

# **The value of real estate in the vicinity of airports – methodology of valuing loss and determining compensation**

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## **The value of real estate in the vicinity of airports – methodology of valuing loss and determining compensation**

- Restriction of property ownership in the surroundings of airports
- Principles of compensation for legal damage and Environmental Law
- Differential method in determining damages
- Examples of determining the value of outlays and reduction of real estate value

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### **Introduction**

Economic development boosts the intensity of land use causing owners to increasingly change the use of their land. Land is a rare asset and a resource limited by physical availability. Due to their permanent location, such assets are naturally exposed to **neighbour conflicts** especially in urbanized areas. Conflicts arise when there is no consistency in the use of neighbouring properties or when such properties are used with varying degrees of intensity. The intensifying urbanization processes are conducive to different types of **nuisance**, e.g.: noise, smell, smoke, dust, water, vibrations, tremors, blocking the sunlight. Emissions cross the boundaries of the property from which they originate and become a negative **external effect**. This situation also occurs in the case of airports which use its own land in a manner that influences the owners of neighbouring properties. Land belonging to an airport covers a large area and it is utilized in a unique manner. Airport operations give rise to specific nuisance by noise, observable at intervals over vast neighbouring areas. Noise is a negative external effect, particularly for owners of neighbouring residential properties.

In such circumstances, a dispute regarding ownership arises and escalates. It may be resolved in different ways. Without State intervention, the airport and the owner of private property would resolve the conflict on the property market, subject to the terms of a market agreement concluded on a voluntary basis. When the State becomes involved in the resolution of neighbour conflicts, it is necessary to establish criteria, procedure and terms of deciding the dispute. This requires the development of a solid and comprehensive theory of private property ownership. Our considerations are based on the currently dominant concept of ownership seen as a **package (bundle) of rights**, which in the systems based on Roman law, with the overriding principle of the unity of the right of ownership, is expressed through different entitlements of the owner. This theory not only allows but also justifies and reinforces the potential of the State to regulate private ownership. Regulations assume the form of different **interventions**. One of them is the **triangular (tripartite) intervention**, which enforces particular terms of the exchange on the market by, for example, imposing the terms of contracts that transfer rights between the parties of a neighbour conflict caused by excessive noise, the latter impossible to eliminate despite using available technologies. This occurs in neighbour conflicts between the airport and a homeowner when the State, through environmental law, **enforces**

**an exchange of rights/entitlements** (property rights) **and defines its terms**, which is necessary to establish a new neighbour order imposed by a legal obligation. The intervention determines the terms of the conducted negotiations, because the legal obligation imposes the form and the scope of the rights exchanged between the airport and property owners.

In the case of residential housing situated in the vicinity of an airport, **the intervention of the State which influences and shapes the ownership** of a private residential property may cause **legal damage**. The latter may consist of limiting ownership by removing or restricting a certain entitlement or by imposing an obligation. At the same time, the State decides about which types and what scope of losses caused by the intervention will be compensated. Ownership, as property right, is by definition limited and the scope of such limitations follows, in the first place, from statutory law, but also from the principles of social coexistence and the social and economic purpose of ownership. Damage caused by a lawful act of the State, as a rule, does not require compensation. The possibility to claim compensation must follow from the legislator's clear intention. It is the legislator who decides what consequences of the State's legal activities are subject to compensation and what the scope of such compensation should be. This applies precisely to the situation of creating a restricted use area (hereinafter: RUA) for an airport under the provisions of the Environmental Law Act 2001 (hereinafter: ELA).

The publication considers the problem of solving, through public intervention, nuisance conflicts in the case of **external noise effects of an airport**. The adoption of a resolution establishing a RUA is primarily intended as a permanent, institutional stimulus allowing social processes to allocate the best use to land surrounding an airport, the latter creating external noise effects in the form of **public bads**. Since meeting environmental quality standards outside the boundaries of an airport (or other public facility) is not possible, **a zoning intervention is introduced** in the form of creating a RUA. Within the RUA, the legislator imposes requirements and prohibitions, also including ones regarding permissible uses of land and the erected buildings. The intervention is definite, however the possibility and the obligation to create a RUA relates only to selected land utilized for the purpose of operating **public infrastructure** facilities. Those are: water treatment plants, municipal landfills, compost plants, communication routes, **airports**, power transmission lines and distribution stations, gas network facilities and radiocommunications, radionavigation or radiolocation installations (Art. 135(1) ELA).

