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Market Failures as Premises of Granting State Aid

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Abstract: Economists from centuries have been leading discussions on the role of state in economy. Some of them are in favour of state's wide interference in economy while others seek to limit the role of the government. One of the arguments for the necessity of state interventionism in the market mechanism is the existence of market failures. However interfering in the market without any restrictions could lead to much greater disturbances than those causing market failures. Therefore significant restrictions are placed on the role of the state in economy. In the European Union a policy of state aid is introduced, which shows when and for what purposes state support may be granted. The main aim of this article is to show how state aid influences on the market failures' elimination. Provision of state aid is therefore justified by the presence of market failures.

Keywords: state aid, market failures, equilibrium

JEL codes: H23, H41

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1. Introduction

Contemporary economic situation is so complex that it is difficult to imagine a functioning market in isolation from the state. The reason of above mentioned is the fact that the market itself is not perfect. Economists point to many of its failures, among which the most significant are: imperfect competition, the existence of public goods, externalities, incomplete markets, imperfect information, unemployment, inflation and inequality. The presence of those failures causes the economists' ongoing for centuries discussions about the role of the state in the economy and debates about breadth of the scope of state intervention in the economy. The state can in fact prevent or mitigate the occurrence of market failures. It could be precisely done by state

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intervention in the market. One of the instruments used by state to intervene in the market is state aid. State aid can be an instrument that properly applied will contribute to mitigating the negative effects of market failures.

2. Methodology of the research

The considerations in the article are divided into fourth main stages. In the first part the concept of state aid is presented. The definition of aid was adduced and reasons why its granting is significantly reduced and regulated by considerable amounts of regulations were brought up. The next part presents the main market failures. In the third stage of research state aid contributions to bridging market failures are shown. In the fourth stage, a statistical analysis of the state aid provided in the European Union from 2009 to 2014 was conducted.

The study was based on desk research method and statistical analysis. The analysis has been made based on the scientific literature, legislation and reports of various organizations. The scope of the statistical analysis was state aid provided in the European Union in the period from 2009 to 2014. The analysis covered the structure and dynamics of the aid.

3. State aid concept

Present-day economic reality is so complicated that it is impossible to imagine the functioning of the market mechanism in separation from the state. One of the instruments through which the state can intervene in a market economy is state aid. It shall be considered part of the economic state intervention, which aims to stimulate positive economic developments or prevention of negative processes (Modzelewska and Pełka, 2001:33). This aid can be considered as a tool in the hands of public authorities, which is used to achieve different objectives and tasks of social and economic policy. Government grants state aid for many reasons: economic, social, political and strategic (Hancher at al., 2012:30). Despite the widespread occurrence of the phenomenon of state aid, there is no legal (normalized by law) definition of that term.

The term state aid is very difficult to define clearly. Neither literature nor existing legislation has introduced a single, universally accepted definition. A commonly used interpretation says that, in order for a measure to be regarded as state aid, four conditions have to

be fulfilled, such as: transfer of public funds, donations benefit on terms more favourable than those offered on the market, the transfer must be selective, i.e. to favour certain entities or the production of certain goods, and the transfer must violate or may violate the conditions of competition and affect trade (European Commission, 2012). Those conditions are set out in the Treaty on the Functioning of the European Union, and their total fulfilment means that the measure can be regarded as state aid.

There are several economic reasons which justified granting state aid. Classic reasons are market failures. State aid can be treated as a tool for correcting market failures (Haucap and Schwalbe, 2011:5) or alleviate market failures (Haucap and Schwalbe, 2011:186). State aid is also granted from politically motivated reasons and political economy reason (Haucap and Schwalbe, 2011:5-11).

Government intervention in the market can lead to economic improvements. Some authors said, that, an evaluation in terms of a comparative-institutional economic approach should be conducted prior to granting state aid, in which possible market failure with the potential threat of state failure is carefully considered. After all, granting state is not economically justified if a market does not produce the same result as the theoretical ideal but only is state aid is especially appropriate to correct market failure (Haucap and Schwalbe, 2011:6).

