Chapter 7
Loss Aversion in Companies Whose Location Is Affected by Fire

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ABSTRACT

In Portugal, fires have originated a big debate not only because of the environmental damages they cause but also because of the material damages they provoke to families and companies. This way, it is important to understand how these events impact companies' cash holdings, not because of the direct damages caused by them, but because of managers' loss aversion. The empirical evidence, mainly documented by Dessaint and Matray and Kahneman and Tversky, were the main sources to this empirical study, where the authors have chosen to work with panel data analysis using a sample of 38,574 small and medium enterprises during the period from 2009 to 2015. About the obtained results, there is evidence that cash holdings increase when managers of a company located in a region close to a fire, but not directly damaged by it, perceive a salient event of a future fire. In other words, when they anticipate the occurrence of an identical event, cash holdings are increased to protect the company against it.

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INTRODUCTION

Tversky and Kahneman (1974) state that one of the heuristics that corporate managers use is to attribute the frequency of occurrence of a given event based on the ease with which this event arises in their minds (imminence). Thus, events that occurred relatively recently appear in the mind more easily and are likely to overestimate their occurrence (Dessaint and Matray, 2017). There is also a possibility that these managers may be more loss-averse, as their perceived risk may be temporarily higher, although the actual risk does not change.

Fires are considered to be a good source of information for the study of loss aversion. First of all, when a fire occurs, it does not provide any information on whether or not another fire may occur shortly. According to Dessaint and Matray (2017), the estimation of the increased occurrence of a hurricane at the same location based on the occurrence of another during the last two years results in a statistically non-significant coefficient. This statement, while applied to another type of disaster, could also be applied in the context of fires.

Moreover, the occurrence of a fire is nothing related to the characteristics of a company and its manager (considering that neither agent has any kind of fault in the formation of it). Fires can cause extensive damage to affected areas. Thus, these are considered imminent events, not only for companies directly located in the area but also for their neighborhood. Finally, fires allow a certain identification strategy to be used, as this imminence of danger decreases as the distance to it increases.

This study will analyze the Portuguese Small and Medium Enterprises (SMEs), trying to understand the behavior of their managers regarding the imminence of fire concerning cash, to understand if their aversion to loss affects or not those same amounts. According to Dessaint and Matray (2017), risk perception can be demonstrated through the treasury amounts of a given company, based on the studies by Froot et al. (1993) and Hölmstrom and Tirole (1998), who state that Treasury is used by companies as a liquidity security mechanism when the use of external financing is limited.

From the results obtained, evidence was found that fires have an impact on the change in the companies' cash amounts, and their increase, as Dessaint and Matray (2017) conclude about hurricanes. Thus, our results seem to indicate that managers are trying to anticipate these events by increasing their reserves to prevent disasters. These reserves are increased by an average of 0.15% to protect against these events.

On the other hand, the results are different from those obtained by Dessaint and Matray (2017) regarding the timing of this increase. This difference is explained by the fact that the nature and frequency of these events are different. While there are several fires per year in Portugal (17,607 occurrences on average per year between January 1 and October 31, 2007, to 2017, where 3,444 correspond to forest fires and the rest to hot flushes with a burned area of less than 1 hectare, according to the Institute for Nature Conservation and Forests (2017a)), in the United States there is only an average of 11.7 named storms per year, with only 6.3 being hurricanes and 1.7 touching the ground of the country (National Oceanic & Atmospheric Administration, 2017).

Recently, the literature got more concerned about special events' impacts on a firm's cash flows. Brown et al. (2021) examine firms' use of credit lines when they face a liquidity shock that is not directly related to fundamentals, namely considering abnormally heavy winter snowfall. The authors provide novel evidence of direct effects that firms use credit lines as liquidity insurance against cash flow volatility that is unrelated to firm fundamentals. Gill (2020) explores whether and under which conditions firms hoard cash holdings to address natural disaster risk (Acts of God), technological disaster risk (Human related), or both. Results point that firms do not have a trade-off between these two types of

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