A FEW REMARKS ON ASSESSMENT OF AIRPORT’S ECONOMIC IMPACT

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Abstract

Often is statement in legal documents and nation-wide studies and strategies about crucial or at least significant role of Lithuanian airports on national, regional or local economy. This seems to be clear for everyone, but still little if any is done in Lithuania so no evidence, whether qualitative or quantitative, is provided to ground these statements.

The objective of the paper is to overview and discusses the works and findings on methods and good practices of analysis of airport economic impact (on local economy).

This paper reviews the existing scientific literature analysing theoretical and practical results of airport infrastructure impact on social and economic development of the region.

Analysis shows that there is no unique concept in literature for determining the interdependence of airport infrastructure and regional or national economy; there are different systems of measuring impact’s components and various models which provide different analysis results. Lack of unique methodology in scientific literature puzzles assessment of airport infrastructure and project investments impact on social and economic development of the region. The authors reviewed stress different methods and ideas on this relationship but there is lack of conceptual unique methods and models that could be transferred for distinct object.

The analysis of economic impact is based on three main factors: definition of objective of the analysis and assessment; identification of current methods, identification of obstacles for economic analysis and application of the methods, analysis of best practices. The authors conclude at the end that methods using derivative indicators or generally describing indirect effects seems hardly to pass the critic from groups of interests because represent hard-to-verify facts though very logic and correct; the income-expenditure method, net impact on economy method or net impact on added value methods seems most simple, transparent and persuasive and could be easily presented to all groups of interests – policy makers, business, and community. Authors will continue analyzing these academic issues in their further researches.

Keywords: Airport, analyses of economic impact.
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Introduction

It is a long time since economic impact studies were started to be conducted in global context. Analysis of literature shows that economic impact analysis is conducted by airports operators for several reasons: the key reasons are „to protect against unwanted relocation, cut down or closing down of the airport“ or „to justify airport’s spatial expanding“. However, the relation between investment into infrastructure and the country’s development is not so widely analyzed in scientific literature in the Baltic States (Lithuania, Estonia and Latvia) as in other European Union states (Snieska, Simkunaite, 2009).

As analysis shows Lithuania lags behind in this aspect but still we have already experience in measuring impact of transport infrastructure development projects (roads, highways, taxiways, apron, terminal, etc.). This forced experience was induced by requirements arising from rules for implementing pre-accession projects funded by Cohesion Fund and later by EU structural funds. Worth to mention that a kind of economic analysis were being made in the context of spatial planning procedures during preparation of spatial (general) plans for airports’ territory. But the objectives of economic analysis in latter documents were limited to forecasting of aircraft, travellers and goods flow in order to foresee the technical characteristics of runways, taxiways, aprons and other airfield infrastructure. No evidence found that economic (including social aspect – employment issues – also) impact analysis of Lithuanian airport was ever conducted.

Topics analysed: methodology of airport economic impact analysis.

Objective of the Article: to review and evaluate present methods and tools of airport economic impact analysis.

The research methods used were as follows: a systematic comparative and structural analysis of scientific literature on airport economic impact analysis, logical analysis.
Objectives of Economic impact analysis

In modern economics transport is considered to be one of the determinants of economic development so the strategic solutions in the sphere of transport investments, based on clear understanding of the needs of the stockholders generated by the infrastructure must be clearly understood (Bazaras, Miceviciene, 2010).

The economic impact study is a tool frequently used by airport operators, planners, and regulatory agencies to measure the economic value that an airport contributes to its local and regional surroundings. It is becoming one of the airport planning documents, along with the airport master plan and environmental impact assessment document.

In fact, the argument that the improvement of transport infrastructure changes travels costs and benefits the stockholders in the commodity market is not neglected. The analysis of scientific literature allows concluding that in this case transport infrastructure development benefit consumers and producers in terms of welfare change (Bazaras, Miceviciene, 2010).

