

Theoretical Old Age Tax (OASI)

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There is nothing mysterious to calculating what Old Age Social Security tax (OASI) that is required to pay full benefits. Social Security's Old Age benefit formula targets the benefit at 42% of life time indexed average wages. Therefore, if you have average workers earning the average wage to support one average retiree, then you can calculate the tax rate needed by simply dividing the targeted benefit rate by the worker to retiree ratio. This yields the tax burden equally spread among workers to take care of one retiree.

In the strict sense, the tax rate is actually lower than this simply dividing the targeted benefit by the worker to retire ratio. The difference between wage growth and inflation allows for some amount of growth to take place during a cohorts retirement years. Taking into account the effect of wage growth and inflation during a cohort's retirement effectively reduces the simplified method by about 15%. Had COLA been based not on inflation, but rather on the change in the US Average Wage Growth, then the simplified method would be valid. The table values listed have been adjusted by 15%..

Age 65 is the full retirement age for Old Age Benefits. Retiring earlier reduces the benefit by 5/9ths of one percent for each month you retiree early. In 2020, the age for full retirement is 66 and by 2030 it is age 67. This does not change the fact one can retire at age 62, but does reduce the initial Old Age Benefit instead by 33.3% instead of 20%.

The average age of retirement is 62 years and four months. Therefore in 2000, the theoretical required tax rate was 9.9% with an actual tax of 10.6%.

The table below shows the Old Age tax in each of the years analyzed. Previously a calculation was done to show the number of [workers to retirees](#) for each of these years. Dividing the Old Age tax by the worker to retiree ratio yields the tax rate needed to pay full benefits in that year. Values in red indicate the Old Age Tax based on that retirement age was insufficient to pay benefits for the long term.

The Table 1 shows the tax rate required for a pay-as-go SS program by year of operation. Green numbers identify the actual SS-OASI tax rates in effect. Red numbers indicate the SS-OASI tax was insufficient to cover SS-OASI benefits. Table 1 clearly indicates between 1937 and 1980, the tax rate was insufficient to pay benefits. The question begs to be answered, "How did Social Security pay promised benefits during these years and produce a surplus?" The answer is relatively simple. No benefits were paid prior to 1940 which produced three years of surpluses. Beginning in 1940 benefits were paid to a select few and not all those who were of age 65and

over. Starting in the 1950's different categories of workers were brought under the umbrella of Social Security. Again this inflated the worker to retiree ratio only until the youngest new worker reached retirement age. It produced a short term revenue boost in exchange for a long term liability.

The table's purpose is to show that had all workers been brought under Social Security's umbrella at once, the tax rate was too low to support benefits. By 1983, Social Security redeemed all its Special US Treasury Notes after running negative cash flows since 1971 and had to borrow \$11 Billion from Medicare's and SS-DI's Trust Funds. Taxes were raised along with the base in order to create a fund large enough to pay Baby Boomer benefits, but not those who would follow.

In summary, looking at the actual tax rate applied to wages and the theoretical tax rate needed for a pay go system and not an actuarial correct system, the tax rate remained too low until 1980. The tax rate will once again be too low to sustain benefits some time around 2016.

For those who want to keep a pay-as-you-go Old Age Social Security program, the tax rates in the future are pretty well defined. For those wanting to understand why we have a problem with Social Security, all you need to do is to compare the tax rate paid with the theoretical tax rate that was required. If the tax rate paid was less than required, then not enough funds were collected. If not enough funds are collected in each year, then there are insufficient funds deposited and compound interest on less than required funds means that the trust fund balance in any given year is insufficient to cover promised scheduled benefits.

There are several uses for this chart. One could use this chart to determine the retirement age that can be supported in any given year. For example in the year 2030, the payroll tax could support a full retirement age of 71. By 2080 the retirement age would have to rise to 73 or 74.

Raising the retirement age affects workers in multiple ways. To read about the affects of increasing the retirement age read http://www.justsayno.50megs.com/pdf/retirement_age.pdf

