
Externalities in the Light of Selected Spatial Economy Issues - Contribution to the Discussion*

Submitted 01/11/20, 1st revision 08/12/20, 2nd revision 12/01/21, accepted 16/02/21

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Abstract:

Purpose: The aim of research is to identify major differences between externality effects and spillover effects. It discusses selected spillover effects in spatial planning and it attempts to identify interdependencies between implemented spatial management and the resulting spillover effects.

Design/Methodology/Approach: The identification and assessment of endogenous relationships in implemented spatial policies as part of a specific spatial economy and spatial management is not an easy task. The assessment was made based on a review and an analysis of available literature. In issuing own opinions, scientific research in which the author of the text actively participated, was also important.

Findings: Who causes negative externalities is obliged to compensate for the losses suffered by those injured. It may be financial satisfaction, investment in infrastructure, investment into the investment fund, etc. Those who generate effects should strive to eliminate them, e.g., by changing the form of land use or organizing production - which may also be subject to government compensation.

Practical Implications: The paper presents major differences between externalities and spatial spillover in the context of space management and spatial economy. The distinction may be required to determine the prices and benefits of spatial economy.

Originality/Value: The proposed spatial spillover effects are the core of external effects generated by spatial planning. The author answers the question about the sources of external effects in spatial planning. What or who causes external effects? In addition, it is worth asking a research question to what extent it is possible to scientifically analyse the spatial spillover effect and whether it is possible to indicate all external effects generated by spatial planning at all.

Key words: Spillover effect, externalities, spatial planning, spatial policy, spatial economy.

JEL codes: D62, H2, P25, R11, R12.

Paper Type: Discussion article.

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*The publication was financed by Cracow University of Economics (POTENTIAL Scientific Grants Program No.52/GGR/2020/POT).

1. Introduction

In the period of nearly 30 years Poland has recorded positive changes in spatial management, public space facilities and the organization of infrastructure. However, regarding the effectiveness of implemented spatial policies, the last decade has been characterised by an increasing number of barriers to spatial development – urban and architectural errors resulting in adverse geographical, social, and cultural effects. Erroneous planning decisions are accompanied by negative economic effects. Inconsiderate spatial policies, not adapted to the existing circumstances, generate various current and future costs, further affected by multiplier factors as well as external effects and those related to broadly understood agglomeration effects. The accompanying spillover effects can be mainly attributed to social and economic activities as well as legal regulations in force, leading to diversified relations generated in cities, suburbs and typical rural areas affected by the functioning of cities. A significant role is played by the size of metropolitan centres. Metropolitan areas, treated as independent entities, have closer cooperation with one another than with gminas or powiats (administrative units) located in the same voivodeship (Jałowicki, 2005).

Moreover, the urban entities of big cities implement their own spatial policies adapted to specific local development needs. The diversity of the above relations results from the social and economic needs of local communities related to such issues as the place of residence, work, education, leisure activities etc. Debates over spatial policies must consider the specificity of local development, which is frequently understood only in terms of economic issues. Local development also includes such issues as communications as well as social and political problems (Potoczek and Jachowicz, 2005; Alonso, 1960).

The negative effects of spatial planning usually result from inefficiently controlled (or uncontrolled), irrational or even unconsciously undertaken programmes launched by territorial self-government entities, which disregard the interests of other actors operating in each space (spillover multiplier effects occur in inhabitant-user-investor relations). They ultimately lead to various externality effects which can be attributed to implemented spatial policies (Korcelli *et al.*, 2016), positive/negative externalities (costs), monetary and non-monetary/technological, unilateral/multilateral, and private (diminishable) and public (non-diminishable) (Żylicz, 2004; Batabyal and Nijkamp, 2014; Corentin and Neysen, 2009; Scharpf, 1994). In the next parts of the study, issues of planning and space management are discussed. Steps were also taken to systematize selected externalities generated through spatial planning.

