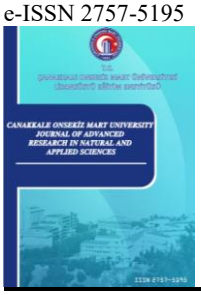
e-ISSN 2757-5195



Çanakkale Onsekiz Mart University

Journal of Advanced Research in Natural and Applied Sciences

Open Access

doi.org/10.28979/jarnas.1245637 2023, Vol. 9, Issue 4, Pages: 854-870 dergipark.org.tr/tr/pub/jarnas

Investigation of Some Real Estate Valuation Problems in Turkey

Varol Koç[1,*]

[1]Department of Civil Engineering , Faculty of Engineering, Ondokuz Mayıs University, Samsun, Turkey

Article History

Received: 31.01.2023

Accepted: 24.06.2023

Published: 20.12.2023

Research Article

Abstract − The urban population increases after the industrial revolution also increased the commercialization of real estate. In the future, this situation would require being able to determine the real estate values more than before. Today, real estate values are of much greater importance in terms of socioeconomic relations and activities in the world. Establishing a standardized real estate valuation system is among the important duties of public administrations. However, in general, the countries that could not catch up with the industrial revolution in the world and whose industrialization started very late and were not mature enough, could not reach the desired level in terms of real estate valuation. In other words, lagging in industrialization naturally leads to being late and behind in the real estate valuation branch, which is an output of industrialization. The problem created by this situation cannot remain local in today's socioeconomically globalized world. Therefore, the problem affects the whole world and developed countries. In this context, as an example, this study presents the contradictions related to the real estate legislation in Turkey and the application errors in valuation and offers suggestions for the elimination of all these.

Keywords − *Real estate, valuation, development, public administration, regulations, cost analysis*

1. Introduction

Economist M. Porter (1990) states that the competitiveness of a country depends on the development and innovation capability of its industry. The need for property, which has increased with industrialization, has also increased the importance of the correct valuation of properties. After the industrial revolution, the cadastralization of the lands with the licensing of the buildings and their taking them under the guarantee of the state was now an obvious necessity. In the following years, depending on the population concentration in the cities, lands and structures became subject to purchases, rents and guarantees, and immovables became more important elements of capital than ever before. At the end of the 20th century, determining the values of real estate became more significant than ever for the public and private sectors. In particular, the increase in population, the decrease in agricultural areas and the increase in urbanization were constantly increasing the values of immovables. Today, the fact that the real estate sector triggers the global economic crisis that has emerged especially in the recent period shows the importance of connecting real estate valuation activities to international standards. Because an established real estate valuation system produces fair and predictable results in practices such as the determination of public financial values, taxation, privatization, expropriation, and crediting. It guides in terms of insurance and capital market risks. For these, public administration valuation standardization should primarily be carried out with legal regulations and practices that will not cause conflicting results in public real estate.

Towards the 2000s, professions to determine the price of real estate for a fee began to be seen in many organizational structures all over the world (Morgan 1998; Ramsey 2004). The 2008 global financial crisis, which started due to the real estate markets, further demonstrated the importance of real estate valuation expertise

[1] kvarol@omu.edu.tr

[*]Corresponding Author

(Źróbek et al. 2013). Greater emphasis has been placed on the regulation of valuation services. There has been a lot of work in the literature on the concepts of real estate development and valuation, its applications, and its effects on urban transformation (d'Arcy et al 1997, Donaldson and Van der Merwe 1999, Palicki and Rącka, 2016, Lai and Lorne 2019, Koç 2021a, b, c, Koç ve Çiçek 2021). By 2020, more than 60 countries now have valuation professional bodies that are members of the International Valuation Standards Council (IVSC 2020). Especially for today, it can be said that real estate trade is tightly regulated all over the world (RICS 2022). S. Bartke and R. Schwarze (2021) point out that in practice, nothing else is so strictly defined and controlled by laws as zoning laws. The inability to update the market values of properties over time according to the current selling price trend is an important reason for the global economic crisis that started in 2008 (Taylor 2009; Mooya 2011). Another reason is the inadequacy of the methodologies used to evaluate market values, which mainly require lengthy processes (D'Amato and Kauko 20017). Direct estimates may be affected by accepted approaches and lead to erroneous results (Bitner 2008; Downie and Robson 2008). As a result, the inadequacy of the valuation methods adopted by credit institutions created problems in the financial transmission of the housing price bubble in the USA. The static structures of valuations and the inability to understand complex socio-economic dynamics and their effects on the real estate market have led to the global economic crisis (Marco et al. 2020). The International Valuation Standards define a uniform and common guidelines among professionals to guarantee a unique code based on the same principles and rules and the public interest in valuation models (Gilbertson and Preston 2005). The need to control uncertainty aims to prevent or at least reduce the possibility of systemic financial and economic market crises, similar to those that occurred in the US subprime in 2007 (Marco et al. 2020).

The real estate sector and the determination of real estate values have become some of the most important elements of global economic relations, beyond being local. In this context, global organizations such as the United Nations, the World Bank and the European Union constantly emphasize the duties of the public administration in ensuring the transparency of the real estate market and establishing the real estate valuation system in their directives and statements (Eriksson et al. 2005; EC 2006; Peldschus 2010). Since the real estate sector is the trigger of the recent global economic crises, international scientific real estate valuations are being tried to be standardized (Cete and Yomralioglu 2013; EU 2004). Because real estate valuation; is also important in investment and stock market transactions, value and property records, and concepts such as cost, reconstruction and replacement (Açlar and Çağdaş 2002). The successful realization of the valuation directly depends on the determination of the properties of the real estate and the selection of the valuation criteria and method according to the market of the real estate based on this (Erkek et al., 2021). In the public and private sectors, it is very important to record the precedent values according to the properties of the immovable with a correct and proper system and to create a database. A standardized valuation system needs to be revised according to needs in line with the principles of continuous improvement. Thus, both fairness and transparency and healthy and sustainable real estate valuation are ensured (Erdem, 2020).

2. The Problems Investigated in This Study

In Turkey, especially in the valuation of public real estate, only the cost value is taken as the value of the real estate together with the land share. It is not correct to take the value of the real estate as equal to the cost spent in creating that real estate. Even determining with precedent values cannot be completely accurate. No real estate can be the same as other real estate. First, its point location is unique. For value, the property's unique social and natural environments must be considered. Based on the best usability of the property, the current value of the income that can be generated from the property over its future life should also be included (Bartke and Schwarze 2021). Van der Spek (2017)'s research has shown that real estate is perceived as a long-term income. So, this should be reflected in the valuation of the property. Thus, although the property can be valued using a variety of valuation methods, Vrbka et al. (2019) focused on the synthesis of valuation methods that determine the total amount of investment. Indeed, according to A. Sharkawy and W. Barnes (1992), there is no significant relationship between value-based underwriting criteria and default, and strict cost-based criteria are closely related to the probability of default. This shows that the valuation cannot be made with purely cost calculation, and the possible return on investment of the property must be considered. A market value estimate includes not only the continued use of the asset in its current state but also its full potential use. At the core of market value estimation is the concept of highest and best use (Appraisal Institute 2008). Valuation

is the activity of estimating the most probable selling price or 'market value' (D'Amato 2015). Taslan et al. (2013) state that the replacement value should be applied to appraise a house with social housing status. To determine the replacement value, operating expenses such as administration, maintenance, taxes, and insurance must be subtracted from the expected operating income such as rent and residual value. Because of the below-market rent, the replacement value of a social home will be lower than that of a private residence. This difference determines the market price discount range for development sites (Taslan et al. 2013). In any case, however, it is necessary to reflect the entrepreneur's earnings on the replacement value for social housing as well.

