

HANDLING INTERREGIONAL TRANSPORT AND TRANSACTION COSTS THROUGH BRIDGES AND ENHANCING ECONOMIC GROWTH AND DEVELOPMENT

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ABSTRACT

The most important impediment to interregional trade is the transportation and transaction cost among trading parties. In this study, the transportation and transaction cost is characterized in three different forms of gaps between trading partners viz; physical, institutional, and social. In all forms of gaps, movement can be facilitated by a form of bridge. Bridges, as an abstract concept, can be characterized as i) physical bridges connecting two sides of any geographic obstacles, ii) institutional bridges handling transaction limitations (such as absence of compatible telecommunication, banking, legal system), and iii) socio-cultural bridges dealing with difficulties for mutual understanding of trading parties such as cultural mismatches. *Physical bridges* are the basic capital investments linking physical gaps between sides such as tunnels, bridges, highways, airports. *Institutional bridges* are the compatible institutional structures among regions, states, countries such as banking, insurance finance, and legal structures. *Socio-cultural bridges* are the socio-cultural proximities among societies such as historic backgrounds, common languages, familiar religious practices, common cultural identities from food to humor. In this study, first, the benefits of bridges are theoretically presented, and then the advantages of various forms of bridges to the selected country, Turkey, are critically presented. The study has shown that, Turkey has been *handling all forms of transportation and transaction costs* not only through the physical bridges but also through the legal, institutional as well as the informal and emotional bridges. In this process, Turkey is taking advantage of her geostrategic and geopolitical location as well as her geo-cultural characteristics which have been accumulated throughout history. As a result, all efforts aimed to reduce the cost of transportation and transaction bring about additional consumer and producer surpluses and which consequently bring about positive welfare gain to the Turkish society.

Keywords: Bridges, spatial price equilibrium model, transport cost, transaction cost, consumer surplus, local and international trade, growth and development, hinterland, export based growth.

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I. INTRODUCTION

Economic records have shown that, the last two decades of government policies not only took Turkey out of the 2001 economic crisis but also managed to triple the nation's Gross National Product (GNP). There have been many instances of disagreements in the use of major physical, social, economic, cultural, and political machinery of the country. Some of the major oppositions have been geared towards; i) the construction of major infrastructure such as intercontinental bridges, highways, airports, tunnels, metro lines, ii) the review of civil and state laws and institutions, and iii) the efforts to increase tolerance of internal diversity of the country as well as efforts to increase the extent of international relations with neighboring and overseas countries. This study proposes *a unifying principle* in clarifying and explaining the major political backbone and direction of the country. This principle, in this study, is referred to as a form of *physical, institutional, and socio-economic bridging process* in which its theoretical construct is basically built on the *Spatial Price Equilibrium Model (SPEM)* (Samuelson, 1952). In this context, the concept of SPEM and specifically one of its main components, which is *the transport cost*, carries a significant explanatory power in the theoretical formulation of interregional movements and trades.

Bridges are the basic infrastructures that enable crossing between two sides of natural barriers such as rivers, valleys among others. Beyond the basic physical infrastructure, any type of structure connecting one part to another can be considered as a bridge. This *term* can also be used for established functioning institutions to facilitate activities across various thresholds, borders, and even between various socio-cultural entities. In practice, bridges close gaps, increase cooperation and improve productivity and welfare among parties.

In this study, the concept of *SPEM* is used to analyze three forms of bridges, which are *physical, institutional, and socio-cultural*, in explaining the growth and development of Turkey in the last 40 years especially 20 years of trajectory. The basic principle is the reduction of costs between two or multiple sides of bridges in order to enable arbitrage. Then the capability of the model in conceptualizing and explaining the various *transaction costs* are reviewed. Finally, various forms of local, regional, international strategies, decisions, activities are reread by the explanatory power of this model. The benefits of forming local, regional, and international coalitions and organizations are reviewed in this respect.

In the coming sections, *firstly*, there is a literature review in which, initially, various forms of regions are described, later, *spatial price equilibrium model* is presented; *secondly*, how those

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three different bridge concepts are applied in these different forms of regions and presented as practical policies. *Lastly*, the value of reducing all forms of transaction costs is presented within the context of growth and development of Turkey.

