

Comparing the impact of regulatory regimes Combining Transaction Cost Economics and Institutional Legal Theory

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Abstract

Transaction Cost Economics (TCE), developed by Oliver Williamson, has proven to be a methodology that provides useful insights into the way in which transactions should be organized. Its original form was developed in the context of the private sector. Next to analysing regularities between characteristics of transactions and characteristics of governance structures, a new line of research concerns the question whether the choice for a particular governance structure actually matters. This new line of research is of great interest for analysing the impact of regulatory regimes in the context of the provision of public utility services. However, a mature theoretical foundation for applying TCE to the public sector is still lacking. The characteristics of the public sector require a richer framework and special attention for the legal dimensions of public governance structures. Besides that, a more adequate instrument to measure the impact – in terms of governance costs – is necessary. We propose to extend TCE with elements of Institutional Legal Theory (ILT), which enables us to compare different governance structures more systematically and to analyse their impact. The overall goal is to extend TCE to the public sector.

1 Introduction

In the not so distant past, the provision of public utility services in Europe was a governmental responsibility, both at the local and national levels. Public utilities include, for example, public transport, energy, and telecommunication. Service provision was entrusted to public enterprises that enjoyed monopoly power. The regulatory regime was weak as public ownership was thought to provide effective protection against monopoly power. This has changed dramatically since the 1980s. For about three decades now, the provision of public utility services in Europe has been engaged in a process of intensive changes. Privatisations have

taken place, markets have been opened to competition, and entirely new regulatory regimes and administrations have been created. During the same period the EU has engaged itself in regulating the markets for e.g. telecommunication, energy, and public transportation. However, the ways in which the different European countries have implemented this reform agenda vary considerably, leading to a wide variety of arrangements for the provision of public utility services. This raises intriguing, comparative questions concerning the impact of different regulatory regimes. For example, does the choice for one or the other institutional arrangement matter? Or, what arrangements do perform better? And when do they perform better?

Ferris and Graddy (1998) point out that many different new structures have been introduced, but that it should be generally understood that the relative success of such initiatives depends on the contexts in which they have been initiated. Outsourcing and privatisation are, in their view, not always the most efficient ways to provide a public service. Especially, when not only production costs are taken into account, but also transaction costs, that is, costs of negotiating, writing and monitoring contracts. To gain a better insight into all the costs caused by the new structures, costs should be defined more broadly (see also Nelson 1994).

Transaction Cost Economics (TCE) provides a theoretical framework for analysing the efficiency of regulatory regimes or – in TCE's terminology – governance structures. Recently, researchers in TCE have become more aware of the importance of the impact of a particular governance structure. This new line of research is called “second generation TCE research” (Yvrande-Billon and Saussier 2005). Researchers are no longer only interested in whether regularities exist between characteristics of transactions and the choice for a particular governance structure. Indeed, there is a growing interest in the question whether this choice actually matters (Yvrande-Billon and Saussier 2005). An increasing number of researchers has become interested in the *impact* of governance structures. The impact can for example be interpreted in terms of efficiency, survival or quality. In this paper we are interested in the *efficiency* of governance structures, because efficiency is one of the most important arguments for institutional change in the provision of public utility services.

We propose an analysis combining TCE (Williamson 1985) and Institutional Legal Theory (ILT) (Ruiter 1991, 2004) to address the question *whether some modes of governance outperform others systematically*. We use TCE's central hypothesis, the *discriminating alignment hypothesis*, as a starting point. This hypothesis states that a transaction cost economizing result is reached when transactions with spe-

cific characteristics are aligned with governance structures with specific characteristics. However, it is necessary to enrich TCE – which was originally developed for the *private* sector – to be able to analyse *public* sector governance structures. Furthermore, we need a framework to analyse the impact of governance structures. This should give us some answers regarding the question whether alignment between transactions and governance structures actually leads to a higher efficiency than misalignment between the two. We use ILT as an instrument to describe and compare legal institutions systematically. In addition, ILT provides a detailed specification of cost hazards in different regimes.

In Section 2 we start with a short description of public utilities and the changes that have been introduced with regard to the provision of these services. Then, in Section 3, we describe TCE's basic notions. After that, in Section 4, we discuss TCE's contribution to the provision of public utility services and we give an overview of related empirical work on this topic. In Section 5, we discuss the way in which the impact of governance structures can be measured by using ILT. Finally, in Section 6, we end with a conclusion and a discussion of further research.

2 Public utilities¹

Public utilities are a crucial element of the economies of the European Union, as they provide services of general interest to the public at large and are an important part of the economic infrastructure. Public utilities include, at the local level, water distribution and water treatment, sewage (collection and treatment), gas utility (operation and management), and garbage disposal. At the national level, public utilities are for example public transportation, telecommunication and energy. Traditionally, the provision of these services was a responsibility of publicly-owned enterprises and often even of the government directly. Moreover, public utilities used to operate in a strictly regulated environment and often as a monopoly.

Major changes have occurred in technology and the regulatory environment of public utilities. Whereas public utilities traditionally exhibited a high degree of vertical integration, with production, transmission, and distribution often organized within a single firm, recent public policies have led to increasing vertical disintegration in the utilities sector. Arms-length exchanges increasingly replace vertical integration in a number of regulated environments. Yet, the alternative outcome is seldom the competitive spot market officially envisioned by regulators.

