A Transaction Cost Analysis of Scheduled international Air Transport of Passengers

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Chapter II - Transactions and transaction cost analysis

2.1 - Introduction
Chapter I introduced the notion of transactions in air transport rights and noted the various elements pertaining to such transactions. A detailed analysis of these transactions will be given in Chapters III and IV. The present chapter analyses the concept of transactions and transaction costs in the general context of any private good or service. Section 2.2 defines transactions and elaborates on what is needed in order to conclude and execute them. This section also introduces the concept of governance structures. Section 2.3 explains the concept of transaction costs, while Section 2.4 analyses the factors that are responsible for such costs. Section 2.5 expands conventional transaction cost analysis by introducing the notion of effectiveness. Section 2.6 introduces the industry environment. Section 2.7 then describes some of the most frequently found governance structures. Section 2.8 summarises the purpose of this thesis and indicates how the thesis will apply transaction cost theory to the exchange of air transport rights.

2.2 - Transactions
The exchange of scarce goods in a market is a central theme in economics. Man's objective is the maximisation of utility and he tries to satisfy his needs through exchange. Participants in an exchange expect that the benefits will outweigh the costs of the exchange. Exchange can be equated with the term 'transaction', the latter referring to both the material (or physical - emphasis added) and contractual aspects of exchange (Francis, Turk, Willman, 1983: 6). To be able to conclude and execute transactions, several conditions need to be met. The present thesis distinguishes the following factors: the existence of an object of trade, property rights, information, parties, a medium of exchange and a governance structure. These factors are explained more fully below.

The execution of an exchange requires an exchange object. This could be anything from which an individual derives utility or satisfaction, such as a good. Exchange also requires the existence of property rights with respect to the good. The owner of these property rights can exclude others from free access to the good and can determine what to do with the good (Pejovich, 1990: 28). Without a system of property rights, exchange is greatly discouraged since the execution of a transaction is not guaranteed. Who guarantees, for example, that the agents who claim competence to decide on the use of a certain good are entitled to conclude a transaction with respect to the good, and who guarantees that no one can frustrate the exchange by contesting their claims? Furthermore, the absence of property rights can lead to resource depletion. There will be a tendency to overuse the resource as the costs of depletion are shared with other people, and not to protect the resource as others benefit from any
investments. Similarly, investments made to produce a good other than for direct use are discouraged since there is no certainty that the investments will be recouped. Property rights can then be defined as ‘sanctioned behavioural relations among men that arise from the existence of scarce goods and pertain to their use’ (Pejovich, 1990: 27-28). Property rights comprise four elements:

1. the right to use an asset (usus),
2. the right to capture benefits from the asset (usus fructus),
3. the right to change the form, content or location of the asset (abusus) and
4. the right to transfer all or part of the rights in 1, 2 and 3 to someone else at a mutually agreed price.

In addition, property rights have to be measurable if they are to exclude others from the use of the good and thus create incentives for its optimal use. For some goods exclusion is not possible. Collective goods are an example. One of the characteristics of these goods is that they are not divisible into individual units so that others cannot be excluded from their use. Excludability is also ruled out if the costs of creating or supervising it are prohibitively high. This can change, however, as a result of technological developments that lower these costs. An example is the creation of rights to protect intellectual property such as material distributed via the internet, or the introduction of electronic pricing, which enables the use of road infrastructure to be priced individually and more cheaply than toll booths. Another example, relevant to this thesis, are property rights to airspace. To be sure, excludability does not mean unlimited rights. There are limits, but these have to be based on legislation or case law (North, 1981: 36). Another factor that is necessary to conclude and execute transactions is information. Information is needed about the characteristics of the good, the trading partner, the partner’s objectives, the terms of the exchange, and conditions and routines that pertain to the exchange process. If there is no information, or if information is incorrect, there may not be any exchange. For example, a seller may not know that there is a willing buyer. Information failures could also lead to an exchange that is ‘wrong’ in the sense that the price at which a good is traded does not reflect opportunity cost, or in the sense that the good does not end up with the person who values it most. Transactions require two or more parties. If a party wants to exchange a good, it needs to identify a trading partner. The identification process can be organised in many ways, including various types of markets (e.g. physical markets and auctions), intermediaries (e.g. travel agencies) and lobbying. In some exchange situations,

1 The right of ownership is not identical to the term 'property rights' used in the English literature. The former also covers the rights of trespassing, usufruct, use (usus) and pawn. In the context of the current analysis, the term property rights can be equated with the Dutch term 'beschikkingsrechten'.

2 A second feature of collective goods is their non-rivalry character, which means that consumption by one individual does not diminish the amount available to other people.
identification does not pose great difficulties. It is not difficult to identify a monopolist or a seller of goods that are standardised and supplied on a regular basis. In the case of barter, however, the identification of a trading partner can be very difficult and time-consuming. The availability of a uniform medium of exchange (usually some form of money), with a stable or predictable value, can facilitate the process considerably. Finally, there should be a governance structure. The governance structure is a special part of the institutional environment, namely ‘the institutionalised matrix in which transactions are being negotiated and executed’ (Williamson, 1986: 105), and offers a certain method of allocating and distributing resources. One aspect of the governance structure is a system of norms and instruments that guarantees compliance with the terms of transactions. In the absence of institutional restraints, the inclination of man to promote his own interests, and the consequent risk that the other party will not comply with the terms of the transaction, will rule out the possibility of concluding complex exchanges (North, 1990a: 33 and 1984: 259). The guarantee can be internalised completely (i.e. be within the relation itself), such as when an employer exercises authority over an employee. Enforcement can also occur through the expectation that non-compliance will be penalised, for example through severance of a relationship. Sometimes this is the only way of penalising a violator, for instance, when parties are unwilling or unable to submit their dispute to a third party. Under these circumstances, the agreement can only work if it is self-enforcing, i.e. if non-performance is against the interest of each party (Telser, 1980). A party will not breach the relationship if the terms of the agreement or value of the relationship (including the possibility of beneficial future trade) are such that the benefits outweigh the costs of adherence. The incentive to adhere to the agreement is reinforced in cases where parties do not know which transaction will be the last (ibid.: 28, Axelrod, 1984: 188, Zajac, Olsen, 1993: 137, OECD, 1997: 84). Internal guarantees are sometimes the most efficient as the parties concerned can devise more satisfactory solutions to their disputes than can professionals who are constrained to apply general rules on the basis of their limited knowledge of the dispute (Williamson, 1999a: 130, citing Galanter, 1981). In other situations internal guarantees leave the parties with too much uncertainty and fail to protect their property rights adequately. An external compliance mechanism is then necessary. There are various forms of external mechanisms. They include social norms, which can exert environmental pressure upon a party, and most importantly they include a system of legal enforcement by a third party. The creation and maintenance of such a system of third party enforcement is traditionally a task of the state because the state has sovereign powers. This implies that sovereignty, or a sovereign power, is important for a system of property rights (North, 1981: 21 and 1984, Dugger, 1993: 183 and 189). In addition to compliance mechanisms, a governance structure contains a system of communication to convey information on the good and associated conditions to the trading partners. The conclusion and execution of the transaction also call for processes and routines,
as well as ‘a set of constraints or arrangements that govern the behavioural relations amongst individuals and groups’ (North, 1991: 97). These institutions can help to structure the relationships among individuals in a predictable way (Shepsle, 1986: 52), thereby lowering uncertainty and diminishing the need for guarantees that would otherwise be an explicit element of the governance structure³.

In traditional microeconomics the market is the governance structure that co-ordinates resource allocation. However, there are other governance structures, as will be seen in Section 2.7. The next sections describe the costs associated with transactions and the factors that account for their existence.

2.3 - Transaction costs

The central tenet of transaction cost economics is that economic activities will be organised efficiently, in the sense that the total costs incurred in the transaction process will be minimised (Van der Zaal, 1997: 155). Efficiency is usually considered from the perspective of the costs of physical production. However, as observed in Section 2.2, the maximisation of utility requires exchange⁴ and transacting involves a claim on productive resources, i.e. it generates costs. These ‘transaction costs’ do not flow from production as such, but constitute the ‘costs of running the economic system’ (Williamson, 1985: 18): they are the costs incurred to prepare, conclude and execute transactions. They are also referred to as ‘the costs of running the contractual relation’, emphasising the contractual elements of the transaction (MacNeil, 1981: 1018-1063, Kneppers, 1988: 59)⁵. Williamson (1985: 1-2) refers to transaction costs as the economic equivalent of friction in physical systems. The word ‘friction’ can give rise to misunderstanding, since it might suggest that exchange is problematic. Even when exchange proceeds smoothly, however, costs will be incurred in the transaction process, as will be seen in this section.

Economists did not pay any attention to transaction costs until the publication of ‘The nature of the firm’ by Coase (1937). Following Commons (1934), who gave the transaction a central place in his analyses, Coase posed the question of why not all exchange takes place via the market, given that the market supposedly co-ordinates any exchange through the price mechanism. He saw the answer in the costs generated by the use of the market, arguing that

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³ The institutional environment influences the options from which individuals can choose. In this way, the institutional environment can influence the course of development of a society (North, 1990a: 78). Note that the institutional environment itself may also change over time (North, 1978).

⁴ The Coase theorem states that externalities and other economic inefficiencies will be corrected by bargaining between the affected parties (Samuelson, Nordhaus, 1992: 732). This, however, is based on the unrealistic assumption that transactions can be prepared, concluded and executed costlessly.

