GATEWAY TO
**GLOBAL
AGING
DATA**

g2aging.org

Gateway Policy Explorer: Retirement Series

United States

Public Own Old-Age Benefit Plan Details

1992-2022

Authors
David Knapp
Ah Reum Lee

Contributors
Jinkook Lee
Maciej Lis[†]
Drystan Phillips
Kanghong Shao

Version: 2.1 (August 2023)

Preface

This document is intended for researchers who want to understand the evolution of policy or the policy in place at a particular point in time. This document is not intended for financial advice or to aid in decision-making. The authors have made significant effort to identify and collect historical information pertaining to these policies, to accurately represent these policies, and to communicate how policies may interact to determine legal requirements, eligibility for benefits, and/or benefits levels. The policies presented in this document focus on rules applicable to most individuals aged 50 and older from 1992. Many systems include special policies or alternative eligibility rules for specific groups. We encourage all users to complete their own review of literature in this area depending on the research questions they have in mind.

If you have feedback or questions or identify an error, please contact policy@g2aging.org.

Background — *Gateway Policy Explorer: Retirement Series*

The *Gateway Policy Explorer* (http://g2aging.org/policy-explorer) is part of the Gateway to Global Aging Data (http://g2aging.org) project. The *Retirement Series* captures historical policy that affects the birth cohorts of respondents in the surveys covered by the Gateway. It was motivated by the rapid evolution of policies affecting older people across the world. As the Health and Retirement Study (HRS) began in 1992 and many of the international network of studies (HRS-INS) cover more than a decade, understanding the policies in place at the time of the survey has become more demanding for researchers.

Why are we tracking past policy? Individuals make choices based on current policies and the outcomes we see today may reflect responses to past policies. When interpreting the survey responses of individuals, an understanding of the policy environment under which those individuals operate is critical. The collection of contextual information in the *Gateway Policy Explorer* aims to support researchers who want to understand or use policy changes in their research and provide context for longitudinal or cross-country differences. Over the period 2023–2026 the *Gateway Policy Explorer* will be expanded to include information on retirement, long-term care, education, and other policies affecting the life cycle.

The key dimensions to the *Gateway Policy Explorer: Retirement Series* are country and time. We prioritize data collection for each country based on its first interview wave and are continuing to expand our data collection back in time to 1992, the earliest survey date in the HRS-INS.

A separate document, like this one, is developed for each country and each broad category of policies covered in the *Gateway Policy Explorer: Retirement Series*.

Author and Contributor Disclaimers

† The opinions expressed here are those of authors and do not necessarily reflect the views of the OECD or of its member countries.

United States
Own Old-Age Benefits
Plan details 1992-2022 * †

A worker's own old-age pension benefits are provided by the Old-Age, Survivors, and Disability Insurance (OASDI) system, also referred to as "Social Security." This system is administered by the US Social Security Administration. OASDI provides insured US workers and their families with benefits after meeting age and contribution requirements. The old-age benefit is based on a worker's best 35 contribution years, pays a benefit in proportion to lifetime earnings that is higher for low income earners (i.e., it is progressive benefit), and permanently increases benefits for delaying their start past the earliest eligibility age, which is age 62. The design of OASDI has been stable since 1983, with a minor reform in 2000 that restructured benefit payments if a beneficiary continues to work.

Key Dates
First law: 1935
Major changes since 1992: None

Contents

---

*   If you have questions or suggestions, please contact policy@g2aging.org.
†   Detailed information and definitions are provided in tables, formulas and a glossary at the end of this document. To facilitate switching back and forth, this document is designed with hyperlinks. Most PDF readers have shortcuts that permit a reader to return to the previous location after selecting a hyperlink. In Adobe Acrobat on a PC: "Alt" + "←"; In Adobe Acrobat on a MAC: "command" + "←"; In Preview on a MAC: "command" + "[".

Chapter 1: Policy enacted 1992-2022

Overview

Old-age pension benefits are provided by the Old-Age, Survivors, and Disability Insurance (OASDI) system, also referred to as "Social Security." This system is administered by the US Social Security Administration. OASDI provides insured US workers and their families with benefits after meeting age and contribution requirements. The old-age benefit is based on a worker's best 35 contribution years and pays a benefit in proportion to lifetime earnings that is higher for low income earners (i.e., it is progressive benefit). The system provides options to claim own old-age benefits as early as 62 with a permanently reduced monthly benefit or delay starting benefits until age 70 and receive a permanently higher monthly benefit. Benefits are reduced if a worker starts benefits before certain ages but continues to work.

OASDI was established in 1935 and underwent a number of major reforms before 1992. Notably, the 1983 reforms created future adjustments to the statutory retirement age that affect workers reaching the eligibility age during the policy periods covered here. Dewitt (2010) provides a concise history of U.S. Social Security from 1935-2009. While OASDI covered most workers in the United States, certain workers are exempt including students and some state and local government workers who have their own separate pension systems.

This document is focused on a worker's own OASDI eligibility and benefit rules. Additional benefits for spouses and survivors are covered in separate documents. Currently, we do not cover additional benefits for other family members (e.g., children, parents) or for disability.

There have been limited reforms to OASDI since 1992 and the reforms that have occured have been relatively minor. Reforms during this period affecting a worker's own old-age benefits include:
- The "Senior Citizens' Freedom to Work Act of 2000" (Public Law 106-182), passed in April 2000 and effective from December 31, 1999, eliminated the earnings test for workers after their statutory retirement age.