Among politically motivated reasons special attention should be paid to the fact that state aid is granted in sectors which are important for the state, but on the other hand, can be the cause of immense problems. Examples of such sectors are among others agriculture and mining. State aid is also a tool of supporting regional development. By granting regional support committed to the development of infrastructure in the area the improvement of the quality of life in the zone is expected.

Each intervention in the market mechanism can cause distortion of competition. State aid is granted from state resources that may come from tax revenue. Granting any kind of support causes the costs associated with handling the entire support system. Public support is also provided in cases where the state has no other more effective instruments through which it is possible to achieve the same effects. It can therefore be noted that the aid is granted from political economy reasons. In fact state granting state aid achieves its own short-term objectives. State doesn't pay attention to the costs associated with achieving projected outcomes.

4. Main market failures

According to the first fundamental theorem of welfare economics, the economy is efficient in Pareto meanings only under certain conditions. There are six different reasons that may cause the market is not effective within the Pareto meaning. These are called the types of market failures and are considered as the justification of state action (Stiglitz, 2004:91). The term market failure in economics describes a relatively narrow field of inefficient market outcomes. From a neo-classical viewpoint, market failure is present when the market does not provide effective results with play of forces. No market failure exists, however, when markets deliver efficient, though not politically desired, results (Haucap and Schwalbe, 2011: 5). In general, a market failure exists when another possible outcome can make at least one economic actor better off without making someone else worse off (de Jong et. al.,2015:1856-1865).

To main market failures could be included:

- failure of competition,
- the existence of public goods,
- external effects.
- incompleteness of markets,
- incomplete information,
- unemployment, inflation and imbalance.

To achieve Pareto efficient outcome from the functioning of market mechanism, specific requirements must be fulfilled: the market must be in condition of perfect competition, ie. it has to have sufficiently many manufacturers, each of which is convinced that it has no impact on the price. Existence of restrictions of competition (monopolistic competition, natural monopoly, patents, etc.) causes economic inefficiency associated with the reduction in production and a loss of prosperity (Stiglitz, 2004:91). Economists suggest that accordingly to the theory of general equilibrium, allocation of resources in the economy can be effective, only when in all spheres of economic activity are maintained the conditions of perfect competition. The mechanism of perfect competition means that companies balance the marginal cost to the market price, and thus with the level of consumer marginal utility (Czajkowski, 2005:170). Each company and sector of the economy extends its kind of production until the price is equal to the social marginal cost. The market can achieve such conditions, if it will be characterized by a large number of entities in the

industry, full allocative efficiency, the rational behaviour of market players, perfect mobility of factors of production and excellent elasticity of supply and demand (Levinson, 1992:52-62).

The occurrence of public goods i.e. those goods that due to natural causes (physical) can serve the local community or the wider society is another of the types of market failure. Public goods are goods that can be consumed by everybody in a society or nobody at all. They cannot or will not be produced for individual profit, since it is difficult to get people to pay for its large beneficial externalities. It is helpful to think about a public good as one with a large positive externality. A public good is defined as an economic good which possesses two properties: nonrivalrous and non-excludable (Gruber, 2007:184). Therefore characteristic of public goods is their collective the possibility of consumption (Samuelson, 1954:387-89). indivisibility of consumption (Buchanan, 1968) and their not competed character (Cowen, 1999). Some examples of public goods include clean air, national defence, the judiciary, lighthouses, street lights, and the well know example of a fireworks show (Cowen, 1999:11). The literature emphasizes that public goods may be offered for both by the government and also by local and regional authority (Jack and Recadle, 2015:80-93). Some authors underlined that the public goods can be seen as a stock that changes over time, in a dynamic economy where people have positional preferences for private consumption (Aronsson and Johansson-Stenman, 2014:390-410). In other words, public goods are non-exclusive and non-rivalled (Toleubayev et al., 2010:411-421).

The concept of external effects was introduced by A. Pigou, who understood by them the divergence between private and social costs. He pointed out that externalities can be not only positive but also negative (Bartniczak and Ptak, 2011:11).