¹This section benefits from a comparative study of EIRO (European Industrial Relations Observatory) (June 2005) on industrial relations in public utilities.

Instead, long-term contracts appear to be the preferred norm in actual practice (Crocker and Masten 1996).

Liberalisation (and privatisation) efforts have had varying impacts, depending on the different sectors, ranging from major transformations in the telecommunications sector to limited changes, at least so far, in other fields such as the production and distribution of electricity, gas and water distribution and of public transport. In all cases, however, financial constraints have been strengthened and controls on cost-effectiveness and efficiency have increased, while competition has been introduced to different degrees. Furthermore, the issue of regulation has become crucial, both to promote competition in a structurally difficult context and to balance the interests of providers, users and the public at large, given the public interest relevance of these services.

A key aspect of the transformations in public utilities since the 1990s is the shift from a situation of direct public control to looser and more indirect forms of governance, which include a significant use of market mechanisms, competition and more or less independent regulatory bodies, such as agencies or authorities. Both the initial and current arrangements differ across countries in terms of the degree of state intervention and competition. However, the above description of the general trends holds for most of the European Union countries - not least because certain liberalisation policies in the energy, telecommunications and transport sectors, as well as for postal services have been developed within the institutional framework of the European Union. These initiatives started in the 1990s and were in some cases reviewed and consolidated in the early 2000s; notable exceptions are Cyprus and Malta, where the role of the state has remained prevalent and the impact of liberalisation has so far been marginal, partly due to the limited potential for competition.

Public utilities are now often operated by commercial firms, while the involvement of public bodies has almost disappeared (though it remains significant in Austria, Cyprus, Malta and, to a certain extent, in some of the Nordic countries, such as Norway and Finland); the ownership and market structures have not changed dramatically though. Public ownership still plays an important role (with the notable exception of fixed-network telephony) and, even in the cases where liberalisation and privatisation are more fully implemented, dominant positions, nationally or locally, of public bodies are still common. Furthermore, the implementation of the liberalisation of public utilities is far from homogeneous across the European Union. These developments have all led to a wide variety of institutional arrangements.

In conclusion, we observe a general tendency towards liberalisation, privatisation, and outsourcing, but there are many differences in the way they have been implemented. This raises the question what the impact of the different governance structures is. Transaction Cost Economics provides a framework to analyse this.

3 Transaction Cost Economics

Transaction Cost Economics is situated within New Institutional Economics. New Institutional Economics aims at opening the “black box” of institutions. The goal is to explain what institutions are, how they arise, what purpose they serve, how they change and how – if at all - they should be reformed (Klein 2000). In New Institutional Economics, special attention is paid to institutional change and reforms at four levels, which are (i) social embeddedness, (ii) institutional environment, (iii) institutional arrangement and (iv) resource allocation and employment. More specifically, the question is whether changes and reforms, at each of these levels, lead to efficiency. TCE focuses specifically on changes at the level of institutional arrangements or governance structures in the *private* sphere. Governance structures are the rules that govern an exchange relationship between trading partners. Some governance structures lend themselves better to specific transactions than others. In some cases the firm is the most suitable form. A common example is the automobile industry. In other cases the most suitable governance structure is a long-term contractual relationship, for example, between suppliers and supermarkets.

TCE’s central proposition is the so-called *discriminating alignment hypothesis*. It hypothesizes what is, from an efficiency point of view, the governance structure that is the most suited to support transactions of a given kind. Efficiency is defined in terms of a minimization of transaction costs. The hypothesis gives expression to a matching principle stating that (Williamson 1998)

transactions, which differ in their attributes, are aligned with governance structures, which differ in their cost and competence.

This means that characteristics of the transaction should ideally match with characteristics of the governance structure. Williamson (1999) introduces a *remediableness criterion* for assessing efficiency. This criterion holds that

an extant mode of organization for which no superior feasible alternative can be described and implemented with expected net gains is presumed to be efficient.

This means that only feasible alternative governance structures should be compared in a transaction cost analysis, not hypothetical ideal alternatives.

The unit of analysis is the *transaction*. The core of the transaction concept is the exchange of a good or a service. To Williamson (1985, 1999), the transaction is characterized by three characteristics, which are asset specificity, uncertainty and frequency. *Asset specificity* refers to the specific knowledge or technical skills that are necessary with regard to a certain good or service. In some cases this knowledge and these skills can not be used alternatively. Consequently, a high bilateral dependency exists between partners. *Uncertainty* refers to behavioural uncertainty. This can be the consequence of opportunistic behaviour of one of the partners in an exchange relationship. It can also be the result of a lack of information about expected future developments. The third characteristic is the *frequency* with which transactions of a certain kind take place. Sometimes a transaction takes place for one time only. In that case high transaction costs are not to be expected. However, when trading partners often exchange services, they benefit from a long-term contract to avoid frequent negotiations over specific transactions.