Review of literature and current trends show that there is no global standard in setting the objectives, tasks and results of such economic impact analysis document. This is highly dependent on the point of view and objectives of the groups of interests (airport administration, policy makers at national, regional and local level). The thing that is mostly common in all the studies and stressed in literature is that such studies aims at grounding the importance and necessity for presence of the airport, for the development of airport infrastructure and expansion of airport territory. In summary then, the predominant objectives of such studies are as follows:

1) To assess the monetary gain the airport and related activities gives to local economy;
2) To assess the benefits (usually savings) the airport and related activities gives to local community;
3) To assess the share of value added created by the airport and related activities in the context of national (regional) economy.

As different are the objectives of the economic analysis, different are methods and tools for conducting the process.

Methods for economic impact analysis

Different models of infrastructure and development relationship measurement are found in scientific literature which result in various results (Pilinkienė, 2008). Literature and economic impact studies review shows that key methods for analysis of economic impact of the airports are as follows: income-expenditures method, costs-benefits method, spillover method.

Income-expenditures method. This method and its variations normally takes into account three distinct economic effects – 1) direct effects, 2) indirect effects, 3) induced effects. To go more in-details, analysis of direct effects usually includes such aspects as employment of an airport’s staff and expenditures incurred directly by the airport. Further, indirect effects are represented economic activities located, roughly speaking, outside of airports activities. This is to be understood as, for example, employment and direct expenditures by companies outside airport fence, but whose activities are directly and closely related to, or even solely dependent on the airport. And last but not the least - induced effects; these are impact induced by direct and indirect effects. As probably must be clear, total economic impact of given airport would be the total of all above mentioned effects – direct, indirect, and induced effects.

Costs-benefits method. This quantitative as well as qualitative method widely uses various aspects of benefits and costs for society and business induced by the airport, including time saved on travelling and commuting; costs of transportation decreased (e.g. road maintenance savings are calculated by finding the difference between maintenance costs at market prices of the road in the present condition (without the project) and maintenance costs of the road after an airport investment project (Rudziankaite-Kvaraciejiene et. al., 2010); stimulation of business, tourism inflows, as well as benefits (and costs) for local community.

Spillover method. This measures to what extent the airport stimulates activities in the supply-side of local economy including impacts on investment, trade, etc.

Income-expenditure method and costs-benefits method are used for already some thirty years. Spillover method is quite new method of measuring economic impact. Some economic impact analysis studies went further and used multiple methods, combining elements of above mentioned studies, or execute economic simulation analyses based on the results of one or more of the methods described above.

From practical point of view the income-expenditure method is dominating; this usually measures the sum of direct, indirect, and induced economic impacts. Worth to mention that there is no global standard on
what aspects of economic impact should be measured – revised studies propose specific definitions of impact areas that are related to specific economic activities of the country or region in question. Direct, indirect, and induced impacts could be seen as first, second, and third concentric cycles of impacts.

Preconditions and constrains for use of the analysis

As in most economic studies, the results of the economic impact analysis of the airport are highly dependent on availability of relevant and credible input data. That is from our point of view the most limiting factor, which is caused by several reasons and itself causes several subsequence. These are analysed below in this chapter.

As overlooked studies and practical experience shows the collection of input information is complicated in most cases. By this we mean collection of information from airport administration, airport based companies which serve the airport and travellers. The challenges in collecting the information arise under the circumstances that part of necessary primary data are not available or have to be aggregated and processed specially for the economic analysis. This is very general for statistical data about the region or country that are represented in the third cycle of impacts– these yearly data lags behind real life by at least half a year. It is also a case that aircraft operators and private companies, located in the airport and serving the airport, have very little willingness to participate, collect and publicize their data that is often treated as confidential information. All this leads to inadequate and unreliable database, the high costs of studies and poor overall result of the work done.