External effects occur when decisions on production or consumption made by one operator affect the usefulness of the profit or other entity unintentionally, and the entity that causes this effect does not make compensation to the entity which is the recipient of the externality (Perman, 2003:134). In other words, externalities occur when production (consumption) of certain entities causes not only the intended effects, but also side effects in the form of benefits and costs of the underlying (incurred) by other entities not participating directly in the market exchange. These effects, which affect the well-being of others, are called externalities because the benefits or costs are external to the individuals or companies responsible for creating them (Arnold, 2008:362).

Externalities can be positive or negative (desirable and undesirable). In the first case, when the influence of the perpetrators of externalities to third parties is positive, it means the external

benefits, in the second, when the impact is negative - the external cost (disadvantages) (Sloman, 2001:231-232).

According to J. Stiglitz (Stiglitz, 2004:98) when private markets do not provide goods or services, even though the cost of their offer is lower than the price that buyers are willing to pay for- market failure occurs. He calls it an incomplete market. Because the complete market delivers all goods and services in respect of which the production cost is lower than the price the buyers are willing to pay. In his opinion the markets fail especially in the area of insurance and credit, and this fact justifies state intervention. Private market does not offer insurance because of a number of important risks. The result is that the state is forced to perform many insurance programs. An example of this could be insurance programs of flood, fire, unemployment or crop insurance for farmers. In the case of capital markets, the state offers loans to students or to entrepreneurs. The cause of imperfections in capital markets and insurance is the occurrence of innovation, transaction costs, information asymmetry and the costs of enforcing contracts.

In many respects, the information reminds the public good. Providing information to the next person does not reduce the quantity available for others. Effectiveness requires that the information was made available for free or more precisely to the fee charged for it only covered the actual cost of transmittal. Private market often does not provide the right amount of information, exactly as it does not provide the proper amounts of other public goods (Stiglitz, 2004:100). If the firm has neither limits to its rationality nor any constraints on its ability to process information, then more information is better. The firm can always freely dispose of the information, and in general the ability to make more accurate forecasts will allow it to make decisions that yield higher expected profits (Mankiw, Reis, 2010 p. 8).

In carried out researches (Rothschild and Stiglitz,1976:629-649) many underlined that competition on markets with imperfect information is more complex than in standards models. Even a small amount of imperfect information could have a significant effect on competitive market.

In the J. Stiglitz opinion (Stiglitz, 2004:91) the most visible manifestations of market failures are repeated periods of underutilization of labour and physical capital. High level of unemployment by most economists is treated as evidence that there is something wrong with the market. For some economists, high unemployment is the most dramatic and most convincing testimony of market failures. The presence of unemployment and inflation is a sign that in the

economy appear the conditions that deviate from the optimum in terms of economic and social. From the point of view of Pareto optimum decline in consumption, inflation and other negative phenomena in the social assessment erode the well-being not only of individuals, but often large social groups. The market mechanism not only leads to social and economic inefficiencies, but cannot fix it (Czajkowski, 2005:170).

5. State interference in market mechanism

Those kinds of market failures, lead to economic inefficiency within the meaning of Pareto efficient outcome and justify - according to Stiglitz - state interference in the market mechanism (Bochenek, 2010:77). Subjecting the analysis of each of the above market failures, demonstrates that their occurrence justifies state interference and thus the granting of state aid. The literature emphasizes that the interference of the state government or public authorities, should lead to the elimination of the negative effects of market failures, justifying the right of public authorities to steer the economy (Fijor, 2011:4).

The arguments of supporters of government intervention are based on the assumption that the free market does not work optimally, which means that the free market is not able to eliminate the negative impact of human behaviour contaminated by subjectivity, ignorance, selfishness and other shortcomings which countermeasure to maximize social utility, or even making that smaller. An alternative to the free market is the state intervention which corrects its shortcomings (Fijor, 2011:4).

Entities receiving support are in fact in a better position compared to those who do not receive such support. Therefore, the European Commission introduced a whole catalogue of rules in the area of state aid in order to be sure that granted aid does not have a negative impact on the market. Each aid instrument must be examined in terms of its impact on the market. Strict regulation of issues concerning the granting of state aid limits its negative impact on the market. This prevents the formation of the failure of favouring a certain group of companies. Lack of any regulations regarding to state aid could lead to the creation of many defects in the market.