Contributions

- **Employee contribution rate**
  5.3% of earned income up to the maximum earnings contribution level - See Table 1 for values by year
- **Employer contribution rate**
  5.3% of earned income up to the maximum earnings contribution level - See Table 1 for values by year
- **Self-employed contribution rate**
  10.6% of earned income up to the maximum earnings contribution level - See Table 1 for values by year

Eligibility

Age requirements to start benefits without penalty
- **Statutory retirement age (SRA)**
  Age 65 for persons born before 1938 and gradually increasing until age 67 for persons born after 1959
- **Does SRA vary by birth year?** Answer: Yes
- **Does SRA vary by sex?** Answer: No
- **Details by birth year**: See Table 3 for SRA by birth year

Contribution requirements to be eligible to receive benefit
There is only one eligibility track for unreduced benefits and it depends on age and contribution periods. A contribution period is defined as a "quarter of coverage" which can be achieved after earning above a threshold amount in a calendar year in a position that contributes to OASDI. Quarters of coverage do not correspond to calendar time, but only four quarters of coverage can be credited per year. Earnings required for a quarter of coverage varies by year —values by year are available in Table 2.

Main Eligibility Track
- Age requirement: Age 65 for persons born before 1938 and gradually increasing until age 67 for persons born after 1959 —See Table 3 for SRA by birth year
- Contribution requirement: 40 quarters of coverage

Alternative eligibility requirements that permit starting benefits early, but with a penalty
  - **Can an individual start benefits before SRA?** Answer: Yes
  - **Earliest eligibility**
  Age 62
  - **See the subsection *Adjustments for starting benefits before SRA (Early claiming or retirement)* within the *Benefits* section for details on the penalty applied for claiming at earliest eligibility.**

Benefits

To receive a benefit, does an individual have to claim it? Answer: Yes

Payment type
  - **Payment options (i.e., Annuity, cash balance, or lump sum):** Annuitable

Factors effecting computation of benefit entitlement
  - **Does the formula for computing benefit entitlement differ by birth year?** Answer: Birth Year
  - **Is the formula for computing benefit entitlement progressive?** Answer: Yes
  - **Does the benefit entitlement depend on the individual's own contribution/work history?** Answer: Yes
  - **Does the benefit entitlement depend on national income?** Answer: No
  - **Does an individual receive credits for military service (above any credits normally received for employment)?** Answer: Yes

    From 1957 through 2001, if an individual had military service earnings for active duty (including active duty for training), they may have extra Social Security wage credits added to their earnings record.
    – From 1957 through 1977: Credited with $300 in additional earnings for each calendar quarter in which an individual received active duty basic pay.
    – From 1978 through 2001: For every $300 in active duty basic pay, credited with an additional $100 in earnings up to a maximum of $1,200 a year
    Source: §429 (LLI, 2022)

  - **Does an individual receive credits for number of children?** Answer: No
  - **Does an individual receive credits for unemployment?** Answer: No
  - **Are future benefit entitlements adjusted for cost of living?** Answer: Yes
  - **If so, what measure is used for adjustment?**
  CPI (specifically Consumer Price Index for Urban Wage Earners and Clerical Workers, CPI-W)

Benefit formula for claiming at SRA
  Persons eligibile to start benefits at an unreduced rate have their benefit computed based on their average indexed earnings. Earnings before a person reaches age 60 are indexed based on average wages when a person was age 60. Earnings after age 60 are not indexed. Average indexed earnings are converted to monthly values and then a progressive formula is applied on these earnings based on threshold values where 90% of earnings are paid below the first threshold, 32% of earnings are paid between the first and second threshold, and then 15% of earnings are paid above the threshold. Annual threshold values (known as "bend points") are associated with a person's birth year. The adjusted value of average indexed monthly earnings is known as the "primary insurance amount" and is a key value in determining Social Security benefit entitlements. The primary insurance amount is the benefit paid at the SRA. See Formula 1 for how to compute the primary insurance amount and Formula 2 for how the primary insurance amount is converted into the monthly benefit after applying to start benefits (i.e., claiming).

  Additional reference tables:
    - Maximum earnings covered by Social Security by year: Table 1
    - Average wages by year: Table 4
    - Annual threshold values by birth year: Table 5
    - Cost-of-living adjustments by year: Table 6

Adjustments for starting benefits before SRA (Early claiming or retirement)
  - **Are benefits reduced for starting benefits before SRA?** Answer: Yes
  - **Is so, what is the earliest eligibility?**
  Age 62

- **Adjustment formula**
An individual eligible to collect old-age benefits before SRA has their benefit permanently reduced by 6.7% [20/3] per year (0.56% [20/36] per month) for the first 3 years prior to their SRA and 5.0% per year (0.42% [5/12] per month) for any additional years before SRA. See Formula 2 for additional detail on how this reduction is applied based on a person's SRA.

Adjustments for starting benefits after SRA (Delayed claiming or retirement)
- **Are benefits increased for starting benefits after SRA?** Answer: Yes
- **If so, what is the latest claiming age where benefits are adjusted?** Answer: Age 70
- **Adjustment formula**
If an individual eligible to collect old-age benefits delays starting to receive those benefits until after their SRA, then their benefit is permanently increased by 1% to 8% per year depending on their birth year until they reach age 70. See Formula 2 for additional detail on how this increase is applied based on a person's SRA and birth year and Table 7 for the annual and monthly adjustment factors by birth year.

Adjustments for starting benefits and continuing to work (Earnings Test)
- **Are benefits reduced or eliminated while working?** Answer: Yes
- **Adjustment formula**
If a worker is eligible for and starts receiving their old-age benefits, then Social Security withholds benefits if the earnings exceed a threshold level. Prior to the 2000 reform, this applied to workers under age 70 and since the reform it has only applied to workers before their SRA. The reduction applies to all benefits paid based on a worker's earnings record, which means spousal benefits may also be reduced. How much the benefit is reduced depends on whether a beneficiary is entitled to old-age benefits based only on their earnings record or are also entitled to benefits based on another beneficiary's earnings record. See the following formulas for computational details based on circumstance:
    – Entitled to old-age benefits only on own earnings record: Formula 3
    – Entitled to old-age benefits and benefits from another person's earnings record (known as "dual entitlement"; examples include spousal and survivors benefits): Formula 4
Additionally, threshold values for the earnings test are available in Table 8 by year. Box 1 provides a worked example of how the earnings test is applied in the case of a person only entitled to their own benefit.

