

MASS VALUATION ACTIVITIES CONDUCTED BY GENERAL DIRECTORATE OF LAND REGISTRY AND CADASTRE IN TURKEY

Ümit YILDIZ, Tuğba GÜNEŞ, Özkan ESER, Sadık YILDIRIM, Neşe BUÇAN, Güngör GÜZEL, Hatice Şule POSTACI TEMİZ, Enver UZER
Turkey

Key Words: mass valuation, property valuation for taxation, Turkey

SUMMARY

This is a summary on the paper on mass valuation activities conducted by General directorate of Land Registry and Cadastre (TKGM) with the support of International Bank for Reconstruction and Development in Turkey within the scope of the Property Valuation component of Land Registry and Cadastre Modernization Project.

Mass valuation is as “Mass appraisal is the process of valuing a group of properties as of a given date and using common data, standardized methods, and statistical testing” by the International Association of Assessing Officers (Standard on Mass Appraisal of Real Property 2013). Mass valuation implementations are realized for various purposes in the world, the aim of this project is a pilot implementation in two chosen municipalities for mass valuation with taxation purpose and policy development on this issue.

In this study, mass valuation process is explained in terms of its objectives, preparatory studies (such as pilot area selection, preparation of reports on mass valuation especially for capacity building since this kind of valuation is made for the first time in Republic of Turkey), data assembly studies, model building activities, how to deal with various challenges and making conclusions through the necessary comparisons.

ÖZET

Bu bildiri Dünya Bankası tarafından desteklenen Tapu ve Kadastro Modernizasyon Projesi Gayrimenkul Değerleme bileşeni kapsamında yürütülen küme değerlendirme faaliyetlerinden oluşmaktadır. Küme değerlendirme uygulamaları dünyada çeşitli amaçlar için gerçekleştirilmekte olup, bizim bu projedeki amacımız seçilen iki belediyede vergilendirme ve bu konuda politika geliştirmedir. Bu çalışmada, küme değerlendirme süreci, hazırlık çalışmaları (pilot bölge belirlenmesi, bu tür değerlendirme Türkiye Cumhuriyeti’nde ilk kez yapılacağından kapasite geliştirme için küme değerlendirme raporlarının hazırlanması vb.), veri derleme çalışmaları, model oluşturma faaliyetleri ve çeşitli zorlukların nasıl aşılacağı bakımından açıklanmıştır.

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1. INTRODUCTION

The agreement, concerning the loan valued at 135.000.000.000 Euro, signed between the Republic of Turkey and International Bank for Reconstruction and Development on June 9, 2008, for financing of the Land Registry and Cadastre Modernization Project (TKMP) to be applied by the General Directorate of Land Registry and Cadastre (TKGM), the Ministry of Public Works and Settlement in order to increase the efficiency and quality of the land registry and cadastral services, was entered into force by publishing on the Official Journal no 26956 and dated 03/08/2008.

The Project consists of the following parts::

1. Cadastre and Land Registry Renovation and Updating
2. Improved Service Delivery
3. Human Resources and Institutional Development
4. Property Valuation
5. Project Management

In this study, activities carried out by TKGM in the scope of the fourth component “Property Valuation” will be explained and evaluated the results of the this component.

Within the property valuation component, it is aimed to submit knowledge to the decision-makers with regard to the real estate valuation activities in our country in order to develop the country policy concerning this subject, by underlying the need for changes in the governing structure, establishing the standards in the valuation studies conducted for various purposes and also a database in which the valuation studies are kept centrally.

The Project Appraisal Document-PAD no. 43174-TR and dated 07/04/2008, prepared for the TKMP by the World Bank Sustainable Development Department is the first document prepared after the feasibility report of the project. The objects of the real estate valuation component were specified according to the survey study-report themed “mass valuation” published in 2002 by the United Nations Economic Commission for Europe (UNECE Report 2002). It is highlighted in the PAD that there are some deficiencies in the institutional structuring, professional capacity and standards except for the valuation studies conducted pursuant to the Capital Markets Law.

