

return developed by asset class. For 2020, management anticipates that 7.00% will be the expected long-term rate of return. The decrease of 75 basis points in the 2018 expected long-term rate of return was due to a decrease in the expected return by asset class and the 20-year moving average. A change in the assumption for the expected long-term rate of return on plan assets of 1/4 of 1% would impact after-tax earnings by approximately \$9 for 2020.

In 2019, a net loss of \$388 (after-tax) was recorded in other comprehensive loss, primarily due to the decrease in the discount rate of 105 basis points, which was partially offset by the plan asset performance that was greater than expected, and by the amortization of actuarial losses. In 2018, a net loss of \$114 (after-tax) was recorded in other comprehensive loss, primarily due to the impact of the adoption of new accounting guidance that permits a reclassification to Retained earnings (accumulated deficit) for stranded tax effects resulting from the Tax Cuts and Jobs Act of 2017, as well as the plan asset performance that was less than expected, which were partially offset by the increase in the discount rate of 60 basis points and the amortization of actuarial losses. In 2017, a net loss of \$220 (after-tax) was recorded in other comprehensive loss, primarily due to the decrease in the discount rate of 45 basis points and plan asset performance less than expected, which were partially offset by the amortization of actuarial losses.

Stock-Based Compensation. Arconic recognizes compensation expense for employee equity grants using the non-substantive vesting period approach, in which the expense is recognized ratably over the requisite service period based on the grant date fair value. Forfeitures are accounted for as they occur. The fair value of new stock options is estimated on the date of grant using a lattice-pricing model. The fair value of performance awards containing a market condition is valued using a Monte Carlo valuation model. Determining the fair value at the grant date requires judgment, including estimates for the average risk-free interest rate, dividend yield, volatility, and exercise behavior. These assumptions may differ significantly between grant dates because of changes in the actual results of these inputs that occur over time.

Compensation expense recorded in 2019, 2018, and 2017 was \$78 (\$70 after-tax), \$50 (\$39 after-tax), and \$54 (\$36 after-tax), respectively.

Income Taxes. The provision for income taxes is determined using the asset and liability approach of accounting for income taxes. Under this approach, the provision for income taxes represents income taxes paid or payable (or received or receivable) for the current year plus the change in deferred taxes during the year. Deferred taxes represent the future tax consequences expected to occur when the reported amounts of assets and liabilities are recovered or paid, and result from differences between the financial and tax bases of Arconic's assets and liabilities and are adjusted for changes in tax rates and tax laws when enacted.

The 2017 Act created a new requirement that certain income earned by foreign subsidiaries, Global Intangible Low Taxed Income (GILTI), must be included in the gross income of the U.S. shareholder. The 2017 Act also established the Base Erosion and Anti-Abuse Tax (BEAT). Until regulations are finalized, judgement will be required to apply preliminary guidance, including proposed regulations, to Arconic's facts and circumstances.

Valuation allowances are recorded to reduce deferred tax assets when it is more likely than not that a tax benefit will not be realized. In evaluating the need for a valuation allowance, management considers all potential sources of taxable income, including income available in carryback periods, future reversals of taxable temporary differences, projections of taxable income, and income from tax planning strategies, as well as all available positive and negative evidence. Positive evidence includes factors such as a history of profitable operations, projections of future profitability within the carryforward period, including from tax planning strategies, and Arconic's experience with similar operations. Existing favorable contracts and the ability to sell products into established markets are additional positive evidence. Negative evidence includes items such as cumulative losses, projections of future losses, or carryforward periods that are not long enough to allow for the utilization of a deferred tax asset based on existing projections of income. Deferred tax assets for which no valuation allowance is recorded may not be realized upon changes in facts and circumstances, resulting in a future charge to establish a valuation allowance. Existing valuation allowances are re-examined under the same standards of positive and negative evidence. If it is determined that it is more likely than not that a deferred tax asset will be realized, the appropriate amount of the valuation allowance, if any, is released. Deferred tax assets and liabilities are also re-measured to reflect changes in underlying tax rates due to law changes and the granting and lapse of tax holidays.

In 2018, Arconic made a final accounting policy election to apply a tax law ordering approach when considering the need for a valuation allowance on net operating losses expected to offset GILTI income inclusions. Under this approach, reductions in cash tax savings are not considered as part of the valuation allowance assessment. Instead, future GILTI inclusions are considered a source of taxable income that support the realizability of deferred tax assets.

Tax benefits related to uncertain tax positions taken or expected to be taken on a tax return are recorded when such benefits meet a more likely than not threshold. Otherwise, these tax benefits are recorded when a tax position has been effectively settled, which means that the statute of limitations has expired or the appropriate taxing authority has completed their examination even though the statute of limitations remains open. Interest and penalties related to uncertain tax positions are