The features that characterize *governance structures* are administrative controls, incentive intensity and contract law (Williamson 1991). *Administrative controls* refer to instruments of control and accountability. *Incentive intensity* is the extent to which incentives are used. *Contract law* is defined in terms of classical contract law (or dispute resolution by court), neoclassical contract law (or dispute settling by arbitration) and excuse doctrine and forbearance (or internal dispute settling). Variations in these characteristics lead to a wide range of governance structures. Williamson designs a spectrum with three types of governance structures, namely the spot market, hybrid forms and the firm. On the one extreme, the *spot market* scores high on incentive intensity and dispute resolution by court. On the other extreme, *the firm* scores high on administrative controls and internal dispute settling. In between are the *hybrids* that share characteristics of both governance structures.

Efficiency is defined in terms of a minimization of transaction costs. A *transaction cost economizing result* is reached by a minimization of transaction costs. Transaction costs are the costs that partners have to make in an exchange relationship. Williamson distinguishes between ex ante and ex post costs (1985:388). *Ex ante* transaction costs are costs that partners must make before a transaction is actually performed. These are costs of drafting, negotiating and safeguarding an agreement. *Ex post* transaction costs are costs that are made after the transaction has been performed. These costs take different forms and include the costs of

monitoring, the costs of conflicts and their settlement, the costs of adaptation to changes, and costs of effecting secure commitments.

With the previous discussion of the characteristics of transactions and governance structures, we can now formulate the matches that should ideally occur between them. We look into the consequences of transactions that vary on the characteristics of asset specificity and uncertainty (Williamson 1985, 1991). The higher the asset specificity of a certain transaction is, the higher the transaction costs associated with market governance become. In that case, hybrids turn out to be preferable over markets. At high levels of asset specificity, even hierarchy may become the preferable governance structure. When uncertainty is taken into account as well, the following hypothesis can be formulated. When both asset specificity and uncertainty are high, transaction costs in the market will raise. Consequently, in these situations hierarchies are preferable to both hybrids and markets. Hierarchy is then the most efficient governance structure.

4 Transaction Cost Economics on public utilities

TCE was originally developed to help to determine the efficiency of governance structures in the private sphere. Yet, Williamson (1976) already addressed public utility services and the importance of transaction costs in the public sector when analysing franchise bidding in the case of cable television. Parties had to bid for the right to install and operate a cable television system, when the award was to go to the bidder offering the lowest monthly fee for basic service. Problems arose because of an overly simple award criterion that resulted in a misleading and possibly deceptive award, disputes over price, quality, and timing during contract execution and, the inability or unwillingness of the local government to exercise its rights to discipline the franchisee by acquiring its assets and transferring them to an alternative operator (Crocker and Masten 1996). Williamson observed that franchising, therefore, often ended up in intensive government regulation. The government wanted to reduce uncertainty and thereto introduced safeguards. These caused transaction costs for the government, which had to be taken into account. Such transaction costs are often overlooked because – even though they have budgetary impacts – they are difficult to discern and their impact is subtle.

Williamson (1976) argues – likewise does Goldberg (1976) – that the problems associated with contracting solutions in the types of environments encountered in public utility transactions are likely to be difficult to tackle. Firstly, where competitive bidding can indeed be an effective way of determining the lowest cost supplier

when the price of the good or service being procured is the buyer's only concern, it works less well for complex goods and services where the buyer cares more for the quality, reliability, and other attributes of the procurement. Secondly, because supplying public utility services typically requires large, durable investments in production and distribution facilities that are specialized to a particular market, the efficient governance of public utility transactions is likely to require long-term contracts to avoid the hazards of repeated haggling over the terms of trade once those investments are in place. Finally, uncertainty about cost and demand conditions over such long horizons and the complexity of public utility services will leave long-term contracts for public utility services inevitably incomplete (Crocker and Masten 1996).

As Goldberg (1976) puts it: "the problems are intrinsic to the service". Especially public utility services – characterized as complex or uncertain transactions requiring durable, specialized investments – require governance structures that are aligned with these characteristics (for example long-term, incomplete, relational contracts). Here we touch on the central idea of TCE, namely that characteristics of transactions should be aligned with characteristics of governance structures to achieve a transaction cost economizing result. Only recently, Williamson (1999) started to extend TCE theoretically to the provision of public services and to decisions that governments must make between providing a service themselves, or outsourcing it through contractual arrangements. To our knowledge, that work is the only attempt to expand theoretically the implications of applying TCE to the public sector.

Williamson argues that TCE can also be applied to public sector issues. Furthermore, he argues that we need to have a better economic appreciation of the properties of alternative modes of governance in the public sector. The most important adjustments to his original theory – developed for application to the private sector – are adjustments to on the one hand the concept of the transaction and on the other hand the spectrum of governance structures.

4.1 Public sector transactions

Employing transactions as units of analysis presumes an identification of features in which transactions differ from each other. After all, TCE assumes that rational economic reasons exist for organizing different transactions in different ways. Williamson (1981:552) defines the transaction concept as follows. A transaction occurs when a good or service is transferred across a technologically separable

interface. Williamson compares a transaction with a machine. In mechanical systems we look for frictions. Do the gears mesh, are the parts lubricated, is there needless slippage or other loss of energy?

The economic counterpart of friction is transaction cost: do the parties to the exchange operate harmoniously, or are there frequent misunderstandings and conflicts that lead to delays, breakdowns, and other malfunctions?

The relationship between the government on the one hand and the private firm or public bureau on the other hand can also be seen in these terms.