The publication **addresses the principles** of resolving neighbour conflicts between the owners of residential properties and entrepreneurs (airports) when a RUA is created. It concentrates on legal and economic aspects of that specific intervention, the scope of the airport's compensatory liability, and valuation methods of determining due compensation. An impulse to undertake the research was provided by an identified **systemic error** caused by an erroneous interpretation of the law, which dominated judicial practice and due to various subsequent mistakes appeared in the practice of valuing real estate for the purposes of compensation. This publication presents a part of the results of concluded descriptive **research** regarding **the legal system** regulating the intervention in the form of RUAs and the **activities of regulated entities** (parties to the conflict) as well as of actors supporting the resolution of such disputes. The study refers to the methodology used by valuers in the valuation of properties for the purpose of determining compensations in RUAs, since on the basis of such calculations, compensations are awarded and it is possible to assess the effectiveness of the intervention.

**The purpose of the publication** is to present the scope and terms of compensating loss as well as the differential methodology of determining compensation payable in the case of creating an airport RUA, in the context of the legally and economically organised theory of ownership and theory of public intervention on the property market. As a result of such considerations, the Authors present the principles of assessing the reduction of a property's value and the value of expenditures made by owners of single-family houses to adjust their buildings to new technical requirements. Thus, the

study analyses the principles of protecting the capital (value) of private properties regulated in environmental law, the latter allowing to impose requirements and prohibitions that determine, adequately to the purposes of the intervention made, the manner of exercising ownership. Simultaneously, the legislator specifies the method of claiming compensation and determines the scope of compensable loss.

The content and the scope of the publication are designed to present a part of the conducted research and its scientific results. The considerations are presented in five chapters. The first and the second chapter are theoretical. They depict the contemporary legal and economic approach to the ownership of property as well as the scope and terms of compensating loss along with the differential methodology of determining compensations for the properties affected by the consequences of creating an airport RUA. The third and the fourth chapter are theoretical and empirical. Chapter three, in the context of the public intervention theory discusses the methodological questions of preparing analyses for a property market operating under the influence of an intervention, considering the importance for valuation practice of the highest and best use of properties. Chapter four starts with a specification of the contemporary technical standards for residential buildings regarding acoustic insulation. The study continues to present the practical aspects of assessing the state of residential buildings and determining the level of wear of elements responsible for acoustic insulation. The chapter also discusses the practical matters of preparing analyses of the construction market for the purpose of determining the value of expenditures made by the owners to comply with the technical requirements provided for buildings located in a RUA. Chapter five has a strictly empirical nature. It provides examples illustrating the principles of identifying the value impairment of properties caused by restrictions imposed in the resolution establishing a RUA on the use of properties in the form of a prohibition to erect residential buildings. In addition, examples of assessing the value acoustic expenditures for newly designed buildings and existing ones are shown, the expenditures being a consequence of technical standards set out for such buildings in the RUA resolution. The existing practice required that examples also cover considering expenditures that have not yet been borne, since airports conclude settlements and pay compensations even when money has not actually been spent on acoustic improvements. Additionally, the courts award compensations ignoring the condition that before any reimbursement occurs, the owner should actually incur costs of acoustic improvements.

The publication is based on the the results of the research performed in the years 2019-2020 at the Cracow University of Economics as a part of research-and-implementation project “Restricting Negative Consequences of Noise Nuisance from Airports in Poland” (given the name “Owl 2020”), using the initial research carried out in the period 2016-2018 at the University of Economics in Katowice. Moreover, Magdalena Habdas presents a part of research results obtained in the research project “Compensating landowners in the vicinity of airports - present dilemmas and future challenges” financed by the National Science Centre, No. 2018/31/B/HS5/00231.<sup>1</sup> The results of the mentioned research projects were of key importance for confirming the existence of a systemic error in implementing the discussed public intervention on property markets surrounding airports. Removing the error needs to start with criticism of the existing case-law and the derivative practice of valuations for compensation purposes. In the context of a written law system, only strong legal theoretical foundations allow us to consider economic knowledge and utilize the achievements of the economic analysis of law. This combination allowed to establish criteria which additionally justify the criticism of the existing, highly diversified practice of determining compensations in airport RUAs, and permitted an objective assessment of the proposed systematization of the differential methodology currently recommended for use in valuations and calculations of compensation.

The results of research allow to recommend a method of solving this narrow, but not only

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<sup>1</sup> More on the projects in the summary.

symptomatically important, current social problem for the parties to the conflict as well as the courts, professionals supporting the procedures for awarding compensation relating to airport RUAs, including legal professionals, valuers, surveyors and expert witnesses in the area of construction who prepare opinions for the purpose of establishing compensations described in the provisions relating to that intervention.

The Authors' route to this publication was long, meandered among various questions and lasted over five years during which many challenges connected with researching new, mutually related areas of different scientific disciplines had to be overcome. The necessary condition for the undertaking, planning and conducting the research was cooperation, a large dose of understanding and, most importantly, trust between the co-authors representing not only different scientific disciplines but also having different professional experience.

