

Table 1. Number of individuals remaining in the sample after each step in the sample selection.

	Men	Women	Men and Women
Individuals born 1927-1940	22 375	21 948	44 323
Neither emigrated nor dead in 1983	22 055	21 798	43 853
Usable earnings histories	22 046	21 781	43 827
Not retired at age 50	20 364	19 576	39 940
Not retired in 1983	18 163	15 916	34 079
Employed in 1983	15 619	14 820	30 439

Table 2. Results from probit regressions on individual retirement decision; men (15 619 individuals and 127 390 observations); t-values are in parentheses.

	Peak value		Option value	
	Linear Age	Age Dummies	Linear Age	Age Dummies
ACCR/10 ⁶	-0.93 (-10.12)	-0.92 (-9.94)	-5.11 (-9.39)	-6.74 (11.42)
ISW/10 ⁶	0.34 (6.41)	0.35 (6.43)	0.31 (5.50)	0.24 (4.16)
Lifetime earnings	-2.76 (-1.92)	-2.80 (-1.92)	-2.43 (-1.71)	-2.55 (-1.76)
Lifetime earnings ²	0.11 (1.45)	0.11 (1.39)	0.10 (1.31)	0.12 (1.58)
Predicted earnings	1.47 (0.93)	1.40 (0.87)	1.26 (0.80)	1.59 (1.00)
Predicted earnings ²	-0.09 (-2.14)	-0.09 (-2.16)	-0.08 (-1.91)	-0.10 (-1.94)
Lifetime*Predicted	0.13 (0.91)	0.15 (0.96)	0.12 (0.83)	0.08 (0.53)
(Lifetime*Predicted) ²	-0.01 (-1.78)	-0.01 (-1.77)	-0.01 (-1.62)	-0.01 (-1.33)
Education2	0.22 (6.91)	0.22 (6.85)	0.22 (6.92)	0.22 (6.91)
Education3	0.18 (11.19)	0.18 (10.99)	0.18 (11.23)	0.19 (11.24)
Education4	0.13 (6.87)	0.14 (6.75)	0.14 (6.88)	0.15 (7.04)
Education5	0.12 (4.71)	0.12 (4.44)	0.12 (4.75)	0.12 (4.73)
Education6	0.07 (2.50)	0.07 (2.41)	0.07 (2.46)	0.07 (2.59)
Occupation2	-0.17 (-9.77)	-0.17 (-9.53)	-0.17 (-9.68)	-0.17 (-9.16)
Occupation3	0.03 (1.38)	0.03 (1.46)	0.03 (1.42)	0.03 (1.62)
Occupation4	-0.18 (-8.68)	-0.19 (-8.78)	-0.18 (-8.82)	-0.19 (-8.90)
Age	0.11 (38.39)		0.11 (33.28)	
Married	-0.05 (-1.21)	-0.06 (-1.29)	-0.04 (-0.93)	-0.02 (-0.47)
Lifetime earn, spouse	0.03 (2.45)	0.04 (2.77)	0.02 (2.11)	0.03 (2.63)
Lifetime earn.,spouse ²	-0.01 (-2.51)	-0.01 (-2.83)	-0.01 (-2.16)	-0.01 (-2.68)
ISW,spouse/10 ⁴	0.04 (3.01)	0.04 (3.11)	0.03 (2.98)	0.03 (3.01)
Indicators for age	No	Yes	No	Yes
Indicators for counties	Yes	Yes	Yes	Yes
Pseudo R ²	0.1621	0.1841	0.1612	0.1844
Ln L	-24 571	-23 928	-24 599	-23 920

Table 3. Results from probit regressions on individual retirement decision; women (14 820 individuals and 123 979 observations); t-values are in parentheses.

