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UNDERSTANDING TRANSACTION COSTS IN THE MESOECONOMIC PERSPECTIVE

The aim of this article is to provide an insight into understanding transaction costs on other than the company level. Using the literature review, the foundations of the new institutional economics are evoked to verify whether any obstacles exist that would prevent translating the analysis into the mesoeconomic level. Furthermore, referring to Coase's suggestion on bonding economics and accounting, a proposal for industry-level operationalisation is presented, based on profit and loss account and highlights different elements of transaction costs. The proposal constitutes a starting point for further meso or macro-economic estimations. It also suggests a more in-depth way of estimating the value of transaction costs in industries and economies that could constitute an alternative for the Wallis and North's previous estimations of transaction services estimations.

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1. INTRODUCTION

In the 1930s, distrust of the limitations of the neoclassical economic theory and the observation of business practice led to the publication of the paper *The Nature of the Firm* by Coase, which is nowadays considered to be the germ of transaction cost theory constituting a part of the new institutional economics. The theory has been the subject of interest to eminent economists, whose contribution (Coase, Williamson, North) has led to Nobel prizes in the field of economics.

Today, transaction cost theory is recognised, in addition to the principal-agent theory and the theory of property rights, in the canon of new institutional economics (Williamson 1998). The origin of its creation, however, suggests the close relationship between both the neoclassical theory of the firm and the works of neo-Keynesians from the 1950s and 1960s. The undeniable advantage of the transaction cost theory lies in its multidimensional character which manifests itself in its applicability to many

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areas of economics and management. The concept touches upon the problem of property rights, the forms of the organisation of transactions and the boundaries of the activity of a firm, as well as the mathematical and statistical growth models embracing entire economies (Klaes 2000, p. 192).

Transaction costs have become a category the importance of which has been steadily increasing. It is commonly applied to microeconomic studies of contracting, internationalisation processes of companies, company structure and much more. It is also applicable for macroeconomic research such as growth analysis. It has been estimated that in the American economy, transaction services amounted to 25% of GDP in 1870, while in 1970 their value increased to 45% of GDP (North and Wallis 1986). Similar analyses have been carried out in Poland and their results state that in the period 1996-2002 the value of estimated transaction costs increased from 50% to 68% of GDP. (The value was assessed using Wallis and North's methodology. See more in further sections) (Sulejewicz and Graca 2005). These studies have confirmed the growing importance of transaction costs in world economies and their undeniable influence on the decisions taken at state level and the decisions of business entities operating within it.

This paper aims at presenting the history of the development of the concept of transaction costs, the change in its meaning and an assessment of its applicability in modern economics. It is important to capture the dependencies and relationships of the theory of the organisation of a firm with other approaches, as well as outlining the main trends and tendencies which were manifested in the research programmes of this concept.

2. ASSUMPTIONS UNDERLYING TRANSACTION COSTS IN THE MICRO, MESO- AND MACROECONOMIC PERSPECTIVE

For years, researchers have strived to find an explicit and exhaustive definition of transaction costs. They were intuitively understood as costs that need to be borne for a transaction to take place. They are visibly distinct from production costs but it quickly became evident that to truly understand the economic processes, researchers need to analyse both one and the other. The transaction cost theory is characterised by the macroanalytic approach and specifically by the analysis of companies from the point of view of a single contract and organizational structure which was adopted by the company. With the introduction of the concept of transaction costs it has become possible to search for the reasons for the existence of many non-

standard forms of economic activity such as franchising, cross sale, vertical integration, etc., which were attributed to monopolistic practices in neoclassical theory (Williamson 1998, pp. 30-33). The new institutional economics emphasizes that not only technological changes but also organisational changes have had a significant impact on the development of trade.

However, transaction cost theory does not stand in opposition to neoclassical theory but complements it, therefore it adopts a number of its assumptions. It is still assumed that the available resources are limited and that companies compete for them which in turn results in the need to make allocative choices. However institutional analysis also uses the price mechanism as an analytical tool (Słomska-Gołębiowska 2009, p. 114).

One of the criticisms directed against neoclassical theory refers to its rigid assumptions that do not exist in the real world. The new institutional economics assumes that marginal analysis alone is not sufficient to fully explain the causes of the emergence of exchange relationships in the market and for human behaviour, including one relating to transactions, which is largely irrational (Williamson 1998, p. 57). Irrationality or actually bounded rationality does not stem from an entity's deliberate action but from incomplete information about the market. In order to obtain a more complete picture of the operation of a company Coase (1937), Williamson (1984, 1998) and Knight (1921) refer to behavioural assumptions on which new institutional economics was based – bounded rationality, opportunism and uncertainty arising from asymmetric information.

