



## **Estimate of EEOICPA Liabilities**

Liability Estimate as of September 30, 2019

Report prepared for:

U.S. Department of Labor

Office of Workers' Compensation Programs

Report Date: September 26, 2019



September 26, 2019

Mr. Hari Kadavath  
Director/Comptroller, Division of Financial Administration  
Office of Workers' Compensation Programs  
US Department of Labor  
Frances Perkins Building  
200 Constitution Ave NW  
Washington DC 20210

Re: Estimate of EEOICPA Liabilities as of September 30, 2019

Dear Mr. Kadavath:

Attached is the actuarial report documenting our analysis of the EEOICPA liabilities as of September 30, 2019. If there are any questions regarding this report or the analysis which it documents, I can be reached by telephone at (651) 293-8008 or by email at [chris.gross@cgconsult.com](mailto:chris.gross@cgconsult.com).

Sincerely,

Chris Gross, ACAS, MAAA  
President and CEO

Jennifer Nelson  
Senior Vice President

CG/jn

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## Introduction

The Energy Employees Occupational Illness Compensation Program Act (“EEOICPA”) provides compensation and medical benefits to claimants who are (or were) employed in various energy-related activities either directly for the Department of Energy (“DOE”) or through its contractors or subcontractors. Eligible claimants also include survivors of deceased workers who otherwise would have been eligible for benefit payments.

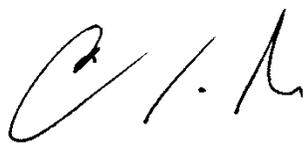
The Office of Workers’ Compensation Programs (“OWCP”) at the U.S. Department of Labor maintains a model to estimate the future liabilities of the EEOICPA program. The OWCP has requested that Gross Consulting review the annual data updates to the model, review the reasonableness of the EEOICPA model and assumptions, and recommend enhancements as needed.

## Distribution and Use

The valuation has been conducted in accordance with all relevant Actuarial Standards of Practice. The purpose of the actuarial valuation report is to document the Energy Employees’ Occupational Illness Compensation Program (“EEOICP”) actuarial liability estimate and the change in the actuarial liability, and to assess the reasonableness of the related assumptions; to assist the U.S. Department of Labor in preparing the consolidated financial statements, as of and for the fiscal year ended September 30, 2019, in accordance with U.S. generally accepted accounting principles, as promulgated by the Federal Accounting Standards Advisory Board. We understand a copy of this report may be provided to OWCP’s auditors. If this report is shared, we request that the report be shared in its entirety.

## Qualification

I, Chris Gross, am a member in good standing of the Casualty Actuarial Society and the American Academy of Actuaries and am qualified to provide this analysis.



Chris Gross, ACAS, MAAA

## Executive Summary

Part B of EEOICPA, effective July 31, 2001 provides lump sum compensation of \$150,000 and medical expenses to employees of the Department of Energy (“DOE”), or its contractors or subcontractors, who develop cancer, beryllium disease, or chronic silicosis after working at a covered facility. If the employee is no longer living, compensation benefits are available to survivors. Part B also covers employees who are a member of the Special Exposure Cohort (“SEC”). A worker who is included in a designated SEC class of employees, and who is diagnosed with one of 22 specified cancers, may receive a presumption of causation under the EEOICPA. The National Institute for Occupational Safety and Health (“NIOSH”) has responsibility for designating additional facilities to the SEC.

Part E of the Act, effective October 28, 2004, provides wage loss, impairment benefit, and medical expenses to employees of the DOE and its contractors and subcontractors, who develop an illness due to exposure to toxic substances at certain DOE worksites. Part E also pays survivor benefits to certain survivors. Part E pays a maximum compensation amount of \$250,000 per case.

As of 9/30/2019, the discounted liability estimate for future EEOICPA benefit payments is \$26.7 billion. The future medical payments are projected at \$20.8 billion, and the future compensation payments are projected at \$5.9 billion, on a discounted basis. The discount rates used were 2.458% for compensation and 2.734% for medical.

### ESTIMATED LIABILITY FOR EEOICPA AS OF SEPTEMBER 30, 2019

#### SUMMARY OF LIABILITY FOR FUTURE PAYMENTS (\$ Millions)

		Discounted Estimate as of 9/30/2019
Compensation: Part B	\$	1,920
Compensation: Part E	\$	3,981
Compensation: Total	\$	5,901
Medical Payments		20,775
Total Future Payments	\$	26,676

1- The discount rates used for the 9/30/2019 estimates were 2.458% for compensation and 2.734% for medical.

### Discounted Cash Flow by Year

The following exhibits document the estimated cash flows by year, on a discounted basis. For informational purposes, the cash flows for the Department of Justice Part B RECA payments are displayed in column 4. The RECA compensation liability is included as part of Part B compensation liability in the Executive Summary.

## **ESTIMATED LIABILITY FOR EEOICPA AS OF SEPTEMBER 30, 2019**

### **SUMMARY OF DISCOUNTED PAYMENTS BY YEAR**

Fiscal Year	Compensation Part B Discounted Payments	Compensation Part E Discounted Payments	Compensation DOJ RECA Discounted Payments	Compensation Total Discounted Payments	Medical Total Discounted Payments	Total Discounted Payments
(1)	(2)	(3)	(4)	(4)	(5)	(6)
2020	\$ 223,036,569	\$ 327,562,759	\$ 13,597,606	\$ 564,196,934	\$ 873,201,008	\$ 1,437,397,942
2021	194,593,735	308,170,228	12,190,955	514,954,918	892,185,173	1,407,140,091
2022	169,883,416	289,690,165	10,929,820	470,503,401	905,231,413	1,375,734,814
2023	148,407,932	269,622,593	9,799,147	427,829,672	901,392,267	1,329,221,939
2024	129,736,676	250,134,643	8,785,441	388,656,759	898,647,009	1,287,303,768
2025	113,497,004	231,718,373	7,876,601	353,091,978	889,551,858	1,242,643,836
2026	99,366,367	214,134,280	7,061,779	320,562,426	874,977,921	1,195,540,347
2027	87,065,522	198,203,377	6,331,249	291,600,148	855,786,264	1,147,386,412
2028	76,352,666	184,253,956	5,676,291	266,282,912	832,818,999	1,099,101,911
2029	67,018,368	171,313,582	5,089,088	243,421,038	806,869,400	1,050,290,437
2030	58,881,197	157,760,710	4,562,629	221,204,536	778,643,957	999,848,493
2031	51,783,940	143,019,019	4,090,633	198,893,592	748,757,979	947,651,571
2032	45,590,338	129,002,271	3,667,463	178,260,073	717,738,501	895,998,574
2033	40,182,262	116,399,956	3,288,070	159,870,288	686,028,537	845,898,824
2034	35,457,274	105,161,588	2,947,924	143,566,785	653,992,200	797,558,985
2035	31,326,520	95,028,799	2,642,966	128,998,285	621,927,229	750,925,513
2036	27,712,907	85,975,953	2,369,555	116,058,416	590,081,216	706,139,631
2037	24,549,529	77,698,209	2,124,429	104,372,166	558,664,052	663,036,218
2038	21,778,299	70,025,115	1,904,660	93,708,074	527,856,308	621,564,383
2039	19,348,778	63,395,099	1,707,626	84,451,503	497,815,026	582,266,528
2040	17,217,148	57,543,625	1,530,974	76,291,748	468,676,186	544,967,934
2041	15,345,333	52,203,322	1,372,598	68,921,253	440,555,402	509,476,655
2042	13,700,237	47,190,144	1,230,605	62,120,986	413,547,319	475,668,305
2043	12,253,081	42,648,583	1,103,300	56,004,964	387,724,918	443,729,882
2044	10,978,829	38,489,588	989,166	50,457,583	363,139,424	413,597,007
After 2044 <sup>1</sup>	56,664,117	255,114,364	4,994,077	316,772,557	3,589,382,859	3,906,155,417
Total Future	\$ 1,791,728,044	\$ 3,981,460,301	\$ 127,864,648	\$ 5,901,052,993	\$ 20,775,192,425	\$ 26,676,245,418

<sup>1</sup> Reflects projected cash flow through FY 2079

# Summary of Changes

Based on observed trends in the updated EEOICPA data, the following changes in assumptions were made to the model this year:

## 1. Part B

- Overall decrease in the projected number of future approved Part B cases

## 2. Part E

- Increase in the projected number of future approved Part E cases
- Updates to the average payment amount per case and the timing of these payments

## 3. Medical Costs

The estimated medical inflation rates for future years 1-5 were updated based on guidance from OWCP management regarding expected cost increases in the short term. The long-term inflation rates selected are the CPI-Medical inflation rates the OMB Economic Assumptions for the 2019 Mid-Session Review.

Additionally, an overall increase in the percentage of approved cases that are filed by an employee (and thus eligible for medical expenses) has been assumed.

Please see Appendix 2 for a listing of the specific values for all assumptions.

## Actual vs Projected

### Number of Cases Approved

Overall, there were 2% fewer cases newly approved during 7/1/18 to 6/30/19 than what was projected.

#### Number of Cases Approved 7/1/18 to 6/30/19

	<u>Projected</u>	<u>Actual</u>	<u>Diff</u>	<u>%Diff</u>
Part B:RECA	114	177	63	56%
Part B:BD	25	41	16	61%
Part B:BS	70	80	10	15%
Part B:CS	116	195	79	67%
Part B:CNSEC	1,122	955	(167)	-15%
Part B:CN (nonSEC)	389	336	(53)	-14%
Part E	2,143	2,099	(44)	-2%
<hr/>				
Part B	1,836	1,784	(52)	-3%
Part E	2,143	2,099	(44)	-2%
<hr/>				
Total	3,979	3,883	(96)	-2%

### Cash Flow

The revised cash flow projection for Fiscal Year 2019 is 2% greater than projected in the 9/30/2018 liability estimate. The revised compensation payment estimate is lower due to the slightly lower number of awards and the revised medical payment estimate is greater due to an increase in the average medical payment for 2019.

#### Cash Flow for FY 2019

	<u>Projected</u>	Actual 9 mo <u>+ Proj 3 mo</u>	<u>Diff</u>	<u>%Diff</u>
Part B Compensation	259,714,611	252,975,529	(6,739,082)	-3%
Part E Compensation	342,793,266	339,432,409	(3,360,857)	-1%
Medical Payments	799,426,224	834,622,191	35,195,967	4%
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Total	1,401,934,102	1,427,030,129	25,096,027	2%
Average medical payment per case	40,822	42,615	1,793	4%

# The EEOICPA Model

The EEOICPA analysis consists of the following steps:

1. Organize and aggregate the data

## **Compensation Benefits**

2. Estimate the number of future new cases approved
3. Estimate the average compensation payout per approved case
4. Determine the payout patterns to estimate the compensation cash flow by year

## **Medical Benefits**

5. Estimate the percentage of cases eligible for medical benefits
  6. Remove double counting – cases can be approved for both Part B and Part E
  7. Apply mortality assumptions to determine the number eligible for medical benefits
  8. Estimate the number of individuals eligible for medical benefits
  9. Estimate the average medical costs and future inflation rates
  10. Calculate the total expected medical payments
- 
11. Discount the future payments to 9/30/2019

These steps are described in detail in the next sections.

## 1: Organize and Aggregate the Data

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The EEOICPA analysis is performed using detailed claim-level data extracts provided by the DOL. Data provided includes information on medical payments by case, compensation payments by claim and case, claim disposition status (e.g., approved, denied, pending decision, etc.), and employee data such as date of birth, sex, date of death (if known), and survivor information.

The data provided for this analysis consists of a series of text data files that were imported into a database for further analysis and manipulation. The source data includes the following tables:

Table Name	Description
Bp_history	History of medical payments by case
Case_main	Employee information by case, includes RECA indicator
Causation	All causation records, includes SEC identifier
Claimant	Claim information included type of claim and filing dates
Employment	Employment information for employees, including worksite ID
FD	Final decision table by case, identifies acceptance/denial of filed claims
Medical	Medical information by case, includes disease type
Payment_mart	History of compensation payments by claim
RECA_eft	Additional RECA payments (electronic funds transfer)
RECA_paper_check	Additional RECA payments (paper check)

The data was then organized through a series of database queries to create summarized tables of new entrants, compensation payments, medical payments, and claims filed by living employees. These summarized tables are checked against the EEOICP Program Statistics<sup>2</sup> (as shown in the table below), and then brought into the EEOICPA model to begin the analysis.