⁵ Other definitions of transaction costs are ‘costs of the exchange of titles of ownership’ (Demsetz, 1990: 64), and ‘apparently any costs necessarily incident to a transaction or series of transactions above and beyond production costs’ (Maitland, 1985: 60).
these costs justified the existence of the firm as an alternative governance structure. Sometimes, the firm is the best resource allocation mechanism, and sometimes the market serves best. Differential transaction costs will give rise to a discriminating assignment of transactions to governance structures (Williamson, 1996b: 16-17). In his article ‘The problem of social cost’ (1960), Coase extends the argument to the assignment of property rights to productive resources. In Coase’s opinion, the efficiency of an allocation does not depend on the initial distribution of property rights provided that there are no transaction costs. Starting from a certain assignment, parties will conclude transactions to arrive at a result that maximises utility. In reality, however, the transaction process generates costs so that the initial assignment of property rights matters. According to Coase and the theory of property rights developed subsequently (Vromen and Groenewegen, 1996: 368, 375), property rights need to be assigned in a manner that minimises transaction costs.

Given sufficiently high costs, some transactions might not take place, resulting in a lower welfare than would otherwise be possible. Similarly, a suboptimal allocation of property rights may generate unnecessary transactions.

The literature (among others: Williamson, 1985: 20-21, Kneppers, 1988: 59) generally categorises transaction costs as follows:

1. the pre-contractual costs associated with gathering information (e.g. on the relevant prices, trustworthiness and creditworthiness of the other party) and searching for a contract partner,
2. the costs associated with concluding (negotiating) the agreement,
3. the costs associated with drafting the agreement,
4. the costs associated with executing the agreement,
5. the costs resulting from checking compliance with the agreement,
6. the costs generated by conflicts arising between the parties after the conclusion of the agreement,
7. the costs incurred in amending the agreement and
8. the costs associated with enforcing compliance with the terms of the agreement.

The costs in 1, 2 and 3 are incurred prior to concluding the agreement. They constitute the ex ante transaction costs of identifying a transaction opportunity, selecting a trading partner, negotiating and drafting the agreement and organising supervision. After the agreement has been concluded a number of costs will arise. The parties might feel a need to monitor the

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6 In this explanation, other factors that can explain the existence of the firm, like economies of scale, are ignored. This is one of the criticisms of transaction cost analysis. Furthermore, Sawyer (1993: 33) opines that, since the primary function of a firm is production, the firm can never be seen as a substitute for the market. See also Fourie (1993: 44) and infra, pp. 27-28.

7 Chapter VI will look into the option of a different assignment of property rights.
execution of the agreement, and in case of a deviation from its terms, it might be necessary to enforce compliance using legal remedies. Furthermore, the agreement will not cover every contingency, and responding to unforeseen events will lead to ex post transaction costs. A change in circumstances that prevailed when the transaction was concluded may require a change in the agreement and generate negotiating costs. A distinction between ex ante and ex post costs can be arbitrary. Consider, for example, a situation where two parties foresee a sequence of transactions with each other. The costs that are ex post with respect to one transaction may alter behaviour - and thereby the level of transaction costs - in a subsequent transaction (Bokkes, 1989: 37-38). For instance, recurrent transacting can lead to trust, which could induce parties to put less effort into fully detailing the terms of any agreement and to forego some compliance monitoring. However, a division of the transaction process into phases is useful in that the factors responsible for transaction costs may be analysed more accurately. The analysis below uses an extended version of a division by Noteboom (1996: 340). The transaction process is split into three stages, the first two stages accounting for ex ante costs and the third for ex post costs.

1. the contact phase - identifying a transaction opportunity, searching for and evaluating potential trading partners,
2. the contract phase - drafting and negotiating the terms of the transaction and
3. the execution phase - execution of the transaction, performance monitoring, compliance and dispute resolution as well as minor adjustments of conditions not requiring a formal negotiation.

The costs incurred in performing the activities belonging to a particular phase will be ascribed to that phase.

Some authors define transaction costs as the costs incurred to create, use or change a governance structure and suggest using the term ‘co-ordination costs’. They argue that this term makes clear that not only transactions but also ways of allocating resources not readily associated with exchange are covered (for example, Bokkes, 1989, or Kay, 1993: 257). Raes and Willekens (1994: 25) also refer to costs incurred to arrange for the allocation of resources. Apart from the costs associated with exchanges between parties, transaction costs include costs resulting from unilateral decisions by the state that affect a governance structure. Some examples are the cost of imposing a new regulation on firms and the cost of compliance with this regulation. These costs are important in the early existence of a new governance structure, but they are one-off costs that are negligible in the long run. For this reason, they

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8 The phase during which the transaction is implemented is referred to as ‘execution phase’ rather than ‘control phase’, which is the term used by Noteboom, to avoid any confusion with the term ‘control’ used in the context of opportunism (infra, Section 2.4.5).
9 For instance, they influence the case with which an industry adapts to new conditions.
will not be included in the analysis, although Chapter VI will comment on the costs of creating
the current Community structure in the context of air transport.

While there is common agreement on the notion that transacting will give rise to certain
costs, there is less unanimity on the content of the concept. Transaction costs are not easy to
operationalise (Pitelis, 1993: 12) and there is a danger that all costs will be subsumed under the
concept. As a result, transaction cost analysis has attracted a great deal of criticism\(^\text{10}\). A start
to giving more operational content to transaction costs can be made by defining and analysing
the factors that are responsible for their existence. This will be done in the next section.

2.4 - Factors influencing transaction costs

As Williamson suggests (1985: 30) transaction costs can be explained by the presence and
interaction of two types of factors, namely individual attributes and transaction characteristics.
They will be referred to as ‘core dimensions’, following Van der Zaal (1997). The individual
attributes are the behavioural assumption of opportunism and the human attribute of bounded
rationality, which will be described in Sections 2.4.4 and 2.4.5. The transaction characteristics
are discussed below.

In a society characterised by numerous combinations of resources, used to create numerous
products and services, there are numerous transactions. These transactions exhibit a variety of
characteristics. Abstracting from such differences as the object of trade and the objectives of
parties, the characteristics of a transaction can be reduced to (Williamson, 1986: 111):
1. the frequency with which the transaction occurs,
2. the uncertainty that is associated with the transaction and
3. the degree of asset specificity associated with the transaction.
The following sections explain the factors that determine these characteristics.

2.4.1 - Frequency

An important factor influencing transaction costs is the frequency of the transaction. Frequency
can be characterised as one-time, occasional and recurrent. On the one hand, one-time
transactions are relatively simple. Parties agree to meet only once, they do not have a
relationship and are not looking to create one. A motorist, for example, engages in a one-time
transaction when he refuels on a long-distance trip far from home (De Vos, 1987: 272-290,
Kneppers, 1989: 65). On the other hand, the absence of a prior relationship and consequent
lack of a reputation for reliability could mean that a party will feel a need to devise safeguards
against a breach of agreement by the other party. In the refuelling example, the question could
arise of who will guarantee that the amount of petrol paid for is actually obtained. This could
lead to elaborate monitoring or a legal system of obligatory calibration of petrol pumps,
coupled with an awareness that non-compliance is penalised. This knowledge influences (constrains) behaviour (Van Dijk, 1998). One-time transactions thus need not be simple at all. However, few transactions are truly one-time. The following discussion of the factors that influence the transaction frequency apply not to one-time transactions but to occasional and recurrent transactions.

One determinant of the transaction frequency is the nature of the good or service transacted. Public transport, for example, has a high frequency of exchange because of both product and demand characteristics: it is consumed regularly but it is perishable. For a given level of consumption, the more perishable is a good, the higher the frequency of transacting. The frequency of the transaction is also increasing in the number of alternatives. A large number of alternative suppliers and strong competition among them lowers the cost of switching to other sources of supply. The transaction frequency also rises with an increase in the dynamism of the environment. For a given agreement, the more dynamic the environment, the more quickly the agreement becomes inadequate and the greater the need to re-negotiate. Finally, the flexibility of the relationship affects the transaction frequency. This determinant applies to the transaction process as well as the ultimate document which formalises the transaction. If the transaction process is flexible, parties can tailor their relationship by taking into account every single need. However, if the ensuing agreement is rigid, the terms of the agreement will eventually cease to reflect economic conditions. For instance, prices fixed in the agreement may cease to reflect opportunity costs. The agreement will then give parties inappropriate production and consumption incentives. Furthermore, a party that feels disadvantaged by a misalignment between the agreement and the market has an incentive to deviate from the contract or to negotiate more favourable terms. In order to bring the agreement back into line with economic conditions, it might be necessary to conclude a new transaction. A lack of flexibility thereby raises the transaction frequency. Conversely, flexibility offered by a framework agreement or an agreement containing procedures that allow parties to adjust to new circumstances is likely to reduce the transaction frequency (Crocker, 1996: 94).

Table 2.1 shows the relationship between the transaction frequency and its determinants.

