

PUERTO RICO JUDICIARY RETIREMENT SYSTEM

June 30, 2019 Actuarial Valuation Report

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August 5, 2022

Mr. Luis M. Collazo Rodríguez, Esq.
Administrator
Puerto Rico Judiciary Retirement System
437 Ponce de León Avenue, 15th Floor
Hato Rey, PR 00917-3711

Dear Mr. Collazo:

This report presents the results of the actuarial valuation of the Puerto Rico Judiciary Retirement System (PRJRS), a single employer defined benefit pension plan, as of June 30, 2019. Section I contains highlights of the valuation including a general discussion. The subsequent Sections contain schedules summarizing the underlying calculations, participant data, plan benefits and actuarial assumptions and methods. The final Section contains information about risks to the Plan, including considerations for pay-as-you-go financing.

Purpose

The main purposes of this report are:

- to present information pertaining to the operation of the plan for inclusion in financial statements based on relevant Statements of the Government Accounting Standards Board (GASB); and
- to review the experience under the plan since the previous valuation; and

In particular, this valuation provides the change in total pension liability under GASB 73 and the change in total other postemployment benefits (“OPEB”) liability under GASB 75. This valuation does not include the GASB 73 pension expense, nor does it include the GASB 75 OPEB expense.

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Mr. Luis M. Collazo Rodríguez, Esq.
August 5, 2022
Page 2

The use of this report for purposes other than those stated above may not be appropriate and should be reviewed with Milliman.

The report was prepared solely to provide assistance to the Commonwealth of Puerto Rico Judiciary Retirement System for a specific and limited purpose. It is a complex, technical analysis that assumes a high level of knowledge concerning PRJRS's operations, and uses PRJRS's data, which Milliman has not audited. Milliman and PRJRS do not intend to benefit and assume no duty or liability to other parties who receive this report. Milliman and PRJRS recommend that any third party recipient of this report be aided by its own actuary or other qualified professional when reviewing the Milliman report. Any distribution of this report should be made in its entirety.

Data Reliance

In performing this analysis, we relied on the census data, benefit payment information, and other information (both written and oral) provided by the System. We have not audited or verified the census data, benefit payment information, or other information. To the extent that any of these are inaccurate or incomplete, the results of this valuation may likewise be inaccurate or incomplete.

We did not audit the data used in our analysis, but did review it for reasonableness and consistency and have not found material defects in the data. It is possible that material defects in the data would be uncovered by a detailed, systematic review and comparison of the data to search for data values that are questionable or for relationships that are materially inconsistent. Such a review was beyond the scope of our assignment.

Future Measurements

This valuation report is only an estimate of the System's financial condition as of a single date. It can neither predict the System's future condition nor guarantee future financial soundness. Actuarial valuations do not affect the ultimate cost of System benefits. While the valuation is based on an array of individually reasonable assumptions, other assumption sets may also be reasonable and valuation results based on those assumptions would be different. No one set of assumptions is uniquely correct. Determining results using alternative assumptions is outside the scope of our engagement.

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Future actuarial measurements may differ significantly from the current measurements presented in this report due to factors such as the following:

- Plan experience differing from the actuarial assumptions;
- Future changes in the actuarial assumptions;
- Increases or decreases expected as part of the natural operation of the methodology used for these measurements (such as potential additional contribution requirements due to changes in the plan's funded status); and,
- Changes in the plan provisions or accounting standards.

Due to the limited scope of our assignment, we did not perform an analysis of the potential range of such measurements.

Certification

We hereby certify that, to the best of our knowledge, this report is complete and accurate and all costs and liabilities were determined in conformance with generally accepted actuarial principles and practices which are consistent with the Actuarial Standards of Practice promulgated by the Actuarial Standards Board and the applicable Guides to Professional Conduct, amplifying Opinions, and supporting recommendations of the American Academy of Actuaries and are based on actuarial assumptions and methods adopted by the System. All of the actuarial assumptions were developed by Milliman in consultation with PRJRS. We believe that the actuarial assumptions and methods used in this actuarial valuation are reasonable for the main purposes of this report as stated herein.

Actuarial computations presented in this report are for purposes of fulfilling financial accounting requirements under the GASB Statements 73 and 75. The calculations in the enclosed report have been made on a basis consistent with our understanding of the plan provisions described in Section V of this report, and of the applicable GASB Statements. Determinations for purposes other than meeting these requirements may be significantly different from the results contained in this report. Accordingly, additional determinations may be needed for other purposes.

The results shown in this report were developed using models intended for valuations that use standard actuarial techniques.

This valuation reflects the law in effect as of June 30, 2019, as required by GASB accounting. The impact of any prospective legislative changes impacting the System are not yet fully known.

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Mr. Luis M. Collazo Rodríguez, Esq.
August 5, 2022
Page 4

Qualifications

The consultants who worked on this assignment are retirement actuaries. Milliman's advice is not intended to be a substitute for qualified legal or accounting counsel.

We are members of the Society of Actuaries and meet the qualification standards of the American Academy of Actuaries to render this actuarial opinion.

Respectfully submitted,



By Glenn D. Bowen, F.S.A.
Member American Academy of Actuaries



Rebecca L. Ross, E.A.
Member American Academy of Actuaries

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PUERTO RICO JUDICIARY RETIREMENT SYSTEM

TABLE OF CONTENTS

	<u>Page</u>
SECTION I - SUMMARY	1
Subsection A - Summary of Principal Results	1
Subsection B - General Discussion	3
SECTION II - GASB 73 ACCOUNTING INFORMATION	6
Subsection A - Total Pension Liability	6
Subsection B - GASB 73 Benefit Obligations	7
Subsection C - Changes in Total Pension Liability	8
Subsection D - Sensitivity Analysis	8
SECTION III - GASB 75 ACCOUNTING INFORMATION	9
Subsection A - Total OPEB Liability	9
Subsection B - GASB 75 Benefit Obligations	10
Subsection C - Changes in Total OPEB Liability	11
Subsection D - Sensitivity Analysis	11
SECTION IV - CENSUS DATA	12
Subsection A - Reconciliation with Prior Valuation	12
Subsection B - Summary of Active Members	13
Subsection C - Summary of Terminated Vested Members	14
Subsection D - Summary of Retirees	15
Subsection E - Summary of Beneficiaries	16
SECTION V - SUMMARY OF PRINCIPAL PLAN PROVISIONS	17
SECTION VI - ACTUARIAL ASSUMPTIONS	30
SECTION VII - ACTUARIAL METHODS	36
SECTION VIII - RISK DISCLOSURE	37

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PUERTO RICO JUDICIARY RETIREMENT SYSTEM

SECTION I – SUMMARY

A. Summary of Principal Results of June 30, 2019 Actuarial Valuation

GASB 73 Accounting (\$ amounts in thousands)

	June 30, 2018 <u>Valuation</u>	June 30, 2019 <u>Valuation</u>
Total Pension Liability ¹	\$570,504	\$594,936

GASB 75 Accounting (\$ amounts in thousands)

	June 30, 2018 <u>Valuation</u>	June 30, 2019 <u>Valuation</u>
Total OPEB Liability ¹	\$6,263	\$6,488

Both the pension benefits accounted for under GASB 73 and the OPEB benefits accounted for under GASB 75 are administered on a pay-as-you-go basis.