### Comparison to EEOICP Program Statistics

Website: <https://www.dol.gov/owcp/energy/regs/compliance/weeklstats.htm>

The data on this website is updated weekly, and shows cumulative data since the inception of the program.

	Raw Data @ 6/30/2019		DOL website as of 6/30/2019		Difference between raw data and 6/30/2019 website data	
	# Cases Approved	Payments	# Cases Approved	Payments	# Cases Approved	Payments
Part B Compensation	54,272	6,798,931,971	54,205	6,798,931,971	-0.1%	0.0%
Part E Compensation	47,230	4,753,268,022	47,088	4,753,268,022	-0.3%	0.0%
Medical		5,034,667,164		5,035,250,824		0.01%
Total		16,586,867,156		16,587,450,817		0.0%

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<sup>2</sup> The expectation is not that the results will match exactly to the website, but that they will be reasonably close. Due to the fact that the data may reported a few days apart, and that there may be slightly differing methodologies for determining the number of approved cases, a small amount of variance is expected.

## 2: Estimate the number of Future Approved Cases

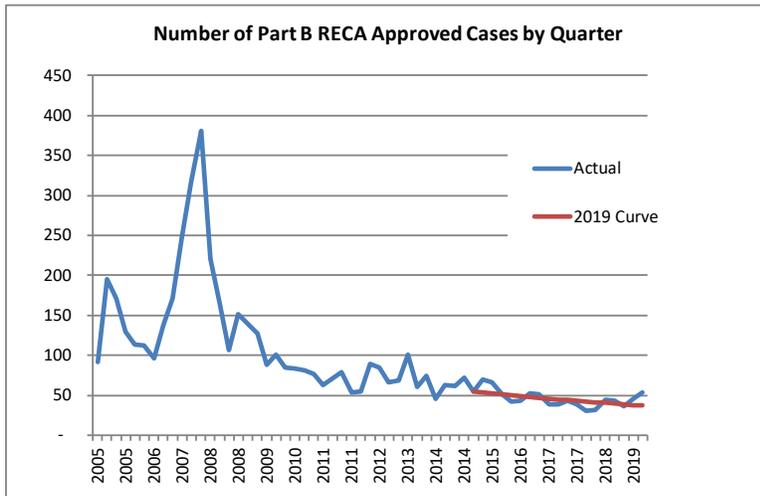
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To estimate the number of cases that will be newly approved in the future, the historical number of newly-approved cases by quarter is determined in total for Part E and by governing disease for Part B. Part B is split out by governing disease because the compensation payment amounts are different by governing disease for Part B.

An exponential decay model is then fit to the recent history, minimizing the sum of squared errors between the actual data and the fitted data, to determine the parameters with the best fit. Judgment is used to determine how many quarters of recent history should be incorporated into the fit model, as the rate of decay differs somewhat over time. For the 9/30/2019 liability estimate, the models are based predominately on the last four or five years of history.

The exhibits on the following pages show a graph of the quarterly history of newly-approved cases and the modeled fit line.

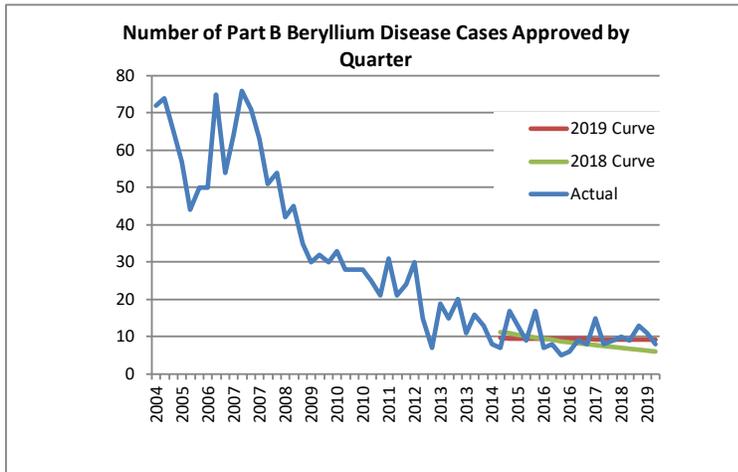
### Part B: RECA



Selected Decay Rates:

	<u>2019</u>	<u>2018</u>
Quarterly	2.1%	4.5%
Annual	8.1%	17.0%

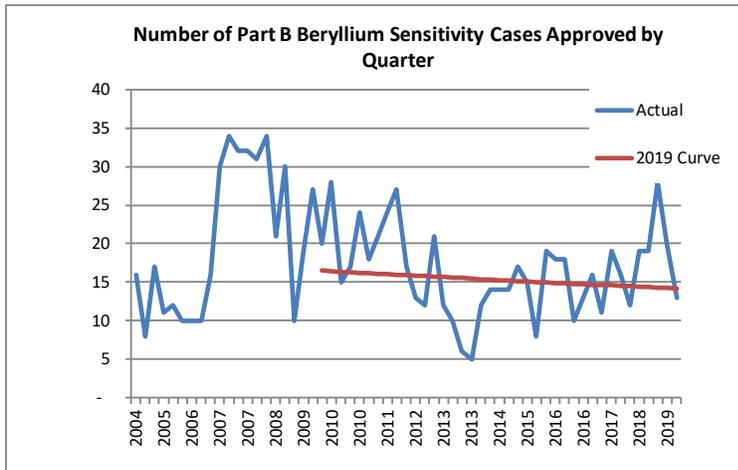
## Part B: Beryllium Disease



Selected Decay Rates:

	<u>2019</u>	<u>2018</u>
Quarterly	0.3%	3.4%
Annual	1.0%	13.0%

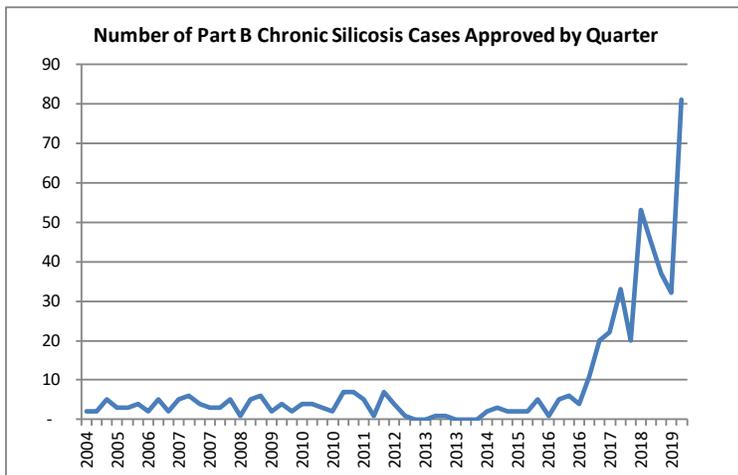
## Part B: Beryllium Sensitivity



Selected Decay Rates:

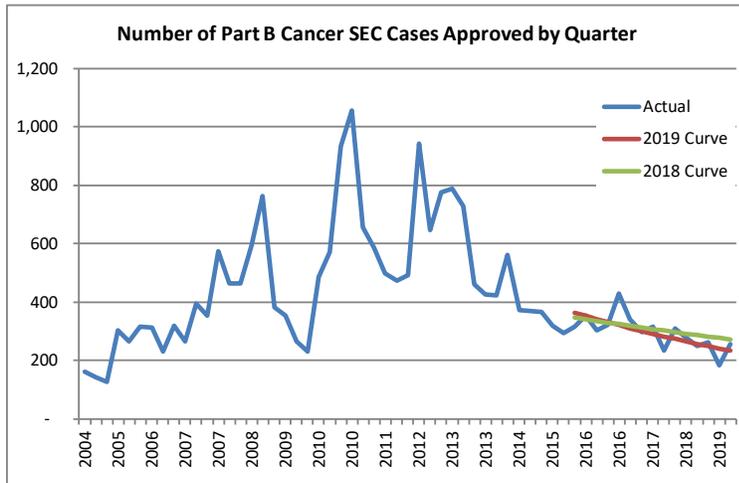
	<u>2019</u>	<u>2018</u>
Quarterly	0.4%	2.0%
Annual	1.6%	7.7%

## Part B: Chronic Silicosis



Due to the recent increase in approved cases, a curve was not fit to the historical data for Part B Chronic Silicosis. Instead an average of 71 new cases per quarter in FY 2020 was assumed, with a 2% quarterly decay going forward.

## Part B: Cancer SEC

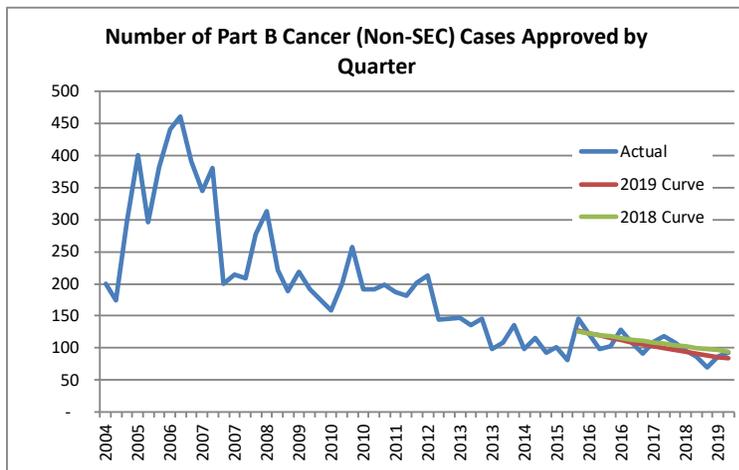


Selected Decay Rates:

	<u>2019</u>	<u>2018</u>
Quarterly	3.1%	1.7%
Annual	11.9%	6.6%

For Cancer SEC, a decay model is fit to recent history to estimate future decay rates in the number of newly-approved cases. This method does not explicitly assume any future new SEC designations.

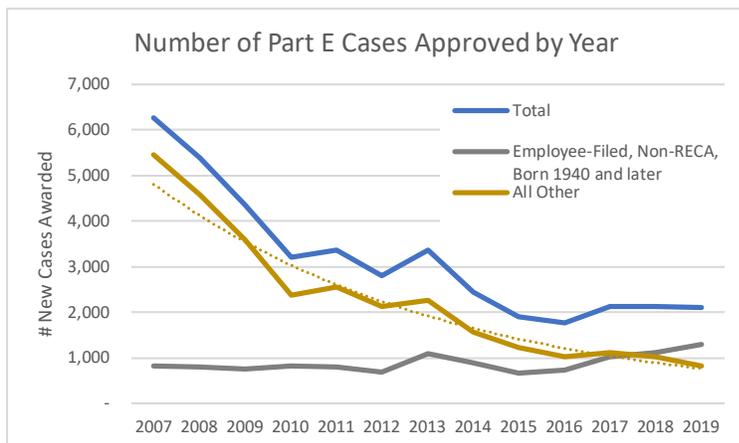
## Part B: Cancer Non-SEC



Selected Decay Rates:

	<u>2019</u>	<u>2018</u>
Quarterly	2.9%	2.0%
Annual	11.2%	7.9%

## Part E



For Part E, the Non-RECA claims awarded to Employees born in 1940 or later have been growing over the past few years. The model currently assumes that the total number of Part E awards will decay at a rate of 0.5% per quarter for FY 2020 through FY 2022, and then at a quarterly decay rate of 2.0% for FY 2023 and later.

