A Transaction Cost Analysis of Scheduled international Air Transport of Passengers

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Chapter 1 - Introduction

1.1 - Objective of the thesis
This thesis aims to examine and analyse the governance of international passenger air transport. Such governance may take place via one of two alternative structures, namely the traditional Bilateral structure and the structure that applies within the European Community\(^1\), also known as the ‘Community structure’\(^2\). More specifically, the objective is to examine: 1) the ability of the state to realise certain policy goals in the field of air transport and 2) the transaction costs which are incurred in that process under each of the two structures. The primary focus will be on the Netherlands. Given the reality that the Netherlands are a Member State of the European Community, a secondary objective is to investigate possible ways of improving the current Community structure. The investigation adapts the theory of transaction costs, developed by Coase among others, and applies it to the Dutch air transport system. The transaction that is analysed is the exchange between states of certain rights 1) to enter a foreign air transport market, 2) to use the airspace to transport people to and from that market and 3) to capture the benefits from such use. These rights will also be referred to as ‘air transport rights’.

1.2 - Context of the thesis
The transaction (i.e. exchange) process covers the preparation, conclusion and execution of transactions and leads to a claim on productive resources. This claim is referred to as ‘transaction costs’. The level of transaction costs varies with the governance structure within which the transaction occurs. This structure may be defined as ‘the institutionalised matrix in which transactions are being negotiated and executed’ (Williamson, 1986: 105). It is thus formed by the total of rules and institutions that govern the transaction process. A governance structure may give parties to a transaction the wrong incentives, or the structure may be too inflexible to govern the transaction adequately, thus generating transaction costs and necessitating an alternative way of governing the transaction. Modelling the governance structure as an endogenous variable is an integral part of transaction cost economics as its

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\(^1\) The European Community (or: ‘EC’) is based on the Treaty of Rome of 1957 (‘EC Treaty’). The EC comprises the EEC, Euratom and ECSC and acquired the name ‘European Community’ following the Treaty on European Union (‘Maastricht Treaty’) of February 1992 (entered into force on 1 November 1993). The European Union (or: ‘EU’) consists of the European Community, augmented by the fields of justice and home affairs and a common foreign and security policy. Since the European Community, but not the European Union, possesses legal personality, this thesis uses the term ‘EC’ to identify the entity that enacts legislation. In addition, articles from the EC Treaty are referred to by the numbers applicable since the entry into force of the Treaty of Amsterdam in May 1999 (treaty agreed on 2 October 1997, approved for the Netherlands by law of 24 December 1998, STB 737). Where necessary the original numbers will be footnoted.
purpose is to analyse governance structures from the perspective of finding efficient combinations of governance structures and transactions. Efficiency in this context is looked at from the perspective of transaction costs, in the sense that an efficient governance structure minimises those costs. This notion of efficiency will be referred to as ‘transaction cost efficiency’. The definition ignores efficiency of the production process, which reflects the level of production costs associated with the transaction. In a standard transaction cost analysis, transaction cost efficiency is the sole criterion used to differentiate governance structures. The model developed below extends existing theory by explicitly introducing a second criterion, namely the ability of a governance structure to realise the objectives of transacting parties. Such objectives underlie any transaction but are usually not explicitly taken into account. A traditional objective pursued by the individual is utility maximisation, while the state is often seen as a social welfare maximiser. The ability of a governance structure to attain given objectives will be called its ‘effectiveness’. More specifically, the definition captures the extent to which certain policies and instruments enable the parties to realise their objectives. The transaction cost efficiency and effectiveness of a governance structure may interact in the sense that a higher effectiveness can imply higher transaction costs and vice versa. For example, a policymaker may choose to spend more time gathering information on the reputation of a service provider, thus increasing the chance of a high quality service. In doing so, the policymaker may incur transaction costs. Conversely, the policymaker may opt to refrain from information gathering and select the service provider on the basis of general information, thereby running a greater risk of a low quality service. A policymaker may thus have to make a trade-off between efficiency and effectiveness in choosing the optimal structure.