	Peak value		Option value	
	Linear Age	Age Dummies	Linear Age	Age Dummies
ACCR/10 ⁶	-1.42 (-10.39)	-1.29 (-9.69)	-23.4 (-20.43)	-24.0 (-21.67)
ISW/10 ⁶	0.07 (1.27)	0.13 (2.16)	-0.47 (-7.13)	-0.48 (-7.14)
Lifetime earnings	-4.68 (-2.47)	-4.60 (-2.34)	-6.31 (-3.39)	-6.22 (-3.25)
Lifetime earnings ²	0.40 (5.07)	0.36 (4.34)	0.66 (7.32)	0.65 (6.80)
Predicted earnings	5.94 (3.50)	6.02 (3.38)	5.53 (3.56)	8.82 (3.56)
Predicted earnings ²	-0.19 (-3.05)	-0.22 (-3.20)	-0.07 (-1.26)	-0.08 (-1.47)
Lifetime*Predicted	-0.19 (-1.06)	-0.12 (-0.66)	-0.46 (-2.85)	-0.46 (-2.68)
(Lifetime*Predicted) ²	-0.00 (-0.37)	-0.00 (-0.38)	0.00 (0.04)	0.00 (0.19)
Education2	0.06 (2.27)	0.05 (1.80)	0.09 (3.44)	0.08 (2.96)
Education3	0.07 (4.15)	0.06 (3.87)	0.09 (5.72)	0.09 (5.52)
Education4	0.07 (2.23)	0.06 (1.70)	0.11 (3.32)	0.09 (2.78)
Education5	-0.00 (-0.07)	-0.00 (-0.05)	0.04 (1.74)	0.05 (1.80)
Education6	-0.08 (-2.75)	-0.09 (-3.04)	-0.02 (-0.82)	-0.04 (-1.10)
Occupation2	-0.11 (-5.12)	-0.11 (-4.93)	-0.03 (-1.48)	-0.03 (-1.29)
Occupation3	-0.04 (-1.81)	-0.04 (-1.52)	-0.02 (-0.67)	-0.01 (-0.42)
Occupation4	-0.13 (-7.27)	-0.13 (-6.82)	-0.21 (-11.34)	-0.21 (-10.95)
Age	0.14 (50.07)		0.09 (24.64)	
Married	0.29 (4.61)	0.32 (4.87)	0.32 (4.96)	0.35 (5.28)
Lifetime earn, spouse	0.01 (0.30)	0.00 (0.12)	0.00 (0.27)	0.00 (0.04)
Lifetime earn.,spouse ²	-0.00 (-0.66)	-0.00 (-0.48)	-0.00 (-0.67)	-0.00 (-0.43)
ISW, spouse/10 ⁴	-0.01 (-0.58)	-0.01 (-0.68)	-0.02 (-1.12)	-0.02 (-1.23)
Indicators for age	No	Yes	No	Yes
Indicators for counties	Yes	Yes	Yes	Yes
Pseudo R ²	0.1762	0.2004	0.1828	0.2083
Ln L	-23 540	-22 850	-23 351	-22 624

Table 4. Discounted expected value at age 55 of benefit and tax payments.

	PDV				Total Change Relative to Base		
	Reform 1	Reform 2	Reform 3	Reform 1	Reform 2	Reform 3	
	Base	Plus 3 years	Act. Adjust	Common	Plus 3 years	Act. Adjust	Common
Peak Value - S1							
Benefits	167147	158050	138769	134688	-5.4%	-17.0%	-19.4%
Benefits incl. Occup.	190242	173187	162066	134688	-9.0%	-14.8%	-29.2%
Taxes: Payroll	64627	68208	64767	68964	5.5%	0.2%	6.7%
Taxes: Income	107656	104790	95879	89093	-2.7%	-10.9%	-17.2%
Taxes: VAT	55216	54279	51691	49704	-1.7%	-6.4%	-10.0%
Taxes: Total	227499	227276	212337	207761	-0.1%	-6.7%	-8.7%
Peak Value - S2							
Benefits	163661	155370	138733	134518	-5.1%	-15.2%	-17.8%
Benefits incl. Occup.	187750	170363	162682	134518	-9.3%	-13.4%	-28.4%
Taxes: Payroll	66351	69920	66520	70761	5.4%	0.3%	6.6%
Taxes: Income	108424	105444	98009	90890	-2.7%	-9.6%	-16.2%
Taxes: VAT	55509	54556	52388	50367	-1.7%	-5.6%	-9.3%
Taxes: Total	230285	229920	216918	212018	-0.2%	-5.8%	-7.9%
Peak Value - S3							
Benefits	163661	139474	138733	134518	-14.8%	-15.2%	-17.8%
Benefits incl. Occup.	187750	158406	162682	134518	-15.6%	-13.4%	-28.4%
Taxes: Payroll	66351	82105	66520	70761	23.7%	0.3%	6.6%
Taxes: Income	108424	114474	98009	90890	5.6%	-9.6%	-16.2%
Taxes: VAT	55509	57552	52388	50367	3.7%	-5.6%	-9.3%
Taxes: Total	230285	254130	216918	212018	10.4%	-5.8%	-7.9%
Option Value S1							
Benefits	168476	158265	137729	134037	-6.1%	-18.2%	-20.4%
Benefits incl. Occup.	190741	173112	160215	134037	-9.2%	-16.0%	-29.7%
Taxes: Payroll	63531	68025	63382	68319	7.1%	-0.2%	7.5%
Taxes: Income	106955	104753	93839	88401	-2.1%	-12.3%	-17.3%
Taxes: VAT	54982	54274	51052	49444	-1.3%	-7.1%	-10.1%
Taxes: Total	225468	227052	208273	206164	0.7%	-7.6%	-8.6%
Option Value S2							
Benefits	167432	158670	138163	134187	-5.2%	-17.5%	-19.9%
Benefits incl. Occup.	190066	172809	160563	134187	-9.1%	-15.5%	-29.4%
Taxes: Payroll	62686	67123	62528	67540	7.1%	-0.3%	7.7%
Taxes: Income	105414	103218	92731	87175	-2.1%	-12.0%	-17.3%
Taxes: VAT	54595	53897	50785	49170	-1.3%	-7.0%	-9.9%
Taxes: Total	222695	224238	206044	203884	0.7%	-7.5%	-8.4%
Option Value - S3							
Benefits	167432	147465	138163	134187	-11.9%	-17.5%	-19.9%
Benefits incl. Occup.	190066	164633	160563	134187	-13.4%	-15.5%	-29.4%
Taxes: Payroll	62686	75856	62528	67540	21.0%	-0.3%	7.7%
Taxes: Income	105414	109937	92731	87175	4.3%	-12.0%	-17.3%
Taxes: VAT	54595	56050	50785	49170	2.7%	-7.0%	-9.9%
Taxes: Total	222695	241843	206044	203884	8.6%	-7.5%	-8.4%