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In this document, the Real Estate Valuation Component was divided into 3 sub-components indicated in the Loan Agreement as follows:

1. Policy Development
2. Pilot Implementation
3. Capacity Building (www.wolbank.org.tr, 2008).

The objectives of these sub-components defined concerning the “Property Valuation Component” were listed in the loan agreement as follows:

1. Development of policy and institutional options for property valuation function in the Republic of Turkey consistent with the European practices.
2. Development of guidelines and piloting of mass property valuation for local property taxation in two selected municipalities.
3. Provision of training for the development of core capacities for property valuation within TKGM and other central government agencies and in the municipal governments, carrying out seminars and workshops, and postgraduate training of selected individuals from government and stakeholder agencies and selected universities (www.wolbank.org.tr, 2008).

In this project, mass valuation is realized for residential properties and for lands without improvements.

2. PREPARATORY STUDIES

3 main activities were realized to achieve the objectives of property valuation component:

2.1 Pilot Area Selection

TKGM valuation team started the pilot area selection studies at the beginning of 2012. In the Project Appraisal Document (PAD) the selection criteria were specified as follows;

- The municipalities are willing to cooperate,
- Including the different real estate types as urban and rural,
- Availability of an active real estate market,
- Presence of the renewed cadastral data,
- Including the data concerning the land use and building.

It was decided by the TKGM administration to be performed one of the pilot applications in Istanbul and the other in Ankara. The pilot areas were specified as Fatih Municipality in Istanbul and Mamak Municipality in Ankara.



Figure 1: Fatih Municipality



Figure 2: Mamak Municipality

Fatih Municipality has a comprehensive urban information system presenting detailed information via e-government gateway and websites, won awards in several competitions and this had an importance in selecting Fatih as pilot area. In addition, a wide variety of real estate types such as urban transformation areas, old and new buildings for residential purpose,

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various commercial properties, public buildings, historical structures are available in Fatih Municipality.

Mamak Municipality presents the scanned samples of a part of the zoning archive documents to all users' open access within the urban information system. For this reason, it was thought that the data collection studies could be easily realized in Mamak.

The sales mobility belonging to the last 4 years in Fatih and Mamak was looked during the pilot area selection and the relevant information are shown in Figure 3 and Figure 4 (TKGM 2013).

