MEDICARE FOR ALL AND THE FORGOTTEN CONTRIBUTIONS

By Arthur Young, Ph.D., CPA, and Dennis Jones, Ed.D.

As the country moves toward the 2020 presidential election, "Medicare for All" has become a hot political topic. If this becomes the law of the land, one group that may have a grievance is made up of the workers who contributed to Medicare for many years. Under Medicare for All, these workers will receive the same health care benefits as someone who has never paid into the system.

The purpose of this article is to compute a dollar value for their "contributions" and subsequent investment returns (i.e., assuming they had been able to invest these "contributions" in the stock market).

The Medicare tax was first collected in 1966. At that time, the tax rate was 0.35% of an employee's earnings, for both the employee and the employer, for a combined amount of 0.70% (Social Security Administration, 2013). There was a ceiling on the amount of wages that were subject to the Medicare tax and this ceiling also applied to wages subject to the Social Security program.

The Medicare tax rate gradually rose to 1.45% of the earnings of the employee, for a 2.90% combined amount by 1986. In 1994, the ceiling on wages that were subject to the Medicare tax was removed and at that time, all wages became subject to the Medicare tax. See Table 1 for a summary of the Medicare tax rates and tax base (1973-2017).

The starting point for computing the terminal value of these Medicare contributions is to determine how much the employee had withheld from wages for Medicare and then add that to the employer's matching contribution. This computation assumes the employer's contribution would be instead given directly to the employee as a salary and, therefore, subject to the income tax. For purposes of this simulation, a 30% marginal tax rate is used. (See Footnote 1.) The employee contribution plus the "net of tax" employer contribution is added to the employee's fictional "Medicare Investment Fund" (MIF) at the end of each year.

As these re-characterized payments were originally intended to help workers with health care during

Table 1: Medicare Tax Rates 1973-2017

Tax Rate as a Percent of Taxable Earnings
Rate for Employees and Employers, Each

Years	Medicare Tax Rate	Maximum Taxable Base
1973-1990	0.90%-1.45%	Same as Social Security (=51,300 in 1990)
1991-1993	1.45%	125,000 (1991), 130,200 (1992), 135,000 (1993)
1994	1.45%**	All Earnings are Subject to the Medicare Tax

** Beginning in 2013, an additional Medicare tax of 0.9% was assessed on earned income exceeding $200,000 for individuals and $250,000 for married couples filing jointly.

Source: Social Security Administration (2013, 2019)

their retirement years, it seems appropriate that such payments should be invested in long-term securities. One such appropriate investment might be stocks of companies that are included in the Dow Jones Industrial Average (DJIA). This is an index of 30 large companies that are widely owned.

The SPDR Dow Jones Industrial Average ETF Trust (stock symbol: DIA) started operations in January 1998 and is the easiest way to invest in the stocks that make up this index. Before then, it would have been possible to invest in the individual stock of the 30 components.

Information related to the annual return of the stocks and their dividend yield are available in the DIA prospectus. (See Table 2.) The current estimate from the prospectus is that the ordinary operating expenses of the DIA will equal 0.17% of the net assets each year.

The simulations are based on two hypothetical workers. (See Table 3.) The first earns an annual wage equal to the National Average Wage Index (AWI) Series Amount as the earnings of an employee (Social Security Administration, 2018) and (b) the second is a case study for a more typical worker. They work from 1973-2017 and then liquidate their MIFs at the end of 2017. The case study worker makes very little in wages immediately after high school, but eventually settles into a well-paying profession in her middle age years.

Tables 4 and 5 summarize the computations. The MIF has a zero balance until the end of the first year. At that time, the amount that would have been withheld from the employee's paycheck for Medicare plus the employer's net matching amount is added to get a year-end balance.

In year 2, the computation is more complex. The beginning of year MIF balance is the starting point. To this (a) the stock market return is added or subtracted, (b) the amount of dividends is added and (c) an amount is deducted as a percentage of the beginning of the year balance for fees, taxes and commissions. The amount deducted in this computation is 1%. (See Footnote 2 for a more detailed explanation.) Taxes based on a dividend yield of 3% and a tax rate of 15% would equal 0.45%, and other fees, commissions and state income taxes, if applicable, would make up the remaining 0.55% in the computation. Finally, (d) the current year's "contributions" are added to determine the end-of-year balance. This computation is repeated in years 3 and beyond. All dividends are reinvested in this computation.