Table 5. Change in discounted expected value at age 55 of benefit and tax payments.

	Change in PDV								
	Plus 3 years			Actuarial Adjustment			Common Reform		
	Mech-anical	Behav-ioral	Total	Mech-anical	Behav-ioral	Total	Mech-anical	Behav-ioral	Total
Peak Value - S1									
Benefits	-4937	-4160	-9097	-28334	-44	-28378	-33659	1201	-32459
Benefits incl. Occup.	-14426	-2629	-17055	-28180	5	-28175	-56754	1201	-55553
Taxes: Total	-7867	7643	-223	-15510	347	-15163	-31399	11661	-19738
Net Change	2930	-11804	-8873	-12824	-391	-13215	-2260	-10460	-12720
Change as a % of Base Benefits	1.8%	-7.1%	-5.3%	-7.7%	-0.2%	-7.9%	-1.4%	-6.3%	-7.6%
Peak Value - S2									
Benefits	-4129	-4163	-8292	-24878	-51	-24929	-29964	821	-29143
Benefits incl. Occup.	-14504	-2883	-17386	-25075	7	-25068	-54052	821	-53231
Taxes: Total	-7923	7558	-364	-13793	426	-13367	-30018	11751	-18267
Net Change	3794	-11721	-7927	-11085	-477	-11562	54	-10931	-10876
Change as a % of Base Benefits	2.3%	-7.2%	-4.8%	-6.8%	-0.3%	-7.1%	0.0%	-6.7%	-6.6%
Peak Value - S3									
Benefits	-4129	-20058	-24187	-24878	-51	-24929	-29964	821	-29143
Benefits incl. Occup.	-14504	-14840	-29344	-25075	7	-25068	-54052	821	-53231
Taxes: Total	-7923	31768	23846	-13793	426	-13367	-30018	11751	-18267
Net Change	3794	-51827	-48033	-11085	-477	-11562	54	-10931	-10876
Change as a % of Base Benefits	2.3%	-31.7%	-29.3%	-6.8%	-0.3%	-7.1%	0.0%	-6.7%	-6.6%
Option Value S1									
Benefits	-4771	-5440	-10210	-30728	-19	-30746	-35989	1550	-34439
Benefits incl. Occup.	-13787	-3842	-17629	-30498	-28	-30526	-58255	1550	-56705
Taxes: Total	-7505	9089	1584	-16783	-412	-17195	-32087	12784	-19304
Net Change	2734	-14529	-11795	-13945	393	-13552	-3901	-11234	-15135
Change as a % of Base Benefits	1.6%	-8.6%	-7.0%	-8.3%	0.2%	-8.0%	-2.3%	-6.7%	-9.0%
Option Value S2									
Benefits	-3316	-5447	-8763	-29301	31	-29269	-34926	1680	-33246
Benefits incl. Occup.	-13309	-3948	-17257	-29529	25	-29504	-57560	1680	-55880
Taxes: Total	-7240	8782	1543	-16232	-419	-16651	-31691	12880	-18811
Net Change	3923	-14229	-10306	-13069	451	-12618	-3235	-11200	-14435
Change as a % of Base Benefits	2.3%	-8.5%	-6.2%	-7.8%	0.3%	-7.5%	-1.9%	-6.7%	-8.6%
Option Value - S3									
Benefits	-3316	-16651	-19967	-29301	31	-29269	-34926	1680	-33246
Benefits incl. Occup.	-13309	-12124	-25433	-29529	25	-29504	-57560	1680	-55880
Taxes: Total	-7240	26388	19148	-16232	-419	-16651	-31691	12880	-18811
Net Change	3923	-43039	-39115	-13069	451	-12618	-3235	-11200	-14435
Change as a % of Base Benefits	2.3%	-25.7%	-23.4%	-7.8%	0.3%	-7.5%	-1.9%	-6.7%	-8.6%