The end-result of the present stage of research was achieved with the support and kindness of great many people met "en-route" to the goal, the latter consisting of proposing a property valuation methodology for the purpose of determining compensation for the restrictions imposed by RUA resolutions for airports. We would like to thank Dr hab. prof. UW r Elżbieta Klat-Górska and Dr hab. prof. ZUT Maciej J. Nowak, the reviewers of the publication, for their valuable feedback. Their comments not only affected the final shape of this publication but also indicated directions for future research. The scientific value and proposed practical solutions were also affected by extensive discussions conducted by the Authors during national and international academic conferences, the exchange of opinions with the professional environment of experts (made possible by the generous cooperation of the local valuers' associations), many long conversations and debates with the staff managing the largest national civil airports and the knowledge about the methods of solving similar conflicts in the USA, obtained during study visits at several airports.

The Authors would hereby like to release this publication to the readers, appreciating all substantive comments of the above-mentioned persons and entities, and with the hope of continuing the scientific discussion at the next stages of research regarding compensations connected with RUAs.

## Summary

The inspiration for writing this publication and presenting considerations on the value of residential properties in the vicinity of an airport as well as the principles of compensating legal damage was an identified systemic error concerning the interventions made in Poland from 2007 in the form of airport RUAs. The erroneous judicial practice identified at the onset of the research and the related mistakes of expert witnesses assessing the value impairment of properties or the value of expenditures for the purposes specified in ELA determined the purpose and the scope of research carried out as a part of the research-and-implementation project “Restricting Negative Consequences of Noise Nuisance from Airports in Poland” (given the name “Owl 2020”) and the research project “Compensating landowners in the vicinity of airports - present dilemmas and future challenges” financed by the National Science Centre, No. 2018/31/B/HS5/00231. Undertaking and planning the research was greatly influenced by the particular legal regime in force, which attached the consequences of a public law intervention to the civil law concept of loss/damage. The examination of contentious matters was entrusted by the legislator to general courts, who did not thoroughly consider the essence and nature of the intervention both in the legal and the economic context. Moreover, the bodies resolving the disputes or being the parties to the conflict failed to recognize the reasons why market settlements were not being concluded although the legislator provided clear methods of reaching agreements regarding claims and the due damages.

The Authors were surprised to find that an intervention which made sense only when voluntary agreements were being concluded between the conflicting parties, on the terms specified by the legislator, in a manner balancing the parties’ interests, is in practice implemented only through court proceedings awarding damages for value impairment of a property. Moreover, such compensations do not redress the damage intended for compensation by the legislator. As a result, there is no reduction in the transaction costs, social costs increase, prosperity decreases, which leads to a situation in which the legislator’s intervention in the resolution of a neighbour conflict does not fulfil its purpose. Unfortunately, the above observations are not the criteria that are taken into account in the process of interpreting and applying the law or in the attempts to resolve the conflicts. In this quite difficult and extraordinary situation, scientific research was undertaken in respect of the value and ownership of residential properties in the vicinity of airports, functioning under the conditions of the intervention, usually implemented on the local real estate market for the first time. For the above reasons, the research perspective was dominated by questions relating to the practice of dispute resolution. It was reasonable to concentrate on the problems of compensating loss and the differential method of determining compensation.

It is also worth mentioning that at the time of commencing the work on the book, almost a year ago, the co-authors’ intention was to focus on the solution of only one methodical question relating to the erroneous intervention. That error consists of disregarding, in the process of determining compensation, the recurrence of loss S (value reduction) and loss A (acoustic expenditures). Such a problem does exist, but the conducted legal and economic research of the public intervention theory revealed that it was only quite an obvious mistake in the courts’ application of the law, reinforced by the valuers’ omission of the valuation methodology as expressed in their professional rules (Guidance 1). From the scientific perspective, it was not justified to devote a scientific monograph to the problem of recurrence, since it was a result of an erroneous application of the law and not of an incorrect legislative intervention. At the same time, numerous ongoing activities relating to the popularization and communication of the results of scientific research in the form of articles, presentations at national and international conferences and the organisation of seminars devoted to valuation methodology did not provoke discussion among representatives of either science or practice, even with an obvious mistake in the implementation of the intervention, resulting in double compensation of the same loss. Only a very faint influence of the conducted research project on the change of the existing, very diverse but always erroneous case-law and incorrect valuation practice could be identified. Both

seminars and trainings, taking place as a part of popularizing science, proved insufficient to initiate changes in the methodology applied by valuers and the transfer (in the form of trainings) of the research results to judges faced the usual organisational and financial problems, which have not been overcome until the present day.<sup>2</sup>

**In such a situation and in connection with the results of the conducted scientific research, it was concluded that the economy operates under the conditions of an intervention carried out with a substantially advanced and well-established systemic error, whose elimination may not be effected through normal adaptational corrections of the irregular practices. Such practices were considered by judges and expert witnesses as applicable and correct, thus the resolution of the problem by the market and contracts concluded on the market was institutionally blocked.** The current publication is a reaction to such a diagnosis of the condition of the examined section of the economy. The publication's basic premise relates to the appropriate identification of the event causing compensable damage, the rules of compensating legal damage and the methodology of calculating the value impairment of real estate as well as the value of acoustic renovation expenditures, bearing in mind that valuations are prepared for the purpose of determining compensation. The above issues have been presented in a wider context, against the background of the legally and economically organised theory of ownership and the theory of public intervention on the property market. The results of research point to the need of introducing modifications reaching beyond a mere rectification of the existing practice and this relates to all entities involved in the neighbour conflict resolution.