¹ A discussion of the benefits included in the Total Pension Liability and Total OPEB Liability begins on page 3 of this section.

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PUERTO RICO JUDICIARY RETIREMENT SYSTEM

SECTION I – SUMMARY

	July 1, 2017 Census Data <u>Collection</u>	July 1, 2018 Census Data <u>Collection</u>
<i>Participant Data</i>		
<u>Active Members</u>		
Number	381	358
Average Salary	\$87,516	\$87,527
Total Annual Salary	\$33,343,773	\$31,334,533
<u>Retirees</u>		
Number	370	370
Average Monthly Basic System Benefit	\$4,677	\$4,724
Average Monthly System Administered Benefit	\$433	\$411
<u>Disabled Members</u>		
Number	0	0
Average Monthly Basic System Benefit	n/a	n/a
Average Monthly System Administered Benefit	n/a	n/a
<u>Beneficiaries</u>		
Number	40	44
Average Monthly Basic System Benefit	\$1,905	\$1,900
Average Monthly System Administered Benefit	\$191	\$174
<u>Terminated Vested Members</u>		
Number	49*	54*
Average Monthly Basic System Benefit (for those assumed to receive an annuity)	\$3,605	\$3,743

* Terminated vested members include both (a) members due a deferred annuity benefit (24 as of July 1, 2017 and 30 as of July 1, 2018) and (b) members who are due a refund of member and, if applicable, employer contributions (25 as of July 1, 2017 and 24 as of July 1, 2018). Former active members hired before July 1, 2014 who are not vested in PRJRS but are covered by another Puerto Rico government system are assumed to be due both their member and employer contributions with interest.

Basic System Benefit and System Administered Benefit amounts shown above are for pension benefits, including COLAs, and are as of the respective valuation date. Special Law "bonus" benefits are not reflected.

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PUERTO RICO JUDICIARY RETIREMENT SYSTEM

SECTION I – SUMMARY

B. General Discussion

Basic System Benefits

As summarized in Section V, the Puerto Rico Judiciary Retirement System (PRJRS) provides benefits to members, or their beneficiaries, upon:

- Retirement
- Disability
- Vested withdrawal
- Death
- Nonvested withdrawal (return of contributions)
- Christmas bonus (\$150) (if hired before December 24, 2013)

Active members hired before December 24, 2013 contribution 8.0% of compensation. Active members hired between December 24, 2013 and June 30, 2014 contribute 10% of compensation and active members hired July 1, 2014 or later contribute 12% of compensation.

These benefits will be referred to as the “Basic System Benefits” throughout this report. Prior to Act 106-2017, these benefits were paid from System assets.

System Administered Benefits

Also summarized in Section V are benefits granted under a series of special laws that are administered by PRJRS, including:

- Additional minimum death benefit (if hired before July 1, 2014)
- Cost-of-living adjustments (COLAs)
- Medical insurance plan contribution
- Medication bonus (if hired before December 24, 2013)
- Christmas bonus (\$450) (if hired before December 24, 2013)

These benefits will be referred to as “System Administered Benefits” throughout this report. Prior to Act 106-2017, these benefits were generally paid from the Commonwealth’s General Fund on a pay-as-you-go basis.

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PUERTO RICO JUDICIARY RETIREMENT SYSTEM

SECTION I – SUMMARY

Benefits included in Total Pension Liability and Total OPEB Liability

The Total OPEB Liability is for the medical insurance plan contribution benefit. The Total Pension Liability is for the Basic System Benefits and all other System Administered Benefits. Note that the Medication Bonus has been included in the Total Pension Liability because members can receive the bonus without submitting documentation to substantiate medication expenses.

System Experience since Prior Valuation

Our analysis of System experience between the June 30, 2018 to June 30, 2019 valuations resulted in a liability gain of \$14 million (e.g. – the June 30, 2018 Total Pension Liability of \$571 million was expected to increase to \$584 million as of June 30, 2019, and instead decreased to \$570 million, prior to assumption and plan changes).

Major sources of gains and losses are as follows:

1. \$2 million loss on "pop-up" retirees and beneficiaries
2. \$10 million gain on continuing retirees and beneficiaries due to mortality experience and data updates.
3. \$6 million gain on continuing actives due to fewer retirements than anticipated during the prior year along with changes in judicial service and other government service

Changes in Assumptions since Prior Valuation

In accordance with GASB 73 and GASB 75, the discount rate is based on a bond market index. PRJRS has selected the Bond Buyer General Obligation 20-Bond Municipal Bond Index for this purpose. The index rate and resulting discount rate decreased from 3.87% as of June 30, 2018 to 3.50% as of June 30, 2019.

The projected mortality improvement scale was updated from Scale MP-2018 to Scale MP-2019.

Changes in Plan Provisions since Prior Valuation

There have not been any changes in plan provisions since the prior valuation.

Changes in Methods since the Prior Valuation

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PUERTO RICO JUDICIARY RETIREMENT SYSTEM

SECTION I – SUMMARY

There have not been any changes in methods since the prior valuation.

Overview of Recent Significant Changes in Plan Provisions

Act 106-2017

Act 106-2017 provides that PRJRS will be funded on a pay-as-you-go basis, which also eliminated interest credits on member contributions as of July 1, 2017.

Act 3-2017

Act 66-2014 originally implemented a salary freeze for FY 2014-15 through FY 2016-17. The recent extension in Act 3-2017 freezes salaries for four additional years, through FY 2020-21.

Fiscal Plan

The *2021 Fiscal Plan for Puerto Rico* was certified on April 23, 2021 by the Financial Oversight and Management Board (“FOMB”), a body created by the enactment of the Puerto Rico Oversight, Management, and Economic Stability Act (“PROMESA”). The liabilities presented in this valuation are based on existing law only.

GASB Pension Accounting Information

Pension accounting results in Section II of this report have been prepared under GASB 73 parameters to determine a Total Pension Liability at the end of the fiscal year. The Total Pension Liability reflects the full amount of the liability, and thus can be significantly volatile from year to year.

GASB OPEB Accounting Information

OPEB accounting results in Section III of this report have been prepared under GASB 75 parameters to determine a Total OPEB Liability at the end of the fiscal year. The Total OPEB Liability reflects the full amount of the liability, and thus can be significantly volatile from year to year.

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PUERTO RICO JUDICIARY RETIREMENT SYSTEM

SECTION IV – CENSUS DATA

A. Reconciliation with Prior Valuation

	<u>Active</u>	Terminated <u>Vested</u>	Retirees, Disabled Members, and <u>Beneficiaries</u>	<u>Total</u>
Members as of July 1, 2017	381	49	410	840
Changes				
Terminated Vested	(11)	11	0	0
Retired & Disabled	(12)	0	12	0
Death	(1)	(1)	(12)	(14)
Disappeared	0	0	(1)	(1)
Refund/Transfer of Contributions	(1)	(5)	0	(6)
Return to Active	0	0	0	(5)
New	2	0	5	7
Members as of July 1, 2018	358	54	414	826

As of July 1, 2018, terminated vested members include both (a) 30 members due a deferred annuity benefit and (b) 24 members who are due a refund of member and, if applicable, employer contributions. Former active members hired before July 1, 2014 who are not vested in PRJRS but are covered by another Puerto Rico government system are assumed to be due both their member and employer contributions with interest.