II. LITERATURE

In this study, a form of trade based growth and development approaches presented by P. Samuelson, D. North, and P. Krugman, the Nobel Prize laureates in Economics, are used. The initial mathematical model of *interregional trade* providing overall net economic gains to the involved parties is shown by Samuelson (1952). Emphasizing the importance of *transport cost* in economic growth, Krugman (1991) states that firms create geographic concentration of wealth by choosing locations where they can find large local demand, interaction of increasing returns, and minimal transport costs. In principle, the larger the market the higher the source of economies of scale and the better competitive environment for firms. He asserts the concept as *Home Market Effect* that is the larger the home economy the more competitive the region and the firms. In other words, the *home market effect* is that “the country with the larger demand for a good shall, at equilibrium, produce more than proportionate share of that good and be a net exporter of it” (Dymond, 2015). According to Krugman (1999, cited in Shukurov, 2016), “if trade is largely shaped by economies of scale, then those economic regions with most production will be more profitable and therefore will attract even more production and FDI, and production will tend to concentrate in a few regions (or big cities) with high levels of business infrastructure and large market size”. That dynamism is built on the principles of minimized *transport costs* and *agglomeration economies*. Consequently, this phenomenon is defined as the *Theory of New Economic Geography* by Krugman.

The emphasized *transport cost* concept can be stretched to the *transaction costs* that is defined as “the costs associated with the measurement and enforcement of agreements” by D. North (1993). According to Arrow (1969) *transaction costs* are “defined as the costs of running an economic system, including exclusion costs and costs of communication (e.g. supplying and learning terms where transactions would be undertaken), and the costs of disequilibrium” (Arrow, 1969, cited in Qian et al., 2016). Transaction costs are based on institutional aspects of the societies and economies. Arrow (1969) and Cheung (1987) state that transaction costs are essentially institutional costs (cited in Qian et al., 2016).

According to North “[i]nstitutional differences produce economic consequences”. North claims that “[t]he success story of Western Europe does occur over five hundred years and does appear to be a result of a sequence of incremental changes in economic and political institutions which gradually increased the scope of credible commitments to permit the increasingly complex contracting essential to creating and realizing the potential of more productive technologies” (North, 1993). These are the bases of progress of the western world. Again, according to North (2003); “Institutions are made up of formal rules, informal constraints and their enforcement characteristics. Formal rules, of course, are very straightforward. They are rules put into place; they are laws, constitutions, regulations, whatever, that has the character of being specific and being defined precisely. Informal norms of behavior provide us with more problems because informal constraints do not show up in formal terms. They are ways of doing things and are extremely important. The kinds of formal rules that we have in fact occupy a very small proportion of the guides to everyday behavior and actions. In many ways norms are more important than the formal rules”. Both *formal rules* and *informal norms* have enforcement characteristics. These measurement and enforcement costs are the results of social, political, and economic institutions (North, 1990).

The scope of formal rules can be easily identified in constitutions, laws, and regulations and can be updated by means of amendments. The scope of informal norms inherited to the codes of behaviors of individuals in societies are hard to understand and change.

Later in this study, in order to improve the interregional and international trade, any physical improvement increasing accessibility and proximity in geography is considered as *physical bridge*; any change in formal rules is considered *institutional bridge*; and any activity which effectively utilizes and adopts the informal codes and/or conducts with the aim of reducing transaction costs is considered *socio-cultural bridge*. All of these have roles if properly handled can contribute to the economic growth and development of regions.

II.I. Definition of Region

Richardson (1979) observes the difficulty of defining the concept of a region and suggests various definitions by means of economic, administrative, historic, and other criteria. Czamanski (1973) proposes *area*, *zone*, and *region* concepts: The *first* one is about a market area; the *second* one is about the subsection of an urban area; and the *third* one is sub-segment of a country within which there are comprehensive, complex, and independent socio-economic structures. This region may have also strong interregional ties (cited in Richardson, 1979).

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From the classical perspective, three major definitions for regions are as follows: *Homogenous regions* in which differences and interactions are not considered. *Nodal or polarized region* in which homogeneity is not taken into account but flows, contacts, and interrelations are considered. These regions are more likely to be identified as centers or nodes. *Planning regions* in which political and administrative controls and integrity are major considerations for the special purpose of planning and program applications (Richardson, 1979).

