

## Current study of carbon pricing sensitivity in investment portfolios

By Bradesco Asset Management, June 2022.

As new climate legislation and increased carbon prices threaten company earnings and investor returns, a new model developed by Bradesco Asset offers investors an update on how carbon pricing might affect invested companies.

A modification of the Sensitivity to Carbon Pricing research (2018) was conducted in 2021, in collaboration with the Empresas Pelo Clima (EPC) platform, a project of the Center for Sustainability Studies (FGVCes) of the School of Business Administration of São Paulo at the Getúlio Vargas Foundation (FGV EAESP).

### OBJECTIVE

Four years after the publication of the first carbon pricing study, this exercise aimed to assess whether there were changes in the current situation of carbon emissions on the invested portfolio, seeking to understand how these emissions could economically impact the net income of the portfolio over the last five years (2016-2021) and how these results could represent a risk if the Brazilian government eventually adopts economic instruments aimed at carbon pricing and, consequently, the reduction of greenhouse gas emissions (GHG) in the Brazilian economy.



## **SAMPLE**

Initially, the scope of analysis was to evaluate all companies in the equity and credit portfolios of Bradesco Asset's investment portfolio. However, due to the lack of public information on the GHG inventories of some companies, this sample was reduced. Thus, to arrive at the final sample of the analysis, companies that published their GHG emissions for at least one year in the period between 2016 to 2021 were considered, either through a GHG inventory, or through sustainability reports or other reporting mechanisms. This selection resulted in a portfolio of 58 companies analysed in this pilot study.

