

BLOWING BUBBLES? A CONCEPTUAL ANALYSIS OF THE CARBON BUBBLE HYPOTHESIS

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Overview

Climate change poses a critical challenge to society. To keep the increase in global mean temperature by the end of the century well below 2°C relative to pre-industrial levels, global cumulative emissions must be kept within a tight ‘carbon budget’ (Meinshausen et al. 2009). The recent COP21 in Paris has resulted in country-level commitments that would bring the world closer to reaching such a budget. Besides, several bottom-up initiatives have emerged, which aim to tackle climate change. A prime example is the ‘fossil fuel divestment movement’, which urges investors to stop financing companies that extract and exploit fossil fuels (Ayling and Gunningham 2015). Even though divestment could be considered the ‘right thing to do’, it might also be financially wise. Recent literature on the Carbon Bubble Hypothesis (CBH) (CTI 2011) has taken the political targets and fast-moving market developments to argue that market valuations of companies and governments possessing large amounts of fossil fuel reserves are grossly overstated. Protagonists of the hypothesis argue that if the 2°C target would be respected, about 4/5 of current proven fossil fuel reserves would need to be left unused (CTI 2011; 2013; Caldecott, Tilbury, Carey 2014). Consequently, the existing fossil fuel assets might form an economic ‘bubble’ and would become ‘stranded assets’ due to changes in political, social, and market conditions necessary to achieve the stated climate targets (CTI 2013; IISD 2014). Accordingly, investors in fossil fuel companies may not only care about rising temperatures but about falling stock prices as well.

However, the main underlying concepts in the CBH literature do not seem to be fully developed and might not be well understood (Abramskieln, Wang, Buchner 2015). The notions of stranded assets and bubbles in the context of the CBH are used inconsistently and are very distant from those used in basic economics and finance settings. This is highly likely to create confusion and result in poor decision making by investors, firms, and policy makers. Furthermore, the argumentation in the CBH is not well understood and conclusions might therefore be drawn too hasty.

We provide a systematic conceptual analysis of the key notions underlying the CBH. As such, we attempt to clarify the notions and arguments implicit in the CBH in order to help improve the debate and decision making by economic actors. First, we show that there are substantial differences in definitions regarding the concepts of economic bubble, stranded assets, and climate-related risk. These differences have to be reconciled in order for a constructive debate to emerge. Then, we analyze the argumentative structure of the CBH and what is (implicitly) at stake in the argument. It seems that a lack of argumentative rigor contributes to hasty generalizations and forms an impediment for debate and future research to develop. Our results are relevant to investors, firms, NGOs, and policy makers considering the CBH debate, because we specify the issues and concepts subject to the debate.

The paper is structured as follows. After the introduction, the second section provides a brief overview of the literature on the CBH. Section 3 presents and analyzes the main concepts used in the CBH. We then continue to assess the argumentative structure of the CBH and reveal what is (implicitly) at stake. Section 5 concludes and provides recommendations for future research.

Methods

An argumentation theoretical analysis of the concepts (definitions) and arguments (structure and validity) on which the CBH rests.

Results

First, we show that there are substantial differences in definitions regarding the concepts of economic bubble, stranded assets, and climate-related risk within the CBH literature and between the CBH literature and economic literature. For instance, contrary to definitions common in economic literature, the CBH argument presupposes the existence of an economic bubble to be contingent on the realization of some future events (i.e., measures that restrict the total extraction of the available resource stock). We argue that such differences need to be reconciled in order for a constructive debate to emerge. Second, we reveal the argumentative structure of the CBH and what is (implicitly)

at stake in the argument. It seems that a lack of argumentative rigor contributes to hasty generalizations and forms an impediment for debate and future research to develop. Our results are relevant to investors, firms, and policy makers considering the CBH literature. (To be developed.)

Conclusions

The main concepts and arguments on which the CBH rests are not fully developed and are not well understood. A lack of common definitions and argumentative rigor risks creating bubbles out of thin air. Our conceptual analysis helps mitigate confusion and results in better, well-informed decision making by investors, firms, NGOs, and policy makers. In addition, it paves the way for future empirical and theoretical analyses related to the CBH. (To be developed.)

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