If a beneficiary is dually entitled and the beneficiary works, then reductions to their dependent benefits (e.g., spousal or survivor benefit) are applied first and reductions to their own benefits are applied second (Formula 4). See policy documents *United States: Old-Age Spousal Benefits Plan Details* and *United States: Old-Age Survivor Benefits Plan Details* for additional information on eligibility for these benefits and computational rules. See §1804 of the the Social Security Handbook (SSA, 2022) or Appendix A of CRS (2021) for additional information and examples.

- **If benefits are reduced while working, does it effect future benefits?** Answer: Yes
- **If so, how does claiming and continuing to work affect future benefits?**
Periods before a beneficiary's SRA where own old-age benefits were reduced or not paid due to work will result in increased future benefits by an adjustment to the reduction factor for early claiming. See Formula 5 for computational details. Box 1 provides a worked example of how the earnings test is applied and how withheld benefits impact future benefits.

Additional Benefit Adjustments
- **Adjustment 1**: Windfall Elimination Provision
- **Adjustment 1 details**: Benefits are reduced for individuals who work some of their careers in non-OASDI covered occupations. The provision is known as the Windfall Elimination Provision, and primarily effects workers who spent time in state and local government jobs, or were employed by the federal government before 1983. See Windfall Elimination Provision (SSA 2022) for details.

Tables and Formulas

Table 1: Maximum Covered Earnings

Year	Amount	Year	Amount
1937-50	$3,000	1995	$61,200
1951-54	3,600	1996	62,700
1955-58	4,200	1997	65,400
1959-65	4,800	1998	68,400
1966-67	6,600	1999	72,600
1968-71	7,800	2000	76,200
1972	9,000	2001	80,400
1973	10,800	2002	84,900
1974	13,200	2003	87,000
1975	14,100	2004	87,900
1976	15,300	2005	90,000
1977	16,500	2006	94,200
1978	17,700	2007	97,500
1979	22,900	2008	102,000
1980	25,900	2009	106,800
1981	29,700	2010	106,800
1982	32,400	2011	106,800
1983	35,700	2012	110,100
1984	37,800	2013	113,700
1985	39,600	2014	117,000
1986	42,000	2015	118,500
1987	43,800	2016	118,500
1988	45,000	2017	127,200
1989	48,000	2018	128,400
1990	51,300	2019	132,900
1991	53,400	2020	137,700
1992	55,500	2021	142,800
1993	57,600	2022	147,000
1994	60,600		

Source: Contribution And Benefit Base, SSA (2022)

Table 2: Contributions Required to Receive a Quarter of Coverage

Year	Required Contributions	Year	Required Contributions
1978	$250	2001	$830
1979	260	2002	870
1980	290	2003	890
1981	310	2004	900
1982	340	2005	920
1983	370	2006	970
1984	390	2007	1,000
1985	410	2008	1,050
1986	440	2009	1,090
1987	460	2010	1,120
1988	470	2011	1,120
1989	500	2012	1,130
1990	520	2013	1,160
1991	540	2014	1,200
1992	570	2015	1,220
1993	590	2016	1,260
1994	620	2017	1,300
1995	630	2018	1,320
1996	640	2019	1,360
1997	670	2020	1,410
1998	700	2021	1,470
1999	740	2022	1,510
2000	780		

Source: Defined in §413 (LII, 2022); Annual values reported in SSA (2022)
Notes: A maximum of 4 quarters of coverage can be credited per calendar year. "Quarters of coverage" do not need to correspond to calendar time within a year —e.g., if a person earned $8,000 in January 2022, then they would receive 4 quarters of coverage for 2022.

Table 3: Statutory Retirement Age for Own Old-Age Benefit by Birth Year

Birth year	Statutory Retirement Age
1937 or earlier	65 years
1938	65 years and 2 months
1939	65 years and 4 months
1940	65 years and 6 months
1941	65 years and 8 months
1942	65 years and 10 months
1943-1954	66 years
1955	66 years and 2 months
1956	66 years and 4 months
1957	66 years and 6 months
1958	66 years and 8 months
1959	66 years and 10 months
1960 and later	67 years

Source: Defined in §416(l) (LLI, 2022)

Formula 1: Primary Insurance Amount

$$PIA_{i,t} = \begin{cases} 0.9 \times AIME_{i,t} & \text{if } AIME_{i,t} < T_i^{\text{lower}} \\[2ex] 0.9 \times T_i^{\text{lower}} + 0.32 \times \left(AIME_{i,t} - T_i^{\text{lower}} \right) & \text{if } T_i^{\text{lower}} \leq AIME_{i,t} < T_i^{\text{upper}} \\[2ex] 0.9 \times T_i^{\text{lower}} + 0.32 \times T_i^{\text{upper}} + 0.15 \times \left(AIME_{i,t} - T_i^{\text{upper}} \right) & \text{if } T_i^{\text{upper}} \leq AIME_{i,t} \end{cases}$$

- $PIA_{i,t}$ = Individual i's primary insurance amount at time t (monthly value)

- $AIME_{i,t}$ = Individual i's average indexed monthly earnings at time t based on their best "computational years" of earning (e.g., 35 years for old-age and spousal benefits; $\leq$ 35 for survivors benefits):

$$AIME_{i,t} = \frac{1}{12 \times CY_i} \sum_{s=\text{Best of } CY_i \text{ years}} \left(\left(\frac{AWI_{t_i(\text{eligibility age})-2}}{min\{AWI_s, AWI_{t_i(\text{eligibility age})-2}\}} \right) \times min\{EARN_{i,s}, EARN_s^{MAX}\} \right)$$