<table>
<thead>
<tr>
<th>Determinant</th>
<th>Effect on transaction frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Perishability</td>
<td>Positive</td>
</tr>
<tr>
<td>Existence of alternatives / competition</td>
<td>Positive</td>
</tr>
<tr>
<td>Dynamism of the environment</td>
<td>Positive</td>
</tr>
</tbody>
</table>

10 For example, Hodgson (1993) and Piteis (1996).
Flexibility of the relationship, i.e. of the transaction process and the agreement | Negative

Table 2.1

It might seem that a high transaction frequency should generate high transaction costs. The argument is simple: new transactions lead to new negotiations and more drafting. But, as total costs rise, a higher frequency can induce transacting parties to standardise the transaction process, thus lowering average transaction costs. Reinforcing the downward effect on transaction costs are the information and reputation effects of repeated dealings with the same parties. Repeated transactions enable parties to learn about and monitor each other, while information acquired in earlier transactions can be used in later transactions (Ménard, 1996: 158). Parties also need to gather and process less information because they can re-negotiate or easily amend their relationship to bring it into line with economic conditions. An established reputation engenders trust and reduces the incentive to engage in opportunistic behaviour and hence the need for elaborate contracting and monitoring mechanisms. The influence of opportunism is lowered even further as adjustments in the relationship during the execution phase require fewer corrective measures and less haggling in the contract phase (ibid.: 160). A high frequency can thus reduce the level of ex ante as well as ex post transaction costs. If conditions that prevail at the conclusion of the agreement tend to change unexpectedly, then frequent re-negotiation can prevent the costs associated with agreements that become outdated. In this way a high frequency can offer the flexibility that may not be provided by an agreement, once it has been negotiated. The ultimate effect of the transaction frequency on transaction costs is indeterminate and very much dependent on the relative strength of the factors discussed above.

2.4.2 - Uncertainty

In addition to differences in frequency, transactions exhibit various degrees of uncertainty. Uncertainty means ignorance and the need to act on the basis of opinion rather than knowledge or fact (Knight, 1965: 268). When there is uncertainty, a party cannot determine the probability that an event will occur and is therefore unable to cover the negative consequences of the event through insurance\(^\text{11}\). Uncertainty can pertain to many elements of the transaction. It can pertain to the characteristics of the good transacted, the objectives of the transacting parties, future market conditions, or the terms of the transaction. Transactions that are certain are relatively uninteresting from the perspective of this thesis. All situations could be anticipated

\(^{11}\) Uncertainty is not the same as risk. In a situation of risk, the probability of an event can be determined through actuarial computation. With this computation, a premium can be established and insurance becomes possible (North, 1990a: 126).
and taken into consideration in the relationship. The governance structure used would become irrelevant; only the time needed to reach agreement would vary. In the real world, however, uncertainty is prevalent.

Following Van der Zaal (1997: 142-144), four factors are identified as determinants of uncertainty. These are the complexity of the transaction, the dynamism of the environment as well as the information gathering and information processing capacities of the parties. The transaction may be complex because of such factors as the objectives of parties, the characteristics of suppliers, or changes in the institutional environment. The environment may be dynamic because of a large number of competitors and the absence of barriers to market entry. The level of uncertainty associated with a transaction increases as the transaction becomes more complex or the environment more dynamic. The parties' information gathering capacities determine their ability to access the information relevant to the transaction and transaction partner. Their information processing capacity enables them to co-ordinate between possibly conflicting objectives or to deal with changes in the institutional environment. A greater information gathering or processing capacity reduces uncertainty as it enables better and faster insights into new developments and allows information on the nature of the good or the objectives to be understood more easily.

Table 2.2 summarises the effects of these variables on the level of uncertainty.

<table>
<thead>
<tr>
<th>Determinant</th>
<th>Effect on uncertainty</th>
</tr>
</thead>
<tbody>
<tr>
<td>Complexity of the transaction</td>
<td>Positive</td>
</tr>
<tr>
<td>Dynamism of the environment</td>
<td>Positive</td>
</tr>
<tr>
<td>Information gathering capacity</td>
<td>Negative</td>
</tr>
<tr>
<td>Information processing capacity</td>
<td>Negative</td>
</tr>
</tbody>
</table>

Table 2.2

People generally prefer a sure thing to uncertainty and, if transactors face uncertainty, they will try to limit its influence by structuring their relationship accordingly. They might engage in costly information-gathering activities during the contract phase or write elaborate agreements. They might also spend more time negotiating. In this way uncertainty can lead to high ex ante transaction costs. Ex post transaction costs are also affected because uncertainty will induce

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12 Unlike Van der Zaal, there is no division into internal and external factors. Complexity, considered an external factor by Van der Zaal, can also be internal in the sense that it can apply to the objectives of transacting parties.
parties to expend resources on monitoring the execution of the transaction and enforcing compliance. Uncertainty might even cause fewer transactions to take place. An example is given by Van Waarden (1998) of the taxi market, where uncertainty, combined with a risk of opportunistic behaviour by the taxi driver in determining the fare or the route as well as consumers' inability to eliminate this risk, might lead consumers to choose another form of transport.

2.4.3 - Asset specificity

The third transaction characteristic is the degree of asset specificity, i.e. the extent to which a transaction requires parties to make specific investments whose value depends on the continuation of a particular relationship. In some cases, a party to a potential transaction needs to make a durable investment that has a much lower value to alternative users or in alternative uses (Williamson, 1985: 55). These investments result in assets that are specialised in the sense that their value depends on one particular relationship. Stated differently, the relationship itself is an asset. In a situation of asset specificity a large-numbers bidding competition at the outset may be transformed into a small-numbers supply relation during the execution phase and at the contract renewal intervals. A bilateral monopoly could arise where both transacting parties are effectively locked in. Acquiring specific assets might be a requirement for entering a market. An example is the need to meet certain accounting standards and licensing requirements, as is the case in air transport. A different example of transaction-specific investment is lobbying, i.e. the costs incurred in order to influence decision-makers. Other examples include investments in the location of a production facility to save on transport and storage costs, or investments in human capital, such as training programmes (Williamson, 1986a: 142).

The determinants of the level of asset specificity include the scope of the relationship. More particularly, the relationship may have such a long duration, or a trading partner may be so important to the outcome, that the parties are locked in. Williamson (1999b: 136) uses the term 'dedicated assets' for those assets that are acquired specifically with the prospect of selling a significant amount of produce to a specific customer. Lobbying was listed as a form of transaction-specific investment. Lobbying is determined by various elements in the institutional structure. One element is the susceptibility of a decision-maker to being influenced by side payments. There may also be room to influence decision-makers via technical information or

13 There may seem to be a subtle but important difference between these two definitions: a physical asset can presumably be sold, whereas a relationship cannot (Milgrom, Roberts, 1990: 62, 236). However, the two elements cannot be separated because the asset derives its value from the relationship.

14 These conditions, including the importance of continuing the relationship, might make classical market contracting inappropriate and lead to a more relational type of contracting (MacNeil, 1978, Williamson, 1996b: 20).
the reputation of one of the parties. On the other hand, any such room may be limited because of close relationships between industry players and decision-makers. Another element is the set of rules determining the conduct of state representatives and the organisation of the transaction process, such as rules allowing for interest group representation. These conditions are collectively captured in the variable 'susceptibility to lobbying'. Technical requirements can also lead to transaction-specific investments. Examples include requirements in the high tech industry, such as requirements for the construction of a facility specifically designed to produce missiles. Sometimes these investments flow from state-imposed requirements in the form of regulation, as is the case in the construction of some airport facilities that aim to reduce noise pollution. Finally, transaction cost economics presumes that parties consciously choose the amount of transaction-specific investment they are willing to make (Groenewegen and Vromen, 1996: 376). In their decisions, uncertainty about the trustworthiness of the other party and the risk that the other party will breach the agreement play a role. The existence of elements in the institutional environment protecting a party against that risk thus influences the willingness of that party to make a transaction-specific investment. These elements, which will be referred to as ‘institutional guarantees’, can arise from the possession of superior knowledge or from state support. A situation of mutual exposure, where both parties face downside effects from a breach of contract, is another example of an institutional guarantee. Alternatively, the parties may have certain values in common. They may also undertake to explicitly formulate required performance so that it can be enforced in court. In this way, they legally tie their hands with regard to variables that they can otherwise manipulate to hold up their trading partners (Klein, 1985: 597). Lastly, an external compliance mechanism is a form of institutional guarantee.

Table 2.3 summarises the relationship between asset specificity and its determinants.

<table>
<thead>
<tr>
<th>Determinant</th>
<th>Effect on asset specificity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Scope of the relationship</td>
<td>Positive</td>
</tr>
<tr>
<td>Susceptibility to lobbying</td>
<td>Positive</td>
</tr>
<tr>
<td>Technical necessity or regulation</td>
<td>Positive</td>
</tr>
<tr>
<td>Institutional guarantees</td>
<td>Positive</td>
</tr>
</tbody>
</table>

Table 2.3

The degree of asset specificity determines the extent to which parties can sever relations and
find another buyer or source of supply. For instance, if transacting parties choose a specific technology over a multi-purpose technology, then they become more dependent on each other. Sunk investments create a stream of quasi-rents that gives one party some ex post bargaining power. The fear of a disturbance in the relationship creates incentives to try to protect the investment. The parties can do this by making credible commitments to infuse confidence into their relations. They may also turn to a third party such as the state to provide financial support. Alternatively, the parties may spend more time negotiating, or they may incorporate fines for premature termination into their agreement. These ways of protecting transaction-specific investments generate transaction costs.