Table 6. Distributional analysis. Option Value – Linear Age (S1).

	PDV				Change Relative to		
	Base	Reform 1 Plus 3 Years	Reform 2 Act. Adjust	Reform 3 Common	Base PDV		
					Reform 1 Plus 3 Years	Reform 2 Act. Adjust	Reform 3 Common
Quintile 1 (highest)							
Benefits	193126	175623	164917	182759	-17504	-28210	-10368
Benefits incl. Occup.	257348	221499	230230	182759	-35849	-27118	-74589
Taxes: Total	381011	385989	366917	372501	4978	-14094	-8511
Net Change					-22481	-14115	-1857
Change as a % of Base Benefits					-11.6%	-7.3%	-1.0%
Quintile 2							
Benefits	181545	169163	150307	148254	-12381	-31238	-33291
Benefits incl. Occup.	201977	182327	170896	148254	-19650	-31081	-53723
Taxes: Total	238815	239955	221434	221030	1140	-17381	-17784
Net Change					-13522	-13857	-15506
Change as a % of Base Benefits					-7.4%	-7.6%	-8.5%
Quintile 3							
Benefits	167528	158605	135812	128794	-8923	-31716	-38734
Benefits incl. Occup.	178767	165157	146971	128794	-13610	-31796	-49972
Taxes: Total	192534	193224	174317	171290	691	-18217	-21244
Net Change					-9614	-13500	-17490
Change as a % of Base Benefits					-5.7%	-8.1%	-10.4%
Quintile 4							
Benefits	159599	151767	128337	117416	-7832	-31262	-42183
Benefits incl. Occup.	168940	157121	137551	117416	-11819	-31389	-51524
Taxes: Total	175126	175517	156931	151817	391	-18195	-23309
Net Change					-8223	-13067	-18874
Change as a % of Base Benefits					-5.2%	-8.2%	-11.8%
Quintile 5 (lowest)							
Benefits	140712	136271	109411	93164	-4441	-31301	-47548
Benefits incl. Occup.	146908	139631	115666	93164	-7277	-31242	-53744
Taxes: Total	140328	141056	122247	114691	728	-18081	-25636
Net Change					-5170	-13220	-21912
Change as a % of Base Benefits					-3.7%	-9.4%	-15.6%

Table 7. Distributional analysis. Option Value – Age Dummies (\$3).

	PDV				Change Relative to		
	Base	Reform 1 Plus 3 Years	Reform 2 Act. Adjust	Reform 3 Common	Base PDV		
					Reform 1 Plus 3 Years	Reform 2 Act. Adjust	Reform 3 Common
Quintile 1 (highest)							
Benefits	193020	164725	165713	183124	-28295	-27307	-9896
Benefits incl. Occup.	257363	215389	230112	183124	-41975	-27251	-74239
Taxes: Total	371381	408270	357073	362556	36889	-14308	-8825
Net Change					-65184	-12999	-1071
Change as a % of Base Benefits					-33.8%	-6.7%	-0.6%
Quintile 2							
Benefits	180847	157621	150659	148075	-23226	-30188	-32772
Benefits incl. Occup.	201587	173233	171168	148075	-28354	-30419	-53512
Taxes: Total	235642	255807	218594	218358	20165	-17048	-17283
Net Change					-43391	-13141	-15489
Change as a % of Base Benefits					-24.0%	-7.3%	-8.6%
Quintile 3							
Benefits	166474	147006	136146	128899	-19468	-30329	-37576
Benefits incl. Occup.	178144	155332	147464	128899	-22813	-30681	-49246
Taxes: Total	191460	206753	173848	170735	15293	-17612	-20725
Net Change					-34761	-12716	-16851
Change as a % of Base Benefits					-20.9%	-7.6%	-10.1%
Quintile 4							
Benefits	158152	140703	128685	117645	-17449	-29467	-40507
Benefits incl. Occup.	167995	147610	138107	117645	-20385	-29887	-50350
Taxes: Total	174673	188007	157372	152221	13334	-17302	-22452
Net Change					-30783	-12165	-18055
Change as a % of Base Benefits					-19.5%	-7.7%	-11.4%
Quintile 5 (lowest)							
Benefits	138804	127366	109750	93393	-11438	-29054	-45411
Benefits incl. Occup.	145478	131776	116199	93393	-13702	-29279	-52084
Taxes: Total	140775	150885	123793	116037	10110	-16982	-24738
Net Change					-21548	-12072	-20672
Change as a % of Base Benefits					-15.5%	-8.7%	-14.9%