Another obstacle that limits wider use or credibility of economic study is comprehensibility and transparency of theoretic background of calculations of economic impacts. This is not generally a case for direct or indirect impacts. But when users of the study comes to induced impacts comments addressing the general credibility of the results of such study start to arise. Most common reason is the use of multipliers, often taken from other study, carried out in a foreign country or group of countries which is difficult to explain or transfer to the real life of country in question. In this case high estimates in this case are treated as overstated or at least less credible.

Let’s just imagine that above mentioned obstacles were overcome. Another frequent limitation is the lack of reassessment later on. Most of the studies, using above described studies, represent a snap-shot view into economic impact of the airport basing on some input data, usually with comparatively old statistic data. Therefore users of the economic studies (airport operators, policy makers, local community) did not find the results of economic analysis realistic but more theoretic. In this case follow-up efforts should be transformed into updated model that allows quickly aggregate and show the final value in national currency of economic impact of distinct airport or several airports.

Good practices of application of economic analysis methodologies

It is clear that each application of economic impact analysis method on distinct airport raises some good improvements that could be later improved again and again and thus quality of economic analysis is perfected. The analysis of literature and practical examples revealed different approaches and useful ideas for economic impact analysis. Couple of them are presented below.

Net impact on economy method. Only net economic impact of the airport is assessed by considering only the net amount of money that remains in the local economy. This means that economic activities that would not have taken place without the airport are analysed. Thus economic impact by visiting tourists and visitors who arrive by air (only those who indicated that they would not have visited the region without the availability of the airport are take into account), spending for goods and services by airport tenants (airport administration, fixed-base operators, airlines, etc.) located on airport-territory). It is to stress that direct impact is equal to tourist’s expenditures less volume of import, that is necessary to supply tourists with goods and services (Labanauskaite, 2002). (This approach offers three distinct impacts:

- On-airport impacts. These include impacts caused by airport airlines and FBOs.
- Off-airport impacts. These include financial transactions that are associated with visitor spending off-airport (goods and services). Labanauskaite mentioned (Labanauskaite, 2001), that it is very hard to describe the list of such goods and services.
- Airport-related impacts. These are businesses that directly depend on the airport and could suffer if the airport services are not available. Authors offers using three groups of indicators: population
and social welfare, regional economy and employment, public infrastructure and environment (Kilijoniene et. al., 2010).

Net impact on added value method. Only net added value of on-airport and off-airport impacts is assessed by considering the sum of three indicators: expenditures on staff (including related social security taxes), depreciation for the assets and operating profit. The advantage of the method is that all data are found generally in profit (loss) accounts or in company’s accounting database. This method allows assessment of airports economic impact in terms of share of GDP of the region or country.

Sustainable development point of view. Some Lithuanian authors also propose to assess those projects from sustainable development point of view. According to some authors, sustainable development indicators are grouped by major dimensions of sustainable development: economic, social and environmental. These three dimensions are interrelated and complementary. Usually the concept of sustainable development comprises three equal components: environment protection, economic development and social development, and three welfare dimensions: economic, environmental and social, as well as their integration and interconnectivity (Ciegis et al., 2009).

Conclusions

1. It is clear, that there is no single global standard method for doing airport economic impact analysis. One of the reasons is that the methodologies differs in setting the objective of the study and final indicators of economic analysis – ones aim at assessment of size of economic activity, that is related on airport, others calculate benefits of the airport on surrounding businesses and community.
2. Though most of methodologies used often give monetary values of the economic impacts of airport to local economy but these are hardly comparable to others because are created artificially for specific purposes and not found in the official statistics of the region in question.
3. Methods using derivative indicators or generally describing indirect effects seems hardly to pass the critic from groups of interests because represent hard-to-verify facts though very logic and correct.
4. It is to say that finding of globally used and standardised input indicators, persuasive calculating methodology and output indicators would be challenge.
5. Meanwhile the income-expenditure method, net impact on economy method or net impact on added value methods seems most simple, transparent and persuasive and could be easily presented to all groups of interests – policy makers, business, and community.

References