In this study, regions are defined in three different conceptual ways, and regarding these conceptualizations, three different forms of bridges are asserted. These regions are i) *physical geographic regions*, ii) *institutional regions*, and iii) *human geographic regions*.

Physical Geographic Regions: These types of regions are constrained by natural geographic thresholds and obstacles such as rivers, straits, canyons, mountains, channels. Even distance by itself can be considered as a threshold and an obstacle. Those gaps create discontinuity in spaces, and can be overcome and bypassed by means of bridges, tunnels, pipelines, airports (providing direct flights), sea-lines, energy networks, telecommunication lines, and even by satellites. All of these types of connecting infrastructures are considered and in this study so named as *physical bridges*.

Political Regions: In political and administrative perspective, regions carry homogeneity, unity and integrity within their jurisdictions and boundaries regarding the principles of law and regulations. They may also have different forms of organizations and institutions accumulated throughout their history. In political regions, the rule of administration within the boundaries are well defined and many forms of activities are given flexibility under institutional protection. However, moving beyond the boundaries, there are incompatible laws and regulations, institutions and organizations which do not let the mutual penetration of socio-economic and cultural activities take place. In other words, there are gaps between political regions which need to be connected via various forms of bridges. We can call these types of bridges that enable compatibility of political regions by means of allowing facilities and activities that penetrate one another, and creating unities and unions as *institutional bridges*. In this respect, geographically and legally defined districts, counties, provinces, states, countries, regions, nations, and unions may and can interact with each other via pre-determined and/or permitted level of penetration. The easier to cross the other side the more mutual benefit gained. For instance, European Union (EU), the United States of America (USA), United Kingdom (UK), Commonwealth of Independent States (CIS), and the Shanghai Cooperation

Organization (SCO) are forms of cooperation taking advantage of institutional bridges dating back to decades and centuries ago. They have common goals and objectives, well-defined legal and formal rules for conducts and interactions. They have also well-defined trade rules and practices within their unions.

Human Geographic Regions: There is another form of geographic entity in the world called regions, which are not limited by, but go beyond the political and administrative boundaries. These regions, which are characterized by many commonalities coming from shared history can be called cultural basins and influence areas. These areas are not necessarily homogenous in all aspects, and so may carry heterogeneity in many other characteristics. To illustrate broadly, Christian and Islamic Worlds are made up of many ethnic groups and religious sects. Historically, while those homogenous characteristics have enabled various forms of coalitions and penetration of socio-economic cultural activities within each geographic segment of human geographies, the heterogeneous characteristics sometimes prevented the reaching of mutual understanding and created cracks between them. Strong civilizations are the ones handling differences quite well and emphasizing the unity and integrity for the highest goal of the civilizations. According to Davutoğlu (2009) these cultural basins are defined as the regional entity that emerged at the intersection of geo-political, geo-cultural, geo-economic lines and carrying an internal strategic unity and integrity (Davutoğlu 2009).

Together with the progress of science and technology, today's transportation and telecommunication systems provide new opportunities. Although there are geographic discontinuities, there are still rooms for coalition and cooperation among many similar subdivided cultural entities. Those similarities reduce the cost of transaction and enable the generation of additional benefits through socio-economic interaction (mainly trade). Prerequisite of these forms of interaction is the creation, installation, or taking advantage of existing cultural commonalities. Bridges between human geographic regions do not mean only similar or same cultural entities interacting with each other. Those interactions also can be proceeded between different cultural entities by building bridges among different cultures. These bridges crossing over the psychological barriers are called **Socio-cultural bridges**. The easier to cross the bridge the more benefit is mutually derived from the coalition. To illustrate, European Union (EU), the United States of America (USA), and United Kingdom (UK) are a form of socio-cultural unions taking advantage of socio-cultural bridges. The unionised countries are the largest trade partners among each other due to long lasting socio-cultural affiliations.