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PUERTO RICO JUDICIARY RETIREMENT SYSTEM

SECTION IV – CENSUS DATA

B. Summary of Active Members as of July 1, 2018

Number of Active Participants by Age and Service Groups

Age Group	Years of Service							Total
	<u>0-4</u>	<u>5-9</u>	<u>10-14</u>	<u>15-19</u>	<u>20-24</u>	<u>25-29</u>	<u>30+</u>	
<25	-	-	-	-	-	-	-	-
25-29	1	-	-	-	-	-	-	1
30-34	11	1	-	-	-	-	-	12
35-39	17	9	1	-	-	-	-	27
40-44	20	16	13	1	-	1	2	53
45-49	18	10	17	11	11	9	4	80
50-54	8	15	10	14	10	14	12	83
55-59	2	4	8	7	12	8	13	54
60-64	3	6	3	4	5	6	4	31
65-69	1	-	5	5	1	2	2	16
70+	-	-	-	1	-	-	-	1
Total	81	61	57	43	39	40	37	358

Average Annual Compensation of Active Participants by Age and Service Groups

Age Group	Years of Service							Average
	<u>0-4</u>	<u>5-9</u>	<u>10-14</u>	<u>15-19</u>	<u>20-24</u>	<u>25-29</u>	<u>30+</u>	
<25	-	-	-	-	-	-	-	-
25-29	69,600	-	-	-	-	-	-	69,600
30-34	69,600	69,600	-	-	-	-	-	69,600
35-39	74,306	76,300	89,600	-	-	-	-	75,537
40-44	87,140	88,063	88,862	69,600	-	89,600	79,600	87,272
45-49	89,089	90,640	86,706	85,546	83,727	88,578	95,700	87,825
50-54	84,600	86,320	85,600	89,600	92,680	90,043	89,217	88,434
55-59	97,300	92,200	95,325	91,143	87,550	92,825	90,431	91,348
60-64	82,933	92,167	88,067	93,450	89,600	94,667	99,900	92,110
65-69	89,600	-	98,840	98,760	89,600	87,300	89,600	95,063
70+	-	-	-	89,600	-	-	-	89,600
Average	82,156	86,693	89,400	89,772	88,103	90,815	91,000	87,527

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PUERTO RICO JUDICIARY RETIREMENT SYSTEM

SECTION IV – CENSUS DATA

C. Summary of Terminated Vested Members as of July 1, 2018

<u>Age</u>	<u>Count</u>	<u>Average Annual Basic System Pension Benefit</u>
<35	-	-
35-39	-	-
40-44	-	-
45-49	6	41,638
50-54	11	41,470
55-59	6	53,400
60-64	4	54,450
65+	<u>3</u>	34,401
All	30	44,913

The Average Annual Pension Basic System Benefit amounts above are as of July 1, 2018 for terminated vested participants who are due a deferred annuity. In addition, there are 24 former participants who are due accumulated member and, if applicable, employer contributions totaling \$966,544 as of July 1, 2018.

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PUERTO RICO JUDICIARY RETIREMENT SYSTEM

SECTION IV – CENSUS DATA

D. Summary of Retirees as of July 1, 2018

<u>Age</u>	<u>Count</u>	<u>Average Annual Basic System Pension Benefit</u>	<u>Average Annual Total Pension Benefit</u>
<45	-	-	-
45-49	-	-	-
50-54	-	-	-
55-59	21	62,888	63,152
60-64	49	68,700	70,871
65-69	80	60,992	64,526
70-74	79	60,743	65,457
75-79	58	55,972	63,510
80-84	46	45,616	53,375
85-89	25	34,748	41,689
90-94	5	27,556	33,890
95-99	6	23,561	28,977
100+	<u>1</u>	119,152	146,542
All	370	56,694	61,629

The Average Annual Pension amounts above are as of July 1, 2018.

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PUERTO RICO JUDICIARY RETIREMENT SYSTEM

SECTION IV – CENSUS DATA

E. Summary of Beneficiaries as of July 1, 2018

<u>Age</u>	<u>Count</u>	<u>Average Annual Basic System Pension Benefit</u>	<u>Average Annual Total Pension Benefit</u>
<45	2	19,862	20,160
45-49	-	-	-
50-54	-	-	-
55-59	1	33,808	36,000
60-64	1	17,218	18,030
65-69	3	27,740	29,956
70-74	6	27,563	28,026
75-79	3	34,937	37,066
80-84	9	25,395	30,827
85-89	10	19,232	20,248
90-94	5	9,384	10,445
95-100	2	11,117	11,640
100+	<u>2</u>	34,393	37,796
All	44	22,795	24,877

The Average Annual Pension amounts above are as of July 1, 2018.

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PUERTO RICO JUDICIARY RETIREMENT SYSTEM

SECTION V – SUMMARY OF PRINCIPAL PLAN PROVISIONS **AS OF JUNE 30, 2019**

Two main sets of benefit provisions apply to various members of PRJRS depending on the member's date of hire as a result of Act 162 of 2013, as modified by the February 21, 2014 decision of the Puerto Rico Supreme Court.

- The first set of provisions applies to judges hired on or before June 30, 2014. Distinctions for judges hired December 24, 2013 or later are noted throughout this first set of provisions as applicable.
- The second set of provisions applies to judges hired July 1, 2014 or later.

This summary of plan provisions, with separate descriptions for the two sets of benefits, is intended only to describe the essential features of the plan for valuation purposes. All eligibility requirements and benefit amounts shall be determined in strict accordance with the plan document itself.

Act 106-2017 eliminated the prior statutory employer contributions and changed the funding of Systems benefits to pay-as-you-go by the Commonwealth. Prior to July 1, 2017, most benefits were paid from system assets while some benefits were paid by the General Fund.

Provisions applicable to judges hired on or before June 30, 2014 (pre-Act 162)

1. Type of Plan

The System is a contributory, defined benefit plan.

2. Effective Date

The Plan was established in 1954 by Act 12. The plan was last amended under Act 162, approved December 24, 2013.

3. Eligibility for Membership

Members of the Judiciary Retirement System of Puerto Rico include all persons holding a position as Judge of the Supreme Court, Judge of the Court of Appeals, Superior Judges of the Court of First Instance, and Municipal Judges of the Court of First Instance in the Commonwealth of Puerto Rico hired on or before June 30, 2014 (Section 235 and Act 201 of 2003).