**ESTIMATED LIABILITY FOR EEOICPA  
AS OF SEPTEMBER 30, 2019**

**NUMBER OF CASES APPROVED BY YEAR**

Number of Cases Approved									
Fiscal Yr	Part B							Part E	TOTAL
	RECA	BD	BS	CS	CN SEC	CN Non SEC	Part B Total		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Prior	3,202	1,469	468	49	3,291	812	9,291	6	9,297
2005	588	268	52	12	740	1,072	2,732	2,034	4,766
2006	460	219	42	14	1,126	1,579	3,440	5,709	9,149
2007	1,115	265	112	17	1,338	1,315	4,162	6,152	10,314
2008	644	210	118	12	2,098	1,014	4,096	5,028	9,124
2009	455	142	86	17	1,766	822	3,288	3,966	7,254
2010	326	119	80	13	2,220	793	3,551	3,412	6,963
2011	267	105	87	21	2,797	769	4,046	2,904	6,950
2012	295	90	69	13	2,557	741	3,765	2,956	6,721
2013	303	61	49	2	2,758	574	3,747	3,243	6,990
2014	242	48	45	2	1,785	442	2,564	2,300	4,864
2015	242	46	54	9	1,349	390	2,090	1,803	3,893
2016	188	37	65	17	1,299	470	2,076	1,822	3,898
2017	158	38	59	57	1,387	438	2,137	2,202	4,339
2018	150	36	66	151	1,074	409	1,886	2,096	3,982
2019	170	41	75	224	931	330	1,772	2,119	3,891
Through 2019							54,643	47,752	

**ESTIMATED LIABILITY FOR EEOICPA  
AS OF SEPTEMBER 30, 2019**

**PROJECTED NUMBER OF CASES APPROVED BY YEAR**

Projected Number of Cases Approved									
Fiscal Yr	Part B							Part E	TOTAL
	RECA	BD	BS	CS	CN SEC	CN Non SEC	Part B Total		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
2020	138	36	56	283	839	301	1,653	2,061	3,714
2021	126	36	55	261	739	268	1,485	2,019	3,503
2022	116	36	54	241	651	238	1,335	1,905	3,240
2023	107	35	53	222	573	211	1,202	1,757	2,959
2024	98	35	52	205	505	187	1,083	1,621	2,703
2025	90	35	52	189	445	166	976	1,495	2,471
2026	83	34	51	174	392	148	882	1,379	2,260
2027	76	34	50	161	345	131	797	1,272	2,069
2028	70	34	49	148	304	117	721	1,173	1,894
2029	64	33	48	137	268	104	654	1,082	1,736
2030	59	33	48	126	236	92	593	998	1,591
2031	54	33	47	116	208	82	539	920	1,460
2032	50	32	46	107	183	73	491	849	1,340
2033	46	32	45	99	161	64	448	783	1,231
2034	42	32	45	91	142	57	409	722	1,131
2035	39	31	44	84	125	51	374	666	1,040
2036	35	31	43	78	110	45	343	614	957
2037	32	31	43	72	97	40	315	567	881
2038	30	30	42	66	85	36	289	523	812
2039	27	30	41	61	75	32	267	482	749
2040	25	30	41	56	66	28	246	445	691
2041	23	29	40	52	58	25	228	410	638
2042	21	29	39	48	51	22	211	378	590
2043	20	29	39	44	45	20	196	349	545
2044	18	29	38	41	40	17	183	322	505
2045	16	28	38	38	35	16	171	297	468
2046	15	28	37	35	31	14	160	274	433
2047	14	28	36	32	27	12	150	253	402
2048	13	27	36	29	24	11	140	233	373
2049	12	27	35	27	21	10	132	215	347
2050	11	27	35	25	19	9	125	198	323
2051	10	27	34	23	16	8	118	183	301
2052	9	26	34	21	14	7	112	169	280

### **3: Estimate the average compensation payment per case**

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#### **Part B Compensation**

For Part B, the compensation benefit is paid out as a lump sum. The amount of the benefit varies by governing disease as follows:

RECA (Non-DOJ portion)	\$50,000
RECA (DOJ portion)	\$100,000
Beryllium Disease, Cancer, Chronic Silicosis	\$150,000
Beryllium Sensitivity (Part B)	\$0

Under Part B, Beryllium Sensitivity cases are approved for medical benefits only. They do not receive compensation benefits. If the condition develops into Beryllium Disease, the case would then be eligible for compensation benefits.

#### **Part E Compensation**

Part E cases are eligible for wage loss benefits, impairment benefits and survivor benefits subject to a maximum payment of \$250,000 total compensation for the employee and survivor combined.

For Part E, historically only 32% of the compensation benefits are paid within one fiscal year of approval. This is due to the nature of the benefit payments. Employee claimants can file for additional wage or impairment payments subsequent to the initial case approval, and the survivors of the employee may be eligible to receive a lump sum benefit upon the death of the employee years after the initial case approval.

A cradle-to-grave cost estimate is needed, to apply to future new entrants. Because of the development of payments over time, a triangle squaring approach is employed where the compensation payments are organized into a triangle by first approval quarter and subsequent payment quarters. Historical relationships between quarters were then measured and projected forward to determine the ultimate payments by approval quarter from 2005 to the present. The average projected ultimate is then divided by the number of approved cases to determine the average compensation per case.

Part E Average Compensation per case	\$145,886
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For more detail on the triangle squaring analysis, see Appendix 3.

## 4: Payout patterns

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Multiplying the number of cases from Step 2 times the average compensation benefit payment per case will determine the total amount of compensation benefit for new cases.

The next step is to estimate cash flow by fiscal year. To estimate the cash flow, it is necessary to know the timing of the benefit payments.

The historical data shows that the majority of the Part B cases pay the full amount of the compensation benefit within the same fiscal year as the case approval.

### Part B Compensation Payout Pattern

Year 1 100%

The compensation payment triangle analysis was used to estimate the payout pattern for Part E benefits:

### Part E Compensation Payout Pattern

<u>Year</u>	<u>% Paid</u>
Year 1	31.5%
Year 2	22.6%
Year 3	6.2%
Year 4	6.0%
Year 5	4.6%
Year 6	4.2%
Year 7	3.5%
Year 8	3.1%
Year 9	2.8%
Year 10	2.8%
Year 11	2.5%
Year 12	2.3%
Year 13	2.0%
Year 14	1.1%
Years 15-25	0.4%

For more detail on the payment pattern analysis, please see Appendix 3.

## 5: Estimate the number of cases eligible for medical benefits

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The next step in the process is to estimate the future medical payments.

Only the cases in which an approved claim was filed by an employee are eligible for medical benefits. The pool of individuals eligible to receive medical benefits includes both existing and newly approved cases that were filed by an employee (as long as the employee is still alive).

Historical ratios were used to select the percentage of future cases expected to contain an approved claim filed by an employee (and thus eligible for medical benefits).

### % of Newly-Approved Cases that were filed by an Employee

	<u>RECA</u>	<u>BD</u>	<u>BS</u>	<u>CS</u>	<u>CN SEC</u>	<u>CN Non SEC</u>	<u>E</u>
20143	63%	88%	100%	100%	45%	69%	68%
20144	65%	71%	100%	100%	43%	70%	67%
20151	67%	76%	100%	50%	42%	72%	69%
20152	68%	85%	100%	50%	50%	48%	74%
20153	65%	67%	100%	100%	54%	72%	74%
20154	57%	71%	100%	80%	47%	58%	74%
20161	65%	43%	100%	100%	50%	66%	74%
20162	58%	88%	100%	80%	52%	60%	77%
20163	57%	80%	100%	100%	54%	72%	77%
20164	55%	100%	100%	75%	51%	64%	71%
20171	56%	78%	100%	100%	46%	71%	75%
20172	65%	75%	100%	95%	57%	60%	80%
20173	63%	73%	100%	82%	56%	69%	80%
20174	61%	88%	94%	91%	51%	64%	79%
20181	75%	56%	100%	100%	56%	78%	80%
20182	55%	80%	100%	91%	56%	71%	80%
20183	70%	78%	100%	96%	64%	77%	82%
20184	50%	62%	100%	95%	59%	75%	83%
20191	60%	45%	100%	100%	67%	72%	87%
20192	53%	100%	100%	99%	67%	77%	86%
10-yr average	63%	73%	100%	73%	44%	64%	70%
5-yr average	61%	75%	100%	89%	53%	68%	77%
2-yr average	61%	73%	99%	94%	59%	73%	82%
1-yr average	58%	71%	100%	97%	64%	76%	85%
Prev selected	65%	73%	100%	87%	54%	69%	82%
Selected	61%	72%	100%	93%	59%	72%	83%

The selected ratios are then applied to future approved cases in all future years, to estimate the number of future cases that will be eligible for medical benefits.

## 6: Remove double counting

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Cases can be approved for Part B alone, Part E alone, or for both Part B and Part E. Cases approved for either Part are eligible to receive medical benefits. The number of approved cases is being projected separately by Part, so the total count of approved cases will count many, but not all, of the individuals twice (once for Part B and once for Part E). Historical ratios are used to determine how the approved cases need to be reduced in order to convert the number of approved cases to the number of individuals eligible for medical benefits.

Because the approval decisions are made separately for each Part (for example, a case could receive approval for Part B and then months or years later receive approval for Part E), a reduction in the case count is made for the assumption that some of the newly approved cases will have already been approved for the other Part and thus are already included in the count of individuals eligible for medical benefits.

It is assumed that 9.1% of newly-approved Part B cases have already been approved for Part E, and that 0.7% of newly-approved Part E cases have already been approved for Part B.

<b>Percent of Part B cases filed by an employee that had previously been accepted as a Part E case</b>		<b>Percent of Part E cases filed by an employee that had previously been accepted as a Part B case</b>	
<b><u>FY</u></b>	<b><u>Percent</u></b>	<b><u>FY</u></b>	<b><u>Percent</u></b>
2005	0.0%	2005	20.5%
2006	1.2%	2006	58.9%
2007	0.8%	2007	30.4%
2008	2.5%	2008	16.1%
2009	5.9%	2009	6.2%
2010	10.2%	2010	1.3%
2011	9.1%	2011	1.5%
2012	10.5%	2012	1.5%
2013	7.8%	2013	0.8%
2014	9.0%	2014	0.7%
2015	9.0%	2015	0.8%
2016	8.6%	2016	0.8%
2017	9.7%	2017	0.6%
2018	12.4%	2018	0.7%
2019	9.1%	2019	0.7%
<b>Selected</b>	<b>9.1%</b>	<b>Selected</b>	<b>0.7%</b>

Additionally, some cases will receive an approval for both Part B and Part E at the same time, or in the same fiscal year. A reduction must be made so that these two approved case parts are not treated as two separate individuals eligible for medical benefits. Historically, approximately 79% of the employee-filed Part B cases also are approved for Part E at the same time. It is assumed that this ratio will continue into the future.

<b>Percent of Part B cases filed by an employee where Part E is approved in the same year</b>		<b>Percent of Part E cases filed by an employee where Part B is approved in the same year</b>	
<b><u>FY</u></b>	<b><u>Percent</u></b>	<b><u>FY</u></b>	<b><u>Percent</u></b>
2005	2.2%	2005	10.9%
2006	71.4%	2006	32.6%
2007	88.9%	2007	46.3%
2008	82.6%	2008	49.3%
2009	80.4%	2009	47.7%
2010	79.8%	2010	60.3%
2011	69.3%	2011	60.7%
2012	73.9%	2012	67.6%
2013	81.6%	2013	68.9%
2014	78.2%	2014	63.9%
2015	79.2%	2015	70.5%
2016	78.9%	2016	67.2%
2017	78.5%	2017	58.1%
2018	79.1%	2018	58.1%
2019	79.0%	2019	54.2%
<b>Selected</b>	<b>79.0%</b>		

To convert the number of approved employee-filed cases into the number of employee-filed cases eligible for medical benefits, the number of newly-approved employee-filed Part B cases is reduced by 9.1%, the number of newly-approved employee-filed Part E cases is reduced by 0.7% (as shown on the previous page) and then the newly-approved employee-filed Part B cases is further reduced by 79% to estimate the total number of cases eligible for medical benefits by year.

## 7: Mortality

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Because the EEOICPA program is not always notified when a participant is deceased, the number of individuals that are still alive and eligible for medical benefits must be estimated, using mortality assumptions. The model uses the RP-2014 Male Disabled Retiree mortality table and assumes that employees are age 72 at the time that the first claim is approved<sup>3</sup>.