The fact that the expropriation and privatization and registration activities of the public are carried out by commissions formed in-house and composed of personnel who may not be very competent in valuation expertise, makes it difficult to determine the real values. This situation creates problems in public finance and the registration of public property values. It causes situations such as the possible reflections of public real estate values on the market to mislead the market, or especially expropriation activities are subject to objections and lawsuits. In practices in Turkey, the commissions that make the valuation of public immovables are generally composed of the employees of the public institution that owns the immovable. Most of these employees do not have competency in valuation expertise. The valuation of public buildings is usually made using the cost method as a customary method. As the value, the sum of the progress payments paid by the public institution to the contractor while having the building constructed is taken. The problem, however, is that entrepreneurial profit is not reflected in this value. As a result, the data files that will form the real estate valuation information system and the reflection of the values available in the market are adversely affected. Because, taking the value of the building equal to the price paid only for the construction of the building, that is, the cost, cannot be a correct approach in terms of market conditions and practices. In the cost value method, the profit of the entrepreneur, which is essentially different from the profit of the contractor, must also be reflected in the value. Keeping public buildings separate from this reality will result in the accounting of government properties not reflecting the real situation. This creates risks for the sustainable economy. In this study, this issue was emphasized by taking examples from the literature and applications. University campuses are often far from city centers and trading counterparts are difficult to find. For this reason, it is difficult to reflect the entrepreneur's profit to the cost value found from the progress payments also. For these reasons, especially the valuation of a college campus has been taken as an example, in terms of representing public immovables.

Moreover, in Turkey, two separate legal communiqués, one about the property tax and the other about the approximate unit cost of the structures, give different results, up to 25%, in the cost calculations for the same type of buildings. This situation causes contradictory data in the building information files, which are important for the real estate valuation system. In this study, this situation is also examined with legislative comparisons.

3. The Importance of Accounting for Public Immovables and the Situation in Turkey

There are criticisms in the literature focusing on the role that accounting standards played in the 2008 global financial crisis (André et al. 2009; Bengtsson, 2011; Quagli & Ricciardi, 2010). Because accounting standards can affect resource allocation and a wide range of social actors (Farjaudon and Morales, 2013; Kothari et al. 2011; Llewellyn and Milne, 2007). For these reasons, it becomes important to include the public interest among the objectives of accounting regulators (Stuebs & Wilkinson, 2014). For these reasons again, both the European Union (EU) and the United Nations Inter-Agency Standing Committee (IASC) demand international harmonization of financial accounting standards. The institutional framework, historical background and current achievements of national accounting regulations are reviewed and compared by the EU and IASC. Therefore, national standard setters have important duties related to this process. Policies should be developed to ensure that national and international standard setters work in a mutually supportive manner rather than in a competitive manner (Thorell and Whittington 1994). However, problems in some national accounting standards could not be resolved in Europe. For example, the application of elements of the International Financial Reporting Standards based on the EU accounting Directive (2013/34/EU) to Czech accounting standards is still only partial (Jindrichovska and Kubickova 2017). Turkish accounting standards are also being tried to be regulated, but as discussed in this section, the desired successes have not been achieved yet. However, there are of course positive examples. For example, Sally Aisbitt (2002) notes that the first discussions of legal harmonization of financial reporting in Scandinavian countries were reported in the 1930s. Thus, financial reporting began early

in the Nordic countries, and legislation implemented in the 1970s was based on the proposal for a common Scandinavian Companies Act (Aisbitt 2002). The state, which is the highest level of social organization, must provide justice and security in society. These are the classical duties of the state. However, modern functions of the state such as economic development, fair income distribution, employment and stability have also emerged. To fulfil all its functions, the state becomes partners with the economic resources of the society through taxes, debts, purchases, and leases. It gives them back to society through utilities, purchases of goods and services, or transfer expenditure. These activities of the state cause various effects in terms of macroeconomics. These effects should be able to be measured and evaluated with government accounting. In addition to current assets such as income and expense items of the government, fixed assets that make up its assets are also included in the accounting. Because, in the public economy, what the state receives from the social segments and gives to them becomes clear only when the changes in the values of the state assets are taken into account in a period. These changes can be physical, such as wear and tear, or financial, such as profit and loss (Güngör, 1981).

In all societies, the state uses 25% or even more of the national income. Thus, the state is the largest institution that creates value movements in the economy. There is a special accounting system developed for the recording, tracking and auditing of these assets since the state is the largest resource collector and allocator in the economy. Thanks to this system, it is possible to monitor and control the values that the state receives from the national income (Aksoy, 1994). As a concept, property accounting refers to the acquisition of fixed assets of the state by purchasing or similar means, their use, evaluation, and disposal, keeping their records in a certain system and monitoring their physical and monetary changes (Bulutoğlu and Kurtuluş, 1988). Fixed assets are goods such as buildings, land, vehicles, movable properties, and fixtures. The values of fixed assets must be determined correctly. Because the benefit to be obtained from a good depends, first of all, on knowing the value of that good. However, in Turkey, although some accounts were included in the context of property accounting in the past in government accounting, which has been in practice for more than a century, these accounts were not operated due to various reasons, especially implementation difficulties (Kızılkaya, 2002). Until 2004, there was no "property accounting" in the government accounting system. The basis of government accounting system was based on the collection of revenues, payment of expenses, and advance, escrow, and dispatch transactions. The fixed assets that make up the state's assets were not seen in the accounts of the accountancy and were not included in the trial balance accounts (Altınok, 1973). In addition to these, there were also deficiencies in Turkey, such as the fact that government accounting was based on cash, lacked classification and coding, and hindered accountability because it was not suitable for financial reporting (Kerimoğlu, 2002). Based on these points, the legislator enacted the Public Financial Management and Control Law No. 5018, which includes reporting and financial control, aimed at creating public accountability and financial transparency to ensure more effective, economic, and efficient use of public resources.

The law introduced new reforms in public finance (Üçbaş, 2004). A system is suitable for accounting and auditing by international standards is envisaged. (Aslan, 2004). Several innovations have been introduced in the context of accounting for fixed assets that constitute the state's assets, both with this law and with the regulations. For example, according to Article 58 of the Government Accounting Regulation, fixed assets include assets that are acquired for use for more than one year and are not expected to be converted into cash or consumed within one year.

Determining the value of the land is one of the responsibilities of the General Directorate of Land Registry and Cadastre (TKGM in Turkish) in Turkey (TKGM 2020). Although there are some academic studies investigating collective valuation with advanced statistical and machine learning techniques, there is no official definition of real estate value and annual property tax assessments representing market values (Güneş and Yıldız 2015, 2016). In this context, TKGM initiated some parcellation projects within the scope of the Land Registry and Cadastre Modernization Project (World Bank 2008). In 2018, TKGM Land Valuation Department was established to determine the value of immovables by collective valuation methods and to manage the valuation information centre (Official Gazette 2018). It is possible to evaluate vacant lands and similar low-income places with the market price method, buildings and similar fixed facilities with the cost method, and income lands and lands with the income capitalization method (Güngör 1981). Undoubtedly, a good government accounting system must include property accounts (fixed assets) as well as cash accounts (current assets). The

concept of efficiency, which was mostly expressed for public expenditures in Turkey until 2004, has now begun to be used for the fixed assets of the state, which are included in the state accounting system. Because Article 1 of the Law stipulates the effective, economic, and efficient use of public resources. Also, in the 4th article of the Law, movable and immovable properties are counted within the scope of public resources. As the quantity and quality of the fixed assets of the government will be included in the knowledge of public financial management, the management of these assets will become more effective. Otherwise, especially immovable properties, which are included in public resources, are not used in place and on time, they are left idle and thus the benefits to be obtained from them are deprived (Arslan 2004).