Williamson (1998, pp. 57-60) evokes three levels of rationality – *full rationality*, *bounded rationality* and *organic rationality*. However, he does not preclude adding completely irrational behaviour to the analysis. In the initial phase of his work on the assumptions of transaction cost theory, Williamson was quite reluctant to refer to the concept of limited rationality. This was due to the departure from "mainstream" assumptions, which in turn did not harmonise with the contemporary views of many economists (Foss 2003; Pessali 2006). Activity aimed at maximising rationality refers to neoclassical theory and consists in the attempt to optimize the allocation of company resources. Bounded rationality results from the asymmetry of information which is not equally available to all subjects. Therefore it is assumed that decisions are "intentionally rational" (Simon 1961, p. 24). The weakest form of rationality is organic rationality, which assumes that decisions are not based on previously thought-out plans. A business organisation is not a consciously designed structure, but is formed as a result

of ad hoc decisions. In its assumptions, transaction cost theory refers to bounded rationality.

The literature on the theory of the firm contains many studies relating to bounded rationality. Verbeke and Yuan (2005) suggest that it manifests itself in four basic elements:

- incomplete information,
- the limited ability of top management to process information,
- discrepancies in the analysis through which the same piece of information can be seen (often extremely) differently by different decision-makers,
- the complexity and the storage of information through which it is difficult to separate key issues and secondary ones that have no significant impact on the matter.

The bounded rationality of decision-makers is directly linked to another assumption of transaction cost theory, i.e. opportunism (Verbeke 2003). The profit orientation of the company can take one of three forms: *opportunism*, *open selfishness* and *obedience* (Williamson 1998, pp. 60-62). Transaction cost theory assumes complete opportunism, that is in practice the possibility of concealing certain information or misleading the partner in order to gain an advantage which in other words can be described as strong self-interest orientation, even including deceit and guile. Opportunism can take the form of *ex-ante* opportunism for actions before the conclusion of the contract and *ex-post* opportunism referring to the behaviour after its realisation (Tepexpa 2011, p. 15; Verbeke and Greidanus 2009). The likelihood of this phenomenon is reduced if long-term cooperation is expected. Open selfishness was characteristic for neoclassical theory because it meant a situation in which there were no costs of acquiring information on the market. The last level, that is obedience, only referred to utopian models where self-interest was absent (Table 1).

Table 1

Mark-up and transaction costs in the financial approach

	Behavioural assumptions	
	Rationality	**Self-interest orientation**
Strong	CC; MD	TC; MD
Semi-strong	TC; T	CC
Weak	E	U; T

Note. CC: Contingent claims, MD: Mechanism design, TC: Transaction cost, E: Evolutionary, U: Utopian, T: Team theory

Source: Williamson (1998, p. 50).

In the literature there are sometimes arguments that transaction cost theory stands in contradiction to neoclassical theory (Ghoshal and Insead 1996). Pessali (2006) points out that this is not true as both concepts refer to human nature and the only difference is in the perception of this nature. Neoclassical theory assumes that a person (company) maximises its rationality and simultaneously behaves selfishly but does not resort to opportunistic behaviour, whereas the transaction cost theory assumes that a person (company) cannot be fully rational but will use the opportunities provided by the external environment or those developed through their opportunistic behaviour (Klamer 1987).

Although the terms bounded rationality and opportunism are commonly associated with Williamson (1998), these issues have been raised by other researchers. Casson (2000) emphasises that it is one of the most important assumptions concerning the operation of the company and at the same time pointing out that it is rarely reflected in the analytical part of research. He assumes that, originally, employees have no reason to mislead partners unless it is the result of miscalculations or erroneous conclusions (Casson 2000). Similarly Madhok (2006) believes that opportunism is an inherent factor in market transactions. However it is of particular importance in the case of the initial activity of a company (e.g. entering new foreign markets) but its importance rapidly decreases with acquired experience. Madhok also stresses that opportunism should not be confused with the constraints resulting from a different perception and interpretation of information, the purpose of which is not to gain an advantage over the business partner.

In addition to bounded rationality, they also refer to the so-called *bounded reliability* or insufficient actions aimed at the proper realisation of the transaction. As a result of these assumptions, transaction cost theory has become a tool of dynamic analysis (Buckley and Casson 1998). Dynamics means that the parties involved in the execution of the contract are responsible for the changes in the environment and adapt their decisions, respectively (Ghoshal 2005).

Williamson (1998) and Coase (1991, 1992) combined the concept of uncertainty with the two previously mentioned phenomena – bounded rationality and opportunism. However some economists, including Slater and Spencer (2000, pp. 81-82), understood uncertainty as a separate assumption that requires proper attention. They emphasised that, according to Williamson's approach (1971, 1979, 1998), bounded rationality suggests the existence of a set of many countable scenarios of future events the

knowledge of which is only limited to the cost of acquiring information. Slater and Spencer (2000) suggest, however, that future events are characterised by uncertainty because in reality even an entity that is ready to bear high costs will not obtain complete knowledge of the future from the market.