Additionally, the paper aims to identify major differences between externality effects and spillover effects. Also, it discusses the issue of spillover effects in spatial planning and tries to identify correlations between implemented spatial

policies and corresponding spillover effects. The author will attempt to answer the question about the sources of external effects in spatial planning. What or who causes external effects? In addition, it is worth asking a research question to what extent it is possible to scientifically analyze the spatial spillover effect and whether it is possible to indicate all external effects generated by spatial planning at all. The assessment was made based on a review and an analysis of available literature. In issuing own opinions, scientific research in which the author of the text actively participated, was also important.

2. Space Management

The forming and implementing of spatial policies are a significant task assigned to territorial self-governments. In accordance with regulations in force, gminas (local administrative units) are held accountable in Poland for spatial order and sustained and sustainable development. It is important to explain the role of the entities in charge of spatial management, which include government administrative bodies and territorial self-government entities. In the case of the latter ones, this is gmina bodies that are responsible for spatial management, and their authority is confined to their administrative boundaries (Parysek, 2007; Barnes, Morgan, Roberge, and Lowe, 2001). Voivodships, in the context of macroeconomic problems, implement their regional policies acting both as the subjects and objects of such policies (Wassmer, 2002). Despite complex horizontal and vertical relationships, they cannot be identified with local spatial and economic policies (Klasik and Kuźnik, 1998).

Public authorities, represented by gmina councils, implement local public policies directly determined by gmina legal and administrative requirements (Nowacka, 2012; Phelps, Parsons, Ballas, and Dowling 2006; Shrestha, 1998). Also, appropriate spatial policies require public authorities to adopt effective time- and space- related management methods (Kyvelou and Gourgiotis, 2019). In the context of the adopted definition, it can be assumed that spatial policies comprise public authorities' overall regular (adjustment), intentional and sovereign activities. They aim to identify and implement spatial management programmes as well as justified and sustainable space use schemes. In a synthetic perspective, spatial policies represent the integrated activities of the institutions which have decision-making authority in relation to a target entity for the purpose of achieving specific objectives (Domański, 2006; Herold, Hemphill, Dietzel, and Clarke, 2006; Fingleton and López-Bazo, 2006). Several significant tasks are usually assigned to spatial policies including the following: stimulating understood development (Havlíček, Thalassinou, and Berezkinova, 2013), coordinating public spatial activities, and creating conditions for the cooperation of spatial policy bodies (Korenik and Słodczyk, 2005; Oates, Wallace, Howrey, and Baumol, 1971).

Consequently, it should be borne in mind that the space in which humans live is linked with the issue of spillover effects and spatial externalities which affect other

users. It is assumed that spatial management activities are accompanied by spillover effects. Active players affect the remaining users of space without any due compensation (Staniszewski, 2013; Galster, Hanson, Wolman, Coleman, and Freihage, 2001). The necessity of ensuring access to public goods in space arouses the need to compare demand (understood as the need for the accessibility of goods) with the phenomena which occur in space and which reduce consumption because of the low responsiveness of space to market factors (Perrsky and Wiewel 2005; Baumol and Oates, 1993). Therefore, it is necessary to determine a correlation between economic and spatial development factors which have an impact of managing free spaces. Local development theory stresses five factors: economic base, location, growth centres, attraction models, and cumulative causation (Hołuj, 2018b). An important role is played in this context by relations between general economic concepts, spatial management theory and local development theory reflected in the following statement: "Everything is related to everything else, but near things are more related than distant things" (Tobler, 1970). A significant role in economic growth analyses is played by "neighbourhood" and "spatial position" (Mankiw *et al.*, 1999).

It should be noted that the phenomenon of spatial spillover and related relationships is undertaken by the researchers who take interest in the issue of space (Capello, 2009; Gruber, 2010; Markowski, 2010; Irwin and Bockstael, 2004; Nijkamp and Verhoef, 2003; Treacy, 2014). They focus on such areas as the existing interdependencies (sometimes of strategic significance) between local and regional actors as well as institutions. These interdependencies are unintentional and voluntary, territorially consistent, and they generate specific dynamics of local and regional development. Moreover, spatial spillover is pointed to as a conceptual foundation of the new economic geography (Fujita, Krugman, and Venables, 1999).