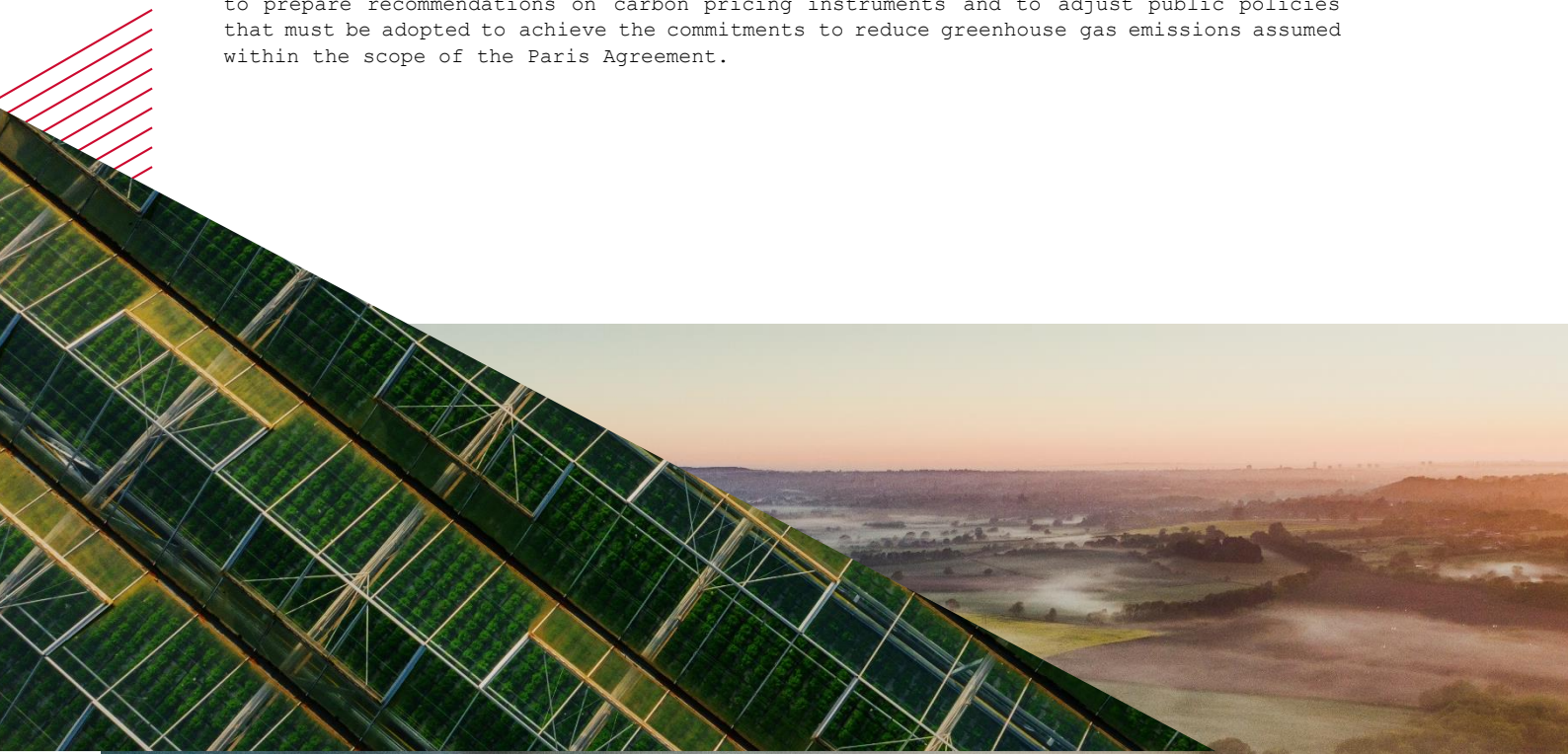
## **METHOD**

In this context, an analysis to evaluate the risk of the occurrence of an economic instrument on specific sectors and, more specifically, on certain types of emission sources of organisations in these sectors, such as the burning of fossil fuels or emissions related to industrial processes. The assumptions for this are based on how other countries' GHG emissions pricing mechanisms treat the emissions of each economic sector, as well as conversations held by the Ministry of Economy with the private sector and society as part of the PMR Brasil project<sup>1</sup>.

After that, among the different existing approaches for Internal Carbon Pricing exercises, in this pilot study a "shadow price" approach was applied, using four hypothetical price scenarios for GHG emissions (R \$/tCO<sub>2</sub>e).

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<sup>1</sup> PMR Project (Partnership for Market Readiness) is a global initiative that helps countries to prepare recommendations on carbon pricing instruments and to adjust public policies that must be adopted to achieve the commitments to reduce greenhouse gas emissions assumed within the scope of the Paris Agreement.



## SCENARIOS

The scenarios were based on studies of price estimates for the Brazilian economy and on prices practised in cap-and-trade regulations in force in other countries/regions, such as California, Europe and Chile. Therefore, three price scenarios were adopted for the entire economy (economy-wide) and a price scenario using emission mitigation costs for each sector separately (sector-specific). It should be noted that in the case of economy-wide, it was considered that prices will be applied uniformly for the different sectors of the economy.

### Economy-wide

1. Optimistic scenario: lower price level for GHG emissions
2. Trend scenario: Intermediate price value for GHG emissions
3. Worst-case scenario: higher price value for GHG emissions

### Sector-specific:

4. Sector scenario: estimates for emission mitigation costs for sectors of the economy in Brazil



## **RESULT**

In the analysis of the risk of incidence of an economic instrument on specific sectors, it was identified that 65% of the companies in the portfolio would not be subject to regulation via tax. Only 2% would be directly impacted and 33% would be indirectly affected via fossil fuel taxation. If Brazil opted for an emissions trading system, 78% of the portfolio would not be impacted, 19% would be and 3% would have the opportunity to sell carbon credits.

However, it should be noted that the premise used is based on other global regulations, which does not guarantee that the country will legislate in the same way.

In the economy-wide analysis, the results pointed out that the oil refining, steel, chemical industry, electricity, transport and food sectors may be most affected. The analysis of the sector-specific price scenario - which considers different prices for each sector - indicated that the steel, oil refining, transport, food and chemical industry sectors would be the most impacted.

## **FINAL REMARKS**

In line with the bank's guidelines and the recommendations of the Task Force on Climate-related Financial Disclosures (TCFD), we conclude that the result obtained in this study of Bradesco Asset's carbon pricing provides elements for climate integration in the analysis and management of investments. Further climate studies will be presented to increase understanding of this topic, in line with trends in the Paris Agreement. To this end, we presented the results of Bradesco Asset Management's financed emissions in the Bradesco organization's Integrated Report (2021).