At the end of 2017, the investment fund is sold and an after-tax value is computed. The 15% capital gains tax rate is assumed. The after-tax value is the amount of wealth increase that the hypothetical worker contributing to Medicare would now have, if the "contributions" made into the Medicare system were instead invested in the DJIA.

The Case of the Worker Making an Amount Equal to the AWI Series Amount

A worker (i.e., Mark) who worked from 1973 to 2017 is examined. (See Footnote 3 as to why these years were picked.) He had Medicare tax withheld from his salary each year. In addition, in this simulation he received payments from the employer equal to the employer's matching Medicare contribution.

Table 4 summarizes the year-by-year computations through the 2017 calendar year, at which time the MIF had a net asset value of $272,385 (see Table 4) and a tax basis of $91,132 ($62,047 + 29,085). In this simulation, at the end of 2017, the MIF is liquidated and the capital gains tax is subtracted, leaving a net liquidation value for the MIF of $245,197.

Case Study: The Case of a Typical Worker (1973-2017)

In this case study, the employment history of a typical worker (i.e., Barbara) is examined. She went to work for a few years immediately after high school and then attended college (1976-1979). She had inconsistent earnings until 2003, making under $10,000 in 1994, 1995 and 2001. Then in 2003, she became established in a well-paying

profession. This earnings pattern is probably more typical than the first hypothetical worker, who enters the workforce right after high school and immediately makes an amount equal to the AWI Series Amount for the year.

The computation results in an almost identical final liquidation value of the MIF. The MIF grew to a value of $245,682 by the end of 2017. (See Table 5.) The final liquidation value after deducting a capital gains tax on the fund's liquidation is $222,552. (See Footnote 4 for calculation.) Once again, like Mark, the opportunity cost for Barbara was very significant.

Similar computations can be made for various other cases. Table 6 (located at https://faculty.tarleton.edu/djones/documents/table6.xlsx) includes a Microsoft Excel worksheet that will compute the December 31, 2017 value for any employee amount plus "net" employer contributions. The assumptions used for this worksheet are once again a rate of return and rate of dividends equal to that of the DJIA and fund expenses equal to 1% of the beginning of year net assets.

Table 2: Stock Market Returns and Dividend Yields (1973-2017)

YEAR	DIA YE INDEX	YE DIV YIELD	STOCK MRK INCREASE
1973	850.86	4.15%	-16.60%
1974	616.24	6.12%	-27.57%
1975	852.41	4.39%	38.32%
1976	1,004.65	4.12%	17.86%
1977	831.17	5.52%	-17.27%
1978	805.01	6.03%	-3.15%
1979	838.74	6.08%	4.19%
1980	963.99	5.64%	14.93%
1981	875.00	6.43%	-9.23%
1982	1,046.54	5.17%	19.60%
1983	1,258.64	4.48%	20.27%
1984	1,211.57	5.00%	-3.74%
1985	1,546.67	4.01%	27.66%
1986	1,895.95	3.54%	22.58%
1987	1,938.83	3.67%	2.26%
1988	2,168.57	3.67%	11.85%
1989	2,753.20	3.74%	26.96%
1990	2,633.66	3.94%	-4.34%
1991	3,168.83	3.00%	20.32%
1992	3,301.11	3.05%	4.17%
1993	3,754.09	2.65%	13.72%
1994	3,834.44	2.76%	2.14%
1995	5,117.12	2.28%	33.45%
1996	6,448.27	2.03%	26.01%
1997	7,908.25	1.72%	22.64%
1998	9,181.43	1.65%	16.10%
1999	11,497.12	1.47%	25.22%
2000	10,786.85	1.60%	-6.18%
2001	10,021.50	1.81%	-7.10%
2002	8,341.63	2.27%	-16.76%
2003	10,453.92	2.00%	25.32%
2004	10,783.01	2.22%	3.15%
2005	10,717.50	2.30%	-0.61%
2006	12,463.15	2.24%	16.29%
2007	13,264.82	2.35%	6.43%
2008	8,776.39	3.61%	-33.84%
2009	10,428.05	2.63%	18.82%
2010	11,577.51	2.54%	11.02%
2011	12,217.56	2.71%	5.53%
2012	13,104.14	2.72%	7.26%
2013	16,576.66	2.23%	26.50%
2014	17,823.07	2.18%	7.52%
2015	17,425.03	2.50%	-2.23%
2016	19,762.60	2.42%	13.42%
2017	24,719.22	2.10%	25.08%