To summarize the research results, it must be concluded that from the legal point of view, the delimitation of ownership boundaries or even the imposition of its restrictions is a legal activity of public authorities and compensation is payable rarely and only to the extent and on the terms formulated by the legislator, subject to the constitutional requirements and the principle of proportionality. On the other hand, from the perspective of the economic theory of public intervention, there is no justification for compensating every activity of the legislator. On the contrary, the consequences of intervention intended to divide goods and shape the content of different ownership rights are, as a rule, excluded from compensation. Simultaneously, in cases of restricting ownership accompanied by the allocation of the owner's interests, compensation may be justified, however this depends on the nature of the intervention and the goals pursued.

**The intervention into the ownership right of properties located in RUAs consists of determining the admissible use of land and imposing technical standards for external noise effects regarding sensitive buildings.** On the other hand, restrictions on the designation (and not the manner of using) of land are irrelevant to the problems of compensation as they are addressed to municipalities who enact development plans (zoning) and not to property owners. Such a stabilizing intervention does not include any allocation effects but only defines the limits of ownership and, in consequence, there is no legal or economic justification for considering the question of compensation. Simultaneously, **the purpose of creating special areas, including airport RUAs, is to prescribe admissible uses of land and technical standards for buildings in that area which make the development of land surrounding onerous facilities reasonable, in conformance with environmental law, and with the postulate of protecting human life.** Therefore, the creation of RUAs is a zoning instrument which shapes the right of ownership and the manner in which it may be exercised.

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<sup>2</sup> In June 2018, a training program for judges was prepared. It regarded legal and economic aspects of the identification and assessment of damages in RUAs. The program was submitted to the National School of Judiciary and Public Prosecution. The training entitled "Methodology of determining the amount of damage suffered as a result of the establishment of airports' restricted use areas" was approved according to the prescribed procedure but unfortunately, for administrative and financial reasons relating to the need to perform urgent tasks assigned by the Minister of Justice, the training could not take place.

Upon the creation of a RUA, the airport operates legally, despite producing external noise effects influencing neighbouring properties. As an exception, ELA provisions introduce the obligation to compensate for the effects of legal activities. This is the effect of the constitutional principle of equality before the law, which means that persons experiencing disproportional restrictions, as compared to others, on grounds of public interest, should have the right to compensation to the extent such compensation restores proportionality. However, this does not mean the need to fully redress all detriments, that is to say, it is possible and legitimate to deviate from the principle of complete equality. Therefore, the scope of liability for legal damage must be interpreted strictly, even if the legislator does not decide to compensate all the consequences of a legal intervention. **As opposed to expropriation, whose constitutional requirement is to pay fair compensation, in the case of imposing restrictions on the right of ownership there is no general principle necessitating compensation.**

The purpose of establishing a RUA is to define the use of properties which is safe for humans in the context of the airport's activities. Restrictions on the use of real estate do not relate to every property. The operation of an airport has a negative impact mainly on residential properties and other sensitive uses. Therefore, the land assigned for such development is subject to restrictions, expressed in the form of requirements or prohibitions in resolutions constituting local legislation. **When considering the question of compensation, the precondition to the application of Art. 129 ELA is the imposition of restrictions on the use of properties. Under that provision, the factors irrelevant to the methodology of determining compensation are: the mere fact of creating the RUA and the related positive or negative social reception (market reaction) or an always relative assessment of the comfort of enjoying a property. The questions relevant to the methodology are only the imposed, formalized requirements and prohibitions on the admissible use of properties, including their development, or other requirements or bans of such type.**