Accounting for the fixed assets of the state will also prevent the unbalanced distribution of goods between institutions. The fact that the fixed assets of the state are out of the accounting system results in an incomplete preparation of the state's balance sheet. However, good government accounting should not leave any transactions out of accounting and the accounts in question should be suitable for consolidation, in the context of providing information that can shed light on economic and fiscal policies. To achieve this, the State Accounting Regulation, which includes public institutions and organizations, has been put into effect (Bağbaşlıoğlu, 2004). Because in Turkey, it has long been desired to bring public financial management to a modern financial control system by ensuring that public accounts are kept and reported by international standards and EU norms.

Based on developments in government accounting, international financial institutions such as OECD, IMF, World Bank and economic and political unions such as the EU need to create financial statistics and reports of other countries (Kerimoğlu, 2002). Because these institutions especially want the balance sheet of the country, they want to give loans. In this framework, government borrowing will be more rational, as property accounts will show the real state of the state's fixed assets (Akça, 1998). Since the expenses for the acquisition of fixed assets are capitalized and depreciated, government accounting will become solid and reliable data for public financial management.

4. The Importance of Valuation of Public Immovables and the Operation in Turkey

To use the immovables in public and private property by making cost-benefit analyses in line with the needs, their current values in the market should be determined. Real estate values: in addition to many transactions such as expropriation, insurance, privatization, and nationalization, it is also used for balance sheet accounts and transfer transactions in public administrations (Soto, 2017). Immovable values: it is necessary information to know on subjects such as buying-selling, investment and inheritance sharing. Public real estate also needs a valuation. For example, in Sweden; in the calculation of capital costs to produce services, in selling high-priced immovables and switching to cheaper immovables, in calculating the financial situation by including the value of the immovables to get a good rating from the government, in the transfer of public immovables in the local and regional administration of the central government, in the privatization of service buildings sold by the public or there were problems in pricing the immovables rented out and the value of public immovables was needed (Lundström & Lind, 1996).

The global real estate market consists of national public and private markets of local economies united across borders. Both public and private real estate play important roles in the value of real estate market offerings. The greater financial transparency of the European and North American economies has resulted in consistent patterns being established in both public and private real estate market cycles. But Asia's public real estate market cycles are volatile and there may be economic instability (Liow & Yeo, 2018). Asian markets are predominantly dominated by construction activities. Therefore, it is important for also global markets that real estate valuations are standard and scientific in these markets.

According to the annual report of the General Directorate of National Real Estate (MEGM), there are approximately 4,5 million Treasury properties in Turkey, which constitute approximately 37,6% of Turkey's surface area (MEGM, 2020). Owners of privately owned immovables have the right to dispose of their immovables as they wish, within the framework of legal rules (TMK, 2001). However, in areas where the benefit of the individual meets the benefit of the community, the benefit of the community is held superior (Constitutional Court of the Republic of Turkey, 1966). The public administrations of the central government within the scope of the general budget are represented by the legal entity "State", the immovables it acquires are registered under

the name of "Treasury" and are managed by the Ministry of Environment and Urbanization. The immovables belonging to other public administrations are registered in the land registry on behalf of their legal entities and each public institution manages it by itself. According to the Public Financial Management and Control Law No. 5018 (Public Property, 2003) and the Regulation on the Registration of Immovables Owned by Public Administrations (Public Record, 2006), the relevant institution is responsible for ensuring financial transparency regarding immovables and is monitored by the Ministry of Treasury and Finance. By the standards specified in the General Management Accounting Regulation, the accounting of immovables is ensured by making use of the Central Government Accounting Regulation. In administrative law, State and local administrations are defined as "public legal entities in the form of a group of persons". Public legal entities in the form of a collection of goods are also called 'public institutions' (Gözler, 2011). Examples of public institutions in Turkey are Universities, the General Directorate of Foundations, the General Directorate of Highways, the General Directorate of State Hydraulic Works, Capital Markets Board (Public Property, 2003).

State property in Turkey, on the other hand, is divided into two public goods and private property of the state. Public goods are derelict places, common goods and service goods. There are separate official norms such as Forest Law, Pasture Law and Coastal Law for some of the derelict places and common properties and they are traded within this scope. Service Goods are the goods registered in the land registry of other public legal entities other than the State Legal Entity. Private goods of the state are goods that are not public goods and contribute indirectly to the provision of public services with income. In other words, such goods are not allocated for public benefit or public use (Arslan 2017; MEGM 2019). The treasury lands and the facility of state-owned enterprises are the private property of the state within this scope. State property; while it is used socially in public services (such as government mansions, hospitals and schools) and for the general benefit of the public (such as roads, squares and pastures), it is also economically used for financial purposes (such as the sale or lease of treasury lands) (Söyler 2005a, 2005b). It is stated that there is a complexity about the places under the rule and disposal of the state, and it is still difficult to distinguish these goods from each other from past to present (Arslan 2017; Söyler 2007). The legal vacuum continues and there is a problem because “there is no clear distinction between private property owned by public legal entities and the status that public goods are subject to” (Kaplan 2004).

In the recording and accounting of public immovables as immovable value; records are kept on cost value, fair value, trace value and property tax value. The immovables under the title of "Immovables Registered in the Land Registry" are recorded over their cost value, and those whose cost value cannot be determined from these immovables are recorded over their current values (Public Record, 2006). The “cost value” is the sum of the current progress payment amounts paid for the manufacture of a building, the expropriation price or the purchase price, the expenses on the land title deed, the expenses made to make the real estate usable, or the sum of the values given. The current value corresponds to the normal trading value on the valuation day. However, in Central and General Management Accounting Regulations, the term “fair value” was accepted instead of “current value” (Public Record, 2006). In accounting, immovables acquired from tangible assets are considered at cost. However, for the building value, the profit of the entrepreneur should be reflected in the cost price.

The RICS EU (2008) on Sustainable Property Investment and Management highlighted an important issue when it stated: Even if professionals do not have a deep knowledge of the value of liquidity, there is a great deal of risk when they treat the property as an asset class with another degree of liquidity. Because Property assets are illiquid and have high transaction costs and are geographically related. In various previous studies, spatial relationships were discussed in real estate market analysis (Thibodeau et al., 1998; Bourassa. et al 2007; Des Rosiers et al., 2000). On January 17, 2020, the European Securities and Markets Authority initiated a consultation on draft guidelines on the completeness and consistency thresholds of securitization repository data. It aimed to set out the key elements of disclosure obligations for securitization transactions, as well as the operational standards of securitization. As a result, the stored data would improve information flows and data access, with the development of a centralized database built on environmental data for the financial sector (Richter 2020).

5. General Situation of University Real Estate in Turkey

Places under the rule and disposal of the state, places in the common use of the public, places reserved for the performance of public services, immovables under the private ownership of the Treasury and State Properties under the administration and management of the State. Among these, the goods registered with the public legal entity and the use of which are in the public interest are public immovables (Cadastre 1987). Some of the immovables registered with the public legal entity are those belonging to universities. According to the historical development of universities in Turkey, campuses generally established outside the city consist of public immovables used by universities (Aydın, 2019). These immovables were mainly obtained as a result of the allocation of treasury or forest lands. Privately owned immovables were expropriated and registered in the name of the university. However, it is seen in the activity reports of the universities that there are immovable properties still waiting for expropriation.