Source: State Street Global Advisors (2019)

Table 3: Wages Used in Simulations

YEAR	NATIONAL AVERAGE WAGE INDEX (AWI) SERIES AMOUNT	CASE STUDY WAGE
1973	7,580	1,938
1974	8,031	4,435
1975	8,631	4,222
1976	9,226	1,586
1977	9,779	0
1978	10,556	250
1979	11,479	0
1980	12,513	15,625
1981	13,773	16,891
1982	14,531	19,851
1983	15,239	15,428
1984	16,135	12,934
1985	16,823	11,080
1986	17,322	16,526
1987	18,427	19,874
1988	19,334	31,157
1989	20,100	30,772
1990	21,028	29,450
1991	21,812	35,283
1992	22,935	25,808
1993	23,133	13,999
1994	23,754	7,148
1995	24,706	3,133
1996	25,914	13,791
1997	27,426	24,460
1998	28,861	21,785
1999	30,470	28,136
2000	32,155	25,560
2001	32,922	0
2002	33,252	31,500
2003	34,065	64,392
2004	35,649	63,684
2005	36,953	65,626
2006	38,651	56,867
2007	40,405	69,211
2008	41,335	71,346
2009	40,712	73,981
2010	41,674	82,936
2011	42,980	70,509
2012	44,322	91,350
2013	44,888	93,356
2014	46,482	88,551
2015	48,099	89,976
2016	48,642	92,798
2017	50,322	98,092

Source: Social Security Administration (2018)

A Catalyst for Discussions

As this article has demonstrated, many workers have sacrificed a great deal to participate in the Medicare system. Arguably, in some cases, their sacrifices have been significant.

Congress will need to examine a number of factors before determining what is best for the country's Medicare program. They will certainly need to conduct some type of cost-benefit analysis when exploring possible changes.

The ideas expressed in this article may serve as a catalyst for discussions related to the "cost" side of the analysis and a reminder of the past contributions made into the system.

ABOUT THE AUTHORS:

Arthur Young, Ph.D., CPA, is an Associate Professor of Accounting in the College of Business Administration at Tarleton State University. Contact him at ayoung@tarleton.edu.

Dennis Jones, Ed.D., is a Professor of Computer Information Systems in the College of Business Administration at Tarleton State University. Contact him at djones@tarleton.edu.

FOOTNOTES

[1]A 30% marginal tax rate is applied to reduce the amount of the employer Medicare contribution that is instead paid to the employee in this simulation. This would be taxed as salary and would, therefore, be subject to the income tax. The federal income tax rate for single taxpayers that had taxable income from $37,950 to $91,900 was 25% in 2017 (Pomerleau, 2016). The National AWI Series wage was $50,322 in that year (Social Security Administration, 2018).

Similarly, if the amount of the wages included in the National AWI Series computations for prior years was equal to the taxpayer's taxable income, the marginal tax rates for those years would also be close to 25%. For example, in 1980, taxable income of $12,513 would place a single taxpayer in the 24% tax bracket. In 1990, taxable income of $21,028 would place a single taxpayer in the 28% tax bracket. In 2000, taxable income of $32,155 would place a single taxpayer in the 28% tax bracket. Finally, in 2010, taxable income of $41,674 would place a single taxpayer in the 25% tax bracket (Tax Foundation. 2013).

Most wages are earned in states with a state income tax that is often close to a 5% marginal tax rate. Therefore, a marginal tax rate of 30% was used as a combination of a federal tax rate of 25% plus a state income tax rate of 5%.

[2]The year-end dividend yield for the DJIA ranged from 3% to 6.43% for the years 1973 to 1992 (State Street Global Advisors, 2019). Since then, except for 2008, it has ranged from 1.47% to 2.76%. The income tax rate on dividends has often been a flat 15% over the past 45 years. Using a 3% dividend yield would result in a federal tax rate equal to 0.45% of the end-of-year net assets. State income taxes would slightly increase this amount.