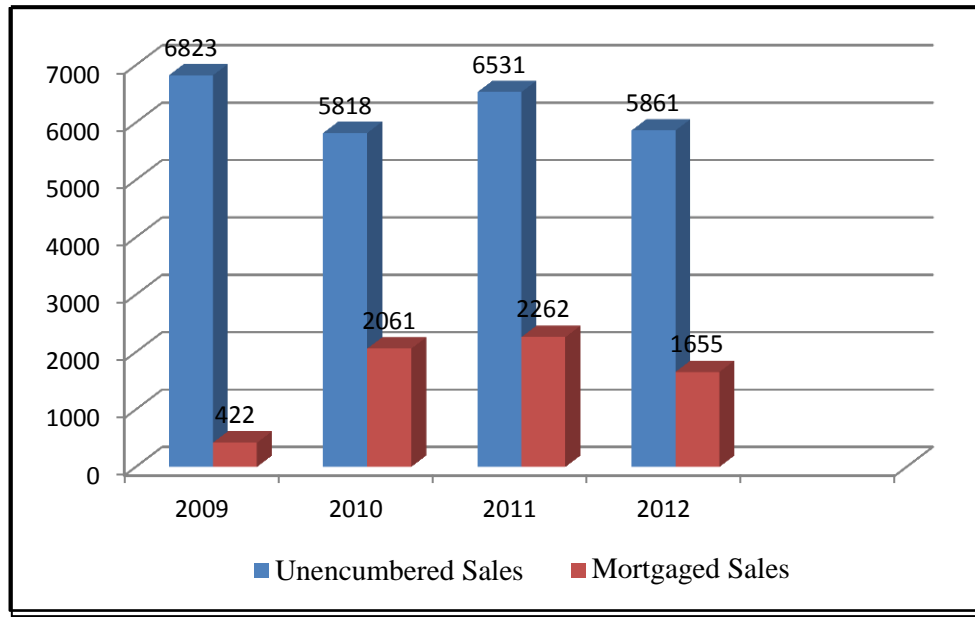


Figure 3: Sales Volume in Fatih

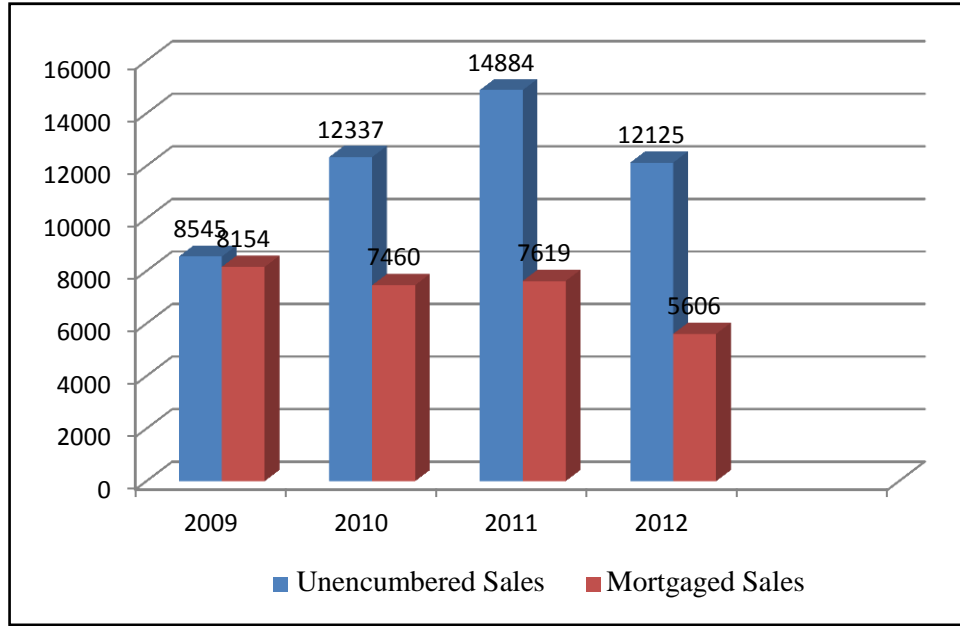


Figure 4: Sales Volume in Mamak

The protocols on data sharing were signed with Fatih and Mamak municipalities in the mid of 2013.

2.2 Recruitment of International Consultants

Due to the fact that the mass real estate valuation studies for taxation purpose will be institutionally realized for the first time in our country within the scope of this project, two international consultants were recruited (Richard Almy from USA and Aivar Tomson from Estonia).

2.3 Reports prepared within the scope of the component

In 2011, following reports prepared by favour of the commissions within the scope of the component:

- Determination of the Parameters and Standard Building Commission Report
- Setting Parameters and Standards Committee Report
- Building Legal Infrastructure Committee Report

In addition, some other reports prepared in order to support especially the pilot implementation studies.

TKGM Valuation Unit staff made a study visit to Finland and Estonia to see their mass valuation systems and to get benefits their experiences. At the end of this visit a comprehensive report was prepared.

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A detailed pilot action report was prepared by TKGM staff in collaboration with international consultants to determine the road map of pilot studies step by step.

Since such a comprehensive pilot implementation as it was expected includes various risks and challenges, a risk assessment report was prepared to indicate the risks to be probably faced during the pilot, their impacts and solution offers for them.

As mass valuation is based on statistical analyses and modelling activities, data is one of the core elements of the implementation and data accuracy and reliability are the key issues of data management. For this reason the data quality control report was prepared for the purpose of the control of the data accuracy and consistency which were delivered to the Administration by the contractors in consequence of the data collection work in pilot.

Since mass valuation is realized for the first time in Turkey, experienced staff or knowledge on this issue was not sufficient enough. It is clear that mass valuation needs various disciplines to work cooperatively, such as cadastre, statistics, taxation, law, valuation, GIS etc. Relevant literature was reviewed comprehensively and a literature review report was prepared.

3. DATA NEEDS

The mass valuation is defined by the International Association of Assessing Officers – IAAO located in the USA as “Mass appraisal is the systematic appraisal of grouped properties using standardized procedures and statistical testing” (Standard on Mass Appraisal of Real Property, 2013).

In order to be performed mass valuation by using the statistical methods, first of all, it is necessary that the variables to be used in the analyses to be determined completely and correctly in the selected pilot areas.

3.1 Indicators of Value

In general, values of the real estates, recorded during the transactions at Land Registry Directorates, are not the real sales prices and moreover they are below of them. Although it is compulsory according to the Charges Law no 492 that the seller and buyer declare the realized price information while the fee amount to be paid in the sale transaction is calculated, due to the fact that the rule of indicating the value based on the real estate tax as the lower limit to be declared, the current value of the real estate is generally declared as the purchase and sale price. In addition to this, although the realized price is equal to the recorded price in the sales realized by decree of court, it doesn't reflect the market value. The recorded value may be different from the market value in situations such as joint-sales or the sale of the real estates located in protected areas, for the reasons such as pre-emption right or exemption from charge. Because of these and similar reasons, an important problem was aroused: What sources will correct and reliable value/price information be obtained from?