The thesis focuses on air transport and, in particular, on the exchange of air transport rights. The state makes use of airlines and airports to execute these rights. Although not in line with standard literature, in what follows, these industry players together will be referred to as the ‘air transport industry’ to capture the idea that air transport services as well as airport services are an essential part of the execution of air transport rights. At present, the air transport industry is in turmoil and transition. Whereas it used to be tightly regulated, in recent years the trend has been towards liberalisation. This is manifest in greater freedom of market access and operation, which is in turn reflected in such factors as growing market instability, the formation of alliances and the development of transport networks. For many states in Western Europe, liberalisation is occurring in the context of the more general economic integration pursued within the Economic Community. Transport developments as well as general economic integration have required transacting states to revise their positions. In Western Europe, one

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2 The ‘Community structure’ is used to refer to the structure governing the exchange of air transport rights between EC member states. The structure comprises the rules of the EC Treaty, secondary legislation and any other rules and institutions governing such exchange.

3 The term usually refers to the airline sector.
An important consequence of the move towards liberalisation has been a radical transformation of the structure governing economic exchange. This has had major implications for the states' ability to realise certain air transport objectives. There are some good reasons for studying governance structures in the transport sector. Transport is seen as a facilitator of integration and a transport sector that functions well stimulates general economic development. Transport can also help attain social objectives such as the development of regions that are lagging behind. These functions make it important to know how well a governance structure performs in the transport sector. Moreover, transport is becoming more important because the trend towards globalisation is stimulating demand for the transport of persons and goods. The development of transport is enhanced further by the increased modularisation of the production process, whereby separate modules are produced where production costs are lowest. The relative importance of air transport as a mode of transport has grown (Schipper, 1999: 1). At the same time air transport contributes to environmental pollution.

Two structures are of primary relevance to this thesis, namely the Bilateral structure, which governs most exchanges of air transport rights, and the Community structure, which governs exchanges of those rights within the European Community. The two structures are built on entirely different foundations. The Bilateral structure proceeds from sovereignty and equality. The states hold the property rights to the airspace above their territory. Agreements on the use of airspace are concluded between two states, each regarded as sovereign and equal to the other in status. Every agreement is formulated as an international treaty and, in line with the principle of sovereignty, there is no supranational authority. Relationships are very important to the content of the transaction. A central feature of Bilateralism is that the market is closed and not opened up until a transaction is concluded, and a carrier is designated by the state to operate the air transport service. The state holds substantial ownership and effective control with respect to the carrier. In contrast, the Community structure is based on a multiparty agreement and Community legislation as well as case law have limited the sovereignty of states. The transaction process and rules are standardised and there is a supranational dispute resolution mechanism. The air transport rights are largely delegated to industry players and airlines are subject to a Community ownership and control requirement.

The above description shows that more than two parties participate in the exchange of air transport rights. Although states are the only parties authorised to implement every phase of the transaction, they use airlines and airports to exercise those rights. These parties are usually private entities rather than part of the government administration. In economics, agency theory is used to discuss the relationship between two parties one of which (the principal) uses the other (the agent) to perform services on its behalf, and to analyse the problems of opportunism that may arise when the objectives of the agent are not consistent with the objectives of the
principal. The standard textbook example is the employer-employee relationship (for instance, Holstrom, Milgrom, 1991). The relationships between the state and the players in the air transport industry are very similar. Here, the state is the principal and airlines and airports are the agents. As private parties, the agents may have objectives that conflict with those of the state. It may be argued that the relationship between the state and the air transport industry is not one of agency because the state does not really have a contract with the industry to pursue its objectives. The relationship is, in fact, no different from that between the state and a shoe manufacturer that generates foreign exchange income for the state. However, the state issues permits to carriers and designates airlines and airports to provide services on its behalf. There is no such explicit agreement between the state and the shoe manufacturer, so that the two situations are different. It may, however, be possible that the state does not pursue any clear objectives, in which case the set of objectives is empty. In such a situation agency theory is indeed not applicable. As will be argued in Chapter III, the Dutch state as well as industry have clear, yet different, objectives. Moreover, the state has concluded an increasing number of covenants with the industry providing explicit agreement to pursue government objectives so that the possibility of the empty set does not apply. Thus, apart from a state’s ties with other states, its relationships with various agents play a role in this thesis.

