Social Security

Memorandum

Refer to : TCC

Date: November 30, 2001

To: Stephen C. Goss, Chief Actuary

From: Alice H. Wade, Deputy Chief Actuary
Chris Chaplain, Actuary

Subject: Estimates of Long-Range OASDI Financial Effect of the ***Social Security Stabilization and Enhancement Act of 2001 (H.R. 3315)*** - INFORMATION

This memorandum provides long-range estimates of the financial effect on the OASDI program assuming enactment of the ***Social Security Stabilization and Enhancement Act of 2001 (H.R. 3315),*** as requested by Tom Vinson of Representative DeFazio's staff. All estimates are based on the intermediate assumptions of the 2001 Trustees Report, with additional assumptions noted below. The comprehensive proposal would:

- Redefine the amount of earnings subject to the OASDI payroll tax,
- Invest a portion of the OASI Trust Funds in marketable securities (including equities),
- Modify the benefit computation period in determining OASDI benefit levels, and
- Increase benefits for beneficiaries over the age of 85.

Enactment of the comprehensive proposal described in this memorandum would improve the long-range OASDI actuarial balance by an estimated 1.89 percent of taxable payroll, changing the present-law actuarial deficit of 1.86 percent to an actuarial balance of +0.03 percent of taxable payroll. The OASDI annual balance for the year 2070 would improve by 2.00 percent of payroll, to an estimated level of -3.78 percent of payroll. The trust fund ratio for the combined OASDI program would increase to a peak of 626 percent in 2019, and then decline to a level of 164 percent at the end of the 75-year projection period.

The remainder of this memorandum provides the following:

- Description of the equity yield assumption used in estimating the yield on the portion of the OASI Trust Fund that is invested in equities,
- Sensitivity analysis with regard to the equity yield assumption and/or the amount of equities held by the OASI Trust Fund,
- Description of the provisions of this bill, and
- Brief listing of the individual provisions of the proposal, including the effect of each provision on the long-range OASDI actuarial balance (shown in table 1), and
- Table 2 that gives *annual* estimates including income rates, cost rates, balances, trust fund ratios, and equities held in the OASI Trust Funds, expressed as a percent of GDP.

Description of the equity yield assumption

As indicated above, estimates provided in this memorandum are based on the intermediate assumptions of the 2001 Trustees Report. In addition, the long-term ultimate average annual real yield assumed for equities is assumed to be 6.5 percent. This is slightly lower than the expected real equity yield used for estimates produced by the Office of the Chief Actuary over the last several years.

A consensus is forming among economists that equity pricing as indicated by price-to-earnings ratios may average somewhat higher in the long-term future than in the long-term past. This is consistent with broader access to equity markets and the belief that equities may be viewed as somewhat less "risky" in the future than in the past. Equity pricing will vary in the future as in the past. Price-to-earnings ratios were very high in the recent past, and are now lower. The ultimate average real equity yield assumed for estimates in this memorandum is consistent with an average ultimate level of equity pricing somewhat above the average level of the past. The extent of this ultimate change is unknown, but it is consistent with assuming a real equity yield somewhat below the long-range past average of about 7 percent.

The assumption for an ultimate real equity yield of 7 percent that was used until this year was developed in 1995 with the 1994-6 Advisory Council. At the time, the Trustees assumption for the ultimate average real yield on long-term Treasury bonds was 2.3 percent. Real yields on corporate bonds are believed to bear a close relationship to Treasury bond yields of similar duration. The 2001 Trustees Report includes the assumption that the ultimate real yield on long-term Treasury bonds will average 3 percent, or 0.7 percentage point higher than in 1995. This increase in the assumed bond yield is consistent with a reduction in the perceived risk associated with equity investments.