What is the content of the relationship between the government on the one hand and a private firm or public bureau on the other hand? In other words, what is the content or subject matter of the public transaction? Transactions of this kind are concerned with the delivery of certain goods or services – for example, public transport, water supply or garbage collection – to the public. However, public transactions are not primarily concerned with the delivery of a certain good or service itself, but more with conditions under which the good or service in question should be provided. We do not address the reasons why the government wants to be involved with certain goods and services or what the government defines as the public interest. We see this as given, because it is a result of the political process, which is beyond the scope of this paper.

The government demands the performance of a certain good or service. In other words, the primary concern is whether the *public interests*, in the context of that good or service, are served in the right manner. In exchange for this the private firm receives the privilege to sell the good or service to the public. The content of the public transaction is thus determined by on the one hand, the promotion of the public interest and, on the other hand, the right to sell a good or service. These conditions concern, for example, the content of a good or service (quality, service delivery and quantity) or the optimal functioning of the market mechanism.

Contractual hazards in the public sector arise, for example, when the public interest cannot be defined precisely enough. This leads to uncertainty and high transaction costs. Uncertainty is one of the characteristics of the transaction distinguished by Williamson. He further distinguishes asset specificity and frequency (Williamson 1999). These characteristics are the same characteristics as Williamson distinguishes in the private sector. For the public sector to these three a fourth characteristic is added, namely *probity*, referring to the loyalty and

integrity of officials. However, probity is not really a characteristic of the transaction but of the governance structure (2005). Williamson implicitly confirms this by stating that probity is delivered through leadership and management attributes (Williamson 1999:322). Furthermore, it is questionable whether this characteristic is important in the public sector only. We assume that probity is important in any hierarchical governance structure, even in the private domain. Other characteristics that can be added on the basis of empirical research are political sensitivity and homogeneity (Nelson 1997). *Political sensitivity* should be taken into account, because it is often difficult to incorporate into a contract or to monitor once the contract is negotiated. *Homogeneity* refers to the homogeneity of the environment, for example, homogeneity in socioeconomic variables such as age, education and income. The nature of the service to be delivered in case of a heterogeneous environment is more complex and is generally associated with a higher degree of human asset specificity. Another characteristic that can be added is *service measurability*, referring to how difficult it is for the government to measure outcomes of the service, to monitor the activities required to deliver the service, or both (Brown and Potoski 2003b).

4.2 Public sector governance structures

Next to the concept of the transaction, the other adjustment is the spectrum of public governance structures. The public sector consists of a wide variety of governance structures. Williamson (1999) distinguishes between privatisation², regulation and public bureaus. *Privatisation* and *public bureaus* constitute the extreme poles of this spectrum. In between is *regulation* that shares characteristics of both governance structures. Both privatisation and regulation are conceived of as hybrid forms. The public bureau is the hierarchical governance structure par excellence.

Like private governance structures, public governance structures are characterized by features such as incentive intensity, administrative controls and contract law. Table 1 shows how the public governance structures can be characterized according to Williamson³. Williamson applies these general theoretical notions to the example of the governance structure of the U.S. State Department. Concerning this example he concludes that the public bureau is the most efficient governance

²Examples of privatisation are franchising, contracting out and outsourcing.

³Note that Williamson uses terms that differ slightly from those employed with regard to the private sector, namely bureaucratization instead of administrative controls and executive autonomy, staff security and legalistic dispute settlement instead of contract law.

| | Privatisation | Regulation | Public bureau |
|-------------------------------|---------------|------------|---------------|
| Incentive intensity | ++ | + | 0 |
| Bureaucratization | 0 | + | ++ |
| Executive autonomy | ++ | + | 0 |
| Staff security | 0 | + | ++ |
| Legalistic dispute settlement | ++ | + | 0 |

Table 1: Public sector governance structures (Williamson 1999); ++ denotes high, + denotes semi-high and 0 denotes neutral.

structure for conducting foreign affairs as compared to regulation and privatisation⁴. The following argument supports this conclusion. There is some asset specificity (mainly human asset specificity), a high degree of probity, while operating cost excesses are small. The first two aspects advocate cooperativeness (as against autonomy) in the set up of the agency and its administration (Williamson 1999). Williamson’s spectrum of public governance structures shows that the public sector is neither a single governance structure nor a hierarchy. Rather this sector is seen as fundamentally different from the private sector and accordingly characterized by divergent governance structures. In TCE the *private* sector consists of *private* entrepreneurs that decide how to govern their relationship. The government has no part in this relationship. The government can be seen as a background actor; as an element of the *institutional environment*.

By contrast, the public sector is defined by the fact that the government is part of the *institutional arrangement* itself. Institutional arrangements are specific guidelines – what Williamson calls governance structures – designed by trading partners to support their *particular* economic relationships (Klein 2000). The government is one of the partners in an exchange relationship. More specifically, the government can be viewed as the entrepreneur in a relationship who needs to make a decision on whether to “make or to buy”. This means that the government needs to decide on whether to contract out to a private firm or to keep the delivery of certain goods and services in its own hands (in-house).