2.4.4 - Bounded rationality

Transaction cost economics departs from some traditional assumptions of neo-classical economics, including the assumption that individuals have complete information about every relevant factor and that there is no limit to the human capability to interpret and use this information. Unlike the neo-classical assumption, the condition of bounded rationality used in transaction cost economics presupposes that the human mind does have limits. These physical limits pertain to the ability to receive, store and transfer information. In addition, they result from failures in language when formulating and resolving matters. As a result, individuals are only partly able to realise their intentions to behave and act rationally. Further, they are not able to accurately monitor the behaviour of others. If rationality were unbounded, it would be possible to negotiate complete and efficient agreements. Given that rationality is bounded, agreements cannot be complete and, even if they were, their terms would not be fully understood, nor would the behaviour of parties be adequately characterised. People deal with the fact that their rationality is bounded, among other things, by gathering and processing information up to the point where marginal costs exceed marginal benefits. Further, transaction cost economics assumes that transactors will try to limit the effects of bounded rationality by realising a transaction via the governance structure that - given the characteristics of the transaction (and opportunism) - is best able to deal with this individual attribute. Although the effect of bounded rationality is influenced by the quality and availability of information, bounded rationality is a parameter and implies a limit on a party's capacity to process information. In what follows, bounded rationality will therefore be treated in the context of uncertainty.

15 The balance may shift, depending on the situation. In the case of monopoly supply, the buyer depends on a supplier, and the supplier has an advantage over the buyer. Alternatively, if demand falls, the buyer may acquire a strong bargaining position vis-à-vis the supplier.

16 Simon (1957: 198) states that 'The capability of the human mind for formulating and solving complex problems is very small compared with the size of the problems whose solution is required for objectively rational behaviour in the real world'. Williamson (1975: 9).
The analysis of uncertainty and bounded rationality would be less important if all parties were completely trustworthy. However, this is not the case; at least, complete trustworthiness is not assumed here. This is where the behavioural assumption of opportunism comes into play.

2.4.5 - Opportunism

Opportunistic behaviour is any action taken by a trading partner to exploit an informational (or other) advantage to the economic detriment of others. Opportunism, or ‘self-interest seeking with guile’, is the strongest form of the pursuit of one’s private interest. It extends the conventional assumption that individuals are guided by considerations of self-interest to make allowance for strategic behaviour (Williamson, 1975: 26). Strong forms of opportunism include lying and cheating. A weaker form is giving truthful information but withholding some relevant information, while a more subtle form entails lowering the quality of a service once the other party has committed to an exchange. Opportunistic parties will deviate from promises made earlier, when this is beneficial to them. Transaction cost economics employs a uniform opportunism assumption in the sense that opportunistic behaviour can occur in each of the transaction phases. To be sure, it is not assumed that all individuals are opportunistic to the same degree, but opportunism cannot easily be discovered ex ante. Safeguards will therefore always be necessary (Noorderhaven, 1993: 2).

A risk of opportunism arises whenever there is an agency relationship. Opportunism thus affects the exchange of market access in air transport, which involves such relationships. An ‘agency relationship’ is defined by Jensen and Meckling (1976: 308) as a contract under which one or more persons (the principal) engages another person (the agent) to perform a service on his behalf. This entails delegating some decision-making authority to the agent. The agent has some discretion in the execution of his task. His decisions affect the benefits accruing to the principal, who therefore wants the agent to act in his interest. The agent, however, will not do this of his own accord and might need an incentive. In the context of this thesis the state is considered the principal, who wants to realise certain goals, while the industry players, i.e. the Dutch airlines and airports, are the agents used to realise these goals. Generally speaking, the agency relation is characterised by information asymmetry and conflicting interests. The principal is confronted with an information problem, in the sense that his information about the agent and the input on which this is based are imperfect. The principal is often not able to monitor the ex post behaviour of the agent and the agent frequently has more information than the principal. These situations can lead to forms of opportunism such as adverse selection or moral hazard.

17 ‘Guile’ can be translated as ‘trickery’ or ‘treacherousness’ (ibid.).
18 Although the agent might be uncertain as to the principal’s objectives, his power or his alternatives, this is not what makes it an agency problem. For a different opinion, see Van der Zaal (1997: 78, 163).
Like other core dimensions, opportunism is influenced by some determinants. One determinant is the fairness of a transaction as perceived by the parties. The greater the degree of volition and fairness in an exchange, the greater the chance that the parties will comply with its terms (North, 1981: 37, 1990: 76, MacNeil, 1985: 499). The notion of perceived fairness captures, among other things, the extent to which the transaction process and terms of the final agreement reflect the real division of power between the parties. It also reflects the influence of socially mediated norms, especially in situations where the relationship between parties rules out formal compliance mechanisms. A second determinant of opportunism is the net gain expected from opportunism. Assuming that parties are utility maximisers, larger gains from opportunistic behaviour will make them more willing to accept any costs of deviating from an agreement. When the gains of deviating outweigh the costs, opportunistic behaviour might occur so that the agreement is not self-enforcing. The nature of the costs and benefits plays a role. Often, it is easier to acknowledge costs especially if these, but not the benefits from complying, are clearly identifiable. The more tangible and immediate the benefits, the greater the chance of voluntary compliance (Noorderhaven, 1990: 34). One benefit of compliance that may be clear is the prospect of continuing trade through future transactions. Hence, a continuing relationship tends to limit the level of opportunism as parties will take into account the effect of their behaviour on future dealings with each other\textsuperscript{19}. The constraint is reinforced in those cases where the victim of a deviation can retaliate or easily terminate the agreement. The possibility of future transactions warrants an additional comment. It might seem that in the case of long-term agreements the effect of opportunism on future transactions is not relevant. However, a single transaction giving rise to a long-term agreement can in some instances be likened to a series of separate transactions between the same parties. A long-term agreement, involving continuous decision-making, can be seen as the outcome of a large number of interrelated mini-transactions that require information, decisions on amendments, and so on. Rather than being determined once and for all at the moment of conclusion, the agreement is continually re-negotiated, as in the case of a series of separate transactions (ibid.: 96, note 51). This means that, notwithstanding the likely prospect of continuing business, parties to a long-term agreement will take into account the effect of their behaviour on the ease of going through the execution phase.

The constraining effect that the costs of deviation may have on opportunism resembles the effect of reputation (Klein, Leffler, 1981, Noorderhaven, 1993: 5)\textsuperscript{20}. Calculating agents can

\textsuperscript{19} Supra, p. 11.

\textsuperscript{20} Noorderhaven (1990: 102) considers reputation a source of obligation that is mediated socially, in future transactions between the deviating party and other members of society. In contrast, the present author believes that reputation plays a role in the context of trust between transacting parties. Noorderhaven (1996: 110) notes that reputation is a functional equivalent of or a substitute for character trust. The present thesis, however, considers reputation closer to system trust, because reputation is more easily explained in terms of self-interest.
consciously honour commitments in order to build a reputation that allows others to trust them. In this way they expand their options for profitable exchange. Hence, trust is an important factor determining whether an agreement is self-enforcing. Trust is a concept that is occasionally referred to in transaction cost economics, usually in the context of opportunism (e.g. Noorderhaven, 1990, 1993, 1996, Lyons, 1999: 304). There, it is used to explain why, despite a risk of opportunism, trusting parties may refrain from devising new ways of protecting an agreement, or may be satisfied with less than complete information about the transaction. There is, however, no unanimity on the definition of trust. If agents are calculating individuals, then trust refers to the belief that another party will not deviate from an agreement for reasons of self-interest. When reputation plays a role, a party relies on the record of past transactions in deciding whether to adhere to an agreement. Similarly, continuing business with a party who has proven to be trustworthy may constitute rational behaviour. This form of trust is referred to as ‘situational trust’ (or ‘system trust’) as it depends on the characteristics of the situation or on guarantees inherent in the institutional system (Noorderhaven, 1990: 106). System trust can derive from elements such as symmetric access to relevant information or mutual dependence. In addition, a longer history of previous exchanges with a co-operative party will mean more information and a greater degree of trust, as will the value and intensity of the relationship. A second form of trust is ‘character trust’. Unlike system trust, which depends on the situation, this form of trust is based on a belief in the other party’s inherent trustworthiness, i.e. its disposition to live up to commitments. Character trust is more difficult to account for in transaction cost economics. Yet, transacting parties sometimes live up to promises made earlier, even though they might benefit from deviating. An explanation for such behaviour is found in sociological theory, which suggests that people act differently in a relationship that is defined as one between friends or acquaintances than in a relationship with a stranger. In the latter situation, the focus is on gain maximisation; in the former, gain maximisation is constrained by considerations of equity and solidarity. Consequently, the interaction process associated with an exchange may enhance a party’s trustworthiness in that exchange if it causes him to perceive the relationship as one between friends or acquaintances (Noorderhaven, 1996: 115-116). Compared to other forms of trust, character trust is more robust in a dynamic environment, where changes in circumstances are frequent. A problem with character trust, however, is that it depends on a party’s personality traits and on whether the assumptions about the motivations of that party hold, which means that it usually leaves considerable uncertainty.

The forms of trust discussed above tend to enhance the attractiveness of not breaching an

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21 Telser’s analysis (1980: 35-36) excludes the effect of previous transactions on the net gains from adhering to an agreement. However, Noorderhaven (1990: 97) in discussing Klein, 1985 (as well as the current author) believes that trustworthy behaviour in a series of transactions is relevant to the calculation.

22 Any system trust may disappear due to changes in the environment.
agreement. In contrast, legal enforceability and environmental pressure (including informal rules and norms which are socially mediated) enhance the disadvantage of breaching an agreement. Trust is especially relevant where the option of legal enforceability or environmental pressure is insufficient, perhaps because of a lack of power or because no outside party has the information needed to assess disputes. In these situations agreements need to be self-enforcing. Whether a party to a transaction emphasises trust or legal enforceability depends on the relative strength or weakness of that party. A party that is relatively strong, i.e. expects the other party to be dependent on him more often than vice versa, will most likely rely on trust rather than invoke or threaten to use legal remedies. A relatively weak or dependent party, on the other hand, will attach more importance to the use of legal remedies. In what follows these considerations will be used to shed light on some aspects of compliance and enforcement in the absence of external enforcement systems.