In the case of public goods it is certain that their character means the market is not able to supply them in sufficient quantity or quality therefore they must be manufactured and supplied by the state or the public sector and financed through tax revenues (Rothbard, 2008:442). The state

therefore evens out market failure involving the existence of public goods, so the state helps market. The instrument by which this can be done is in fact state aid. The state aid thus becomes a tool of redistribution of resources (Syszczak, 2011:71). An example of a sector where state intervention is necessary due to the presence of public goods is sector of research, development and innovation. In this sector you cannot protect companies that have invested in a research and development work by using the results of that works by competitors ant it is the main reason of state aid. There are no exclusions in the case of public goods or limited possibility of exclusion for socially desirable goods, which means that private sector does not exhibit a tendency to their delivery. Deficiency or even lack of such products and services, however, would result in the loss of social benefits, which gives rise to justify state intervention in the economy (Podsiadło, 2013:328). The area where granting state aid is justified due to the presence of public goods is also the environmental protection. The state bears the responsibility for environmental decisions and the task of the state is to provide citizens suitable level of the environment (Macek, 2014:112). The state grants state aid and encourages entrepreneurs to take activities for its protection.

The motivation for granting state aid is also the inability to complete internalisation of external costs (Kudła, 2004:146). The area where such situation can be observed is environmental protection. The inability to full internalisation of external costs causes the inability to fully implement the "polluter pays" principle. According to it, in all those cases where it is impossible to determine unequivocally the responsibility for the use and pollution of the natural environment the business costs should be accepted by the offender. Although strict interpretation of the "polluter pays" principle do not allow to grant state aid, its interpretation by individual economists varies considerably. There is a view that state aid doesn't have to violate this principle, if the polluter is entirely responsible for the emissions, and state aid helps to adapt to the principle of "polluter pays" principle or allows tightening safety requirements. It is also important that the state aid is usually treated in developed countries, and also in Poland, merely as a form of support for the company's own financial effort (Fiedor at al., 2002:261). Some authors even say that the strict application of the "polluter pays" principle in a market economy always leads to deterioration of the environment. This situation occurs when the polluters are out of funds to cover the removal of the effects of pollution caused by them or if because of the special reasons he will not be charge with all costs (Boć et al.2005:150). State aid may also contribute to the emergence of positive externalities. An example of a sector where these effects occur is the R & D sector. Because direct support can

generate positive externality for subsidized firms if taken as a positive signal of future product demand (Montmartin and Herrera 2015:1065-1069).

The phenomenon of incomplete markets, which causes the malfunctioning of the economy and the economy entering a deep recession, governments usually tried to "fix" in theory and in practice by state aid (Noga, 2015:38). State interferes in those market segments where there were no private offering. The state therefore attempts to replace private authority and takes over an area where none of the private operators is interested to run business. One of such area is the development of risk financing and improved access to risk finance for small and medium-sized enterprises, small companies with mid-capitalisation and innovative small companies with mid-capitalisation. (European Commission, 2014b). Indeed, despite the great importance for the market, small and medium-sized enterprises have many difficulties in obtaining capital to operate, especially in the first periods of functioning. Therefore there is a market failure involving the lack of access of SMEs to financing. Thus, the state undertakes the role that should be played by a private financial institution. Providing support on more favourable conditions than the market, state grants the aid. The negative impact of state aid on the market is compensated by achieving positive results in the form of e.g. increasing employment by those companies or by entering into new markets.

Sector where asymmetric information rationalizes granting state aid is the R & D sector. This activity is characterized by a high degree of risk and uncertainty. Due to imperfect and asymmetric information, private investors may be reluctant to finance valuable projects. Highly qualified personnel may not have information about the possibilities of recruitment innovative companies. As a result, the allocation of human and financial resources to these markets may be inadequate, and valuable projects for the economy will not be executed (Podsiadło, 2013:328).

