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Valuing Direct Real Estate Investments by Using the ADAM Modelling Approach

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Abstract

In the Czech Republic the building is considered part of the land on which it lies. Consequently there can be owners of land and buildings being various natural or legal persons. Since 2014 there was a reform of the Czech Civil Code, which leads to the gradual consolidation of property ownership (land and buildings). In the usual case, the division of property on land and buildings in the Czech Republic and the subsequent consolidation efforts constitutes a need for assessment of the relevant investments. Income based model to assess the direct real estate investments (Asset Dividing Appraisal Model, ADAM) presented in this article is based on the methods of measurement values and calculating return on investment, and offers the possibility of investment by real estate appraisal in the background above the consolidation of ownership in the Czech Republic. In doing so, ADAM model combines the approaches to the valuation of property in continental Europe (German yield method) and international approaches, such as the capital market based discounted cash flow method. The objective of the model ADAM is to evaluate direct investments in real estate (land and buildings) and the resulting cash flows, rather than the determination of its current market value.

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1. Introduction

Starting in January 2014, the Czech Republic initiated with Act no. 89/2012 Coll., The Civil Code, the consolidation of previously separate ownership of land and buildings located on it. In terms of valuation it is

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therefore important to examine the factors making the value of land and buildings, not only for the purpose of consolidating the ownership of land and buildings but also to evaluate the return on the investment property as such. This paper presents a newly developed modeling approach for separate analysis of value creation for the investments consisting of land and buildings as separate assets characterized by different lifespan and different sensitivities to changes in the conditions of the relevant market.

Model ADAM (Asset Dividing Appraisal Model) builds upon the synthesis of two concepts of valuation of investment property - the traditional German yield valuation and DCF methodology. The bottom line is a separate evaluation of land rent and return on the buildings located on the land. But there is an effort to preserve the characteristics of the DCF modelling approach originating in neoclassical economics and simulating the function of perfect capital markets and the attempt to respect the actual characteristics of real estate markets, so distant from the definition of a perfect market definition in neoclassical economics (limited offer, heterogeneity of traded goods, market power, market frictions, high transaction costs, and many others). Theoretically relevant is a combination of view of value creation based on market transactions and the perspective of capital value creation. Model ADAM contributes through simulation analysis to a better understanding of the economic and valuation linkages.

2. Theoretical fundaments of the model

In the model ADAM property is considered an investment, consisting of land and buildings placed on the land. In terms of value creation the land and building are evaluated separately: the economic life of the land of the buildings are separated and useful life of land is considered to be eternal (Metzger, 2010, Kleiber, 2010). The economic life of buildings arises from contractual relationships (lease agreements for the usual duration concluded under normal conditions of time and place). Economic life derogates from the residual life within the meaning of the German approach of determining the income based value in accordance with § 17 para 1 (2) ImmoWertV (ImmoWertV-Immobilienwertermittlungsverordnung - prescription for determining the value of property). The economic life of the basic use of the property describes the use of a form that generates cash flows (rental income). The actual economic recovery is based on contractual lease relationships and applies both to the land (land annuity, "eternal" annuity) as well as the building (usage rent). While in the German income based value determination carries out separate evaluation of land and buildings (for methodological details see Moll-Amrein, 2009 Metzger, 2010, Kleiber, 2010), the Anglo-American approach based on DCF considers land and building for one unit (in a broader context Naubereit, 2009). The value of the property is deemed to be eternal (Metzger, 2010, Kleiber, 2010 Moll-Amrein, 2009). DCF approach provides information on the valuation of the property as property values (assets) from the perspective of the capital market on which cash flows are subject to exchange on a risk basis (and thus not unique assets as is the case of real estate market). According to the discount rate therefore it is possible to achieve various results (see the different methods of construction of discount rates). This assessment of the property is based on the economic recovery period usually ranging from 10 to 15 years, according to the lease agreement (Kleiber, 2010). When discounting using the interest rate of an individual required rate of return the DCF method can provide an estimate of subjective values for the decision (Entscheidungswert) for investment in selected properties (Engel, 2002, 2003). Kleiber (2004) concludes the following concerning the DCF-method: "Despite all of this the Discounted Cash Flow method has certain advantages and there are fields where it can be applied. The method originates from entrepreneurial investment analyses and has always been used in Germany, especially when the objective was to evaluate company values on the basis of entrepreneurial targets. According to this understanding cases of applications are also highlighted in English literature, when it is about the subjective value of a special investment."

In the context of the model ADAM both the absolute and relative expected return on investment in real estate with regard to income from land use and buildings should be taken into account. Presented model belongs to the field of investment and financial calculations and calculation of cost of capital, including an analysis of lease rents. The model forms the synthesis of the "land return rate z" for the classical middle-European or rather German method and the "calculation rate p" of the Anglo-American system for real estate evaluation. Its essential purpose is to offer investors a clear evaluation of the annual Asset Rent Generation ARG and of the capital investment K0 for the investment on the basis of the Asset Rate of Return ARR to broaden the decision preparation for a real estate investment and to include chances and risks much more.