Williamson (1998, p. 57) also considered the inclusion of moral principles in the discussion as a foundation of transaction cost theory, but he eventually gave up on the idea. Such attempts, however, were made by Noorderhaven (1996 pp. 105-122), who showed that trust also stems from behavioural reasons and should be taken into account together with opportunism. According to Noorderhaven, trust is defined as "[increasing] one's vulnerability to another whose behaviour is not under one's control" (Noorderhaven 1996, p. 109) and refers only to interpersonal trust in business relationships. He suggests that instead of a model based on pure opportunism, a *split-core model* should be introduced referring both to opportunism and trust because both of these qualities characterise human nature and one rarely exists without the other. Whether one of the two characteristics prevails depends mainly on the degree of the asymmetry of information and postulated objectives. According to Noorderhaven opportunism entails higher transaction costs since it is necessary to use greater *safeguards*.

In contrast to the neoclassical theory where the company's maximised profit, understood as the difference between income and costs, transaction cost theory focuses on the pursuit of profit in the long term instead of its short-term maximisation. Maximisation is replaced by profit optimisation because achieving the maximum level is not possible due to the presence of information asymmetry. It also involves further divergence, namely proponents of neoclassical theory assume that each stimulus triggers an immediate response. Transaction cost theory assumes that for changes to occur, institutional structures are required and therefore adaptation to changes is spread over time (Słomska-Gołębiowska 2009, p. 117). These differences can be summarised as the cessation of perceiving the company as a "black box" and starting to identify it with a method of contract organisation (cf. Jensen and Meckling 1976) in the realisation of which a number of entities are involved.

3. THE ORIGIN OF THE NOTION OF TRANSACTION COSTS

"The costs of running the economic system", as Arrow defines transaction costs (1969, p. 48), constitute an additional charge on market transactions. Some theoreticians believe that they are separable from production costs whilst others point out that transaction costs should be considered as a component of the function of production-distribution costs (cf. Gorynia 2007, p. 174). Regardless of the perspective, the origin of the concept of transaction costs should first be provided and then operationalised.

Until 1940, the expression synonymous with *transaction cost* was that of *friction*, a notion taken from physics. Friction served to illustrate the process of the adaptation of prices on the goods and services market which in practice covered the scope of what, today, is referred to as transaction costs (Hardt 2009, p. 51). Just as the presence of friction in mechanics is undeniable, similarly, market transactions are not devoid of a certain burden. It was, however, emphasised that the mathematical modelling of physical problems often disregards the phenomenon of friction and, at the same time, this procedure is replicated in the theory of economics which in turn contributes to the minimisation of its importance. Whilst models are often based on simplifying assumptions, the researcher should nevertheless be aware of their existence (Langlois 2006, p. 1389).

Friction was defined very broadly – it included the rising costs of the price mechanism, organisational conflicts within firms as well as the disruption of the production process (Klaes 2000, p. 672). The notion was reduced by Menger (1871), who was actually the first to operationalise the concept of friction (Hardt 2009, p. 48). In his work, he referred to customs duties, transportation costs, insurance and fees payable to intermediaries who were considered non-production determinants of the final price of the exchange. Although *The Nature of The Firm* by Coase (1937) is generally considered to be a complementary consideration of the neoclassical theory of a firm, the actual notion of "transaction cost" does not appear in it and the author only refers to the costs of utilising the price mechanism.

For a long time this operationalisation remained the only attempt to narrow down the concept of the cost of the operation of market mechanism. The first use of the term "transaction costs" was in 1940 by Scitovsky (1940, p. 307) who referred to the capital market, though many people wrongly attribute this achievement to Arrow (Dietrich 1994, p. 19). Regardless of the nomenclature, these costs remained "pure tautology" (Hardt 2004, p. 96), which did not allow them to be translated into empirical research.

Giving importance to transaction costs was a complex process that evolved over time. Depending on the concept adopted, the notion would take on a new dimension with an undeniably significant contribution to its evolution brought by Coase (1937, 1972, 1991, 1992), Arrow (1969), North (1990, 1994) and Williamson (1971, 1979, 1991, 1994, 1997, 1998). Initially, transaction costs mainly referred to charges related to mediation in trade (Hardt 2009). In the 1960s, the concept was expanded to the costs associated with searching and obtaining market information, and then from the 1970s they also included contracting, contract supervision and the operation of market institutions (Klaes 2001, p. 179). Further research led to the distinguishing of a group of definitions of transaction costs which mainly focused on the transfer of property rights from the seller to the buyer. Since the late 1970s quite a lot of emphasis has been put on measuring transaction costs and on their operationalisation, which has led to the creation of definitions that were more applicable from the perspective of quantitative analyses. However even after decades of research on transaction costs it is difficult today to provide one uniform definition of the term. Table 2 provides a summary of the most popular definitions that can be found in the literature.