The problem of asymmetric information also applies to the SME sector. Despite the growth prospects of SMEs, they may face difficulties in obtaining access to finance, especially in the early stages of their development. At the core of these problems lies the problem of asymmetric information. SMEs, especially those newly established, are often not able to show investors their creditworthiness. In such circumstances, the type of active control, which carry out investors to finance larger companies, may not be worth the investment in the case of transactions involving these SMEs, as the costs of control are too high compared to the value of investments. Therefore, it is likely that those SMEs, regardless of the quality of their project and growth potential will not

be able to get the necessary financing until they have a documented history of activity and sufficient collateral. As a result of such asymmetric information, markets of corporate finance may not provide the necessary financing equity or debt financing for newly established SMEs with a potentially high-growth, resulting in a persistent market failure with the capital prevented the adjustment of supply and demand at a price acceptable to both sides, which has negative impact on the growth prospects of SMEs (European Commission, 2014b). These arguments are for creating special assistance programs through which state aid can be granted.

Reducing unemployment and promoting employment are among the objectives of socioeconomic policy of the European Union. One of the instruments by which this can be achieved is granting state aid. The European Commission allows the granting of state aid in order to increase employment among workers in disadvantaged or disabled workers. It is also permissible to grant training aid, which in turn leads to an increase of qualified workers (European Commission, 2014b). The European Commission therefore considers state aid granted in the area of employment as an instrument to counteract the externalities, in that case- the formation of unemployment.

6. Statistical analysis of state aid provided in the European Union in the period from 2009 to 2014

The value of the state aid provided in the European Union in the period from 2009 to 2014 amounted to nearly EUR 473.7 billion (table 1). Out of this amount, 86.5% was designated for non-agricultural aid. 10.7% was allocated to agricultural aid, while 2.7% was provided to the transport sector.

Table 1. Value of state aid provided in the European Union in the period from 2009 to 2014 (in millions of EUR)

Specification	2009	2010	2011	2012	2013	2014
Total state aid Of which	84,413.0	77,244.2	70,509.9	70,623.4	68,382.9	102,510.5
Non-Agricultural Aid	70,746.9	66,000.4	59,746.1	60,383.3	59,438.6	93,520.7
Agricultural Aid	10,462.9	8,990.8	8,425.5	8,277.0	7,534.9	7,206.2
Transport aid	3,203.3	2,253.0	2,338.3	1,963.1	1,409.3	1,783.6

Source: own calculations based on European Commission (2015).

An analysis of dynamics conducted with the use of individual chain indices demonstrates that in the period from 2009 to 2013, the value of aid provided decreased each year (table 2). 2012 was 484

the only year in which a minor increase was observed (in comparison with 2011). In 2014, the value of the aid provided rose by nearly a half in comparison with 2013. This surge was predominantly a result of an increase in non-agricultural aid.

Table 2. Value of individual chain indices in the period from 2009 to 2014

Specification	2009	2010	2011	2012	2013	2014
Total state aid Of which	-	91.5%	91.3%	100.2%	96.8%	149.9%
Non-Agricultural Aid	-	93.3%	90.5%	101.1%	98.4%	157.3%
Agricultural Aid	-	85.9%	93.7%	98.2%	91.0%	95.6%
Transport aid	-	70.3%	103.8%	84.0%	71.8%	126.6%

Source: own calculations based on European Commission (2015).

By analyzing the distribution of aid each year, it can be observed that throughout the first three years, regional development aid accounted for the largest part of the total aid provided (table 3). In the period from 2012 to 2014, in turn, aid provided in the environmental protection and energy saving sector constituted the largest share. Particularly noteworthy is 2014: in that year, aid in the aforementioned sector comprised nearly 47% of the total.

