



Are wider economic impacts of transport infrastructures always beneficial? Impacts of the Istanbul Metro on the generation of spatio-economic inequalities [☆]



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ABSTRACT

Assessment of the Wider Economic Impacts (WEIs) of transport infrastructures has become crucial for justifying transport infrastructure investments, especially large-scale projects, not only for transport researchers but also for policy makers. Although the WEIs have been widely discussed in transport research and policy for more than a decade, these discussions lacked an important dimension: the likelihood of transport infrastructure investments to produce spatio-economic inequalities. This paper discusses the necessity of incorporating an understanding of spatio-economic inequalities in the analysis of WEIs. In order to do that, an ex-post analysis of the Istanbul Metro is carried out. In this sense, this paper also adds to the growing number of ex-post analysis of transport infrastructures. Through its findings based on the ex-post analysis of the impacts of the Istanbul Metro, this paper concludes that contemplating spatio-economic inequalities in ex-ante analysis of transport infrastructure investments will improve the calculation of WEIs of transport infrastructures. Such an approach is expected to help policy makers investing in projects that are less likely to produce spatio-economic inequalities.

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1. Introduction

In recent years, understanding the Wider Economic Impacts (WEI) of transport investments has become an important area of investigation, not only for transport geographers and economists but also for policy makers. What makes understanding the WEIs important is that, unlike the traditional economic assessment of infrastructure impacts, the analysis of WEIs captures indirect user benefits which are not normally captured in cost-benefit analysis (Vickerman, 2008). In fact, calculation of the WEIs of transport infrastructures has become so important for policy makers that without its existence it is difficult to justify the need for a particular transport infrastructure investment that are often known to public with their colossal budgets. For instance, in the UK, the

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construction of the High Speed Rail Network 2 has been discussed quite widely with reference to its wider economic impacts (DfT, 2012).

Although the WEIs of transport infrastructure investments are always evaluated with regard to advantages and disadvantages of investments, spatio-economic inequalities that these investments may generate have not yet been discussed. This paper has two main objectives: using existing approaches to the analysis of WEIs in order to understand whether spatio-economic inequalities of transport infrastructures can be captured in the wider sense; and contributing to the ex-post² analysis of transport infrastructures through a comprehensive methodological approach. The paper uses the Istanbul Metro as a case study. It does not aim to present a full evaluation of the WEIs of the Istanbul Metro but to discuss the possible inequalities generated within its catchment area after its opening. In this sense, the paper presents an ex-post analysis which is a neglected area in transport studies. The main argument to be tested here is whether the Metro has had impacts on the

² Ex-post analysis refers to the assessment of a project or policy following its implementation, while ex-ante assessment refers to the analysis of the expected results of a project or a policy before they take place and allows understanding possible impacts of alternative projects.

accumulation of benefits in space and, therefore, been influential in uneven spatial development.

The paper proceeds with a review of the literature on the assessment of wider economic impacts of transport infrastructures. Examples are mainly selected from research on rail transport. Rail infrastructure investments provide important discussions for understanding the wider economic impacts of transport infrastructures, since investment in rail is justified not only on the basis of traditional economic assessments but also by looking at the broader benefits of agglomeration, employment and development (Banister and Berechman, 2000). This brief review of the literature is followed by a methodological discussion on the ways in which these impacts can be examined and the issues relating to such assessments. Following this, economic impacts of the Istanbul Metro are discussed with reference to the development of businesses and, finally, main conclusions on the findings are drawn with regard to spatio-economic inequalities.

2. Assessing the wider economic impacts of transport infrastructures with regard to spatio-economic inequalities

Transport infrastructures and networks have been regarded as important components of economic development since the early days of civilisation. In an attempt to understand how railway networks “civilise” nations, Jefferson (1928) discusses the advancement of societies in relation to the existence of increased mobility. Yet, to recall from Clark (1957), transport infrastructures can be the breaker of the societies as they can be the maker of them.

Recent discussions on the impacts of transport infrastructures suggest that transport systems are likely to form segments and pathways; enclaves and fragments which may create isolation and/or connectivity and fluidity (Graham and Marvin, 2001). Therefore, they can be the facilitators of integration, development and growth; yet, at the same time the causes of disintegration, exclusion and socio-spatial inequalities (ibid). However, possible negative impacts of transport infrastructures are not considered in the emerging area of the assessment of the wider economic impacts of transport infrastructures. Recent research reveals the necessity of such a discussion (Beyazit, 2013a; Chen and Hall, 2012). Yet, due to the complexity of the subject, i.e. the relationships between transport infrastructures, planning decisions, historical/social/political contexts and economic development, a full investigation of the causality needs lengthy explanations. This paper is an attempt to begin such an extensive debate.