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PUERTO RICO JUDICIARY RETIREMENT SYSTEM

SECTION V – SUMMARY OF PRINCIPAL PLAN PROVISIONS AS OF JUNE 30, 2019

4. Definitions

- a. Fiscal Year: A Fiscal Year is a 12-month period beginning on July 1 and ending on June 30 (Section 234).
- b. General Fund: The General Expenses Budget of the Government of the Commonwealth of Puerto Rico.
- c. Creditable Service: The years and months (where fractional months are counted as full months of service) of System participation, beginning on the Date Credit Begins and ending on the date of separation of service. All intervening periods following a resignation, separation or expiration of any term by election or appointment during which a participant was not in government service are excluded. Periods for which no contributions have been made or for which contributions were refunded are also excluded. However, credit will be granted for refund periods if the participant returns any refunded Accumulated Contributions with interest to the System. (Section 234)
- d. Date Credit Begins: For participants with less than eight years of Credited Service as a judge, Creditable Service begins on the day of appointment as a judge. For participants with at least eight years of Creditable Service as a judge, Credited Service begins on the earlier of (1) the day of appointment as a judge or (2) the day first employed by the Government of Puerto Rico, provided that Accumulated Contributions for prior government service are transferred to the System. (Section 234)
- e. Salary: The annual compensation received by a judge for his services in that capacity (Section 234).
- f. Highest Salary: The highest salary received as a judge (Section 236).
- g. Average Compensation: The average of the 36 highest months of salary that the participant has received for Creditable Service (System Disability Regulation).
- h. Contributions: The amount deducted from the compensation of a Member (Sections 242 and 244).

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PUERTO RICO JUDICIARY RETIREMENT SYSTEM

SECTION V – SUMMARY OF PRINCIPAL PLAN PROVISIONS AS OF JUNE 30, 2019

- i. Interest: 2.5% compounded annually, or any other rate as may subsequently be prescribed by the Board of Trustees based on the System's experience (Section 234). The rate of 2.5% has always been in effect.
- j. Accumulated Contributions: The sum of all amounts deducted from the compensation of a Member with interest (Section 239).
- k. Actuarial Equivalent: Equality in value such that the present value of the amount under any form of payment is essentially the same as the present value of the amount under the normal form of annuity payment for single participants. Actuarially Equivalent factors are determined based on annuity and mortality tables adopted by the Board of Trustees based on the system's experience and in accordance with the recommendations of the actuary. (Section 234)

5. Retirement Benefits

a. Normal Retirement

Basic Eligibility: Age 60 with 10 years of Creditable Service (Section 236).

Basic Benefit: 25% of Highest Salary, plus 5% of Highest Salary for each year of Creditable Service in excess of 10 years, subject to a maximum of 75% of Highest Salary if hired before December 24, 2013 and 60% of Highest Salary if hired between December 24, 2013 and June 30, 2014 (Section 236).

Eligibility for judges who serve without a fixed tenure: 10 years of Creditable Service (Section 236, as interpreted by the System). This enhanced eligibility is not available to judges who are appointed after June 28, 2007 to an unlimited term (Act 54, Section 2).

Benefit for judges who serve without a fixed tenure: 25% of the Salary corresponding to the office during the retirement period, plus 5% of such Salary for each year of Creditable Service in excess of 10 years, subject to a maximum of 100% of such Salary. If the judge has served in a position without a fixed tenure for a total of at least 8 years, the 25% increases to 50% in the preceding formula. (Section 236). This enhanced benefit is not available to judges who are appointed after June 28, 2007 to an unlimited term (Act 54, Section 2).

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PUERTO RICO JUDICIARY RETIREMENT SYSTEM

SECTION V – SUMMARY OF PRINCIPAL PLAN PROVISIONS **AS OF JUNE 30, 2019**

Optional Eligibility: Age and Creditable Service as shown in the table below, provided at least 8 years of Creditable Service were earned in office as a judge (Section 236a).

Age	Years of Creditable Service
Less than 60	30
62	20
61	21
60	22
59	23
58	24
57	25
56	26
55	27

Optional Benefit: 75% of Highest Salary if hired before December 24, 2013 and 60% of Highest Salary if hired between December 24, 2013 and June 30, 2014 (Section 236a).

Enhanced Eligibility: Any judge who has served without a fixed tenure for at least 3 years and has at least 25 years of Creditable Service (Section 236). This enhanced benefit is not available to judges who are appointed after June 28, 2007 to an unlimited term (Act 54, Section 2).

Enhanced Benefit: 75% of the Salary earned at the time of retirement (Section 236).

Compulsory Retirement: All judges must retire by age 70. If the judge has less than 10 years of creditable service, the judge can elect a refund of Accumulated Contributions or a proportional part of the Basic Benefit based on completed years and months of creditable service. (Section 236)

b. Early Retirement

Basic Eligibility: 20 years of Creditable Service before age 60 (Section 236).

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PUERTO RICO JUDICIARY RETIREMENT SYSTEM

SECTION V – SUMMARY OF PRINCIPAL PLAN PROVISIONS AS OF JUNE 30, 2019

Basic Benefit: The Basic Benefit payable under Normal Retirement, reduced on an actuarial equivalent basis for each month that Early Retirement Date precedes age 60. However, no actuarial reduction is applied for judges who serve without a fixed tenure. (Section 236).

Optional Eligibility: 20 years of Creditable Service, provided at least 8 years of Creditable Service were earned in office as a judge (Section 236a).

Optional Benefit: 75% of Highest Salary if hired before December 24, 2013 and 60% of Highest Salary if hired between December 24, 2013 and June 30, 2014, reduced on an actuarial equivalent basis for each month that Early Retirement Date precedes the age specified in the table under Optional Eligibility under Normal Retirement for the applicable years of Creditable Service (Section 236a).

6. Termination Benefits

a. Lump Sum Withdrawal

Eligibility: A Member is eligible upon termination of service.

Benefit: The benefit equals a refund of Accumulated Contributions (Section 239).

b. Deferred Retirement

Eligibility: A Member is eligible upon termination of service prior to age 60 and after 10 years of Creditable Service, provided the member has not taken a lump sum withdrawal.

Benefit: The benefit, commencing at age 60, is equal to the benefit payable upon Normal Retirement (Section 236).

7. Death Benefits

a. Occupational Death Benefit

Eligibility: The beneficiaries of any active participant who dies from an employment-related cause under the Workmen's Accident Compensation Act (Section 240).

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PUERTO RICO JUDICIARY RETIREMENT SYSTEM

SECTION V – SUMMARY OF PRINCIPAL PLAN PROVISIONS AS OF JUNE 30, 2019

Spouse's Benefit: 50% of the participant's Salary at date of death, payable as an annuity until death or remarriage (Section 240).

Children's Benefit: \$10 (\$20 if full orphan) for each child payable monthly until child's age 18 or completion of studies, if later. The maximum family benefit is 75% of the participant's Salary at date of death. (Section 240)

Benefit if no spouse or children: Refund of Accumulated Contributions, plus an amount equal to one year of Compensation in effect at the time of death (Section 240).

b. Pre-retirement Death Benefit

Eligibility: Any current non-retired member is eligible, provided not eligible for the Occupational Death Benefit (Section 240).

Benefit: The benefit is as follows:

- (i) While in active service, the benefit equals a refund of Accumulated Contributions; plus an amount equal to one year of Compensation in effect at the time of death (Section 240).
- (ii) While not in active service, the benefit equals a refund of Accumulated Contributions.

c. Special Pre-retirement Death Benefit

Eligibility: An active participant who was eligible to retire at the date of death with a surviving spouse or dependent children (Section 240a).