Sensitivity analysis with regard to the equity yield assumption and/or the amount of equities held by the OASI Trust Fund

The ***Social Security Stabilization and Enhancement Act of 2001*** specifies that a portion of the OASI Trust Fund be invested in marketable securities starting October 1, 2001, reaching 40 percent in 2016 and later. An investment board would determine the allocation of these marketable securities. For the purpose of these estimates, we have assumed that the yield achieved on this portion of the trust fund assets would, on average, be consistent with maintaining 50 percent in domestic corporate equities and 50 percent in long-term U.S Treasury bonds.

If less than 50 percent of the marketable securities were to be invested in equities or if actual real yields on equities were to average less than 6.5 percent, the long-range actuarial balance under this proposal would be less than indicated above. For example, if actual real yields on the marketable securities held in the OASI Trust Fund during the next 75 years were to average only 3 percent, the same level as assumed for long-term Treasury bonds, this comprehensive proposal would not provide for adequate financing for the OASDI program. However, the long-range actuarial deficit would still be reduced considerably. The long-range OASDI actuarial balance would improve by an estimated 1.52 percent of taxable payroll, reducing the present-law actuarial deficit of 1.86 percent to 0.34 percent of taxable payroll.

It must be noted that the uncertainties associated with equity investments and bond yields mean that actual experience could vary substantially from the estimates provided in this memorandum. In particular, there is a potential that real equity yields could average less than 3 percent over long periods of time, although this is not very likely.

Description of the provisions of this bill

Provision 1: Eliminate the OASDI contribution and benefit base in determining the amount subjected to FICA and SECA payroll tax

For earnings in years after 2001, change the OASDI contribution and benefit base to be a benefit base only. This means that there would be no limit on the amount of an individual's covered earnings that would be subject to OASDI payroll taxes, but the base would continue to be used to establish the maximum annual amount of earnings that is credited for the purpose of benefit computation.

Provision 2: Beginning in 2002, establish an exempt amount ($4,000 for 2002) that would serve to exclude up to that amount of covered earnings from Social Security employee payroll taxes.

Beginning in 2002, establish an *exempt amount* that would serve to exclude up to that amount of covered earnings from the employee portion (1/2 of the self-employed portion) of the OASDI payroll taxes. The *exempt amount* would be set at $4,000 in 2002, and would be increased each year after 2002 by increases in the Social Security average wage index. Earnings exempted due to this provision would still be included in determining OASDI benefit amounts.

Provision 3: Beginning in 2003, increase the benefits of beneficiaries who are age 85 or older. The maximum increase in benefits would be 5 percent.

For years after 2002, increase the level of benefits for all beneficiaries who age 85 or older. This amount of increase in an individual's present-law benefit level for a *given calendar year* would be determined by multiplying:

- 0.25 percent by
- The number of calendar years, before the *given calendar year,* in which the individual was age 85 or older.

The maximum amount of increase would be 5 percent.

For a *given calendar year,* benefit levels under present law would be increased by 0.25 percent for those who are age 85 as of the beginning of the *given calendar year*, by 0.50 percent for those who are age 86 as of the beginning of the *given calendar year*, …. , and by 5.00 percent who are age 104 as of the beginning of the *given calendar year*.

Provision 4: Change in calculation of AIME

Provision 4a: Increase the number of benefit computation years used in determining AIME:

Provision 4a would apply in determining benefits for retired workers and their dependents and for survivors of deceased workers. This provision does not apply in determining benefits for disabled workers and their dependents.

In calculating the AIME for a retired worker under present law, the highest 35 years of indexed earnings are generally used in determining the numerator of the AIME and a benefit computation period of 35 years is used in determining the denominator. Under this provision, the number of years of earnings used in calculating the numerator and denominator of the AIME, are both gradually increased, reaching 38 years for individuals who have no periods of disability and who become newly eligible for retired worker benefits after 2010.

The chart below indicates the phase in schedule of the above changes.

