Valorization

This addendum to the PhD thesis, in accordance with article 23 of section “Note on the Regulation Governing the Attainment of Doctoral Degrees” of the document “Regulation governing the attainment of doctoral degrees” of Maastricht University, aims to address the following five points specified in this document: relevance, target groups, activities/products, innovation, and schedule and implementation. As specified in the aforementioned official document, “the addendum about valorisation does not form part of the dissertation and should not be assessed as part of the dissertation.”

Relevance

The social and economic relevance of this dissertation, in addition to the scientific relevance, can be discussed within several contexts. Firstly, from a public policy making perspective, the dissertation elaborates on the outcomes and determinants of investments in certain types of public infrastructure. For instance, in the second chapter, the impact of internet infrastructure on regional per capita income convergence in an upper-middle income economy was examined. The theoretical base was built on the assumptions that the diffusion of information makes regional economies more similar by homogenizing them in terms of markets, financial services, and culture. In turn, it was recognized that telecommunications infrastructure increases the speed of information transfer

1This addendum contains text from the introduction and conclusion (chapters 1 and 6).
2http://www.maastrichtuniversity.nl/web/Main/Research/PostgraduateResearch/PracticalMatters/Regulation\GoverningTheAttainmentOfDoctoralDegrees.htm.
among regions. Finally, a specific, and modern type of telecommunication infrastructure was taken into focus, namely, internet infrastructure. In this chapter, the core-periphery structure of the Turkish economic geography is also explored.

The spatial units used in the analysis within this chapter were the 26 NUTS-2 level statistical regions\(^3\) of the Republic of Turkey, an upper-middle income economy (The World Bank, 2014). The results have supported the hypothesis that better internet infrastructure makes regional economies more similar by increasing their speeds of convergence to their steady-state levels of per capita income, and also by making the individual steady-states of regional economies more alike. As a result, for countries like Turkey, if regional disparities are seen as a problem, increasing the regional communication ties through modern communication technologies is suggested as a relevant policy tool. On the other hand, in terms of scientific relevance, Chapter 2 provided an application of methods of spatial analysis on Turkey. The dissertation in general obtained and used data on Turkish regions that prior to the remedies suggested in the dissertation, were highly fragmented. Extensive use was made using the statistical software STATA 13 in conducting all analyses.

The results of the dissertation also provided relevant results in terms of the policies regarding trade-related infrastructure. A meta-analytic study is presented in Chapter 3 with the purpose of synthesizing previous research results on studies looking at the relationship between infrastructure and trade. An interesting result was observed which also rises policy-relevant questions. This can be summarized as such: previous studies persistently estimated that trade-related infrastructure such as ports, roads, airports, railroads, and communication infrastructures increase the exports of the economy in which they are located more than its imports. This is obviously an outcome that needs further attention. Such a result would suggest from a policy making perspective that ceteris paribus, enhancing own trade related infrastructure could help improve the trade balance in an economy. Why such results have

\(^3\)“Nomenclature of territorial units for statistics,” see: http://epp.eurostat.ec.europa.eu/portal/page/portal/nuts_nomenclature/introduction
been observed in the literature is further discussed in the concluding section of this chapter. In terms of scientific relevance, this chapter presents the first meta-analytic application on the question of the relationship between infrastructure and trade. The analysis follows the concrete guidelines for conducting a meta-analysis provided in Stanley et al. (2013). The study also considers the multidimensional nature of the concept of “infrastructure” and distinguishes its components.

Regarding the policy relevance of trade-related infrastructure, further evidence is presented in Chapter 4 where a case-specific focus is taken. Using the regions in Turkey, the chapter assesses not only the impact of the presence of infrastructure, but also the effects of the location of point infrastructures (e.g. ports and airports) as exit or entry nodes for trade flows. Results have essential implications on policy decisions regarding where to locate infrastructure and what type of infrastructure is good for exports. The study is the first application of a gravity model on the export flows of Turkish regions, and underlines the importance of private ports, air transport infrastructure, and land infrastructure.

The dissertation does not only look at how infrastructure affects convergence and trade, but also at how it is allocated by the central planners in Turkey. This is especially relevant for regional policy making and its applications. I assume, in line with the dominant theories in the literature, that there are two main points of interest in the decision making process regarding the allocation of public capital: national efficiency and regional equity. The policymakers, depending on their purposes, allocate weights on these goals in various degrees. On the other hand, this mechanism of preference may be influenced by other factors, mainly, political ones. This chapter shows that in Turkey, the regional allocation of investments in transportation and communication public capital has been subject to political influences. These influences are in a way moving the balance point in the efficiency and equity trade-off, putting it to a potentially sub-optimal state. The results are highly relevant for Turkey, given that an alleged strong presence of such influences have long been part of political debates.

Scientifically, the research in Chapter 5, is the only study that recognizes
the dependency between allocation decisions of different infrastructure types when looking at the determinants of public investments. Moreover, the study also presents a regional gross value added series for Turkey for a relatively long period of time (1987-2011, with the possibility to be extended further as new data is published). This regional gross value added series was previously not available due to gaps in the official data, differences in measurement of regional output in different periods, and differences in the spatial scale of data collection in different periods. Finally, aside of public policy related implications, the dissertation also is relevant for location choices of firms. Firms will locate to where increasing external returns to scale is higher. Moreover, reduction in transportation and communication costs also highly affect the agglomeration of firms and industries, as formulated in the New Economic Geography literature by Paul Krugman.\textsuperscript{4} Therefore, infrastructure-related policies are important policy tools that partly determine the agglomeration of economic activity over space.