Polish legislation, in line with the economic principles of implementing public intervention, does not provide for compensation of a property's value impairment caused by transitions relating to urbanization processes or civilizational development unless specific restrictions (requirements/bans) are introduced in relation to a specific piece of real estate. Consequently, the law provides for compensation for a legal intervention in the right of ownership to the extent that concrete requirements and bans introduced by the authorities in respect of property use cause damage. Only in such situations allocative intervention occurs. It entails introducing within the RUA, non-market principles of transferring property rights/entitlements. In such cases compensation is not only legally but also economically justified. Therefore, in accordance with economic theory, the determination of the compensation amount requires prior methodological conceptualization, based on the economic category of value. It also requires operationalization in relation to market data. The precondition to the emergence and compensation of loss mentioned in Art. 136(3) ELA (acoustic improvement of buildings) are costs incurred to ensure compliance with technical requirements, both obligatory ones (newly designed buildings) and non-obligatory ones (existing buildings). The owner adapts the building at the airport's expense but compensation is awarded only when money has actually been spent on performing appropriate acoustic renovations, otherwise there is no loss to redress and the purpose of environmental law provisions would not be realized. The owner may claim reimbursement of the total costs incurred for that purpose regardless of the wear of replaceable building elements, since the valuation conceptualization is based on the value of expenditures, which, when there is no wear, corresponds to market costs, that is typical ones, most frequently observed in the market, reasonably and efficiently incurred. The rules on compensation referring to the incurred market costs of acoustic improvements are both efficient and fair and do not unnecessarily restrict the owner's freedom, since renovation is voluntary for the existing buildings and the actual expenditures made are tailored and dependent on the property users' needs.



Interventions establishing airport RUAs are accompanied by speculative activities of property owners and lawyers representing such owners, declaring comprehensive and extensive transfers of rights/entitlements which, in their opinion, are subject to compensation. Bearing in mind the erroneous judicial practice and the subsequent erroneous valuation methodology applied by expert witnesses, the effect is the compensation of “full market loss” connected with the property’s location in the airport’s vicinity (and not with the effects of public intervention), which, from the social perspective, leads to increased social costs and a decrease of welfare. This publication provides criticism and unveils the fact that there are no grounds for compensating “full market loss” both in terms of the principles of interpreting and applying the law and the economic theory of public intervention. The differential method is prescribed in a manner compatible with assessing compensable loss as specified by the legislator under Art. 129(2) and Art. 136(3) ELA, with the required consideration of the type and the actual scope of loss caused by restrictions introduced in the RUA resolution. Provisions of such resolutions determine the scope of valuation which serves as the basis of awarding compensation, the latter due only if loss is a consequence of the event causing damage as defined by the legislator. The presented proposals and recommendations to standardize valuation methodology were directly based on legislation with the exclusion of erroneous interpretations which dominate judicial practice and raise serious concerns about the legality of the adopted interpretation of law.

The use of the economic analysis of law allowed to translate the general principles of the differential method applied in civil law when identifying loss and consequently the amount of compensation, into the language of valuation methodology used by expert witnesses in the preparation of opinions for the purposes of calculating compensation. The differential method allows to confirm and assess loss and to determine its amount. It consists of the calculation of the difference between the condition of legally protected goods of the injured party after the event causing damage and the hypothetical condition of the same goods had the event causing damage not happened. The compensable legal damage in the case of RUAs is a consequence of a complex intervention, which is difficult to comprehend on the level of theory and application of law, as it is situated at the intersection of administrative and civil law. Moreover, such legal damage is an exception to the general notion of damage in the sense that the legislator introduced specific rules of determining the type and scope of loss subject to compensation. **Compensation is legitimate only to the extent the legislator clearly and unambiguously interfered with ownership entitlements.** It is specified that an airport is the obliged entity and owners are entitled to compensation corresponding to the value impairment that is a consequence of the legislator’s intervention, the latter consisting of requirements or prohibitions introduced in the RUA resolutions. The parties are supposed to settle their claims through contracts concluded without the involvement of state administration or other institutions since the intervention specifies the rights and obligations of the conflicting parties and, by doing so, enables and greatly facilitates negotiation and timely conclusion of contracts on terms which are fair for both transacting parties. If market contracts are not concluded in order to settle claims, the purpose of the intervention is frustrated and there is no reduction of transaction costs.

The adoption of a resolution establishing a RUA is primarily intended as permanent, institutional stimulus allowing social processes to allocate the best use to land surrounding an airport which creates external noise in the form of **public bads**.<sup>3</sup> At the same time, the resolution corrects ineffective spatial policies adopted by the municipality, by restricting the municipality in prescribing land uses sensitive to noise externalities, thus allowing to ensure reduced social costs. Identifying the rights and obligations of the conflicting parties should eliminate previous uncertainty about the methods and costs of resolving the conflict and, with a properly designed and duly implemented intervention, the transfer of property rights/entitlements should take place on market terms. This guarantees low

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<sup>3</sup> R. Cooter R, T. Ulen , *Ekonomiczna analiza prawa*, op. cit., 131.

transaction costs. On the other hand, by bringing a large proportion of compensation cases to courts, transaction costs are increased and the purpose of the intervention is not achieved. Such a purpose may only be ensured by means of transferring rights under market contracts concluded on the terms set out in ELA provisions and within the scope locally specified in a particular RUA.