II.II. Spatial Price Equilibrium Model and Interregional Trade

The *Spatial Price Equilibrium Model (SPEM)*, which is principally asserted by Cournot (1838; cited in Richardson, 1979), is introduced into academic literature as an optimization problem by Samuelson (1952). Later Takayama & Judge (1964) and Flinn & Guise (1970) formulized the model as a quadratic multi-interregional trade model maximizing the net social payoff. The model theoretically presents how a trade activity is actualized between regions for a homogenous good. Today, given the computer technology, these problems are easily solved by means of various solvers. Beyond the mathematical capability, the conceptual understanding of the model shed light on many different trade, transportation, welfare, and growth problems in practice and academic areas.

The SPEM principally is based on maximizing net social payoffs through an actualized interregional trade activity. For a homogenous good, trade takes place from low price regions to high price regions only if the regional price differences among regions exceed the transportation cost, and provide a sufficient profit margin to the trader via arbitrage. At the end of trade, a new regional and interregional price equilibrium is attained. While prices in selling regions are increasing, the prices in the buying region falls. This process continues until the unit price differences are equal to the unit transport costs. This process is more efficient than the pre-trade situation and provides an overall net welfare gains (Richardson, 1979).

The critical parameters in the SPEM are *unit prices of homogenous goods* in different regions and *unit transport costs* among the regions. In this study, *transport costs are the focus of attention*. And all types of costs showing similar impacts as the transport cost are considered as such. For instance, any measures preventing interregional trades is named as transaction costs as well as various mismatches and socio-cultural impediments.

According to Randall (1987) transaction costs are defined as *information, contracting, and policing* costs. Randall (1987) states that if the transaction cost exceeds the expected benefit, trade does not happen. Beyond Randal's definition, the transaction cost can also be a form of legal and administrative incompatibility or restrictions hampering trades, such as visas, tariffs, and custom duties, or a form of socio cultural incompatibility preventing the interactions of the different socio-economic parties. Once those transaction costs are handled and reduced to a reasonable level, trade flows start and provide net social gains beyond transaction costs.

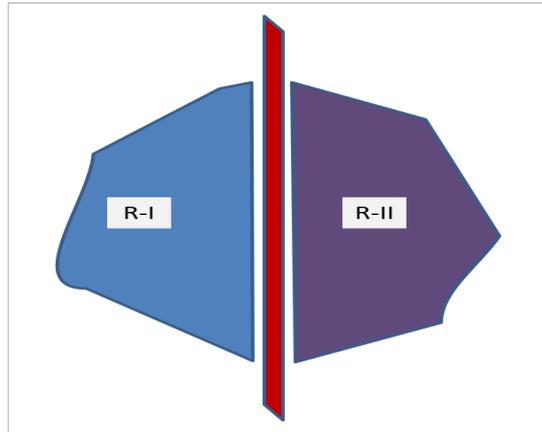


Figure 1: Two separate regions for production and consumption of a homogenous good

The SPEM studies in the literature can be categorized into two groups: The *first* group focuses on pure economic theory and the relevant mathematics (Samuelson, 1952; Takayama and Judge, 1964; Takayama, 1967; Flinn & Guise, 1970; Hartwick, 1972); and the *second* group, in addition to the mathematical aspects, focuses on the empirical applications of the SPEM on various goods and services, such as log and lumber trade (Kooten, 2013), wheat, grains and beef markets (Bawden, 1966), food -rice and maize- trade (Mosavi, 2014), water resource allocation and market (Vaux and Howitt, 1984; Mahan et al, 2002), crude oil trade with emphasis on marginal transport costs (Bennett and Yuan, 2016), international rice trade with emphasis on transaction costs (Ho, 1990), and coal trade with emphasis on profit maximizing transport firms (Harker, 1984). In some of these models, the transport costs are explained with import/export duty, export subsidy (Bawden, 1966), ad valorem tariffs (Mosavi, 2014). However, none of these studies considered the intangible but indispensable aspects of trade, such as personal contacts, mutual understanding, bargaining, convincing, and building trust among parties involved. These intangible but indispensable aspects can be considered as a form of informal institutional aspects of trade and they constitute a form of positive/negative cost component in trade activities. These costs can also be embedded in the SPEM in an adapted form of transport and transaction cost.