The introduction to this section explained that the extent of opportunism depends on the presence of certain safeguards that improve the degree of control over the behaviour of the parties. These mechanisms include methods used to check ex post behaviour, performance incentives, such as the reward schedules common in agency relationships, as well as various systems of external enforcement. The principal could devise a fee schedule that minimises the agent’s propensity to shirk and motivates him to choose an action that maximises the residual accruing to the principal. Another strategy imposes restrictions on the set of options open to the agent, prohibiting those actions that have an adverse effect on the pay-off of the task. If the agent chooses an action outside his permitted action set, his fee will be lower (Noorderhaven, 1990: 62-63, Van der Zaal, 1997: 77-80). The choice between these two strategies will depend, among other things, on the ability of the principal to limit the agent’s options and to exercise control over his performance. A further distinction is possible between output control and behaviour control. Output control involves checking the output by sampling results. This form of controlling the agent is usually the simpler, because the agent’s behaviour can be ignored. An understanding of the transformation process and a reliable and valid measure of desired outputs must, however, be available and difficulties will arise in those cases where outputs are joint or where the agent’s behaviour may have effects going beyond the agency relationship (for example, political effects). Behaviour control requires the specification of rights and an ability to monitor and control the behaviour of the agent. In situations where the set of formal rules and procedures to specify behaviour is more complete, there is less need for output control. When, as in some situations, behaviour cannot be adequately monitored, the transformation process is not known and outputs cannot be measured, only ritualised control can be used. Situations such as these often show a heavy reliance on the selection process. A final determinant of opportunism is the harmonisation of interests. The parties may share some objectives. If they do not, their interests can be harmonised in various ways. One method is
collective ownership, which internalises transactions previously conducted in the market. The parties may also create interdependencies. When the agent aims at harmonising his interests with those of the principal, the term ‘bonding’ is used (Van der Zaal, 1997: 79). Bonding mechanisms can be in the form of measures to guarantee that the agent will not take certain actions which would harm the principal, or to ensure that the principal will be compensated if the agent does take such actions. An example is the forfeiture of a deposit or a licence. Bonding may also occur via signalling. An agent can send signals to the principal, for example on his reputation or quality, with the purpose of reassuring the principal and thereby bonding him. Some examples of signals are diplomas and ISO certificates (Spence, 1973, Van der Zaal, 1997). In this case, bonding mechanisms are used to infer relevant information. Finally, the duration of the relationship affects not only the net gains from opportunistic behaviour but also the degree of interest harmonisation (Klein et al., 1978: 304). The longer the relationship, the greater the likelihood that parties develop common objectives.

The following table summarises the determinants of opportunism.

<table>
<thead>
<tr>
<th>Determinant</th>
<th>Effect on opportunism</th>
</tr>
</thead>
<tbody>
<tr>
<td>Perceived fairness</td>
<td>Negative</td>
</tr>
<tr>
<td>Net gains from deviation</td>
<td>Positive</td>
</tr>
<tr>
<td>Control</td>
<td>Negative</td>
</tr>
<tr>
<td>Harmonisation of interests</td>
<td>Negative</td>
</tr>
</tbody>
</table>

Table 2.4

Opportunism has some important consequences for transaction costs. The existence - or rather, threat - of opportunistic behaviour combined with factors like uncertainty leads to more encompassing agreements and the need for periodic checks and supervision during the execution phase. In addition, it becomes worthwhile, prior to concluding the agreement, to pay attention to harmonising parties’ interests and taking precautions. Some examples are the

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23 Williamson (1999b: 131, mentioning Grossman and Hart, 1982) distinguishes between bonding and signalling. In the case of bonding agents communicate their endogenous intentions, while in the case of signalling agents communicate their exogenous characteristics. Bonding refers to the incentives of agents at the contract execution stage, while signalling involves inferring the otherwise unobservable ex ante attributes of agents.

24 In other words, it pays to search for ways of inducing parties to honour their commitments whenever they cannot rely on external compliance mechanisms. Any substantial interest harmonisation usually follows rather than precedes conclusion of an agreement. Not until a transaction has been concluded will a relationship be created and, if ongoing, might harmonisation occur.
calibration of petrol pumps mentioned earlier, the use of detailed, long-term agreements and
the organisation of standby facilities. Resources will thus be used to protect the agreement.

Having analysed the various core dimensions, the influence of the core dimensions on the
level of transaction costs can now be summarised as follows:

<table>
<thead>
<tr>
<th>Core dimension</th>
<th>Effect on transaction costs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Transaction frequency</td>
<td>Indeterminate</td>
</tr>
<tr>
<td>Uncertainty</td>
<td>Positive</td>
</tr>
<tr>
<td>Asset specificity</td>
<td>Positive</td>
</tr>
<tr>
<td>Opportunism</td>
<td>Positive</td>
</tr>
</tbody>
</table>

Table 2.5

The analysis of transaction characteristics and individual attributes shows a departure from the
notion of a homogeneous market characterised by fully rational, trustworthy participants who
are capable of preparing, concluding and executing transactions without incurring costs. When
traditional assumptions break down, the need to incur transaction costs arises and transactions
become more costly. The time and effort taken to deal with uncertainty, the measures needed
to protect specific investments and the monitoring of opportunistic agents are just some
examples of the way in which deviations from the traditional market place can generate
transaction costs.

2.5 - Effectiveness

Current transaction cost theory focuses on the relative transaction cost efficiency of
governance structures. However, a transaction cost analysis is relevant only when transactions
are related to an objective. Transaction cost analysis usually fails to take objectives explicitly
into account, or points out the possibility that objectives may not be fully realised because of
prohibitively high transaction costs. Williamson, for example, notes that positive transaction
costs either deprive the organisation of some activities altogether or give rise to discriminating
(i.e. transaction cost minimising) assignment of activities to governance structures25. Turvani
(1996: 197), too, states that ‘It is usually understood that when the costs of market usage
cause its failure, exchanges run into several difficulties or do not occur at all.’ Pitelis (1996:
278-280), however, criticises the assumption in transaction cost economics that a certain
governance structure exists because it economises on transaction costs. In his view, the
assumption that a firm’s objective is to reduce market transaction costs is at odds with the conventional neo-classical assumption that firms are profit maximisers. The correct objective is profit maximisation and not transaction cost minimisation. In line with this criticism, the present thesis explicitly addresses the ability of a governance structure to meet the objectives of the transactors. This ability will be referred to as the ‘effectiveness’ of the governance structure. One implication of explicitly addressing effectiveness is that a trade-off may have to be made. In comparing governance structures, one structure may be less cost-efficient but it may come closer to realising an objective than another structure. Consider, for instance, a buyer who wants to acquire a particular service. In one structure, the costs of finding a producer and defining the terms of the transaction are high but the service can also be obtained at a high quality. In an alternative structure, there is more information, which facilitates the transaction process, but the quality of the service is lower. In such situations the choice between governance structures involves a trade-off between the higher effectiveness of one structure and the higher transaction cost efficiency of another structure.

To evaluate the effectiveness of a governance structure, it is important to have a precise definition of the objectives to be attained and a methodology for measuring the extent to which those objectives are attained. These points are now addressed in turn.

In the governance structures examined in Chapters III and IV, the main players are producers and the state. Producers are interested in maintaining continuity, while the state is assumed to maximise social welfare. In the case of producers, this objective is not entirely consistent with the neo-classical producer, who is modelled as a profit maximiser. The continuity assumption recognises that the objective of profit maximisation does not imply that the producer actually realises maximal profits. The attribute of bounded rationality, discussed in Section 2.4.3, is one important reason why a producer often seems to follow a strategy of satisficing, leading to a satisfactory rather than a maximal level of profits (Jansen, 1982). Furthermore, a producer may be motivated by factors other than profit maximisation. Important stakeholders, for example, may be able to influence the objectives as well as the behaviour of producers through lobbying and other activities. Sometimes, public support is necessary before a firm can operate or expand its activities. Such factors could enter the producer’s objectives and lead him to adopt the objective of continuity. Continuity does not supplant profit maximisation but is broader in that it combines profit maximisation with satisfying the needs of various stakeholders (Herkströter, 1998). A strategy of continuity seems particularly relevant to the air transport industry because of public concern about the industry’s harmful effect on the environment. In Western Europe, and in the Netherlands specifically, air transport has attracted a great deal of attention as a result. The industry is

25 Supra, p. 13.
26 Preferably, there is a unique, clear, consistent and comprehensive objective (Bolkos, 1989: 58, 192-193).
tightly regulated and in recent years court cases have restricted it further. The industry is
dependent upon public support and a stable operating environment as is reflected in the mission
statements and annual reports of KLM Royal Dutch Airlines (hereafter: ‘KLM’) and Schiphol
airport. These two companies also publish annual environmental reports and subject
themselves to environmental audits and certification (ISO). Continuity will therefore be
adopted below to capture the objectives of the air transport industry.

