

# Preface

To extract key dimensions from a complex set of micro-level market data requires the use of high-quality data cross-sections and a robust modelling tool. Such tools have been developed within a realm known as mass appraisal: systematic economic valuation of groups of properties using standardised procedures largely based on the multiple regression analysis (MRA). Hitherto mass appraisal has been mostly restricted to taxation, although mortgage lending is fast becoming another widespread application area. In a more generic sense, mass appraisal offers an untapped possibility to link the property value with various characteristics of the building, plot and its vicinity, as well as social and functional features of the neighbourhood and local area. Ideally the data should cover differences in socio-economic aspect and differences in environmental aspects such as pollution. At present, valid property value data is easy to find in some countries and difficult (or even impossible) to find in others.

Following the experience of our edited book *Mass appraisal methods—an international perspective for property valuers* RICS Series, Blackwells, Oxford, 2008, a number of our colleagues who read it proposed a sequel focusing our attention on a concept known as automated valuation method/model (AVM, Automated Valuation Methodology). The present book picks on this request and poses some questions about AVM methodology. For this reason we have raised a number of issues: in particular, on the current methodological framework of AVM, about the main problems encountering AVM applications, and what we realistically could do to improve AVMs so as to make our financial—and by implication, social—world safer. This line of research seeks to contribute to the current debate on AVMs especially after the crisis of 2007–2008. After this extensive and tragic economic crisis we are entitled to have our doubts and we are also increasingly concerned about the social responsibility of AVM for the stability of our economies. As a consequence our field of research now has an opportunity to contribute, in an effective way, to improve the stability of our financial system. AVMs may be helpful in several fields. They can, for example, be used in the collateral estimation, in the valuation of real estate portfolios. According to Basel II agreement and EU Directive 2006/48/CE, banks should provide periodic automatic valuation to appraise properties for which acquisition has

been financed in the mortgage lending process. In this valuation activity for mortgage lending purposes statistical and mathematical modelling may be used in combination with valuation.

When we examine strategic issues within mass appraisal AVMs are relevant due to their huge financial—and as a consequence also socio-economic—significance. How to avoid—or at least mitigate—a new financial crisis stemming from real estate market bubbles? So this is about socio-economic sustainability. The crisis showed that AVM can work in a normal situation with rising and stable prices, but not in a more abnormal one with falling prices. Since then a debate is emerging, but it is still not sufficiently developed in terms of conclusions between any connection between data, methods and the financial consequences.

To remind the initiated readers—and to demonstrate the point for the uninitiated ones—in our prior book on mass appraisal we followed a line of argumentation based in what we discovered was a contemporary problem—the difficulty of promoting development in the valuation paradigm. Since then, however times have changed, towards more favourable attitudes among the real estate research community, more people being involved, higher level of technical and methodological expertise, more and better datasets, greater R&D activity and data management responsibility of the private sector, the development of ICT and hardware, and not least, the new reality imposed on us by the massive global market meltdown (with consequences thereof) from 2007–2008 onwards. Because of these changes, the focus of our present book is rather different than what was the case documented in the prior book, almost a decade ago. In the present book each chapter makes a cut into the problem area we begun theorising in the previous book, rather than following a suggested line of argumentation—or vision—that would be common for all contributions. In the present compilation of papers the approach remains the same as in the prior one: we need to explore the unknown. This time we have not focussed on a competition amongst the results obtained applying different AVM methods as in the prior work. It is instead about an assemblance of different issues at stake, including best practices, real-life constraints, administrative procedures, software capabilities, expert competences, modelling frameworks, background theories and more.

When reading these books a detail in terminology is worth noting. Namely, in some instances the term computer-assisted mass appraisal (CAMA) is used instead of the term AVM. It is to observe that these two terms are not synonyms: AVM is about financial aims and mathematical procedures whereas CAMA pertains to any administrative end applications; however, plenty of overlap between these two realms exist as many methods can be used for both. At a technical level, the main difference between a CAMA estimate of value and the one produced by the AVM is the effective date of the appraised value estimate. CAMA systems value all properties in a jurisdiction as of a statutory valuation date such as January 1st of each year. On the other hand, AVMs usually are designed to produce a value estimate that coincides with the sale date of the property.

In USA the use of CAMA started in the 1970s and has since then spread around the world. During the last two decades CAMA has developed in an impressive way.

Here it is to note that, in 1999, the Appraisal Standard Board replaced the term ‘estimate of value’ with the ‘opinion of value’ in the USPAP. A clear distinction was made between two important and distinct definitions. The opinion of value regards the final results of an in person valuation and the estimate of value has been indicated as the final results of an AVM. It is worth noting that some institutions consider AVM assisted valuation more reliable than valuation in person.

Lastly, we would like to pay respect to the personal aspirations of all those colleagues, who have helped us develop our research agenda during the past 10–15 years period. To provide a brief summary, a group of academics with broadly similar interests (i.e. appraisal, valuation and market analysis) started working in two meeting organised by the OTB research Institute of Delft University of Technology, the Netherlands—this was in 2006 and 2007. For this reason we usually call this group the Delft group, even if frequent communications among many members of this group already existed a few years before that (the absolute starting point being the ERES meeting in Alicante in 2001). Then we continued with extending this network. Several authors joined our group after a large meeting arranged in Rome in 2010. While the list of authors in this book already gives an idea of this consistence, the whole group of people involved is too large to list here, and to mention only a few names would not be fair to those left out. Here is an exception, however: in this vein we have dedicated this book to the memory of Prof. Koloman Ivanicka Jr. of STU Bratislava, a passionate researcher and a joyful friend of ours.

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July 2016

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Advances in Automated Valuation Modeling

AVM After the Non-Agency Mortgage Crisis

d'Amato, M.; Kauko, T. (Eds.)

2017, XXXVIII, 418 p. 39 illus., Hardcover

ISBN: 978-3-319-49744-0