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While literature review report was preparing, it was understood when faced with similar situations in some other countries, property values are obtained from various sources such as valuation reports prepared for mortgage loans or several field works like asking price; however it was observed that most of the countries try to form databases in which the price information can be kept correctly.

Because of the reasons mentioned above, following sources were used as the indicators of value in property valuation component:

1. Pursuant to the capital market legislation, the real estate valuation companies, in the list of the Capital Markets Board, generate annually about 700.000 valuation reports, most of them are generated for the mortgage financing system. Valuation reports prepared in Fatih and Mamak between 2011-2013 2011 were requested from the Appraisers Association of Turkey (TDUB) in order to be analyzed and used as the dependent variable in mass valuation after some corrections. Due to the fact that there is not a database in which the valuation report information are kept centrally, The Board of Directors of TDUB requested from the member companies a certain number of valuation reports, and then the collected data were sent to TKGM.
2. A survey study was made in Fatih and Mamak Land Registry Directorates and the real prices was asked to the sellers/buyers during the transactions by informing their declarations would be used for the project, not for any official purposes.
3. Asking price

3.2. Data Sources for Independent Variables

Due to the fact the mass valuation study conducted within the TKMP Property Valuation component is a “Pilot Implementation”, all the factors were tried to be considered and collected the data from different sources for each variable. While deciding what dependent variables should be included, sources listed below were reviewed for this purpose :

- Determination of the Parameters and Standard Building Commission Report
- Valuation reports
- International standards concerning mass valuation
- International mass valuation implementations
- Academic studies
- Field work
- Questionnaires at several symposiums
- Variables in the advertisements of real estate agencies

Data concerning the independent variables for the properties selected in the pilot implementation areas were obtained mainly from TAKBIS (Land Registry and Cadastre Information System), Land Registry Offices, and Municipalities and also from the field.

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Independent variables were collected with the data collection forms titled as below :

- Form A- TAKBIS Information- Definitive Data (Cover Form)
- Form B- Parcel Detail-Parcel Zoning Detail
- Form C- Distances
- Form D- Structure Detail
- Form E- Individual Unit Detail.

While data collection forms filled out, some information was obtained from archives of the relevant municipalities and land registry offices and also from the field. Needed documents, considering data for independent variables, were scanned in the archives and photos of the properties were taken from different angles. By visiting all the parcels, data was controlled on the field by comparing the current situations and official records.

Form C wasn't used for data collection since all the distances were calculated via GIS.

Data was collected through the paper forms (via GIS for Form C), entered the data collected into the digitizing tables, and smartened the digitizing tables as to be kept together with the data collected. The smartening studies performed by the contractor were mostly realized to as the updating of the database.

Although nearly 80 different attribute information of the properties was collected and digitised, some data was not used in the modelling studies since they were descriptive information for the related properties, whereas the others were collected for the purposes of collecting all of the information as much as possible about the properties, ensuring the consistency and accuracy for the difficulties encountered during the collection thereof and the information collected and providing information that may be needed in other possible studies during the application due to the fact that the project was a pilot application.

3.3. Data Assembly

It was planned to carry out the data collection, analysis, modelling, rate study and information system formation work steps within the scope of only one tender in the first planning of the pilot application to be realized within the scope of the Real Estate Valuation Component and it was decided to be carried out these studies by the TKGM valuation team in order to be built the institutional capacity in analysis and modelling together with the employment of the international consultant and the international assistant consultant. Thus, it was aimed that the service procurement to be realized for the pilot application is only for data collection and smartening operation and the analysis and modelling studies are performed by the TKGM valuation team.

The agreements were signed with both companies at the beginning of October 2013 and data collection was completed in April 2014.

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In this project, approximately 2.000 residential properties and 400 lands without improvement were used for model building activities for each pilot area and values of approximately 40.000 properties were estimated with these models.

During the data collection studies, a midterm evaluation workshop was held with the participation of universities and stakeholders to get their evaluations and suggestions in Istanbul.

