



Looming Financial Challenges

Now is the Time to Address Social Security's Long-Term Financial Soundness

The newly released 2010 Social Security Trustees' Report indicates that income from taxes will fall short of covering outgo for benefits and other expenses in 2010 and 2011 due to the depth of the recession. After a three-year period with small positive balances, persistent annual deficits are projected to start in 2015, one year earlier than was projected a year ago. The Department of the Treasury will soon begin to repay Social Security—a long-expected consequence of the Treasury Department having received surplus cash from Social Security in the past. The trust fund, however, is projected to run out of assets during 2037, and if the imbalance between income and outgo is not corrected by that date, benefits would have to be paid from federal government general revenue or reduced by about one-fourth thereafter.

- ▲ The current present value of the shortfall examined in the Trustees Report over the 75-year timeframe is \$5.4 trillion, equal to 0.6 percent of the gross domestic product (GDP) and 1.92 percent of taxable earnings over the same period. The shortfall is expected to persist past the 75-year projection period.¹
- ▲ The Social Security trust fund has full legal rights to assets that are currently about \$2.5 trillion. To repay Social Security, the Department of the Treasury will have to raise the money (either through taxation, issuance of debt, or reduced spending elsewhere). The total amount of trust fund assets available to be repaid by Treasury hits a peak value of \$4.2 trillion in 2025 (in 2025 dollars).
- ▲ Congress should act soon to balance Social Security income and outgo.

An Actuarial Perspective on the 2010 Social Security Trustees' Report

The Social Security Trustees' Report is a detailed annual checkup that serves as a starting point for discussions of Social Security's financial problems and solutions. Social Security's Chief Actuary prepares and certifies the financial projections for the Old-Age, Survivors, and Disability Insurance program, under the direction of the Social Security Board of Trustees (the Trustees).

Because future events are inherently uncertain, the report contains three 75-year financial projections to illustrate a range of possibilities based on separate sets of assumptions. These projections are called intermediate, low-cost, and high-cost. The Trustees consider the intermediate projection to be their best estimate. All estimates in this issue brief are based on the intermediate projection unless otherwise noted.

OVERVIEW OF FINANCIAL STATUS

Short-Range Estimates, 2010–2019

Projected Social Security finances during the next 10 years are weaker than anticipated a year ago, as the deeper recession is affecting both income and outgo. Higher and more persistent unemployment causes a reduction in projected

¹ The rough approximate current present value of the persisting shortfall under current law after the 75-year study period is an additional \$10.7 trillion.

The American Academy of Actuaries is a professional association with over 17,000 members, whose mission is to assist public policymakers by providing leadership, objective expertise, and actuarial advice on risk and financial security issues. The Academy also sets qualification, practice, and professionalism standards for actuaries in the United States.



income from payroll taxes. It also results in increased numbers of applicants for disability benefits