  – CY_i = Individual i's computational years which are equal to the smaller of 35 or the number of years elapsed between the age of death or disability and age 27
  – $AWI_{t_i(\text{eligibility age})-2}$ = Average wage index two years before individual i reaches "eligibility age", defined as age 62 or i's death, whichever comes first —See Table 4 for values by year
  – $min\{AWI_s, AWI_{t_i(\text{eligibility age})-2}\}$ = Average wage index in year s, where $s < t$, or two years before i reaches eligibility age, whichever is lower
  – $EARN_{i,s}$ = Indvidual i's annual earnings in Social Security covered work (most formal employment) is year s
  – $EARN_s^{MAX}$ = Maximum annual covered earnings in year s —See Table 1 for maximum covered earnings by year

- $T_i^{\text{lower}}, T_i^{\text{upper}}$ = Lower and upper threshold values for benefit computation based on the year i reaches "eligibility age" —See Table 5 by birth year

Source: Defined in §415 (LLI, 2022); Also see §700, 703-704 of the Social Security Handbook (SSA, 2022)
Notes: Average indexed monthly earnings are indexed to two years before a person becomes first eligible for any benefits (i.e., age 62 for old-age benefits). Formula only applies to persons living past age 27. Additional adjustments may apply before this age.

Formula 2: Own Old-Age Benefit

$$B_{OA,i,t,t_c} = PIA_{i,t} \times \left(\prod_{s=t_i(\text{age 62})}^{t-1} (1 + COLA_s) \right) \times ADJ_{i,t}$$

- B_{OA,i,t,t_c} = Individual i's monthly own old-age Social Security benefit at time t if claiming at time $t_c \leq t$

- $PIA_{i,t}$ = Individual i's primary insurance amount at time t —See Formula 1 for computational details

- $COLA_s$ = Cost-of-living adjustment at time $s < t$ —See Table 6 for values by year

- $t_i(\text{age 62})$ = Year individual i reaches age 62

- $ADJ_{i,t}$ = The adjustment factor for starting benefits before or after individual i's statutory retirement age (SRA) based on number of months to SRA.

$$ADJ_{i,t} = \begin{cases} 0.8 - \left(\frac{(36-m_i)}{240} \right) & \text{if } m_i < -36 \\[2em] 1 - \left(\frac{m_i}{180} \right) & \text{if } -36 \leq m_i < 0 \\[2em] 1 & \text{if } m_i = 0 \\[2em] 1 + (DRC_i \times m_i) & \text{if } 0 < m_i < m_i^{MAX} \\[2em] 1 + (DRC_i \times m_i^{MAX}) & \text{if } m_i^{MAX} \leq m_i \end{cases}$$

- m_i = Number of months between the age i starts benefits and i's SRA —See Table 3 for SRA by birth year (negative values indicate starting benefits before SRA)
- DRC_i = Monthly delayed retirement credit based on i's birth year —See Table 7 for values by birth year
- m_i^{MAX} = Number of months between age 70 and i's SRA

Source: Defined in §413 (LLI, 2022)

Notes

- If an individual starts benefits SRA and continues to work, $ADJ_{i,t}$ may change after reaching SRA based on the number of periods benefits are partially or fully reduced due to the earnings test —See Formula 5 for details of how this factor is adjusted
- The actual benefit formula is a more complicated then described above —For each year after age 62, the primary insurance amount is adjusted by the COLA and rounded down to the nearest one-tenth of a dollar until reaching the person's current age at which point it is rounded down to the nearest dollar. The final benefit after adjustments is always rounded down to the nearest dollar.

Table 4: National Average Wage Index

Year	Average Wages	Year	Average Wages
1951	$2,799.16	1986	$17,321.82
1952	2,973.32	1987	18,426.51
1953	3,139.44	1988	19,334.04
1954	3,155.64	1989	20,099.55
1955	3,301.44	1990	21,027.98
1956	3,532.36	1991	21,811.60
1957	3,641.72	1992	22,935.42
1958	3,673.80	1993	23,132.67
1959	3,855.80	1994	23,753.53
1960	4,007.12	1995	24,705.66
1961	4,086.76	1996	25,913.90
1962	4,291.40	1997	27,426.00
1963	4,396.64	1998	28,861.44
1964	4,576.32	1999	30,469.84
1965	4,658.72	2000	32,154.82
1966	4,938.36	2001	32,921.92
1967	5,213.44	2002	33,252.09
1968	5,571.76	2003	34,064.95
1969	5,893.76	2004	35,648.55
1970	6,186.24	2005	36,952.94
1971	6,497.08	2006	38,651.41
1972	7,133.80	2007	40,405.48
1973	7,580.16	2008	41,334.97
1974	8,030.76	2009	40,711.61
1975	8,630.92	2010	41,673.83
1976	9,226.48	2011	42,979.61
1977	9,779.44	2012	44,321.67
1978	10,556.03	2013	44,888.16
1979	11,479.46	2014	46,481.52
1980	12,513.46	2015	48,098.63
1981	13,773.10	2016	48,642.15
1982	14,531.34	2017	50,321.89
1983	15,239.24	2018	52,145.80
1984	16,135.07	2019	54,099.99
1985	16,822.51	2020	55,628.60

Source: National Average Wage Index, SSA (2022)

Table 5: Thresholds for Computation of Primary Insurance Amount by Year

Effective Year	Birth Year [1]	Lower Threshold	Upper Threshold
1979	1917	$180	$1,085
1980	1918	194	1,171
1981	1919	211	1,274
1982	1920	230	1,388
1983	1921	254	1,528
1984	1922	267	1,612
1985	1923	280	1,691
1986	1924	297	1,790
1987	1925	310	1,866
1988	1926	319	1,922
1989	1927	339	2,044
1990	1928	356	2,145
1991	1929	370	2,230
1992	1930	387	2,333
1993	1931	401	2,420
1994	1932	422	2,545
1995	1933	426	2,567
1996	1934	437	2,635
1997	1935	455	2,741
1998	1936	477	2,875
1999	1937	505	3,043
2000	1938	531	3,202
2001	1939	561	3,381
2002	1940	592	3,567
2003	1941	606	3,653
2004	1942	612	3,689
2005	1943	627	3,779
2006	1944	656	3,955
2007	1945	680	4,100
2008	1946	711	4,288
2009	1947	744	4,483
2010	1948	761	4,586
2011	1949	749	4,517
2012	1950	767	4,624
2013	1951	791	4,768
2014	1952	816	4,917
2015	1953	826	4,980
2016	1954	856	5,157
2017	1955	885	5,336
2018	1956	895	5,397
2019	1957	926	5,583
2020	1958	960	5,785
2021	1959	996	6,002
2022	1960	1,024	6,172