For the immovables under the ownership and use of the university to be managed sustainably, good management should be ensured by incorporating their past and present features into a system. Universities should offer a livable campus life to future generations by better managing the immovables in their use. Establishing a parcel-based information system for this; is necessary to plan for protecting natural resources such as water, soil and living things in nature. In addition to an up-to-date, accurate and reliable cadastral map and title deed information such as property and value, zoning plans, topographic maps, geological maps, and other produced maps are also needed. In the real estate type of Universities in Turkey, the land is generally denser. Most of the universities have their legislation on real estate administration. The immovables managed by the universities may consist of piecemeal parcels on different campuses. The reason for this is in universities that are open to continuous development and technology, opening new departments, increasing student quotas. Universities are growing in parallel with the developments, and some land needs arise. In this context, valuation information should be obtained so that university immovables can be managed and planned very well.

State universities, by the State by law; foundation universities can be established by foundations subject to the supervision and control of the State (Constitution of the Republic of Turkey, 1982, Article 130). According to the statistical data for the year 2018-2019, there are 129 state universities and 74 foundation universities and 4 foundation vocational schools in Turkey (YÖK 2020). Higher Education Institution and Universities; it is classified as a special budget administration within the scope of the central government. The immovables registered in the name of the university in the land registry are service goods within the scope of public goods (Arslan, 2017). University immovables are permanently exempt from property tax, if they are not rented out. It is also exempt from fees and stamp tax (Tapu 2014).

6. As an Example, Valuation of a College Campus in Turkey

Public immovables are public properties that are reserved for use in public services and that are identified in the name of legal entities in the land registry. University real estate is classified as public property. To inventory and account for these goods, their values should be calculated objectively (Ünel 2021). The establishment of a valuation infrastructure is essential to determine the classes of immovables and to manage them sustainably. In this section, as an example, immovable properties in a high school campus in Turkey are discussed. The factors that show the characteristics of the immovables and affect their value and their arrangement are exemplified. Common mistakes made in practice are shown and what should be done is explained. In other words, the path to be followed for the use of data in valuation analysis has been determined.

There are common practice errors in registering and accounting for immovable and movable properties of universities, which are public institutions. For example, in Turkish Universities, real estate valuation studies are generally carried out by collecting the amounts paid within the scope of progress payments for immovables whose tenders have been made and whose construction has been completed by the university. In the 2019 External Audit General Evaluation Report of the Turkish Republic Court of Accounts, published in September 2020, it is stated that one of the most common mistakes is not reflecting all aspects of the transactions of public institutions' real estate in the financial statements. The most common errors detected by the auditors of the court of accounts are that the immovables registered in the land registry in the name of the administration are not included in the institution's financial statements and the types of the immovables are not corrected.

The vocational school, which is the subject of the research, is located on the main real estate with a surface area of 44,000.00 m² and in the area marked as university in the zoning plan. There is an education block, a canteen building, an indoor parking lot, an energy block, a centre of the heat, a basketball court and guard-houses which were completed within the boundaries of the vocational school campus and used in education and training services. The prices paid to the contractor firm within the scope of the tender for the buildings used in the education and training services of the university were determined and used in the valuation with the cost method. With the completion of the construction of buildings or other structures, their temporary acceptance is made and a real estate valuation report is created. However, in public institutions, construction costs may change in final acceptance (Final Account) transactions after the tender period. For this reason, there may be changes in the expenditures of the building or other productions after the final acceptance. In this case, these changes are reported to the relevant unit based on the recorded immovable valuation report with their reasons, and a correction is requested.

Since public buildings are built for a specific purpose, they are structures that are not subject to purchase and sale. In the valuation of these structures, it is tried to determine their values by using the cost method. Cost method: instead of purchasing real estate, it considers the possibility that the same real estate or another real estate that will provide the same benefit can be built. This method aims to arrive at the cost value of the real estate on the valuation day. Cost approach: it is at the forefront in the valuation of properties that are not frequently traded in the market, in the valuation of buildings with private use, and when it is not an income generating property. In Turkey, especially the Real Estate Tax Law No. 1319 and the Expropriation Law No. 2942 envisage the valuation of built real estate using the cost method.

Since there are many buildings on the main immovable campus examined; the value of the main immovable will be determined by the peer comparison-market research method, as recommended in the Real Estate Tax Law, and the land value will be specified separately. Negotiations were held with local real estate companies to apply the peer comparison method in the district centre where the campus is located, and the average current price of the real estate was determined as 225 TL/m2. In this case, the value of the real estate, which is 44,000 m^2, is 9,900,000 TL.

The construction was completed after the tender of the building immovables by the University in May 2014 and their provisional acceptance in December 2019. The total progress payments paid to the contractor by the administration while the buildings are completed and put into service are taken into the immovable records, and the immovable value is accepted as the construction cost. In the Regulation on the Registration of Immovables Owned by Public Administrations published in the Official Gazette dated October 2, 2006, and numbered 26307, productions are divided into classes according to the title deed. According to this regulation, outside the buildings, infrastructure, landscaping, etc. productions must also be recorded in the immovable records. However, there is one thing that should not be ignored. Movable materials within the scope of construction work are determined and a list is created. The costs of movable materials are reduced from the progress payments. Because these materials are within the scope of the tender and are in immovable buildings. Thus, the registration of both movable materials and immovable properties is determined and movable and immovable properties are recorded.

All buildings are on the same campus, within the same building construction site. Building styles are reinforced concrete carcasses. Building classes are determined as IV/A (university campuses) in the construction permits. The wall filling material of all of them is aerated concrete and the floor is a reinforced concrete plate beam system. The wastewater system of the buildings is sewerage, and the drinking water system is the city network. There is no wastewater or drinking water system in the energy building. There is no drinking water system in the parking garage building and the guard's hut. There is no communication system in the energy building and the parking garage building. There is no water tank in any of the buildings except the heating centre. The generator is only available in the education-administration building. Other information about the buildings is summarized together in Table 1. The building cost values shown in the last line of Table 1 are obtained from the sum of the progress payments paid to the contractor company for the buildings.

Table 1
Building Features and Cost Values

	Eduction-admnist. building	Energy building	Cafeteria	Parking garage	Watch box	Guardhouse	Heating center
Floor area	3,000 m^2	441 m^2	475 m^2	275 m^2	2 x 7.3 m^2	30 m^2	475 m^2
Number of floors	B+ G+ 4	B+ G	3	G+ 1	1	1	1
Height above the road	22.5 m	7.5 m	8.8 m	9 m	3 m	4 m	7.3 m
Total height	22.5 m	9.6 m	13.5 m	9 m	3 m	4 m	7.8 m
Construction year	2018	2018	2014	2014	2014	2014	2014
Heating system	central	none	central	none	O	O/ AC	none
heating fuel	NG	none	NG	none	E	E	none
Hot water supply	joint	none	joint	none	none	WH	HWB
Hot water fuel	none	none	none	none	none	E	NG
Lift	available	none	available	available	none	none	none
Disabled lift	available	none	available	available	none	none	none
Exterior	NS/A.	PP	NS/A	PP	A	A	PP
Fire escape	available	none	available	none	none	none	none
Canteen	none	none	available	none	none	none	none
Closed area	9,000 m^2	800 m^2	1,300 m^2	2,250 m^2	2x 10 m^2	30 m^2	500 m^2
Cost (thousand TL)	10,000	700	2,750	1,300	98.5	150	1,500

* B: basement , G: ground floor, O: oil radiator, AC: air conditioning, NG:natural gas, E: electric, WH: water heater, HWB: hot water boiler, NS: natural stone cladding, A: aluminum facade cladding, PP: plaster- paint.