A significant role is also played by interdependencies (discrepancies) between private and social optimum, which often lead to strictly intervention-related activities. Research studies in the recent years have given increasing attention to externality effects, especially negative ones. The examples of interesting studies include the analyses of externality effects on the real estate market (Głuszak, 2019), or the entropy of land use (Korcelli *et al.*, 2016; Hołuj, 2018a). Other studies focus on relationships between gmina budgets and gmina spatial management (Lityński, 2019).

We must bear in mind that space that is fit for human functioning is a rare, limited, and finite good. Spatial policy plays an important role in the organization of space. Usually stimulated or limited by various factors and an established vision of the development of the local government unit (commune). At this point, attention should be paid to economic and political factors, the intensity of their total impact on space and the interactions between them. These factors show established trends,

depending on the implemented policy, existing administrative, legal and institutional solutions. All indicated factors can be considered as causes of external effects.

Practice of space management unfortunately highlights its various shortcomings, the sources of which are, among others, insufficient knowledge and competences, lack of respect for the space and its users, or actions intentionally aimed at quick and short-term profit (Kowalewski and Nowak, 2018; Śleszyński, 2018). The current state repair programs generating various external effects on a mass scale have been proposed many times. However, the realities of space management are burdened with "escaping" from good practices of this process, from the achievements of world and national science. In parallel with the work on establishing the final paradigm of new urbanism, the practice leads to the creation of spontaneously spreading structures, or monofunctional structures, unable to function efficiently in the long run. In these structures, the value of a place is determined through the prism of particular interests.

This condition is undoubtedly the result of the weakness of functioning public entities, which from an urban perspective should mean the power of decision. A long-term, integrated development policy, which is justified and adapted to the requirements of sustainable spatial development, is indispensable. Its purpose would be to abandon the procedure based on the assumptions of centralized planning of socio-economic development (Stelmach-Fita, Pękalska, and Bartoszczuk, 2018). Over the past decades, we have seen in Poland how institutional and political disorder strongly interferes with the processes observed directly in urban structures. Spatial order is closely related, among others with economic and social order, which in turn constitute a "system of vessels connected" to spatial order.

As T. Markowski notes, subjective assessment of spatial order can be, under certain conditions, a synthetic assessment of economic, social, and environmental order (Markowski, 2019). Spatial management should be implemented based on solutions serving quality and understood integrated order (including partial order, i.e., economic order, institutional and political order, spatial order, social order and environmental order) (Borys, 2011; Markowski 2019; Zawilińska and Hołuj, 2014). Integrated order can be the basis for creating a development pattern, however, without the possibility of identifying it with sustainable development. Integrated order is perceived as the future state of final developmental changes, and sustainable development should be classified as a process (Borys, 2011). However, the necessary condition is the acceptance of the formal principle of spatial order in the context of the elementary principle of programming spatial policy (Nowak 2017). Spatial planning can undoubtedly contribute to this. It should become an unambiguous and universal regulator of urbanization, investment, and settlement processes.

3. Externalities and Spillover Effects: Definition and Background

The functioning and management of human beings together with evoked interpersonal relations is a direct reason for emerging externalities. Externalities occur throughout the entire market economy. Scientific studies explicitly recognize that also the effects of emerging externalities are significant to all market actors. It is worth noting that the discussion about externalities in both Polish and foreign literature is characterized by a variety of definitions, sometimes erroneous (in terms of meaning and interpretation). Pigou is considered to have developed in 1952 the notion of external effects identical to the canons of today's neoclassical economics. His position is still valid, but with a modification that reduces to the problem of external technological savings or losses, which are recognized directly as "external effects" (Samuelson, 1959). Samuelson concluded that the balance of a closed economy is valid except when there are external technological savings or losses.

The intervention in the field of economic factors is necessary in this state. It is important to distinguish between external and financial externalities. Often in the literature, discussion is reduced to external costs, and these should be equated only with negative externalities. Thus, it is assumed that externalities are positive or negative effects resulting from emerging market relations that affect society (usually local), although it is not directly related to them (Kamerschen *et al.*, 1992). Modern economists say that externalities are generated when an entity imposes costs on or benefits others, and they do not have the economic incentive to accept these costs or benefits (Krugman, Wells, 2009). You can also illustrate externalities in a slightly different way, namely externalities occurs when a person generates an action affecting bystanders - and these do not pay for this fact or receive any compensation (Mankiw, 2009). Thus, externalities, both positive and negative, can be created during consumption or at the stage of production itself. Here we observe the complexity of the process, compounded by the variety of causes that cause the effect. Usually identified causes are problems with indicating the ownership rights to goods (public/private), including complementary and substitution goods. In addition, the form of use, reaping the benefits of using the goods and the consumption of these goods is not without significance in identifying externalities.