Figure 1. Probability of access to the labor market insurance pathway and probability of using the labor market insurance pathway conditional on retirement age.

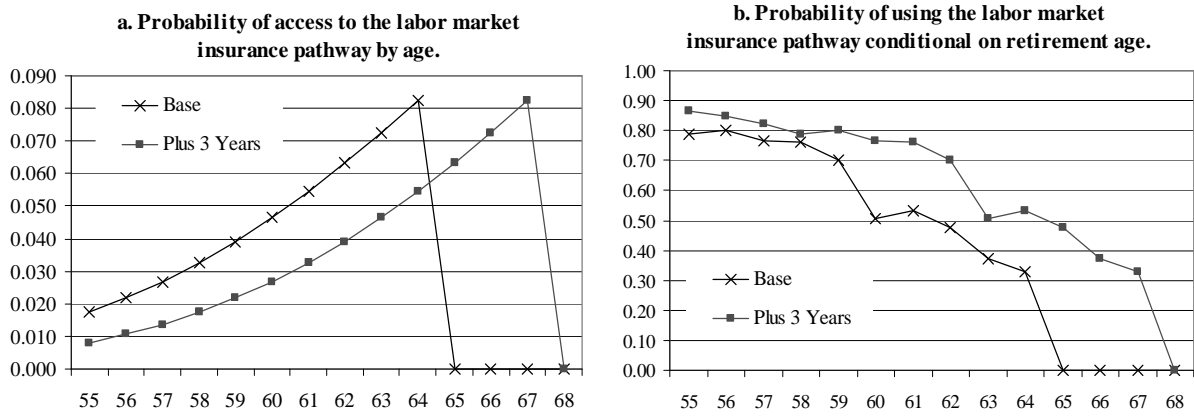


Figure 2. Results for the Plus 3 Years Reform.