The government as an entrepreneur acts in a context that is different from the context in which the private entrepreneur acts. The government is subject to many constraints. One can think of principles of good government and other legal constraints. It also has other opportunities than private partners. Law is in fact unilaterally imposed by the government. Another important element is the fact

⁴Two reasons for choosing this case are firstly, that even the obvious can sometimes benefit from explication and secondly, that extreme instances often help to uncover ‘essentials of the situation’.

that in any relationship with other parties, the government pursues the provision of a good or service for the benefit of the public. In contrast to the private sector, where parties are legitimated to pursue their own interests, in the public sector, the public interest is involved, that requires to be safeguarded by the government.

4.3 Related empirical research

The amount of empirical research is growing, also concerning the provision of public utility services. Ménard and Saussier are among the first to conduct econometric tests in TCE to explain decisions by governments either to provide a service directly (in-house) or to outsource part (lease) or all of the service (concession or privatisation) to a private operator (Ménard and Saussier 2002, see also Huet and Saussier 2003). They apply the TCE framework to the case of French water supply by local authorities. Two questions are addressed by them. What determines the choice of a specific mode of governance among a set of possible forms? How is the performance of alternative modes of governance perform with regard to the same type of transactions? They find that characteristics of the transactions at issue at least dictate partly the choice of decision-makers. Their results also strongly suggest that there is no specific mode of governance that is absolutely preferable. They observe instead some comparative advantages that depend crucially on the characteristics of the transactions governed. Another study (Yvrande-Billon and Ménard 2005) analyses the consequences of the reform of the British railway industry. This study shows that the degree of asset specificity has a direct effect on the efficiency of governance structures. Policy makers have to take this into account when they decide to change existing governance structures.

Brown and Potoski (2003a, 2003b, 2004) use TCE in analysing the delivery of public services by local governments. They focus on concerns about the ability of governments to manage service provision when provided under contract (Brown and Potoski 2003a). Contracting poses a new set of risks to successful service delivery. Using TCE, they identify three categories of risks. These are associated with the type of service contracted, the contract partner and the market context of the contract. The overall empirical findings suggest some clues as to why contracting is sometimes successful and sometimes not, especially with regard to refuse collection (Brown and Potoski 2004). Brown and Potoski (2003b) conclude that applying the transaction costs approach to governments yields important insights. The approach provides a sophisticated and useful means for understanding complex behaviour, such as opportunism of partners and governmental strategic choices.

Nelson (1997) also extends TCE to the public sector and the “make or buy” decisions faced by governments. Nelson concludes that, consistent with TCE’s propositions, the costs of writing and monitoring contracts are an important factor in local public service delivery and that in-house supply is not as inefficient as some previous studies indicate. Nelson makes an analysis of sixty-three local public services, among which five public utilities. He shows that municipal governments are less likely to select external service delivery solutions in environments where preferences are not homogeneous. The nature of services to be delivered in such environments is more complex and is generally accompanied by a higher degree of human asset specificity. Furthermore, he adds political sensitivity as a characteristic of the transaction that can play a role in the decisions of policy makers. Political sensitivity is often difficult to incorporate into a contract or to monitor once the contract is negotiated. Nelson’s general conclusion is that governance structures should not be evaluated in the abstract, but rather compared to the expected performance of the alternative available institutional choices.

Walls et al. (2005) try to find determinants of the market organization of local public services on the basis of an examination of residential waste management. The central question is what explains the organization of local waste and recycling markets? Their results point out that costs are significant in explaining local governments’ choices. In contrast, few political variables are statistically significant. These results hold for both waste and recycling management, providing further evidence that local governments are primarily focussed on costs when choosing between public and private provisions.

This overview is not intended to be complete. It illustrates the kind of studies that have been conducted in the area of the provision of public utilities. Some studies have been conducted on the question whether there are regularities in the ways public services are provided. Moreover, the issue has been addressed what can explain the choices that are made by governments. These studies often make use of standard procedures developed in economics, such as statistical or econometric tests. Only a few studies focus on the impact of the choice for a certain institutional arrangement. Here econometric tests have been used as well. Finally, despite progress in these studies, the fundamental problem remains that much of TCE was originally developed for the private sector and has not yet been adjusted to a frictionless application in the public sector.

This presents us with some challenges. One challenge is that much work has to be done to make TCE applicable to the provision of public (utility) services. In Section 4.1 and Section 4.2 we have made an attempt to describe and define TCE’s

basic concepts in the context of the public sector. Furthermore, although a start has been made with the analysis of the impact of governance structures, especially the measurement of the impact is still in a preliminary phase. Besides that, this kind of research is necessary to demonstrate that a proper alignment between characteristics of transactions and characteristics of governance structures does matter. In the next section we take up the challenge of measuring the impact of governance structures.

5 The impact of governance structures

Most of the empirical studies in TCE try to explain contractual choices that have actually been made. These empirical studies often make use of econometric tests. Around 600 of such empirical tests have been conducted. The empirical findings are broadly supportive of transaction cost propositions (Masten 1993, Shelanski and Klein 1995). More specifically, empirical research to date supports the view that transaction cost considerations influence organizational choices and that the theory is therefore a useful tool for understanding and explaining the choice among organizational alternatives (Masten 1993).

The “traditional” empirical approach in TCE consists of an estimation on the basis of transaction cost considerations of the probability that contracting will be chosen over alternative governance forms and then investigating whether the empirical evidence agrees with transaction cost predictions (Masten and Saussier 2002). Therefore, the usual econometric tests of the TCE propositions are indirect. They show that contractual choices correspond to what the theory predicts and infer from this that these choices must have been efficient, that is to say that transaction costs must have been minimized. But they rarely provide hard evidence supporting this conclusion by showing how much is lost by going from the best to the next best institutional arrangement (Joskow 1991).