In general, spillover effects occur when a phenomenon spreads (usually it is knowledge) in various spatial systems or structures in an uncontrolled, unconscious, unintentional, and freeway. Spillover effect may concern experience, prediction skills, good practices, or local customs. Spillovers effects can occur on several different levels and in different configurations. They can be individual, private, mixed, social, or economic spillover effects, generated by individuals or businesses.

Spatial spillover has the expected level when their location shows favorable conditions for their "multiplication". This condition is strongly influenced by

location (e.g., location of a small commune with good spatial policy within the range of impact of a large agglomeration). Several diffusion factors will also be needed to stimulate multiplier effects (including knowledge and capital). From a functional point of view, space becomes a physical canvas with specific functions implemented in space. In this approach, space is a place of positive and negative relationships stimulated by hierarchical social and economic dependencies.

However, the spatially limited nature of the spillover effect results from the capacity and assimilation possibilities of a given space (and its users). It is practically impossible to clearly determine the mechanisms that stimulate the production of positive spillovers by local institutions or investors. What is identifiable is their knowledge and skills that increase, among others, the chances of local or regional development. An important question arises here, what is the local sensitivity to spillover effects occurring in its space? If the space (as well as local authorities, investors, residents) is ready to apply new knowledge and services, then multiplier effects, and thus increased benefits in the local (also regional) system, can be expected. Development and spatial policies established by local authorities serve to solve local problems. However, the multiplier processes generated because of the combined use of resources and developmental resources available at a given time and region can produce the classic snowball effect. As a result, the best potential processes of utilizing the possibilities of internal development dependent on local markets and their environment will be initiated (Holuj, 2018a).

The conducted observations indicate a significant linkage between spatial spillovers and externalities (spatial externalities). When spatial spillovers occur in implemented spatial policies, externalities are only likely to take place. It cannot be taken for granted that they will accompany spillover effects. On the other hand, externalities are always accompanied by spillovers. The essence of this interdependence lies in the fact that the introduction of market spatial spillover compensating (internalising) mechanisms will trigger the processes that eliminate externalities. To explain this problem, it can be useful to refer to the definition of externalities offered by J. Gruber: “A fundamental externality exists when the actions of one party affect the welfare or the production possibilities of another party, even if this other party's private consumption does not change.” (Gruber, 2010).

The compensation for spatial spillovers can affect the internalization of externalities, thereby eliminating externalities from the market. However, spatial spillovers can be still observed by market analysts – the remaining spillovers will be adjusted to the desirable level set by the equilibrium between marginal social costs and marginal social benefits. Ultimately, we should observe the levelling of private costs and social costs which cause the internalization of externalities. According to the Pigovian tax, the fiscalization of an entity whose activities have a negative impact on space could stimulate a rational use of resources within the

scope of specific activities. The levelling of the price of a manufactured good and the sum of total marginal costs of economic activities, i.e., external, and individual marginal costs of production, results in setting an optimum level (Fiedor, 1990; Arrow, 1970).

It will be necessary to identify space management ownership rights to compensate for the incurred costs. Granting ownership rights to entities which operate in space and implement approved spatial policies will prevent the internalization of external costs. Victims can reduce, or even eliminate unwelcome activities by exerting direct influence on perpetrators. In the markets with effective legislation parties can state their position in a transparent way. The use of space is not exclusively dependent on ownership rights in force. On the other hand, granting ownership rights to victims leads to internalization, in which a loss suffered by one entity is compensated for by the benefit of another (Żylicz, 2004). Therefore, spatial policies are likely to be regarded as effective when the spatial negative effects of activities are attributed to perpetrators.

