Zombie Developments in the Polish Residential Market – Their Causes and Consequences

Studia Regionalne i Lokalne Nr 3(85)/2021 © Autorzy 2021



ISSN 1509-4995 E-ISSN 2719-8049 doi: 10.7366/1509499538502

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Abstract

"Zombie developments", i.e. the problem of unfinished development projects, is an unrecognised phenomenon in Poland. In the USA, research on the causes, consequences and actions aimed to reduce the nuisance has been conducted for years. Therefore, the aim of this article is to show, through case studies, that the problem of "zombie developments" also occurs in Poland, causing many negative consequences for various entities. At the same time, this study is intended to help identify the causes of this phenomenon in Poland.

Keywords

zombie development, residential market, development activity

"Zombie developments" na polskim rynku nieruchomości mieszkaniowych – ich przyczyny i konsekwencje

Streszczenie

"Zombie developments", czyli problem nieukończonych przedsięwzięć deweloperskich jest w Polsce zjawiskiem nierozpoznanym. W USA badania nad przyczynami, konsekwencjami i działaniami ograniczającymi uciążliwość ich występowania prowadzi się od lat. Dlatego też celem niniejszego artykułu jest wykazanie, za pomocą studiów przypadku, że problem nieukończonych przedsięwzięć deweloperskich występuje również w Polsce, wywołując powodując wiele negatywnych konsekwencji dla różnych podmiotów. Jednocześnie badanie to ma pomóc w rozpoznaniu przyczyn powstawania tego zjawiska w Polsce.

Słowa kluczowe

zombie developments, rynek mieszkaniowy, działalność deweloperska

1. Introduction

Development activity in Poland has been carried out for thirty years and during this time it has experienced ups and downs. More difficult periods for developers were most often associated with limited access to external financing, a financial crisis or significant changes in the institutional environment. During those years many enterprises were established, but also many of them declared bankruptcy, sometimes leaving behind unfinished development investments. Such projects without adequate protection quickly deteriorate. They start to scare onlookers, as befits real "zombies". Several such spectacular bankruptcies and examples of abandoned developers' investments are described in press articles. Most often, these are investments in which there are many aggrieved buyers from the times when the Act of 16 September 2011 on the Protection of the Rights of Buyers of Apartments or Single-family Houses had not yet been in force. The Act introduced escrow accounts to which buyers' funds are paid today. Therefore, some of these unfinished investments have been empty for more than a decade. Although little is said about it, some of them generate negative consequences not only for buyers but also for owners of neighbouring properties, as well as municipalities in which they are located.

Therefore, the author formulates the hypothesis that although it is difficult to find the subject of zombie developments in the Polish literature, this phenomenon occurs in Poland, causing many negative consequences, and the reasons for it are not only economic, but also largely institutional. The purpose of the article is to verify this research hypothesis based on several selected case studies.

2. The phenomenon of zombie developments in the literature

The "zombie" phenomenon comes from voodoo beliefs that have their origin in the countries of West Africa. Today it is also popular in Haiti and parts of the Caribbean Islands. According to these beliefs, zombification means the separation of the soul from the body by a sorcerer with the purpose of killing, enslaving a person or making him or her sick (Nasiruddin et al. 2013). However, in the current pop culture (movies, literature, music, etc.) a "zombie" means mostly a character who has risen from the grave: it is neither alive nor dead. Such a meaning of the word has been used in economic sciences to describe the phenomenon of "zombie enterprises" or "zombie banks". "Zombie banks" are institutions that have a negative rate of return and, in market conditions, should already file for bankruptcy, but remain in the economy thanks to government support (see: Nelms 2012; Fiordelisi et al. 2020). According to Okamura (2011), "zombie banks" can lead to the creation of "zombie firms". These, in turn, should be understood as companies that are unable to cover the costs of debt servicing from their current profits in the long run (Banerjee and Hofmann 2018) - they are financially dead. In order to function, they need constant financial support (Golub and Lane 2015), e.g. from banks. The concept of zombies also occurs in the real estate market and therefore, in the foreign literature, words such as "zombie buildings", "zombie subdivisions" or "arrested developments" (USA), as well as "ghost estates" (more common in the United Kingdom and Ireland) can be found. In the Polish literature, such terms do not exist. It does not mean, however, that the "zombie" phenomenon do not occur in Poland at all.