### Average Age of Employee at First Case Approval Date

<b>Part B</b>			<b>Part E</b>		
<b>FY</b>	<b>Count</b>	<b>Avg Age at Award</b>	<b>FY</b>	<b>Count</b>	<b>Avg Age at Award</b>
2001	116	71.0			
2002	1,734	66.4			
2003	1,487	64.4			
2004	928	68.7			
2005	1,167	70.4	2005	239	69.0
2006	1,488	72.2	2006	3,261	70.4
2007	1,970	70.5	2007	3,779	71.0
2008	1,700	71.8	2008	2,842	70.9
2009	1,370	72.8	2009	2,305	70.8
2010	1,560	72.2	2010	2,064	70.7
2011	1,572	72.5	2011	1,792	71.0
2012	1,639	73.2	2012	1,786	72.2
2013	1,785	70.8	2013	2,106	70.2
2014	1,295	72.7	2014	1,586	71.4
2015	1,141	72.8	2015	1,279	72.3
2016	1,179	73.7	2016	1,377	72.4
2017	1,256	73.2	2017	1,691	72.4
2018	1,248	72.2	2018	1,679	71.5
2019	947	72.2	2019	1,365	71.3
Average 2011-2019		72.6	Average 2011-2019		71.6

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<sup>3</sup> The exception to this assumption is for employees for which the first case approval date was more than 15 years ago. For these employees, the model uses a weighted average of the actual age at approval.

## 8: Estimate the Number of Individuals eligible for medical benefits

The total number of individuals eligible to receive medical benefits each year is then the number of individuals with prior case approvals, assumed to be still alive, plus the number of newly-approved cases (adjusted to remove double counting of cases approved for both Parts) minus the number of expected deaths, as shown below:

### ESTIMATED LIABILITY FOR EEOICPA AS OF SEPTEMBER 30, 2019

#### ESTIMATED NUMBER OF INDIVIDUALS ELIGIBLE FOR MEDICAL EXPENSES

Fiscal Year	New Cases Eligible for Medical Expenses							Remove double counting:				Assumed # Deaths	Total # Individuals Eligible	Average # Individuals Eligible
	RECA	BD	BS	CS	CN SEC	Non SEC	Part E	Part B already in	Part E already in	EB concurrent	Net new Individuals			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)			
Prior	1,247	1,014	468	38	1,191	307	2	-	-	-	4,267	(298)	3,969	
2005	394	125	52	11	221	364	239	-	(49)	(26)	1,331	(204)	5,096	4,533
2006	329	107	42	13	316	681	3,261	(18)	(1,922)	(1,062)	1,747	(286)	6,557	5,826
2007	782	154	112	11	376	534	3,779	(15)	(1,150)	(1,750)	2,833	(418)	8,972	7,764
2008	379	134	117	10	595	462	2,842	(42)	(458)	(1,401)	2,638	(543)	11,067	10,020
2009	270	91	86	10	466	444	2,305	(81)	(142)	(1,099)	2,350	(656)	12,762	11,914
2010	193	85	80	9	737	454	2,064	(159)	(27)	(1,244)	2,192	(762)	14,192	13,477
2011	162	70	87	14	769	469	1,792	(143)	(26)	(1,088)	2,106	(865)	15,432	14,812
2012	188	60	69	9	867	440	1,786	(172)	(26)	(1,207)	2,014	(964)	16,482	15,957
2013	222	42	49	2	1,119	346	2,106	(139)	(16)	(1,452)	2,279	(1,075)	17,686	17,084
2014	153	36	45	2	751	308	1,586	(117)	(11)	(1,013)	1,740	(1,160)	18,266	17,976
2015	161	35	54	7	629	253	1,279	(103)	(10)	(902)	1,403	(1,229)	18,439	18,353
2016	111	26	65	15	660	297	1,377	(101)	(11)	(926)	1,513	(1,301)	18,652	18,545
2017	95	30	59	51	726	291	1,691	(121)	(10)	(983)	1,829	(1,384)	19,097	18,874
2018	97	27	65	141	609	294	1,679	(153)	(11)	(975)	1,773	(1,461)	19,409	19,253
2019	104	30	75	208	551	239	1,758	(110)	(12)	(954)	1,890	(1,538)	19,761	19,585

#### Notes:

(2)-(8) = Number of approved cases \* percent of cases filed by employee

(12) = Sum of (2) through (11)

(13) = Mortality tables applied to the average number of individuals eligible

(14) = (14) from previous year + (12) + (13)

(15) = Average of (14) from previous year and (14) from current year

**ESTIMATED LIABILITY FOR EEOICPA  
AS OF SEPTEMBER 30, 2019**

**ESTIMATED NUMBER OF INDIVIDUALS ELIGIBLE FOR MEDICAL EXPENSES**

Fiscal Year	New Cases Eligible for Medical Expenses							Remove double counting:				Assumed # Deaths	Total # Individuals Eligible	Average # Individuals Eligible
	RECA	BD	BS	CS	CN		Part E	Part B already in	Part E already in	EB concurrent	Net new Individuals			
					SEC	Non SEC								
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
2020	84	26	56	262	496	218	1,710	(104)	(12)	(903)	1,834	(1,609)	19,986	19,873
2021	78	26	55	242	437	194	1,675	(94)	(12)	(815)	1,786	(1,671)	20,101	20,044
2022	71	26	54	223	385	172	1,581	(85)	(11)	(736)	1,680	(1,722)	20,060	20,080
2023	65	26	53	206	339	153	1,458	(77)	(10)	(665)	1,548	(1,759)	19,848	19,954
2024	60	25	52	190	299	136	1,345	(69)	(9)	(602)	1,426	(1,783)	19,492	19,670
2025	55	25	52	175	263	121	1,240	(63)	(9)	(546)	1,314	(1,792)	19,013	19,252
2026	51	25	51	162	232	107	1,144	(57)	(8)	(495)	1,211	(1,788)	18,436	18,724
2027	47	25	50	149	204	95	1,055	(52)	(7)	(450)	1,116	(1,771)	17,781	18,108
2028	43	24	49	137	180	85	973	(47)	(7)	(409)	1,028	(1,741)	17,068	17,425
2029	39	24	48	127	158	75	898	(43)	(6)	(373)	948	(1,700)	16,316	16,692
2030	36	24	48	117	140	67	828	(39)	(6)	(340)	873	(1,651)	15,539	15,927
2031	33	24	47	108	123	59	764	(36)	(5)	(311)	805	(1,595)	14,750	15,144
2032	30	23	46	100	108	53	704	(33)	(5)	(285)	742	(1,534)	13,958	14,354
2033	28	23	45	92	95	47	650	(30)	(5)	(261)	685	(1,470)	13,173	13,566
2034	26	23	45	85	84	41	599	(28)	(4)	(240)	631	(1,404)	12,401	12,787
2035	24	23	44	78	74	37	553	(25)	(4)	(221)	582	(1,337)	11,646	12,024
2036	22	22	43	72	65	33	510	(23)	(4)	(203)	537	(1,270)	10,914	11,280
2037	20	22	43	66	57	29	470	(22)	(3)	(188)	495	(1,203)	10,206	10,560
2038	18	22	42	61	51	26	434	(20)	(3)	(174)	457	(1,137)	9,525	9,865
2039	17	22	41	57	45	23	400	(19)	(3)	(161)	422	(1,073)	8,874	9,199
2040	15	22	41	52	39	20	369	(17)	(3)	(150)	389	(1,009)	8,254	8,564
2041	14	21	40	48	35	18	340	(16)	(2)	(139)	359	(947)	7,666	7,960
2042	13	21	39	44	30	16	314	(15)	(2)	(130)	331	(887)	7,110	7,388
2043	12	21	39	41	27	14	290	(14)	(2)	(121)	306	(828)	6,587	6,849
2044	11	21	38	38	24	13	267	(13)	(2)	(114)	282	(772)	6,098	6,343
2045	10	20	37	35	21	11	246	(12)	(2)	(107)	261	(719)	5,640	5,869
2046	9	20	37	32	18	10	227	(12)	(2)	(100)	241	(667)	5,213	5,426
2047	9	20	36	30	16	9	210	(11)	(1)	(94)	222	(619)	4,816	5,015
2048	8	20	36	27	14	8	193	(10)	(1)	(89)	205	(573)	4,449	4,632
2049	7	20	35	25	13	7	178	(10)	(1)	(84)	190	(531)	4,108	4,278
2050	7	19	35	23	11	6	164	(9)	(1)	(80)	175	(491)	3,793	3,950
2051	6	19	34	21	10	6	152	(9)	(1)	(76)	162	(453)	3,501	3,647
2052	6	19	34	20	9	5	140	(8)	(1)	(72)	150	(419)	3,233	3,367
2053	-	-	-	-	-	-	-	-	-	-	-	(380)	2,852	3,042
2054	-	-	-	-	-	-	-	-	-	-	-	(345)	2,508	2,680
2055	-	-	-	-	-	-	-	-	-	-	-	(312)	2,196	2,352
2056	-	-	-	-	-	-	-	-	-	-	-	(281)	1,914	2,055
2057	-	-	-	-	-	-	-	-	-	-	-	(253)	1,661	1,788
2058	-	-	-	-	-	-	-	-	-	-	-	(227)	1,434	1,548
2059	-	-	-	-	-	-	-	-	-	-	-	(203)	1,231	1,333
2060	-	-	-	-	-	-	-	-	-	-	-	(181)	1,050	1,141
2061	-	-	-	-	-	-	-	-	-	-	-	(160)	890	970
2062	-	-	-	-	-	-	-	-	-	-	-	(141)	749	819
2063	-	-	-	-	-	-	-	-	-	-	-	(124)	625	687
2064	-	-	-	-	-	-	-	-	-	-	-	(108)	517	571
2065	-	-	-	-	-	-	-	-	-	-	-	(93)	423	470
2066	-	-	-	-	-	-	-	-	-	-	-	(80)	343	383
2067	-	-	-	-	-	-	-	-	-	-	-	(68)	275	309
2068	-	-	-	-	-	-	-	-	-	-	-	(57)	218	246
2069	-	-	-	-	-	-	-	-	-	-	-	(48)	170	194
2070	-	-	-	-	-	-	-	-	-	-	-	(39)	131	150
2071	-	-	-	-	-	-	-	-	-	-	-	(32)	99	115
2072	-	-	-	-	-	-	-	-	-	-	-	(25)	74	87
2073	-	-	-	-	-	-	-	-	-	-	-	(20)	54	64
2074	-	-	-	-	-	-	-	-	-	-	-	(15)	39	47
2075	-	-	-	-	-	-	-	-	-	-	-	(11)	28	34
2076	-	-	-	-	-	-	-	-	-	-	-	(8)	19	24
2077	-	-	-	-	-	-	-	-	-	-	-	(6)	13	16
2078	-	-	-	-	-	-	-	-	-	-	-	(4)	9	11
2079	-	-	-	-	-	-	-	-	-	-	-	(3)	6	7

**Notes:**

- (2)-(8) = Number of approved cases \* percent of cases filed by employee
- (12) = Sum of (2) through (11)
- (13) = Mortality tables applied to the average number of individuals eligible
- (14) = (14) from previous year + (12) + (13)
- (15) = Average of (14) from previous year and (14) from current year

## 9: Estimate Average Medical Payments and Inflation Rates

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The total medical payments each year are divided by the average number of eligible individuals to determine the average medical payment per eligible individual for each year.

Average Medical Payment in 2019	\$42,615
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Medical inflation rates are then selected for future years.

The average medical inflation rates for future years 1-5 were selected based on guidance from OWCP management regarding expected cost increases in the short term. Medical inflation rates for 6 years and later are the CPI-Medical inflation rates the OMB Economic Assumptions for the 2019 Mid-Session Review.

Annual Medical Inflation, Future Year 1	4.5%
Annual Medical Inflation, Future Year 2	4.1%
Annual Medical Inflation, Future Year 3	4.0%
Annual Medical Inflation, Future Year 4	2.9%
Annual Medical Inflation, Future Year 5	3.9%
Annual Medical Inflation, Future Year 6+	3.9%

## 10: Calculate the total expected Medical Payment by year

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The total number of individuals eligible is then multiplied by the average medical cost per eligible individual to determine the expected medical payments by fiscal year, as shown below.