4. External Effects in Spatial Planning

Spatial planning and strategic planning are causally related to the principles of land use and development. They need satisfactory, effective instruments for local governments and residents. Planning and strategic development should be consistent. Their separate perception limits the desired effectiveness in the use of available internal and external potentials. Local government can experience sustainable development when it can properly program its activities, combine the objectives of socio-economic development with the objectives of spatial development, considering external economic conditions. It is also observed that strategic planning is a source of information for implemented policies (e.g., spatial, demographic, environmental, development, etc.), usually medium-term, also serving local interest groups. They are the spiritus moves of developmental processes creating organizational structures using individualized self-assessment criteria based mainly on costs and own effects.

In turn, when discussing space management, there are a few things to note. First, the form of implemented spatial management and the specificity of real estate markets are important here. The price of real estate is a result of many factors, i.e., the way of building, location, availability of technical infrastructure, environment, labor market, etc. (Czaja, 1999; Hajduk, 2017). In this connection, the key aspects are dynamics and land use, recomposition of functions in selected spaces, and costs and benefits generated by reorganizing planning functions (Bajerowski, 2008). Secondly, public authorities implement several activities not only in the field of spatial management (spatial policy). The following areas of local government activity will be important for achieving spatial development: availability and quality of municipal services, land management, waste management and forest

management. In addition, public space should be treated in a special way. It is an important value of every local government unit. It is subject to reliable valuation, which highlights its true potential (Popławski and Kaczmarczyk, 2016).

Experience indicates a high level of relevance of continuity in spatial policy that guarantees its effectiveness over time. In addition, the adopted policy requires updating based on a string of reliable diagnosis of space and socio-economic phenomena occurring in it. In addition, public authorities are obliged to effectively manage spatial systems, while the implemented spatial policy generates externalities and spillover effects. From a scientific point of view, positive externalities are desirable, but to make this possible, they must be included in public intervention in the spatial development process. Identification of the effects of spatial planning usually increases in direct proportion to the number of users of space. It is not just about the direct use of the land. An indirect user here will be a person endowed with intangible benefits derived from being in each space. As Coase noted, business transactions of external effects occur, which negatively affect one of the participants of the transaction.

We must also consider the fact that the market has self-regulating capabilities. When discussing spillover effects in spatial planning, it is necessary to establish ownership rights in the context of the space resources used. In the light of this, the external effect will be the subject of a transaction when the right to property (possession) is reasonably recorded. Marginal transaction costs will be relatively low. In spatial planning, we observe several transaction costs related to the process of implementing planning procedures. However, the user or landlord does not contribute to the costs of this procedure. The opposite will be the procedure used to issue an administrative decision on building conditions. In this situation, the generated transaction costs are spread. Another issue is the right to develop the space, related to the right to use the assimilation capabilities of the environment.

These rights can be transferred while considering the resulting cost. However, it must be assumed that the entity has legal capacity to develop the space. In addition, the entity affected by the development effects has the option of buying back the right to use the space from the reorganizing unit. Along with the increase in the range of market processes, freedom in transferring this right is developing, which leads to limiting the occurrence of spatial externalities. When characterizing spatial spillover effects, attention should also be paid to spatial losses and benefits. In elementary terms, spatial losses are reduced (incurred damages) or unreached (lost opportunities) social benefits from the use of resources and space values. This condition is expressed by a decrease in the current and future well-being of the local community, understood as the quality of life in space. The proposed approach to the problem does not eliminate other, non-market concepts of losses, e.g., natural, ecological. We observe the effect of actions that cause irreparable damage to the natural environment. These damages cause direct market reactions.

Spatial benefits are equated with positive effects. They occur simultaneously with the launch of the intervention process limiting the sources of space depreciation. Losses always accompany the reduction of natural resources. Spatial losses and benefits in economic theory are recognized as external costs and benefits (external effects, also called social effects due to their specificity). However, the use of environmental values, co-existing with a simultaneous downward trend in creating new sources of benefits, is expressed by ecological external costs. From an economic point of view, there are direct losses (treated as negative spatial consequences expressed in the form of reduced environmental potential) and indirect losses (resulting from the development of space where the division into social and economic losses occurs). In summary, it is proposed to distinguish between spatial spillover effects:

1. Simple investment spillover - spillover effects generated because of spatial development - affecting spatial development.
2. Complex investment spillover - spillover effects generated because of spatial development - affecting the use of space.
3. Simple organizational and functional spillover - spillover effects generated and absorbed because of space use.
4. Complex organizational and functional spillover - spillover effects generated because of use - affecting spatial development.
5. Simple formal and institutional spillover - spillover effects generated and absorbed in the institutional sphere.
6. Complex formal and institutional externalities - external effects generated because of the functioning of the state apartment - affecting space management and its development.