The definitions of zombie buildings are quite diverse. Nevertheless, if we combine them into one definition, it can be said that they are built-up land properties, abandoned usually as a result of enforcement proceedings. This term also includes buildings whose owner is unreachable, does not manage the property properly or neglects it. It may also be a property not adapted to market needs (see: Historic Albany Foundation; Caloir 2018; Goulding et al. 2011; Corfman 2009; Clark 2015; Ginsburg 2010; D'Alterio 2012). The definition of the "ghost estate" is similar. This term means abandoned, uninhabited, often unfinished real estate comprising minimum 10 houses, of which at least half are uninhabited or unfinished, not necessarily because of bankruptcy (see: Collins Dictionary; "Ghost Estates" 2012; The National Institute for Regional and Spatial Analysis).

"Zombie subdivisions" or "arrested developments" are started but unfinished investment projects. Laitos and Martin (2015) indicate that the recession of the years 2008–2009 forced some developers to abandon their investments at different stages of completion – from partially constructed, through finished and uninhabited (problems with sale), finally to those existing only on paper. The interruption of an investment may be related not only to the bankruptcy of the developer/investor, but also to unregulated ownership relations or other legal and financial problems of the entity running the given project (Holway et al. 2014). They usually remain unused for a long time and, therefore, are subject to considerable technical and functional wear, which means that they lose their market and aesthetic value. In a word, they are beginning to scare, and can cause many negative consequences for the municipalities in which they are being developed, and for the owners of the neighbouring properties (see: Shane 2012; Klein 2017; National Vacant Properties Campaign 2005). In order to standardise the vocabulary, the author of the article applies the term "zombie developments" to unfinished development projects (not necessarily related to bankruptcies).

Information on the consequences or the negative impact of abandoned properties on the environment can be found in the literature. The consequences of the phenomenon in question can be divided according to the categories of entities which they affect. Therefore, Table 1 presents the most frequently mentioned types of consequences using the above-mentioned division.

Table 1. Consequences of abandoned properties (including zombie developments) by category of entities they affect

| For property owners | decrease in the value of real estate (caused by property devastation: vandalism, theft, illegal seizure of real estate, possible fires, abandoned rubbish) |
|---------------------------------------|--|
| For owners of neighbouring properties | decline in property values (due to the vicinity of the zombie development) higher rates for property insurance (higher risk of burglaries, fires) lower quality of life (decreased safety in the area, rats, insects, etc.) decline in the investment attractiveness of the neighbourhood |
| For local governments | increase in crime (drugs, prostitution, theft, homicide) fires (arson, inadvertent fires caused by the homeless) deterioration of the quality of health and life (abandoned rubbish, stagnant water) decline in property value decrease in income from property taxes |

Source: own elaboration based on: Shane, 2012, p. 5; Klein, 2017; National Vacant Properties Campaign, 2005.

Many of the consequences presented in Table 1 result from other factors, e.g. a decrease in the value of real estate and the attractiveness of the location is caused by the devastation of real estate referred to as zombie developments and the development of crime in the area. However, what is most important in this regard is the fact that the emergence of one zombie property has negative consequences for many entities. Hence, it is important to counteract this phenomenon.

The causes underlying the emergence of zombie properties, also of zombie developments, seem to be a more difficult issue, as the literature lacks a comprehensive approaches to this problem. These reasons are largely of an economic nature (e.g. bankruptcy, enforcement proceedings related to the insolvency of entities, other financial problems). They are often associated with economic crises (see: Weber 2014; Weiss 2015; McQuade 2016; DiNapoli 2016; Strniste, Baez 2012). However, some publications also mention the socio-demographic (see: Martinez-Fernandez et al. 2012; Pallagst et al. 2009; Neill 2015) or even institutional and legal (see: Chapman Phillips 2014) reasons for the formation of this type of real estate, although it should be emphasised that the socio-demographic reasons apply more to the already existing facilities, i.e. zombie buildings. In some cases unfinished foreclosure proceedings can also be considered as an institutional cause (protracted actions to establish a list of creditors, disagreement between them, etc.).