Change in Calculation of AIME for Retired Worker With no Periods of Disability

(assumes the retired worker gets no credit for child care years)

Newly Eligible in Years:	2007 – 2008	2009 - 2010	2011+
Present Law			
Years in Numerator[1]	35	35	35
Denominator (in years)[2]	35	35	35
Proposal			
Years in Numerator[1]	36	37	38
Denominator (in years)[2]	36	37	38

[1] Years in Numerator: Refers to the number of years of earnings used in calculating the numerator of the AIME.

[2] Denominator (in years): Refers to the benefit computation period (in years) used in calculating the denominator of the AIME.

Under current law, the number of benefit computation years for a retired worker of a deceased worker is determined by subtracting 5 *dropout* years from the number of *elapsed* years[1]. Under this proposed provision, the increase in the number of benefit computation years would be accomplished by reducing the number of *dropout* years, ultimately to two.

Provision 4b: Credit up to 3 child-care dropout years in determining the number of years used in calculating the AIME for OASDI benefits.

Under this provision, credit up to 3 child-care dropout years, for workers who attain age 62, become disabled, or die after 2010. In the case of a disabled worker, this provision would increase the number of child-care dropout years under present law by up to 3 additional years. To credit a worker with a child-care dropout year, the following conditions must be met:

- The year must be included in the worker's computation base years,
- The child was under age 12 throughout the year,
- The worker is the parent or stepparent of the child, and
- The worker had earnings below a certain threshold amount during the year. The threshold amount is set at $3,000 for calendar year 2007. The $3,000 level is indexed both backwards and forwards by the Social Security average wage index.

Dropout years are phased in by one additional year for new eligibles in each year 2007, 2009, and 2011. This phase in of the dropout years is consistent with the phase in of the increase in the number of years used in determining the AIME.

[1] The number of e*lapsed years* used in determining the AIME for retired worker benefits equals the number of years from age 22 through the year prior to reaching the earliest eligibility age (age 62), excluding any disability years. The number of e*lapsed years* used in determining the AIME for deceased worker benefits equals the number of years from age 22 through the year prior to death, excluding any disability years.

Provision 5: Invest a portion of the OASI Trust Fund in marketable securities beginning on or after Oct 1, 2001, reaching 40 percent of assets for 2016 and later.

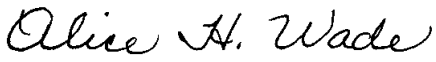
An Independent Social Security Investment Oversight Board shall establish in the OASI Trust Fund an investment fund comprised of:

- A *Government Securities Investment Fund*;
- A *Fixed Income Investment Fund* which would be invested in insurance contracts, certificates of deposits, etc.;
- A *Common Stock Index Investment Fund*; and
- *Other investment funds* as the Board may provide by regulation.

The portion of the OASI Trust Fund that would be held in this investment fund is targeted to be:

- 8 percent as of the end of 2004,
- 16 percent as of the end of 2007,
- 24 percent as of the end of 2010,
- 32 percent as of the end of 2013, and
- 40 percent as of the end of 2016 and for each year thereafter.

For the purpose of these estimates, we have assumed that the yield achieved on this portion of the trust fund assets would, on average, be consistent with maintaining 50 percent in domestic corporate equities and 50 percent in long-term U.S Treasury bonds.



Alice H. Wade

Christopher J. Chaplain

Table 1. Estimated Long-Range OASDI Financial Effect Social Security Stabilization and Enhancement Act of 2001, H.R. 3315 (Rep. DeFazio)