Infrastructure and Landscape productions were made by the project within the scope of the tender, and the sum of the progress payments paid to the contractor company constitutes the infrastructure cost value. These values are 3,500,000 TL for infrastructure production and 3,750,000 TL for landscaping, and they are recorded in the real estate records as infrastructure and landscape values. Infrastructure, 950 m. Wastewater line, 270 m. retaining wall, 500 m. road construction, 650 m. rainwater line and 280 m. It consists of gallery production. There is landscaping covering a total building construction area of 44,000 m^2 within the landscape production. In addition, the basketball court and grass amphitheatre with an area of 17x30 m are also included in this production. According to these, the construction costs of the buildings, infrastructure and areas on the campus were calculated from the progress payments, and the construction costs shown in the 1st column of Table 2 were obtained. While calculating the payments of the structures according to the progress payments, the values including the Price Difference and Value Added Tax (VAT) should be taken as basis. Otherwise, the valuation to be made according to the cost method will not give the correct information. After the calculation of the Total Campus Construction Cost, the goods that are within the scope of the tender but will have the status of movable material should be listed and deducted from the progress payments paid on a building basis (Air conditioning, computers or devices that can be found in the electrical or mechanical room, etc.). These values are given in

the 2nd column of Table 2 . The movable material costs are specified in the 2nd column of Table 2; By deducting the building construction costs given in the 1st column, the basic construction costs of the building or other structures are obtained and shown in the 3rd column.

Table 2
Campus building costs in separate units and in total

	Buildings construction costs	Movable materials costs	Buildings Costs
Education-administration building	10,000,000	400,000	9,600,000
Energy building	700,000	2,000	698,000
Cafeteria	2,750,000	10,000	2,740,000
Parking garage	1,300,000	-	1,300,000
Watch box- Guardhouse	250,000	1,500	248,500
Heating center	1,500,000	4,000	1,496,000
Infrastructure	3,500,000	-	3,500,000
Landscape	3,750,000	-	3,750,000
TOTAL	23,750,000	417,500	23,332,500

Thus, the campus construction and building construction costs of the District Vocational School Campus and buildings, which were built within the scope of the tender, were calculated. However, these values, which are obtained after deducting the values of the movable goods within the scope of the tender, are the progress payment values of the contractor company and include general expenses, price differences, VAT and contractor profit. Of course, the cost spent for the construction of the building is a value for use, namely the building service, to be obtained from that building, but the pure building value must be higher than this cost value. Otherwise, it would be to say that the state only needs to build buildings for compulsory public services. Although this seems to be true when it comes to the state, the same condition must also apply to other actors in the same market. In other words, private individuals and companies should have a structure built for only purposeful use. This claim means to say that individuals, public and private sector structures should not be subject to purchase and sale, apart from necessities, and it puts forward an attitude that is completely contrary to reality.

The contractor who undertakes the construction of the building has a profit expectation. Therefore, naturally, in the same way, even if they have the building built for use, the public or private institution or person or persons who has it built should hope to profit from these building activities. Because they spent the price, time and effort. To claim that the state should be exempt from this gain is to accept that a valuation has been made that does not comply with market conditions. This situation will inevitably be reflected in the market as price irregularity due to interaction in the same market. In terms of standardizing the valuation and generating data, this approach can have very problematic results. On the other hand, the commissions established by universities and public institutions in the valuation and registration processes of the buildings they own in Turkey generally determine the construction costs, which they obtain only from progress payments, as the construction value by deducting the costs of movable goods. This situation creates problems in the determination of the real value of the state's assets and the reliability of the data pool created from public-private value determinations.

The cost method calculates the value within the framework of the cost spent for the reconstruction of the building (Alptürk 2007). However, calculating within this framework does not mean that the value is only this price. Because the profit of the entrepreneur must be added to the cost of the reconstruction or repair-strengthening-restoration-rehabilitation applications of the building. The current absolute value of the building is obtained by deducting the financial equivalent of the depreciation of the building from the resulting value and adding the land value (Bakır 2009). These expressions can be expressed with a simple formula as follows (Ventolo & Williams 2001):

Building Value = [Construction cost+Land value+Entrepreneur profit- Depreciation]

The value of the buildings is the sum of the construction cost and the sales profit of 20% of this and the purchase and sale price of the land, as stated in Article 19 of the Real Estate Taxes Regulation of the Republic of Turkey (TCRG 1972). The 20% sales profit expressed here can be called the profit of the entrepreneur and should not be confused with the profit of the contractor (Ramsett 1998; Karaca 2008; Özer 2010; Akkaynak 2014). Although it would be appropriate for the appraisers to determine the profit of the entrepreneur with market research, in Turkey conditions, at least based on the relevant regulation, a reasonable rate of 20% for public buildings can be accepted and used in public building valuations. In general, in Turkey, only the progress payment costs are taken in the valuation of public buildings according to the cost method, and only the approximate unit costs of the building are used in the cost analysis of the public and private buildings that are the subject of the lawsuit. This acceptance would be much more appropriate than just reflecting the progress payment values or calculating the value from the approximate unit costs of the building. Therefore, the total construction costs of the examined immovables, which are 23,332,500 TL in Table 2, are increased by 20% to include the profit of the entrepreneur, and the total value of the buildings is found as 27,999,000 TL. By adding 9,900,000 TL, which is the campus land value, to this value, the total value of the lands and structures of the district vocational school examined is 37,899,000 TL.

7. An Example of Contradiction in Real Estate Valuation Legislation in Turkey

S. Gnat (2021) reports that in many developing countries real estate taxation reforms are underway or are planned. In these executions and plannings, the real estate value is accepted as a tax base. Because in countries with established market economies, real estate is usually taxed according to its value. Currently, the land taxation system has a major impact on land use and reallocation (Gnat 2021). The same can be said for housing taxation. According to the Real Estate tax law of the Republic of Turkey, the tax value for buildings is determined jointly by the Ministry of Treasury and Finance and the Ministry of Environment and Urbanization. According to the General Communique of the Property Tax Law, which is issued every year based on this law, the building cost classifications that are the basis for the property tax for the year 2021 are given in Table 3. Classification and unit cost values are presented in the same table for 2021, according to the communiqué on the approximate unit costs of buildings published by the Ministry of Environment and Urbanization every year. When these two separate legislative values are compared, it is seen that very different cost values can be taken for the same type of houses. Building approximate unit costs can be used in expert reports prepared for court cases, housing valuation reports prepared for banks' lending, and valuation of public buildings. However, there may be large differences between the building values obtained from approximate unit costs and the values based on taxation, supported by the inconsistency of the legislation. This situation causes the recorded building information to be contradictory in valuation.

Table 3

Comparison of house value charts in terms of real estate tax base and approximate unit costs of buildings in Turkey

Costs based on property tax (TL/m2)				Building approximate unit costs (TL/m2)					
	Min.	Max.	Av.	3A	3B	4A	4B	4C	5A
Luxury	2,007	2,253	2,130	-	-	-	2,300	2,480	2,970
First class	1,268	1,393	1,330	-	-	1,920	-	-	-
Second class	812	964	888	-	1,800	-	-	-	-
Third class	573	685	629	1,360	-	-	-	-	-
Simple	292	412	352	1,360	-	-	-	-	-

In addition, in the table of approximate unit costs of the building, the buildings are divided into many classes and groups and gathered under a total of about 125 different titles. However, in this classification style, there is no clear classification of carrier system type and material, purpose of use and construction quality. In the table showing the unit cost prices for the tax base, the buildings were collected in approximately 880 different types. These different types are grouped distinctly based on the type and material of the carrier system (reinforced concrete carcass, masonry, etc.), the purpose of use (factory, hotel, cinema and theatre, etc.) and quality (luxury, 1st class, 2nd class, etc.). These two legislative charts do not use a common language in terms of classification of structures and this situation can easily lead to confusion.