In many countries around the world, there is a lack of research on the zombie phenomenon in the real estate market, and often, even if it is carried out, it concerns the existing buildings (see: Silverman et al. 2013; Cowan and Aumiller 2014). Public statistics, if any exist, tend to include all abandoned housing. Nevertheless, several U.S. states have also attempted to investigate the scale of zombie developments. For example, in Arizona, Colorado and Idaho, the growing demand during the housing boom was conducive to starting new investments. Unfortunately, the crisis stopped many of them, even at the preliminary stages (some of them exist only on paper). In Teton County (Idaho), where about 8,800 residents lived in 2011, over 7,000 of vacant plots were found (for more see: Laitos and Martin 2015). Similarly, in Ireland, the number of ghost estates with which the state took up the fight was assessed. In 2010, there were nearly 3,000 such properties, which seems to be quite a large number in such a small country. Ten years after the outbreak of the crisis, in 2017, there were still 420 such properties, most of which were located in the southern county of Cork (Carswell 2017).

Although the scale of the discussed phenomenon in the world is not investigated, the Internet sources contain many examples of abandoned development projects located in different countries, especially those that were affected by the economic crises of the 1990s and 2008–2009. Examples of these include: Tundra Village in Texas (USA), Ciudad Jardin Soto Real in Buniel (Spain), "Disney's estate" in Burj Al Babas (Turkey), or even a whole city of newly built facilities with various functions – Ordos in China. There are also such objects in Poland.

3. Research methods

As the zombie developments phenomenon is not recognised in Poland, statistical data on it are not available. Thus, the opportunities for doing quantitative research on the scale of the phenomenon or developing a comprehensive approach to the consequences of zombie developments are

very limited. It is only possible to study its individual consequences separately, e.g. a decline in the value of specific properties in the vicinity of these developments. In order to recognise the consequences and causes of this phenomenon in Poland, it is necessary to use qualitative methods. In this research, the case study method was used. This method allows to discover the unknown (phenomena, relationships, entities, etc.), while constantly monitoring our own, as well as general, existing knowledge (Starman 2013). The case study uses a variety of techniques and tools for collecting and analysing data, e.g. observations, interviews, surveys, documentation of the examined organisation, press sources, the Internet, available databases, and others (Grzegorczyk 2015). Therefore, this method will provide detailed information on the studied zombie developments so that their potential causes and possible consequences on the Polish residential real estate market can be identified. This type of research will be the basis for further analysis of this phenomenon.

This article discusses three examples of developers' investments which, according to the author, can be considered zombie developments. The analysed examples include the Nord House investment in Wrocław, the Żubr Housing Estate in Niepołomice and the investment at Twardowski Street in Kraków. A preliminary analysis of press materials about zombie developments in Poland has revealed that many such properties are located in and around Kraków (six out of 15 identified cases). Therefore, the article refers to two properties from this area. The example of Wrocław has been widely discussed in the press from the perspective of its consequences for apartment buyers. Therefore, according to the author, its analysis may also be interesting from the point of view of its impact on the neighbouring properties.

The description of the discussed investments takes into account a similar amount of information, i.e. the location, type of development, size of investment, termination of construction works and possible declaration of the developer's bankruptcy as well as the stage of the investment at which the construction works were suspended. The current conditions of each investment are also described. It may be the basis for theoretical considerations on the consequences that these investments have for the space and the explanation of the reasons for abandoning these investments. The description of the selected properties is based on press materials and other publicly available Internet sources.

This study is limited only to zombie developments implemented by developers' companies, thus excluding unfinished single-family houses built for private use. Although the consequences for both entities may be similar, a clear difference can be observed with regard to the reasons why these entities abandon the property.