The objective of the state employed in this thesis is based on the theory of the Contract
Social. In this theory, it is presumed that the state has obtained elaborate powers in exchange
for a fiduciary responsibility to enhance social welfare. The objective of the state may then be
defined as the pursuit of those goals that enhance social welfare (Hennipman, 1977: 63 and 95:
xx). In identifying the goals of the state they should not be confused with the goals of various
other parties. In particular, they should not be confused with the goals of those (e.g.
politicians) who initiated or designed government policy. The latter goals may be partly or
completely private, reflecting individual utility and political opportunity rather than official
goals. The goals are also to be distinguished from the goals of those who implement
government policy, as these parties also pursue private as well as state goals. The goals are
furthermore not identical to the more narrowly defined ‘technical goals’, which result from the
translation of (often implicit) social aims into concepts that are needed to implement the policy.
Other problems include the operationalisation of those social aims. If technical policy goals are
too narrowly defined to serve as an approximation of the state’s goals, the researcher will have
to formulate these goals himself, again giving rise to the introduction of private goals.
Although these subjectivity problems may be reduced by gathering as much information from
as many sources as possible, an element of subjectivity is likely to remain. The next question is
the measurement of goal attainment. One approach to evaluating the attainment of a given
objective is to measure certain variables that directly capture the objective. For instance, if

27 At present, KLM’s mission statement does not refer to the interests of stakeholders. Its annual report for
1998-1999, however, emphasises in various places the close relationship between the company and Dutch
society and the significant investments in environmentally related measures. Schiphol’s mission is to be a
leading international airport organisation. In achieving this goal, it aims to take into account the interests of all
stakeholders (annual report for 1999). Schiphol’s annual reports increasingly focus on the city element of the
airport and the experience of being at the airport (‘Airport City’). It is in frequent contact with the local
community to discuss the airport operation and scope for future development and also sponsors local activities.
These consultations are not necessarily motivated by government regulation.

28 Rietkerk (1998: 285-290) argues that continuity is not a sensible objective, because it is the result
of productive activities and not the objective itself. Moreover, continuity considered as an objective, and objectives
such as profit maximisation are in fact management objectives. Rietkerk prefers the objective of maximising
shareholder value, with law, social norms and values as constraints. Nevertheless, even if continuity were a
management objective, in this thesis continuity is preferred because it is broader than maximising shareholder
value and because not every firm has shareholders.

29 In addition, efficiency dictates that the state should realise its goals via policies and instruments that take up
the smallest amount of productive resources. The state’s responsibilities extend to the choice or design of a
environmental protection is the objective, then the level of pollution might be one such variable. The problem is that a favourable value of the variable chosen does not irrefutably imply that the policy has been effective unless an extremely dubious ceteris paribus assumption is employed. This problem of causality is fundamental. Even if a substantial change is observed in the variable targeted by the policy, it may be difficult to tell whether this change is caused by the policy or by other factors. Conversely, if a limited change is observed, the effect of the policy may have been offset by other factors. Although some studies have tried to establish cause-effect relationships by combining econometric studies with company interviews, this approach does not offer a fundamental solution to the problem (Noorderhaven, 1990: 9).

Noorderhaven (ibid.: 10) has developed an alternative approach. Rather than measuring variables capturing the objective directly, this approach looks at the relationships between essential players. In the context of the exchange of air transport rights, there are relationships between states and between state and industry. The interstate relationships define limits within which the transaction is executed and influence the scope and content of the state-industry relationships. The state's ability to realise its goals depends on the contribution to the state's goals by foreign states and the industry and hence on interstate as well as on state-industry relationships. This contribution, in turn, depends on the attributes of the governance structure. For example, the industry is more likely to act appropriately if the governance structure promotes interest harmonisation and provides performance incentives (for instance, rewarding the use of noise friendly equipment via lower aircraft charges). Similarly, a governance structure that allows the state to prescribe how the industry is to provide air transport and airport services and enables it to monitor compliance should increase the industry's contribution. Rather than evaluating the effectiveness of a governance structure by measuring changes in those variables that capture the objectives themselves, that structure may thus be evaluated in terms of the interaction between states and between the state and its agents. To this end, the state's air transport goal will be translated into subgoals, which in turn will be translated into requirements that pertain to the production of air transport and airport services (for instance, noise pollution levels generated by production processes). Governance structures then differ in the ability to meet these requirements. This is the approach that will be adopted in this thesis. It is well-suited to air transport and airport services because the characteristics of these services do not seem to be influenced by the governance structure that is used.

To conclude, the analysis performed in this thesis extends conventional transaction cost analysis by explicitly addressing the question of effectiveness. It focuses on alternative structures in terms of their ability to realise an objective at minimal transaction cost. In other

governance structure. In other words, the state should choose a structure which best meets objectives, given any constraints.

30 Bokkes (1989: 68) adopts a similar approach. He uses this approach, however, in analysing transaction costs.
words, it looks at whether a structure is effective and whether it is transaction cost efficient. The next section discusses a final element influencing these properties. Section 2.7 then reviews some broad categories of governance structures.

2.6 - Industry environment
In addition to the elements described in the previous sections, the industry environment influences the effectiveness and transaction cost efficiency of a governance structure. After all, the process of concluding and executing transactions does not occur in a vacuum. The concept of ‘industry environment’ used in this thesis captures the structure of the industry, which may be described as ‘the relatively stable economic and technical dimensions of an industry that provides the context in which competition occurs’ (Bain, 1972: iii, 170). It reflects the degree of competition among firms in the industry, product differentiation, any scale economies and demand characteristics. The industry environment influences the behaviour of firms and hence the industry. It is an industry-wide feature, unlike the core dimensions, which apply at the level of the transaction.

2.7 - Governance structures
Section 2.2 defined a governance structure as the institutionalised matrix in which transactions are being negotiated and executed, and observed that there are a number of alternative structures. In Williamson’s writings, each generic mode of governance is also supported by a distinctive form of contract law (Williamson, 1989: 233-261, 1999a: 126). Some aspects of these governance structures also characterise the structure examined in this thesis, namely the ‘State’31, and may suggest ways of improving the State. Williamson calls the structures non-specific (classical contract), semi-specific (neo-classical contract) and very specific (relational contracting). The next sections will review some of the existing theory on governance structures from the perspective of transaction cost efficiency.

2.7.1 - Non-specific structure
In a non-specific governance structure, anonymous buyers and sellers meet each other to exchange homogeneous goods at standard prices. A long-term relationship is not important and new relations are created with ease. Uncertainty and the frequency of transaction do not play a role. This structure is appropriate for transactions that do not require specific investments. The costs generated by the structure derive mainly from negotiating separate and recurrent transactions between independent agents. A legal system facilitates executing the transaction but is not crucial, partly because the uncertainty associated with the transaction is

31 Note that the ‘State’ will be used to denote a particular governance structure and the ‘state’ to denote one of the main actors in that structure.
not relevant and the agreement is extensively worked out. The structure is supported by ‘Classical contracting’ (Williamson, 1985: 69). Formal documents are important, formal provisions apply in case of a dispute and compliance procedures, including remedies, are narrowly described.

One example of a non-specific structure is the competitive market. The concept of a market was originally defined as a physical place where buyers and sellers meet. Since then, the definition has evolved from a physical place to a process. Here, the market is seen as an abstract exchange process formed by the total of factors determining demand and supply, with the price mechanism as a co-ordinating system. Full-scale operation of the market will lead to an equilibrium between demand and supply. For a market to exist, it is necessary to have property rights, standards of weight and measure, and a uniform medium of exchange with a fixed or predictable value. A market also requires channels for physical exchange (e.g. a shop) and transaction routines governing initiation of the exchange (who can act) and the exchange process including dispute resolution (Dugger, 1993: 192). A market is thus not a spontaneous institution but a product of institutional evolution. In a perfectly competitive market the goods transacted are homogeneous, so that there is perfect substitutability, there are large numbers of buyers and sellers who can contact each other freely without influencing the price (they are price takers), information about market conditions is freely available and there is no uncertainty. Finally, there are no obstacles preventing complete mobility of resources, either into or out of an industry (Phillips, 1969: 31-32). The competitive market leads to a socially efficient allocation of resources (ibid.). Not much can go wrong in this process. In real life, however, most exchange situations do not meet the above conditions and market failures exist. The provision of services may generate negative externalities, or specific investments may be needed to effect a transaction. Section 2.4.3 showed that in these situations continuity of the relationship becomes important. Furthermore, additional precautions will be needed to protect parties from a breach of contract and to induce them to accept the risk associated with undertaking the necessary investments or proceeding on the basis of imperfect information. As Coase (1937) stated so succinctly, these elements will lead to transaction costs and may warrant the use of an alternative governance structure.

2.7.2 - Semi-specific structure

According to Williamson, the semi-specific structure is often best-suited to non-standardised transactions that occur incidentally and require an average amount of transaction-specific investment. Compared to a non-specific structure, this structure offers a more flexible way of adjusting to change and relationships last longer. In the event of a dispute, so-called ‘trilateral governance’ applies, as the resolution of disputes will be placed in the hands of a specialised third party via an arbitrage or complaint procedure. Given their specific assets, the parties find
it too risky to submit disputes to a judge, while the frequency of contracting is too low to warrant creating an internal dispute-resolution mechanism. The structure is supported by ‘Neo-classical contracting’.

Regulation falls into this category. Regulation can be described as a very incomplete form of long-term contracting, where the regulated party is guaranteed a just return, in exchange for which the contract is amended gradually in response to changed circumstances, without the costly negotiating that would arise with a greater autonomy (Goldberg, 1976: 439, Williamson, 1976: 91, 1986a: 276). Regulation thus involves some delegation of property rights to a third party.

2.7.3 - Transaction-specific structure

2.7.3.1 - General comment
When non-standardised transactions occur frequently or a long-term agreement covers a multitude of mini-transactions, the transaction-specific structure is the most appropriate form. In these cases the heterogeneous character of the transactions (and the ensuing risk posed by market transactions) warrants introducing a specific structure. Williamson distinguishes the ‘bilateral structure’32 and the ‘hierarchy’ or ‘unified structure’.