Notes:

([1]) For old-age benefits, the effective year corresponds to the year a person reaches age 62

Table 6: Cost-of-Living Adjustment (COLA) by Year

Year	COLA	Year	COLA
1992	3.0 %	2007	2.3 %
1993	2.6	2008	5.8
1994	2.8	2009	0.0
1995	2.6	2010	0.0
1996	2.9	2011	3.6
1997	2.1	2012	1.7
1998	1.3	2013	1.5
1999	2.5	2014	1.7
2000	3.5	2015	0.0
2001	2.6	2016	0.3
2002	1.4	2017	2.0
2003	2.1	2018	2.8
2004	2.7	2019	1.6
2005	4.1	2020	1.3
2006	3.3	2021	5.9

Source: Cost-Of-Living Adjustment Summary, SSA (2022)

Notes: Cost-of-living adjustments in year t are based on the change in the 3rd quarter consumer price index (CPI) for urban wage earners and clerical workers between year t and year $t-1$. This change is rounded to the nearest tenth of a percent. For example, the third quarters CPI in 2021 and 2020 respectively were 268.421 and 253.412. Consequently, the 2021 cost of living adjustment was $\frac{268.421}{253.412} - 1 = 0.05923$ or 5.9% after rounding. See the Social Security Actuary's website for additional information: https://www.ssa.gov/oact/STATS/avgcpi.html. In cases where the third quarter CPI declines relative to the previous year, the adjustment is based on the last year CPI was adjusted. For example, the CPI in 2009 and 2010 was below the CPI in 2008. The COLA for 2011 was computed based on the ratio of the 2011 CPI to the 2008 CPI.

Table 7: Delayed Retirement Credit by Birth Year

Birth Year	Annual Rate	Monthly Rate
Before 1917	1.0 %	0.08 % (2/2400)
1917 - 1924	3.0	0.25 (6/2400)
1925 - 1926	3.5	0.29 (7/2400)
1927 - 1928	4.0	0.33 (8/2400)
1929 - 1930	4.5	0.38 (9/2400)
1931 - 1932	5.0	0.42 (10/2400)
1933 - 1934	5.5	0.46 (11/2400)
1935 - 1936	6.0	0.50 (12/2400)
1937 - 1938	6.5	0.54 (13/2400)
1939 - 1940	7.0	0.58 (14/2400)
1941 - 1942	7.5	0.63 (15/2400)
1943 and later	8.0	0.67 (16/2400)

Source: §402(w)(6) (LLI, 2022)

Note: The monthly rate as a fraction is used when computed benefit adjustments.

Formula 3: Reduction in Own Old-Age Benefits If Beneficiary Continues to Work

$$B_{OA(work),i,t,t_c} = B_{OA,i,t,t_c} - min\{B_{OA,i,t,t_c}^{\text{SHARE(total paid)}} \times RED_{i,t}^{\text{WORK}}, B_{OA,i,t,t_c}\}$$

- $B_{OA(work),i,t,t_c}$ = Individual i's monthly own old-age Social Security benefit at time t if claiming at time $t_c \leq t$ and continuing to work

- $B_{OA,i,t,t_c}^{\text{SHARE(total paid)}}$ = Individual i's share of the total Social Security benefits paid from i's earnings records, which may include benefits paid to other dependents such as a spouse, child, or parents —Examples:
    - If i is the only beneficiary based on their work history, this is 100% (e.g., single person or spouse had sufficient earnings as to not qualify for the survivor benefit)
    - In cases where the only other member of the household is a spouse eligible for the spousal benefit, it would be $\frac{B_{OA,i,t,t_c}}{(B_{OA,i,t,t_c} + B_{SP,j,i,t,t_c(j)})}$ where the second term in the denominator corresponds to the supplemental amount paid to spouse j based on i's earnings history at time t and consider j's claiming date for the spousal benefit ($t_c(j)$) —See the policy document *United States: Old-Age Spousal Benefits Plan Details* for additional information on how to compute this value

- B_{OA,i,t,t_c} = Individual i's monthly own old-age Social Security benefit at time t if claiming at time $t_c \leq t$ and not working —See Formula 2 for computational details

- $RED_{i,t}^{\text{WORK}}$ = Individual i's average monthly reduction in old-age benefits while working

$$RED_{i,t}^{\text{WORK}} = \begin{cases} 0 & \text{if } EARN_{i,t} \leq T_t^{\text{A}} \text{ and satisfy } Condition\ Set\ A \\[2mm] \frac{1}{12} \times \frac{1}{2} \times (EARN_{i,t} - T_t^{\text{A}}) & \text{if } T_t^{\text{A}} < EARN_{i,t} \text{ and satisfy } Condition\ Set\ A \\[2mm] 0 & \text{if } EARN_{i,t} \leq T_t^{\text{B}} \text{ and satisfy } Condition\ Set\ B \\[2mm] \frac{1}{12} \times \frac{1}{3} \times (EARN_{i,t} - T_t^{\text{B}}) & \text{if } T_t^{\text{B}} < EARN_{i,t} \text{ and satisfy } Condition\ Set\ B \\[2mm] 0 & \text{otherwise} \end{cases}$$

   - $EARN_{i,t}$ = Individual i's expected or realized annual earnings in year t
   - $T_t^{\text{A}}, T_t^{\text{B}}$ = Annual earnings threshold for persons satisfying condition sets A and B, respectively —See Table 8 for threshold values
   - Condition Set A
       * Before 2000 reform: Under age 65
       * Since 2000 reform: Years prior to year i reaches SRA
   - Condition Set B
       * Before 2000 reform: Age 65-69
       * Since 2000 reform: Year i reaches SRA

Source: Congressional Research Service (2021) provides worked examples and additional details.
Notes: Future own old-age benefits are adjusted in the future for periods where they were reduced because the beneficiary worked. See Formula 5 for details on this adjustment.