In order to guarantee appropriate institutional implementation of the intervention, courts should adjudicate in compensation matters, firstly, within the scope specified by the legislator and secondly, on terms corresponding to the principle of reflecting the market. **For the above reason, the amount of compensation should correspond to the objective category of market value or market cost. As a result, none of the conflicting parties can lose or gain anything from the mere fact that the conflict was resolved in court.** However, if the dispute is resolved by the court, transaction costs are higher than in a situation of resolving the same conflict on the market by the parties, on the terms enforced by the intervention. The risk relating to additional transaction costs being incurred should, in the absence of other benefits of litigious resolution of the dispute, incline the parties acting reasonably and driven by their own interests to conclude agreements on the market, since such a method is much easier.

The legislation does not provide for the obligatory involvement of a valuer in the process of determining compensation, however usually such involvement will be necessary because of the high monetary values of settlements and the difficulties in calculating the proper amounts by the conflicting parties themselves. Based on value or costs, and respectively their difference, specified by the valuer, the parties to the dispute may, with a lower risk of mistake and with relatively low transaction costs, hold effective negotiations and determine the purchase price or the amount of compensation, following the legislator's decisions expressed in ELA as to what losses and to what extent the parties need to settle. **As a consequence, valuers must understand what constitutes legal damage and what the scope of the compensatory obligation is so that the valuation reflects such consequences of the intervention that the legislator qualified as compensable.** The valuation report retains the nature of an independent specialist opinion but, in the first place, it is supposed to have a consulting and argumentative function and contribute to an increase in mutual trust between the parties to the contract. However, this will not give rise to the same type of trust as in voluntarily concluded transactions on free market terms. The valuer's opinion is to enable bridging the gap between the conflicting parties and to allow them to establish a relation based on reciprocity, necessitating kindness, understanding and moderation, which make up the fabric of the society and are decisive for the intervention's effectiveness.<sup>4</sup> Therefore, valuers must have a very profound knowledge and understanding of the sense and purpose of the legal regime introduced in a specific RUA so as to support the parties in the conclusion of contracts. **In order to avoid errors that occur when methodological questions are understood narrowly, as merely providing answers to the**

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<sup>4</sup> In a systemic approach, the functioning of professional valuers or other expert witnesses in the process of compensating damage may be analysed from the point of view of the notion and the performance of governance processes. Expert witnesses are an important element of public intervention who develop appropriate professional standards concerning that intervention. Governance as a research perspective is useful for the complex problem of the involvement of expert witnesses in the process of compensating damage. That problem may be solved by using a comprehensive approach consisting of three elements: dysfunctions-dilemmas-actions and requiring the cooperation and joint thinking of many actors engaged in the planning and implementation of the intervention. In the examined topic of establishing RUAs, the complex problem of compensation relates to important public matters, however the initially designed institutional solutions did not work properly in the development of methodology by and for valuers. For more on governance processes, see: J. Hausner, *Spółeczna czasoprzestrzeń gospodarowania. W kierunku ekonomii wartości*, Wydawnictwo Nieoczywiste, 2019, p. 327-351. In a wider context, governance, e.g., according to the network management theory or delegation theory, seems to be an appropriate perspective for a comprehensive investigation of the processes of managing public intervention when RUAs are established by acts of public administration. For more on the network management theory and delegation theory in governance, see: St. Mazur, *Współzarządzanie a administracja publiczna [in:] Współzarządzanie publiczne*, ed. St. Mazur, Wydawnictwo Naukowe SCHOLAR, Warszawa 2015, 41-48.

**question of how to apply a given valuation method (“How to value?”), the current publication includes a comprehensive presentation of differential methodology regarding identifying and valuing loss. This methodology follows the typical structure, as applied in social sciences, according to the hierarchical model which covers the subsequent stages of conceptualization, operationalization, and measurement (as the last stage).**

The considerations presented in this publication go beyond the “magical” discussion line for practitioners who focus on answering the question of “How to do the calculations?” (the measurement stage). We supplement the methodology by necessary elements of conceptualization and operationalization of the valuation process (answering the questions of: Why? and What?), which is necessary for the adoption of correct assumptions for the differential method. Only when using complete methodology can expert witnesses support the courts in the adjudication of compensation that reflects the purpose of public intervention and corresponds to the subject matter and scope of compensation as provided in statutory law.