The bilateral structure is best-suited to transactions that occur with a high frequency and need an average amount of transaction-specific investment. In this structure, parties retain their autonomy. There is no integration since economies of scale can be realised through procurement. It is also possible that integration is not feasible, perhaps because parties value their independent status. The bilateral structure is problematic whenever a change in the relationship is needed. If a change is not foreseen at the start, a new agreement must be reached. The following dilemma occurs: both parties will benefit from continuing the relationship, but each party also has a certain profit expectation that may be jeopardised by any change in the existing agreement. This complicates any amendment, especially given the interdependence between parties. Moreover, if a party expects its trading partner to behave opportunistically, it may choose not to co-operate in an amendment, or to insist on lengthy negotiations and elaborate drafting, generating high transaction costs. Any proposal to make a change might be accompanied by a threat to end the relationship. Since the transaction-specific structure involves sizeable investments, the threatening party will be faced with the substantial cost of creating a new relationship if it carries out any threat. Such costs diminish the potential gains from opportunism and serve as a constraint on such behaviour. They will, however, not reduce the length or complexity of negotiations.

32 Note that this bilateral structure is not the same as the Bilateral structure governing air transport. The latter derives its name from the bi-partite treaties used to exchange air transport rights.
The internal organisation of transactions within a unified structure has advantages in case of very specific transactions occurring with a high frequency. Procurement is a possibility but the level of asset specificity makes internal organisation more efficient. The benefits of this structure include ready access to information and the ability to adjust the relationship with relative ease. Problems surrounding amendments are minimal because there are procedures to guide any change and because interests tend to be harmonised.

The transaction-specific structure is supported by ‘Relational contracting’ (MacNeil, 1981: 1043). Here, not the text of the agreement, but the relationship as it has developed forms the starting point for an interpretation of the facts. A contract is more relational to the extent that transacting parties are incapable of reducing important aspects of an exchange to well-defined obligations. In relational contracting, the longer, the more complex and more uncertain an anticipated relationship, the less significance will generally be attached to any price and quantity variables at the formation stage. The emphasis will be upon establishing (explicitly or by way of tacit assumptions) rules to govern the relationship or transaction process. These include rules covering unanticipated adjustments to the relationship, risk-sharing, the assignment of authority and its scope as well as rules concerning termination of the relationship (Noorderhaven, 1990: 89-90).

2.7.3.2 - The firm

The firm is an example of a hierarchy. The firm, in Coase’s view (1988: 42), is a system of relations that is created when decisions on the allocation of inputs become dependent on the direction of a manager. Like the market, the firm needs property rights, transaction routines and standards of weight and measure. But whereas the market involves separate transactions between independent parties, the firm requires just one transaction. A long-term relationship is created, in which transacting parties agree - within certain limits - upon working under the direction of one of them, namely the manager. Production takes place team-wise. A hierarchy, furthermore, enables the use of authority to end prolonged disputes and replaces the price mechanism as a means of co-ordination. Property rights are allocated to a single entity. Williamson (1999a: 106) considers fiat and forbearance to be central to the description of firms. Fiat refers to the authority of the manager to fill in blanks left in contracts, which facilitates detailing and adjusting the relationship. Any further detailing is embedded in certain structures and processes of the relationship, thus limiting the risk of opportunism. Forbearance implies that a third party will not hear disputes between internal divisions. Access to courts being denied, parties have to resolve disputes among themselves. The firm can thus act as its

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33 See, however, Chapter III on the Bilateral governance structure.
34 Hierarchy is not the same as authority, as only the former is backed by a specific institutional arrangement (Ménard, 1996 : 155).
own court of ultimate appeal. These elements reveal the aspect of relational contracting in the firm.

The firm might perform better than the market for a number of reasons. To begin with, it requires fewer transactions. Its ongoing nature stimulates the availability of information and reduces the need to process information when the agreement is amended. It also enables any problems to be solved at the moment they occur and lowers negotiating costs. In addition, the objectives of transacting parties are more harmonised than they are in the market, reducing the risk of opportunistic behaviour. This is not to say that there is no such risk. In a firm environment, where there is bureaucracy, incentives to allocate the means of production efficiently are weaker than in the market since suboptimal behaviour might not directly affect output levels and, when there is team production, is harder to detect. There is also a risk of moral hazard in the form of shirking. In a team, every individual knows that his efforts affect the reward of the team. While every team member shares in the reward, the individual will bear the full cost, which might induce him to lower his productive effort. The foregoing shows that, as in the case of the market, there are costs involved in the use of the firm. There are direct costs of control, such as the resources needed to detect violators. The manager himself, furthermore, does not generate a directly productive effort but concentrates on monitoring and supervising production. In order to be effective, monitoring requires the development and maintenance of well-defined internal norms and routines, which also generates costs. The extra output of the team has to compensate for the costs of organising, controlling and disciplining the members of the team (Alchian, Demsetz, 1972: 779).

2.7.3.3 - The State

Another structure that can govern resource allocation is the State (amongst others Coase, 1988: 115, Simon, 1993: 28, Pitelis, 1993: 8). In most governance structures, the state exerts influence by, for example, guaranteeing the system of property rights. The State as a governance structure, however, refers to a situation where the state holds the property rights to the good transacted and government actions constitute a specific way of preparing, concluding and executing transactions. The state’s possession of property rights is the defining characteristic of the State. The state may also play a regulatory part. In this case the resulting governance structure can be seen as a hybrid between the State and the semi-specific structure of regulation. North (1981: 21) defines the state as ‘an organization with a comparative advantage in violence, extending over a geographical area, whose boundaries are determined by its power to tax constituents’. This comparative advantage in violence puts it in a position to specify and enforce property rights. North goes on to explain the State using two theories, namely contract theory and predatory or exploitation theory. The former is a logical extension of the theorem of exchange (ibid.: 22), in which the state plays the role of social welfare
maximiser. Since exchange forms the core of this thesis, North's contract-based definition of the State is adopted for purposes of analysis.

The state comprises all separate authorities, legal persons and bodies corporate that possess the competence to issue laws or regulations. All these persons can be reduced to the term 'bestuursorgaan', as defined in the General Law on Administrative Procedures ('Algemene Wet Bestuursrecht' – hereafter: 'AWB')\(^{35}\). In a representative democracy, like the Netherlands, the state is entrusted with promoting efficiency and equity, fostering balanced growth and stability (among others Hennipman, 1977 and 1995), and creating conditions for exchange. The state may also be directly involved in the transaction process. Examples are the conclusion of treaties, issuance of permits and commissioning of infrastructural projects. These examples show that, for the state to play a direct role, it need not engage in any production itself. It could make a third party responsible for the production or distribution of a product or service, under contract, through regulation (Bokkes, 1989: 26) or both. Various factors can demand an active role by the state (among others Hennipman, 1977: part I § 8). The state may have political motives such as the safety of its territory or relations with other states. An apt example is the state's involvement in air transport. The economic reasons for an active role by the state can be categorised as market failure and income redistribution (Berechman, 1993: 56-60). The transport sector offers many situations where these motives lie behind government intervention (Phillips, 1969: 23, 31 and 43). For example, transport is claimed to be a merit good whose public provision at affordable prices is considered the best way to assure its widespread availability. Externalities, such as pollution through air transport, can also lead to state intervention. The costs of negotiation with the producers who generate the externality might prevent any agreement. In such a case, government regulation may force people to accept some pollution in exchange for certain benefits\(^{36}\).

In some situations, the State can be compared to a firm. The internal structure of a ministry under the direction of a manager-bureaucrat is one such case. In addition, both the State and the firm are based on continuing relationships. However, the State differs from the firm and the market in some crucial respects. A central feature of the State is universal membership. More specifically, a party residing in a particular country has no choice but to be subject to rules prevailing in that country. It could choose to leave the territory but, while there, it is subject to applicable rules and regulations. A second central feature is the legitimate power of coercion, i.e. the monopoly of power. The state ranks higher than other agents and can exercise control

\(^{35}\) Article 1 para 1 of the AWB defines the state as 'an authority or a legal person which has been established under public law, or another person or body corporate which is invested with any public authority, such as the central government, provinces or local authorities'. A crucial element in the definition is the power to give an order ('bestuif'); see Article 1 para 3 AWB.