4. MASS VALUATION MODEL BUILDING APPROACHES

Because of the need to accommodate local circumstances and the many decisions involved, and here is no single approach to model building. Different models can produce equally valid results as long as the statistical tools have been used properly. Moreover, there is an art to modeling, and different modelers may approach a problem somewhat differently based on their experience and preferences. Within the scope of the capacity building, it was decided that model building studies should be realized by TKGM Valuation Unit with the support of consultants.

However Multiple Regression Analysis method, which is most commonly used especially for mass valuation in the world, was planned to be used in studies conducted with respect to the property valuation component; it was determined that the techniques based on especially artificial intelligence applications delivered more successful results than the Multiple Regression Analysis did in the studies conducted. For this reason, the methods used in the pilot application studies conducted in Fatih and Mamak are listed below:

1. Multiple Regression Analysis
2. Artificial Neural Networks
3. Decision Trees
4. Linear Modelling.

Values of the properties were estimated with the models for each method and compared the known values (IOVs). By making statistical tests and ratio analysis, the average estimation success of the models is at around %80.

Raito analysis are made according to the (International Association of Assessing Officers) standards- Standard on Ratio Studies and COD (coefficient of dispersion) and PRD (price-related differential) values are in the needed intervals (Standard on Ratio Studies 2013).

Estimated values by using mass valuation methods were compared with the values registered in TAKBIS (If chosen properties were sold in last three years) , which are the declared values by the sellers/buyers during the transactions. These declarations mostly equal to the current value registered at municipalities as stated before.

Estimated values by using mass valuation methods were also compared with the tax values registered at municipalities.

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The comparisons show that; values estimated with models are three times higher in Fatih and two times higher in Mamak than officially registered values.

5. CONCLUSION

According to the OECD records, rates of taxes taken from real estate to the gross domestic product (GDP) of some member countries are shown below (see Chart 1). Although this rate is under the average rate of OECD countries in Turkey, it is above of the rate in other countries such as Netherlands, Spain, Denmark, UK etc. conducting mass valuation implementations successfully (OECD 2014).

	2005	2006	2007	2008	2009	2010	2011	2012
Australia	2,6	2,7	2,6	2,2	2,5	2,4	2,3	..
Chile	1,3	1,2	1,1	1,2	0,8	0,7	0,8	0,9
Denmark	1,9	1,9	1,9	2,0	1,9	1,9	1,9	1,8
Finland	1,2	1,1	1,1	1,1	1,1	1,2	1,1	1,2
France	3,4	3,5	3,5	3,3	3,4	3,7	3,7	3,9
Germany	0,9	0,9	0,9	0,9	0,9	0,8	0,9	0,9
Greece	1,3	1,7	1,7	1,8	1,5	1,0	1,8	2,0
Israel	3,3	3,1	3,2	3,1	3,0	3,1	3,1	2,9
Japan	2,6	2,6	2,6	2,7	2,7	2,7	2,8	2,7
Korea	2,9	3,3	3,4	3,2	3,0	2,9	3,0	2,8
Mexico	0,3	0,3	0,3	0,3	0,3	0,3	0,3	..
Netherlands	2,0	1,8	1,8	1,7	1,5	1,5	1,3	..
Spain	3,0	3,2	3,0	2,3	2,0	2,1	1,9	2,0
Switzerland	2,2	2,2	2,2	2,1	2,1	2,1	2,0	2,0
Turkey	0,8	0,9	0,9	0,9	0,9	1,1	1,1	1,2
UK	4,3	4,5	4,5	4,2	4,2	4,2	4,2	4,2
USA	2,9	3,0	3,0	3,1	3,2	3,1	3,0	3,0
OECD Average	1,9	1,9	1,9	1,8	1,8	1,8	1,8	..

Chart 1: Rates of taxes taken from real estate to the GDP of some OECD countries

According to the working paper titled “Taxing Immovable Property – Revenue Potential and Implementation Challenges” prepared by IMF, rates of real estate taxes revenue to the GDP is shown below (see Chart 2). In OECD countries, developing and transition countries, and other countries, share of real estate taxes is showing increase in GDP (OECD 2014).