The proposed spatial spillover effects are the core of external effects generated by spatial planning. A detailed (literal) indication of all spillover effects is not necessary here and possible because it will be based on the above relationships. In addition, it is difficult to predict and consider all possible situations generating external effects, occurring in space and their mutual correlations.

5. Spillover Effect vs Externalities

The phenomenon of a spillover effect can be approached in different ways depending on the focus of a given debate. The term “spatial spillover” is not always used correctly, being confined to the concept of a “spillover” itself. This, in turn, is most frequently identified with spillovers of knowledge or specific activities undertaken in an identified space and the horizontal and vertical diffusion of such activities (Anselin, 2003; Holod and Reed, 2004; Karlsson and Manducchi, 2001, Parker, 2007). Knowledge diffusion is significant to an extent to which local policies are inclined to create appropriate conditions. Spillovers of knowledge, understood as a production factor, are frequently analysed in an incorrect manner in

the context of endogenous growth theory (lack of information, unsatisfactory diagnosis, and methodology). In the event of the occurrence of negative externalities, when social return on investment exceeds private rates of return, it is necessary to implement government intervention policies (including spatial policies). Therefore, the level of knowledge and experience achieved by a given institution is not confined to the area of its own interests – it constitutes a value for other institutions. It is commonly believed that the positive externalities of an agglomeration result from spatial industrial concentration.

Originally, the concept of agglomeration economies referred to the extent of and trends in the local economy in the context of an understood labour market (Baicker and Chandera, 2010; Cowen, 1996; Paci and Usai, 1999). Local development drivers are described by their dynamics, effectiveness and efficiency transferred in space (in each sector). Related institutions are usually affected by positive multiplier effects. Local growth dynamics (urban or regional functional areas) affect local economic growth in neighbouring gminas (Churski, 2005). The importance of external effects of the agglomeration should also be emphasized. Combined with the spillover effects of knowledge, they build growth drivers - they are key to the development of cities in space.

Analysing the problem exclusively from the perspective of the development of agglomeration economies (understood production activities) at territorial levels, we should mainly consider the monetary external effects which are subject to market forces. An important role is played by the revenue and expenditure which depend on the costs of transport, as well as knowledge exchange, e.g., technology management etc. (Xie, Fang, and Liu, 2016; Hołuj and Lityński, 2015). An empirical perspective should give attention to distance – the major cause of spatial external phenomena. Originally, it referred to phenomena characterised by relative spatial limitations (Thalassinos, 2007). In this context, diffusion would relate to the exchange of information and classical economic relations established based on typical gravitation principles. Therefore, externalities represent all indirect effects resulting from consumption or economic activities carried out by one “actor” (economic agent), having an impact on consumption, and the usefulness or effectiveness of economic activities carried out by another market participant (Baumol, Baumol, Oates, Baumol, Bawa, Bawa, and Bradford, 1988; Laffont, 2008).

Therefore, it can be assumed that state intervention is not always necessary in the case of external benefits or costs. Their existence is only significant when ownership rights are not properly defined. Any government intervention generates costs; therefore, external effects which lead to socially acceptable transaction costs (e.g., enforcement or negotiation procedures exceed the value of damage) should not be considered. An analogy can be observed in the case of the users of space affected by depreciation. No effective and measurable activities are undertaken for the purpose of reducing the effects of disorder, urban sprawl, or space devastation.

The reason for this is not obvious benefits resulting from counteracting such processes could be counterbalanced by expenditures aimed to achieve these results. Besides, attention should be given to solutions accepted by “conflicting parties” in the context of existing externalities. Efforts can be made to reach an agreement aimed to set forth recommendations for internalising generated externalities (Stiglitz, 2004; Baumol, 1972).