The SPEM based studies are product specific; however, when considering project or policy, reducing the cost of transportation and transaction (such as investments in telecommunication and transportation, tax policy, and visa exemption) their impacts are seen not only on a selected product but also on all traded and transported materials (such as raw materials, capital, labor, energy, intermediate and final products). When considering the extent of all traded goods and services, the practical use of the SPEM becomes technically impossible.

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Nevertheless, impacts of policies and projects can only be seen in the macroeconomic indicators.

In contrast to academic studies listed above, the focus of this study is beyond a single or multiple of goods and services market. This study conceptually dwells on the macroeconomic impacts of government projects and polices in Turkey and it is based on the basic principles of the SPEM handling all forms of transport and transaction costs. As distinguished from the earlier works also, this study does not pinpoint the direct sources of economic growth at a product specific level; however, the general outcomes of these policies are observed in macro figures, which are presented in the next section.

In the coming section in Figures 1-4, the *Spatial Price Equilibrium Model (SPEM)* is graphically presented for *three different trade situations* over a simple hypothetical two-region model. These three cases are i) *No Trade Case*, ii) *Feasible Trade Case*, and iii) *Unified Regions Case*.

No Trade Case (NTC): There are several basic assumptions valid also for the next section which need to be mentioned together with the NTC: i) There are *two regions* (Region 1: R_1 and Region 2: R_2) separated by geographic, political, or socio-economic barrier that makes them act separately and in this NTC case, there is *no trade* between them (Figure 1). ii) In these two regions, there is *a homogenous good* produced via different level of production technology and resource capabilities. At the same time, iii) these regions have *different demands and supplies* for this homogeneous good. In other words, both regions have their own demand and supply functions [$S_1(P_x)$, $D_1(P_x)$, $S_2(P_x)$, $D_2(P_x)$]. In these two separate regions, the differences in demands and supplies make two different equilibrium prices and associated quantities produced (Figure 2). Comparatively, in the Region 1, there is an *excess demand*, and in Region 2, there is *excess supply* that leads to different equilibriums (E_1 and E_2) and associated prices, respectively, high (P^*_1) and low (P^{**}_2). The price differences ($P^*_1 - P^{**}_2$) creates a room for arbitrage if the transport cost is lower than the interregional price differences (Figure 2 and 3). iv) Mutual transport costs for the delivery of the good between regions are the same ($t_{12} = t_{21}$). For the NTC case this *transport cost is prohibitively high* and so *trade is completely impossible* by assumption.

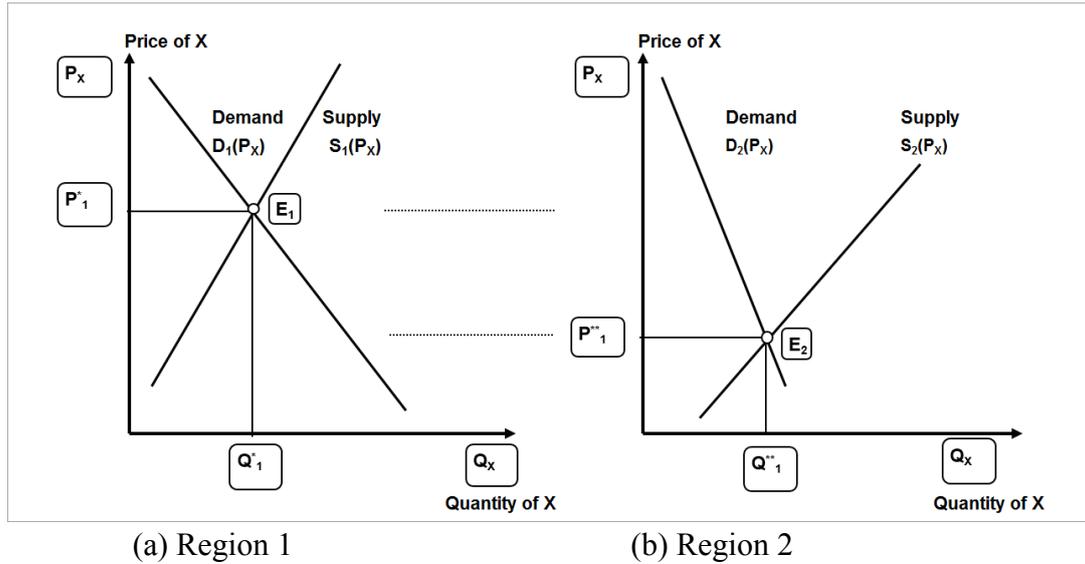


Figure 2: Two independent autarkic regions with two different equilibriums: (a) high price and (b) low price region