The practical implementation of the obtained research results, bearing in mind the systemic and well-established nature of the mistake, requires an active involvement of judges and expert witnesses. Those are the environments that, interdependently from the institutional perspective, formed and consolidated the erroneous interpretation and implementation of the intervention relating to airport RUAs. Judges and expert witnesses, as actors expected to stand above the conflicting interests of neighbouring landowners, are the primary addressees of the results of the descriptive research regarding the legal system and the functioning of regulated entities (parties to conflicts). Judges are institutionally treated as persons resolving disputes and, for that purpose, it is necessary that they understand the principles and the purpose of the intervention consisting of creating a RUA. Expert witnesses support judges not only in the “technical” determination and justification of the market price level or the type of necessary expenditures but, first and foremost, are comprehensively responsible for the methodology used and for a clear and comprehensive presentation of the description and evaluation of the market operating under the intervention’s impact. The publication is intended to enable communication in a common language at an “intersection” of difficult legal, economic and technical problems relating to the discussed intervention. The use of clear, consistent and consequently understood terminology was considered a key question both for the description and assessment of the intervention and for the preparation of methodological recommendations.

The publication presents only a part of research results considered essential and necessary for a comprehensive discussion of determining compensation. The entire research carried out in the SOWA 2020 project was organised using the distinction introduced by Posner<sup>5</sup> between positive and normative economic analysis of law. This paradigm, structuring the research from the methodological point of view, was then combined with efficiency criteria derived from Coase’s<sup>6</sup> views. This allowed to distinguish between normative and positive analyses of the regulated and regulating phenomenon regarding RUAs. The adopted approach to investigating compensation rules in RUAs also allowed to distinguish between two areas relating to the research of the regulatory behaviour (the object of the research is the intervention and the market) and of the behaviour of the regulated entities (airports and property owners) or actors institutionally involved in the implementation of the intervention at different stages, e.g.: expert witnesses preparing environmental reviews, voivodship assemblies and administration of that level, lawyers advising the airports or property owners, judges and judicial experts. From such a perspective, it becomes apparent that the question of compensation is an important but a narrow problem, arising only at the final stage of the intervention’s implementation. The publication does not investigate compensation at the level of analysing the relations and reactions

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5 R.A. Posner, *Economic analysis of law*, Wolters Kluwer Law&Business, 2014.

6 R. Coase, *Firma, rynek i prawo/The Firm, the Market and the Law*, Wolters Kluwer, Warszawa, 2013.

of the parties regulated by the legal system. Instead, we offer descriptive and normative research of a fragment of the legal system's structure, specifying the terms of operation of regulated parties and defining the tasks of other involved actors, institutionally engaged in the resolution of problems relating to the intervention. The question of valuation methodology was addressed in a situation when the market instruments of resolving disputes were abandoned and settlement of compensation was passed on to judges and expert witnesses. The methodological principles described are useful in a properly implemented intervention and they enable an amicable resolution of a vast majority of compensation claims, thus leading to a situation where only few cases go to courts.

From the technical point of view, the scope of intervention ought to be dependent on the actual acoustic insulation values of building partitions. It is not difficult to carry out appropriate computational analyses, but the task requires appropriate data. The most serious problem in the analysis of acoustic insulation is the missing information about the value of the external noise. For the purpose of specifying that noise value, archival measurements can be used, as well as results of the airport's monitoring, or field research can be carried out with appropriate computational simulations. Until the end of 2022, strategic noise maps will be prepared, which will solve that problem. However, it must be remembered that building acoustics is currently a strongly developing area of the construction industry, which is why standard provisions are subject to frequent amendments.

It must be noted that currently in court cases regarding compensation connected with RUA's all problems of the intervention are combined and exacerbated. This may be partly explained by the fact that the intervention is to a certain degree institutionally imperfect, but also by the fact that it has been defectively interpreted and implemented by the courts. This provides additional justification for the operation of the courts and expert witnesses within a wider, methodological perspective since their knowledge may prove insufficient to diagnose and solve problems which, in practice, have become so serious that they are not resolvable on the level of case-law and expert witnesses' opinions. In such a situation, it becomes necessary to reach for the results of scientific research presented in this publication.

Being able to identify, understand and accept the economic principles accompanying the intervention is a condition necessary to propose changes that would eliminate the existing systemic errors. It should also contribute to the discussion about the correctness of current legal provisions in the context of economic principles and various principles of perceiving justice. In the future, this may help to avoid mistakes in the interpretation and application of law in the analysed situation as well as in similar public interventions. The current problems in correctly applying arts. 129 and 136 ELA in reference to airport RUA's allow to assume that regardless of any specific legal regime governing this type of intervention, such errors will be repeated. This is because in order to avoid such mistakes, understanding the legal and economic conditions as well as purposes of such interventions is essential.

The publication deliberately regards only a small fragment of the theory of public intervention relating to the methodology used by expert witnesses in the valuation of properties for the purposes of determining compensations in RUA's. This is justified by the fact that damages are awarded on the basis of such valuations and they also provide the basis of assessing the intervention's effectiveness.