8. Conclusion

In this study, 2 important situations that cause erroneous valuations in real estate valuation studies in Turkey are discussed. The first is the calculation of public real estate only with progress payment values. As a result, the entrepreneur's profit in public real estate is not reflected in the real estate value. However, the value of an immovable cannot be taken equal to the price spent only to create the immovable. The second issue is the difference between the construction cost classifications based on taxation and the approximate construction unit cost classifications in the legislation. This may cause the value taken as a basis for taxation to be smaller than the approximate cost of the building. However, the entrepreneur's profit should be added to the approximate cost of the building, which is normally calculated from the legislation charts, since it is subject to trading. In this case, the difference will be even greater. Because the value of the real estate subject to tax must already include the profit of the entrepreneur, representing the purchase and sale. However, when approximate valuations are made from the legislation tables, the tax value expected to include the profit of the entrepreneur is significantly smaller than the approximate cost of the structure that does not include the profit of the entrepreneur. Both the first and the second issue discussed in this study cause great inconsistencies in the recording and accounting of real estate values. Incorrect accounting and recording of building values negatively affect sustainable economic development due to the misleading valuations.

The conclusion information to be given as a summary on the first issue and what can be done to solve the problem can be expressed as follows: In practices in Turkey, the commissions that make the valuation of public immovables are generally composed of the employees of the public institution that owns the immovable. Most

of these employees do not have competency in valuation expertise. The valuation of public buildings is usually made using the cost method as a customary method. As the value, the sum of the progress payments paid by the public institution to the contractor while having the building constructed is taken. However, the problem is that the profit of the entrepreneur is not reflected in this value. As a result, the data files that will form the real estate valuation information system and the effects of the values found on the market are adversely affected. Because, taking the value of the building equal to the price paid only for the construction of the building, that is, the cost, cannot be a correct approach in terms of market conditions and practices. In the cost value method, the profit of the entrepreneur, which is essentially different from the profit of the contractor, must also be reflected in the value. Keeping public buildings separate from this reality will result in the accounting of government properties not reflecting the real situation. This creates risks for the sustainable economy. The value of the buildings is the sum of the construction cost and the sales profit of 20% of this and the purchase and sale price of the land, as stated in Article 19 of the Real Estate Taxes Regulation of the Republic of Turkey. The 20% sales profit expressed here can be called the profit of the entrepreneur and should not be confused with the profit of the contractor. Although it would be appropriate for the appraisers to determine the profit of the entrepreneur with market research, in Turkey conditions, at least based on the relevant regulation, a reasonable rate of 20% for public buildings can be accepted and used in public building valuations. This acceptance would be much more appropriate than just reflecting the progress payment values or calculating the value from the approximate unit costs of the building. In addition, personnel who will make valuations in public institutions should receive training on this subject. Specialist personnel trained to make valuation in public institutions can also be provided to serve in other public institutions in their own regions through interagency assignments.

The concluding information to be given as a summary about the second issue and what can be done to solve the problem can be also expressed as follows: The Ministry of Environment, Urbanization and Climate Change in Turkey publish approximate unit cost values according to building types every year. The published structure includes approximate unit costs, 15% contractor profit and 10% overheads. However, it does not include the land share price and the profit of the entrepreneur. In practice in Turkey, especially in expert reports requested by the courts, this table is used when determining the building values. However, the entrepreneur's profit is not added to the accounts when valuing the building based on approximate unit costs. This situation is problematic in terms of housing valuation on its own. For more qualified valuations, the court may request cost analysis from the experts more specifically according to the quantity calculations and unit price charts. However, in this case also, the building values are not found by adding the entrepreneur's profit. In addition, the housing values to be obtained from the approximate unit costs of the building, even without the entrepreneur's profit, are approximately 25% higher than the tax bases that are said to be based on taxation in the legislation. With the addition of entrepreneurial profits, the difference will become much larger. Therefore, it is essential to ensure coordination by reviewing legislation and management in Turkey. Same structure classification methodologies should be used in different calculation tables and should be corrected to give the same values. In court expertise and public or market valuations, not only costs, but also entrepreneurial profits supported by precedent values should be reflected in the building valuations.

Author Contributions

This article is single authored.

Conflicts of Interest

The authors declare no conflict of interest.

References

Açlar A, Çağdaş V. (2002) Real estate valuation for engineers, architects and experts, *TMMOB Chamber of Surveying and Cadastre Engineers,* 5-9.

Aisbitt S. (2002) Harmonization of financial reporting before the european Company law Directives : the case of the Nordic Companies act , *Accounting and business Research,* 32:2 , 105-117. https://doi.org/10.1080/00014788.2002.9728960

Akça, Y. (1998) Budget and Government Accounting, Istanbul University, Faculty of Economics Publication, No: 4047/555, Istanbul, p. 51.

Akkaynak , B. (2014) Real Estate Valuation and an Application on Real Estate Valuation, Consultant: Yılgör , AG ., Mersin University . Social Science. Inst . Business USA, Mersin, 202 p.

Aksoy S. (1994) Public Finance, Filiz Bookstore , Istanbul, 1994, p. 46.

Alpturk , E. (2007). Real estate valuation guide, Publications of Finance and Law, Ankara, 411 p.

Altınok T. (1973) Stock Accounting in Our Government Accounting System, *Journal of Finance*, Issue: 4, July-August, p. 6.

Anayasa (1982). Constitution of the Republic of Turkey, Law Number: 2709, Date of Adoption: 18/10/1982 , Official Gazette Published; Date: 9/11/1982 Number: 17863 (Repeated), Code of Published; Edit: 5 Volumes: 22 Pages: 3.

André , P., Cazavan - Jeny , A., Dick , W., Richard, C., & Walton, P. (2009). Fair value accounting and the banking crisis of 2008 – hitting the messenger. *Accounting in Europe* , 6 (1), 3 – 24. https://doi.org/10.1080/17449480902896346

Appraisal Institute (2008) Appraisal of Real Estate , 13 edn , Appraisal Institute , Chicago, IL

Arslan , A. (2004) Public Financial Management and Control Law No. 5018 and Regulations Made in the Expenditure System", *Financial Guide Magazine*, Issue: 25, July-September, 88 p.

Arslan , KO (2017). Determination of the Quality of Public Goods and Principles of Utilizing Public Goods, *TBB Journal*, 131, 57-86.

Aydın, I. (2019). Academic Ethics, Ankara: Pegem Academy

Bağbaşlıoğlu , A. (2004) Boards to be Established and Regulations to be Made with the Public Financial Management and Control Law No. 5018, *Financial Guide Journal*, Issue: 24 (Free Supplement), April-June, p. 71.

Bakır, H. (2009). Real estate valuation and finance mathematics , Detail Publishing, Ankara, 160s.

Bartke , S. , & Schwarze , R. (2021). The economic role and emergence of professional valuers in real estate markets . *Land* , 10 (7), 683. https://doi.org/10.3390/land10070683

Bengtsson , E. (2011). Repoliticizing accounting standard-setting—IASB, EU, and the global financial crisis. Critical Perspectives in Accounting , 22 (6), 567 – 580.

Bitner , R. (2008). Confessions of a Subprime Lender : An Insider 's Story of Greed, Fraud, and Ignorance ; John Wiley & Sons : Hoboken , NJ, USA.

Bourassa , SC, Cantoni , E. and Hoesli , M. (2007). Spatial dependency, housing submarkets and housing price prediction. *Journal of Real Estate Finance and Economics* , 35 (2): 143–160. https://doi.org/10.1007/s11146-007-9036-8

Bulutoğlu , K. , Kurtuluş, E. (1988) Budget and Public Expenditures, Filiz Bookstore , Istanbul, p. 127.

Cete , M. , Yomralioglu , T. (2013) Re- engineering of Turkish land administration , *Survey Review* , vol . 45, iss . 330, p. 197-205.