	1970s	1980s	1990s	2000s
OECD Countries	1.24	1.31	1.44	2.12
(Number of Countries)	(16)	(18)	(16)	(18)
Developing Countries	0.42	0.36	0.42	0.60
(Number of Countries)	(20)	(27)	(23)	(29)
Transition Countries	0.34	0.59	0.54	0.68
(Number of Countries)	(1)	(4)	(20)	(18)
All Countries	0.77	0.73	0.75	1.04
(Number of Countries)	(37)	(49)	(59)	(65)

Chart 2: Rates of real estate taxes revenue to the GDP

In Turkey, revaluation activities for taxation are carried out by commissions established according to the legislation in every four years. Since the commission members are not professional valuation experts, revaluation rates are determined by multiplying with an unscientific rate with older ones. On the other hand, single property valuation is not convenient for taxation purpose since it is not possible to gain any advantages in terms of time and costs. Therefore, mass valuation studies based on the mathematical models, statistical methods and artificial intelligence algorithms are preferred to calculate the property values in the world recently.

Building the mass valuation system in Turkey will not only provide calculating the property values in parallel with market value, but also it makes property market more transparent.

Mass valuation implementations need a system in which property prices during the transactions have to be registered accurately. On the other hand, official registers at the Land Registry Offices are not real prices because of the buyers/sellers' deceptive statements (apart from the exclusions such as REITs etc.). Besides this, title deed fees are quite high in Turkey.

The basic component of the mass valuation system is value/price information. According to the TAKBİS records, there are approximately 56.2 million parcels and 15.2 million properties (individual units) in Turkey and 2.1 million property transactions were made in 2013. Especially in metropolitan cities, most of the transactions are made through the real estate agencies. As in Netherlands, information such as asking price, accurate price, asking rental, marketing duration etc. can be registered in a database integrated to TAKBİS with the help of voluntary real estate agencies by making them integrated to this system. In addition, every year averagely 700.000 valuation reports are prepared every year by the licensed valuation companies mostly for mortgage purpose. These valuation reports with the property attributes and values should be registered in this same system as well. Thus price/value data from different sources can be registered on a common database and can be used for model building purpose in mass valuation system.

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It can be ensured that accurate prices can be declared during the transactions with various incentives such as reducing the title deed fees etc. After the system established, declared values during the transactions can be compared to the estimated values by mass valuation system, and accuracy and consistency tests can be done.

The second component of mass valuation system is property attributes that have effects on property value. In Turkey, information regarding mentioned attributes are registered at several institutions in different formats. Therefore, data regarding these attributes can be provided by data sharing between the institutions.

Third component of mass valuation system is sufficient workforce. Property valuation is accepted as a multidisciplinary science. Mass valuation for taxation purpose should be conducted by full time personnel from various disciplines such as survey/agriculture/civil engineers, city planners, architects, economists, statisticians, data managers etc.

A system for real estate valuation is planned in Medium Term Program of 2014-2017 and 10th Development Plan of Turkey. Mass valuation system will not only increase the success of the real estate valuation for taxation purpose, but also accomplishing the goals stated in Medium Term Program and 10th Development Plan of Turkey will be easier through increasing the quality of the data that the system would need and making possible sharing the data with other parties. Mass valuation, as one of the components of an active and effective real estate management system, will make an important contribution to sustainable development.

Within the scope of this project, the total amount of resources used in the preparation and implementation stages of the pilot implementation was 1.300.000 Turkish Liras. Accordingly, the unit cost in the mass valuation application was nearly 25 TL (if 1 USD is calculated as 2,2 TL, 11.4 USD). As it is stated above, it is thought that unit costs will decrease by increasing the quality of the data and making easier the data sharing. In Turkey recurrent taxes (like real estate tax, environment tax etc.) taken from the properties approximately 3,9 billion Turkish Liras in total (General Directorate of Public Accounts 2013). According to the results of TKMP, it is concluded that without changing real estate tax rates, when tax value will come close up to the market value, this revenue will increase at least 2,5 times.

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REFERENCES

General Directorate of Public Accounts, 2013,
https://portal.muhasebat.gov.tr/mgmportal/faces/anasayfa?_afLoop=23744477380756164&_afWindowMode=0&_adf.ctrl-state=4ax8ejoq5_4, Turkey.

OECD, 2014. <http://www.oecd-ilibrary.org/taxation>

Standard on Mass Appraisal of Real Property, 2013, International Association of Assessing Officers (IAAO), Kansas City, Missouri, USA

Standard on Ratio Studies, 2013, International Association of Assessing Officers (IAAO), Kansas City, Missouri, USA.