Table 2

Current definitions of transaction costs

The scope of the definition	Author	Definition
Market mechanism	Coase (1937)	The costs of using the price mechanism
	Arrow (1969)	The cost of running the economic system
Property rights	Demsetz (1988)	The costs resulting from the transfer of property rights
	Allen (1991)	The cost appearing when property rights are transferred or they require protection
	Demsetz (1995)	The costs of coordinating resources through market arrangements
Operationalization of the transaction	Barzel (1977)	Involve all the required costs of coordinating and securing a contract
	North, Wallis (1986)	All costs associated with making exchanges, the costs of performing the transaction function
	Wang (2003)	The difference between the prices paid by the buyer and received by the seller

Source: own study based on: Allen (1999); Hardt (2009); Andreea-Oana (2010).

Research on the origins of transaction costs shows that in the studies from the second half of the nineteenth century onwards, one could find mentions of additional costs that had to be incurred in the exchange of goods. However these costs were not the focus of interest for researchers who did not analyse their significance.

In the 1930s and 1940s the lack of costs governing trade exchange started to be questioned. These costs were analysed in the context of capital investment in the financial market. Only later were the findings of this research translated into transactions carried out in the commodity market. Years later, as Wallis and North (1986) indicated with their study of the American economy, the doubts that began to surface in 1940s were well-founded. The value of transaction costs was increasing significantly. Two approaches utilising elements of transaction cost theory began to develop independently. The first one referred to the inclusion of transaction costs in the general equilibrium model as well as determining the demand for money in the economy. This trend largely corresponded with neoclassical trends and combined both approaches. At the same time an approach developed according to which transaction costs were treated as a consequence of the transfer of property rights.

The works by Williamson (1971, 1979, 1991, 1994, 1997, 1998) proved to be ground-breaking for the importance of transaction costs in economic analysis. He showed that transactional analysis can be applied in many areas, especially in relation to the forms of organisation of transactions in the market (vertical integration, franchising, licensing, etc.). Research using these assumptions has been carried out continuously at the level of economies, sectors, as well as individual companies. The literature emphasises that the application of transaction costs as an analytical tool is very broad, but so far many fields have lacked conclusive empirical research results (Carter and Hodgson 2006).

The theory of transaction costs is considered to be a very important research tool because it has high cognitive value. Cognitive value means that with the use of a given concept it is a possible to explain the causes and consequences of the phenomena that surround us (Woodward 2003). As a result, in order for a given theory to be considered cognitive, it must meet at least three criteria: being insensitive to changes in the environment, being accurate and internally consistent (Ylikoski and Kuorikoski 2010, p. 204). The criterion of insensitivity means that the assumptions and hypotheses verified by means of the theory should provide similar conclusions irrespective of the external conditions in which they are tested, for example,

similar results should be obtained for different economies in which they are tested. This does not mean that the proposed arguments cannot allow for any deviations and exceptions, but that the theory is internally consistent which is confirmed by proposed assumptions. Accuracy is associated with the message that a given concept conveys. This means that its assumptions and content must be clear and understandable to the people who use it in research. The integrity of the theory, by which is meant the interactions of elements constituting it, is also important. In practice, a theory is considered consistent when it is able to answer the *what-if-things-had-been-different* question, because in this way the theories complement the areas and gaps which earlier theories did not investigate (Hardt 2011, p. 126).

Transaction cost theory emphasises another important feature which constitutes its cognitive usefulness – *factual accuracy*. The neoclassical theory was accused of adopting rigid, unreal assumptions that showed it as a perfect theory which translates into economic reality to a small degree. By introducing the concept of bounded rationality, transaction cost theory has gained a new, practical dimension. The cognitive character of this theory resulted in its application to many research areas combining economics, management, law and even sociology.

4. DECOMPOSITION OF TRANSACTION COSTS

The concept of transaction costs may either refer to a single trade exchange, culminating in the transfer of the title to the goods from the seller to the buyer, as well as to many transactions executed in the form of contracts which provide for long-term cooperation. Depending on the approach, the transaction cost will be considered either in a narrow sense, i.e. only those activities that directly determine the exchange price, or more broadly, including into the analysis the costs associated with the coordination of many auxiliary activities (cf. Niehans 1987, pp. 676-679). The scope of the notion of transaction costs has become not only a matter for discussion by economists but also the cause of inaccuracies in the works of individual researchers; e.g. comparing the costs of the operation of entities selling information as coordination costs or transaction costs (Coase 1937, 1991).

