



The impact of intercontinental air accessibility on local economies: Evidence from the de-hubbing of malpensa airport[☆]



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ARTICLE INFO

Keywords:

Airports
De-hubbing
Malpensa
Local development

ABSTRACT

An increasing body of literature has found a positive and significant impact of airport activities on local economies. However, it is not clear whether this effect is driven by demand factors (passengers arriving and departing with their expenditure) or supply factors (accessibility provision for local firms). By considering the 2008 de-hubbing of Malpensa Airport as a natural experiment, we estimate the impact of a reduction in flight network connectivity on employment in the travel to work areas of Lombardia, Piemonte, Liguria and Emilia Romagna. The de-hubbing decision, in fact, permanently affected the intercontinental accessibility of the airport, with only a temporary effect in terms of passengers. We found that areas characterized by export-oriented sectors suffered from contraction in the degree of connectivity, which decreased as an effect, along with distance from the airport. No effect was found in urban areas and areas characterized by heavy industry sectors.

1. Introduction

Airports are crucial for local development because they dramatically influence the international accessibility of cities and regions, as well as function as key players in local economies due to demand-side effects of operations (Brueckner, 2003; Percoco, 2010). The air transport service is indeed recognized as playing a crucial role by facilitating the transfer of both goods (Button and Yuan, 2013) and people (Forsyth et al., 2014; Bråthen and Halpern, 2012), while promoting the attractiveness of more firms to specific regions (e.g., Sellner and Nagl, 2010).

Hub airports, in particular, provide higher levels of connectivity to local consumers through a higher frequency of flights and, even more importantly, through long-haul flights. In other words, hubs enlarge the network scope of consumers with respect to a simple origin-destination system (Burghouwt and Redondi, 2013). It is hence no surprise that economic activities benefit from being located close to a hub. Bel and Fageda (2010) found that a 10% increase in intercontinental routes increases the number of headquarters of multinationals in European metropolitan regions by 4%. Similarly, Vinciguerra et al. (2011) also identified a positive effect on innovative activities of firms.

The aim of this paper is to contribute to the literature on the economic impacts of international accessibility on local development by analysing the natural experiment of the de-hubbing of Malpensa Airport. In turn, we aim to estimate the effect of an exogenous contraction of international connectivity or areas surrounding the airport.

In the period from 2005 to 2007, Malpensa Airport experienced continuous growth in terms of activities, handling 490,000 tons of cargo and 24 million passengers in 2007. On 31 March 2008, Alitalia cut 180 flights and 14 intercontinental routes per day (about 70% of its operations in the airport) from Malpensa as a result of the de-hubbing decision. Our aim is therefore to estimate the effect of such a sudden contraction in connectivity on economic development as measured by total employment in travel to work areas (TTWAs) in the regions of Piedmont, Lombardy, Liguria and Veneto.

In this paper, we are interested in the implications of de-hubbing for local development, while considering the effect of such a decision in areas surrounding Malpensa Airport. By using before-after econometric methodology and addressing the spatial interdependence among TTWAs, we have found that de-hubbing reduced employment by 5.5% in TTWAs within a range of 10 km from the airport, and that this effect was

[☆] Comments from audience in the conferences “Air traffic and regional development” (Ponta Delgada, April 2016) and “9th Geoffrey Hewings Regional Economics Workshop on Topics in Applied Regional and Spatial Economics” at WIFO (Vienna, October 2016) were of great help in improving the paper. All remaining errors are ours. Percoco gratefully acknowledges financial support from FIRB-MIUR (B41J12000290008). Address for correspondence: Marco Percoco, Department of Policy Analysis and Public Management Università Bocconi, via Rontgen 1, 20121 Milano Italy. Email to: marco.percoco@unibocconi.it.

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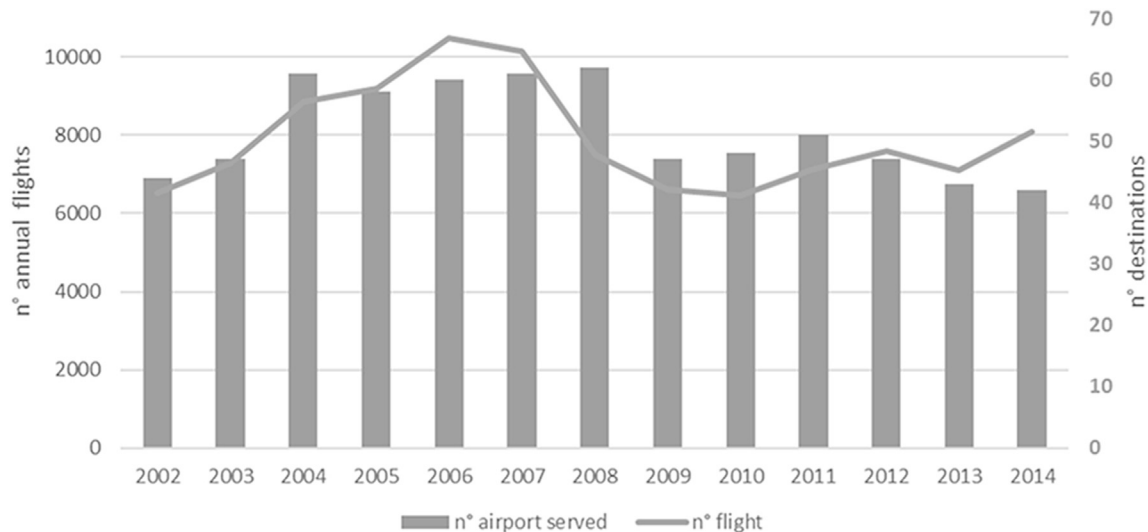


Fig. 1. The yearly offer from the MXP airport toward non-EU destinations that are 3000 km far away.

localized in areas characterized by export-oriented industries.

