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"Gheorghe Asachi" Technical University of Iasi, Romania

THE "INSURANCE EFFECT": HOW TO INCREASE THE INVESTMENT AMOUNT IN GREEN BUILDINGS – A MODEL-BASED APPROACH TO REDUCE THE ENERGY EFFICIENCY GAP

Hans Ulrich Buhl[1], Tobias Gaugler[2], Philipp Mette[1*]

[1]*FIM Research Center, University of Augsburg, Universitaetsstrasse 12, 86159 Augsburg, Germany*
[2]*Institute of Materials Resource Management (MRM), University of Augsburg, Alter Postweg 101, 86159 Augsburg, Germany*

Abstract

Real estate is an industry sector with high potential to increase energy efficiency. However, many of the existing green building investment opportunities (GBIO) are not utilized because economic valuation tools are complex and oftentimes difficult to understand. For this reason, we develop a formal, but comprehensible bottom-up model to determine the optimal investment amount from an economic perspective, placing particular emphasis on the descriptive valuation of risk, and point out the applicability of GBIO as insurance against energy price volatility. We also give examples of the model's potential application. Our work shows that considering the insurance effect will increase the optimal investment amount and that certain investment amounts lead to both economic and ecological benefits in properties and property portfolios. Our findings can be used for a comprehensible enhancement of existing valuation methods and tools to reduce the energy efficiency gap (EEG). They constitute a quantitative basis for the adaption of laws to counteract the current underinvestment in the real estate sector.

Key words: energy efficiency gap, energy price risk, green building, investment valuation

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* Author to whom all correspondence should be addressed: e-mail: mette@mail.de; Phone: + 49177 599 7011