<u>FY</u>	<u>Average # Individuals Eligible</u> (1)	<u>Average Medical Cost per Eligible Individual</u> (2)	<u>Total Undiscounted Medical Payments</u> (3)
2020	19,873	44,535	885,057,176
2021	20,044	46,350	929,022,642
2022	20,080	48,225	968,378,439
2023	19,954	49,646	990,634,664
2024	19,670	51,582	1,014,619,077
2025	19,252	53,594	1,031,809,114
2026	18,724	55,684	1,042,652,000
2027	18,108	57,856	1,047,663,457
2028	17,425	60,112	1,047,421,071
2029	16,692	62,456	1,042,528,954
2030	15,927	64,892	1,033,565,479
2031	15,144	67,423	1,021,068,173
2032	14,354	70,052	1,005,526,955
2033	13,566	72,784	987,378,925
2034	12,787	75,623	967,004,373
2035	12,024	78,572	944,734,203
2036	11,280	81,637	920,865,188
2037	10,560	84,820	895,672,397
2038	9,865	88,128	869,417,500
2039	9,199	91,565	842,354,422
2040	8,564	95,136	814,730,443
2041	7,960	98,847	786,784,482
2042	7,388	102,702	758,742,939
2043	6,849	106,707	730,814,851
2044	6,343	110,869	703,187,675
After 2044			8,776,420,996
<b>Total future undiscounted</b>			<b>32,058,055,598</b>

## **11: Discount the cash flows to 9/30/2019**

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The projected cash flows by fiscal year are then discounted back to 9/30/2019. The discount rates for compensation and medical payments are determined based on the duration of the liabilities. The rate used for discounting corresponds to the point on the Treasury yield curve for that duration. The Treasury curve being used is based on a five-year averaging of the U.S. Department of Treasury's Yield Curve for Treasury Nominal Coupon Issues.

Discount rate for compensation payments	2.458%
Discount rate for medical payments	2.734%

## Ranges

We have calculated a range of reasonable estimates to clarify the level of uncertainty surrounding the EEIOCPA liability estimate and have shared that range with OWCP management. This includes a low, high and middle range of estimates. We recommend OWCP to use the middle range value of \$26.7 billion as the best estimate for financial reporting purposes. Significant uncertainty exists around these estimates, and the reader of this report should not confuse any level of reported precision in the estimates contained in this report to be indicative of predictive accuracy.

## Hindsight Opinion

The hindsight opinion adjusts the current liability estimate to be consistent with the liability estimate as of 9/30/2018, removing periods that were not contemplated at that time, and adding back payments made between the previous date and the current date. The current hindsight estimate for liability as of 9/30/2018 is \$24.6 billion.

### Calculation of 9/30/2018 Hindsight Liability Opinion

(\$millions)

Current Estimated Liability as of 9/30/2019	\$	26,676
Minus liability for additional exposure as of 9/30/2018		(2,668)
Minus projected payments in FY2072		(1)
Plus payments in FY2019 (excluding pmts for current exposure)		1,311
Discount back to 9/30/2018		(694)
Hindsight Liability Estimate as of 9/30/2018	\$	24,624

To arrive at the hindsight estimate, the liability for additional exposure was estimated at 10% of the total liability. The total estimate is not calculated at the employment year level.

## Appendix 1: Reconciliation of Change in Liability Estimate

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Liability Estimate as of 9/30/2018 (\$millions, discounted to 9/30/18).....	\$24,024
1. FY 2019 roll off of estimate	(1,383)
2. FY 2079 roll on to estimate	1
3. Discount to 9/30/19 instead of 9/30/18	694
4. Revised projection of future Part E approvals	1,713
5. Average Medical Payment in FY 2019	775
6. Revised future medical inflation rate assumptions	547
7. Revised projection of future Part B approvals	(444)
8. Change in discount rates	390
9. Revised assumptions for percent filed by an employee	181
10. Changes to Part E payment assumptions	18
11. Combination effect/other	161
Total Change	2,652
Liability Estimate as of 9/30/2019 (\$millions, discounted to 9/30/19).....	\$26,676

## Appendix 2: Summary of EEOICPA Model Assumptions

	as of 9/30/2019	as of 9/30/2018
<b>Compensation Benefit Amounts</b>		
RECA Benefit (Non DOJ)	\$50,000	\$50,000
RECA Benefit (on behalf of DOJ)	\$100,000	\$100,000
Part B Benefit (lump sum)	\$150,000	\$150,000
Part E Benefit, average	\$145,886	\$149,275
<b>Discount Rates</b>		
Discount Factor for Compensation	2.458%	2.531%
Discount Factor for Medical	2.734%	2.875%
<b>Duration</b>		
Average Compensation Duration (years)	11.2	11.5
Average Medical Duration (years)	18.4	18.4
<b>Inflation Rates</b>		
Annual Inflation for Compensation	0.0%	0.0%
Annual Inflation for Medical, Future Year 1	4.5%	4.3%
Annual Inflation for Medical, Future Year 2	4.1%	2.6%
Annual Inflation for Medical, Future Year 3	4.0%	2.6%
Annual Inflation for Medical, Future Year 4	2.9%	2.5%
Annual Inflation for Medical, Future Year 5	3.9%	3.9%
Annual Inflation for Medical, Future Years 6+	3.9%	3.9%
<b>Medical Costs per Eligible Case</b>		
Average medical payment for FY 2020	44,535	42,577
<b>Mortality</b>		
Mortality Table	RP-2014 Male Disabled Retiree	RP-2014 Male Disabled Retiree
Projection Scale	No projection	No projection
<b>New Cases</b>		
Eligible for medical benefits if filed by employee	100%	100%
Average age of employee when case approved <sup>4</sup>	72	72
<b>Percent of new cases filed by employee</b>		
RECA (Part B)	61%	65%
BD (Part B)	72%	73%
BS (Part B)	100%	100%
CS (Part B)	93%	87%
CN SEC (Part B)	59%	54%
CN Non SEC (Part B)	72%	69%
Part E	83%	82%

<sup>4</sup> The exception to this assumption is for employees for which the first case approval date was more than 15 years ago. For these employees, the model uses a weighted average of the actual age at approval.

as of 9/30/2019

as of 9/30/2018

<b>Probability that the newly-approved case is already eligible for medical benefits</b>		
Part B	9.1%	9.1%
Part E	0.7%	0.7%

<b>Part B cases where Part E approved same year</b>	79%	79%
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<b>Quarterly Decay in new case approval</b>		
RECA (Part B)	2.1%	4.5%
BD (Part B)	0.3%	3.4%
BS (Part B)	0.4%	2.0%
CS (Part B)	2.0%	2.0%
CN SEC (Part B)	3.1%	1.7%
CN Non SEC (Part B)	2.9%	2.0%
Part E	varies	2.0%

**Payment Pattern: Part B Compensation**

<u>Year</u>	<u>% Paid</u>	<u>% Paid</u>
Year 1	100%	100%

**Payment Pattern: Part E Compensation**

<u>Year</u>	<u>% Paid</u>	<u>% Paid</u>
Year 1	31.5%	35.9%
Year 2	22.6%	21.8%
Year 3	6.2%	6.2%
Year 4	6.0%	5.8%
Year 5	4.6%	4.3%
Year 6	4.2%	3.7%
Year 7	3.5%	3.2%
Year 8	3.1%	2.7%
Year 9	2.8%	2.8%
Year 10	2.8%	2.7%
Year 11	2.5%	2.4%
Year 12	2.3%	2.3%
Year 13	2.0%	1.4%
Year 14	1.1%	0.2%
Years 15-25	0.4%	0.4%
Total	100.0%	100.0%

**Prior Year Cohort**

Average Age at Award	66	66
Average Age at Start of "Prior" Period	68	67
Average Part E pmt yr for FY2020	18	17

## **Appendix 3: Part E Compensation Payments**

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A triangle approach is employed to estimate the Part E compensation payout patterns. The compensation payments are organized into a paid triangle by first approval quarter and payment quarter. Historical relationships between quarters were then measured and projected forward to estimate the ultimate payments by approval quarter from 2005 to the present.

The exhibits in the following pages show the triangle of payment amounts, the age-to-age factors and the selection of ultimate payments.

### Loss Development Factor (LDF) Method

The LDF method applies a loss development factor to paid cases by period (in this case, approval quarter) to arrive at an estimate of the ultimate losses incurred in that period. The loss development factor varies by the maturity of the period. Loss development factors are selected based on review of historical development and actuarial judgment to consider items such as credibility of observed data and changing patterns within the aggregated data.

**Part E Compensation**

Summary of Results: Paid Compensation

Approval Quarter	Current Paid	Paid LDF	Prior Selection	Selected Ultimate	Ultimate Counts	Ultimate Average Payment
Prior	416,395,399	1.0500	445,403,757	437,215,169	3,493	125,169
2006-2	264,571,137	1.0530	266,679,720	278,593,407	2,545	109,467
2006-3	184,059,652	1.0570	191,566,652	194,551,052	1,705	114,106
2006-4	147,911,328	1.0620	155,831,796	157,081,831	1,376	114,158
2007-1	155,963,380	1.0660	163,571,873	166,256,963	1,411	117,829
2007-2	205,988,264	1.0710	213,479,608	220,613,430	1,774	124,359
2007-3	187,661,356	1.0770	197,096,584	202,111,280	1,591	127,034
2007-4	162,484,171	1.0840	171,746,464	176,132,842	1,467	120,063
2008-1	118,982,690	1.0900	129,293,604	129,691,132	1,111	116,734
2008-2	130,129,464	1.0970	140,502,210	142,752,022	1,207	118,270
2008-3	135,359,840	1.1040	147,209,668	149,437,263	1,243	120,223
2008-4	137,845,757	1.1110	149,414,106	153,146,636	1,259	121,641
2009-1	102,816,615	1.1190	114,337,202	115,051,793	920	125,056
2009-2	100,522,187	1.1270	111,439,222	113,288,505	922	122,873
2009-3	95,020,801	1.1350	103,980,827	107,848,609	865	124,680
2009-4	80,283,596	1.1430	90,455,402	91,764,151	729	125,877
2010-1	89,117,520	1.1520	100,956,397	102,663,383	830	123,691
2010-2	83,459,823	1.1610	95,942,540	96,896,854	785	123,435
2010-3	103,855,040	1.1710	116,475,873	121,614,252	1,068	113,871
2010-4	88,951,279	1.1800	103,168,114	104,962,509	894	117,408
2011-1	71,568,425	1.1900	84,227,802	85,166,426	725	117,471
2011-2	67,773,660	1.2000	79,758,937	81,328,392	673	120,845
2011-3	59,563,553	1.2110	69,657,656	72,131,462	612	117,862
2011-4	53,023,691	1.2200	63,444,570	64,688,903	556	116,347
2012-1	65,232,044	1.2310	78,587,720	80,300,646	668	120,211
2012-2	92,302,497	1.2430	107,437,469	114,732,004	963	119,140
2012-3	68,542,683	1.2550	86,326,546	86,021,067	769	111,861
2012-4	81,483,764	1.2680	99,337,385	103,321,412	865	119,447
2013-1	83,132,017	1.2810	101,910,076	106,492,113	883	120,603
2013-2	77,458,904	1.2920	96,064,763	100,076,904	839	119,281
2013-3	61,224,479	1.3080	76,312,662	80,081,619	656	122,076
2013-4	54,434,516	1.3230	69,041,890	72,016,865	589	122,270
2014-1	48,675,441	1.3430	63,944,885	65,371,117	529	123,575
2014-2	58,775,770	1.3620	73,612,312	80,052,599	673	118,949
2014-3	45,414,999	1.3810	60,923,329	62,718,114	509	123,218
2014-4	44,806,826	1.4020	60,050,845	62,819,170	482	130,330
2015-1	45,386,888	1.4220	61,275,049	64,540,154	469	137,612
2015-2	41,272,708	1.4470	57,970,538	59,721,609	438	136,351
2015-3	39,084,931	1.4690	55,721,694	57,415,763	414	138,685
2015-4	41,173,524	1.4940	58,644,031	61,513,244	455	135,194
2016-1	41,491,178	1.5230	60,253,461	63,191,064	459	137,671
2016-2	41,714,934	1.5580	60,780,227	64,991,867	439	148,045
2016-3	43,923,338	1.6000	66,631,705	70,277,341	469	149,845
2016-4	48,200,094	1.6450	75,424,480	79,289,155	551	143,900
2017-1	50,973,161	1.6820	79,348,584	85,736,856	563	152,286
2017-2	45,756,012	1.7200	76,350,066	78,700,340	545	144,404
2017-3	50,086,957	1.7600	79,842,006	88,153,044	543	162,344
2017-4	48,587,976	1.8050	82,066,502	87,701,297	546	160,625
2018-1	47,079,212	1.8770	68,814,034	88,367,680	535	165,173
2018-2	42,494,402	1.9730	58,405,543	83,841,456	513	163,434
2018-3	40,147,835	2.1340	-	85,675,480	502	170,668
2018-4	32,523,278	2.5290	-	82,251,371	507	162,232
2019-1	15,832,500	3.8850	-	61,509,263	463	132,849
2019-2	<u>10,303,001</u>	<u>7.2480</u>	<u>-</u>	<u>74,676,154</u>	<u>627</u>	<u>119,101</u>
<b>Total</b>	<b>4,750,824,498</b>	<b>1.2454</b>		<b>5,916,545,036</b>	<b>47,224</b>	<b>125,287</b>
				<b>Average 5 Years</b>		<b>145,886</b>