A next step would be to connect observed “misalignment” – identified on the basis of the theory’s predictions – with observed performances (Yvrande-Billon and Saussier 2005). As discussed by Masten (1993:119)

the existing empirical research tells us surprisingly little about the importance of governance to performance. In economics, the emphasis on positive analysis has led to hypotheses and empirical research seeking to explain actual patterns of organization. But whether a theory of governance choice is a good predictor of actual behavior reveals little

about the cost of failing to choose the correct organizational arrangement and may be a poor guide to whether a particular theory offers sound prescriptions for business decisions.

What may explain why the misalignment hypothesis and its consequences on governance efficiency as developed by Williamson have not been broadly tested is the level of difficulty of constructing tests that are able to cope with the required data (Yvrande-Billon and Saussier 2005). Furthermore, it is a problem to collect data necessary to determine governance efficiency. Nevertheless, several empirical studies already exist, using various methodologies to assess the importance of organizational choices for firm performances from a viewpoint of transaction costs.

TCE's second generation empirical studies are interested in more than only regularities between characteristics of transactions and governance structures. They focus on the performance of governance structures. Existing studies of the performance implications of organizational choices, though limited in number and scope, suggest that organizational form (and organizational choice more generally) has a significant impact on efficiency (Crocker and Masten 1996). Some research supports the hypothesis that alignment yields superior performance.

An important question is how to measure performance, because implementable performance measures are not easy to devise (Masten 1993, Joskow 1991). Various performance measures have been used. Masten et. al. (1991) use governance costs as a measure of performance in their study of the "make or buy" decision. They measure governance costs in terms of costs of internal organization for those processes and components actually organized within the firm. More specifically, their measure of the costs was constructed as the number of hours devoted by management to planning, directing, and supervising a particular component or process times the average hourly management wage rate (Masten, Meehan, and Snyder 1991). Their main results are that misaligned governance leads to lower performances whatever the misalignment and that human asset specificity decreases internal transaction costs. Furthermore, Poppo and Zenger (1998) analyse the "make or buy" decision in the case of information services. As a performance measure they use perceptual measures: high levels of satisfaction represent realized performance expectations. They use satisfaction with three common performance goals: satisfaction with the overall costs, the quality of the service and, with the responsiveness to problems or inquiries (Poppo and Zenger 1998). Their main results are that misaligned governance leads to lower performances when externalization is chosen without consideration of transaction cost economics propositions.

Furthermore, they show that asset specificity does not affect firms' performance but affects market performances.

Transaction costs and governance costs are difficult to measure and cannot be exactly calculated. Evaluation of a non-measurable phenomenon requires a comparison of advantages and disadvantages in a different way. It seems that finding such a different way may be more valuable than persisting in carrying out econometric analyses in evaluating efficiency (Kähkönen 2005). That is why we will use case studies instead in further research. In addition to this, in the next section we propose an alternative way to measure governance costs.

5.1 Working rules

To tackle the problem of the measurement of governance costs we make use of Institutional Legal Theory (Ruiter 1993, Ruiter 2001). Additionally, we make use of the work of Commons (1924) which formed an important inspiration for Williamson's work. More specifically, Williamson's concept of the transaction has been derived from Commons (Williamson 1998). Besides that, we observe other parallels. Most importantly, in the context of this paper, is Commons' concept of *going concerns*. Going concerns are similar to Williamson's governance structures. Commons states that the universal and ultimate principle of going concerns is the principle of *working rules* (Commons 1924:384):

The statement and enforcement of a working rule is accomplished through the process of restricting their liberties, and it is this process that creates automatically the correlative rights and exposures of other individuals. When the going concern imposes these ethical duties, it does so through those working rules which guide its officials, foremen, superintendents, judges, legislature, and which in law are known as powers, liabilities, immunities and disabilities.

The *working rules* of a governance structure constitute, so to say, the legislation to which its participants must comply. Working rules determine the rights, duties and liberties of participants and the extent to which the rights of third parties need to be respected. Working rules simply tell what individuals must, must not, can and cannot do (Commons 1924). They form the constraints that determine the interaction between actors in a governance structure. The way in which these working rules operate is by placing certain limits or by opening up certain opportunities for the choices and powers of the individuals, who are parties to the transactions.

These limits and opportunities of the individual wills may be condensed into the four volitional verbs, may, must, can and cannot.

Governance structures are created to achieve certain goals. Working rules provide a structure for human interaction. They determine the way in which transactions take place. In this way working rules determine the level of transaction costs within a certain governance structure. A change in working rules leads to a change in transaction costs. Commons is not very explicit in this, but in his work we find some examples of the connection between a change in working rules and efficiency. He states (Commons 1924:377),

Economic theory starts with the purpose for which the artificial mechanism in question was designed, fashioned and remodeled, and inquires first, whether that purpose is useful or useless, legitimate or illegitimate, ethical or unethical, right or wrong. Then it inquires whether the artificial mechanism in question accomplishes that purpose in an efficient or economical way, and, if not, what is the limiting factor, out of the thousands of cooperating factors, that obstructs the operation, and to what extent that limiting factor can be, and requires to be, controlled in order to facilitate the mechanism and accomplish its purpose. Then it adopts or changes the working rules, that regulate the actions and transactions of participants.