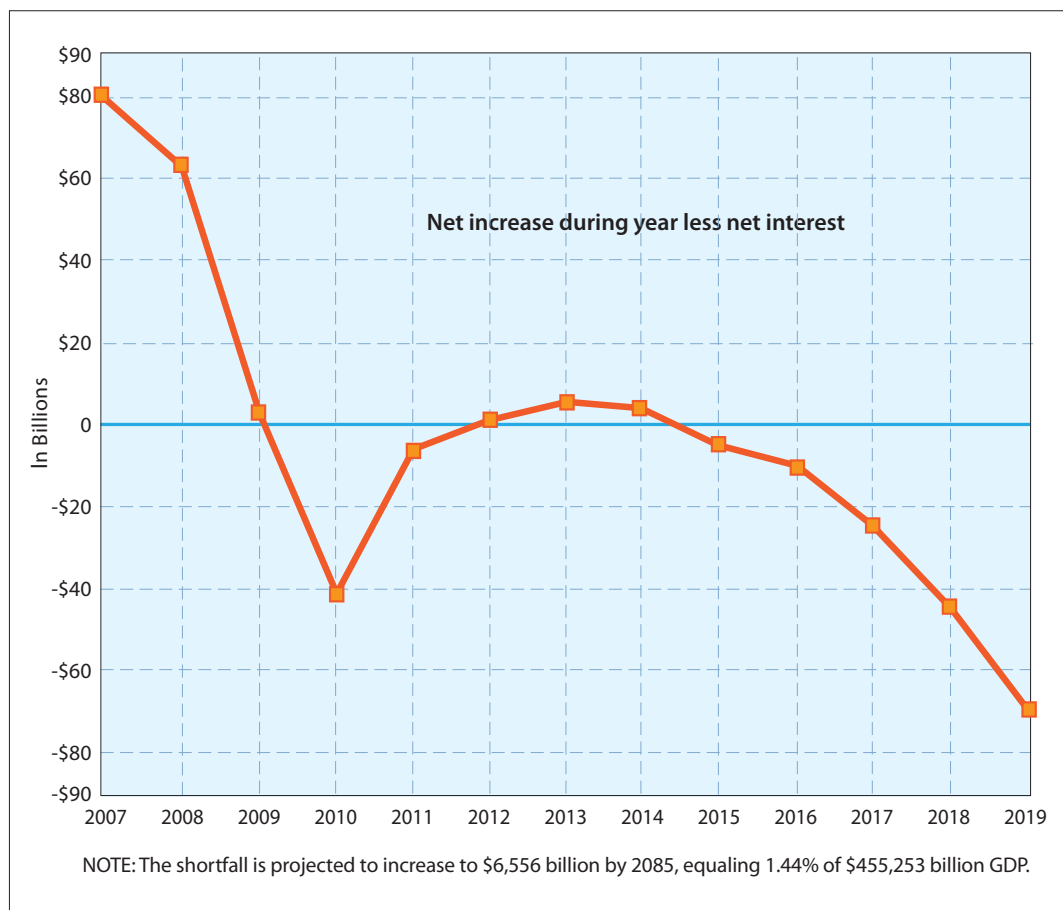
In the years 2005 to 2008 Social Security income from taxes less payouts for benefits and expenses ranged between \$63 billion and \$87 billion. That amount decreased to \$3 billion in 2009. In 2010, the surplus is projected to change to a \$41 billion shortfall (\$16 billion without \$25 billion in adjustments for prior years payroll taxes), as shown in Figure 1.

Any excess of tax income over outgo is recorded as an asset in the Social Security trust funds and allows the Treasury to borrow that much less from the public. These trust fund

assets are held in special U.S. Treasury securities amounting to \$3.9 trillion at the end of the short-range estimate period (and peaking at \$4.2 trillion in 2025). The bonds in the trust funds represent the government's commitment to repay the borrowed cash whenever Social Security needs the money. As the securities are redeemed by the trust funds, the U.S. Government must raise the necessary cash either by raising taxes, increasing publicly held debt, or lowering other expenditures.

The annual amounts of cash income to and outgo from Social Security are expressed as percentages of taxable payroll. These percentages are known as the **income rate** and **cost rate**,

Figure 1: OASDI Cash Flow Excluding Interest on Assets



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respectively. During the short-range estimate period of 2010–2019, the income rate will increase from 12.33 percent of taxable payroll to 13.03 percent. Meanwhile, the cost rate will rise from 13.09 percent of taxable payroll to 13.84 percent. The difference between these two rates, called the **annual balance**, goes from a deficit of 0.76 percent of taxable payroll in 2010 to a deficit of 0.81 percent in 2019.

Long-Range Estimates, 2010–2084

The 75-year projections cover the future lifetimes of nearly all current participants. The estimates show expenditures exceeding tax income in 2010, 2011, and every year after 2014—rising rapidly during 2015–2035 as the baby boomers retire. While costs increase, tax revenue will grow very slowly. From 2010 on (except for the three-year period from 2012–2014 as shown in Figure 1), Treasury will need to supplement dedicated tax income with increasing repayment of assets from the general fund to cover benefit payments.

After 2035, projected costs are fairly level as a share of GDP and taxable earnings. By 2037, Treasury is expected to have repaid all the money borrowed from Social Security—

meaning the trust funds are used up. By that time, the income rate will have fallen below 80 percent of the cost rate. After 2037, under current law Social Security income will be sufficient to pay only 75 percent to 78 percent of scheduled benefits, as shown in Figure 2.