Table 3. Value of aid designated for individual purposes in the non-agricultural sector (in millions of EUR)

Non-Agricultural Aid	2009	2010	2011	2012	2013	2014
Closure aid	19.7	15.8	1,540.4	1,536.2	1,568.3	1,433.8
Compensation of damages caused by natural disaster	3.8	43.1	80.1	34.6	181.5	292.5
Culture	1,661.0	1,838.6	2,024.7	2,405.2	2,692.6	3,313.2
Employment	2,866.9	2,926.3	2,850.5	2,868.7	2,929.3	2,723.9
Environmental protection incl. Energy saving	15,537.1	14,759.7	13,352.3	14,459.3	15,051.7	43,590.2
Heritage conservation	47.0	71.1	78.9	45.3	86.9	94.8
Promotion of export and internationalization	301.2	293.3	327.6	291.1	244.6	155.7
Regional development	17,027.2	14,858.1	13,489.4	12,537.9	13,124.6	15,437.1
Rescue & Restructure	1,179.1	732.5	780.9	754.9	609.2	651.1
Research and development incl. Innovation	11,715.5	11,403.4	10,454.6	9,734.4	9,338.5	10,916.4
Sectoral development	11,511.1	10,324.1	5,545.3	6,152.6	4,829.9	4,058.3
SME incl. risk capital	6,112.8	4,826.1	4,199.9	4,283.2	3,682.0	3,856.2
Social support to individual consumers	1,161.3	2,205.2	3,495.3	3,275.7	3,353.6	5,135.0
Training	1,036.2	892.6	942.5	1,108.7	837.3	650.9
Other	567.0	810.7	583.8	895.6	908.5	1,211.5
Total	70,746.9	66,000.4	59,746.1	60,383.3	59,438.6	93,520.7

Source: own calculations based on European Commission (2015).

Taking the entire period analyzed into consideration, it can be observed that more than 28% of the aid was designated for purposes related to environmental protection and energy saving (fig. 1). More than 21% was allocated to regional development, whereas R&D&I aid accounted for 15% of the total. More than 10% was provided to entrepreneurs undertaking activities in specific sectors. In total, over 75% of all the aid provided was designated for the four aforementioned purposes.

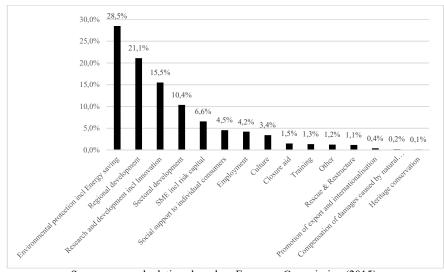


Figure 1. Structure of the state aid provided from 2009 to 2014 (%)

Source: own calculations based on European Commission (2015).

An important issue in the analysis conducted will be the determination of how the state aid provided contributed to the elimination of market failures. The analysis conducted above demonstrated that environmental protection is a sector where the provision of state aid is justified by the presence of public goods. Another reason for the provision of state aid is the lack of possibility of full internalization of external costs. This situation most frequently occurs in the environmental protection sector. The data presented in fig. 1 clearly shows that more than ½ of the aid provided in the period from 2009 to 2014 was designated for purposes related to the aforementioned sector.

The research, development and innovation sector is an example of a sector where provision of state aid is necessary due to the presence of public goods. Moreover, provision of state aid in this sector is motivated by information asymmetry. In the analyzed period, more than 15% of the total aid provided was allocated to that sector.

Market incompleteness justifies the provision of state aid to SMEs, particularly in order to finance high-risk capital. Moreover, the issue of information asymmetry also applies to SMEs. In the period analyzed, the aid allocated to this sector constituted nearly 7% of the total.

Further market imperfections indicated were unemployment, inflation and imbalance. The response to these imperfections is the provision of training and employment aid. Aid designated for these purposes comprised respectively 1.3% and 4.2% of the total.

Overall, nearly EUR 230 billion out of the total amount of EUR 410 billion of aid provided was designated for purposes where the provision of state aid is justified by the presence of market imperfections.

7. Conclusions

The analysis showed that granting of state aid can be an effective tool to eliminate market failures. According to Stiglitz, state intervention in the market is justified only when this interventions will reduce the market failure and will benefit within the meaning of Pareto, which will ensure improvement of the situation of certain individuals, without at the same time compromising situation of someone else (Stiglitz, 2004:299).

It should be emphasized that the state also operates imperfectly, with the result that its intervention should be limited only to those cases where it can be an effective tool for solving specific problems. This makes it necessary to restrict and monitor granted state aid.