Cadastre (1987). Cadastre Law No. 3402, Official Gazette Published; Date: 9/7/1987 Issue: 19512, Published Code; Edit: 5 Volume: 26 Page: 229.

Constitutional Court of the Republic of Turkey, (1966). Decisions of the Constitutional Court, Article No: 1966/3 Decision No: 1966/23 Date of Decision: 28/4/1966 , Official Gazette Date: 11/07/1966 Number: 12345

D'Amato M. (2015) Income approach and property market cycle, *International Journal of Strategic property Management* 19:3 , p. 207-219. https://doi.org/10.3846/1648715X.2015.1048762

D'Amato , M., Kauko , T. (2017) Valuation methods and the non-agency mortgage crisis. In Advances of Automated Valuation Modeling ; Springer : Cham , Switzerland, s. 23–32.

d'Arcy, É., & Keogh, G. (1997). Towards a property market paradigm of urban change. *Environment and Planning A*, 29(4), 685-706. https://doi.org/10.1068/a290685

des Rosiers , F., Theriaults , M., and Villneuve , P. (2000) Decomposition of access and neighborhood factors in hedonic price modeling . *Journal of Real Estate Investment and Finance* , 18 (3): 291 – 315.

Donaldson, S. E., & Van der Merwe, I. J. (1999). Urban transformation and social change in Pietersburg during transition. *Society in transition*, 30(1), 69-83. https://doi.org/10.1080/10289852.1999.10520169

Downie , ML; Robson , G. (2008) Automatic valuation models: An international perspective. In the Proceedings of the RICS Automated Valuation Models Conference: AVMs today and Tomorrow ,

London, UK, 4 November. http://nrl.northumbria.ac.uk/id/eprint/1683

EC (European Council) (2006) Directive 2006/48/EC of the European Parliament and of the Council of 14 June 2006 relating to the taking up and pursuit of the business of credit institutions Official Journal of the european Union , L177: 1 – 200 .

Eriksson , C. , Adair , A., McGreal , S., Webb , J. (2005) Harmonization of Investment Valuation Standards in Europe , *Journal of Real Estate Literature* , vol . 13, is. 1, p. 45-64. https://doi.org/10.1080/10835547.2005.12090149

Erdem, N. (2019) Investigation of the Effectiveness of Turkey's Real Estate Valuation System , *Journal of Geomatik* , 4(1) p. 1-13

Erdem, N (2020) The need for re - engineering in the real estate appraisal system in Turkey , *Survey Review* , vol . 52, it. 370, p. 84-86.

Erkek B. , Erkek, E., Yalpir , S. (2021) The Most Effective and Most Efficient Use of Land Analysis: The Case of TKGM Oran Campus, *AKU J. Sci . Eng .*, 21, 015503, p. 147- 166.

EU, (2004) European Union Land Policy Guidelines for Support to Land Policy design and Land Policy Reform Processes in Developing Countries , EU Tasks Force on Land Tenure .

Farjaudon , AL, and Morales , J. (2013). Seeking consensus: The role of accounting in defining and reproducing prevailing interests . *Critical Perspectives in Accounting* , 24 (2), 154–171.

Gilbertson , B ., Preston, D. (2005) A vision for valuation. *J Prop . val . Investment. Finance*. 23 , 123–140. https://doi.org/10.1108/14635780510699998

Gnat , S. (2021). Property mass valuation on small markets, *Land* , 10 (4), 388. https://doi.org/10.3390/land10040388

Gözler, K. (2011). On Misuse of Some Administrative and Legal Terms in Laws No. 5018 and 6085, AUHFD, 60(4), 837-919.

Güneş, T. and Yıldız, Ü. , (2015) . Collective valuation techniques used in the land registry and cadastre modernization project of the Republic of Turkey. In: FIG workweek 2015 – from the wisdom of the ages to the challenges of the modern world . Sofia, Bulgaria. May 17-21.

Güneş, T. and Yıldız, U., 2016 . Property valuation and taxation to improve local governance in Turkey . *Land use log* , 15 (2), 141 – 160.

Güngör, A. , A. (1981) Turkish Government Accounting System as a Management Tool, *Ministry of Finance Inspection Board Publication*, No:231, Ankara, p. 8.

IVSC (2020) International Valuation Standards Council annual Report 2019–20, London , United Kingdom .

Jindrichovska I. & Kubickova D. (2017) The Role and current Status of IFRS in the Completion of National accounting Rules – Evidence from the czech Republic , *Accounting in Europe* , 14:1 -2, 56-66.

Karaca H. (2008) Real Estate Valuation Methods and Comparison, Supervisor: Coşkun Z ., MS thesis, ITU Science and Technology. Inst . geode And Fotog . USA, Istanbul, 69 p.

Kaplan, G. (2004). Transfer of Immovable Property and Judicial Control between Public Institutions and Legal Persons, *Journal of Maltepe University Faculty of Law*, Issue: 2004/1–2, 167–188.

Kerimoğlu , B. (2002) Reform Studies in Government Accounting, *Financial Guide Journal*, Issue: 17, July-September, p. 97.

Kızılkaya , E. (2002) Tangible Fixed Asset Accounts in Accrual Based Government Accounting, *Financial Guide Magazine*, Issue: 17, July-September, p. 105.

Koç, V. (2021a) Taşınmaz Geliştirme Kavramının İrdelenmesi, V. Internartional Istanbul Scientific Research Congress, August 14- 15, Istanbul, pp. 294- 301.

Koç, V. (2021b) Ayvalık İlçesi Özelinde Konut Değerleme Önerileri, Internartional Halich Congress on Multidisciplinary Scientific Research, August 15- 16, Istanbul, pp. 277- 285.

Koç, V. (2021c) Taşınmaz Geliştirmede Risk Analizinin Yönetim Sistemleri Anlayışıyla İncelenmesi, Mühendislik Alanında Uluslar Arası Araştırmalar'da kitap bölümü, Ed. Aydemir, E., Eğitim Yayınevi, İstanbul, pp. 97- 121.

Koç, V. ve Çiçek, E.N. (2021) Samsun İlinde Kentsel Dönüşüm ve Konut Değerleme ile İlgili bir Örnek, Internartional Halich Congress on Multidisciplinary Scientific Research, August 15- 16, Istanbul, pp. 286- 295.

Kothari , SP, Ramanna , K., & Skinner , DJ (2011). What Should GAAP Look Like? A Survey and Economic Analysis, Working Paper No. 09-22, Harvard Business School, Boston, MA, 1-111.

http://hdl.handle.net/1721.1/66935

Lai, L. W., & Lorne, F. T. (2019). Sustainable urban renewal and built heritage conservation in a global real estate revolution. *Sustainability*, 11(3), 850. https://doi.org/10.3390/su11030850

Liow , KH & Yeo , S. (2018). Dynamic Relationships between price and Net Asset value for Asian Real Estate Stocks , *International Journal of Financial Studies* , 2018, 6, 28. https://doi.org/10.3390/ijfs6010028

Llewellyn , S. and Milne , MJ (2007). Accounting as codified discourse . *Journal of Accounting, Auditing and Accountability* , 20 (6), 805 – 824. https://doi.org/10.1108/09513570710830254

Lundström , S. & Lind , H. (1996). Valuation of public real estate : context and concept, *Journal of Property Valuation & Investment* , 14(4), 31-4. https://doi.org/10.1108/14635789610153452

Marco L. , Morano P., Tajani F., and di Liddo F. (2020) An Innovative GIS- Based Territorial Information tool for the Evaluation of Corporate Properties : An Application to the Italian Context " Sustainability 12, no. 14: 5836 https://doi.org/10.3390/su12145836

MEGM, (2019). "State Property Legislation", https://kurumsal.milliemlak.gov.tr/Yaynlarmz/Devlet_Malları_Mevzuatı_Ekli.doc (7 April 2019).

