## Wage Indexing vs. Inflation Indexing By; William R. Larsen 1 July 1998

The initial Social Security Old Age Survivor's Insurance benefit (SS-OASI) is based on wages that are indexed yearly<sup>1</sup> by the change in the US Average Wage<sup>2</sup>. This in effect makes past wages earned in previous years equivalent to today's wages. This is very similar to the adjusting SS-OASI benefits by COLA (inflation). This is to standardize the initial SS-OASI benefit for all retiring cohorts based on life time indexed wages. In simple terms a person who makes the average wage every year they work will have the same percent of life timed indexed wages replaced in the form of a SS-OASI benefit as any other cohort.

Wage indexing though fair from a theoretical standpoint creates a very serious problem. If wages in the US increase by 5% this year, then the initial SS-OASI benefit will increase 5% two years from now for those who turn 62. If wages increased by 50% this year, the initial SS-OASI benefit would be 50% larger in two years for those who turn 62. The opposite is true as well. If wages were to drop by 10% this year, the initial SS-OASI benefit for those who turn 62 in two years would be 10% less. The change in the US Wage Growth impacts the initial SS-OASI benefit proportionately by the rate of change.

The SS-OASI trust fund is paid interest at the US Treasury Rate. Compounding interest can reduce the amount needed to be set aside yearly to pay future benefits. It is no different than an individual who saves for retirement. The higher the rate of return, the less you need to save each year to reach a goal. Compounding interest works for you as long as it is greater than the rate of inflation. If the rate you earn is less than inflation, then your buying power is decreasing each year, even though your balance is increasing.

The SS-OASI trust fund works in the same way. However, instead of inflation being the index most people used to index cost, wage growth is being used. Therefore, as the US Average Wage increases relative to the US Treasury Rate. The amount of work done by compounding interest decreases. This means the tax rate must increase in order to pay future promised benefits

One solution is to change wage indexing to Consumer Price Index (CPI). The CPI is normally less than wage growth. This would reduce the growth rate in the initial SS-OASI benefit. How much of a reduction can be calculated assuming Wage growth and inflation. Table 1 goes through a 47-year work period showing how the change in wages and CPI would affect the initial SS-OASI benefit. Using indexes does not require actual wages. Wages will be by indexed by the a ratio of the index at age 62 divided by the index for any previous year.

<u>Table 1</u> shows the difference between wage and CPI indexing. Over the course of a 40 years, the index will change by 32%. However, the SS-OASI benefit using average lifetime indexed wages. Therefore, only the best 35 years will be averaged. The reduction in benefits that would take place if this change is implemented for ages 62, 65 and 67 are basically the same at 32%.

<u>Table 2</u> shows the reduction in benefits for different Wage and CPI indexes Reducion in benefits range from 17% to as much as 54%. Had CPI indeing been applied to those retiring this year, 2006 beneficiaries would have seen about an 18% reduction.

<sup>1</sup> Social Security Benefit Formula http://www.ssa.gov/OACT/COLA/Benefits.html