This paper assumes that transaction costs are considered in broader terms, i.e. that they also relate to the costs associated with the coordination of the internal activities of a firm. This corresponds to the perspective presented by Williamson (1979) and sets new research areas in the field of

the management of the organisation of a firm as well as industry efficiency. This approach is crucial from the point of view of minimising the costs of managing transactions which are not a simple sum of direct costs of a single exchange, but the result of direct and indirect costs of a concluded contract.

This approach to the distribution of transaction costs is shown by Williamson, who rather than dealing with their operationalisation, singled out the costs that are incurred prior to the transaction (i.e. *ex ante*) and the *ex-post* costs associated with its realisation and with the activities following as a consequence of the transaction (Williamson 1998, p. 33). In addition he presented the fundamental division between two research areas in the field of transaction costs – these are: the field of management which defines the domains of application of this theory and the field of measurement in which the empirical testing of theoretical concepts takes place.

Wallis and North (1986, p. 97) present a slightly different approach, namely, they define transaction costs as "all costs associated with making exchanges" and therefore, "the cost of performing the transaction function". In their understanding of the costs they do not divide them into those that are present before executing the contract and those related to its realisation, but into strictly measurable and immeasurable costs. North and Wallis's concept is less widespread but it draws attention to an important aspect, which is a transaction mark-up. If, in accordance with Arrow's definition, we assume that transaction cost is "the cost of running the economic system", a mark-up must also be a cost, or at least an equivalent of a cost (Figure 2).

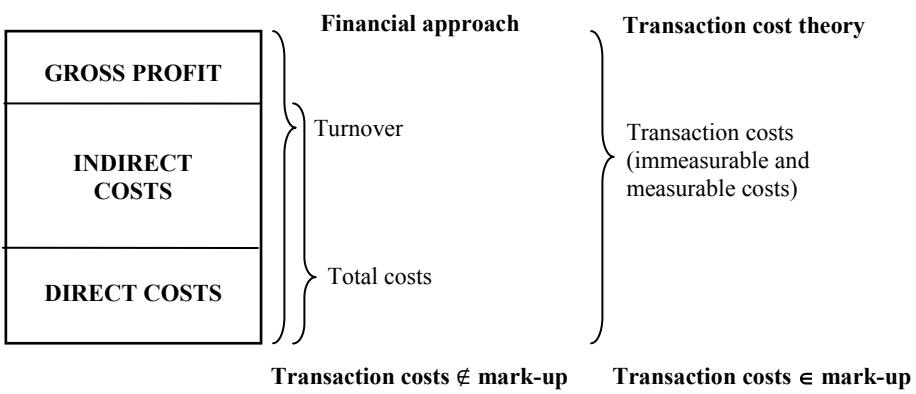

Fig. 1. Mark-up and transaction costs in the financial approach

Source: own study.

Wallis and North (1986) divide costs into measurable costs, which are those that can be expressed in quantitative terms and immeasurable costs including the cost of time and effort involved. This cost is difficult and virtually impossible to estimate in practice so it can be assumed that its value is reflected by transactional profit (Figure 1). In their study the authors focused only on measurable costs, i.e. they only estimated the size of transaction services. This concept is right when we are dealing with one-person companies in which the owner is also the employee. Then the value of the mark-up is the equivalent of the owner's time involved in the transaction (cf. Niehans 1987). For entities which employ workers, Wang's (2003) definition which involves the difference between the selling price and production cost augmented by a profit is more relevant. The author does not indicate whether the net profit or gross profit is taken into account as she defines transaction costs as the difference between what the buyer pays and what the seller receives. The lack of precision in the wording may mean that in this definition the obligatory charges on the financial result are treated as part of transaction costs or not (Cieślak 2009). The employee's salary expressed in terms of a single transaction is then the cost associated with the service of the contract. Net profit (or gross profit, depending on the interpretation), however in this perspective, it does not constitute a transaction cost (see Figure 1).

Both divisions are complementary rather than substitutable and take account of looking at the transaction from different perspectives. In empirical studies, however, detailed operationalisation is important. The problem for many researchers is that the structure of transaction costs will vary significantly depending not only on the industry but even according to the entities that will participate in the trade. However, certain generalisations concerning the majority of cases can be made (Table 3).

Transaction costs in such an approach are not just the sum of the *ex-ante* and *ex-post* costs, but a function that consists of both of them: $f(TC_{ex\ ante}, TC_{ex\ post})$. Martens (2004, p. 111) argues that the *ex-ante* costs should be considered as realised costs whilst the *ex-post* costs – as potential costs. Thus, the greater the emphasis on the preparation of the transaction, the smaller the likelihood of problems resulting from the transaction. Whilst Martens's argument seems to be logical, the identification of *ex-ante* costs with realised costs and *ex-post* costs with potential costs is somewhat controversial, as not all *ex-ante* costs must appear. For example, a company may opt out of the use of contractual safeguards that are included in this group of costs. In contrast the ongoing costs of bureaucracy included in the *ex-post* costs occur regardless