4. Research results

4.1. Examples of zombie developments in Poland – case studies

The Zubr Housing Estate investment, consisting of nearly 600 flats and single-family houses, was to be built in 2007-2008. However, after several months, the construction works were suspended (Kary więzienia dla deweloperów... 2017). At the end of January 2009, the developer closed all of its offices (Morek 2009). Since then, construction works have not been resumed, which means that the buildings have been abandoned and unsecured for over 10 years. In 2009, the prosecutor's office was notified of the possibility of committing a criminal offence (PAP 2017). Only after two years, i.e. in 2011, the investigators found the developers responsible for abandoning the property. In total, three accused persons "siphoned" more than PLN 13 million out of the company (Banasik 2017). Also, in 2011, the ADMA construction company (the contractor of the investment project) filed for the developer's bankruptcy. It has already been emphasised then that the value of the buildings was falling from month to month and some of them had no roof. At that time, the value of the investment was tentatively estimated at PLN 20-50 million (Paluch and Mazurek 2011). In March 2017, a tender was held for the sale of the land with the buildings. The starting price was PLN 17 million (Ogłoszenie o przetargu na sprzedaż nieruchomości 2017). Nobody decided to make an offer due to the poor technical condition of the abandoned buildings. The described real estate was overgrown with thick brushwood, with a great deal of debris and wires sticking out of the ground, which could have posed a threat to the health or even life of people entering it. In the buildings, the windows were broken, the walls were shabby, cables, beer cans and broken glass could be found inside the buildings. The investment was completed in one-third, which means that a significant part of the facilities had not reached the closed state. Unsecured, they are exposed to adverse weather conditions such as water, low temperatures and others. In this way, their technical wear progresses much faster (Banasik 2017). In October 2018, another tender for the sale of Żubr took place. This time it was sold – new owners appeared in two land and mortgage register books regulating the legal status of the plot on which the investment is located. The starting price represented 70% of the value of the property, i.e., PLN 12,255,600 (Ogłoszenie o przetargu na sprzedaż nieruchomości 2018). It shows how quickly zombie developments can depreciate.

The second example of zombie development in Poland is the Nord House property located in the northern part of Wrocław, at Czartoryski Street. The investment was to be carried out in two stages: the first one should have consisted of 78 apartments. The construction started in March 2012 (Urbanity Portal) by a subsidiary of Gant Development SA, then a leading Polish developer listed on the Warsaw Stock Exchange. The construction of the Nord House investment was halted after only a few months in 2013. Initially, it was explained that the workforce was temporarily transferred to the Odra Tower investment. After the completion of that investment, works at the Nord House were to be resumed. However, this did not happen (Wilk 2013). In 2012, the company recorded over PLN 412 million in losses, immediately after the issue of corporate bonds worth PLN 250 million. At the end of 2012, Gant's debt in loans and bonds exceeded PLN 570 million. In October 2013, the management board of Gant Development filed for bankruptcy with the possibility of an arrangement (Urbańska 2018). In 2014, when one of the trustees notified the prosecutor's office about the possibility of committing a criminal offence, the court changed the bankruptcy proceedings from an arrangement to liquidation, and immediately discontinued them because there was no chance of satisfying the creditors (PAP 2019). In February 2019, the Gant Development case was still unresolved. A total of 13 people were detained on charges of acting in an organised criminal group and causing material damage to Gant Development in vast proportions. Some also heard charges of money laundering (PAP 2019). To this day, Nord House remains an unfinished investment. According to Google Street View, the investment is partially secured - the window openings were covered, but the entrance remains available to "uninvited guests". Even a fence is missing, which makes the devastation of the object easier. This property still has a chance of being completed by another developer, especially since there are other developers' investments in the immediate vicinity.

The investment at Twardowski Street in Kraków is a classic example of a scary zombie in the vicinity of which people are afraid to live. There are three multi-family buildings in an open shell. This investment was carried out by the developer Leopard, already known in the community of real estate specialists from the housing scandal at Wierzbowa Street and Kijowska Avenue. The construction of apartments at Twardowski Street was started in 2004 - at the beginning of the housing market boom (Sidorowicz and Wantuch 2017). In November 2006, Leopard issued two-year bonds of PLN 60 million with a very high interest rate (25%) which were bought out by the American fund Manchester Securities Corporation, which is part of the closed-ended Elliott Investment Fund based in New York (Łacka 2014). Most of the money was to be spent on buying more land. In the period from 19 January 2007 to 27 February 2007, Leopard established mortgages on the property located at Wierzbowa and Kijowska Streets to secure the redemption of four series of bonds (Głosy w sprawie Leoparda...2009). A mortgage in favour of this fund was also established on the property on Twardowski Street. Unfortunately, when the global financial crisis began at the end of 2007, Leopard also suffered from solvency problems. It declared bankruptcy in 2009 (Paluch 2013). Today, the buildings are deteriorating. The homeless living in these buildings occasionally start fires (Sidorowicz and Wantuch 2017). Residents of the neighbouring properties complain about the unpleasant smell of excrement, decaying garbage, burned waste and stagnant water in the underground parking lots. Rats began to appear in the area. On cold days, the homeless light bonfires using the electrical wiring. The police confirm that there have already been several deaths on the property – none of them has been the result of a crime yet (Sidorowicz and Wantuch 2015). The buildings are mostly unsecured – there are holes in the fence, the window and door openings as well as elevator shafts are unbricked and uncovered. Its legal status is not clear; in February