Assessment of WEIs of transport infrastructures has been on the agenda of transport research for a relatively short time but has attracted a growing interest amongst academics and policy makers (See for instance, DfT, 2005; Vickerman, 2008; ITF, 2008; Banister and Thurstain-Goodwin, 2011; Hensher et al., 2012). These are the impacts of transport infrastructures on the economic growth and labour market (Banister and Berechman, 2000; Vickerman, 2008; Banister and Thurstain-Goodwin, 2011; Hensher et al., 2012), agglomeration (Graham, 2008; Vickerman, 2008; Banister and Thurstain-Goodwin, 2011; Chatman and Noland, 2011; Graham and Melo, 2011; Mejia-Dorantes et al., 2012) and impacts on land and property values (Cervero and Duncan, 2001; Cervero, 2003; AtisReal and Geofutures, 2005; Debrezion et al., 2007; Banister and Thurstain-Goodwin, 2011).

Despite an important amount of research in the area, methodological challenges remain as a crucial part of every scholarly work with the aim of assessing the WEIs of transport infrastructures. Moreover, an attempt to understand spatio-economic inequalities resulting from transport infrastructures requires more consideration of the methodological issues. Therefore, the next section of

the literature review is devoted to these methodological constraints and the ways in which researchers can overcome them.

2.1. Overcoming the methodological constraints

A variety of methods have been developed in order to evaluate the impacts of different transport infrastructures, but due to the complexity of the subject it is hard to discern the impacts of investment on one particular transport system from any other infrastructure investment, planning regulation or implementation. Vickerman (2008) draws attention to the difficulty of ex-post analysis as the impacts of transport infrastructure investments reveal through time and, therefore, changes cannot be clearly detected. Thus, a methodological challenge exists in understanding post-impacts of transport investments. Issues of scale, causality, distribution, time, double counting and control areas are hereby discussed.

Scale and causality are the first issues that need to be dealt with in any exercise examining the impacts of a transport infrastructure investment (Banister and Thurstain-Goodwin, 2011). It is not just the scale of investment that is important, but also the geography (the context) in which the investment has been made. The scale of investment defines the scale of impact and the spatial unit to be affected by that investment. Therefore, other issues affecting the development of the area, such as planning regulations, economic situation, spatial/environmental barriers and demographics, are important for research. The question is how much of the impact can be attributed to transport. These issues very much affect the causality as well. It is a hard task to prove causality as one needs to eliminate the external factors from the impacts of the transport infrastructure in which scale of research is an important factor (Banister and Thurstain-Goodwin, 2011).

Secondly, the issue of distribution emerges as another important factor. According to Chatman and Noland (2011), the growth that is measured as a result of a transport investment is not always new. On the contrary, it may occur as a result of redistribution from one area to another. Vickerman (2008) explains this process as the acceleration of impacts in one region “at the expense of another” (p. 35) which raises the debate on ‘gainers and losers’. Despite the possible disruptive impacts of such redistribution, Vickerman (2008) suggests that there still would be an overall gain as a result of the investments. Although the overall economic gain at the regional and urban scale could be seen as a positive result, the impacts on the local economy could be tremendous as the losses could negatively affect the local population.

Thirdly, including WEIs in traditional assessment processes may result in double counting of the benefits since they already consist the economic growth parameters resulting from travel cost savings (e.g. as a result of a Cost-Benefit Analysis). However, measuring economic growth effects do not necessarily double count investment benefits since infrastructure investments, as is argued here in terms of wider economic benefits, “produce more than just travel cost savings” (Banister and Berechman, 2000: p. 162).

Fourthly, time-related factors are also crucial for the assessment of transport infrastructure benefits. Banister and Thurstain-Goodwin (2011) suggest that the data to assess these changes should be “ideally available from before the decision to build was taken, prior to opening, and immediately after opening, as well as further downstream. A continuous database is ideal, but data are needed for at least these four points in time” (p. 217). However, different approaches exist such as Cervero and Duncan’s (2001) research on the relationship between transit and land values where they use data from 1998 and 1999 when remarkable changes were observed in land prices.

Last but not least, using control areas is another way to understand the impacts of a transport infrastructure investment. Control

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