Table 3

Division of transaction costs in a contract

	Ex ante		*Ex post*	
	Noticing a chance to make a profit	**Conclusion of the contract**	**Contract realisation**	**Problem solving**
	$t-2$	$t-1$	t	$t+1$
Market research	Research			
Mediation		Safeguarding costs		Legal settlement of disputes
Contracting	Negotiations	Preparation of the contract	Current bureaucratic costs	
Supervision		"Opportunities" prevention		Amicable settlement of disputes
Institutions	Costs of changing/ forming an organisation	Adaptation of the structure to the contract		

Source: own study based on: Hardt (2009, pp. 211, 230); Gorynia and Mroczek (2013).

of the stage of the preparation of the contract (Table 3). Although there may be a situation in which some *ex-post* costs actually remain potential costs (e.g. the settlement of disputes), the risk of their occurrence will increase significantly. Williamson (1998, p. 35) argues that the *ex-ante* and *ex-post* costs are interdependent and inseparable. It may be that, despite the careful preparation of a long-term contract regulating the obligations in detail (see amongst others: Cramton 1991; Cross 1969; Perry 1986), a renegotiation of the contract will take place as a result of additional factors (e.g. the changing of the volume of contracted product/service). In this case, the cost of servicing the contract will rise again (Hart 1991, p. 140).

In the division of *ex-ante* and *ex-post* costs, a clear distinction between direct and indirect costs is not explicitly outlined. Expenses incurred by an entity in terms of the organisation of the exchange are usually indirect. For example, business trips evaluating the partner's actions will be reflected in the final price of the exchange which means that they are transaction costs within the meaning of Arrow's definition. At the same time, they are not directly associated with a single transaction. Many theoreticians, including for example, Coase – although his position is not clearly declared (1937, 1991) – do not quite accept the perception of transaction costs as such a broad function of business activity. A similar approach, as noted by Arrow (1969), allows to search for answers to the question of why some companies

decide to "replace the market with an internal organizational structure" and others prefer to remain in contractual relations (Williamson 1971, p. 114).

Many theoreticians (North and Wallis 1986; Williamson 1985; Masten 1996) limited their discussions concerning transaction costs to a view from the perspective of a company supplying a contracted product or service. However, in the literature there is also a division of costs into the costs incurred by the entrepreneur and those attributable to recipients. It is a division used mostly in the field of management and in most cases the recipient is associated with the consumer, a non-entrepreneur. This approach emphasises the definition of costs as the determinants of the price mechanism since price in this case will be the result of the costs incurred by both parties. A classic example of cost-sharing is the dispute about quality control in a company. If the obligation remains with the supplier, it increases the final price, whereas in the reverse situation it leads to its fall. In either case, however, it remains undeniably, a transactional cost shaping the exchange (Blois, 1996, p. 213). Similarly, depending on the chosen terms of delivery, the same can be said about transportation and insurance costs as well as safeguards such as letter of credit (following Wallis and North (1986) some argue that transportation costs are not transaction costs; for more details see the following section).

5. WILLIAMSON'S APPROACH TO THE TRANSACTIONS' DIMENSIONS

In his discussion of transaction costs, Fischer (1977, p. 322) indicated that even the approach to the organisation of the company through the costs function may call to mind a tautology. No clear definition of transaction costs resulted in the blurring of boundaries between what actually had to be accounted for in the analysis and what remained outside this equation. This has led to the promulgation of the idea of the dimensioning of a transaction and to emphasising the analysis of its various aspects (Williamson 1997, p. 13).

The basic unit of analysis in the theory of transaction costs is the transaction itself which is characterised by three major features: conflict, reciprocity and order of actions (Commons 1932, p. 4; Baudry and Chassagnon 2010, p. 483). While conflict, understood as the divergence of interests and reciprocity relations, exists in every contract, the order of actions can take different forms. Therefore, there are three basic dimensions which determine the assumptions as to the form of the organisation of the

transaction and which will be described later in this section. These are asset specificity, uncertainty and frequency (Williamson 1998, pp. 65-73).

When choosing the form of business organisation, asset specificity is often indicated as a key aspect and, to a lesser extent as the frequency and uncertainty of making a transaction. Usually, however, the analysis of the problem of the form of contract (understood here as any form of organisation of activity, that is, both outsourcing and internalization) covers all three criteria. In addition, analytical models may contain other, additional determinants that are relevant to the given industry or phenomenon (cf. Everaert, Sarens and Rommel 2010, p. 9).

Asset specificity underlies the transaction cost theory because if contracts were not divided into those requiring special purpose investment and those requiring general investment, one could go so far as to say that the market is fully competitive (cf. Williamson 1998, p. 69) and therefore, all companies would have an equal chance to make the transaction.