	Provision	Estimated Change in Long-range OASDI Actuarial Balance (percent of taxable payroll)
1	Beginning in 2002, eliminate the OASDI contribution and benefit base in determining the amount of covered earnings subject to FICA and SECA payroll tax. Retain the base for benefit determination.	2.13
2	Beginning in 2002, establish an exempt amount ($4,000 for 2002) that would serve to exclude up to that amount of covered earnings from the employee portion (1/2 of the self-employed portion) of the Social Security payroll taxes. The $4,000 exempt amount would be increased in years after 2002 by increases in the average wage index.	-0.95
3	Beginning in calendar year 2003, increase the benefits of beneficiaries who are age 85 or older. For a given calendar year, benefit levels under present law would be increased by 0.25 percent for those who are age 85 as of the beginning of the calendar year, by 0.50 percent for those who are age 86 as of the beginning of the calendar year, …. , and by 5.00 percent who are age 104 as of the beginning of the calendar year.	-0.02
4a	For survivors and retirement benefits, reduce the number of dropout years (non-childcare) from 5 to 2; phased in by reducing one additional dropout year for new eligibles in each year 2007, 2009, and 2011. Thus, the benefit computation period for retirees who become eligible after 2010 and who have no periods of disability would be increased by 3 years.	0.23
4b	Provide up to 3 child-care dropout years when determining the AIME for OASDI benefits. These years would be granted to a parent who had earnings below a specified threshold during the year and provided care to his/her child under the age of 12. Also, these years must be includable in the parent's computation base years. Dropout years are phased in by one additional year for new eligibles in each year 2007, 2009, and 2011. *(This provision reflects interaction with provision 4a.)*	-0.14
Total for Provisions 1-4 (including interaction among provisions)		1.52
5	Invest a portion of the OASI Trust Funds in marketable securities beginning Oct 1, 2001, reaching 40 percent of assets in marketable securities for 2016 and later. The yield achieved on these marketable securities is assumed, on average, to be consistent with maintaining 50 percent in domestic corporate equities and 50 percent in long-term U.S Treasury bonds. *(This provision reflects interaction with provisions 1- 4.)*	0.37
Total for Provisions 1-5 (including interaction among provisions)		1.89

Based on the intermediate assumptions of the 2001 Trustees Report under present law, the long-range actuarial balance for the 75-year period (2001-2075) is -1.86 percent of taxable payroll.

Table 2 Social Security Stabilization and Enhancement Act of 2001 (H. R. 3315)