1.3 - Central questions

The previous description of the context and key issues of the thesis leads to the following central questions:

1. Which of the Bilateral and Community structures is more effective?
2. Which of the two structures is more efficient in terms of transaction costs?
3. What suggestions can be made to improve the Community structure?

These questions will be answered from the perspective of the Netherlands as a sovereign state and as a Member State of the European Community. The individual state perspective has been chosen because, as will be seen in Chapters III and IV, current governance structures approach the exchange of air transport rights from the perspective of a state. In addition, bounded rationality on the part of the researcher has limited the analysis to the perspective of the Dutch state. Finally, this thesis aims to give recommendations to Dutch policymakers. However, the applicability of the model developed below is not limited to situations where the Dutch state is one of the transactors. The parties to the exchange may include any state or even groups of states.

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4 Button (1996: 284) refers to the state-airline relationship as one of agency in noting that the objectives of principal and agents sometimes coincide. See also Noorderhaven (1990), who discusses the relationship between the state and firms that receive subsidies as an agency relationship.
1.4 - Methodology

A central governance structure in this thesis is the State. As explained in Section 1.2, the states are the only parties with full authority over the transaction. They derive this authority from their ownership of the property rights to the airspace above their territories. Furthermore, their (legal) power to coerce others within their jurisdiction, gives the states a higher status than any other party involved in the exchange of these rights, and makes the states responsible for the welfare of the public. These features have implications for the nature of the transaction process and hence for the optimal governance structure. A state’s sovereignty and monopoly of power, for instance, make it relatively immune to sanctions imposed by other states via legal compliance mechanisms. The Bilateral and Community governance structures, outlined in Section 1.1, may be considered as variants of the State. The analysis of these governance structures is based on models of transaction costs developed by Williamson (1971, 1985) and Van der Zaal (1997). In these models, transactions are differentiated according to a number of core dimensions, namely the frequency of a transaction, the uncertainty arising from the transaction and the specific investment needed to prepare and execute the transaction. Each core dimension has certain implications for the level of transaction costs. To illustrate, the need to make investments that are specific to a given transaction increases the dependence of the investing party on continuation of the relationship and may induce it to search for certainty and protection. In this way, the party incurs transaction costs. In addition to elements that differentiate transactions, there are two important factors that differentiate transaction parties. First, they may differ in their ability to understand the issues in hand and in their ability to transmit this information. Second, parties may differ in the degree of opportunism in their behaviour. Each of the in total five core dimensions will be studied in terms of the variables that influence them. With this model, the transaction cost efficiency of the two governance structures can then be analysed.

The characteristics of the state make it difficult to evaluate the effectiveness of a governance structure directly. Although the state’s overriding objective may be a general goal such as social welfare maximisation, this objective is really an amalgamation of a number of subgoals. A contribution to one goal may adversely affect other goals. It is also very difficult to attribute observed effects to given policies without making some strong ceteris paribus assumptions. This is particularly problematic for the long-term relationships that exist between states and between states and the industry. The effectiveness of a governance structure will therefore not be measured directly in terms of the effects of a policy on society. Rather, effectiveness will be measured indirectly in terms of the characteristics of the interstate and state-industry relationships. If a governance structure is to be effective in the sense of attaining
the state’s goals, then these relationships need to contain appropriate mechanisms\(^5\). Furthermore, the state’s goals will be made concrete by translating them into requirements pertaining to the provision of air transport and airport services. A governance structure may be considered relatively effective if it contains mechanisms inducing the industry to meet these requirements. Finally, the approach towards measuring the transaction cost efficiency and effectiveness of a governance structure will be qualitative rather than quantitative. The purpose of the analysis is to explore the nature rather than exact size of the connections between governance structures and the variables that determine their efficiency and effectiveness.

1.5 - Scope of the thesis

Section 1.2 observed that transaction cost economics focuses on transaction costs and not on benefits. Although transport generates substantial benefits by allowing a better spatial distribution of labour and specialisation, these are not considered explicitly here. Nor does the analysis address the effects of a governance structure on the welfare of the final consumer. Even though the state is an important party in the analysis and is considered a social welfare maximiser, consumer welfare is not the primary focus of the thesis\(^6\).