**Part E Compensation**

Calculation of Payment Pattern

t (qtr)	% Ultimate	Cumulative % Paid by Quarter	t (yr)	Cumulative % Paid by Year	Incremental % Paid by Year	Prior % of Ultimate Paid
54	0.952381	0.138	1	0.3148	0.31485	0.35850
53	0.949668	0.257	2	0.5405	0.22560	0.21800
52	0.946074	0.395	3	0.6022	0.06176	0.06150
51	0.94162	0.469	4	0.6621	0.05992	0.05800
50	0.938086	0.507	5	0.7079	0.04579	0.04325
49	0.933707	0.533	6	0.7498	0.04188	0.03700
48	0.928505	0.554	7	0.7850	0.03522	0.03150
47	0.922509	0.568	8	0.8156	0.03055	0.02725
46	0.917431	0.581	9	0.8438	0.02820	0.02750
45	0.911577	0.595	10	0.8713	0.02756	0.02650
44	0.905797	0.608	11	0.8967	0.02538	0.02425
43	0.90009	0.625	12	0.9200	0.02329	0.02250
42	0.893655	0.642	13	0.9399	0.01987	0.01400
41	0.887311	0.657	14	0.9510	0.01115	0.00175
40	0.881057	0.669	15	1	0.00445	0.00441
39	0.874891	0.681	16		0.00445	0.00441
38	0.868056	0.691	17		0.00445	0.00441
37	0.861326	0.703	18		0.00445	0.00441
36	0.853971	0.713	19		0.00445	0.00441
35	0.847458	0.724	20		0.00445	0.00441
34	0.840336	0.734	21		0.00445	0.00441
33	0.833333	0.745	22		0.00445	0.00441
32	0.825764	0.756	23		0.00445	0.00441
31	0.819672	0.765	24		0.00445	0.00441
30	0.812348	0.774	25		0.00445	0.00441
29	0.804505	0.781				
28	0.796813	0.789				
27	0.788644	0.797				
26	0.78064	0.805				
25	0.773994	0.812				
24	0.764526	0.820				
23	0.755858	0.826				
22	0.744602	0.833				
21	0.734214	0.840				
20	0.724113	0.847				
19	0.713267	0.854				
18	0.703235	0.861				
17	0.691085	0.868				
16	0.680735	0.875				
15	0.669344	0.881				
14	0.656599	0.887				
13	0.641849	0.894				
12	0.625	0.900				
11	0.607903	0.906				
10	0.59453	0.912				
9	0.581395	0.917				
8	0.568182	0.923				
7	0.554017	0.929				
6	0.532765	0.934				
5	0.506842	0.938				
4	0.468604	0.942				
3	0.395413	0.946				
2	0.2574	0.950				
1	0.137969	0.952				

**Part E Compensation**

Cumulative Payments by Approval Quarter

Approval Quarter	Age1	Age2	Age3	Age4	Age5	Age6	Age7	Age8	Age9	Age10
Prior	260,825,747	326,236,138	330,559,138	334,251,638	338,656,092	343,278,146	349,043,176	353,953,908	358,290,772	363,283,149
20062	64,386,865	81,756,870	85,782,854	93,657,975	106,797,213	118,066,153	127,273,247	133,452,216	143,853,735	150,735,405
20063	56,418,945	73,228,912	77,274,340	84,826,775	96,180,665	104,459,903	108,071,873	113,925,054	119,216,179	122,984,929
20064	39,038,023	63,208,254	69,928,896	78,235,843	84,737,813	89,306,526	91,939,412	96,747,196	100,796,718	102,786,671
20071	39,194,497	54,373,021	65,142,269	73,570,943	79,536,610	85,132,732	90,546,932	94,333,944	97,004,771	100,109,096
20072	49,980,068	73,085,397	83,824,152	91,976,649	102,573,722	112,390,867	119,257,577	124,834,315	128,993,572	132,414,967
20073	47,907,568	67,464,711	78,712,408	90,307,942	100,362,657	109,698,910	113,685,163	117,720,663	120,737,963	123,946,267
20074	44,169,214	64,783,788	79,104,095	89,369,937	94,242,743	99,595,121	105,125,347	107,789,556	110,958,769	112,606,269
20081	40,643,280	54,623,607	60,875,980	66,437,599	72,116,475	77,777,662	80,335,162	82,495,270	83,952,642	84,995,102
20082	40,892,619	59,619,464	69,227,820	78,743,966	87,660,533	91,907,045	94,855,130	97,285,842	99,203,284	99,894,864
20083	43,042,671	64,630,541	73,710,459	85,147,287	91,585,581	95,751,378	98,626,474	101,872,987	103,139,079	104,090,869
20084	43,992,832	63,361,662	77,852,432	86,466,890	93,434,407	97,115,542	100,178,042	102,850,918	104,963,054	106,773,048
20091	26,657,702	43,771,585	52,998,973	63,491,424	67,314,100	70,063,635	73,067,417	73,916,955	75,124,455	77,260,595
20092	30,433,663	43,565,550	57,611,183	63,145,649	68,611,437	71,143,229	72,431,620	74,177,870	75,092,870	75,837,870
20093	22,563,488	39,535,214	51,381,077	56,675,312	61,389,811	63,092,738	64,987,181	66,782,454	67,247,454	67,922,454
20094	19,399,524	28,968,448	42,530,198	49,466,020	51,632,963	53,575,463	55,062,963	56,455,463	57,014,610	57,307,110
20101	22,033,279	39,047,894	49,677,745	54,505,686	59,557,578	61,829,961	64,044,961	65,693,711	66,325,198	66,731,448
20102	21,794,665	37,682,243	46,322,243	55,205,735	58,405,735	60,758,235	61,918,235	62,320,735	63,283,235	63,702,298
20103	39,254,046	55,520,859	67,756,476	73,595,067	76,657,567	78,455,067	79,970,067	81,510,508	81,789,943	82,934,943
20104	29,942,582	41,379,604	52,661,619	59,395,899	62,262,081	64,263,331	65,157,081	66,124,581	67,539,581	68,737,168
20111	21,660,543	33,267,894	40,920,203	46,556,557	48,881,866	50,385,933	51,763,599	52,415,670	53,822,258	54,264,758
20112	23,840,751	32,734,782	40,288,250	43,164,500	45,094,500	46,908,250	48,160,280	48,875,875	49,985,875	50,890,875
20113	18,564,711	26,740,180	35,110,569	37,968,752	39,254,344	41,620,347	42,755,347	43,590,347	44,545,347	46,056,197
20114	16,217,366	24,988,889	32,137,071	34,396,960	36,536,060	37,385,231	38,457,731	38,990,231	39,561,481	40,121,981
20121	16,975,439	28,180,231	35,463,703	42,049,721	45,509,721	46,744,721	47,854,721	48,402,221	48,949,721	49,764,721
20122	34,940,761	49,547,664	56,652,483	60,745,251	64,582,946	66,665,446	68,632,849	69,761,183	70,817,103	71,807,103
20123	23,167,472	34,108,254	42,162,981	46,480,736	48,459,864	50,827,364	51,795,768	52,675,768	54,066,435	54,683,935
20124	21,110,000	36,045,000	45,266,937	51,672,340	55,657,479	58,119,384	59,260,217	60,275,217	61,770,217	63,932,717
20131	27,144,159	40,356,481	48,992,365	54,594,664	58,035,498	59,547,998	60,785,498	62,050,498	63,896,748	65,441,748
20132	25,768,833	34,871,290	45,108,051	50,764,064	53,794,514	56,264,514	56,962,014	58,054,514	58,927,302	59,669,802
20133	15,134,167	22,265,217	29,797,828	33,761,043	37,150,482	39,174,170	41,589,420	42,865,284	44,457,420	45,222,420
20134	13,450,000	21,484,834	28,824,423	34,380,811	36,644,477	38,953,735	40,564,734	41,639,834	42,335,251	42,825,251
20141	11,230,016	19,599,253	27,915,885	31,901,743	34,229,243	35,052,993	35,852,993	36,465,926	37,057,176	38,033,426
20142	17,404,402	27,116,306	34,372,627	38,455,127	42,250,886	43,983,386	45,434,402	46,046,902	46,969,402	48,050,652
20143	14,052,500	21,043,080	27,139,532	30,305,859	32,677,987	34,554,653	35,612,153	36,369,653	36,759,186	37,246,249
20144	13,659,968	20,711,122	26,680,651	29,134,064	31,629,586	33,478,776	34,681,276	35,543,776	36,234,326	37,221,826
20151	12,524,645	20,189,006	25,241,643	30,355,135	31,825,135	33,167,635	34,585,135	35,487,635	36,092,635	37,220,135
20152	13,043,750	19,757,500	25,716,195	28,764,623	30,545,873	31,931,065	33,633,624	34,219,874	35,577,708	36,567,708
20153	12,774,544	18,457,044	23,451,338	27,636,407	29,861,195	31,033,695	32,106,695	32,651,695	33,021,695	33,734,195
20154	10,412,500	17,463,540	24,260,779	28,400,714	30,968,214	33,005,714	34,130,714	35,008,214	36,240,744	37,028,244
20161	13,225,000	19,137,500	24,776,921	29,247,285	31,647,285	33,109,785	34,913,435	37,008,435	37,855,935	38,120,935
20162	10,932,500	19,001,272	25,584,678	30,798,906	32,946,225	34,493,725	35,348,725	35,754,975	37,034,975	38,074,975
20163	10,050,000	19,173,750	26,609,762	31,795,125	34,300,125	37,187,625	38,607,921	39,902,088	40,992,088	41,975,838
20164	14,800,000	23,947,322	34,411,081	38,593,581	41,565,094	43,520,094	44,870,094	46,027,594	46,655,094	47,420,094
20171	13,945,000	24,438,511	34,195,192	40,740,661	44,228,161	46,073,161	47,763,161	48,930,661	49,598,161	50,973,161
20172	10,715,000	21,922,348	31,015,218	37,888,512	40,591,012	42,498,512	43,416,012	44,176,012	45,756,012	
20173	10,873,333	21,142,724	33,359,307	39,999,457	43,072,790	45,645,290	48,829,457	50,086,957		
20174	12,340,197	23,785,349	37,479,107	42,090,012	45,696,543	47,040,476	48,587,976			
20181	12,067,500	21,547,154	35,802,967	41,151,207	44,271,207	47,079,212				
20182	9,512,500	19,927,500	31,167,500	38,465,000	42,494,402					
20183	9,999,718	18,176,381	32,616,625	40,147,835						
20184	8,918,750	16,407,500	32,523,278							
20191	8,277,500	15,832,500								
20192	10,303,001									
	<b>1 to 2</b>	<b>2 to 3</b>	<b>3 to 4</b>	<b>4 to 5</b>	<b>5 to 6</b>	<b>6 to 7</b>	<b>7 to 8</b>	<b>8 to 9</b>	<b>9 to 10</b>	<b>10 to 11</b>
Average	1.584	1.307	1.137	1.075	1.049	1.034	1.025	1.023	1.019	1.019
Wtd Avg	1.468	1.218	1.117	1.072	1.048	1.034	1.026	1.023	1.019	1.018
12 Qtr	1.865	1.536	1.185	1.082	1.051	1.040	1.026	1.024	1.022	1.022
Prior Select	1.721	1.372	1.165	1.078	1.050	1.034	1.023	1.024	1.020	1.021
Selected	1.865	1.536	1.185	1.082	1.051	1.040	1.026	1.024	1.022	1.022