Commons illustrates this with an example of an automobile (Commons 1924:377):

What is the theory of my Ford automobile? That mechanism was designed to move across the country under my guidance carrying a load, and thereby accomplish a purpose deemed useful by me. Suddenly it stops without being directed by me to do so. It gets out of control. I then get out and seek the limiting factor, perhaps a little wire crossing another wire. I change somewhat that limiting factor and resume control of the mechanism. From the standpoint of economic theory that little wire was the limiting factor at the moment and under the circumstances. [...] What the economist does, if possible, is to uncover that limiting factor and to point out, if possible, the extent, degree and point of time at which it should be modified or counteracted, in order to control all of the factors for the further purpose deemed important.

These limiting factors or – as he calls them elsewhere – frictions, are similar to Williamson's transaction costs. As discussed in Section 4.1, Williamson states that

“the economic counterpart of friction is transaction cost”. This presents us with the connection between working rules and transaction costs. However, Commons does not become very specific. He maintains a very abstract level of theorizing and he is not very interested in concretization of his concepts. To be able to compare the impact of different governance structures, working rules need to be compared. In this way we can get a picture of the level of governance costs. To be able to compare these working rules, we need first and for all an instrument to define and compare such working rules. For this reason, we turn to Institutional Legal Theory.

5.2 Institutional Legal Theory

Institutional Legal Theory (ILT) was originally developed by MacCormick and Weinberger (1986) and was further developed by Ruiter (1993, 2001). ILT views legal institutions as distinct systems of legal rules in the same sense as Commons’ working rules. It provides a formal language to describe and compare the working rules of legal institutions systematically, while it makes it possible to formulate governance structures in legal terms. Legal institutions are systems of legal rules governing specific social action in the context of a comprehensive social order, which systems purport to meet with general acceptance. General acceptance means that the working rules of a governance structure are socially taken into account as facts (Ruiter 2004). A typology of *forms* legal institutions may take, follows below (Ruiter 2004).

Legal quality *A social role of a particular person in relation to any other person regulated by a distinct legal system with the form of a characteristic of that person.*

Legal status *A social position of a particular object in relation to any person regulated by a distinct legal system with the form of a characteristic of that object.*

Personal legal relation *A social relation of particular persons regulated by a distinct legal system with the form of a relation between those persons.*

Objective legal relation *A social role of a particular person with respect to a particular object in relation to any other person regulated by a distinct legal system with the form of a relation between that person and that object.*

Legal configuration A *social relation* of any person specifically related to a *particular* object and any other person specifically related to another *particular* object regulated by a distinct legal system with the form of a relation between those objects.

Legal person A *particular* legal system's *social position as a person* in relation to any other person regulated by a distinct legal system with the form of the legal status "personality" of the former legal system.

Legal object A *particular* legal system's *social position as an object* in relation to a legal system.

With this typology we are able to describe the components of a legal regime and the logical relations between the components. This characterization provides an instrument to describe and compare the governance structures systematically. This makes it possible to compare governance structures in general and between different European Union countries, because this typology provides an instrument that is capable of comparing legal regimes without reference to the legal system in which the legal regimes are located.

When we take a look at the spectrum of governance structures formulated by Williamson (see Section 4.2), we observe that the features of incentive intensity, bureaucratization, executive autonomy, staff security, and legalistic dispute settling are not distinctive enough and that it is difficult to operationalize them. This makes it difficult to compare between governance structures. Besides, Table 1 shows that the values of the characteristics do not vary much, although there are many differences between public governance structures. Especially, the specific constraints and opportunities of the government and the relation between the government on the one hand and private firms or public bureaus on the other hand are not included.

To describe these public governance structures more systematically, ILT makes a one-dimensional 'scaling' of governance structures possible by offering alternative interpretations (Ruiter 2004). More specifically, a distinction can be made between the legal act (for example contracts, unilateral legal acts), rule regimes established by such acts (governance structures) and material acts of transferring goods (or services) regulated by such regimes (transactions) (Ruiter 2005).

With this in mind **privatisation** – including franchising and outsourcing – can be defined in terms of a relational contract establishing an enduring exchange

regime between a firm and the government that regulates frequent transactions concerning goods or services the firm supplies. **Regulation** is a complex governance structure containing (a) an enduring contractual exchange regime between a firm and the government that regulates frequent transactions concerning goods or services the firm supplies, (b) an enduring authority regime between the government and an organ regulating the latter’s regular supervision over the firm’s performance, and (c) an enduring supervision regime between the organ and the firm based on the relational contract between the government and the firm. A **public bureau** consists of an enduring authority regime between the government and an organ regulating the latter’s supply of goods and services to which the government is entitled. Defining governance structures in these terms makes clear what the relationship between the government on the one hand and firms or public bureaus on the other hand look like.

These descriptions clearly indicate that ILT is a useful tool for describing the *form* of the governance structures. This, however, is not sufficient. In order to be able to translate differences or changes in working rules in terms of transaction costs, we additionally need a method to define and characterize the *content* of these working rules. This is the next step. We propose to use a characterization in terms of Hohfeld relationships (Hohfeld 1919) following Commons (Commons 1924).

