Methodology for the impact evaluation of the Covid-19 Social Response Bond

The assessment of the KPI identified in the report was carried out considering the purpose of the Covid-19 Social Response Bond to support the liquidity of companies. The KPI measured is therefore the level of liquidity sustained by the Bond, assessed through estimates linked to the cash availability of the companies in the portfolio[1].

Methodology for estimating corporate liquidity

The approach for the analysis of the impact on corporate liquidity follows a methodology developed by Schivardi and Romano (2020) and used in various publications. The methodology allows to estimate the impact of Covid-19 and the interruptions of corporate operations on the liquidity of businesses[2]. The evolution of liquidity for firm *i* in year *y* results from the following equation:

$$L_{iy} = L_{iy-1} + S_{iy} - C_{iy}$$

Where L_{iy-1} is the amount of liquidity of firm *i* available at year *y-1*, S_{iy} is the revenues of firm *i* in year *y* and C_{iy} is the costs of firm *i* in year *y*. From data of the balance sheets of Italian firms[3] we can gather data on the amount of liquidity available at the end of the last available fiscal year. To estimate the revenues instead, we apply the sectoral estimates for the reference year to the revenues of the last fiscal year available[4].

It is also assumed that companies have stopped spending on investments and that therefore the costs only depend on production costs and personnel costs. To estimate these two, we use the

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[1] Estimates by CDP Sustainability.

[2] Schivardi, Fabiano, and Romano Guido. "A simple method to estimate firms' liquidity needs during the Covid-19 crisis with an application to Italy." (2020): 51-69; De Socio, Antonio, et al. Gli effetti della pandemia sul fabbisogno di liquidità, sul bilancio e sulla rischiosità delle imprese. Banca d'Italia, Note Covid, 2020, 13; Mef. Direzione Studi e Ricerche Economico Fiscali. L'impatto della crisi Covid-19 sul fabbisogno di liquidità delle imprese. 12 febbraio 2021.

[3] Aida. Data are available for about 60% of the Bond portfolio. For the remaining 40%, it is assumed identical distribution of the variables.

[4] IHS Markit

elasticities of the inputs to the turnover estimated by the Bank of Italy[5] which allow us to consider the sectoral average variation of costs as the turnover changes.

Given that the sectoral elasticity of production costs is e_{ms} and the sectoral elasticity of labor costs is e_{ws}, the liquidity available at year y for company i will be equal to:

$$L_{iy} = L_{iy-1} + (1 + d_{sy}) * S_{iy-1} - (1 + e_{ms}d_{sy}) * M_{iy-1} - (1 + e_{ws}d_{sy}) * W_{iy-1}$$

Where d_{sy} is the estimate of the sectoral growth rate for year y, M is the total production costs of firm i in year y and W is the total personnel costs of firm I in year y.

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[5] De Socio, Antonio, et al. "Gli effetti della pandemia sul fabbisogno di liquidità, sul bilancio e sulla rischiosità delle imprese". Banca d'Italia, Note Covid, 2020, 13.