Table 4: Growth of Medicare Investment Fund … National AWI Series Case

YEAR	BEG OF YEAR BALANCE	STOCK MRK INCREASE	BOY OF YR PLUS STK RET	DIVIDENDS	CONTRIB FOR YEAR	MM FEE AND TAX 1.00%	END OF YR BALANCE
1973	0	0	0	0	129	0	129
1974	129	(36)	93	6	123	1	221
1975	221	85	305	13	132	2	448
1976	448	80	529	22	141	4	687
1977	687	(119)	568	31	150	7	742
1978	742	(23)	719	43	179	7	934
1979	934	39	974	59	205	9	1,228
1980	1,228	183	1,412	80	223	12	1,703
1981	1,703	(157)	1,545	99	304	17	1,932
1982	1,932	379	2,311	119	321	19	2,732
1983	2,732	554	3,286	147	337	27	3,743
1984	3,743	(140)	3,603	180	357	37	4,102
1985	4,102	1,135	5,236	210	386	41	5,791
1986	5,791	1,308	7,099	251	427	58	7,720
1987	7,720	175	7,894	290	454	77	8,561
1988	8,561	1,014	9,576	351	477	86	10,318
1989	10,318	2,782	13,100	490	495	103	13,982
1990	13,982	(607)	13,375	527	518	140	14,280
1991	14,280	2,902	17,182	515	538	143	18,092
1992	18,092	755	18,847	575	565	181	19,807
1993	19,807	2,718	22,525	597	570	198	23,494
1994	23,494	503	23,997	662	586	235	25,009
1995	25,009	8,366	33,376	761	609	250	34,495
1996	34,495	8,974	43,469	882	639	345	44,645
1997	44,645	10,108	54,753	942	676	446	55,925
1998	55,925	9,004	64,928	1,071	711	559	66,152
1999	66,152	16,684	82,836	1,218	751	662	84,144
2000	84,144	(5,198)	78,945	1,263	793	841	80,160
2001	80,160	(5,687)	74,472	1,348	812	802	75,830
2002	75,830	(12,711)	63,119	1,433	820	758	64,613
2003	64,613	16,361	80,974	1,619	840	646	82,788
2004	82,788	2,606	85,394	1,896	879	828	87,340
2005	87,340	(531)	86,810	1,997	911	873	88,844
2006	88,844	14,471	103,315	2,314	953	888	105,693
2007	105,693	6,799	112,492	2,644	996	1,057	115,074
2008	115,074	(38,938)	76,136	2,749	1,019	1,151	78,753
2009	78,753	14,821	93,574	2,461	1,004	788	96,251
2010	96,251	10,610	106,861	2,714	1,027	963	109,640
2011	109,640	6,061	115,701	3,135	1,059	1,096	118,799
2012	118,799	8,621	127,420	3,466	1,093	1,188	130,791
2013	130,791	34,659	165,449	3,690	1,106	1,308	168,937
2014	168,937	12,703	181,640	3,960	1,146	1,689	185,056
2015	185,056	(4,133)	180,923	4,523	1,186	1,851	184,781
2016	184,781	24,788	209,570	5,072	1,199	1,848	213,993
2017	213,993	53,671	267,664	5,621	1,240	2,140	272,385
			Selected Totals	**62,047**	**29,085**		

There would also be additional management fees, commissions and other expenses. For example, the annual estimated expenses of the DIA ETF is equal to 0.17% of average net assets. Commissions on trading the DIA ETF would also be an expense and some brokerage accounts charge annual maintenance fees.

The 1% expense ratio may be a little bit too high, but in this study, it was decided to use this conservative estimate. To slightly mitigate the high expense ratio, it was decided to apply this to the beginning of the year net assets.

[3]A work/education period of 45 years is reasonable for a typical worker. At the time this simulation was started, the most recent year of the wage from the National AWI Series was for the year 2017. Therefore, this year was selected as the last year and then the previous 44 years were also included.