Formula 4: Reduction in Own Old-Age Benefits If Beneficiary Continues to Work and is Dually Entitled

$$B_{OA(\text{works and dually entitled}),i,t,t_c} = \begin{cases} B_{OA,i,t,t_c} & \text{if } RED_{i,t}^{\text{WORK}} < B_{DEP,i,j,t,t_{c(DEP)}} \\ B_{OA,i,t,t_c} + B_{DEP,i,j,t,t_{c(DEP)}} & \text{if } B_{DEP,i,j,t,t_{c(DEP)}} < RED_{i,t}^{\text{WORK}} \\ \quad - RED_{i,t}^{\text{WORK}} & \text{and } 0 < B_{OA,i,t,t_c} + B_{DEP,i,j,t,t_{c(DEP)}} - RED_{i,t}^{\text{WORK}} \\ 0 & \text{if } B_{OA,i,t,t_c} + B_{DEP,i,j,t,t_{c(DEP)}} - RED_{i,t}^{\text{WORK}} \leq 0 \end{cases}$$

- $B_{OA(\text{works and dually entitled}),i,t,t_c}$ = Individual i's monthly own old-age Social Security benefit at time t if claiming at time $t_c \leq t$ if i is also entitled to a benefit based on another person's Social Security earnings record (known as "dually entitled")

- B_{OA,i,t,t_c} = Individual i's monthly own old-age Social Security benefit at time t if claiming at time $t_c \leq t$ and not working —See Formula 2 for computational details

- $RED_{i,t}^{\text{WORK}}$ = Individual i's average monthly reduction in old-age benefits while working

$$RED_{i,t}^{\text{WORK}} = \begin{cases} 0 & \text{if } EARN_{i,t} \leq T_t^{\text{A}} \text{ and satisfy } \textit{Condition Set A} \\ \frac{1}{12} \times \frac{1}{2} \times (EARN_{i,t} - T_t^{\text{A}}) & \text{if } T_t^{\text{A}} < EARN_{i,t} \text{ and satisfy } \textit{Condition Set A} \\ 0 & \text{if } EARN_{i,t} \leq T_t^{\text{B}} \text{ and satisfy } \textit{Condition Set B} \\ \frac{1}{12} \times \frac{1}{3} \times (EARN_{i,t} - T_t^{\text{B}}) & \text{if } T_t^{\text{B}} < EARN_{i,t} \text{ and satisfy } \textit{Condition Set B} \\ 0 & \text{otherwise} \end{cases}$$

  - $EARN_{i,t}$ = Individual i's expected or realized annual earnings in year t
  - $T_t^{\text{A}}, T_t^{\text{B}}$ = Annual earnings threshold for persons satisfying condition sets A and B, respectively —See Table 8 for threshold values
  - Condition Set A
    * Before 2000 reform: Under age 65
    * Since 2000 reform: Years prior to year i reaches SRA
  - Condition Set B
    * Before 2000 reform: Age 65-69
    * Since 2000 reform: Year i reaches SRA

- $B_{DEP,i,j,t,t_{c(DEP)}}$ = Individual i's monthly old-age dependent benefit (e.g., spousal, survivor, divorced spousal, divorced survivor benefits) based on their spouse or ex-spouse j's Social Security earnings record at time t if claiming at time $t_{c(DEP)} \leq t$ —Claiming date for dependent benefits ($t_{c(SU)}$) may differ from claiming date of own old-age benefits (See policy documents *United States: Old-Age Spousal Benefits Plan Details* and *United States: Old-Age Survivor Benefits Plan Details* for additional information)

Source: Congressional Research Service (2021) provides worked examples and additional details.
Notes: Future own old-age benefits are adjusted in the future for periods where they were reduced because the beneficiary worked. See Formula 5 for details on this adjustment.

Table 8: Annual Exempt Amounts Under the Retirement Earnings Test

Year	Lower Threshold	Upper Threshold	Year	Lower Threshold	Upper Threshold
1975	$2,520	$2,520	2000	$10,080	$17,000
1976	2,760	2,760	2001	10,680	25,000
1977	3,000	3,000	2002	11,280	30,000
1978	3,240	4,000	2003	11,520	30,720
1979	3,480	4,500	2004	11,640	31,080
1980	3,720	5,000	2005	12,000	31,800
1981	4,080	5,500	2006	12,480	33,240
1982	4,440	6,000	2007	12,960	34,440
1983	4,920	6,600	2008	13,560	36,120
1984	5,160	6,960	2009	14,160	37,680
1985	5,400	7,320	2010	14,160	37,680
1986	5,760	7,800	2011	14,160	37,680
1987	6,000	8,160	2012	14,640	38,880
1988	6,120	8,400	2013	15,120	40,080
1989	6,480	8,880	2014	15,480	41,400
1990	6,840	9,360	2015	15,720	41,880
1991	7,080	9,720	2016	15,720	41,880
1992	7,440	10,200	2017	16,920	44,880
1993	7,680	10,560	2018	17,040	45,360
1994	8,040	11,160	2019	17,640	46,920
1995	8,160	11,280	2020	18,240	48,600
1996	8,280	12,500	2021	18,960	50,520
1997	8,640	13,500	2022	19,560	51,960
1998	9,120	14,500			
1999	9,600	15,500			

Source: Exempt Amounts Under The Earnings Test and Exempt Amounts, 1975-1999, SSA (2022)

Notes: A maximum of 4 quarters of coverage can be credited per calendar year. "Quarters of coverage" do not need to correspond to calendar time within a year —e.g., if a person earned $8,000 in January 2022, then they would receive 4 quarters of coverage for 2022.