Benefit: The post-retirement death benefits described below assuming the active participant retired the day before the date of death (Section 240a).

d. Post-retirement Death Benefit

Eligibility: Any retiree or disabled member receiving a monthly benefit.

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PUERTO RICO JUDICIARY RETIREMENT SYSTEM

SECTION V – SUMMARY OF PRINCIPAL PLAN PROVISIONS AS OF JUNE 30, 2019

Benefit: The benefit is as follows:

- (i) For those married or with dependent children at the time of death, an annual income equal to 60% of the Retirement Benefit at time of death, payable for life for a surviving spouse and/or disabled children and payable until age 18 or completion of studies, if later, for non-disabled children (Section 240a).
- (ii) The benefit, when there is no relation as stated above, is equal to the remaining balance of Accumulated Contributions at the time of retirement after the deduction of lifetime annual income paid and is payable to a beneficiary or to the Member's estate. In no case shall the benefit be less than \$1,000. (Section 240 and Act 548)

8. Disability Benefits

a. Non-occupational Disability

Eligibility: All members are eligible for Non-occupational Disability upon 10 years of Creditable Service and the occurrence of disability (Section 238).

Benefit: 30% of Average Compensation, plus 1% of Average Compensation for each year of creditable service in excess of 10 years, payable as an annuity; subject to a maximum of 50% of Average Compensation (Section 238).

b. Occupational Disability

Eligibility: All members disabled while in the course and as a consequence of their work, as certified by two physicians appointed by the Plan Administrator, and provided the member is receiving compensation from the Workmen's Accident Compensation Act (Section 238).

Benefit: 50% of Salary at date of disability, payable as an annuity, reduced by any payments received from the State Insurance Fund under the Workmen's Accident Compensation Act (Section 238).

9. Cost-of-Living Adjustments (COLA) to Pension Benefits: Effective January 1, 2001, commencing January 1, 2002 and subsequently every three years thereafter, the annual benefit is increased by 3% for retirees and disabled members provided that

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PUERTO RICO JUDICIARY RETIREMENT SYSTEM

SECTION V – SUMMARY OF PRINCIPAL PLAN PROVISIONS AS OF JUNE 30, 2019

the member had been receiving payments for at least three years (Section 236c). In addition, an ad-hoc 3% COLA was granted effective January 1, 1999 (Section 236b).

10. Medical Insurance Plan Contribution: A payment of up to \$100 per month to the eligible medical insurance plan selected by the retiree or disabled member (Act 483).

11. Special “Bonus” Benefits:

a. Christmas Bonus: An annual bonus of \$600 for each retiree, beneficiary, and disabled member paid in December provided the judge was hired before December 24, 2013 (Act 144).

b. Summer Bonus: An annual bonus of \$100 for each retiree, beneficiary, and disabled member paid in July provided the judge was hired before December 24, 2013. The amount is prorated if there are multiple beneficiaries. (Act 37)

c. Medication Bonus: An annual bonus of \$100 for each retiree, beneficiary, and disabled member to cover health costs paid in July provided the judge was hired before December 24, 2013. Evidence of coverage is not required. The amount is prorated if there are multiple beneficiaries. (Act 155)

d. Judges hired between December 24, 2013 and June 30, 2014 are not eligible for these special “bonus” benefits.

12. Forms of Payment

The basic pension benefits described in the above sections are payable in the form of a cash refund annuity. Optional benefits are provided upon a member’s death to the surviving beneficiaries as described in 7.d.

13. Member Contributions: Contributions by Members are 8.0% of Compensation if hired before December 24, 2013 and 10.0% of Compensation if hired between December 24, 2013 and June 30, 2014 (Sections 234, 240a and 242).

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PUERTO RICO JUDICIARY RETIREMENT SYSTEM

SECTION V – SUMMARY OF PRINCIPAL PLAN PROVISIONS AS OF JUNE 30, 2019

Provisions applicable to judges hired July 1, 2014 or later (Act 162)

1. Type of Plan

The System is a contributory, hybrid defined benefit plan.

2. Effective Date

The Plan was established in 1954 by Act 12. The plan was last amended under Act 162, approved December 24, 2013.

3. Eligibility for Membership

Members of the Judiciary Retirement System of Puerto Rico include all persons holding a position as Judge of the Supreme Court, Judge of the Court of Appeals, Superior Judges of the Court of First Instance, and Municipal Judges of the Court of First Instance in the Commonwealth of Puerto Rico hired July 1, 2014 or later (Section 235 and Act 201 of 2003).

4. Definitions

- a. Fiscal Year: A Fiscal Year is a 12-month period beginning on July 1 and ending on June 30 (Section 234).
- b. General Fund: The General Expenses Budget of the Government of the Commonwealth of Puerto Rico.
- c. Creditable Service: The years and months (where fractional months are counted as full months of service) of System participation, beginning on the day of appointment as a judge and ending on the date of separation of service. All intervening periods following a resignation, separation or expiration of any term by election or appointment during which a participant was not a judge are excluded. Periods for which no contributions have been made or for which contributions were refunded are also excluded. (Section 234)
- d. Salary: The annual compensation received by a judge for his services in that capacity (Section 234).

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PUERTO RICO JUDICIARY RETIREMENT SYSTEM

SECTION V – SUMMARY OF PRINCIPAL PLAN PROVISIONS AS OF JUNE 30, 2019

- e. Average Compensation: The average of the last 60 months of salary that the participant has received for Creditable Service.
 - f. Contributions: The amount deducted from the compensation of a Member (Sections 242 and 244).
 - g. Actuarial Equivalent: Equality in value such that the present value of the amount under any form of payment is essentially the same as the present value of the amount under the normal form of annuity payment for single participants. Actuarially Equivalent factors are determined based on annuity and mortality tables adopted by the Board of Trustees based on the system's experience and in accordance with the recommendations of the actuary. (Section 234)
 - h. Hybrid Program Contribution Account: The individual account established for each judge hired July 1, 2014 or later. Each member has a nonforfeitable right to their contributions to the Hybrid Program Contribution Account.
 - i. Credits to Hybrid Program Contribution Account: The credits to the Hybrid Program Contribution Account include (1) contributions by the judge, (2) any discretionary matching contribution made by the Courts Administration Office, and (3) the investment yield for each semester of the fiscal year as determined by the Board. The investment yield determined by the Board shall never be less than 80% of the investment portfolio yield of the System during each semester of each fiscal year minus management fees such as, but not limited to, fees payable to administrator of the portfolio, custody and investment advice. With the move to pay-as-you-go funding under Act 106-2017, no investment credits are applied after July 1, 2017.
5. Retirement Benefits
- a. Normal Retirement

Eligibility: Age 65 with 12 years of Creditable Service.

Benefit: 1.5% of Average Compensation for each year of Creditable Service, plus the annuitized value of the balance in the Hybrid Program Contribution Account at the time of retirement. The benefit is payable for the member's lifetime.

