



Why do contracts between airlines and airports fail?



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ABSTRACT

We investigate the sustainability of vertical contracts between airports and airlines. We focus on the case of Quantity Forcing contracts, with a theoretical model that accommodates changes to the contracts' clauses or environments in a two period game, since contracts often include clauses that determine obligations for airlines and airports to be accomplished in more than a single period. We find that contracts – by which airlines commit to carry to the airport the quantity that maximizes joint profits and airports commit to advertise the airlines and to rebate charges – are not sustainable. The relationship holds for both the finite periods and a two period game, a situation similar to a Prisoner's Dilemma. Nevertheless, when there is uncertainty from demand fluctuations the Nash equilibrium of the game depends on the magnitude of the expected fall on demand and on the probability of the state of nature.

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1. Introduction

Deregulation of airline markets, privatization of airports and the rise of low cost carriers has thrown in question the nature of airport–airline relations. On one hand, competition between airports has been growing; on the other hand, there has been an increase in the degree of concentration among carriers, that command higher and higher bargaining power (ICCSAI Factbook, 2013, OECD & ITF, 2009). As a consequence, the airport–airline relationship has often turned into a bilateral-monopoly (monopoly–monopsony) and contracts between airports and airlines are becoming more frequent: both airlines and airports may have incentives to enter into cooperative relationships to create a win–win situation and compete with other pairs of airports and airlines.

In practice, airports wish to be protected against demand risk, to obtain financial support and secure business volume, essential for ensuring daily operations as well as long-term expansion. Airlines secure key airport facilities on favorable terms, and seek tailor-made facilities from airports, making long-term commitment/investment at airports possible (Oum & Fu, 2008). Moreover, through revenue sharing, airlines are able to internalize the positive demand externality between aviation and concession services that are growing fast during the year of privatization and commercialization (ATRS Airport Benchmarking, 2011; Graham, 2009).²

In practice, some specific relationships are found (Fu, Homsombat, & Oum, 2011; Starkie, 2008). Many airport operators

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² The demand for commercial operations depends greatly on the passenger throughput of an airport: therefore, the airport charge may be reduced so as to induce a higher volume of passenger and increase the demand for concessions (Starkie, 2002). As a result, airports and airlines now use various agreements to internalize complementarity between the two types of services: if airlines were unable to benefit from concession sale activities at airports, they would ignore such a demand externality in making their decisions.

have entered into long terms contracts (fifteen- to thirty-year), such that airport's gates are leased on an exclusive-use basis and a new entrant can only gain access by subleasing gates from incumbent carriers.³ Sometimes, airlines invest in airport facilities or airports issue special facilities revenue bond (SFRBs) to airlines to finance specific investment programs.⁴

Price rebate on the input charge usually implies a discount on landing fares, obtained through a negotiation process between the airport and the airline, depending on their bargaining power. The average charge paid by the airline in these contracts is usually much less than the average that would result from the use of the published tariff. The published tariff is still used for charging those airlines for which a negotiated contract is less suitable.⁵ Starkie (2012) describes a variety of other clauses that may be added to agreements. In the agreement between Bmibaby⁶ and the Durham Tees Valley Airport, for example, the airline commits to base at the airport a minimum of two aircraft, a minimum number of passengers, and operating exclusively from that airport. In exchange, the airport would reduce its charges over a predetermined period, support advertisement, and commit to other forms of promotion for the airline.⁷

In particular, we focus on contracts in which the parties agree on a discount on the aeronautical fare. Therefore, the results obtained in the paper can be applied mostly to the European case, where price rebate on the aeronautical charge is a common practice (Starkie, 2008). In this context, vertical cooperation between airports and carriers can be modeled through the maximization of their joint profits, which is the procedure of a vertical merger – sometimes referred as vertical collusion (Barbot, 2009). The only

difference is that in this case aeronautical fares are negotiated between the two partners. Price rebate and the sustainability of vertical collusion have been dealt with in literature before. Gillen and Morrison (2003), using a model of spatial competition, conclude that when only one integrated airport–airline chain covers the market, the merger firm will only charge its maximizing profit price if retail revenues per passenger are greater than the airport charges. They found that this result holds for two competing pairs of airports–airlines with symmetric airside costs. The authors also find that there is a clear incentive for airports and airlines to engage in vertical contracts. Basso (2008) considers the issue of facility rivalry and finds that an increasing cooperation between airports and airlines provides some improvements, even if the resulting airport pricing strategy, in the form of a two part tariff, leads to a downstream airline cartel. Barbot (2009) analyzes competition between pairs of airlines and airports that may vertically collude or not. The Nash equilibrium of a repeated game depends on the behavior of each pair, on the similarities of catchment areas, and on the business model of each airline (low-cost or full service).