[4]Tax Basis = $51,573 + 39,906 = $91,479
Capital Gain = $245,682 – 91,479 = $154,203
Capital Gains Tax = $154,203 x 15% = $23,130
MIF Liquidated Value = $245,682 – 23,130 = $222,552

Table 5: Growth of Medicare Investment Fund … Case Study

YEAR	BEG OF YEAR BALANCE	STOCK MRK INCREASE	BOY OF YR PLUS STK RET	DIVIDENDS	CONTRIB FOR YEAR	MM FEE AND TAX 1.00%	END OF YR BALANCE
1973	0	0	0	0	33	0	33
1974	33	(9)	24	1	68	0	93
1975	93	36	128	6	65	1	198
1976	198	35	233	10	24	2	265
1977	265	(46)	219	12	0	3	229
1978	229	(7)	221	13	4	2	237
1979	237	10	247	15	0	2	259
1980	259	39	298	17	279	3	591
1981	591	(55)	537	35	373	6	938
1982	938	184	1,122	58	439	9	1,610
1983	1,610	326	1,936	87	341	16	2,348
1984	2,348	(88)	2,260	113	286	23	2,635
1985	2,635	729	3,364	135	254	26	3,727
1986	3,727	842	4,569	162	407	37	5,100
1987	5,100	115	5,216	191	490	51	5,846
1988	5,846	693	6,539	240	768	58	7,488
1989	7,488	2,019	9,507	356	759	75	10,546
1990	10,546	(458)	10,088	397	726	105	11,106
1991	11,106	2,257	13,363	401	870	111	14,523
1992	14,523	606	15,129	461	636	145	16,081
1993	16,081	2,207	18,288	485	345	161	18,957
1994	18,957	406	19,363	534	176	190	19,884
1995	19,884	6,651	26,535	605	77	199	27,019
1996	27,019	7,029	34,047	691	340	270	34,808
1997	34,808	7,881	42,689	734	603	348	43,678
1998	43,678	7,032	50,710	837	537	437	51,647
1999	51,647	13,026	64,673	951	694	516	65,801
2000	65,801	(4,065)	61,736	988	630	658	62,696
2001	62,696	(4,448)	58,247	1,054	0	627	58,675
2002	58,675	(9,835)	48,839	1,109	776	587	50,138
2003	50,138	12,696	62,833	1,257	1,587	501	65,176
2004	65,176	2,052	67,228	1,492	1,570	652	69,638
2005	69,638	(423)	69,215	1,592	1,618	696	71,728
2006	71,728	11,683	83,411	1,868	1,402	717	85,964
2007	85,964	5,530	91,494	2,150	1,706	860	94,490
2008	94,490	(31,973)	62,518	2,257	1,759	945	65,588
2009	65,588	12,343	77,932	2,050	1,824	656	81,149
2010	81,149	8,945	90,094	2,288	2,044	811	93,615
2011	93,615	5,175	98,790	2,677	1,738	936	102,270
2012	102,270	7,421	109,691	2,984	2,252	1,023	113,903
2013	113,903	30,184	144,087	3,213	2,301	1,139	148,463
2014	148,463	11,163	159,626	3,480	2,183	1,485	163,804
2015	163,804	(3,658)	160,145	4,004	2,218	1,638	164,729
2016	164,729	22,098	186,827	4,521	2,287	1,647	191,989
2017	191,989	48,152	240,141	5,043	2,418	1,920	245,682
			Selected Totals	**51,573**	**39,906**		

REFERENCES

Pomerleau, K. (2016, November 10). 2017 Tax Brackets. Retrieved from https://taxfoundation.org/2017-tax-brackets

Social Security Administration. (2013). Social Security and Medicare Tax Rates. Retrieved from https://www.ssa.gov/OACT/ProgData/taxRates.html

Social Security Administration. (2018). Average Wage Index (AWI). Retrieved from https://www.ssa.gov/oact/cola/awidevelop.html

Social Security Administration. (2019). Contribution and benefit bases, 1937-2019. Retrieved from https://www.ssa.gov/OACT/COLA/cbb.html

State Street Global Advisors. (2019, February 12). SPDR® Dow Jones® Industrial Average ETF Prospectus. Retrieved from https://us.spdrs.com/public/DIA_PROSPECTUS.pdf

Tax Foundation. (2013, October 17). U.S. Federal Individual Income Tax Rates History, 1862-2013 (Nominal and Inflation-Adjusted Brackets). Retrieved from https://taxfoundation.org/us-federal-individual-income-tax-rates-history-1913-2013-nominal-and-inflation-adjusted-brackets