**Part E Compensation**

Cumulative Payments by Approval Quarter

Approval Quarter	Age11	Age12	Age13	Age14	Age15	Age16	Age17	Age18	Age19	Age20
Prior	366,355,995	368,998,334	370,743,334	373,439,070	375,178,903	377,291,133	379,552,646	382,000,146	383,771,714	384,786,714
20062	156,528,420	161,779,785	165,443,792	169,860,305	174,090,865	179,146,668	182,810,158	186,239,362	188,748,576	192,042,164
20063	125,731,696	128,506,891	130,775,056	133,462,309	135,427,842	138,463,605	140,210,045	141,726,712	144,272,816	146,420,316
20064	104,360,157	106,177,558	108,609,474	109,789,792	113,085,890	115,089,243	116,562,857	117,935,198	119,685,198	120,988,557
20071	102,793,796	106,677,938	108,379,838	109,762,955	111,384,560	113,060,050	114,950,515	116,427,938	118,363,603	120,461,962
20072	135,840,513	138,798,320	141,775,734	144,732,287	147,727,366	149,666,825	152,179,515	154,335,525	155,808,025	156,868,137
20073	125,810,943	128,785,626	131,226,522	132,489,022	134,506,002	137,543,326	140,433,326	141,953,191	143,323,397	145,870,897
20074	114,472,934	116,399,286	118,246,740	119,723,912	120,943,849	123,479,460	125,144,061	126,328,037	127,327,010	128,789,672
20081	86,675,102	87,752,559	90,065,736	91,597,162	92,953,638	94,009,854	94,804,757	95,810,590	96,300,174	97,210,322
20082	100,605,837	102,028,337	104,103,797	105,426,565	106,324,065	107,281,565	108,351,565	109,208,929	109,823,929	110,248,929
20083	105,688,610	107,023,786	108,520,691	109,993,181	111,517,236	112,872,321	113,344,821	114,124,226	115,003,440	116,191,833
20084	108,383,048	109,585,559	110,685,376	111,797,876	113,210,376	114,230,473	115,544,900	116,108,260	116,955,760	118,012,400
20091	78,813,095	80,200,852	80,923,352	81,647,828	82,540,328	83,995,328	84,650,328	85,122,828	86,035,328	86,842,828
20092	77,404,171	78,604,911	79,568,404	80,671,518	81,271,518	81,664,018	83,097,435	84,009,387	84,439,387	85,118,250
20093	68,650,684	70,303,184	71,984,184	73,181,952	73,704,452	74,517,941	75,887,094	76,467,094	76,840,165	77,443,200
20094	58,318,614	59,168,614	60,042,026	61,137,859	62,465,350	62,822,850	63,468,062	63,978,062	64,903,062	65,385,562
20101	67,543,948	69,680,688	70,756,938	72,031,938	72,707,706	74,083,385	74,912,186	75,527,186	76,042,186	76,836,666
20102	64,381,441	65,596,441	66,228,898	67,308,898	68,395,898	68,643,398	69,243,398	70,026,914	70,611,914	71,314,414
20103	83,664,943	84,604,275	85,214,275	86,258,886	87,041,386	88,171,283	88,600,033	89,141,283	89,499,313	90,419,313
20104	69,679,668	70,712,305	71,939,805	73,273,868	73,657,360	73,944,860	74,797,360	75,734,860	76,252,360	76,774,860
20111	54,824,758	55,704,758	56,797,258	57,669,758	58,757,749	59,661,635	61,124,135	61,529,135	61,759,135	62,239,135
20112	52,030,601	52,983,101	53,450,601	54,683,101	55,305,601	55,785,601	56,620,601	57,063,101	57,848,101	59,348,101
20113	46,531,284	47,076,284	47,566,284	48,263,784	49,156,284	49,902,648	50,187,648	50,490,148	50,767,648	51,532,648
20114	40,499,481	41,459,033	42,206,533	42,874,033	43,654,969	44,024,969	44,552,195	45,283,839	46,033,839	46,443,839
20121	50,184,721	50,834,721	51,723,627	52,866,127	53,733,627	54,363,627	55,378,627	56,251,127	56,891,127	57,611,127
20122	72,617,790	74,250,290	75,847,790	77,220,290	78,417,541	79,802,541	80,506,291	81,890,932	83,129,997	84,879,997
20123	55,791,435	56,362,450	57,642,450	58,292,450	58,784,950	59,488,950	60,353,950	61,721,450	62,210,584	63,213,084
20124	64,817,717	66,812,539	67,775,039	68,806,102	70,088,432	71,332,182	72,378,432	73,510,932	74,600,932	75,633,432
20131	66,677,998	67,802,998	69,366,434	70,106,434	71,121,434	71,916,434	73,617,684	75,352,684	76,040,184	76,845,184
20132	61,602,302	62,809,662	63,819,662	65,599,662	66,762,162	67,624,662	69,084,662	70,146,266	71,746,347	72,448,847
20133	46,479,920	47,798,504	49,186,004	50,293,504	51,518,504	52,545,624	53,713,564	54,606,064	55,303,564	56,504,814
20134	44,196,501	45,042,751	46,367,713	47,031,463	48,486,463	49,141,463	49,967,532	50,792,404	51,419,904	51,957,404
20141	39,030,926	40,373,426	41,570,042	42,692,966	43,295,466	44,287,966	44,613,966	45,738,966	46,278,966	47,226,466
20142	48,690,652	50,510,652	51,730,652	52,505,652	53,958,152	54,850,652	55,290,652	55,998,152	56,813,270	57,735,770
20143	38,043,749	38,786,249	39,543,749	40,686,249	41,367,499	42,317,499	42,832,499	43,459,999	44,582,499	45,414,999
20144	38,166,826	39,031,826	39,829,326	41,309,326	42,116,826	42,551,826	43,081,826	44,191,826	44,806,826	
20151	38,400,135	39,730,135	41,656,888	42,711,888	43,574,388	44,556,888	44,881,888	45,386,888		
20152	37,065,208	38,020,208	39,165,208	39,731,458	39,848,958	40,595,208	41,272,708			
20153	34,681,695	36,331,695	37,114,195	37,688,361	38,513,361	39,084,931				
20154	37,895,744	38,440,744	39,258,524	40,366,024	41,173,524					
20161	38,858,435	39,841,178	40,618,678	41,491,178						
20162	39,199,975	40,354,975	41,714,934							
20163	42,835,838	43,923,338								
20164	48,200,094									
20171										
20172										
20173										
20174										
20181										
20182										
20183										
20184										
20191										
20192										
	<b>11 to 12</b>	<b>12 to 13</b>	<b>13 to 14</b>	<b>14 to 15</b>	<b>15 to 16</b>	<b>16 to 17</b>	<b>17 to 18</b>	<b>18 to 19</b>	<b>19 to 20</b>	<b>20 to 21</b>
<b>Average</b>	1.022	1.020	1.018	1.016	1.014	1.013	1.013	1.011	1.012	1.011
<b>Wtd Avg</b>	1.020	1.017	1.016	1.015	1.014	1.013	1.012	1.010	1.011	1.010
<b>12 Qtr</b>	1.028	1.027	1.023	1.019	1.017	1.015	1.018	1.014	1.015	1.014
<b>Prior Select</b>	1.027	1.025	1.020	1.018	1.015	1.014	1.017	1.011	1.013	1.011
<b>Selected</b>	1.028	1.027	1.023	1.019	1.017	1.015	1.018	1.014	1.015	1.014

**Part E Compensation**

Cumulative Payments by Approval Quarter

Approval Quarter	Age21	Age22	Age23	Age24	Age25	Age26	Age27	Age28	Age29	Age30
Prior	386,664,214	388,246,714	389,831,714	390,796,714	392,164,214	393,446,201	394,443,701	395,233,663	395,824,813	396,857,313
20062	195,457,164	198,511,181	200,951,181	202,686,421	204,688,921	206,660,707	208,640,014	210,870,014	213,330,014	214,606,322
20063	147,559,071	149,201,007	150,895,157	152,078,117	152,958,117	154,088,117	155,249,616	156,687,116	157,938,737	158,988,737
20064	121,609,942	122,717,442	123,423,672	124,758,672	125,428,672	126,410,426	127,485,426	128,240,426	128,934,795	129,804,795
20071	121,296,899	123,344,048	124,645,311	126,355,210	127,971,994	129,385,573	130,801,147	131,984,401	132,647,261	133,763,753
20072	158,796,383	160,763,201	162,203,201	164,340,701	166,430,701	167,994,451	170,149,451	171,379,578	172,109,578	173,985,581
20073	147,334,465	149,500,004	150,713,465	152,363,985	153,743,921	155,237,716	156,595,355	157,616,251	158,591,834	159,914,575
20074	129,867,156	131,405,726	132,799,717	133,956,676	135,529,176	136,346,101	137,612,120	139,596,488	141,469,454	142,969,223
20081	98,024,300	98,956,800	99,695,813	100,758,313	101,345,616	102,205,616	103,173,116	103,695,616	104,587,655	105,799,381
20082	110,905,018	111,629,018	112,392,939	113,147,803	114,299,072	115,169,072	115,802,300	116,333,134	116,763,224	117,495,846
20083	117,202,953	117,962,953	118,405,453	118,762,953	119,560,453	120,372,953	121,044,171	121,984,171	122,753,386	123,609,636
20084	118,998,179	120,327,012	121,362,012	122,107,012	123,178,208	123,715,708	124,663,208	125,543,208	126,306,958	127,044,458
20091	87,392,828	87,962,828	88,412,915	89,279,894	90,266,277	91,363,777	92,268,777	92,963,834	93,343,834	93,992,584
20092	85,910,750	86,743,250	87,357,536	88,867,286	89,554,786	90,137,286	90,722,286	91,739,786	92,468,263	93,282,013
20093	78,118,832	78,861,332	79,614,970	81,237,470	81,514,970	82,527,054	83,022,054	84,327,054	85,277,054	86,612,432
20094	65,893,062	67,489,305	68,196,805	68,641,572	69,476,572	70,010,322	71,215,624	71,858,124	72,488,124	73,309,469
20101	77,550,416	78,375,351	79,529,248	80,316,748	81,101,138	81,698,397	82,668,132	82,947,849	83,452,849	84,233,990
20102	71,804,184	73,181,198	74,181,212	74,666,212	75,342,752	75,742,752	76,077,752	76,697,752	77,518,896	78,011,453
20103	91,318,456	92,037,206	93,132,206	93,571,103	94,103,603	95,178,353	96,155,853	97,168,095	98,265,595	99,053,095
20104	77,942,480	78,709,564	79,847,470	80,870,375	82,147,875	83,250,375	83,989,067	84,819,067	85,606,567	86,156,567
20111	62,799,135	63,396,635	64,344,217	65,404,217	66,074,217	66,796,897	67,476,897	68,004,397	68,687,156	69,379,675
20112	59,918,101	60,340,601	61,250,601	62,118,101	63,035,878	63,948,378	64,443,378	65,417,602	66,057,602	66,432,410
20113	51,797,648	52,997,648	54,217,775	54,848,553	55,278,553	55,896,053	56,153,553	56,746,053	57,013,553	58,021,053
20114	47,261,339	48,031,339	48,583,839	48,856,339	49,411,339	49,653,839	50,358,839	51,293,839	51,728,839	52,233,839
20121	58,603,627	59,218,627	60,200,794	60,825,794	61,465,794	62,273,294	63,283,294	63,650,794	64,758,294	65,232,044
20122	85,499,997	85,842,497	87,553,747	87,871,247	88,871,247	89,308,747	90,766,247	91,318,747	92,302,497	
20123	63,943,084	64,325,584	64,917,708	65,762,708	66,757,708	67,037,708	67,750,208	68,542,683		
20124	76,413,432	77,639,212	78,474,212	79,434,212	80,284,212	80,814,212	81,483,764			
20131	77,700,184	78,972,302	79,862,302	80,940,079	82,359,517	83,132,017				
20132	74,178,698	74,743,698	75,753,698	76,233,698	77,458,904					
20133	57,479,814	58,816,448	60,435,596	61,224,479						
20134	52,634,904	53,759,904	54,434,516							
20141	47,751,466	48,675,441								
20142	58,775,770									
20143										
20144										
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20182										
20183										
20184										
20191										
20192										
	<b>21 to 22</b>	<b>22 to 23</b>	<b>23 to 24</b>	<b>24 to 25</b>	<b>25 to 26</b>	<b>26 to 27</b>	<b>27 to 28</b>	<b>28 to 29</b>	<b>29 to 30</b>	<b>30 to 31</b>
Average	1.012	1.012	1.010	1.010	1.009	1.009	1.009	1.008	1.009	1.007
Wtd Avg	1.011	1.010	1.009	1.009	1.008	1.009	1.008	1.007	1.008	1.007
12 Qtr	1.014	1.015	1.011	1.012	1.009	1.010	1.010	1.010	1.010	1.009
Prior Select	1.012	1.014	1.010	1.010	1.009	1.009	1.009	1.008	1.009	1.007
Selected	1.014	1.015	1.011	1.012	1.009	1.010	1.010	1.010	1.010	1.009