TKGM, General Directorate of Land Registry and Cadastre, 2013,
http://uygulamalar.tkgm.gov.tr/ybs/ybs/Tapuistatistik_Arsiv/2013/12_Aralik_2013/TapuIstatistik.htm, Turkey.

UNECE Report, 2002, The Report of Workshop on Mass Valuation Systems of Land (Real Estate) for Taxation Purposes, Committee on Human Settlements, United Nation Economic Commission for Europe, Geneva.

www.worldbank.org/projects/P106284/turkey-land-registration-cadastre-modernization-project?lang=en, 2008, TKMP Loan Agreement.

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BIOGRAPHICAL NOTES

Ümit YILDIZ

Work Experience

General Directorate of Land Registry and Cadaster	2009 – ...
Ada Real Estate Valuation and Consultancy Corporation	2008 – 2009
Lider Real Estate Valuation Corporation	2007 – 2008
General Directorate of Land Registry and Cadaster	2002 – 2007

Education

Phd	...	Ankara University, Graduate School of Natural and Applied Sciences, Department of Real Estate Development
Msc	2014	Ankara University, Graduate School of Natural and Applied Sciences, Department of Statistics Thesis Subject: Mass Valuation Implementations in Real Estate Sciences and a Model Proposal for Turkey
Bsc	2005	Yıldız Technical University, Faculty of Civil Engineering, Department of Geomatic Engineering

Tuğba GÜNEŞ

Work Experience

General Directorate of Land Registry and Cadaster	2005 – ...
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Education

Phd	...	Ankara University, Graduate School of Natural and Applied Sciences, Department of Real Estate Development
Msc	2007	Ankara University, Graduate School of Natural and Applied Sciences, Department of Statistics Thesis Subject: Fuzzy Data Envelopment Analysis
Bsc	2003	Kırıkkale University, Faculty of Arts and Sciences, Department of Statistics

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Enver Uzer

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Istanbul, Turkey, 20 – 25 April 2015

Özkan ESER

Work Experience

General Directorate of Land Registry and Cadaster	1997 – ...
---	------------

Education

Msc	2006 Yıldız Technical University, Faculty of Civil Engineering, Department of Geomatic Engineering Thesis Subject: Cadastral Renovation
Bsc	1997 İstanbul Technical University, Faculty of Civil Engineering, Department of Geomatic Engineering
Bsc	2012 Anadolu University, Faculty of Economics, Public Administration
Bsc	... Beypkent University, Faculty of Law

Sadık YILDIRIM

Work Experience

General Directorate of Land Registry and Cadaster	2001 – ...
---	------------

Education

Msc	2015 Aksaray University, Graduate School of Science Engineering and Technology, Department of Geomatic Engineering Thesis Subject: Mass Valuation Approach To The Real Estate Valuation System In Turkey
Bsc	2002 Karadeniz Technical University, Faculty of Civil Engineering, Department of Geomatic Engineering

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Istanbul, Turkey, 20 – 25 April 2015

Neşe BUÇAN

Work Experience

General Directorate of Land Registry and Cadaster 1997 – ...

Education

Bsc 1996
Yıldız Technical University, Faculty of Civil Engineering, Department of
Geomatic Engineering

Güngör GÜZEL

Work Experience

General Directorate of Land Registry and Cadaster
Head Of The Cadastre Office 2014 – ...
General Directorate of Land Registry and Cadaster-Özel Kalem Md. 2014 – 2014
General Directorate of Land Registry and Cadaster- Chief Of a Branch 2005 – 2014
Cadastre Manager 2004 – 2005
Land Manager 1998 – 2004
Cadastre Manager 2004 – 2005
Surveying Technician 1987 – 1994

Education

Bsc 2000
Anadolu University, The School Of Economics, Department of Local
Government
1996
Land Registry And Cadastre Vocational School Of Higher Education
1987
Land Registry And Cadastre Vocational High School

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Hatice Şule POSTACI TEMİZ

Work Experience

General Directorate of Land Registry and Cadaster	2013 – ...
Cumhuriyet University	2012 – 2013
Yetkin Real Estate Appraisalment & Consulting	2011 – 2012
Çağdaş Harita Engineering Company	2010 – 2011