Furthermore, the notion of efficiency is defined in terms of transaction costs. The analysis says very little about the effect of governance structures on production costs. There may be some interaction between the two types of cost. The use of information technology, for example, may enable higher output and at the same time reduce uncertainty. A new method designed to reduce production costs may thus at the same time reduce transaction costs. Similarly, tying a private firm to public goals by given it an exclusive concession for an unlimited period, which may reduce transaction costs, may limit competition and thereby reduce production cost efficiency. As stated in Section 1.4 the analysis essentially focuses on the Dutch situation although many comments apply more generally to the area where the Community structure applies or even air transport relations between states.

The scope of the thesis is further limited to scheduled passenger transport and does not consider charters for passenger transport nor any kind of freight transport\(^7\). Scheduled passenger traffic is the best known, and from the point of view of the thesis, the most interesting of the various submarkets. It is the form of transport that is most important in meeting the demand for air transport and consequently receives the greatest attention in regulation as well as in public and political debate. Freight transport usually follows passenger transport if sufficient destinations are offered. Further, freight transport is limited to long distance transport with a high value to weight ratio and air freight transport within Europe is

\(^5\) Such mechanisms might revolve around financial incentives or the right to expand operations.

\(^6\) See Schipper (1999) for an extensive welfare analysis of regulatory reform in aviation.

\(^7\) The distinction between charters and scheduled traffic has virtually disappeared in the air transport legislation of the European Community.
almost negligible (Berechman and De Wit, 1996: 263). Passenger aircraft are responsible for more than half of total freight capacity (at Schiphol airport and world-wide). At Schiphol airport, freighters are responsible for less than 4% of the total number of aircraft movements. Moreover, for the Netherlands, passenger transport is crucial to attracting new businesses as the potential of this transport affects the attractiveness of the Netherlands as a location for European Headquarters and distribution centres. The effects of air transport on non-aviation industries play an important role in Dutch air transport policy (see, for instance, the 1995 Key Environmental Planning Decision, or ‘KEPD’, discussed in Section 3.3.1). The country’s small territory further implies a relatively small amount of originating and destination traffic. If it is to benefit from any scale-related economies (see Section 5.2.4), it must exploit passenger transport by transferring large numbers of passengers.

1.6 - Organisation of the thesis

In Chapter II, the model outlined above is developed in greater detail. The chapter identifies the core dimensions of transactions and transaction parties and analyses their determinants and their effects on the level of transaction costs. The traditional transaction cost model is then augmented by the notion of the effectiveness of governance structures. This is followed by a description of a number of governance structures, including the State and some variants of the State.

Chapter III gives a detailed description of the Bilateral structure. It covers the basic elements of the structure, including the transaction process, parties active in that process, their motives and their relationships. Chapter IV engages in an analogous discussion of the Community structure. The description of the Bilateral and Community transaction will be organised around phases and subgoals. The alternative approach of describing one particular exchange would not suffice to adequately illustrate the two structures.

The material in Chapters II, III and IV provide the basis for an analysis of the two structures in Chapter V. It applies the terminology developed in Chapter II to the air transport context and summarises the distinguishing features of each structure. It then looks at the effectiveness and transaction cost efficiency of each structure and makes comparisons between the two structures. In this way Chapter V answers the first two central questions, namely which of the two structures is more effective and which is more transaction cost efficient.

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8 The margins on transfer traffic are not high but transfer enables a combination of transport flows. This is vital to a hub-and-spoke network (see Section 3.3.3). It attracts passengers who are not destined for or do not originate from the transfer country, thereby increasing the market potential of that country. Transfer traffic is, however, much more susceptible to changes in aircraft charges and operating conditions at an airport (i.e. it is not captive) (CPB, 1997).
Chapter VI contains a summary and conclusions. The chapter also gives some recommendations for how to improve the current Community structure, with the aim of answering the third central question.

The analysis covers developments up to January 2000.