The broad methodology of the Global Economic Outlook model as outlined in Erumban and de Vries (2018) is still valid for the October 2020 release (GEO2021). However, to account for the pandemic we adjusted some of our standard assumptions. This note highlights the data and methodology used in this release. More information is available upon request.

Model setup and data:

- Changes in the model setup, which were made in 2019 (GEO2020) and were left unchanged for this year’s release:
  - In the TFP equation, ICT capital deepening is replaced by ICT capital deepening growth rates.
  - In the capital services growth equation, economic globalization (in the current period) is replaced by economic globalization in the previous period.
- Use of official GDP data for United States and Japan and alternative Chinese data. Previous editions of the GEO used GDP growth data for US, Japan and China that were adjusted to account for faster declines in ICT investment goods and services than those reflected in official data. As a result of these adjustments the GDP growth rates were revised up. These adjustments amounted to a correction of the downward bias that would have occurred had the improper ICT deflators been used. To align our short-term and long-term forecasts better we use official GDP data for the US and Japan and the unadjusted alternative series for China. Projections for the US based on adjusted growth rates are provided as separate series.

Projections and assumptions:

- The projection periods are defined as 2020-23 (COVID-period) and 2024-2030 (post-COVID period), in lieu of the usual five-year period projections which for GEO2021 would have been 2021-2025 and 2026-2030.
- Crisis dummy coefficients for TFP and capital services growth are applied to the first projection period (2020-2030) to account for the economic impact of the pandemic. The crisis dummy coefficient is estimated for the period average 2009-2013 (see table 3 in Erumban and de Vries (2018)). For the 2009-2019 period it was used to account for the specific impact of the

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2 Data from the Total Economy Database, July 2020 ‘Original version’ are used to model our projections.
3 Note that 2020-2023 refers to the average of annual growth rates in 2020, 2021, 2022 and 2023; and in similar vein 2024-2030 refers to the average of annual growth rates in 2024, 2025, 2026, 2027, 2028, 2029 and 2030.
global financial crisis and its aftermath on TFP and Capital services. This lowers the TFP and Capital services projections by about -0.5 and -1.2 respectively.

• The output gap estimate has been adjusted for this crisis dummy effect. Results for the first projection period—which are to be interpreted as trend growth rates—are usually adjusted for any remaining output gaps (see section 5.2 in Erumban and de Vries (2018)) assuming that these output gaps will be closed by the end of the projection period. Output gaps for 2020 are taken from various sources, such as the Congressional Budget Office for the US and the European Commission Spring forecast for European economies and are adjusted for the crisis dummy implied output gap.

• Projections of underlying data for independent variables are adjusted from previous convention in the following ways (see table 5 in Erumban and de Vries (2018)):
  o Period 7 values are used for (ICT) Capital deepening, Extent of corruption and Economic globalization.
  o Economist Intelligence Unit forecasts for the first projection period are used for labor quantity, real investment growth (as a proxy for R&D spending), exchange rate, saving rate, services share in GDP, wage growth, inflation and interest rates