PROGRAM REFORM

Now is the Time to Address Social Security's Long-Term Financial Soundness

Causes of the long-range financial problems are principally demographic trends. Large numbers of baby boomers will be reaching retirement age in the next two decades, and the longevity of retirees is gradually increasing. Also important is the fact that birth rates dropped precipitously after the baby boom cohort, and have remained at a lower level ever since. The number of workers for each Social Security beneficiary is expected to fall from 3.0 in 2009 to 2.1 in 2035, then decrease slowly to 1.9 by the end of the projection period.

Figure 3 shows the projected growth in the number of Social Security beneficiaries relative to the working population, under the three sets of assumptions. Because the program financing

Figure 2: Projected Annual Cost and Tax Income as a Percentage of Taxable Payroll

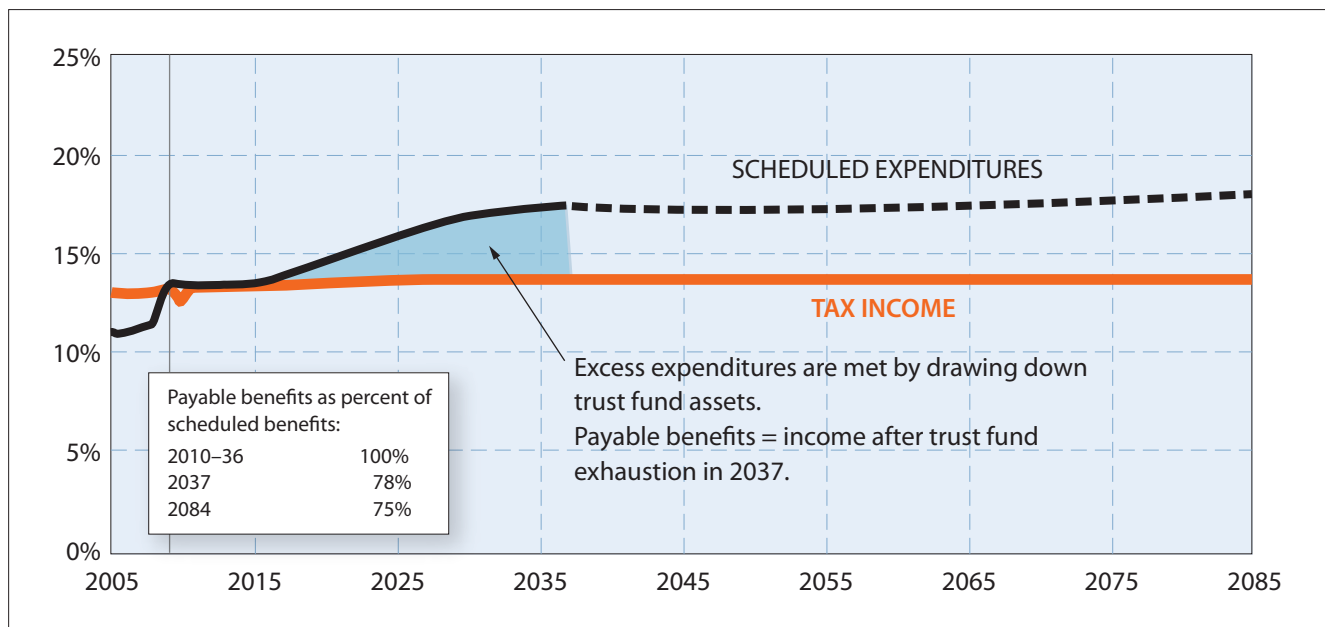
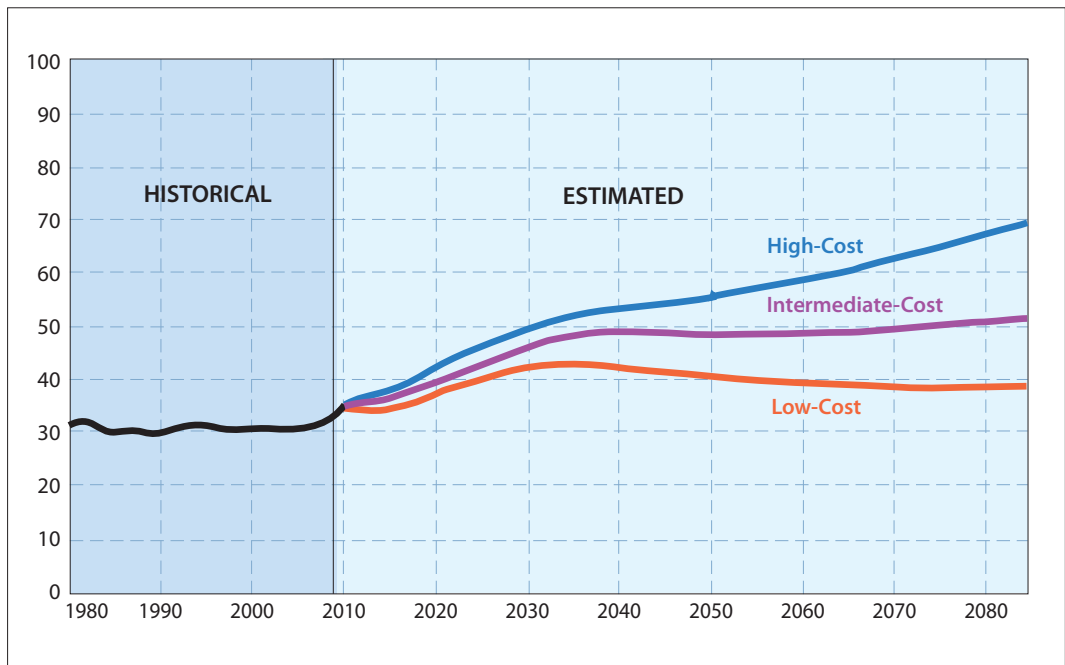


