Behavioral finance of sustainable real estate funds: Modeling market acceptance by cognitive drivers, socio-demography, and institutional context

Scholz, R.W., Bügl, R., Hüni, G.R. and Leimgruber, C.

Real estate is a critical issue for sustainable development, due to its large share of energy, land, and material consumption. Markets for sustainable real estate and finance products are growing at rates faster than those of traditional market segments (Koellner et al., 2005; Minergie, 2008). Currently, sustainable real estate funds (SREFs) focus on the stages of market introduction and product settlement. On international finance markets, Real Estate Funds (REFs) are often perceived as portfolio risk reducers and as economically sustainable investments (Clayton et al., 2007). However, market acceptance of SREFs by institutional real estate investors and REF suppliers has not been explored yet.

Research goals: Socio-psychological analyses are needed to describe human attributes of sustainable development when studying dynamic and self-regulatory systems (e.g., Scholz and Binder, 2004; Scholz et al., 1998). Sustainable finance markets are growing fields where investment ratings, sustainable investment funds, and credit risk management procedures have been developed (e.g., Koellner et al., 2007; Weber, Michalik and Scholz, accepted). We investigated the market acceptance of SREFs by institutional real estate investors and REF suppliers including the impact from cognitive drivers, socio-demography, and institutional context. Primarily, market acceptance of SREFs was evaluated by investors' decision to invest, investment volume, and acceptance of return shortfalls. Moreover, we provide behavioral finance data for REF suppliers' views on SREFs. Considering cognitive drivers for market acceptance, we concentrated on the anticipated sustainability management effect of SREFs, investors' environmentalism and risk tolerance, and the anticipated importance of sustainability factors for the market success of SREFs. Age, marital status, having children, and household income were used as socio-demographic controls. To evaluate the effect of institutional context on investors' market acceptance of SREFs, assets under management (AUM), REF investments, type of company, and hierarchical level of investors were used.

Methods: We carried out a web-based questionnaire study during July and August 2006 using a sample of decision-making institutional real estate investors and REF suppliers in the German-speaking parts of Switzerland ($N = 68$) (cf. Schnell, Hill and Esser, 2005, for an overview on sampling and interview procedures). We performed multiple ordinary least squares (OLS) and binary logistic regression for modeling market acceptance of investors.

Results: In total, 76% of the responding investors were SREF potentials willing to invest in SREFs. 38% of the responding investors reported that they would accept return shortfalls of SREFs against the REF benchmark (SWX Immobilienfonds Index), with a mean relative interest rate decrease of about 21%

(total sample of investors = 8%). Investors' anticipation of the effectiveness of SREFs in steering local and regional sustainability had a positive impact, whereas environmental apathy had a negative impact on the market acceptance of SREFs. Environmental anthropocentrism had a negative effect on investors' decisions to invest in SREFs, but no effect on their investment volume or acceptance of return shortfalls. Risk tolerance of investors was related to higher investment volumes in SREFs, but risk-tolerant investors were less willing to accept return shortfalls than risk-averse investors. Investors who viewed sustainability factors like Building materials and energy or Expenses, return, and flexibility as important for the market success of SREFs were less willing to accept return shortfalls than other investors. On the contrary, the importance attributed to Green space design for the market success of SREFs was positively related to investors' acceptance of return shortfalls. Age was negatively related to investors' decision to invest in SREFs, whereas marriage was positively related. Having children was related to higher acceptance of return shortfalls. Income had no effect on investors' market acceptance of SREFs. As for institutional context variables, we found that AUM were negatively related to the decision to invest and investment volume, whereas amount of REF investments was positively related. Investors from pension funds reported deciding to make an investment in SREFs more often than investors from non-pension funds (collective foundations, other types of companies). Hierarchical level of investors and AUM were positively related to investors' acceptance of return shortfalls, whereas amount of REF investments was negatively related. 30% of REF suppliers reported that investors were willing to accept return shortfalls. For the investors' population, REF suppliers reported an average accepted return shortfall rate of about 0.2% when compared to the benchmark, whereas investors on average reported 0.32% for their own acceptance. These results suggest that the mental models of REF suppliers fit reasonably well with the self reports of investors on SREF investments. Finally, 60% of the responding REF suppliers reported to be willing to develop a SREF if the sustainable real estate supply in Switzerland matches the needs of SREFs in both quantity and quality.

Conclusion: We identified several cognitive, socio-demographic and institutional correlates of key finance stakeholders' market acceptance of SREFs. We found that the Swiss finance market will allow the issuing of several SREFs. However, market success of SREFs and further sustainability criteria such as sustainable building stock supply, portfolio diversification, proximity to public transport, location and shops remain challenging issues (e.g., Kriese and Scholz, submitted; Minergie, 2008; Pivo, 2008; Schweizerischer Ingenieur- und Architektenverein [SIA], 2005). Sustainable management effects of SREFs may entail benefits for dwellers, environment, and communities in built, ecological and social environments, in turn easing the expression of sustainable lifestyles (Bügl and Scholz, in prep.). The results presented here may be used to provide a better understanding of investment mechanisms in the SREF domain. This may result in trans-disciplinary cooperation for the development of new, promising SREFs or the reconstruction of existing REFs to meet goals of sustainability (cf. Hansmann et al., 2003; Laws et al., 2004; Stauffacher et al., 2006).

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