The working rules express the limits of behavior for any individual who is subject to any working rule of any governance structure. The rule merely tells him what he may, must, can or cannot do. These permissions, compulsions, capacities, incapacities suggested by these four verbs have been organized into a system. This system was designed by Hohfeld (1919).

Hohfeld was inspired to design such a system because of the – in his opinion – broad use of the term “rights” denoting different concepts. To solve this problem he formulates a coherent set of concepts or relationships. He reduces the fundamental jural concepts to eight. These eight concepts have two sets of relations to each other, that of “jural opposites” and of “jural correlatives”. These legal concepts and their relationships make it possible to analyse the composing elements of rights. He arranges them as follows (Hohfeld 1919):

| | | | |
|------------------------|-----------|---|------------|
| Jural opposites | claim | ↔ | noclaim |
| | privilege | ↔ | duty |
| | power | ↔ | disability |
| | immunity | ↔ | exposure |

| | | | |
|---------------------------|-----------|---|------------|
| Jural correlatives | claim | ⇔ | duty |
| | privilege | ⇔ | noclaim |
| | power | ⇔ | exposure |
| | immunity | ⇔ | disability |

The *first* order set of legal relationships contains the opposites and correlatives of *claims* and *duties*. The first relationship *claim – duty* signifies one’s affirmative “claim” against another. This refers to a relationship in which an actor has a “duty” towards a claim holder to take or refrain from taking a certain course of action. The second relationship *privilege – no claim* denotes a relationship in which an actor has a privilege to do or not do as he chooses. The terms “privilege” and “no claim”, therefore, denote respectively absence of duty on the part of the one having the privilege and absence of a claim on the part of the one having the “no claim”.

The *second* order set of legal relationships consists of the opposite and correlatives of *powers* and *exposures*. The third relationship *power – exposure* refers to a relationship in which an actor holding a “power” has the legal ability to alter legal relations. Whenever such a power exists, there is at least one other human being whose legal relations will be altered if the power is exercised. This situation Hohfeld describes by saying that the one whose legal relations will be altered if the power is exercised is under “exposure”. The fourth relationship *immunity – disability* is characterized by an exemption from legal power, i.e. “immunity”. Correlatively, the one who lacks the power to alter the first person’s legal relations is said to be under a “disability”, that is, he lacks the legal power to accomplish the change in question.

With this characterization we are able to describe all working rules of a particular governance structure. More importantly, we are able to compare different governance structures, for example, in different European Union countries in the context of a specific public utility service. Or, a comparison between the governance structures before and after the liberalisation or privatisation processes. Herewith, we obtain a picture of the certainties, uncertainties, and risks – or hazards – in a certain governance structure, as compared to other governance structures. As stated above, a difference or a change in the working rules or legal relationships of a certain governance structure, leads to a difference or a change at the level of governance costs. In this way we can measure the impact of different governance structures.

6 Conclusion

In this paper we have discussed the way in which the impact of the choice for particular governance structures in the public sector can be measured. The impact is operationalized in terms of efficiency, referring to a minimization of governance costs. This issue is especially relevant in relation to the question whether misalignment between characteristics of transactions and governance structures leads to a less efficient governance structure.

The overall goal of the paper is the extension of Transaction Cost Economics (TCE) to the public sector. Although theoretical and empirical work has been performed on this issue, there still are some important challenges. We have addressed these challenges in this paper. On the one hand we have addressed the basic concepts of the transaction and the governance structure in the context of the public sector. On the other hand we have made a first step in developing a method to measure the impact of the choice for a particular governance structure by using the work of Commons and Institutional Legal Theory (ILT). Especially, the notion of working rules has proven to be an important notion in bridging changes or differences in governance structures and governance costs.

We have started to develop a richer framework with attention for the legal dimensions to compare the governance structures in the public sector and to measure their efficiency. The description and definition of TCE's core concepts in the public sector and the enrichment with ILT, enables us to address the matching principle of TCE with regard to the provision of public utility services and the analysis of the impact of governance structures.

The starting point of the analysis of the impact of governance structures are predictions regarding the alignment between characteristics of transactions and governance structures. The following predictions on the “make or buy” decision can serve as a starting point:

“Make” The “make”-decision or the establishment of a public bureau is the most efficient governance structure in response to high asset specificity, difficult-to-measure outcomes, political sensitivity, uncertainty about contracting partners and as a consequence of difficulty in identifying the public interest.

“Buy” The “buy”-decision or contracting out is the most efficient governance structure in response to low asset specificity, easy-to-measure outcomes, trust in contracting partners and as a consequence of the ability to define the public inter-

est precisely.

Now, the first step is to describe governance structures in the form of the typology provided by ILT. The second step is to identify all legal relationships or working rules within the different governance structures. The third step is to identify the differences between the governance structures in terms of Hohfeld relationships leading to a picture of certainties, uncertainties and hazards. In this way we should be able to measure the relative level of governance costs of the different governance structures. The question then is whether the impact of the governance structures can be related to the predictions regarding the matching principle formulated above. More specifically, whether misalignment leads to a relatively high level of governance costs or not. This remains to be seen in an empirical study of public utility governance structures. This case study will be conducted in further research on local public utility services such as, for example, garbage disposal and local public transport.

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