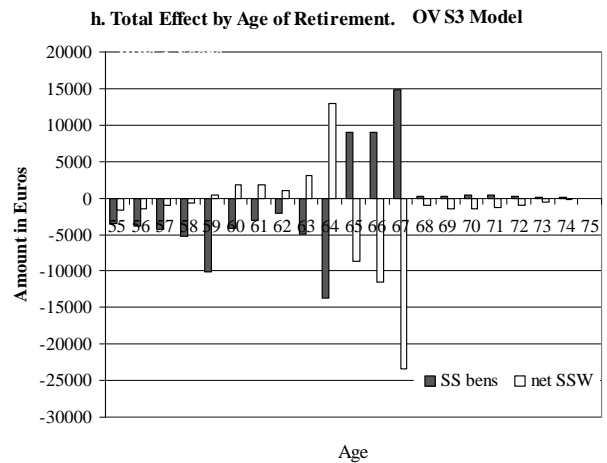
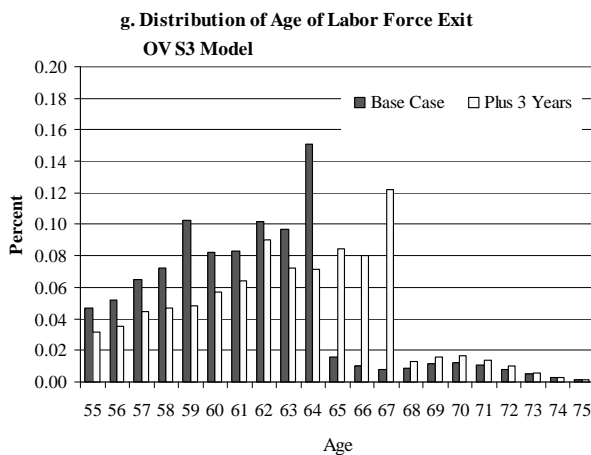
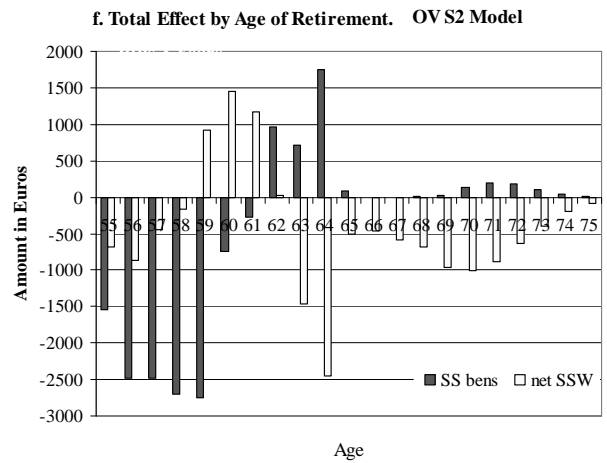
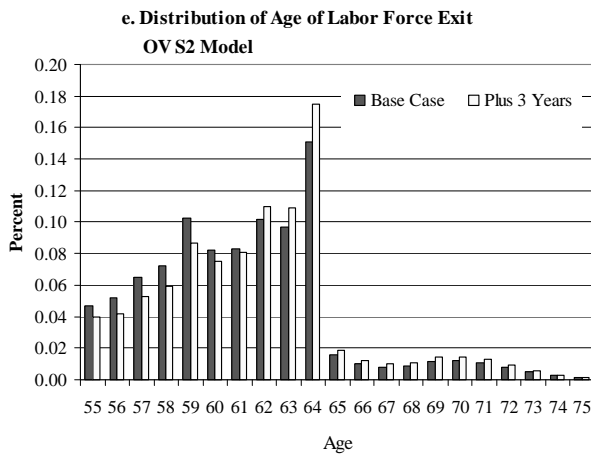
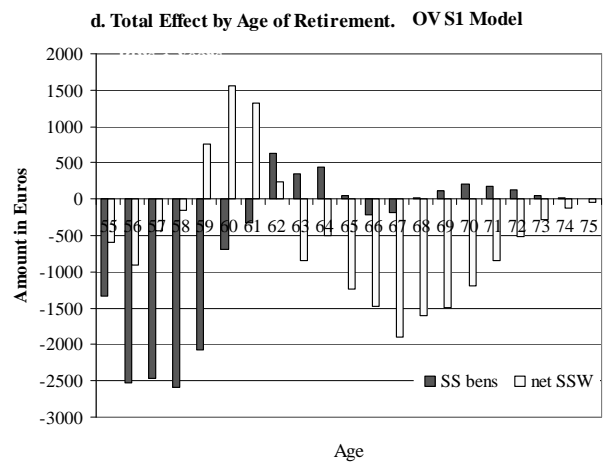
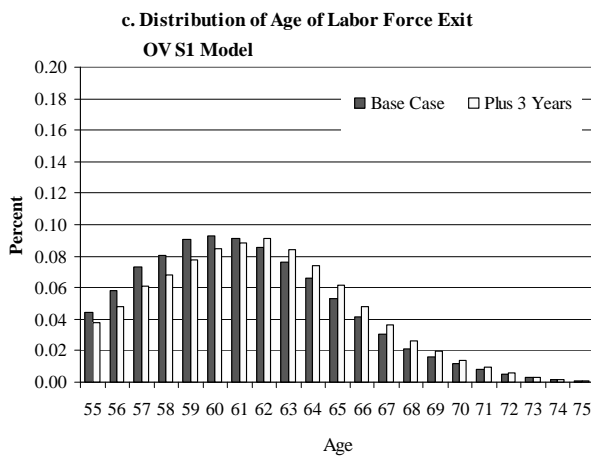
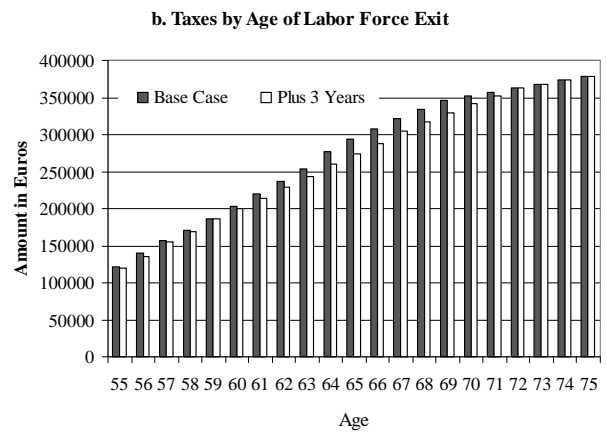
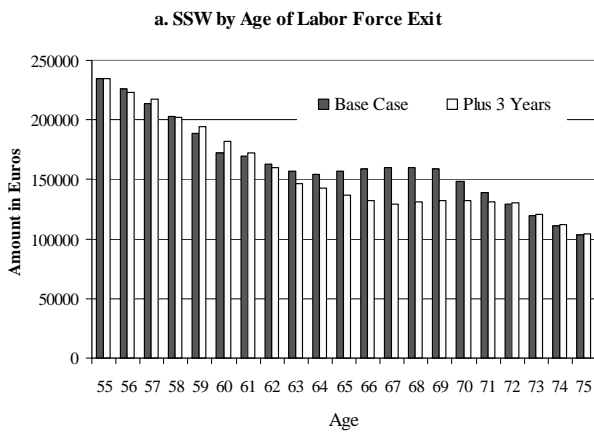