Year	Cost Rate	Income Rate	Annual Balance	Trust Fund Ratio 1-1-year	Change in OASDI Payroll Tax Rate	OASDI Payroll Tax Rate	Equities Held in the OASI Trust Fund as a % of GDP (Beg. of Year)
2001	10.50	12.72	2.22	239	-	12.40	-
2002	9.39	12.69	3.30	264	-	12.40	-
2003	9.41	12.70	3.29	301	-	12.40	0.1
2004	9.44	12.71	3.26	338	-	12.40	0.3
2005	9.50	12.71	3.21	373	-	12.40	0.5
2006	9.57	12.72	3.15	408	-	12.40	0.8
2007	9.68	12.73	3.05	441	-	12.40	1.1
2008	9.81	12.74	2.93	472	-	12.40	1.4
2009	9.98	12.75	2.77	499	-	12.40	1.8
2010	10.16	12.76	2.61	525	-	12.40	2.2
2011	10.35	12.77	2.42	547	-	12.40	2.7
2012	10.59	12.78	2.19	566	-	12.40	3.1
2013	10.85	12.78	1.93	583	-	12.40	3.6
2014	11.13	12.79	1.66	596	-	12.40	4.2
2015	11.43	12.80	1.37	607	-	12.40	4.7
2016	11.74	12.81	1.07	615	-	12.40	5.3
2017	12.06	12.82	0.76	621	-	12.40	5.9
2018	12.38	12.83	0.45	625	-	12.40	6.1
2019	12.71	12.84	0.13	626	-	12.40	6.3
2020	13.03	12.85	-0.18	626	-	12.40	6.5
2021	13.33	12.87	-0.46	625	-	12.40	6.6
2022	13.62	12.89	-0.73	623	-	12.40	6.8
2023	13.90	12.90	-0.99	620	-	12.40	6.9
2024	14.16	12.92	-1.24	616	-	12.40	7.0
2025	14.41	12.93	-1.47	611	-	12.40	7.0
2026	14.64	12.95	-1.69	606	-	12.40	7.1
2027	14.85	12.96	-1.89	600	-	12.40	7.2
2028	15.04	12.98	-2.06	594	-	12.40	7.2
2029	15.21	12.99	-2.21	588	-	12.40	7.2
2030	15.35	13.00	-2.34	582	-	12.40	7.2
2031	15.48	13.02	-2.46	575	-	12.40	7.2
2032	15.59	13.03	-2.56	569	-	12.40	7.2
2033	15.67	13.04	-2.64	562	-	12.40	7.1
2034	15.73	13.04	-2.68	557	-	12.40	7.1
2035	15.76	13.05	-2.71	551	-	12.40	7.0
2036	15.78	13.06	-2.72	546	-	12.40	7.0
2037	15.78	13.06	-2.72	542	-	12.40	6.9
2038	15.77	13.07	-2.71	537	-	12.40	6.9
2039	15.75	13.07	-2.69	533	-	12.40	6.8
2040	15.74	13.07	-2.66	529	-	12.40	6.8
2041	15.72	13.08	-2.65	525	-	12.40	6.7
2042	15.71	13.08	-2.63	521	-	12.40	6.7
2043	15.70	13.08	-2.62	517	-	12.40	6.6
2044	15.70	13.08	-2.62	513	-	12.40	6.6
2045	15.71	13.09	-2.62	508	-	12.40	6.5
2046	15.72	13.09	-2.63	504	-	12.40	6.5
2047	15.74	13.10	-2.64	499	-	12.40	6.5
2048	15.76	13.10	-2.66	494	-	12.40	6.4
2049	15.78	13.10	-2.68	488	-	12.40	6.4
2050	15.82	13.11	-2.71	482	-	12.40	6.4
2051	15.86	13.11	-2.75	476	-	12.40	6.3
2052	15.91	13.12	-2.80	469	-	12.40	6.3
2053	15.97	13.12	-2.85	462	-	12.40	6.2
2054	16.03	13.13	-2.90	454	-	12.40	6.2
2055	16.10	13.14	-2.96	445	-	12.40	6.1
2056	16.16	13.14	-3.02	437	-	12.40	6.1
2057	16.23	13.15	-3.08	427	-	12.40	6.0
2058	16.30	13.15	-3.14	418	-	12.40	6.0
2059	16.36	13.16	-3.20	407	-	12.40	5.9
2060	16.42	13.16	-3.26	397	-	12.40	5.8
2061	16.49	13.17	-3.32	386	-	12.40	5.7
2062	16.55	13.18	-3.37	374	-	12.40	5.6
2063	16.60	13.18	-3.42	362	-	12.40	5.5
2064	16.66	13.19	-3.48	350	-	12.40	5.4
2065	16.72	13.19	-3.53	337	-	12.40	5.3
2066	16.77	13.19	-3.58	324	-	12.40	5.2
2067	16.83	13.20	-3.63	310	-	12.40	5.0
2068	16.88	13.20	-3.68	296	-	12.40	4.9
2069	16.94	13.21	-3.73	281	-	12.40	4.8
2070	16.99	13.21	-3.78	266	-	12.40	4.6
2071	17.04	13.22	-3.82	251	-	12.40	4.5
2072	17.09	13.22	-3.87	234	-	12.40	4.3
2073	17.15	13.22	-3.92	218	-	12.40	4.2
2074	17.20	13.23	-3.97	200	-	12.40	4.0
2075	17.25	13.23	-4.02	183	-	12.40	3.8
2076	17.31	13.24	-4.07	164	-	12.40	3.7

Summarized Rates: OASDI 2001 -2075	Cost Rate	Income Rate	Actuarial Balance	Change in Actuarial Balance
	13.48	13.51	0.03	1.89

Based on Intermediate Assumptions of the 2001 Trustees Report

Office of the Chief Actuary
Social Security Administration
November 20, 2001