Education

Msc	2015 İstanbul Technical University, Graduate School of Science Engineering and Technology, Department of Geomatic Engineering Thesis Subject: Research of Timewise Transpositions Of The ISKI-UKSB Network Stations
Bsc	2010 İstanbul Technical University, Faculty of Civil Engineering, Department of Geomatic Engineering

Enver UZER

Work Experience

İzmir Metropolitan Municipality ESHOT General Directorate	2014 – ...
General Directorate of Land Registry and Cadaster	2008 – 2014
Sebat Harita Engineering Company	2007 – 2008

Education

Msc	2009 Karadeniz Technical University, Graduate School of Science Engineering and Technology, Department of Geodesy and Photogrammetry Engineering Thesis Subject: A Model Suggestion For Turkish Real Estate Valuation Institution
Bsc	2007 Karadeniz Technical University, Faculty of Engineering, Department of Geodesy and Photogrammetry Engineering

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CONTACTS

Ümit Yıldız

General Directorate of Land Registry and Cadastre – Turkey

Adress :

Tapu ve Kadastro Genel Mudurlugu,
Kadastro Dairesi Başkanligi,
Dikmen Cad. No:14 (06100) Bakanliklar
Ankara – TURKEY
Tel. +90 532 431 84 99
Fax. +90 312 413 64 02
Email: umityildiz1981@gmail.com

Tuğba Güneş

General Directorate of Land Registry and Cadastre – Turkey

Adress :

Tapu ve Kadastro Genel Mudurlugu,
Kadastro Dairesi Başkanligi,
Dikmen Cad. No:14 (06100) Bakanliklar
Ankara – TURKEY
Tel. +90 533 469 81 08
Fax. +90 312 413 64 02
Email: gunestugba@gmail.com

Özkan ESER

General Directorate of Land Registry and Cadastre – Turkey

Adress :

İstanbul Kadastro Müdürlüğü
Şişli Birimi,
Darülaceze Cad. No:8 (06100) Şişli
İstanbul – TURKEY
Tel. +90 212 275 23 82
Fax. +90 212 275 23 80
Email: ozkan_eser@hotmail.com

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Ümit Yıldız, Tuğba Güneş, Özkan Eser, Sadık Yıldırım, Neşe Buçan, Güngör Güzel, Hatice Şule Postacı Temiz,
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Sadık YILDIRIM

General Directorate of Land Registry and Cadastre – Turkey

Adress :

Tapu ve Kadastro Genel Mudurlugu,
Kadastro Dairesi Başkanligi,
Dikmen Cad. No:14 (06100) Bakanliklar
Ankara – TURKEY
Tel. +90 312 551 44 16 3124136402
Fax. +90 312 413 64 02
Email: yildirimsadik@yandex.com

Neşe BUÇAN

General Directorate of Land Registry and Cadastre – Turkey

Adress :

Tapu ve Kadastro Genel Mudurlugu,
Kadastro Dairesi Başkanligi,
Dikmen Cad. No:14 (06100) Bakanliklar
Ankara – TURKEY
Tel. +90 312 551 44 17
Fax. +90 312 413 64 02
Email: nbucan.06@gmail.com

Güngör GÜZEL

General Directorate of Land Registry and Cadastre – Turkey

Adress :

Tapu ve Kadastro Genel Mudurlugu,
Kadastro Dairesi Başkanligi,
Dikmen Cad. No:14 (06100) Bakanliklar
Ankara – TURKEY
Tel. +90 312 551 41 12
Fax. +90 312 413 64 02
Email: gguzel@tkgm.gov.tr

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Hatice Şule POSTACI TEMİZ

General Directorate of Land Registry and Cadastre – Turkey

Adress :

Tapu ve Kadastro Genel Mudurlugu,
Kadastro Dairesi Başkanligi,
Dikmen Cad. No:14 (06100) Bakanliklar
Ankara – TURKEY
Tel. +90 554 390 52 54
Fax. +90 312 413 64 02
Email: postacisule@gmail.com

Enver UZER

İzmir Metropolitan Municipality ESHOT General Directorate – Turkey

Adress :

ESHOT Genel Müdürlüğü,
İç Denetim Birimi Başkanlığı,
İnönü Mah. İsmail Sivri Bulvarı
Buca-İzmir-TURKEY
Tel. +90 506 239 44 71
+90 232 293 52 53
Fax. +90 232 282 04 20
Email: enver_uzer@hotmail.com

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