2014, 100% of shares in Leopard were acquired for PLN 1,000 by the law firm Mikołajczyk Gładki with its registered office in Warsaw (Błaszczyk 2018). However, Leopard's creditors' intervention resulted in the sale being annulled, and a portion of the shares in the property at Twardowski Street was acquired by them (*Czy uda się powtórzyć sukces...* 2017). The investigation into the fall of the developer has already been completed, and six people have been indicted. They are accused of acting to the detriment of the company and causing millions of losses by issuing bonds with an inflated interest rate, concluding an unfavourable and economically unjustified contract for the sale of perpetual usufruct rights, deceiving approximately five hundred people for the amount of approximately PLN 100 million, etc. (Łącka 2012). However, the situation of the property at Twardowski Street is still dramatic. Buildings have been deteriorating for 12 years, therefore, and a decline in the value of this investment should be expected.

4.2. The causes and consequences of zombie developments in Poland – discussion

The consequences of zombie developments in Poland, the existence of which can be ascertained on the basis of the discussed case studies, coincide with those presented in the theoretical part. Undoubtedly, these properties, being unsecured, are subject to faster technical wear. For this reason, their market value also declines faster than in the case of occupied properties that are cared for and managed. These properties have been the subject of theft (construction elements, electric cables, plumbing, etc.). In the autumn and winter periods, they also become a shelter for the homeless, which increases the risk of fires. Unsecured foundation elements, window openings, elevator shafts may pose a threat to the health or even life of people who decide to enter the property. Such cases have already been noted in the case of investments at Twardowski Street in Kraków. Easy access to such buildings may also encourage people associated with the criminal world to use them. Due to the lack of fences or their inadequate condition, rubbish is dumped on such zombie developments, and with it there appear rats and insects, which also threatens the health of people living in the neighbourhood. In the underground parking lots not secured with an entrance gate, sometimes on the very foundations, water accumulates. All this contributes to the decline in the quality of life of the local residents, and in extreme cases may also reduce the investment attractiveness of the area. The latter phenomenon has not been noted on the basis of the examples discussed. New residential and commercial facilities are being built in their vicinity. In the case of Poland, it is guite difficult to say what impact the zombie development phenomenon has on municipal property tax revenues. Abroad, the decrease in income is evident as a result of nonpayment of taxes as well as a decline in the value of the property which is the basis for determining taxes. In Poland, due to the fact that the tax is determined in relation to the area of real estate, the lower incomes of municipalities are only the result of non-payment of taxes. However, there is no evidence on the basis of which it is possible to determine how large these losses are.

The causes of zombie developments in Poland are quite a complex issue. Although in two of the discussed cases the direct cause of their emergence was the insolvency of developers and long, complicated foreclosure procedures (one developer "disappeared" and bankruptcy petition was filed two years later), this was not always related to a financial crisis. In all the examples discussed, we dealt with unfair practices. In one of the cases, without the buyers' knowledge, a mortgage was established on the property, bad investment decisions were made, so the problem was in poor management of the enterprise (perhaps as a result of a lack of appropriate knowledge, skills or experience). In the other cases, developers "siphoned" money from the companies. Such a lack of fair play skills should be treated in the category of institutional causes and in countries such as Poland, where the real estate market is still developing, this type of zombie development causes is bigger problem than purely economic causes. Moreover, it should be noted that the investment at Twardowski Street in Kraków is still a zombie development due to the unregulated legal situation – this is also an institutional factor.

Conclusions

Based on the three examples of investments described in the previous paragraph, it can be concluded that the phenomenon of zombie developments exists also in Poland. However, it is not very easy to assess its scale. There are no statistical data on this topic and the press releases are usually limited to large investments where there are many aggrieved buyers. It does not mean, however, that zombie development cases in Poland are sporadic. The cases of zombie developments presented in this publication indicate that the reasons for their emergence are partly similar to those in Western countries. The most common reasons for the emergence of zombie developments in Poland include the bankruptcy of developers due to their insolvency (economic reasons) but also poor management of the enterprise and failure to apply the principles of fair play in running a business (institutional reasons). Bankruptcy proceedings often take several years – then real estate remains unused and deteriorating. It is difficult to sell it them later. Sometimes the problem of zombie developments is related to the unregulated legal situation. Therefore, in Poland, where the real estate market has only been developing for 30 years, institutional reasons can be equally important as the economic ones. This issue requires further research, but the examples discussed in the study support the research hypothesis posed in the introduction.

