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Circular Economy Rebound: A case-based management guideline

Pierluigi Zerbino and Davide Aloini

University of Pisa, Department of Energy, Systems, Territory and Construction Engineering, Pisa, Italy
(pierluigi.zerbino@unipi.it)

Abstract. The Circular Economy (CE) aims to reduce harmful emissions and soothe the pressure on raw material extraction by slowing, closing, and narrowing material and energy loops (Geissdoerfer et al., 2017). In stark contrast to this objective, CE can be environmentally unsustainable. A prominent reason is the Circular Economy Rebound (CER). CER is a phenomenon that occurs when a CE practice, which reduces per-unit production environmental impacts, causes increased levels of production and consumption that offset the environmental benefits (Zink and Geyer, 2017).

CER can impede CE strategies from achieving the intended benefits (Levanen et al., 2021). Moreover, overlooking it may lead firms to overstate their environmental performance. Nevertheless, CER is a largely unaddressed topic that deserves further empirical attention (Goyal et al., 2021). In particular, little to none has been conceived to cope with it (Salvador et al., 2020). Accordingly, this work aims to respond to the following research question: *“What strategies may a firm undertake to manage CER?”*.

To answer the research question, an exploratory single case study was developed. The chosen case was a marble import-export Italian firm. The unit of analysis was the CE initiative that allowed the firm to “close the loop” in its Supply Chain. The data were collected through semi-structured interviews and analysis of documentation and archival records concerning production.

The selected firm purchases marble blocks and transforms them into slabs that are sold worldwide. The transformation generates 240 t/year of slabs that, before 2018, were disposed of. Since 2018, the firm has been remanufacturing the slabs to create upcycled slabs that are similar to mosaics. However, this strategy exhibits massive CER (111.7%) due to the complete lack of displacement between primary and secondary products.

Through the analysis of the evidence, a guideline was developed to manage CER. The guideline presents five actionable insights that may help firms in pursuing their CE addresses through a set of Supply-Chain-wide strategies.

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