**Part E Compensation**

Cumulative Payments by Approval Quarter

Approval Quarter	Age31	Age32	Age33	Age34	Age35	Age36	Age37	Age38	Age39	Age40
Prior	397,874,813	398,504,813	399,334,188	400,076,108	400,901,189	401,818,689	402,728,533	403,441,033	404,108,413	405,078,413
20062	216,713,822	218,849,917	220,666,958	222,706,943	225,001,943	226,756,527	229,817,704	231,792,434	233,702,434	235,969,934
20063	159,850,669	160,900,605	162,056,031	163,137,613	164,160,113	165,827,613	166,650,113	167,775,471	169,187,180	169,849,680
20064	130,734,795	131,419,795	132,552,295	133,459,081	134,466,581	135,438,354	136,385,300	137,319,901	138,219,901	138,894,901
20071	134,286,253	135,031,253	135,582,529	136,679,140	137,523,258	139,560,883	140,226,329	141,438,747	142,552,497	143,666,970
20072	175,560,581	176,943,081	178,473,081	180,177,007	182,495,444	184,495,444	186,298,280	187,348,697	189,221,113	190,947,235
20073	161,661,917	163,365,192	164,585,192	165,792,713	167,557,713	168,850,606	171,543,106	173,596,423	175,125,714	176,628,214
20074	143,596,723	144,416,132	145,833,491	146,560,991	148,073,491	149,818,491	150,744,216	152,255,466	153,722,966	154,602,808
20081	106,191,881	107,067,715	107,845,215	109,037,667	109,832,667	110,712,418	111,852,418	113,073,452	114,103,452	114,880,952
20082	117,841,051	118,799,166	120,104,166	121,376,666	122,161,666	123,044,166	123,665,631	124,655,889	125,333,389	126,171,924
20083	124,426,719	124,926,719	126,384,219	127,303,802	127,818,802	128,505,870	129,452,979	130,382,496	131,055,283	132,240,183
20084	127,834,052	128,626,552	130,031,552	130,953,280	131,487,030	132,379,530	132,725,986	133,548,486	134,564,372	135,169,372
20091	94,480,373	95,034,150	95,575,690	96,825,170	97,960,170	98,662,670	99,667,670	100,137,616	100,817,616	101,477,616
20092	93,782,017	94,667,017	95,581,642	96,016,642	96,999,142	97,514,142	98,264,142	98,664,142	99,135,329	99,937,187
20093	87,147,432	87,525,265	88,596,090	89,459,412	90,146,912	91,081,912	92,038,027	93,840,989	94,458,489	95,020,801
20094	73,968,019	74,380,519	75,158,583	75,918,583	77,308,583	78,311,083	78,911,083	79,570,947	80,283,596	
20101	85,232,565	85,696,873	86,766,994	87,457,520	88,347,520	88,507,520	88,812,520	89,117,520		
20102	79,424,594	79,844,594	80,425,469	81,065,469	81,737,819	82,624,069	83,459,823			
20103	99,158,095	99,950,595	101,375,040	102,350,040	103,175,040	103,855,040				
20104	86,721,567	87,433,779	87,883,779	88,303,779	88,951,279					
20111	69,977,175	70,765,925	71,265,925	71,568,425						
20112	66,832,410	67,386,160	67,773,660							
20113	58,806,053	59,563,553								
20114	53,023,691									
20121										
20122										
20123										
20124										
20131										
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20183										
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20191										
20192										
	<b>31 to 32</b>	<b>32 to 33</b>	<b>33 to 34</b>	<b>34 to 35</b>	<b>35 to 36</b>	<b>36 to 37</b>	<b>37 to 38</b>	<b>38 to 39</b>	<b>39 to 40</b>	<b>40 to 41</b>
Average	1.007	1.009	1.008	1.008	1.008	1.008	1.008	1.007	1.007	1.007
Wtd Avg	1.007	1.008	1.007	1.008	1.008	1.007	1.007	1.007	1.006	1.007
12 Qtr	1.008	1.009	1.008	1.009	1.008	1.008	1.008	1.008	1.007	1.008
Prior Select	1.007	1.009	1.008	1.009	1.009	1.008	1.007	1.007	1.006	1.007
Selected	1.008	1.009	1.008	1.009	1.008	1.008	1.008	1.008	1.007	1.008

**Part E Compensation**  
 Cumulative Payments by Approval Quarter

Approval Quarter	Age41	Age42	Age43	Age44	Age45	Age46	Age47	Age48	Age49	Age50	Age51	Age52	Age53	Age54+
Prior	405,828,413	406,663,413	407,548,413	408,293,413	409,109,213	409,941,713	410,679,213	411,641,713	412,246,713	413,340,046	414,149,566	414,632,066	415,209,566	416,395,399
20062	238,289,000	240,099,000	242,631,500	245,401,500	248,036,500	250,069,000	252,149,000	254,739,321	256,489,321	258,345,534	260,421,992	262,566,137	264,571,137	
20063	171,150,305	171,897,524	173,727,088	174,948,385	175,913,385	177,169,702	178,359,702	180,049,702	181,352,152	182,179,652	182,884,652	184,059,652		
20064	140,137,558	140,990,058	141,688,183	141,920,683	142,913,183	144,333,155	145,345,655	145,921,622	146,914,122	147,331,622	147,911,328			
20071	145,143,653	146,488,074	147,742,794	149,623,678	150,541,178	151,751,028	152,848,528	153,918,380	154,640,880	155,963,380				
20072	192,929,777	194,761,819	196,921,675	198,748,342	199,534,592	200,704,592	202,593,758	204,399,761	205,988,264					
20073	177,872,939	178,931,702	180,599,202	182,024,202	183,461,379	185,123,879	186,094,113	187,661,356						
20074	155,566,558	156,715,258	157,869,789	159,232,289	160,011,039	161,424,964	162,484,171							
20081	115,448,452	116,098,452	116,795,739	117,447,669	118,567,690	118,982,690								
20082	127,218,764	127,880,100	128,825,100	129,537,564	130,129,464									
20083	132,855,008	133,702,508	134,102,340	135,359,840										
20084	136,579,462	137,272,751	137,845,757											
20091	102,174,115	102,816,615												
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	<b>41 to 42</b>	<b>42 to 43</b>	<b>43 to 44</b>	<b>44 to 45</b>	<b>45 to 46</b>	<b>46 to 47</b>	<b>47 to 48</b>	<b>48 to 49</b>	<b>49 to 50</b>	<b>50 to 51</b>	<b>51 to 52</b>	<b>52 to 53</b>	<b>53 to 54</b>	
Average	1.006	1.007	1.007	1.006	1.007	1.006	1.007	1.006	1.005	1.004	1.005	1.005	1.003	
Wtd Avg	1.006	1.007	1.007	1.006	1.006	1.006	1.007	1.005	1.005	1.004	1.004	1.004	1.003	1.050
12 Qtr	1.007	1.007	1.007	1.006	1.006	1.006	1.007	1.005	1.005	1.004	1.004	1.004	1.003	
Prior Select	1.006	1.007	1.007	1.005	1.006	1.005	1.006	1.004	1.003	1.001	1.000	1.000	1.002	1.050
Selected	1.007	1.007	1.007	1.006	1.006	1.006	1.007	1.005	1.005	1.004	1.004	1.004	1.003	1.050

## Appendix 4: Undiscounted Liability Estimate

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As of 9/30/2019, the **undiscounted** liability for future EEOICPA benefit payments is projected at \$39.5 billion. The future medical payments are projected at \$32.1 billion, and the future compensation payments are projected at \$7.5 billion, on an undiscounted basis.

### ESTIMATED LIABILITY FOR EEOICPA AS OF SEPTEMBER 30, 2019

#### SUMMARY OF LIABILITY FOR FUTURE PAYMENTS (\$ Millions)

		Undiscounted Estimate as of 9/30/2019
Compensation: Part B	\$	2,337
Compensation: Part E		5,151
Compensation: Total		7,488
Medical Payments		32,058
Total Future Payments	\$	39,546

**ESTIMATED LIABILITY FOR EEOICPA  
AS OF SEPTEMBER 30, 2019**

**SUMMARY OF UNDISCOUNTED EEOICPA PAYMENTS BY YEAR**

Fiscal Year	Compensation Part B Undiscounted Payments	Compensation Part E Undiscounted Payments	Compensation DOJ RECA Undiscounted Payments	Compensation Total Undiscounted Payments	Medical Total Undiscounted Payments	Total Undiscounted Payments
(1)	(2)	(3)	(4)	(4)	(5)	(6)
2020	\$ 225,761,048	\$ 331,564,066	\$ 13,763,706	\$ 571,088,820	\$ 885,057,176	\$ 1,456,145,996
2021	201,812,315	319,602,002	12,643,186	534,057,504	929,022,642	1,463,080,145
2022	180,515,987	307,821,136	11,613,889	499,951,012	968,378,439	1,468,329,451
2023	161,572,585	293,539,696	10,668,389	465,780,670	990,634,664	1,456,415,334
2024	144,716,883	279,016,751	9,799,862	433,533,497	1,014,619,077	1,448,152,574
2025	129,713,956	264,827,316	9,002,044	403,543,316	1,031,809,114	1,435,352,430
2026	116,355,681	250,746,211	8,269,177	375,371,069	1,042,652,000	1,418,023,069
2027	104,457,653	237,796,307	7,595,973	349,849,934	1,047,663,457	1,397,513,391
2028	93,856,452	226,494,025	6,977,576	327,328,053	1,047,421,071	1,374,749,125
2029	84,407,230	215,763,313	6,409,523	306,580,066	1,042,528,954	1,349,109,020
2030	75,981,578	203,577,853	5,887,716	285,447,147	1,033,565,479	1,319,012,626
2031	68,465,636	189,091,213	5,408,390	262,965,239	1,021,068,173	1,284,033,412
2032	61,758,429	174,751,448	4,968,087	241,477,964	1,005,526,955	1,247,004,919
2033	55,770,390	161,555,637	4,563,629	221,889,656	987,378,925	1,209,268,581
2034	50,422,052	149,545,142	4,192,098	204,159,292	967,004,373	1,171,163,665
2035	45,642,896	138,457,437	3,850,815	187,951,149	944,734,203	1,132,685,352
2036	41,370,332	128,346,468	3,537,315	173,254,116	920,865,188	1,094,119,303
2037	37,548,791	118,840,318	3,249,338	159,638,447	895,672,397	1,055,310,844
2038	34,128,927	109,736,853	2,984,806	146,850,586	869,417,500	1,016,268,086
2039	31,066,912	101,788,855	2,741,809	135,597,576	842,354,422	977,951,999
2040	28,323,807	94,664,607	2,518,595	125,507,010	814,730,443	940,237,453
2041	25,865,008	87,990,226	2,313,553	116,168,788	786,784,482	902,953,270
2042	23,659,756	81,495,471	2,125,204	107,280,431	758,742,939	866,023,370
2043	21,680,702	75,462,754	1,952,189	99,095,644	730,814,851	829,910,495
2044	19,903,522	69,777,784	1,793,259	91,474,565	703,187,675	794,662,240
After 2044 <sup>5</sup>	113,320,572	538,439,686	9,976,238	661,736,495	8,776,420,996	9,438,157,492
Total Future	2,178,079,102	5,150,692,576	158,806,368	7,487,578,046	32,058,055,598	39,545,633,644

<sup>5</sup> Reflects projected cash flow through 2079