<sup>2</sup> US Average Wage http://www.ssa.gov/OACT/COLA/awidevelop.html

Table 1 Wage Index 3.5% and CPL Index 3.5%								
Δde	Age Year wage CPI Wage Indexed CPI Indexed @ Wage CPI Reduction							
Age	rear	wage	011	@ Year 40	Year 40	Indexed @	indexed	Reduction
				e ······		age 62	@ age 62	
21	1	1.00	1.00	3.83	2.62	3.83	2.62	32%
22	2	1.04	1.03	3.7	2.56	3.83	2.62	32%
23	3	1.07	1.05	3.57	2.49	3.83	2.62	32%
24	4	1.11	1.08	3.45	2.43	3.83	2.62	32%
25	5	1.15	1.10	3.33	2.37	3.83	2.62	32%
26	6	1.19	1.13	3.22	2.32	3.83	2.62	32%
27	7	1.23	1.16	3.11	2.26	3.83	2.62	32%
28	8	1.27	1.19	3.01	2.20	3.83	2.62	32%
29	9	1.32	1.22	2.91	2.15	3.83	2.62	32%
30	10	1.36	1.25	2.81	2.10	3.83	2.62	32%
31	11	1.41	1.28	2.71	2.05	3.83	2.62	32%
32	12	1.46	1.31	2.62	2.00	3.83	2.62	32%
33	13	1.51	1.34	2.53	1.95	3.83	2.62	32%
34	14	1.56	1.38	2.45	1.90	3.83	2.62	32%
35	15	1.62	1.41	2.36	1.85	3.83	2.62	32%
36	16	1.68	1.45	2.28	1.81	3.83	2.62	32%
37	17	1 73	1 48	2 21	1.76	3.83	2.62	32%
38	18	1.79	1.10	2.21	1.70	3.83	2.62	32%
39	19	1.76	1.62	2.16	1.68	3.83	2.62	32%
40	20	1.00	1.00	1 00	1.00	3.83	2.62	32%
40	20	1.02	1.60	1.00	1.04	3.83	2.02	32%
41	22	2.06	1.04	1.86	1.00	3.83	2.02	32%
12	22	2.00	1.00	1.00	1.50	3.83	2.02	32%
43	23	2.13	1.72	1.73	1.52	3.00	2.02	32%
44	24	2.21	1.70	1.75	1.40	3.00	2.02	32%
45	20	2.20	1.01	1.00	1.45	3.03	2.02	32 /0
40	20	2.30	1.00	1.02	1.41	3.03	2.02	32 /0
47	21	2.40	1.90	1.50	1.30	3.03	2.02	32%
40	20	2.55	1.95	1.01	1.04	3.03	2.02	32%
49	29	2.02	2.00	1.40	1.31	3.03	2.02	32%
50	30	2.71	2.05	1.41	1.28	3.83	2.02	32%
51	31	2.81	2.10	1.30	1.20	3.83	2.62	32%
52	32	2.91	2.15	1.32	1.22	3.83	2.62	32%
53	33	3.01	2.20	1.27	1.19	3.83	2.62	32%
54	34	3.11	2.20	1.23	1.16	3.83	2.62	32%
55	35	3.22	2.32	1.19	1.13	3.83	2.62	32%
56	36	3.33	2.37	1.15	1.10	3.83	2.62	32%
57	37	3.45	2.43	1.11	1.08	3.83	2.62	32%
58	38	3.57	2.49	1.07	1.05	3.83	2.62	32%
59	39	3.70	2.56	1.04	1.03	3.83	2.62	32%
60	40	3.83	2.62	1.00	1.00	3.83	2.62	32%
61	41	3.96	2.69	1.00	1.00	3.96	2.69	32%
62	42	4.10	2.75	1.00	1.00	4.10	2.75	33%
63	43	4.24	2.82	1.00	1.00	4.24	2.82	33%
64	44	4.39	2.89	1.00	1.00	4.39	2.89	34%
65	45	4.54	2.96	1.00	1.00	4.54	2.96	35%
66	46	4.70	3.04	1.00	1.00	4.70	3.04	35%
67	47	4.87	3.11	1.00	1.00	4.87	3.11	36%
	Average Indexed Wage Retiring at age $6\overline{2}$					3.83	2.62	31.5%
	Average Indexed Wage Retiring at age 65				3.89	2.65	31.8%	
	Aver	age Ind	lexed W	age Retiring at	age 65	3.94	2.67	32.1%

## Table 2Reduction in SS-OASI Benefit Based on Wage and CPI IndexWage Index 3% and CPI Index 2.5%

	Wage Indexed @ age 62	CPI indexed @ age 62	Reduction
Average Indexed Wage Retiring at age 62	3.17	2.62	17.3%
Average Indexed Wage Retiring at age 65	3.21	2.65	17.5%
Average Indexed Wage Retiring at age 65	3.25	2.67	17.6%

Wage Index 4% and CPI Index 2.5%					
Average Indexed Wage Retiring at age 62	4.62	2.62	43.3%		
Average Indexed Wage Retiring at age 65	4.70	2.65	43.6%		
Average Indexed Wage Retiring at age 65	4.78	2.67	44.0%		

Wage Index 4.5% and CPI Index 2.5%					
Average Indexed Wage Retiring at age 62	5.57	2.62	52.9%		
Average Indexed Wage Retiring at age 65	5.68	2.65	53.4%		
Average Indexed Wage Retiring at age 65	5.79	2.67	53.8%		

Wage Index 3% and CPI Index 3%					
Average Indexed Wage Retiring at age 62	3.17	3.17	0.0%		
Average Indexed Wage Retiring at age 65	3.21	3.21	0.0%		
Average Indexed Wage Retiring at age 65	3.25	3.25	0.0%		

Wage Index 3.5% and CPI Index 3%					
Average Indexed Wage Retiring at age 62	3.83	3.17	17.2%		
Average Indexed Wage Retiring at age 65	3.89	3.21	17.4%		
Average Indexed Wage Retiring at age 65	3.94	3.25	17.6%		

Wage Index 4% and CPI Index 3%					
Average Indexed Wage Retiring at age 62	4.62	3.17	31.4%		
Average Indexed Wage Retiring at age 65	4.70	3.21	31.7%		
Average Indexed Wage Retiring at age 65	4.78	3.25	32.0%		

Wage Index 4.5% and CPI Index 3%					
Average Indexed Wage Retiring at age 62	5.57	3.17	43.1%		
Average Indexed Wage Retiring at age 65	5.68	3.21	43.5%		
Average Indexed Wage Retiring at age 65 5.79 3.25 43.9%					