As the discussed examples show, real estate affected by the described problems stands empty for many years. In such situations, properties depreciate, becoming a dangerous and unfriendly place for neighbours. However, there are many more consequences of this phenomenon which were presented in the previous section. The problem is that they have not been recognised in Poland as yet. Therefore, this article is a significant contribution to the theoretical knowledge of the zombie development concept in Poland, in particular with regard to the causes and consequences of this phenomenon. It should be noted that the economic and social effects of the described zombie developments are so severe that they still fully justify the need for further research into this problem. Without such studies, it will not be possible to take measures to prevent this phenomenon nor minimise the losses resulting from the appearance of such properties in the urban space.

References

- Banasik, M., 2017, "Opuszczone osiedle popada w ruinę. Oszukani wciąż przeżywają horror", https://dziennikpolski24.pl/opuszczone-osiedle-popada-w-ruine-oszukani-wciaz-przezywaja-horror-wideo/ar/c3-11994285 (accessed: 13.12.2019).
- Banerjee, R., and Hofmann, B., 2018, "The rise of zombie firms: causes and consequences", *BIS Quarterly Review*, September, 67–78.
- Błaszczyk, P., 2018, "W tych pustostanach giną ludzie'. Kto zabezpieczy teren?", https://www.rmf24.pl/fakty/polska/news-w-tych-pustostanach-gina-ludzie-kto-zabezpieczy-teren,nld,2484393 (access: 26.12.2019).
- Caloir, H., 2018, "The 'Zombie' and Vacant Properties Remediation and Prevention Initiative: Emerging Best Practices", LISC, https://www.lisc.org/media/filer_public/5d/b4/5db4c4b5-d311-4b04-99f8-87bd473029ce/042518_housing_zombie_vacant_properties_best_practices.pdf.
- Carswell, S., 2017, "Weekend Read: The ghost estates that still haunt Ireland", *The Irish Times*, https://www.irishtimes.com/life-and-style/people/weekend-read-the-ghost-estates-that-still-haunt-ireland-1.3181498 (accessed: 21.10.2020)
- Chapman Phillips, G., 2014, "Zombie Cities: Urban Form and Population Loss", *Rutgers Journal of Law & Public Policy*, 11(4), 703–739.
- Clark, A., 2015, "How the Zombie House Crisis Mutated and What Cities Are Doing About It", https://nextc-ity.org/daily/entry/zombie-houses-vacant-properties-ownership-solutions (accessed: 1.01.2020).
- Collins Dictionary, https://www.collinsdictionary.com/dictionary/english/ghost-estate (accessed: 1.01.2020).
- Corfman, T. A., 2009, *Tishman Speyer defaults on big Chicago loan*, https://www.crainsnewyork.com/article/20091205/FREE/912059998/tishman-speyer-defaults-on-big-chicago-loan (accessed: 1.01.2020).
- Cowan, S., and Aumiller, M., 2014, *Unresolved Foreclosures: Patterns of Zombie Properties in Cook County*, Woodstock Institute.

"Czy uda się powtórzyć sukces przy inwestycji na ul. Wierzbowej? Podsumowanie 3 letnich działań spółki Wierzyciele Leopard w sprawie inwestycji przy ul. Twardowskiego", 2017, https://wierzycieleleopard.wordpress.com (accessed: 26.12.2019).