Figure 3: Number of Social Security Beneficiaries Per 100 Workers



is nearly pay-as-you-go, the three alternative projections of long-range cost show similar patterns.

Low-cost, intermediate and high-cost projections are profiled.

The Social Insurance Committee believes that any modifications to the Social Security system should include “sustainable solvency” as a primary goal. Sustainable solvency means that not only will the program be solvent for the next 75 years under the reform method adopted, but also that the timing of changes will result in stable financing and trust fund reserves at the end of the 75-year period and beyond.

The Trustees note that providing for solvency beyond the next 75 years would require changes to deal with increasing longevity, as people would be receiving benefits for ever-longer periods of retirement. A 2008 statement from the American Academy of Actuaries addresses this longevity issue: “Demographic problems require demographic solutions. You just cannot have people living longer and longer with a frozen retirement age. As actuaries, we believe that increasing the retirement age should be a part of any solution.”

Regardless of the types of changes ultimately enacted into law, Social Security reform will best serve the public if it is enacted sooner rather than later. Some advantages of acting promptly are:

- Future beneficiaries will have more time to plan for all aspects of retirement and modify their own financial planning while adjusting to changes in Social Security.
- The implementation of program reform can be more gradual and phased in over several years and multiple generations of retirees.
- If lawmakers delay making modifications to the Social Security program, a variety of program reform options no longer may be available to them.

APPENDIX

OTHER MEASURES OF FINANCIAL STATUS

The program's long-range financial status can be measured in terms of annual costs vs. income, discussed in the body of this issue brief, or in other ways to be covered here.

Actuarial Balance

The **actuarial balance** is calculated as the difference between the summarized income rate and the summarized cost rate over a period of years. For purposes of evaluating the program's financial adequacy, these amounts are adjusted to include the cost of reaching and maintaining a target trust fund level equal to one year's outgo, as shown in Table 1.

In the 75-year period 2010–2084, the actuarial deficit is 1.92 percent. An immediate increase of 1.98 percentage points in the payroll tax from 12.4 percent of payroll to 14.38 percent, or a benefit reduction of 12 percent or some combination of the two would pay all benefits during the period and would end the period with a trust fund balance equal to the scheduled benefits for the following year. The actuarial deficit decreased from the comparable figure of 2.00 percent a year ago, primarily because of a small projected shift in employee compensation, from nontaxable benefits to taxable earnings, due to

enactment of the Patient Protection and Affordable Care Act in March 2010.

The high-cost 75-year projection in the Trustees' Report shows a far greater actuarial deficit, 5.26 percent of taxable payroll. The low-cost projection is much more favorable, with a positive actuarial balance of 0.59 percent.

Trust Fund Ratios

The **trust fund ratio**, equal to trust fund assets as a percentage of the following year's cost, is an important measure of short-term solvency. A trust fund ratio of at least 100 percent indicates the ability to cover most short-term contingencies. Figure 4 shows projected trust fund ratios under all three sets of assumptions.