The analysis conducted shows that in the period from 2009 to 2014, more than 56% of the state aid provided in the European Union was allocated to sectors where the provision of state aid is motivated by the presence of market imperfections. This demonstrates that the process of limiting and monitoring state aid can be evaluated positively. The support reaches specific areas and contributes to the elimination of specific problems. State aid can therefore be an efficient tool serving not only to intervene in the market mechanism, but also eliminate market imperfections.

The analysis undertaken in this article can be considered as a starting point for further research related to the importance of state aid in eliminating market imperfections. It should be determined to what extent state aid influences individual imperfections. Another important issue is the analysis of this influence from the perspective of different countries.

Literature

- Arnold, R. (2008). Microeconomics. Mason: Thomson-South-Western.
- Aronsson, T.; Johansson-Stenman, O. (2014). State-variable public goods and social comparisons. *Journal of Environmental Economics and Management* 68 (2). doi:10.1016/j.jeem.2014.07.001.
- Bartniczak B.; Ptak, M. (2011). Opłaty i podatki ekologiczne. Teoria i praktyka. Wrocław: Wyd. Uniwersytetu Ekonomicznego we Wrocławiu.
- Boć, J.; Nowacki, K.; Samborska-Boć E. (2005). Ochrona środowiska. Wrocław: Kolonia Limited.
- Bochenek, M. (2010). Bruno S. Freyi Joseph E. Stiglitz o zawodności państwa i zawodności rynk*u. Ekonomia i prawo* Tom VI.
- Buchanan, J.M. (1968). The Demand and Supply of Public Goods. Chicago: Rand-McNally, Volume 5 in the series.
- Cowen, T. (1999). Public goods&market failures. A critical examination. New Brunswick: Transaction publisher.
- Czajkowski, M. (2005). Przyczyny niedoskonałości i zawodności rynku. Zeszyty Naukowe Uniwersytetu Szczecińskiego 10 (408).
- de Jong, J.P.J.; Hippel, E.; Gault, F.; Kuusisto, J.; Raasch, C. (2015). Market failure in the diffusion of consumer-developed innovations: Patterns in Finland. *Research Policy* 44 (10).
- European Commission (2012). Consolidated version of the Treaty on the Functioning of the European Union, O.J. C 326/2012
- European Commission (2014a). Commission regulation (EU) No 651/2014 of 17 June 2014 declaring certain categories of aid compatible with the internal market in application of Articles 107 and 108 of the Treaty, O. J. L 187/2014.
- European Commission (2014b). Communication from the Commission Guidelines on State aid to promote risk finance investments, O.J. C 19/2014.
- European Commission (2015). *State aid Scoreboard 2015. Country fisches.* Available at: http://ec.europa.eu/competition/state_aid/scoreboard/index_en.html. Accessed 10 April 2017.
- Fiedor, B.; Czaja, S.; Graczyk, A.; Jakubczyk, Z. (2002). *Podstawy ekonomii środowiska i zasobów naturalnych*. Warszawa: Wydawnictwo C.H. Beck.
- Fijor, J. M. (2011). Zawodność rynku jako fundament teorii dóbr publicznych. Available at:,http://mises.pl/blog/2011/07/07/fijor-zawodnosc-rynku-jako-fundament-teorii-dobr-publicznych/. Accessed 10 April 2017.
- Gruber, J. (2007). Public finance and public policy. New York: Worth Publishers.
- Hancher, L.; Ottervanger, T.; Slot P.J. (2012). EU State Aids. Leiden: Sweet & Maxwell.
- Haucap, J.; Schwalbe, U. (2011). *Economic principles of state aid control*. Düsselforf: Institute for Competiotion Economics. Disccusion paper 17.
- Jack, B. K.; Recalde, M. P. (2015). Leadership and the voluntary provision of public goods: Field evidence from Bolivia. Journal of Public Economics 12., doi:10.1016/j.jpubeco.2014.10.003
- Kudła, I. (2004). Wspólnotowe aspekty udzielania pomocy publicznej na ochronę środowiska. In. Piontek, F. (Ed.) Rola i znaczenie funduszy ochrony środowiska i gospodarki wodnej po integracji Polski z Unią Europejską. Warszawa, Bielsko-Biała, Katowice: Zeszyt Naukowy PAN.
- Levinson, M. (1992). Nie tylko wolny rynek. Warszawa: PWE.
- Macek, I. (2014). Dylematy nowoczesnej rzeczywistości na przykładzie środowiska jako dobra publicznego. Wrocławskie studia politologiczne 17.
- Mankiw, N. G.; Reis, R. (2010). *Imperfect Information and Aggregate Supply*. Available at: http://scholar.harvard.edu/files/mankiw/files/imperfect information.pdf. Accessed 10 April 2017.
- Modzelewska-Wąchal, E.; Pełka, P.; Stasiak, M. (2001). *Pomoc publiczna dla przedsiębiorców i jej nadzorowanie*. Warszawa: LexisNexis.
- Montmartin, B.; Herrera, M. (2015). Internal and external effects of R&D subsidies and fiscal incentives: Empirical evidence using spatial dynamic panel models. *Research Policy* 5 (44) doi:10.1016/j.respol.2014.11.013
- Noga, A. (2015). *Niekompletność rynków i sposoby jej redukcji*. Available at: http://www.adam-noga.pl/publikacje/item/23-zagro%C5%BCenia-utrzymania-rentowno%C5%9Bci-przedsi%C4%99biorstw.html. Accessed 10 April 2017.
- Perman, R. (2003). Natural Resource and Environmental Economics. Essex: Pearson Education.
- Podsiadło, P. (2013). Pomoc publiczna na badania, rozwój i innowacje w kontekście kryzysu gospodarki Unii Europejskiej. *Zarządzanie i finanse* 2.
- Rothbard, M. N. (2008). Ekonomia wolnego rynku, Tom 3. Warszawa: Wyd. Fijorr Publishing.