When deciding to accept a contract that requires non-standard inputs, a company is faced with the need to utilise, most commonly two categories of assets which in the vast majority of transactions are non-transferable (*idiosyncratic investment*). These assets are human capital or workers with experience, specialised knowledge of the terms of the transaction and the production process as well as tangible assets, i.e. the equipment used to service the contract (Monteverde and Teece 1982, p. 208; Klein 2005, p. 440). Human capital is crucial in services (e.g. accounting, IT outsourcing), whilst fixed assets – in the case of the production process (e.g. sub-supplies). Furthermore, in some cases, the specificity of asset location may take place. With high asset specificity the parties of the transaction may experience a *lock-in* situation or strategic exclusivity (Hax and Wilde 1987, p.12). This will mean high costs in repudiating the contract and its organisation in a different form.

The lack of perfect information about the market and the assumption of partner opportunism results in a situation in which the parties to the transaction must make decisions without knowing the actions of the other market players. This uncertainty is called behavioural uncertainty because the possible consequences of the events occur as a result of subjective, not always rational, human behaviour (Williamson 1998, p. 79). In addition to behavioural uncertainty, there is also external uncertainty, namely the likelihood of unexpected changes in the legal and economic environment as well as in the immediate competitive environment (Bremen et al 2010, pp. 3-4).

Although Williamson (1998) pointed to frequency as one of the dimensions that should be considered in the analysis of transaction costs many researchers attached little weight to it when compared to other components (cf. Dietrich, 1994; Bremen et al. 2010; Nicita and Vatiero 2011). However, when deciding on the form of the organisation of the activity, frequency does not only refer to transaction costs but also to production costs. This is due to the fact that usually a higher frequency of transactions requires higher production capacity and thus raises the question of the minimisation of both types of costs.

Frequency is identified, in this sense, with the volume of products or services sales. This is decisive in relation to high asset specificity because, amongst others, recurring transactions increase the motivation to invest in assets of low transferability. The relationships occurring between the dimensions suggest that the omission of any one of them in the analysis may result in an incomplete understanding of the problem.

6. TRANSACTION COSTS IN THE MESOECONOMIC PERSPECTIVE

Over the years, researchers have always highlighted that since transaction costs are embedded in the transactions, the research unit in their analysis should be a single transaction. However, since it is fairly difficult to extract data on a single transaction, researchers broaden the analysis to the set of transactions that are carried out by a company. Hence, transaction costs do not refer directly to the transactions themselves but to companies. The literature overview reveals mostly studies on the impact they bear on company's operating models, their performance, internationalisation process etc. and scarcely touch upon whole industries or economies. Therefore, one may unconsciously assume that firm-level is the only valid level for transaction-costs-based analysis. However, by invoking the transaction costs definition and Wallis and North's (1986) study we argue that this is not necessarily true.

One of the most general, but at the same time, most accurate definition of the transaction cost is the one invoking "the cost of exchanging property rights" (Demsetz 1988). The notion includes all the costs that need to be incurred in order for a good or service to pass into the buyer's hands. Of course these costs will be generated by a single transaction but will eventually be visible in a company's overall financial statement. If we assume that the aggregation can be done on firm level, it could also be

carried out on industry or macroeconomic levels. Coase (1990) strongly suggested that it was high time the economy started bonding with accounting to jointly generate answers on the transaction costs level. He emphasised that financial statements are the source of information needed to estimate the so far blurred concept of transaction costs.

Wallis and North (1986) were among the firsts to attempt to measure transaction costs in the American economy. Although they stress that they do not strictly measure the costs but assess the value of transaction services, in their analysis they constantly invoke transaction costs. By using census reports they concentrate on wages of transaction occupations in non-transaction industries, since by that time gaining information on other costs was improbable. Nonetheless, by distinguishing transaction and non-transaction industries and assessing the transaction services on the macroeconomic level, Wallis and North have stepped out from the boundaries imposed by many previous studies.

One may argue that an industry consists of more than just firms competing in the market. There are local institutions, clusters and other entities that are not directly involved in the industry sales. Their functioning, however, does not create additional transaction costs other than those visible in the financial statements of the companies making sales. Therefore, even if their existence generates any costs that could be perceived as transaction costs (e.g. negotiations of contracts carried out by cluster members) they will be included in the membership fees and therefore will be assessable using the company data.

Based on Wallis and North's approach, we would now like to discuss the possibility of assessing industry transaction costs. Firstly, we do not view the economy as a division of transactional and non-transactional sectors. Wallis and North argue that some of the industries (e.g. real estate, finance, insurance industries) act as intermediaries and therefore are bound to be seen as a transaction sector. We argue that all of the industries involve both transaction and non-transaction costs, hence they can and should be regarded as separate companies and not primary providers of transaction services. Having said that, we would like to propose a measurement of transaction costs within industries.