Box 1: Earnings Test Example

Bob was born in 1934 and he has a primary insurance amount of $1,250. Bob's statutory retirement age is 65, but he claims his benefit when he is first eligible at age 62 in 1996. As a result, Bob is entitled 80% of his primary insurance amount, or $1,000 in 1996. For illustrative simplicity, we ignore cost-of-living adjustments. Bob continues to work and earns the following:

Year	Amount in Excess of Threshold	Annual Reduction Amount
1996	$18,280	$10,000
1997	$18,640	$10,000
1998	$19,120	$10,000
1999	$24,500	$9,000

Since Bob's income exceeds the applicable thresholds from Table 8, his benefits are reduced, but not completely. He will have his benefits reduced $1 for every $2 of income over the threshold before age 65 and $1 for every $3 above the threshold from ages 65 to 69. Applying the rules in the earnings test formula (Formula102), we see the following:

Year	Annual Reduction Amount	Effective Benefit Reduced
1996	$10,000	$5,000
1997	$10,000	$5,000
1998	$10,000	$5,000
1999	$9,000	$3,000

Bob's benefit was $1,000 per month or $12,000 per year. If Bob stops working at the end of 1999, then Social Security would adjust his benefit in 2000 according to the formula for the adjustment of reduction factors (Formula 5). From 1996 to 1998, Bob would have had the equivalent of 5 months of benefits withheld (i.e., $5,000 from a total benefit of $12,000) and 3 months in 1999. Applying Formula 5:

$$
\begin{aligned}
ADJ_{i,t} =\ & 1 - \left(\left(1 - \frac{15}{36} \right) \times 0.2 \right) + \left(3 \times \frac{11}{2400} \right) \\
=\ & 1 - \left(\frac{21}{36} \times 0.2 \right) + 0.1375 \\
\approx\ & 1 - 0.1167 + 0.01375 \\
\approx\ & 0.897
\end{aligned}
$$

Applying this new adjustment factor to the formula for the old-age benefit (Formula 2) and assuming none of the additional years of work improved Bob's average indexed monthly earnings, we observe that his new permanent lifetime benefit in 2000 (before cost-of-living-adjustments) will be $0.897 \times \$1,250 = \$1,121$.

Source: Author's interpretation.

Formula 5: Adjustment to Reduction Factors

$$ADJ_{i,t} = 1 - \left(\left(1 - \frac{m_i^{\text{Withheld before SRA}}}{m_i^{\text{Claim to SRA}}} \right) \times RED_{i,t}^{\text{Early Claim}} \right) + \left(m_i^{\text{Withheld after SRA}} \times DRC_i \right)$$

- $ADJ_{i,t}$ = The adjustment factor used in determining old-age benefits (see Formula 2) with additional changes to reduction factors based on proportion of months that old-age benefits were fully or partially reduced due to continued work

- $m_i^{\text{Claim to SRA}}$ = Months between when individual i starts their old-age benefits and the month i reaches their SRA —See Table 3 for SRA by birth year (Set to zero if claim after SRA)

- $m_i^{\text{Withheld before SRA}}$ = Number of months own old-age benefits were withheld due to the earnings test before i's SRA —See Formula 3 for how the earnings test is applied for person's only receiving benefits based on their own earnings record and Formula 4 for how the earnings test is applied in cases where a beneficiary is entitled to benefits on their own and another person's earnings record (e.g., eligible to receive old-age spousal benefits)

- $RED_{i,t}^{\text{Early Claim}}$ = The reduction factor for starting benefits while the earnings test applies for individual i

$$RED_{i,t}^{\text{Early Claim}} = \begin{cases} \left(\frac{(m_i^{\text{Claim to SRA}} - 36)}{240} \right) & \text{if } m_i^{\text{Claim to SRA}} > 36 \\[2em] \left(\frac{m_i^{\text{Claim to SRA}}}{180} \right) & \text{if } 0 < m_i^{\text{Claim to SRA}} \leq 36 \\[2em] 0 & \text{if } m_i^{\text{Claim to SRA}} \leq 0 \end{cases}$$

- $m_i^{\text{Withheld after SRA}}$ = Number of months own old-age benefits were withheld due to the earnings test after i's SRA

- DRC_i = Monthly delayed retirement credit based on i's birth year —See Table 7 for values by birth year

Source: Congressional Research Service (2021) provides worked examples and additional details.
Notes: The adjustment to reduction factors is only applied to own old-age benefits. Reduction factors for spouse and survivor benefits are not adjusted for the earnings test.

Sources

This section records key sources consulted when we collected the institutional details reported in this document. Archived versions of these sources are available at the Gateway Policy Explorer website (http://g2aging.org/policy-explorer).