Figure 3. Results for the Actuarial Adjustment Reform.

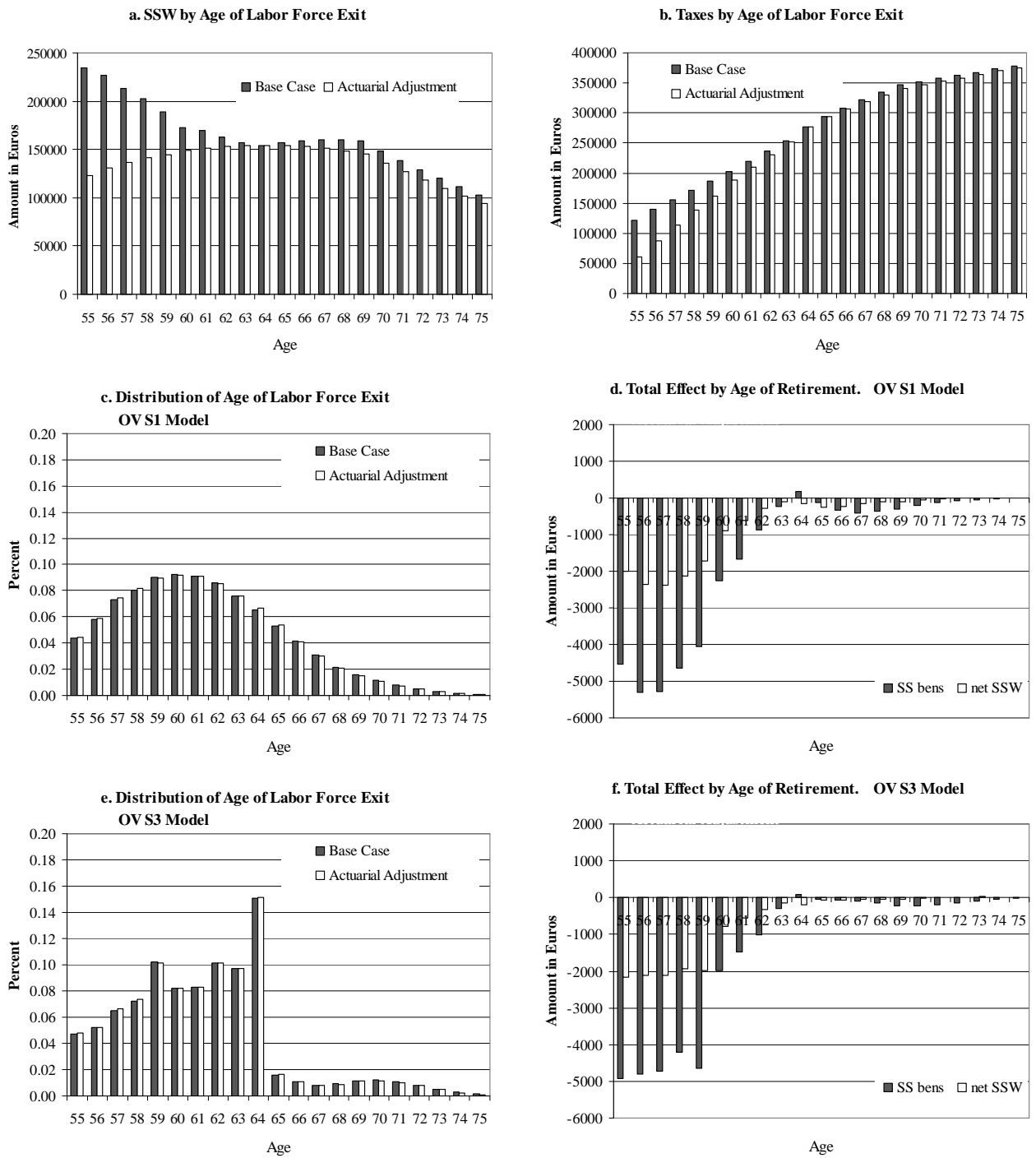


Figure 4. Results for the Common Reform.