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Rothschild, M.; Stiglitz, J. (1976). Equilibrium in Competitive Insurance Markets: An Essay on the Economics of Imperfect Information. *The Quarterly Journal of Economics* 90(4).

Samuelson, P.A. (1954). Pure Theory of Public Expenditures. Review of Economics and Statistics 36.

Sloman, J. (2001). Podstawy ekonomii. Warszawa: PWE.

Stiglitz, J.E. (2004). Ekonomia sektora publicznego. Warszawa: Wydawnictwo Naukowe PWN.

Syszczak, E. (2011). Research handbook on European State Aid Law. Cheltenham: Edward Elgar Publishing.

Toleubayev, K.; Jansen, K.; van Huis, A. (2010). Commodification of science and the production of public goods: Plant protection research in Kazakhstan. *Research Policy* 39(3).

Niedoskonałości rynkowe jako uzasadnienie udzielania pomocy publicznej

Streszczenie

Współczesna sytuacja gospodarcza jest tak skomplikowana, że trudno sobie wyobrazić funkcjonowanie mechanizmu rynkowego w oderwaniu od państwa. Wynika to z faktu, że rynek sam w sobie nie jest doskonały. Ekonomiści wskakują na wiele jego niedoskonałości wśród których do najważniejszych zalicza się zawodność konkurencji, istnienie dóbr publicznych, efekty zewnętrzne, niekompletność rynków, niepełną informację, bezrobocie, inflacja i brak równowagi. Występowanie tych niedoskonałości powoduje, że ekonomiści od wieków toczą dyskusje na temat roli państwa w gospodarce, na temat tego jak szeroki powinien być zakres ingerencji państwa w gospodarkę. Państwo może bowiem przeciwdziałać lub łagodzić występowanie niedoskonałości rynku. Dokonuje tego poprzez swoją interwencję na rynku. Jednym z instrumentów za pomocą których może ingerować w rynek jest pomoc publiczna. Pomoc publiczna może być bowiem instrumentem, który właściwie zastosowany przyczyni się do łagodzenia negatywnych efektów niedoskonałości rynkowych.

Słowa kluczowe: pomoc publiczna, niedoskonałości rynkowe, równowaga.