In the research, it was necessary to depart from the methodologically secure areas of descriptive investigation and to move into the sphere of normative judgements. However, the boundary of formulating strict recommendations about the methods and directions of the transition to be made in case-law and practice of property valuation has not been crossed. Those problems were left to be solved by entities institutionally responsible for the implementation of the intervention, as difficult decisions must be made in order to end the widely accepted, systemic errors in the implementation of the intervention. Nonetheless, the publication clearly points to the interpretation of legal provisions that may be considered as correct both from the legal and economic perspective. Only for experts in

the area of construction this publication contains practical recommendations. We fill a publication gap and propose solutions concerning the methods of evaluating building insulation as well as the contents and the manner of presenting conclusions of the opinion concerning building construction.

The research results presented in this publication are consistent with studies concentrating on ensuring sustainable development. We assume that achieving that objective is only possible with a solid and comprehensive concept of private ownership of real estate and of the value of the environment, which must be treated as correlated since the absence of a well-formed private ownership will be detrimental to environmental values. The research objective regarding the appropriate rules of compensating loss in RUAs and the developed differential methodology, structures and reinforces the concept of private ownership of real estate in the context of environmental values. On that basis, the parties to whom the intervention is addressed and actors engaged in its implementation may analyse their own activities and evaluate the obtained results according to objective criteria of scientific research results.

It must also be noted that the research perspective concerns interventions carried out for airports that have been in existence for many years and have influenced the conditions of the development and operation of local property markets. Airports “merely” increase the intensity of operations or implement alterations that affect the alignment of runways. In such situations, developing the methodology of calculating damages requires applying the conceptualization and professional interpretation of value based on neoclassical equilibrium economy models, which simplifies the assessment and the use of HBU analysis. On the other hand, the present considerations do not relate to newly designed airports which, from the methodological perspective, require another method of conceptualizing the value relevant to and necessary for determining compensation. Such situation concerns the currently implemented Polish project of constructing the Central Communication Port (CCP).<sup>7</sup> It must be noted that it is an intervention of a different economic nature, which relates both to expropriation for construction purposes and other aspects of restrictions imposed on the use of properties. The investment takes place in a dynamic and emergent real estate market in the area subjected to the intervention. The market’s structure and conditions under which it operates (including the price level) will be shaped by the consequences of the project’s operation (external effects). In such markets, methods originating from neoclassical economy, which are in widespread use by valuers in the preparation of market analyses for the purposes of property assessment (market equilibrium models), will be of limited use. Solutions involving the tools for analysis deriving from neoclassical economy must be supplemented by the output of new institutional economy allowing to combine market analysis methods with the theory of public intervention in the legal and economic context. The above-mentioned problem of emergence does not refer only to the area of the new airport and its close vicinity but to the entire project with many accompanying linear investments in railways and road routes.

In fact, this problem refers to all interventions connected with major infrastructural projects,

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<sup>7</sup> The unique nature of the CCP was reflected by the special intervention tools set out in the Act of 10 May 2018 on the Central Communication Port (Journal of Statutes of 6 June 2018, item 1089). One of the valuable, novel and, at the same time, prototypical solutions of that project, as provided in Art. 47 of the cited Act, is supporting the resolution of property disputes by activities that improve informational efficiency of the real estate market through the procurement of regular, specialist analyses. The high quality and objective nature of those analyses are to be formally guaranteed by entrusting them to valuers, expected to prepare such reports as a part of their professional activities, under the provisions of Art. 174(3a) items 1 and 2 of the Act on Real Estate Management. It must be emphasized that despite many years of experience of the professional valuers there is no valuation standard covering property market analyses for the purposes of assessing the value of properties. This denotes that uniform methodology of preparing such analyses does not exist. However, the main problem in this case is the particular nature of conceptualization since in projects of such large scale equilibrium models become of little use. Without an appropriate concept, in projects which are economically strategic and socially sensitive it will be difficult to avoid conflicts concerning compensation.

especially construction of new roads. On such occasions, the problematic question is always the conceptualization of value as the only economic category allowing to solve difficult problems of determining compensations calculated in markets operating in the conditions of constant fluctuation, caused by the mere intention or the actual implementation of an infrastructure project. For some owners this is an opportunity and for others only a huge risk since they may be affected only by negative external consequences. The conclusion that in such situations good or bad luck determines the fate of landowner is unacceptable for a scientist. At the same time, in such cases, the efficiency model of intervention with compensation of damages only up to the level of the formal restrictions on property use calls for an analysis and evaluation in the context of promoting social welfare or another criterion, since this is a separate question that requires scientific discussion and research.

Although this publication considers only selected aspects of the wider issue, this is not an obstacle to utilize the study for discussing the drawbacks of the current legal RUA regimes and seeking solutions better tailored to the needs of a social market economy. Researching these issues is already taking place within both of the mentioned research projects in which the co-authors of the current publication are involved. We hope that new research results will be presented in the near future in the form of further academic publications.

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