Nevertheless, only some contributions have analyzed the conditions for the existence or the sustainability of other forms of contracts. Thus, research documented in the literature appears to lack coverage in this direction. Barbot (2011) develops a model to examine the effects of three types of contracts between airports and airline. She finds that two types of agreements imply a downstream market foreclosure, through a price-squeeze strategy; nevertheless, in all of them, consumers are better-off. Thus, there is a trade-off between competitiveness and welfare. D'Alfonso and Nastasi (2012) extend the results to the case of two competing facilities and multiple airlines. Specifically, they find that both the two competing pairs of airport–airline have incentive to vertical collusion, and the equilibrium is stable when they share the same market and the market itself is not covered.

Zhang, Fu, and Yang (2010) investigate the effects of concession revenue sharing between an airport and its airlines. They found that the degree of revenue sharing will be affected by how airlines' services are related to each other (complementing, independent, or substitute). Airport–airline chains may nonetheless derive lower profits through revenue-sharing rivalry with other pairs, a situation similar to a Prisoners' Dilemma. Fu and Zhang (2010) extend these results by examining concession revenue sharing in terms of the competitive and welfare implications. They found that revenue sharing allows the airport and airlines to internalize a positive demand externality between aeronautical and concession services, improving welfare. Nevertheless, it may cause a negative effect on airlines competition, given that the airport may strategically share the revenue with its dominant airlines, which can further strengthen its' market power.

In this paper, we investigate the sustainability of vertical contracts between airports and airlines focusing on the case of Quantity Forcing arrangements (QF) and price rebate, with a theoretical model that allows changing the contracts' clauses or environments. In particular, the parties, while accounting for a discount on the aeronautical fare, agree on fixed of level of quantity to be sold in the downstream market, i.e. the number of flights, that is the quantity that maximizes the joint profits of both the airport and the airline.

The contribution of the paper is twofold. First, it adds to the debate because vertical contracts in air transport are becoming more and more frequent and the considerable number of cases brought to the Court – motivated either by breach of contract or illegal clauses – is throwing into question if contracts between airports and airlines are sustainable. In 2008, the General Council of Charentes, which manages the airport of Angoulême, agreed to pay to Ryanair about one million euro per year to secure the low cost airline's passengers volume, but after three year Ryanair request

³ For instance, US Airways has leased 37 gates at the Charlotte Airport until 2016. At Cincinnati, 50 gates are leased to Delta while at Minneapolis 54 gates are leased to Northwest. Tampa International Airport has been sharing 20% of its net revenue with the signatory airline, i.e. Continental Airlines, Inc., which continued to operate in the facility under an amended lease that expired in 2009. Delta Airlines is the signatory airline at Atlanta Hartsfield Airport; in 2002 Melbourne airport and Virgin Blue, the signatory carrier, reached a 10-year agreement for the airline to operate from the Ansett Domestic Terminal.

⁴ Terminal 2 of Munich airport is a joint investment by FMG (60%) and Lufthansa (40%). Lufthansa has also invested in Frankfurt airport, and holds a 29% share of Shanghai Airport Cargo Terminal. JetBlue invested \$80 million in Terminal 5 of the New York JFK Airport to be used by the airline under a 30-year lease agreement. Latvia's Riga Airport has offered a contract to the national airline Air Baltic to build and operate a 92 euro million terminal for seven million passengers per annum by 2014. For example, Terminal E at Houston Airport was built for Continental Airlines. The airport issued a \$323.5 million SFRB in 2001 and the rent paid by Continental secured the bonds. A similar agreement was signed between Dallas Love Field Airport and Southwest Airline (Fu et al., 2011), and Sydney Airport and Quantas Airlines.

⁵ Some examples can be found in the case of Bratislava Airport with Ryanair, Copenhagen Airport with Transavia, Helsinki Airport with Finnair or Berlin Schoenefeld with Easyjet. In the Ryanair/Charleroi Airport agreement clauses included an airport charge rebate, a reduced fixed price per passenger for ground handling services, a financial support for the opening of Ryanair's base, advertisement and other forms of promotion for Ryanair (European Commission, 2004).

⁶ Bmibaby Limited was a British low cost airline that flew to destinations in the UK and Europe from its bases at Birmingham and East Midlands airports. It was a subsidiary of British Midland international, itself wholly owned by International Airlines Group (IAG). Following the takeover of Bmibaby and its subsidiaries by IAG in April 2012, it was announced on 3 May 2012 that Bmibaby would be shut down in September 2012, with many flights ceasing to operate with effect from June, 11. Bmibaby's final flight, from Málaga to East Midlands, operated on 9 September 2012.

⁷ Nevertheless, despite this growing tendency to engage in vertical relationships, most airport–airline agreements are not publicly disclosed because they may include clauses such as lower airport charges, priority of service for certain partner airlines. In other words, they may lead to price and service discrimination, which is prohibited by EU rules: an airport is required to charge all airlines the same price for identical services (EU Directive 2009/12/EC-Art.3, EEC Treaty-Art.87/88, EEC Council Regulation No. 95/93).

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