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**Management Discussion**

International Business Machines Corporation and Subsidiary Companies

assumption is material due to the levels of subjectivity and judgment involved, and (b) the impact within a reasonable range of outcomes of the estimate and assumption is material to IBM's financial condition. Senior management has discussed the development, selection and disclosure of these estimates with the Audit Committee of IBM's Board of Directors. Our significant accounting policies are described in note A, "Significant Accounting Policies."

The inputs into certain of our critical accounting estimates considered the macroeconomic impacts of the COVID-19 pandemic. These estimates included but were not limited to, the allowances for credit losses, the carrying values of goodwill and intangible assets and other long-lived assets, our net investments in sales-type or direct financing leases, valuation allowances for tax assets and revenue recognition. The macroeconomic impacts of the COVID-19 pandemic did not have a material impact on our critical accounting estimates reflected in our 2020 results. Given the inherent uncertainty of the magnitude of future impacts from and/or the duration of the pandemic, our estimates may change materially in future periods.

A quantitative sensitivity analysis is provided where that information is reasonably available, can be reliably estimated and provides material information to investors. The amounts used to assess sensitivity (e.g., 1 percent, 10 percent, etc.) are included to allow users of the Annual Report to understand a general direction cause and effect of changes in the estimates and do not represent management's predictions of variability. For all of these estimates, it should be noted that future events rarely develop exactly as forecasted, and estimates require regular review and adjustment.

**Pension Assumptions**

For our defined benefit pension plans, the measurement of the benefit obligation to plan participants and net periodic pension (income)/cost requires the use of certain assumptions, including, among others, estimates of discount rates and expected return on plan assets.

Changes in the discount rate assumptions would impact the (gain)/loss amortization and interest cost components of the net periodic pension (income)/cost calculation and the projected benefit obligation (PBO). The discount rate assumption for the IBM Personal Pension Plan (PPP), a U.S.-based defined benefit plan, decreased by 90 basis points to 2.20 percent on December 31, 2020. This change will increase pre-tax income recognized in 2021 by an estimated \$48 million. If the discount rate assumption for the PPP had increased by 90 basis points on December 31, 2020, pre-tax income recognized in 2021 would decrease by an estimated \$29 million. Further changes in the discount rate assumptions would impact the PBO which, in turn, may impact our funding decisions if the PBO exceeds plan assets. A 25 basis point increase or decrease in the discount rate would cause a corresponding decrease or increase, respectively, in the PPP's PBO of an estimated \$1.3 billion based upon December 31, 2020 data.

The expected long-term return on plan assets assumption is used in calculating the net periodic pension (income)/cost. Expected returns on plan assets are calculated based on the market-related value of plan assets, which recognizes changes in the fair value of plan assets systematically over a five-year period in the expected return on plan assets line in net periodic pension (income)/cost. The differences between the actual return on plan assets and the expected long-term return on plan assets are recognized over five years in the expected return on plan assets line in net periodic pension (income)/cost and also as a component of actuarial (gains)/losses, which are recognized over the service lives or life expectancy of the participants, depending on the plan, provided such amounts exceed thresholds which are based upon the benefit obligation or the value of plan assets, as provided by accounting standards.

To the extent the outlook for long-term returns changes such that management changes its expected long-term return on plan assets assumption, each 50 basis point increase or decrease in the expected long-term return on PPP plan assets assumption would have an estimated decrease or increase, respectively, of \$240 million on the following year's pre-tax net periodic pension (income)/cost (based upon the PPP's plan assets at December 31, 2020 and assuming no contributions are made in 2021).

We may voluntarily make contributions or be required, by law, to make contributions to our pension plans. Actual results that differ from the estimates may result in more or less future IBM funding into the pension plans than is planned by management. Impacts of these types of changes on our pension plans in other countries worldwide would vary depending upon the status of each respective plan.