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PUERTO RICO JUDICIARY RETIREMENT SYSTEM

SECTION V – SUMMARY OF PRINCIPAL PLAN PROVISIONS AS OF JUNE 30, 2019

Compulsory Retirement: All judges must retire by age 70. If the judge has less than 12 years of creditable service, the judge will receive a refund of the Hybrid Program Contribution Account.

b. Early Retirement

Eligibility: Age 55 with 12 years of Creditable Service before age 65.

Benefit: 1.5% of Average Compensation for each year of Creditable Service, reduced by 1/180 for each for the first 60 months and by 1/360 for each of the next 60 months by which the early retirement date precedes age 65, plus the annuitized value of the balance in the Hybrid Program Contribution Account at the time of retirement. (Note that Act 162-2013 provides for an actuarial reduction for early retirement, however the PRJRS Board has not yet adopted the recommended factors as described in this paragraph.)

6. Termination Benefits

a. Lump Sum Withdrawal

Eligibility: A Member is eligible upon termination of service with less than 12 years of Creditable Service.

Benefit: The benefit equals a refund of the Hybrid Program Contribution Account.

b. Deferred Retirement

Eligibility: A Member is eligible upon termination of service prior to age 65 and after 12 years of Creditable Service, provided the member has not taken a lump sum withdrawal.

Benefit: The benefit, commencing at age 65, is equal to the benefit payable upon Normal Retirement. The benefit may commence as early as age 55, subject to the reductions described under early retirement.

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PUERTO RICO JUDICIARY RETIREMENT SYSTEM

SECTION V – SUMMARY OF PRINCIPAL PLAN PROVISIONS AS OF JUNE 30, 2019

7. Death Benefits

a. Pre-retirement Death Benefit

Eligibility: Any current non-retired member is eligible.

Benefit: A refund of the Hybrid Program Contribution Account.

b. Post-retirement Death Benefit

Eligibility: Any retiree or disabled member.

Benefit: If the member elected at the time of retirement to transfer a portion of the annuity to a beneficiary by selecting an actuarially equivalent optional form of payment, the applicable survivor benefit.

For all members, the excess, if any, of the Hybrid Program Contribution Account at the time of retirement over the total Hybrid Program annuity payments paid to the member and any beneficiary per the terms of the optional form of payment shall be payable to a beneficiary or the Member's estate.

8. Disability Benefits

Eligibility: All members are eligible upon 5 years of Creditable Service and the occurrence of disability prior to age 65.

Benefit: 1.5% of Average Compensation for each year of Creditable Service plus plus the annuitized value of the balance in the Hybrid Program Contribution Account at the time of disability, payable as an annuity; subject to a maximum of 33% of Average Compensation.

9. Cost-of-Living Adjustments (COLA) to Pension Benefits: Commencing January 1, 2017 and subsequently every three years thereafter, the annual benefit is increased by 3% for retirees and disabled members provided that the member had been receiving payments for at least three years (Section 236c).

10. Medical Insurance Plan Contribution: A payment of up to \$100 per month to the eligible medical insurance plan selected by the retiree or disabled member (Act 483).

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PUERTO RICO JUDICIARY RETIREMENT SYSTEM

SECTION V – SUMMARY OF PRINCIPAL PLAN PROVISIONS **AS OF JUNE 30, 2019**

11. Member Contributions: Contributions by Members are 12.0% of Compensation.

Changes in Plan Provisions since Prior Valuation

There have not been any changes to plan provisions since the prior valuation.

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PUERTO RICO JUDICIARY RETIREMENT SYSTEM

SECTION VI – SUMMARY OF ACTUARIAL ASSUMPTIONS AS OF JUNE 30, 2019

Municipal Bond Rate: 3.50% per annum (Bond Buyer General Obligation 20-Bond Municipal Bond Index)

GASB 73 and GASB 75 discount rate: 3.50% per annum

Compensation Increases: 3.0% per year. However, no compensation increases are assumed from July 1, 2013 until July 1, 2021 as a result of the Act 3-2017 four year extension of the Act 66-2014 salary freeze. Based on professional judgment and System input.

Hybrid Program Contribution Account: Member contributions to the Hybrid Program Contribution Account are assumed to be 12.0% of Compensation. No matching employer contributions to the Hybrid Program Contribution Account are assumed. Due to Act 106-2017, Hybrid Program Contribution Accounts are assumed to grow using a 0% annual investment return.

Annuitization of Hybrid Program Contribution Account: Single life annuity factors using an interest rate of 4% and the RP-2000 Healthy Annuitant Mortality Table for ages 50 and over and the RP-2000 Employee Mortality Table for ages under 50, projected to 2025 using Scale AA and blended 50% male / 50% female, are used to convert the Hybrid Program Contribution Account to a lifetime annuity.

Basis for demographic assumptions: The mortality assumptions reflect standard industry tables that were selected based on the characteristics of the System's members. Most other demographic assumptions used in this valuation are based on a 2009 experience study using data as of June 30, 2003, June 30, 2005, and June 30, 2007. Certain demographic assumptions (e.g. termination and retirement) were impacted by the Act 162-2013 pension reforms and were revised based on the new retirement eligibility and expected future experience. All assumptions were reviewed with PRJRS staff for reasonableness and are documented in this Section.

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PUERTO RICO JUDICIARY RETIREMENT SYSTEM

SECTION VI – SUMMARY OF ACTUARIAL ASSUMPTIONS AS OF JUNE 30, 2019

Termination – Judges who serve with a fixed tenure: Withdrawal rates vary by age and years of Creditable Service as a judge (not including any prior governmental service for judges hired before July 1, 2014).

Years of Creditable Service	Less than Age 45	Age 45 and older
0 – 6	3.5%	0.0%
7	0.0	0.0
8	30.0	15.0
9 – 11	3.0	3.0
12+	0.0	0.0

Retirement – Judges who serve with a fixed tenure and were hired before July 1, 2014: Rates of retirement vary by age and years of Creditable Service (including any prior governmental service). Retirement rates are not applied prior to completion of 8 years of Creditable Service as a judge.

If Eligible for the 75% of Highest Salary Maximum Benefit:

A retirement rate of 45% per year is assumed for active members who are eligible for retirement with the maximum benefit (e.g. age 60 with 20 years of Creditable Service, 30 years of Creditable Service, or Optional Eligibility).

If Not Yet Eligible for the 75% of Highest Salary Maximum Benefit:

The rates shown below apply when an active member is eligible for retirement with less than the maximum benefit (e.g. age 60 with 10 years of Creditable Service, or 20 years of Creditable Service before age 60).

Age	Less than 20 years of Creditable Service	20 or more years of Creditable Service
Less than 60	N/A	1.5%
60 and older	8.0%	N/A

At age 70, a retirement rate of 100% is applied.

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PUERTO RICO JUDICIARY RETIREMENT SYSTEM

SECTION VI – SUMMARY OF ACTUARIAL ASSUMPTIONS AS OF JUNE 30, 2019

Retirement – Judges hired July 1, 2014 or later – Rates of retirement vary by age once eligible for early retirement (age 55 with 12 years of Creditable Service) or normal retirement (age 65 with 12 years of Creditable Service).

Age	Rate of Retirement
55 to 59	1.0%
60 to 61	2.0
62 to 64	10.0
65	30.0
66 to 69	20.0
70+	100%

Termination – Judges who serve without a fixed tenure: No termination is assumed prior to retirement eligibility.