The problem of differences between externalities and spillover effects can be illustrated by a simple case in which an important role is played by ownership structure and the order of consecutive events. Negative spillovers are counterbalanced by investigation procedures (e.g., negotiations) if the event which occurs first is subjected to transposition.

The indicated circumstances remain valid even if later events have an adverse impact on the value of the first event. The counterbalancing of negative/positive spillovers (e.g., through price adjustments) is identified with their internalization. It does not change the recognisability (possible identification) of spillovers by external actors who are not, as a rule, engaged in the activities of a given market. It should be stressed here that physical spillovers can no longer be treated as externalities. Price adjustments compensate for reduced ownership rights.

To illustrate the analysed problem, let us imagine the on-going spatial development in the vicinity of a national park, or in the area of this park itself (Serafin and Zawilińska, 2017; Zawilińska and Kochel, 2018), and the intensified development of the area close to a facility which causes nuisance, for example a communal landfill (Ready 2005; Nedovic-Budic, Knaap, Shahumyan, Williams, and Slaev, 2016, Bourne, 1978). Undoubtedly, the value of property/land near the national park is greater. This truth is confirmed by the common occurrence of both positive and negative spillovers. However, their presence may not be identified with the lack of compensation. In both cases the prices of houses or land are affected by peculiar circumstances resulting from internalization. Ownership rights to the above spillovers are assigned to owners. The owners of houses in the vicinity of the national park paid a correspondingly higher price. In the other location, the owners received a compensation in the form of a lower price of buildings as compared with those farther away from the landfill. The cited example allows for the explicit presentation of the negotiating parties or those finalising a market transaction.

An important role in implemented spatial policies is played by a good understanding of the interests of third parties. The Act on Planning and Spatial Development sets forth a procedural framework for developing planning documentation and, consequently, guiding principles for spatial development. According to the relevant procedures, all interested parties can make comments on local and gmina (local administrative unit) spatial plans (Zawilińska and Hołuj 2014; Hołuj and Zawilińska, 2013). Theoretically, we can affect the size and type

of spillover effects (there is no guarantee that the elimination of individual spillovers corresponds to the interest of other interested parties or that their comments are taken into consideration). A relatively similar situation occurs in the process of making administrative decisions, e.g., in the case of zoning laws.

Various individuals have legal interests, which implies the direct interests of an investor's neighbour, but also the interests of other entities (other entities located farther away can also express their interests, but it is assumed that legal interests cannot be claimed by all gmina inhabitants). The fact remains that regardless of whether space is developed based on local plans or administrative decisions, inhabitants must give their approval to limitations of their ownership rights. To clarify this matter, it is worth referring to the Building Code and its Art. 5.: *"respecting, in the area of a facility and its impact, the interests of third parties, including providing access to a public road"*. In managing property, and, in particular, in erecting buildings, owners are obligated to consider (not act against) the interests of third parties, including next door or more distant neighbours regardless of possessed ownership rights. It can be assumed that if the owner of property erects buildings on the road used by a neighbour, making access to the road more difficult, it leads to negative spillover effects. With no consideration given to the interests of third parties it could be also assumed that a spillover ceases to exist when a neighbour resigns from using the road in question.

Theoretically, the owner is entitled to cause nuisance to the neighbour who does not have the full right of way. Considering the above, the owner causes nuisance on the grounds of his rights and does not bear any responsibility. The question remains, then, who causes nuisance. It is the owner despite his ownership rights – he developed the road when it was already used by the neighbour and before ownership rights were limited. The neighbour's rights are acquired by prescription which explicitly states that legal rights existed and were enjoyed for several years.

Therefore, reorganization is possible through relevant transactions concerning the original legal rights. Literatures indicate that the major problem faced by courts of law is not what should be done and by who, but who should be the actual lawmaker (Coase, 1960).