MEGM, (2020). Annual Report 2019. Ministry of Finance, General Directorate of National Real Estate (MEGM), Ankara.

Mooya , M. (2011) Of Mice and Men: Automatic valuation models and the valuation profession. *Urban Stud.*, 48 , 2265–2281.

Morgan, JF (1998). the natural history of professionalisation and its effects on valuation theory and practice in the UK and germany, Journal of Property Valuation and investment .

Official Gazette (2018). Presidential Amendment Decree on the organization of public institutions affiliated to the Ministry. Official Gazette of the Republic of Turkey, Number: 30479, Date: 15/07/2018 .

Özer, M. (2010) Financial and Quantitative Methods Used in Real Estate Valuation: An Application with TOPSIS and New Multiple Criteria Models, Supervisor: Baray , İ ., MS Thesis, DEÜ Sos. know Inst . Economics USA, Izmir, 197 p.

Palicki, S., & Rącka, I. (2016). Influence of Urban Renewal on the Assessment of Housing Market in the Context of Sustainable Socioeconomic City Development. In Smart City 360°: First EAI International Summit, Smart City 360°, Bratislava, Slovakia and Toronto, Canada, October 13-16, 2015. Revised Selected Papers 1 (pp. 851-860). Springer International Publishing. http://dx.doi.org/10.1007/978-3-319-33681-7_76

Peldschus , F. (2010) Economical analysis of projects management under consideration of multi - criteria decisions , *Ukio Technologinis ir Econominis Vystymas* , vol . 12, is. 3, p. 169-170. https://doi.org/10.1080/13928619.2006.9637737

Porter , M. (1990) . Competitive Advantage of Nations, *Harvard Business Review* , March -April: 73-91.

Public Property (2003). Public Financial Management and Control Law No. 5018, Official Gazette Published Date: 24/12/2003 No: 25326, *Code Published*; Issue: 5 Volume: 42.

Public Record (2006). Regulation on Registration of Immovables Owned by Public Administrations, Official Gazette Published; Date: 2/10/2006 Issue: 26307, Published Code; Issue: 5 Volume: 46.

Ramsett ED (1998) The Cost Approach : An Alternative View, The appraisal Journal , NewYork, April, p.4.

Ramsey , R. (2004). The urban land economics tradition : how heterodox economic theory survive in the real estate appraisal profession Of Wisconsin Government and business and the History of Heterodox Economics thought Emerald group Publishing limited. https://doi.org/10.1016/S0743-4154(03)22058-7

Richter J. (2020) EU Regulatory development , law and financial Markets review , 14:1 , 65-76.

RICS (2022) Red Book Global Standards : https://www.rics.org/en-za/upholding-professional-standards/sector-standards/valuation/red-book/red-book-global / (Accessed on 04.10.2022).

RICS EU (2008) Advisory group on Sustainable Property Investment and Management, Sustainable property investment and management, key issues and major challenges, RICS Proceedings (Available at http://www.rics.org/Newsroom/Keyissues/Sustainabilty/SPIM_r_230908.html, accessed February 10, 2023)

Quagli , A. and Ricciardi , M. (2010). IAS 39 Amendment October 2008, as another earnings management opportunity: an analysis of the European banking industry, SSRN 1639925.

Sharkawy , A. , & Barnes , W. (1992). Cost , Value , and Hybrid - Based underwriting criteria, *Journal of Real*

Estate Research , 7 (2), 169-185. https://doi.org/10.1080/10835547.1992.12090669

Soto , HD (2017). The Secret of Capital, Translated by M. Aygen, Liberte Publications, Ankara.

Söyler, I. (2005a) Reflections of the Accounting of Fixed Assets of the State on Public Finance, *Accounting and Auditing Overview*, September, p. 105- 116.

Söyler, I. (2005b). Evaluation of State Property in Terms of Public Finance, Ministry of Finance Research, Planning and Coordination Board, Publication No: 2005/368, Ankara

Söyler, I. (2007). Places of Rule and Disposition of the State in Terms of Public Goods Theory, *Journal of the Court of Accounts*, 83, p. 57-68.

Stuebs , M. and Wilkinson , B. (2014). Professionalizing the tax accounting profession: Fulfilling public interest reporting responsibilities . In S. Mintz (Ed.), Public interest Accounting. Perspectives on Accountability, Professionalism and role in society (pp. 27 – 50). springer . https://link.springer.com/chapter/10.1007/978-94-007-7082-9_2

Tapu (2014). Land Registry applications, General Directorate of Land Registry and Cadastre, *Department of Land Registry*, Ankara.

Tasan K.T., Groetelaers DA, Haffner MEA, Van Der Heijden HM, & Altes WKK (2013) Providing Cheap Land for social Housing : Breaching the state aid Regulations of the single European Market?, *Regional Studies* , 47:4, 628-642. https://doi.org/10.1080/00343404.2011.581654

Taylor, JB (2009) Financial Crisis and Policy Responses: An Empirical Analysis of What Gone Wrong ; 14631 Working Certificate No. National Bureau of Economic Research: Cambridge, MA, USA.

TCRG (1972) Regulation on the Appraisal of the Tax Value to be Subject to Real Estate Tax, March 15, No: 14129, p. 1915-1927.

Thibodeau , TG and Sabyasachi , B. (1998). Spatial autocorrelation in house prices analysis . Journal of Real Estate Finance and Economics , 17 (1): 61 – 85.

Thorell P. & Whittington G. (1994) The harmonization of accounting within the EU, *European accounting review* , 3:2 , 215-240. https://doi.org/10.1080/09638189400000019

TMK (2001). Turkish Civil Code No. 4721, Official Gazette Published; Date: 8/12/2001 Issue : 24607 Code of Published; Issue: 5 Volume: 41.

TKGM (2020). Official website of TKGM , https://www.tkgm.gov.tr/ Access date: 10.05.2020

Üçbaş , A. (2004) What the Law No. 5018 Brought to Public Finance, *Fiscal Guide Magazine*, Issue: 25, July-September, p. 48.

Ünel , FB ., Kuşak, L., Yakar, M. (2021) Preparation of Data for Sustainable Management by Examining Public Real Estate from a Legal Perspective: Mersin University, *Turkish Journal of Land Management*, 3(1), p. 08-24

World Bank (2008). Project valuation document for 135.0 million euro loan proposed to the Republic of Turkey for the land registry and cadastral modernization project .Washington , DC: World Bank . http://documents.worldbank.org/curated/en/608031468338987781/pdf/431740PAD0P106101official0use0only1.pdf

Van der Spek , M. (2017) Investin inf Real Estate Debt: Real Estate or Fixed Income? *Abacus-A J. Account. Finance. Bus. Stud.*, 53 , 349–370. https://doi.org/10.1111/abac.12112

Ventolo , WL and Williams, MR (2001), Fundamentals of real estate appraisal, Dearborn estate Education , Chicago , 446s.

Vrbka , J .; Junga , P.; Krulický , T. (2019) Methodology for determining the rental rate of return of built-up land. *Adalta J. Interdiscip . Res.*, 9 , 364–370.

YÖK, (2020). Higher Education Information Management System, (28.11.2020) https://istatistik.yok.gov.tr/

Źróbek , S. , Adamiczka , J., & Grover , R. (2013). Valuation for loan security purposes Of the Context Of A Property Market Crisis - The Case of the United Kingdom Andean Poland . *Real estate Management and Valuation* , 21 (4), 36-46. https://doi.org/10.2478/remav-2013-0035