Congressional Research Service (2021). Social Security Retirement Earnings Test: How Earnings Affect Benefits. Report R41242. February 9, 2021. [Link]

DeWitt, Larry (2010), The Development of Social Security in America, Social Security Bulletin, Vol. 70, No. 3, 2010 [Link]

Legal Information Institute [LII] (2022). *Federal Old-Age, Survivors, and Disability Insurance Benefits*. Title 42, Chapter 7, Subchapter II, United States Code. Cornell, NY: Cornell Law School. [Link]

Social Security Administration [SSA] (2022). Online Social Security Handbook. As of March 11, 2022. [Link]

Social Security Administration [SSA] (2022). Quarters of Coverage. As of March 8, 2022. [Link]

Social Security Administration [SSA] (2022). Cost-Of-Living Adjustment (COLA) Summary. As of March 8, 2022. [Link]

Social Security Administration [SSA] (2022). National Average Wage Index. As of March 8, 2022. [Link]

Social Security Administration [SSA] (2022). Contribution And Benefit Base. As of March 9, 2022. [Link]

Social Security Administration [SSA] (2022). Benefit Formula Bend Points. As of March 9, 2022. [Link]

Social Security Administration [SSA] (2022) Exempt Amounts Under The Earnings Test. As of March 9, 2022. [Link]

Social Security Administration [SSA] (2022). Exempt Amounts:1975-1999 (Historical Document). As of March 9, 2022. [Link]

Social Security Administration [SSA] (2022). Windfall Elimination Provision. As of March 11, 2022. [Link]

US Congress (2000). Public Law 106-182: Senior Citizens' Freedom to Work Act of 2000 (114 Stat. 198. April 7, 2000). As of March 10, 2022. [Link]

Glossary of terms

This section summarizes key definitions from the main text. To facilitate switching back and forth, this document is designed with hyperlinks. Most PDF readers have shortcuts that permit a reader to return to the previous location after selecting a hyperlink. In Adobe Acrobat on a PC: "Alt" + "←"; In Adobe Acrobat on a MAC: "command" + "←"; In Preview on a MAC: "command" + "[".

Annuitable System: A pension system that provides a periodic payment for life after the benefit begins.

Average Indexed Monthly Earnings (AIME): A term used by US Social Security to describe the average of the best 35 years of earnings, adjusted for changes in the national average wage index.

Cash Balance System: A pension system that provides each individual an account that is drawn down over time.

Claimable Benefit: A pension where the beneficiary must actively file a claim for benefits with the government's pension authority.

Cost-of-Living Adjustments (COLA): Adjustments after an individual begins receiving benefits that increase benefit payments, typically in line with consumer prices or average earnings.

Delayed Retirement Credits (DRC): Credits provided if benefits are not started until after statutory retirement age

Earliest eligibility: Earliest age and/or years of contributions required to be eligible to start receipt of a particular type of benefit. Earliest eligibility is the same as statutory eligibility in countries where there is no benefit penalty for claiming before the statutory retirement age.

Latest claiming age: Latest age where a benefit may be claimed such that benefit payments are increased as an incentive for delaying the start of benefits past the statutory retirement age. Latest claiming age is the same as statutory retirement age in countries where

there is no benefit to delayed claiming. Not applicable for non-claimable benefits.

Lump Sum Benefit: A pension system that provides an individual with a one-time or limited number of payments. Lump sum benefits are distinct from annuitable or cash balance benefits because they do not continue past a specified time frame. Lump sum benefits use varies by country, but they are sometimes used as death benefits, incentives to delay claiming, or payments to individuals with an insufficient contribution history to be eligible for annuitable benefits.

National Income Measure: In some pension systems, the benefit is dependent on a national income measure, such as average wages. We indicate a pension system depends on the national income measure if the benefit paid is determined by a national income measure (as opposed to an individual's earnings history). For example, the benefit level for the United Kingdom Basic State Pension depends on a level set by the government and does not depend on an individual's earnings. This distinction does not include systems that adjust annual benefits based on a national income measure or index past earnings using a national income measure.

Old-Age, Survivors, and Disability Insurance (OASDI): The official name of the US Social Security system

Primary Insurance Amount (PIA): The base benefit level if a person collects their benefit at their statutory retirement age.

Progressive Benefit: A benefit is progressive if people with lower earnings have a greater replacement rate for their contributions.

Qualified Benefit: A benefit is qualified if an individual must continue to meet certain standards, such as a means test, to continue receipt of benefits.

Quarter of Coverage: A contribution unit using for determining a worker's insured status and benefit eligibility. Up to four quarters of coverage can be earned each calendar year based on a worker's income. Quarters of coverage are not based on calendar time.

Social Security Administration (SSA): The government organization responsible for administration of old-age own, spouse, survivor benefits and old-age social assistance.

Statutory Retirement Age (SRA): The age at which individuals are eligibile to receive their full benefit. In the United States, this is known as the normal retirement age. In the United Kingdom, this is known as the state pension age.

Version information

Current Version: 2.1 (August 2023)

Version History

- 1.0 (March 2021): First version

- 2.0 (May 2022): Revisions to formatting and updating of values

- 2.1 (August 2023): Updated formatting

Additional resources

The following resources provide additional details for the interested reader:

Social Security Administration (2022) *Online Social Security Handbook*.
Available at: https://www.ssa.gov/OP_Home/handbook/handbook.html
Features: This document is updated on an annual basis and provides detailed information on how benefits are currently administered

Social Security Administration (2021) *Annual Statistical Supplement*.
Available at: https://www.ssa.gov/policy/docs/statcomps/supplement/index.html
Features: This document is published annually and includes a section entitled "Program Descriptions and Legislative History" that provides detailed background on the current OASDI system as well as additional statistical tables of the system in the year it is published. Historical versions are available back to 2000 and a separate link identifies digital versions back to 1990 through US universities.

Legal Information Institute (2022). *Federal Old-Age, Survivors, and Disability Insurance Benefits*. Title 42, Chapter 7, Subchapter II, United States Code. Cornell, NY: Cornell Law School.
    Available at: https://www.law.cornell.edu/uscode/text/42/chapter-7/subchapter-II
    Features: This is the section of US law pertaining to OASDI.

Other papers of interest include:
  · Congressional Research Service (2021). Social Security Retirement Earnings Test: How Earnings Affect Benefits. Report R41242. February 9, 2021.
    Available at: https://crsreports.congress.gov/product/pdf/R/R41242
  · DeWitt, Larry (2010). The Development of Social Security in America, Social Security Bulletin, Vol. 70, No. 3, 2010.
    Available at: https://www.ssa.gov/policy/docs/ssb/v70n3/v70n3p1.html