- D'Alterio, E., 2012, after: Rutherford, J., 2013, Zombies, Abingdon: Routledge.
- DiNapoli, T. P, 2016, Foreclosure Update From a Local Government Perspective, Research Brief, Office of the New York State Comptroller.
- Fiordelisi, F., Radic, N., and Weyman-Jones, T. G., 2020, "Detecting Zombie Banks", available at https://ssrn.com/abstract=3622048 or http://dx.doi.org/10.2139/ssrn.3622048.
- "Głosy w sprawie Leoparda", 2009, *Krakowski Rynek Nieruchomości*, 24/2008, https://www.krn.pl/arty-kul/glosy-w-sprawie-leoparda-cd,560 (accessed: 26.12.2019).
- Golub, A., and Lane, C., 2015, "Zombie companies and corporate survivors", *Anthropology Now*, 7(2), 47–54.
- Goulding, Ch., Most, J., and Marr, S., 2011, "The Energy Tax Aspects of Zombie Buildings", *Corporate Business Taxation Monthly*, 12(7), 9–12.
- Grinsburg, S., 2010, "Beware of Zombie Buildings: Danger Can Be Lurking Among the Opportunities", https://hughesmarino.com/san-diego/blog/2010/06/09/beware-of-zombie-buildings-danger-can-be-lurking-among-the-opportunities/ (accessed: 1.01.2020).
- Grzegorczyk, W., 2015, "Studium przypadku jako metoda badawcza i dydaktyczna w naukach o zarządzaniu", w: W. Grzegorczyk (ed.), *Wybrane problemy zarządzania i finansów. Studia przypadków*, Łódź: Wydawnictwo Uniwersytetu Łódzkiego, pp. 9–14.
- Hollander, J. B., Pallagst, K. M., Popper, P. J., and Schwartz, T., 2009, "Planning Shrinking Cities", *Progress in Planning*, 72(4): 223–232.
- Holway, J., Elliot, D., and Trentadue, A., 2014, *Arrested Development. Combating Zombie Subdivisions and Other Excess Entitlements*, Cambridge, MA: Lincoln Institute of Land Policy.
- "Ghost Estates", 2012, Irish Environment, http://www.irishenvironment.com/iepedia/ghost-estates/ (accessed: 1.01.2020).
- "Kary więzienia dla deweloperów za osiedle Żubr w Niepołomicach", https://krakow.wyborcza.pl/krakow/7,44425,22526998,kary-wiezienia-dla-deweloperow-za-osiedle-zubr-w-niepolomicach.html (accessed: 13.12.2019).
- Klein, A., 2017, *Understanding the True Costs of Abandoned Properties: How Maintenance Can Make a Difference*, Community Blight Solution.
- Laitos, J. G., and Martin, R., 2015, "Zombie Subdivisions in the United States and Ghost Developments in Europe: Lessons for Local Governments", *Washington Journal of Environmental Law & Policy*, 4(2), 314–357.
- Łącka, M., 2012, "Leopard stanie przed sądem", https://krakow.gosc.pl/doc/1403846.Leopard-stanie-przed-sadem (accessed: 26.12.2019).
- Łącka, M., 2014, "Cena jedności", https://www.gosc.pl/doc/2009857.Cena-jedności (accessed: 26.12.2019).
- Martinez-Fernandez, C., Audirac, I., Fol, S., and Cunningham-Sabot, E., 2012, "Shrinking Cities: Urban Challenges of Globalization", *International Journal of Urban and Regional Research*, 36(2), 213–225.
- McQuade, A., 2016, "The Antidote to Zombie Foreclosures: How Bankruptcy Courts Should Address the Zombie Foreclosure Crisis", *Emory Bankruptcy Developments Journal*, 32(2), 507–535.
- Morek, M., 2009, "Osiedle Żubr i kto tu jest jeleniem?", https://biznes.interia.pl/nieruchomosci/news/osiedle-zubr-i-kto-tu-jest-jeleniem,1277704 (accessed: 13.12.2019).
- Nasiruddin, M., Halabi, M., Dao, A., Chen, K., and Brown, B., 2013, "Zombies A Pop Culture Resource for Public Health Awareness", *Emerging Infectious Diseases*, 19(5), 809–813.
- National Institute for Regional and Spatial Analysis, after: Brouder, S., 2010, "Spectre of bulldozer hangs over 21 Kerry 'ghost' estates", https://www.independent.ie/regionals/kerryman/news/spectre-of-bulldozer-hangs-over-21-kerry-ghost-estates-27393930.html (accessed: 1.01.2020).
- National Vacant Properties Campaign, 2005, *Vacant Properties. The True Cost to Communities*, Washington.
- Neill, W. J. V., 2015, "Carry on Shrinking?: The Bankruptcy of Urban Policy in Detroit", *Planning Practice & Research*, 30(1), 1–14, DOI: 10.1080/02697459.2014.997462.
- Nelms, T. C., 2012, "The zombie bank and the magic of finance", *Journal of Cultural Economy*, 5(2), 231–246.
- Ogłoszenie o przetargu na sprzedaż nieruchomości, 2017, http://infoinwestycje.pl/root/wszyst-kie-kategorie/2-sprzedaz/111-syndyk-masy-upadlosci-osiedle-mieszkaniowe-zubr-sp-z-o-o-w-upadlosci-likwidacyjnej-w-warszawie (accessed: 13.12.2019).

