

# **INTEGRATION OF SUSTAINABILITY ISSUES INTO REAL ESTATE RISK ANALYSIS AS A FOUNDATION OF REAL ESTATE PORTFOLIO MANAGEMENT**

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## **Summary**

With the issue of sustainable buildings becoming established within property business practises, scientific research in this field has also progressed. Current discussions regarding economic advantages of sustainable buildings show the dynamic developments happening in the field. However, so far little attention has been paid to risk analysis tools and property analysis tools. The challenge here is to include sustainability issues in a market-oriented way into these tools. When examining a project in terms of sustainability, the objective is to assess those qualities and characteristics, that have direct impacts on the risk and opportunity profile of a property investment. The aim is not to identify new „sustainability risks“, but to identify and assess appropriately those building characteristics, that constitute risk factors whose importance will increase in future due to a changing environment. These changes in environment are primarily climate change and demographic shifts. Socio-economic changes, political conditions, technological progress and the consequences of a globalised work and resource market however also play important roles.

Insofar the integration of sustainability issues into risk analysis and property analysis forms the basis for sustainable property portfolio management. Following on from the identification of sustainability related risk factors, existing portfolio management concepts need to be developed further.

**Keywords:** Sustainability, real estate, risk analysis, portfolio management

## **1 Sustainability assessment and risk analysis**

The objective of an integration of sustainability issues into risk analysis of real estate is to allow the identification of perceptible changes of general conditions through long-term observation. These can then be assessed in terms of their impacts on future letting/potential and marketability. To this end the following needs to be analysed: firstly, the conditions determining risk and their impact on the building and secondly, success factors

for real estate investment. Consequences for the assessment of risks of individual buildings as well as those of the entire portfolio of a business in the housing industry can be deduced from these two determining factors. The aim is to distil the risk relevant qualities and properties of a building that are related to sustainability issues, in order to incorporate these in turn into risk assessment, but also into planning, refurbishment and operation.

Risk-determining conditions are governed by certain over-arching mega-trends, which affect many areas of individual and public life and which contribute to changes in systematic risk. To explain these briefly - the housing industry and its risk management face new challenges which are due to demographic change, climate change and depleting resource. Further challenges are posed by changing values, lifestyles and resulting user needs, an increasing sense of responsibility towards the environment and health as well as an increased interconnection between real estate industry and finance industry. In an attempt to deal with these developments and to define requirements for buildings, the below qualities emerge as risk relevant:

**Tab. 1** Qualities that are relevant to sustainability and extended risk assessment

- |   |  |
|---|--|
| ▪ energy efficiency   | ▪ options for reduction of potable water use and sewage                          |
| ▪ environmentally friendly and healthy building products    | ▪ accessibility/ adaptability to the needs of the aged and disabled.             |
| ▪ functionality/ adaptability to current user needs         | ▪ ease of maintenance and repair   |
| ▪ flexibility/ adaptability to changes in user requirements | ▪ indoor air quality, thermal and acoustic comfort                               |
| ▪ resilience against extreme weather events.                | ▪ participation, ease of access to services, quality of management and operation |

Studies by PFNÜR and AROMAT, that surveyed real estate investment institutions, show that the improvement and safeguarding of future marketability of a property are particularly important criteria for successful real estate investment. In fact, these are more important than economic growth tendencies of the macro location and developments in national economic policies [1]. The resulting demands on a building therefore represent a strategy for maintaining or increasing the long-term marketability of a building.

Integration of sustainability issues into risk analysis of properties initially aims to identify those qualities and features of a property, that may potentially influence the risk assessment of the property in future and to make these qualities specifiable and assessable. The approach used differs from others in as far as that it does not propose to introduce an exclusive and complete assessment of the sustainability of a building. The approach introduced here much rather allows the extension of existing methods for the assessment of the opportunity/ risk profile of the building by adding sustainability issues.

The use of a scoring process is an appropriate methodology for analysing an individual property or a property portfolio or the external environment. The Scoring process provides a way in for factoring in the risk analysis of properties within the portfolio management process and therefore is a central building block in the process of integrating sustainability issues, since physical qualities and features of a given building will be accounted for at this point.

## **2 Integration of Sustainability Issues into a Scoring-Modell**

As a first step it is necessary to analyse the existing model. In particular those criteria should be focused on that deal with building specific qualities and/ or risks as well as their weighting factors, since it can be expected that these will be most relevant. For this analysis the criteria should be ordered systematically in order to allow easy identification of those criteria that are already sustainability related. The second step is to identify which aspects of sustainability are not yet covered sufficiently. As a third step, new sustainability criteria should be defined and added in order to fill the gaps identified. The new criteria should be developed based on the list of building qualities presented earlier. Using a mostly performance based specifications, where possible, is of advantage (e.g. use of over-all energy targets instead of elementary U-values). As a fourth step, weighting factors may need to be adjusted to suit the extended catalogue of criteria. When compiling the new criteria catalogue attention should be given to avoid too strong a correlation between the individual criteria. Otherwise scores from one criteria can directly lead to increases in other scores, leading to an over-emphasis of these aspects. If on the other hand respective scores were to fight each other this would be equally wrong.

As a fifth step the chosen weighting factors could be “regionalised and dynamised”, to reflect regional parameters or conditions changing over time. Hence this would allow the scoring model to adapt to a changing market environment and changing demand, that may result from changing preferences of market players [3].

## **3 Lessons from practical implementation**

Based on the approach illustrated in the previous paragraph the scoring system of one of the larger housing providers in southern Germany was extended to encompass sustainability. The project was supported by the federal ministry of transport, building and urban development (BMVBS). In order to assess the validity of this extended system the results were compared with those of ‘VÖB-Immobilienanalyse’ (a renowned German tool for property risk analysis developed and used by banks).[4]

Only building specific indicators were looked at at this stage. The system of the housing provider in question was called “Innosys” – the extended system is now referred to as “Innosys extended”. Four of the company’s properties were investigated, two of which were of fairly high quality. The other two were of relatively low quality. The result showed that the buildings of higher over-all quality showed lower risks in particular in the risk-relevant sustainability criteria and hence showed a lower over-all risk. While the building related scores did not override the dominant quality of location, they lead to a stronger differentiation of results.

The results from the VÖB-Immobilienanalyse confirmed these findings. This shows that sustainable buildings are associated with lower over-all risk, be it through commonly used risk analysis tools or extended tools.

Based on the results of the extended scoring process a qualitative portfolio analysis can be undertaken. The scores obtained in the assessment determine the position of the property within the portfolio matrix. In the case at hand, the emphasis was on the matrix dimension “building specific quality” (internal dimension). However the scoring process can also define the position of the property with regard to external dimensions, such as quality of location. Therefore there is a need to also check the scoring model for risk

relevant sustainability factors in this area. The use of a “three-dimensional” model that allows the juxtaposition of quality of location, quality of the building and financial success is recommended.

#### **4 Conclusions**

For risk analysis and portfolio management the integration of risk relevant sustainability issues is crucial. These often determine future letting and marketing potential as well as cashflow and therefore economic success at large. No new, additional methods are required, only a targeted further development of those already used in scoring models.

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