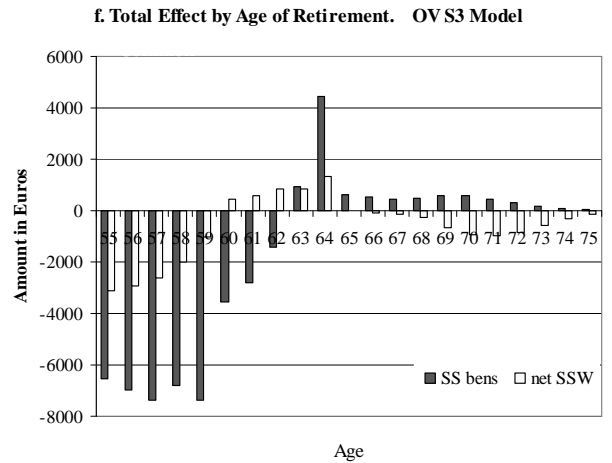
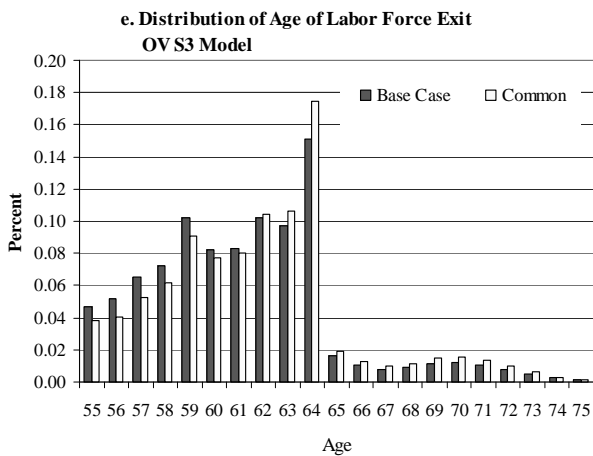
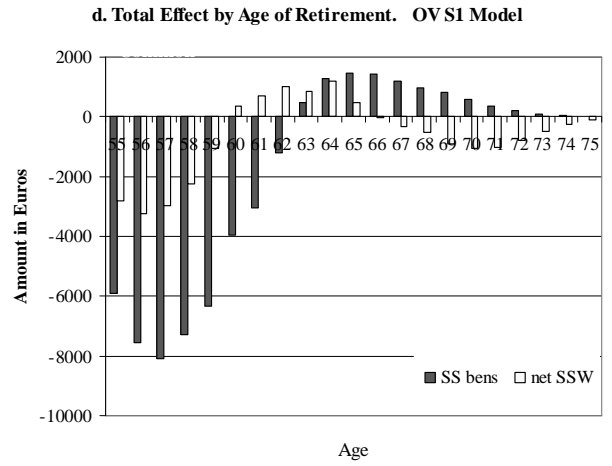
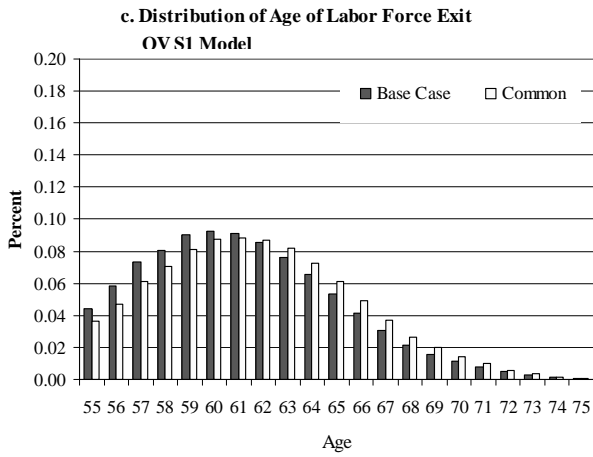


Figure 5. Fiscal Implications of Reform as a Percent of GDP.

