

## Appendix D: Discount Rates for Benefit-Cost Analysis

**Effective Dates.** This appendix is updated every three years. This version of the Appendix is valid until the release of a subsequent Appendix in 2026. A copy of the updated appendix can be obtained in electronic form through the OMB home page at <https://www.whitehouse.gov/wpcontent/uploads/2023/11/CircularA-94AppendixD.pdf>. The text of the Circular is found at <https://www.whitehouse.gov/wp-content/uploads/2023/11/CircularA-94.pdf>, and a table of past rates is located at <https://www.whitehouse.gov/wp-content/uploads/2023/11/CircularA-94DiscountHistory.pdf>. Questions about the appendix can be sent to OMB's Office of Economic Policy ([a94@omb.eop.gov](mailto:a94@omb.eop.gov)).

**Risk-Free Rate.** OMB's Office of Economic Policy approximates the risk-free discount rate as the average real (inflation-adjusted) rate of return on long-term U.S. government debt over the last 30 years. This is the rate available on riskless personal savings and is therefore a rate at which individuals may increase future consumption at the expense of current consumption. It is also the rate at which society as a whole can trade current consumption for future consumption. The measures used to calculate the risk-free discount rate over the relevant 30-year period are: (1) the average yield on 10-year Treasury notes minus the average annual rate of change in the consumer price index (CPI) over the period within that 30 years that 10-year Treasury Inflation Protected Securities are not available (currently, 1993 to 2002), and (2) the yield of 10-year Treasury Inflation Protected Securities over the period they are available (currently, 2003 to 2022). This currently produces a real 10-year rate of 1.7 percent, to which a 0.3 percent rate is added to reflect inflation as measured by the personal consumption expenditure (PCE) inflation index rather than CPI. Therefore, the risk-free rate to be used in the calculation of the real social discount rate is 2.0 percent.

**Risk Premium.** OMB's Office of Economic Policy reviewed a wide range of models with various parameters and determined that an appropriate default risk premium for analyses covered by Circular No. A-94 is 1.1 percent.<sup>5</sup> Agencies may consider using a different rate based on their particular risk profile with the approval of OMB. See Section 9.

**Social Discount Rate.** This rate is calculated using the estimated real risk-free rate plus a risk premium if certainty equivalents are not calculated. Constant-dollar benefit-cost analyses of proposed investments should report discounted net benefits by taking the difference between discounted benefits and costs. Discounted benefits or costs should be determined using a real discount rate of 2.0 percent if the benefits or costs reflect certainty-equivalent valuations and 3.1 percent if they do not (unless a project-specific risk premium is calculated).

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<sup>5</sup> There are a variety of approaches for calculating this rate. OMB's Office of Economic Policy uses the standard consumption capital asset pricing model. In this model, this rate is calculated by multiplying together (1) the market risk premium by (2) the correlation between market risk and net benefits from government investment. The market risk premium, which OMB arrives at using the average implied risk premium in equity markets over the 1960-2022 period, adjusted for leverage, is estimated to be 2.5%. The correlation between market risk and net benefits is estimated to be 0.45, which captures the correlation in equity markets for economic sectors closest to government investment, adjusted for the difference in nonpayment risk between equity market investments and government investments.