As a measure of long-range solvency, the trust fund ratio shows when the program is expected to run out of money to pay full benefits scheduled under current law. Figure 4 shows such insolvency occurs in 2037 under the intermediate projection. The high-cost projection moves up the insolvency date by about eight years, to 2029, while the low-cost projection shows the program remains solvent throughout the projection period.

Sustainable Solvency

Sustainable solvency means the program is not expected to run out of money any time in the

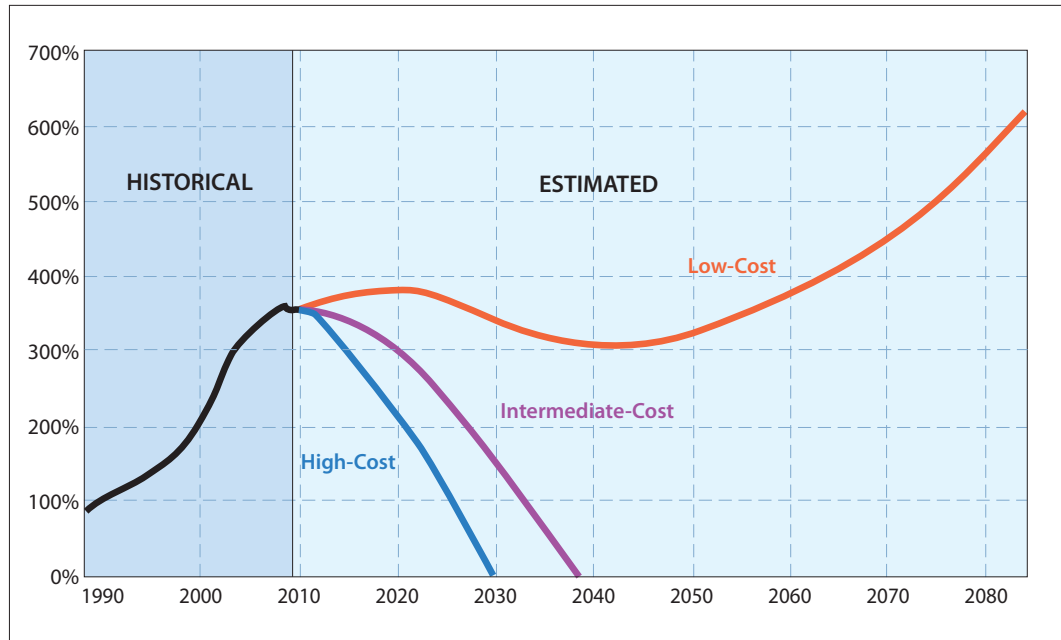
Table 1: Long-Range Actuarial Balance
(percentage of taxable payroll)

	Summarized Income Rate	Summarized Cost Rate	Actuarial Balance
2010–34	14.94%	15.23%	-0.25%
2010–59	14.23%	15.68%	-1.45%
2010–84	14.01%	15.93%	-1.92%

The summarized income and cost rates are the ratios of the present value of scheduled tax income and cost, respectively, to the present value of taxable payroll, expressed as a percentage.

These calculations include the cost of increasing the trust fund to a target fund at the end of the period equal to one year's outgo.

Figure 4: Long-Range Projections of Trust Fund Ratios



75-year projection period, and trust fund ratios are expected to finish the 75-year projection period on a stable or upward trend.

Sustainable solvency is a stronger requirement than actuarial balance in two ways. Actuarial balance is based on averages over time, without regard to year-by-year figures that could indicate inability to pay benefits from trust fund assets at some time along the way. And actuarial balance can exist even when trust fund ratios toward the end of the period are trending downward. For example, large and growing actuarial deficits are now projected at the end of the long-range projection period. Adequate financing beyond 2084 would require larger program changes than would actuarial balance.