2. Related literature

A growing body of literature is currently analysing the consequences of de-hubbing for airport operations and consumer welfare. Overall, de-hubbing can suddenly leave passengers with no more available links due to the fall in airports' connectivity (Rodríguez-Déniz et al., 2013), although de-hubbing itself cannot be generally considered as fatal. In some circumstances, opportunities are created in terms of developing a new optimal mix of alternative carriers (Wei and Grubestic, 2015) or increasing product quality, due to a reduction in travel times and on-time performance (Rupp and Tan, 2016). So far, the literature has provided mixed results.

Redondi et al. (2012) presented the results of a statistical analysis of 37 cases of de-hubbing and found a low degree of resilience among airports, given that, in the vast majority of cases, traffic did not recover after five years from the shock, unless low-cost carriers replaced the hub carrier. Low-cost carriers are also crucial in reducing airfares after de-hubbing (Tan and Samuel, 2016), although results in terms of variation in consumer welfare are not univocal.

Indeed, Bilotkach et al. (2014) noted a reduction in consumer welfare in the case of Malév Hungarian Airlines' bankruptcy. The benefits from airfare reduction were, in fact, outweighed by the deterioration in service quality. Luo (2013) presented an analysis of the de-hubbing of Cincinnati Airport following the merger between Delta and Northwest. In this case, the variation in consumer welfare was positive because of the reduction in airfares and an increase in the frequency of flights to other hubs.

The closest paper to the present one is that by Cifarelli and Percoco (2017) in which the authors estimate the effect of the de-hubbing of Malpensa Airport on international trade with Lombardy. By considering a panel of 28 European countries and 30 sectors, a substantial impact of the de-hubbing on regional export was found to be −6%, on average, with greater impact for farer countries and sectors relying more on airfreight to export their products.

3. The de-hubbing of Malpensa

In 2008, the financial crisis experienced by the traditional Italian flag carrier, Alitalia, was the main cause for the de-hubbing at Malpensa Airport. Before the financial collapse, the company developed its network based on a dual-hub strategy at Fiumicino (Rome) and Malpensa Airports, where the latter offered up to 62 destinations (both destinations

more than 3000 km away and destinations outside Europe). Specifically, one third of all these destinations were directly served by Alitalia.

Following the crisis in 2008, the airline decided to focus on a unique hub, namely, Fiumicino, by de-hubbing its network in Malpensa. After the crisis, only four intercontinental routes (out of 28) departing from Malpensa were served by Alitalia (data are from OAG). As a result, the number of intercontinental flights dropped by 36%, while the number of served airports dropped by 19%, from 58 to 47 (Fig. 1). Accordingly, the total number of annual passengers decreased from 23.8 million in 2007 to 17.5 million in 2009. When considering European and medium-haul connectivity, the decline was less pronounced, with a cumulative decrease in the number of flights equal to 18%, which soon recovered thanks to the activity of low-cost carriers.¹ easyJet² greatly intensified its activities in Malpensa, increasing the number of seats by 112% and opening 12 new routes between 2007 and 2009, as well as opening a further 12 new routes in 2010. However, the substitution strategy of easyJet could have partly contributed to restoring the benefits related to air traffic arriving in Milan and the surrounding areas in the years following de-hubbing. Indeed, easyJet's output largely differs from that of Alitalia in terms of passenger types (less business-oriented) and network connectivity (it did not connect intercontinental metropolis/business centres), as well as the inability to offer cargo belly solutions. Only recently has easyJet undergone a hybridization process, taking inspiration from traditional carriers (Cattaneo et al., 2016).

Fig. 2 helps to better illustrate how the scheduled flight services of Alitalia significantly dropped at Malpensa, both at an intercontinental and a European level. Several reasons were conducive to the decision by Alitalia to significantly decrease the number of flights operated from Malpensa. First, Alitalia suffered significantly from the decision to run a network strategy involving operations from two hubs, with a significant duplication of flights and routes served with respect to both Rome Fiumicino and Milan Linate. For instance, Redondi (2013) estimated that about 70% of seats offered by Alitalia from Milan Linate overlapped with the supply for Malpensa. This situation was unsustainable from a financial point of view for Alitalia, whose net result was EUR -712 million in 2008.

¹ Many flag carriers have maintained a steady profile. Analyses suggest that the number of seats offered by Air France, Iberia and Swiss International Air Lines remained fairly constant between 2007 and 2009, or even experienced a decrease, registering an average change of −8%. Only Lufthansa increased the number of offered seats (from 1.3 million to 3.0 million), although traffic was not even comparable to that of Alitalia.

² At that time, Ryanair was not operating at Malpensa Airport.

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