6. Concluding Remarks

The analyses of spatial policies indicate that externalities comprise tangible/intangible products. Their beneficiaries are the recipients operating in the surrounding areas, and the costs of manufacture are not related to appropriate compensation. Effective spatial planning gives attention to transaction costs which are directly related to the external effects of spatial management (e.g., costs of property, negotiations, or planning documentation). Attention should be given to the fact that space is a rare good (unrenewable) and its value is determined by owners and market factors. The identified characteristics of space are undoubtedly

synchronised with transaction costs, which are inseparably linked to the internalization of the externalities of spatial planning. The resulting transaction costs are dependent on the specific conditions of space. In the case of spatial management transaction costs result from the costs of identifying the perpetrator of a spillover and individuals affected by a given spillover.² It is necessary to identify the legal status and expectations of such individuals. Also, the costs of negotiating the optimal terms of spillover transfer (handover or takeover) can be generated (e.g., the right of passage) (Staniszewski, 2013). In this context, it would be desirable to internalise transaction costs based on socially acceptable institutional solutions (the monitoring of the accepted spatial management limitations).

When analyzing the problem of external effects in spatial planning, reference should also be made to the issues of restrictions imposed by its regulatory effectiveness. Spatial planning is aimed at achieving spatial goals, it also generates restrictions on the use of real estate - it affects the rights of the landowner. The merits of spatial planning for the correct organization of the area and the maintenance of broadly understood proportions are indisputable. On the other hand, the necessary intervention causes dissatisfaction as a result of limiting ownership. It should be noted that the ownership rights of one owner are restricted and another is not.

If the market efficiently coordinates decisions on land use, it can be assumed that spatial planning is responsible for reducing productivity (affects people and exercising their property rights). The market failure is probably largely due to the centralization of process coordination and the release of activities through decentralized, spontaneous investment activities at the local level. The author is not in favor of the liberalization of spatial planning, but it should be emphasized that determining the optimal ratio between the government and the market is not a simple task. The government's goal should be to limit negative external effects, sometimes reducing the amount of spatial development. Government interventions

²*Conclusions are based on the following: 1) author's research conducted from June 2016 to March 2017 for the needs of a sub-report entitled "Koszty migracji wahałowych ze strefy podmiejskiej do miasta rdzeniowego ośrodków wojewódzkich" (co-author), Studia KPZK PAN, Warszawa - vol. 182, part 2 (2018), 114-162; Studia nad chaosem przestrzennym. Part 2, "Koszty chaosu przestrzennego" (ed. A. Kowalewski, T. Markowski, P. Śleszyński) KPZK PAN; 2), author's work "Wybór obszarów badań, na których może występować urban sprawl oraz delimitacja urban sprawl" as part of research project NCN [in:] Mechanizmy finansowe w gospodarce wynikające ze zjawiska urban sprawl (UMO)-2016/23/B/HS4/02961; 3), author's work "Metodologia optymalnej delimitacji obszarów w dokumentach planistycznych – zarządzanie polityką rozwoju na terenach dotkniętych procesem urban sprawl w Polsce". The project co-financed by the EU as part of EFS (MARR/3282/2014/DZPP); 3) Urban Sprawl Costs: the Valuation of Households' Losses in Poland, Lityński P., Holuj A. Journal of Settlements and Spatial Planning, - vol. 8, no. 1 (2017), 11-35.*

should be based on empirical testing of intervention effectiveness. It is also recommended to use compensation adapted to the structure of the local market. Compensation should be based on reliable law ordering the problem of external effects. The simplest solution seems to be to apply the principle: who causes negative externalities is obliged to compensate for the losses suffered by those injured (it may be financial satisfaction, investment in infrastructure, investment into the investment fund, etc.). Those who generate effects should strive to eliminate them, e.g., by changing the form of land use or organizing production - which may also be subject to government compensation.

Therefore, it can be assumed that spillovers and externalities in spatial planning are mainly affected by implemented spatial policies. In the context of the conducted analysis, only spatial spillovers are “common” in character. The question arises whether the available research studies of side effects offer appropriate definitions or, more importantly, reliable interpretations of the concept of externalities. Or is it the case that spillover effects are identified with externalities, and vice versa? Moreover, is attention given to the internalization of non-compensated benefits? Difficulties in offering answers to these questions reflect the complexity of the analysed problem.

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