Unfunded Obligation

The **unfunded obligation** is another way of measuring Social Security's long-term financial commitment. To compute it, discount the year-by-year streams of future cost and income at interest, then sum them to get their present values. Based on these present values, the general formula for computing the unfunded obligation is:

$$\begin{aligned} &\text{Present value of future cost (benefits and expenses)} \\ &\textit{minus} \text{ the present value of future income from taxes} \\ &\textit{minus} \text{ current trust fund assets.} \end{aligned}$$

The unfunded obligation may be computed and presented several ways. Perhaps the most useful way is based on taxes and benefits for an open group of participants over the next 75 years, including many people not yet born, the same as in the basic projections. That methodology is consistent with the primarily pay-as-you-go way the program is designed and is currently run. Although the Trustees provide alternative calculations based on the closed group of current participants, we believe the open-group basis makes more sense here and avoids certain misleading outcomes. For example, if the program were in exact actuarial balance, the open group measure of the unfunded obligation would be zero, while the closed group measure would still show a substantial unfunded obligation.

The dollar amount of unfunded obligation is much easier to interpret if put in perspective, for example by comparing it with the size of the economy over the same period. The unfunded obligation often is presented as a percentage of the present value of either taxable payroll or gross domestic product (GDP). At the beginning of 2010, the open-group unfunded obligation over the next 75 years was \$5.4 trillion. This represents 1.8 percent of taxable payroll, or 0.6 percent of GDP. A year ago, these figures were \$5.3 trillion, 1.9 percent of taxable payroll and 0.7 percent of GDP, respectively.

In recent years, the Trustees' Report also has presented the unfunded obligation based on

stretching the 75-year projection period into infinity. This measure has the advantage that reform proposals will be cost increases or revenue decreases beyond the horizon, but in practice it is highly problematic. Projections over an infinite time period have an extremely high degree of uncertainty. Troublesome inconsistencies can arise among demographic and program-specific assumptions. For example, assuming that longevity keeps increasing forever while retirement ages remain static, results in an extremely long period of retirement.

Alternative Sets of Assumptions

Table 2 shows the ultimate long-range values of key assumptions used in each of the three projections. The ultimate values of these assumptions have not changed since last year's report. The only exception is a small increase (0.1 percentage points) in the real-wage growth assumption, which reflects a lower expected rate of increase of employee benefit costs due to the Patient Protection and Affordable Care Act enacted in March 2010. The Trustees assume that a lower

Table 2: Current and Long-Range Values of Key Economic and Demographic Assumptions

	Estimated 2009 Value	Ultimate Value		
		Low-Cost Assumptions	Intermediate Assumptions	High-Cost Assumptions
Fertility (children per woman)	2.1	2.3	2.0	1.7
Mortality reduction (assumed average annual decrease in adjusted death rates)	1.1%	0.35%	0.77%	1.24%
Annual net immigration (thousands)	1,255	1,305	1,025	770
Productivity growth (total U.S. economy)	2.5%	2.0%	1.7%	1.4%
Real-wage growth	0.0%	1.8%	1.2%	0.6%

Table 3: Sensitivity to Varying Any of Three Key Assumptions

Ultimate Value	Low-cost Assumptions	Intermediate Assumptions	High-cost Assumptions
Total Fertility Rate			
Ultimate assumption (children per woman)	2.3	2.0	1.7
■ 75-year actuarial deficit	1.56%	1.92%	2.29%
■ Year of combined trust fund exhaustion	2037	2037	2038
Mortality Reduction			
Average annual reduction in adjusted death rates over 75-year period	0.33%	0.79%	1.32%
■ 75-year actuarial deficit	1.30%	1.92%	2.58%
■ Year of combined trust fund exhaustion	2040	2037	2036
Real-wage Growth			
Ultimate assumption (annual rate)	1.8%	1.2%	0.6%
■ 75-year actuarial deficit	1.09%	1.92%	2.74%
■ Year of combined trust fund exhaustion	2046	2037	2034

rate of growth in non-taxable benefits implies a higher rate of growth in taxable earnings.

Other Measures of Uncertainty

Because the future is unknown, the Trustees use the alternative projections and other methods to assess how the financial results may vary with changing economic and demographic experience.

Sensitivity Analysis

The low-cost and high-cost projections change all the major intermediate assumptions at once in the same direction, favorably or unfavorably. A sensitivity analysis is also performed, changing the major assumptions one at a time to determine the financial impact. Table 3 gives results of three sensitivity tests.

For example, if the real-wage growth assumption were changed from 1.2 percent to 1.8 percent, the actuarial deficit would be reduced from 1.92 percent of taxable payroll to 1.09 percent, and the year of trust fund exhaustion would be extended from 2037 to 2046.

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