Retirement – Judges who serve without a fixed tenure: Rates of retirement vary by age. The rates do not apply until the completion of 10 years of Creditable Service with 8 years earned as judge.

Age	Rate of Retirement
Under 65	0%
65 to 69	20
70 & Over	100

For benefit purposes, all Judges who serve without a fixed tenure are assumed to retire with at least 8 years of Creditable Service earned as a judge without a fixed tenure.

Commencement of benefits for terminated vested members: Current terminated members with a vested benefit are assumed to retire at age 60 if hired before July 1, 2014 or age 65 if hired July 1, 2014 or later, or at the attained age on the valuation date if later. Future terminated vested members are assumed to retire at age 60 if hired before July 1, 2014 or age 65 if hired July 1, 2014 or later.

Disability: 50% of the six month elimination period rates in the 1987 Commissioners Group Disability Table. 100% of disabilities are assumed to be occupational. For judges hired before July 1, 2014, rates of disability cease to apply once a member is eligible for

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PUERTO RICO JUDICIARY RETIREMENT SYSTEM

SECTION VI – SUMMARY OF ACTUARIAL ASSUMPTIONS AS OF JUNE 30, 2019

the 75% of Highest Salary maximum benefit. For judges hired July 1, 2014 or later, rates of disability cease to apply at age 65.

Pre-retirement Mortality: RP-2014 Employee Mortality Rates with white collar adjustments for males and females adjusted to reflect Mortality Improvement Scale MP-2019 from the 2006 base year, and projected forward using MP-2019 on a generational basis. As a generational table, it reflects mortality improvements both before and after the measurement date.

Among deaths while in active service, 50% are assumed to be occupational, 50% are assumed to be non-occupational.

Post-retirement Healthy Mortality: RP-2014 Healthy Annuitant Mortality Rates with white collar adjustments for males and females adjusted to reflect Mortality Improvement Scale MP-2019 from the 2006 base year, and projected forward using MP-2019 on a generational basis. As a generational table, it reflects mortality improvements both before and after the measurement date.

Post-retirement Disabled Mortality: RP-2014 Disabled Annuitant Mortality Rates, for males and females adjusted to reflect Mortality Improvement Scale MP-2019 from the 2006 base year, and projected forward using MP-2019 on a generational basis. As a generational table, it reflects mortality improvements both before and after the measurement date.

Marriage: 75% of current active and terminated members are assumed to be married at retirement with males 3 years older than females.

Form of Payment: For judges hired before July 1, 2014, future retired members are assumed to receive a joint and 60% survivor annuity if married and a modified cash refund (approximated by a single life annuity with 2 years certain) if not married. For judges hired July 1, 2014 or later, future retired members are assumed to receive a modified cash refund.

Spousal information was not provided for current retired and disabled members. If the retiree or disabled member was indicated as married, that member was assumed to receive a joint and 60% survivor annuity. The spouse's date of birth was imputed based on an assumed age difference of 3 years with males older than females. If the retiree or

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PUERTO RICO JUDICIARY RETIREMENT SYSTEM

SECTION VI – SUMMARY OF ACTUARIAL ASSUMPTIONS AS OF JUNE 30, 2019

disabled member was indicated as not married, that member was assumed to receive a modified cash refund (approximate by a single life annuity with 2 years certain).

No future dependent children were assumed to become beneficiaries.

Members who terminate employment with at least 10 years of Creditable Service (12 years of Creditable Service if hired July 1, 2014 or later) are assumed to elect to receive a deferred pension benefit in lieu of a refund of contributions.

Medical Insurance Plan Contribution: 75% of future and current service and disability retirees are assumed to receive a monthly medical insurance continuation benefit of \$100 per month.

Tenure as Judge: Supreme Court judges appointed before June 29, 2007 are assumed to serve with unlimited terms. All other judges are assumed to have a fixed tenure.

Census Data Collection Date: July 1, 2018. When information is provided by participant category in this report, the category is determined as of the census data collection date.

Special Data Adjustments: The following adjustments were made to the census data received from the System.

Benefits for some of the current terminated vested members were estimated based on the provided years of creditable service and the last monthly salary.

Refer to the Form of Payment assumption above for a description of form of payment and spousal data imputation for current retired and disabled members.

Accumulated member contributions for active members hired before July 1, 2014 with other government service include the contributions accumulated during the other government service.

Benefits for current beneficiaries who are under age 22 as of the valuation date were assumed to cease at age 22. Benefits for current beneficiaries who are age 22 or older as of the valuation data were assumed to be payable for life. In addition, the current level of benefit was assumed to remain constant.

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PUERTO RICO JUDICIARY RETIREMENT SYSTEM

SECTION VI – SUMMARY OF ACTUARIAL ASSUMPTIONS AS OF JUNE 30, 2019

Benefits not valued: The minimum post-retirement death benefit of \$1,000 for retirees without surviving beneficiaries (for judges hired before July 1, 2014) is not explicitly valued. The additional liability associated with this benefit is expected to be de minimis.

Changes in actuarial assumptions since the prior valuation:

The GASB 73 and GASB 75 discount rate has decreased from 3.87% as of June 30, 2018 to 3.50% as of June 30, 2019.

The projected mortality improvement scale was updated from Scale MP-2018 to Scale MP-2019.

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PUERTO RICO JUDICIARY RETIREMENT SYSTEM

SECTION VII – SUMMARY OF ACTUARIAL METHODS AS OF JUNE 30, 2019

The ultimate cost of a pension plan is the excess of actual benefits and administrative expenses paid over actual net investment return on plan assets during the plan's existence until the last payment has been made to the last participant. The plan's "actuarial cost method" determines the expected incidence of actuarial costs by allocating portions of the ultimate cost to each plan year. The cost method is thus a budgeting tool to help to ensure that the plan will be adequately and systematically funded and accounted for. There are several commonly-used cost methods which differ in how much of the ultimate cost is assigned to each prior and future year. Therefore, the pattern of annual contributions and accounting expense varies with the choice of cost method. Annual contributions and accounting expense are also affected by the "asset valuation method" (as well as the plan provisions, actuarial assumptions, and actual plan demographic and investment experience each year).

Actuarial Cost Method

The plan's actuarial cost method is the entry age normal method. Under this method, a projected benefit is determined at each active participant's assumed retirement age assuming future compensation increases. The plan's normal cost is the sum of each active participant's annual cost for the current year of service determined such that, if it were calculated as a level percentage of his compensation each year, it would accumulate at the valuation interest rate over his total prior and future years of service as a judge to his assumed retirement date into an amount sufficient to fund his projected benefit. The plan's accrued liability is the sum of (a) the accumulation of each active participant's normal costs attributable to all prior years of service plus (b) the present value of each inactive participant's future benefits.

Liability Determination

The results as of June 30, 2019 are based on projecting the System obligations determined as of the census data collection date of July 1, 2018 for one year using roll-forward methods, assuming no liability gains or losses.

Changes in actuarial methods since the prior valuation

None.