**Target Groups**

The target groups of this dissertation are academics, policy-makers and policy-analysts, firms, non-governmental organizations, and political parties. In the academic sense, as mentioned in the previous section, the study presents novelties in terms of analytical contributions, synthesis, applications of various methodologies, and reconciled data sets for the use of future research projects.

For policy-makers and policy-analysts, this dissertation provides information and evidence regarding infrastructure related policies and their outcomes, how they are undertaken, how their location choices should be, and also present suggestions on the separate functions of different types of public infrastructures.

In the context of private firms, the dissertation has implication on

\textsuperscript{4}see for example Fujita and Krugman (2004); Fujita et al. (2001); Krugman (1991); David (1999).
location choices in relation to infrastructure presence and agglomeration. The dissertation also gives information for firms regarding what benefits to expect from what infrastructure type.

Finally, for non-governmental organizations and political parties in Turkey, Chapter 5 provides important evidence that allocation decisions of the central government in relation to regional transportation and communication public capital is subject to political influence. This evidence can contribute scientifically to political discussions in need of academic research findings.

**Activities/Products**

The results of this dissertation can be translated to activities regarding the enhancement and location choice of infrastructure based on specific regional and national needs. In turn, such activities would influence the general economic geography in a given group of regional economies. Moreover, results can also support political activities that aim towards attaining an optimal strategy in allocating infrastructure across the regions of Turkey.

Further activities that could arise are related to an international dimension of investing in the infrastructures of trade partners. Also, general national policies on trade promotion or export strategies could benefit from the results mentioned earlier. Such activities, of course, are dependent on the general policy goals of the relevant policymakers.

**Innovation**

The results presented in this dissertation stem from a collection of innovative components. For instance, recognizing dependencies between capital allocation decisions in Chapter 5, or using an interaction variable approach to see how the speed of convergence is affected by the main
explanatory variable of interest are innovative contributions. Moreover, focusing on internet infrastructure as a modern mode of communication infrastructure in assessing regional per capita income convergence, providing meta-analytic results on the infrastructure-trade relationship, and special focus on the implications of infrastructure enhancements in the Turkish regions within the last decade provide new approaches and case specific results to the relevant academic strand of literature.

**Schedule and Implementation**

The schedule and implementation in relation to the results presented in this PhD dissertation, are of course entirely dependent on the potential interest of policymakers. Naturally, it is unlikely that states shape whole policies by considering one paper or dissertation on economic policies. It is rather an accumulation of knowledge and empirical results that ultimately impact policy making. It is my hope that this dissertation has contributed numerous novel empirical bits of evidence that will add to this pool of knowledge that eventually translates into policy making in conjunction with the results presented in the literature in general.

**Concluding Discussion for the Valorization Addendum**

Connectivity of regional economies in relation to costs of transportation and communication, the agglomeration of industries over space, and the decision mechanisms that affect these processes are key components of the spatial economy. This valorisation addendum to the PhD dissertation titled “Regional policies, convergence and trade: studies on Turkish regions and a meta-analysis” aimed to address how the findings of the studies composing the thesis is relevant to the economic and social occurrences.

Three our of the four studies represented as separate chapters in the thesis focus on the regional economies of Turkey. Therefore, for similar
upper-middle income economies, the dissertation presents policy relevant suggestions within the context of regional infrastructural policies. Another study presented in the thesis aims to combine the research findings of many previous research findings on how regional trade performances can be enhanced through policies related to infrastructure.

A diverse collection of methodologies have been used in answering the research questions which where (1) to what extent internet infrastructure reduces regional disparities? (2) to what extent infrastructure impacts on trade flows? and (3) to what extent political influences determine the regional allocation of transportation and communication public infrastructure? These questions were addressed using methodologies such as dynamic panel estimation, meta-analysis, gravity models, and spatial econometrics.

The results, other than academic contributions, also underline certain indirect implications about firm location and economic clustering. For instance, the spatial analyses presented in Chapter 2 point out how regions with similar economic characteristics are clustered over space, implying that firms must be concentrating on certain areas of the country in question. Moreover, as mentioned in the concluding section of Chapter 3, the difference between the estimated exporter infrastructure elasticity of trade and the importer infrastructure elasticity of trade could be due to how exporting firms respond to improvements in own infrastructure versus trade partner infrastructure. The firm location choices also depend on the presence of infrastructure in given areas and the type of such infrastructures together with their distance to economic centers. Finally, the dissertation also suggests that firms in Turkey need to be wary about the political atmosphere in their regions as they can have important implications on how regional infrastructure is supplied and maintained.

Certainly, future research will shed more light on the research questions this dissertation focuses on. For instance, the utilization of infrastructure within the context of trade activities can be elaborated further, as it may provide more information how the same infrastructure may influence export flows and import flows differently. Also, the affect of
internet on convergence can be further solidified by researching the micro level mechanisms such as firm and market connectivities leading to the homogenization of, say, corporate cultures across the firms located in different regions of an economy. Finally, the lobbying power of regions for attracting more investments from the central government can also be researched using case study approaches, interview based data collection, or survey focused research.
Bibliography

Altunc, Ö. F. and Senturk, B. (2010). The role of public and private investment to ensure sustainable macroeconomic stability in Turkey.


