

Additionally, lower expenses driven by lower annual incentive compensation accruals and overhead cost reductions were somewhat offset by an increase in legal and other advisory costs related to Grenfell Tower of \$4 as well as strategy and portfolio review costs of \$7 in 2018.

Research and Development Expenses (R&D). R&D expenses were \$70 in 2019 compared with \$103 in 2018. The decrease of \$33, or 32%, was primarily due to the consolidation of the Company's primary R&D facility in conjunction with ongoing cost reduction efforts.

R&D expenses were \$103 in 2018 compared with \$109 in 2017. The decrease of \$6, or 6%, was the result of lower spending.

Provision for Depreciation and Amortization (D&A). The provision for D&A was \$536 in 2019 compared with \$576 in 2018. The decrease of \$40, or 7%, was primarily due to the impact of divestitures, as well as asset impairments in the EP&F segment during the second quarter of 2019 (see Note [M](#) to the Consolidated Financial Statements in Part II, Item 8. (Financial Statements and Supplementary Data) of this Form 10-K).

The provision for D&A was \$576 in 2018 compared with \$551 in 2017. The increase of \$25, or 5%, was primarily due to capital projects placed into service.

Impairment of Goodwill. In 2017, the Company recognized an impairment of goodwill of \$719 related to the annual impairment review of its Arconic Forgings and Extrusions (AFE) business (see Goodwill under Critical Accounting Policies and Estimates below).

Restructuring and Other Charges. Restructuring and other charges were \$620 in 2019 compared with \$9 in 2018 and \$165 in 2017.

Restructuring and other charges in 2019 primarily included asset impairments of \$556, related to the Disks asset group of \$428, agreements to sell the Company's Brazilian rolling mill operations, the U.K. forgings business, and a small additive business of \$112, and a trade name intangible asset and properties, plant, and equipment related to the Company's primary research and development facility of \$25; and a charge for layoff costs of \$103, including the separation of approximately 1,310 employees; partially offset by a benefit from the elimination of the life insurance benefit for the U.S. salaried and non-bargaining hourly retirees of the Company and its subsidiaries of \$58; and a gain for contingent consideration received from the sale of the Texarkana rolling mill of \$20.

Restructuring and other charges in 2018 primarily included a charge for pension and other postretirement benefits net settlements and curtailments of \$91; a loss on the sale of the Hungary forgings business of \$43; and a charge for layoff costs of \$20, including the separation of approximately 125 employees; partially offset by a gain on the asset sale of the Texarkana rolling mill of \$154.

Restructuring and other charges in 2017 primarily included a charge for layoff costs of \$69, including the separation of approximately 880 employees; a charge related to the sale of the Italy rolling mill of \$60; and a charge for the impairment of assets associated with the sale of the Latin America extrusions business of \$41.

See Note [C](#) to the Consolidated Financial Statements in Part II, Item 8. (Financial Statements and Supplementary Data) of this Form 10-K.

Interest Expense. Interest expense was \$338 in 2019 compared with \$378 in 2018. The decrease of \$40, or 11%, was primarily due to lower debt outstanding, driven by the repayment of the aggregate outstanding principal amount of the 1.63% Convertible Notes of approximately \$403 on October 15, 2019, as well as costs incurred of \$19 in 2018 related to the premium paid on the early redemption of the Company's then outstanding 5.72% Senior Notes due 2019 that did not recur in 2019.

Interest expense was \$378 in 2018 compared with \$496 in 2017. The decrease of \$118, or 24%, was the result of higher costs incurred in 2017 related to the early redemption of the Company's outstanding debt than were incurred during 2018, as well as lower debt outstanding.

Other Expense (Income), Net. Other expense, net was \$122 in 2019 compared with \$79 in 2018. The increase of \$43 was primarily due to an increase in deferred compensation arrangements and related investment performance and the benefit recognized in 2018 from establishing a tax indemnification receivable reflecting Alcoa Corporation's 49% share of a Spanish tax reserve of \$29 that did not recur in 2019, partially offset by favorable foreign currency movements.

Other expense, net was \$79 in 2018 compared with Other income, net of \$486 in 2017. The decrease in Other income, net of \$565 was the result of gains recorded during 2017 related to the sale of a portion of Arconic's investment in Alcoa Corporation common stock of \$351, the Debt-for-Equity Exchange (in April and May 2017, the Company acquired a portion of its outstanding notes held by two investment banks (the "Investment Banks") in exchange for cash and the Company's remaining 12,958,767 shares (valued at \$35.91 per share) in Alcoa Corporation stock and recorded a gain of \$167), income associated with an adjustment to the contingent earn-out liability related to the Firth Rixson acquisition of \$81 (see Note [S](#) to the Consolidated Financial Statements in Part II, Item 8. (Financial Statements and Supplementary Data) of this Form 10-K), and