\(^{36}\) See Coase (1960) making a powerful argument against the need for state interference in such a case, assuming, however, the absence of transaction costs. The same argument applies to positive externalities (Wolf, 1994: 22-23).
over their activities (Hennipman, 1977: 31 and 1995: 2). This has as result that transactions which might be viewed as beneficial from a Paretian viewpoint but are not realised in the private sector can be realised through some kind of coercion by the state (Stiglitz, 1989: 21). The above pollution example may be a case in point. The legitimate use of coercion can be based upon the theory of the Contract Social (among others North, 1984, Stiglitz, 1988: 110). It means that the state is able to define and to enforce property rights. In exchange for these extensive powers, the state carries some heavy duties and responsibilities, the most important being the duty and responsibility to promote the welfare of its citizens. It is difficult to determine what this objective entails since the concept of ‘welfare’ is actually a collection of individual objectives. Given the difficulty of gathering and processing information on each individual objective, it is also difficult to arrive at a measure of social welfare. Even if the necessary information could be collected, it is virtually impossible to satisfy every individual’s preferences and to aggregate individual objectives in a way that is immune to manipulation. Apart from satisfying current interests, the state looks to satisfy the needs of future generations and any non-material aims covered by the broad concept of welfare. The state has to base its decisions on an assessment of interests and wishes, guided by its own judgements and valuations (Hennipman, 1977: part 1 § 8 and 1995: 25-26). The problem is exacerbated by the fact that, in politics, a vague and reassuring formula is often preferred to a precise and binding definition (Nicolson, 1964: 50). Furthermore, the state does not have a direct mechanism, like the price mechanism, to measure the costs and benefits of alternative decisions. Decisions in a democracy are usually taken on the basis of a weighing of the stated or revealed preferences of individuals with respect to the good. The mechanism effecting a decision is essentially a political process, characterised by lags, bottlenecks, coalitions, vote trading and so on (Wolf, 1994: 63-64) and the causal relationship between the outcome of an election and individual preferences is vague. Moreover, according to the theory of the Contract Social, not only should decisions be directed at promoting social welfare, they also have to be seen as just by the people involved (Stiglitz, 1989: 28-29). Deciding what is just is difficult. In the case of industrial policy, for example, should the state aid an ailing industry or enhance the competitive power of a successful industry? Not only does it lack a satisfactory notion of social welfare, the state is also hampered in its pursuit of social welfare. Unlike firms or market participants, the state does not face competition, which might make its actions less efficient. Compared with the market, there may be fewer incentives to use productive factors in the most efficient way\textsuperscript{37}. The absence of incentives also applies to the internal organisation of the state, where bonuses or extra pay might be in conflict with the legitimacy of the state discussed earlier (ibid.: 26-27). Moreover, the absence of competition reduces the ability to measure the quality of output

\textsuperscript{37} Although this may also apply to the firm, the problem is greater here because with the State, the state does not run the risk of default.
produced by the state. In the market place, information about output quality is transmitted to producers via consumer choices. When there is no private alternative, quality comparisons are virtually impossible (Wolf, 1994: 52-55, Chapter IV). The state’s performance is further impaired because it lacks the means or information needed to influence the effect of its actions in the market. One reason is that the state generally needs outside parties to realise its goals and that relations with these parties may generate agency problems such as moral hazard or adverse selection. In the context of a project geared toward realising a social benefit, adverse selection pertains to the selection of agents who misrepresent the social benefits stemming from the project. Moral hazard occurs when during the execution phase the agent deliberately fails to act as agreed, for instance, by using equipment other than prescribed. Although the state, as a principal, has the ability to coerce, the existence of multiple goals may reduce the agent’s awareness of the actions that are desired or required of him. The state, in turn, faces difficulties monitoring the actions of the agent and relating them to its own goals. In order to reduce these problems, the state may choose to focus on resolving the conflict between its own interests and those of the agent, rather than detailing appropriate behaviour through additional regulation or trying to devise effective monitoring schemes. This strategy will be elaborated in the following chapters.

Problems of adverse selection or moral hazard can also arise within the state organisation. When the public calls for government intervention, it assumes that opportunism will be absent, since the state is entrusted with promoting the welfare of its citizens. Civil servants are expected loyally to serve all constitutional governments, irrespective of political party sentiments. The government, in return, is expected to place its trust in every civil servant, irrespective of his supposed party sympathies. A private firm, pursuing profit or continuity, will supposedly not act in the public interest (Stiglitz, 1988: 62). Such assumptions fail to take into account the idea, already present in the days of Adam Smith, that social welfare might be best served if everyone served his own interests. They further deny the possibility that civil servants might place private interests above the common interest. Yet, assuming that utility maximisation by an elected civil servant means a desire to increase the chance of being re-elected, he will follow a strategy to maximise votes and might be influenced by lobby groups. A civil servant who is appointed will strive for promotion or other benefits and will therefore also be the target of various factions. Because the state has multiple goals, leaving considerable discretionary powers to civil servants, the risk of moral hazard is greater within the State than the firm (Niskanen, 1971: 36, Stiglitz, 1988: 199-203).

To summarise, the key features of the State as a governance structure are:

1. universal membership,
2. highest rank,
3. elaborate powers (i.e. monopoly of power, ability to coerce) and
4. multiple goals
These features make the State a transaction-specific structure.

The ‘highest rank’ feature warrants an additional comment. It means that the state has the ability to coerce citizens. Compared to other economic agents, the state has access to a broader set of instruments and mechanisms to motivate appropriate behaviour. In addition to regulation, the state may use agreements, it may organise competition, it may introduce a hierarchy by nationalising an industry, or it may stimulate the development of institutional guarantees. In the relationship between states, ‘highest rank’ implies sovereignty and equality. Sovereignty makes it difficult to devise compliance mechanisms because it generally precludes the use of external enforcement to resolve disputes. Unless a state explicitly accepts formal rules, there are none, except for options under the Charter of the United Nations providing for compliance mechanisms that make it possible to adjudicate states or to impose formal sanctions. Sovereign states jealously guard their independence and fear any erosion of their status. This implies that states will not submit to adjudication on any significant issue unless they are certain that the decision will go their way (Shaw, 1991: 679). A decision in favour of one state might also be meaningless when other states refuse to implement it and might, in fact, seriously damage relations. The states therefore have to try to resolve any conflict amongst themselves. They could agree to enforcement by a third party, but a prior commitment is seldom seen (Shepsle, 1986: 71). In this sense, there is a lack of an external compliance mechanism and a consequent incentive to behave opportunistically. This may constitute a serious shortcoming of the State as a governance structure. At the same time, earlier sections noted the possibility that transactions may be self-enforcing. Trust, norms such as mores and traditions, and environmental pressure all play a role and can make a state honour its commitments. In the following chapters, the structures governing the exchange of air transport rights will be analysed in terms of these sources of obligation.

To conclude, the above description of alternative governance structures aims to make clear that every governance structure has special features that influence the transaction process and the level of transaction costs. Although the market has a central place in microeconomics, the discussion shows that the market might not be the most appropriate governance structure for every transaction and that alternative structures are sometimes called for. As an example, if the characteristics of a transaction call for elements of coercion and universal membership then the State would be the preferred governance structure. These might be transactions that would otherwise not be realised because there are too many parties, or because they involve the production of collective goods. The differences among the non-specific, semi-specific and

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38 This does not mean an absolute freedom because only ‘acts of state’ are exempted, i.e. actions by the state in relation to another state (Shaw, 1991: 128).
transaction-specific structures described in this section mainly concern the flexibility of these structures and the degree to which relationships are ongoing. In some structures changes are easily made within the existing agreement, whereas in other structures it is easier to sever the relationship and conclude a new agreement. In some cases it pays to amend the agreement only when it expires; in other cases it is preferable to leave a suboptimal relationship intact to avoid re-negotiation costs. Further, a non-specific structure is not optimal for complex transactions and a transaction-specific structure is a costly way of exchanging homogeneous goods at standard prices. Traditional transaction cost analysis ranks governance structures in terms of transaction costs. It should be clear from Section 2.5 that effectiveness also matters.

2.8 – Concluding remarks

The imperative in neo-institutional economics is to save on the sum of production and transaction costs. With respect to transaction costs, this can be achieved by analysing a particular transaction, given certain individual attributes and the governance structures within which it could be organised, and then choosing the structure that produces the lowest transaction costs. In making a choice, the effectiveness of the governance structure also needs to be considered. In the next chapters the effectiveness of the governance structure will be analysed in terms of the interaction between states and, following Noorderhaven, in terms of the attributes of state-industry relationships. Its transaction cost efficiency will be analysed by looking at the cost effects of the transaction in the interstate and state-industry relationships. The analysis uses an integrative framework (see Sections 2.4.1-2.4.5) based on Van der Zaal (1997: 148 onwards), which identifies and analyses the core dimensions of a transaction. Finally, the industry environment influences the effectiveness and transaction cost efficiency of the governance structure. The optimal structure may be a hybrid, combining features from several alternative structures, recognising that each structure can improve the operation of the other (Wolf, 1994: Chapter 8). Any statements about the effectiveness and efficiency of a governance structure will be formulated in qualitative terms. Rather than giving quantitative estimates of transaction costs, such as a percentage of GNP or equivalent tax burden, they will give some insight into the fundamental nature of and reasons for these costs.

One final comment is in order. It may be that the state does not pursue any goals in air transport. In such a situation the approach may not be useful. The next chapter will show that the state does pursue an explicit goal in the area of air transport.

39 Few studies address this use of productive resources in financial terms. One example is De Vor (1992), who analyses the growth of government and relates transaction costs to the amount of resources (as a percentage of GNP) that a society devotes to the economic exchange process. This is not always the best way of analysing a transaction where the state is heavily involved (Bolkes: 1989: 193). Multiple objectives are a problem, as well as the fact that the state’s services are often hard to identify clearly.
The analysis is organised as follows. Chapter III identifies the reasons behind state involvement in air transport. For the Netherlands, these reasons are translated into an air transport goal, a number of subgoals and concrete requirements that pertain to the provision of air transport and airport services. The chapter continues with a discussion of the parties involved in the transaction, the interstate and state-industry relationships and the transaction process. The focus is on the traditional treaty structure governing the exchange of air transport rights. Chapter IV addresses the Community structure, which seems to be essentially one of regulation. Chapter V analyses for each governance structure the ability of the structure to attain the air transport goal of the Dutch state, core dimensions of the transaction and the structure’s transaction cost efficiency. The chapter thereby aims to determine which of the two structures is more effective and more transaction cost efficient.