As various transaction costs definitions indicate, it is debatable to explicitly decide what accounts for such a cost and what does not. Therefore, it is crucial to underline that we are attempting to make an approximation only, and not claiming to measure the exact level of transaction costs within the industries. North and Wallis applied labour costs as their proxy but we

fear it to be insufficient. The profit and loss statements of companies contain additional information on expenses incurred while carrying out transactions. The level of transaction costs can be understood as the total industry transaction costs to the total industry revenues. Four main parts of the profit and loss statement should be taken into consideration: gross profit, operating profit, profit before tax, and net profit (Table 4).

As various definitions underline, transaction costs should be associated only with the core activities of the company. Therefore, the starting point for the calculation is the gross profit from sales, which expresses the difference between revenue and sales costs and therefore can in no way be associated with transaction costs (since it covers the costs associated with the production or purchase of the goods sold). First, transaction costs can be distinguished at the level of the costs of sales and administrative expenses. Whilst the costs of sales are fairly clear (marketing, transportation etc.), some may doubt the inclusion of the administrative costs (Wallis and North do not agree that transportation costs account for transaction costs, whereas we perceive them as such since they are indispensable to allow the transfer of the property right from the seller to the buyer). However, they cover, among others, legal fees and administrative staff wages, which at least partly are the costs needed for running the daily operations. Coase (1990) strongly suggested that administrative costs cover opportunity costs (which some claim to be immeasurable) and therefore ought to be included in the calculations. Also income tax will only partially be a transaction cost as it depends on both operating and non-operating income as well as on the expenses of the company. Net profit, although in terms of the statement is not a cost, represents a fee that the buyer has to bear in order for the seller to be willing to make the transaction. It is an equivalent of the unmeasurable transaction costs (risk, information asymmetry etc.). Operating expenses such as "impairment losses on time-barred, cancelled, uncollectible amounts receivable, or write-down of amounts payable" (Accounting Act, p. 19) will also constitute a part of transaction costs. However, the profit and loss statement also embraces other costs that are non-transaction costs. These are non-operating expenses, which include, among other things, the interest rates of financial instruments and dividends. Extraordinary losses are understood to mean the losses arising from events that are difficult to foresee, beyond the operating activities of an undertaking and unrelated to its general operating risk (Accounting Act, p. 19) and are also excluded from the category of transaction costs.

Table 4

Transaction costs in the profit and loss account breakdown

Statement Position	Includes:	Transaction costs
Net proceeds from sales of products, goods and materials	– Net proceeds from sales of products – Net proceeds from sales of goods and materials	
Costs of products goods and materials sold	– Manufacturing costs of products sold – Value of goods and materials sold	
Gross profit (loss) on sales		
Cost of sales		Yes
General administrative expenses		Partially
Profit (loss) on sales		
Other operating income	– Profit on disposal of non-financial fixed assets – Subsidies – Other operating income	
Other operating expenses	– Loss on disposal of non-financial fixed assets – Impairment loss on non-financial fixed assets – Other operating expenses	Partially
Operating profit (loss)		
Financial income	– Dividends and share profits – Interest – Profit on disposal of investments – Investments' regulation – Other	
Financial expenses	– Interest – Loss on disposal of investments – Impairment loss on investments – Other	
Profit (loss) on ordinary activities		
Result of extraordinary events*	– Extraordinary gains – Extraordinary losses	
Gross profit (loss)		
Income tax		Partially
Other compulsory charges decreasing the profit (increasing the loss)		
Net profit		Yes

Note: *The amendment to the Accounting Act of 23 September 2015 requires the extraordinary gains and losses to be included in the other operating income and expenses, respectively. The change was included as of 2016.

Source: own study based on The Accounting Act.

The question arises of how to assess the share of the "partial" transaction costs categories. As the meso or macroeconomic accounts rarely include detailed enough data to estimate the exact numbers, an approximation needs to be given. One way to attempt this is to perform a case study analysis of separate companies and later translate their results into mesoeconomic level. That may indicate that the share of "partial categories" of transaction costs will differ depending on the given industry. This however, goes beyond the scope of this particular article.

CONCLUSIONS

Although transaction costs are dominantly a firm-level concept, the assumptions underlying that theory have clearly shown that no major obstacle exists to apply them into meso or macroeconomic analysis. The bone of contention here lies with the numerous definitions that hinder the process of establishing common operationalisation. Applying Williamson's transactional dimensions for more aggregated levels (industry, economies) seems useless and therefore another solution for costs measurement is needed. The profit and loss statement analysis constitutes only one of the possible propositions towards the issue.

Assessing the level of industry transaction costs may become a starting point for further economic research. Transaction costs are commonly associated with determinants of company's organizational structures, possible foreign entry modes etc. They have proven to be a useful tool in understanding a company's operations, therefore they may similarly prove valuable in explaining various industry patterns.

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