Feasible Trade Case (FTC): Similar to Samuelson (1952), Takayama & Judge (1964) and Richardson (1979), Figure 3 is designed to present the interregional trade. The demand and supply functions of both Region 1 (Figure 3a) and Region 2 (Figure 3b) are converted into the Excess Demand (ED_1) and Excess Supply (ES_2) functions in Figure 3c. Allowing free trade between two regions changes the equilibrium prices and quantity produced in two regions. While the price in Region 1 decreases ($P^*_1 \searrow P^{**}_1$), the price in Region 2 increases ($P^{**}_2 \nearrow P^*_2$) to a new equilibrium levels together with actualized trade. Then an amount (Q^{**}_F) of good is transported between two regions. Finally, the price difference declines to the cost of transportation ($P^*_1 - P^*_2 = t_{21}$). In Figure 3c, there is a post-trade equilibrium, the grey marble texture area is the cost of transportation ($t_{21} \cdot Q^{**}_F$), blue triangles are the net social payoffs (NSP) from the trade, and the green area is the potential economic gains if the transport cost is reduced to zero together with elimination of interregional transport cost. Because there exists transport cost, considering the unit transport cost, the green area is measured as a form of deadweight loss. In Figures 3a and 3b, the trapezoids (redlined) are the transfers from producers to consumers and consumers to producers due to free trade between regions, respectively. In the same figures, the blue triangles are the net social payoffs from the interregional trade. The area of blue triangles in Figures 3a and 3b are counterparts of blue areas in Figure 3c. Finally, in mathematical form, Equation 1 computes the maximized Net Social Payoffs from the rationally and optimally actualized trade, which is succinctly presented in Figure 3c.