- Ogłoszenie o przetargu na sprzedaż nieruchomości, 2018, http://infopublikator.pl/ogloszenie/ogloszenie-6/ (accessed: 13.12.2019).
- Okamura, K., "'Zombie' Banks Make 'Zombie' Firms", 2011, available at SSRN: https://ssrn.com/abstract=1786496 or http://dx.doi.org/10.2139/ssrn.1786496
- Paluch, M., and Mazurek, M., 2011, "Osiedle Żubr pod Niepołomicami: ludzie bez szans na mieszkanie", https://krakow.naszemiasto.pl/osiedle-quotzubrquot-pod-niepolomicami-ludzie-bez-szans-na/ar/c1-802168 (accessed: 13.12.2019).
- Paluch, M., 2013, "Klienci Leoparda odzyskają mieszkania?", https://krakow.naszemiasto.pl/klienci-leoparda-odzyskaja-mieszkania/ar/c3-1906367 (accessed: 26.12.2019).
- PAP, 2017, "Zapadł wyrok w sprawie deweloperów z osiedla Żubr w Niepołomicach", https://businessin-sider.com.pl/wiadomosci/osiedle-zubr-w-niepolomicach-wyrok-ws-dewelopera/chr1156 (accessed: 13.12.2019).
- PAP, 2019, "Kolejne zatrzymania w sprawie Gant Development", https://www.propertynews.pl/prawo/kolejne-zatrzymania-w-sprawie-gant-development,71122.html (accessed: 19.12.2019)
- Portal Urbanity, https://www.urbanity.pl/dolnoslaskie/wroclaw/nord-house,b6445 (accessed: 13.12.2019) Shane, J. M., 2012, *Abandoned Building and Lots*, Problem-Specific Guides Series, No. 64, Washington, DC: Office of Community Oriented Policing Services.
- Sidorowicz, J., and Wantuch, D., 2015, "Slums w centrum. Bezdomni zasiedlili niedokończone bloki Leoparda", https://krakow.wyborcza.pl/krakow/1,44425,17907241,Slums_w_centrum_Bezdomni_zasiedlili_niedokonczone.html (accessed: 26.12.2019).
- Sidorowicz, J., and Wantuch, D., 2017, "Klienci Leoparda znowu w sądzie. Walczą o odzyskanie mieszkań", https://krakow.wyborcza.pl/krakow/7,44425,22375332,klienci-leoparda-znowu-w-sadzie-walcza-o-odzyskanie-mieszkan.html (accessed: 26.12. 2019).
- Silverman, R. M., Yin, L., and Petterson, K. L., 2013, "Dawn of the Dead City: An Exploratory Analysis of Vacant Addresses in Buffalo, NY 2008–2010", Journal of Urban Affairs, 35(2), 131–152.
- Starman, A. B., 2013, "The case study as a type of qualitative research", *Journal of Contemporary Educational Studies*, 1, 28–43
- Strniste, P. E. Jr, and Baez, A. E., 2012, "Subdivision and Maintenance Bonds", *For the Defence*, January, pp. 23–27.
- The 2015 Endangered List, Historic Albany Foundation.
- Urbańska, J., 2018, "Cztery osoby zatrzymane za wyprowadzenie 650 mln zł z Gant Development", https://wroclaw.wyborcza.pl/wroclaw/7,35771,23996710,cztery-osoby-zatrzymane-za-wyprowadzenie-650-mln-zl-z-gant-development.html (accessed: 19.12.2019).
- Weber, D. P., 2014, "Zombie Mortgages, Real Estate, and the Fallout for the Survivors", *New Mexico Law Review*, 45, 501–541
- Weiss, M., 2015, "Attack of the Zombie Properties", The Urban Lawyer, 47(3), 485-500.
- Wilk, P., 2013, "Porzuceni przez Ganta", https://wroclaw.tvp.pl/13110273/porzuceni-przez-ganta (accessed: 19.12.2019).