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PUERTO RICO JUDICIARY RETIREMENT SYSTEM

SECTION VIII – RISK DISCLOSURE

The purpose of this section is to identify, assess, and provide illustrations of risks that are significant to the Plan, and in some cases to the Plan's participants.

The results of the actuarial valuation are based on one set of reasonable assumptions. However, it is almost certain that future experience will not exactly match the assumptions. It is therefore important to consider the potential impacts of these likely differences when making decisions that may affect the future financial health of the Plan, or of the Plan's participants.

In addition, as plans mature they typically grow in size and become more material compared to the plan sponsor's overall operations. This increases the potential risk inherent in the long-term financing of the plan. Since pension plans make long-term promises and rely on long-term financing, it is important to consider how mature the Plan is today, and how mature it may become in the future.

Actuarial Standard of Practice No. 51 (ASOP 51) addresses these issues by providing actuaries with guidance for assessing and disclosing the risk associated with measuring pension liabilities and the determination of pension plan contributions. Specifically, it directs the actuary to:

- Identify risks that may be significant to the Plan.
- Assess the risks identified as significant to the Plan. The assessment does not need to include numerical calculations.
- Disclose plan maturity measures and historical information that are significant to understanding the Plan's risks.

ASOP 51 states that if in the actuary's professional judgment, a more detailed assessment would be significantly beneficial in helping the individuals responsible for the Plan to understand the risks identified by the actuary, then the actuary should recommend that such an assessment be performed.

This section uses the framework of ASOP 51 to communicate important information about: significant risks to the Plan and the Plan's maturity.

Potential Pay-as-you-go (“paygo”) financing risks

Operating a retirement system on a paygo basis may be conceptually simple, but can be very difficult in practice when reserves are limited or non-existent. While the valuation of liabilities for financial reporting purposes is conducted on an annual basis in arrears,

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PUERTO RICO JUDICIARY RETIREMENT SYSTEM

SECTION VIII – RISK DISCLOSURE

benefit payments vary continuously and respond instantaneously to emerging events. There are also administrative expenses incurred continuously.

Disbursements will experience natural variation due to emerging demographic experience and can also be greatly impacted by specific management decisions, such as an early retirement incentive program or other workforce reduction.

A major issue that needs to be addressed is determining what the process of budgeting for paygo funding will be. While an expected paygo amount can be set at the time of budgeting for an upcoming fiscal year, disbursements can vary from expectations during the fiscal year.

- If the budget is set based on expected disbursements, in the event of adverse experience during the fiscal year, will additional funds be available?
- Alternately, would the budget request include a margin to provide a buffer against adverse experience?
 - If so, consideration will need to be given to what level of margin should be included. Scenarios such as higher retirement activity and/or lower mortality rates could be modeled to provide a range of potential adverse outcomes.
 - Increased security comes at increased cost, and no specific margin guarantees protection against all circumstances.
- How would the impacts of specific management decisions be handled?
 - For instance, assume that the fiscal year paygo amount appears to be sufficient as of mid-year.
 - Then a reduction in workforce is announced, with an effective date of March 31.
 - In the final three months of the fiscal year, disbursements will be higher than expected as some members will take a refund of contributions upon termination, and other members who are retirement eligible will commence their annuity earlier than they had been expected to do so.

There are certainly many more operational details to be considered. We provide this limited commentary in order to point out that paygo operation is a complex issue that requires careful thought and planning, constant monitoring, and the ability to respond to emerging events quickly.

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PUERTO RICO JUDICIARY RETIREMENT SYSTEM

SECTION VIII – RISK DISCLOSURE

Benefit Payment Risk

Definition: This is the potential that members will not receive the full benefit payments promised under current law.

Identification: The system is operated on a pay-as-you-go basis with benefits funded by the Commonwealth. The Commonwealth's finances are under the control of the FOMB, a body created by PROMESA.

Assessment: Uncertain. Future revenue sources will be needed in order to finance the benefit payments. Reductions in benefits have been proposed in prior fiscal plans.

Inflation Risk

Definition: This is the potential of a pension to lose purchasing power over time due to inflation.

Identification: The participants of pension plans without fully inflation-indexed benefits are subject to the risk that their purchasing power will be reduced over time due to inflation.

Assessment: Members in this Plan bear all of the inflation risk occurring after retirement that is not offset by the 3% cost-of-living adjustment provided every three years to retirees.

Maturity Risk

Definition: This is the potential for total plan liabilities to become more heavily weighted toward inactive liabilities over time.

Identification: As a plan matures, benefits accumulate, and the plan membership ages, the plan's liabilities become large relative to its source of contributions. A decline in the sponsor's finances can exacerbate economic shocks to an older, bigger plan. The more mature a plan, the shorter the plan's time horizon, which leads to less time to recover from liability losses.

Assessment: The following table displays certain maturity risk metrics. Over the past 10 years, the percent of the liability attributable to retirees has increased slightly as shown in the table below.

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PUERTO RICO JUDICIARY RETIREMENT SYSTEM

SECTION VIII – RISK DISCLOSURE

<u>Valuation Year</u>	<u>Percent of Liability Attributable to Retirees</u>	<u>Ratio of Actives to Retirees</u>
2019	54.9%	0.87
2018	56.0%	0.93
2017	59.6%	0.77
2016	58.8%	0.83
2015	58.4%	0.85
2014	57.3%	0.85
2013	59.9%	0.85
2012	56.9%	0.93
2011	57.7%	0.93
2010	57.1%	0.92

Retirement Risk

Definition: This is the potential for participants to retire and receive subsidized benefits more valuable than expected.

Identification: This plan provides for valuable early and optional retirement benefits.

Assessment: If participants retire at earlier ages than anticipated by the actuarial assumptions, it is expected that additional financing will be required.

Interest Rate Risk

Definition: The potential that interest rates will be different than expected.

Identification: The pension liabilities reported herein have been calculated by computing the present value of expected future benefit payments using the interest rate(s) described in Section VI. If interest rates in future valuations differ from this valuation, future pension liabilities may differ significantly from those presented in this valuation. As a general rule, using a higher interest rate to compute the present value of future benefit payments will result in a lower pension liability, and vice versa.

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PUERTO RICO JUDICIARY RETIREMENT SYSTEM

SECTION VIII – RISK DISCLOSURE

Assessment: Section II Exhibit D “Sensitivity Analysis” presents the results of re-measuring the Total Pension Liability at discount rates 100 basis points lower and higher than that used in the development of the Total Pension Liability

Demographic Risks

Definition: The potential that mortality or other demographic experience will be different than expected.

Identification: The pension liabilities reported herein have been calculated by assuming that participants will follow patterns of demographic experience (e.g., mortality, withdrawal, disability, retirement, form of payment election, etc.) as described in Section VI. If actual demographic experience or future demographic assumptions are different from what is assumed to occur in this valuation, future pension liabilities may differ significantly from those presented in this valuation.

Assessment: Demographic gain/loss is measured each year as part of the annual valuation process and reported in the GASB 73 reconciliation. Demographic assumptions are updated as needed each year to reflect significant known deviations occurring in the fiscal year in order to minimize short term gains/losses. Demographic assumptions are also updated when periodic experience studies are conducted, with a goal of minimizing gains/losses over the long term.

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