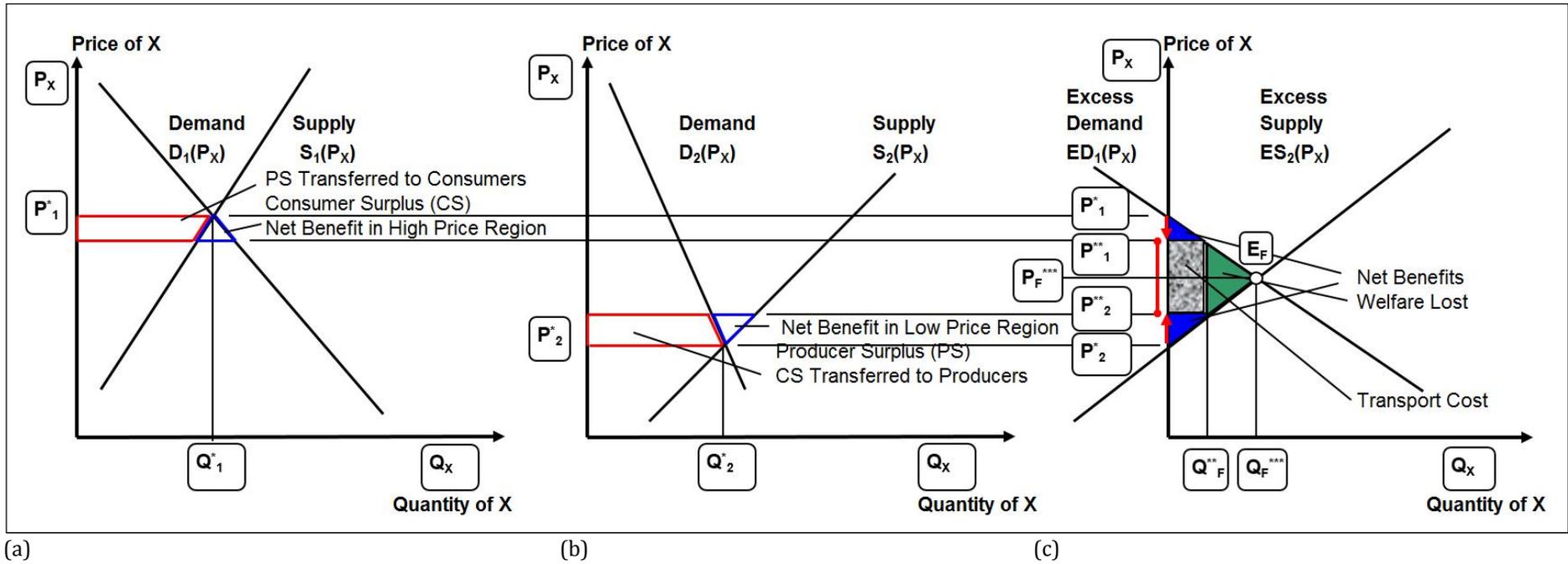


Figure 3: Free trade between two regions and new equilibriums: (a) Excess demand region, (b) Excess supply region, (c) Unified regions by trade and the equilibrium quantities and prices together with transport cost

$$\text{Maximize } NSP = \int_0^{Q^{**}_{21}} ED_1(x)dx - \int_0^{Q^{**}_{21}} ED_2(x)dx - t_{21}(Q^{**}_{21}) \quad (1)$$

Unified Regions Cases (URC): Different from Figures 2 and 3, Figure 4 is prepared in order to show the outcome of elimination of interregional transport costs as if both regions are a unified single region. In this case, the declined and vanished transport cost ($t_{21}=0$) enables two different regional equilibrium prices to reach to a unique equilibrium price ($P^*_1 \searrow = P^{***}_F = \nearrow P^*_2$). In this case, the transport costs and so the deadweight loss vanishes, the total area of blue increases and generates maximum reachable net social payoff, which is much more than the earlier cases. In Equation 1, the third statement becomes zero ($t_{21} \cdot Q^{***}_F = 0$) and two integrals compute maximum net social payoff. The same answer can be obtained from the equilibrium of derived aggregate demand and aggregate supply functions. This situation can be named as *United Regions*.

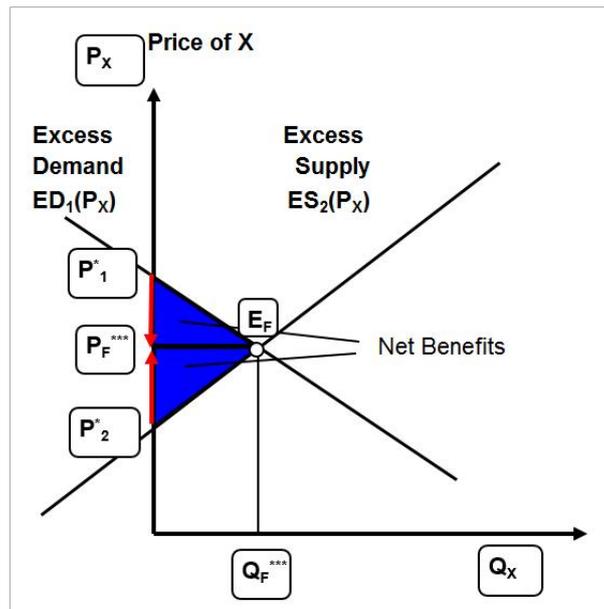


Figure 4: Net social payoffs within unified regions

The Factors Affecting Interregional Trade within the Scope of Spatial Price Equilibrium Models: There are two main factors affecting interregional trade: These are i) *interregional price differences*, and ii) *Interregional transport costs*.

Interregional Price Differences: Interregional price differences emerge due to demand and supply differences. Anything having an effect on demand and supply has an automatic effect in the determination of equilibrium prices and quantities in the regions. On the demand side, they are related to the tastes, preferences, and income level of consumers, and the sizes of

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population; on the supply side, they are related to the availability of inputs, resources and existing production technologies. To facilitate an interregional trade in any region, at least there should be demand or supply.

Interregional Transport Costs: Interregional transport costs are the cost associated with loading, carrying and unloading. These costs can be incorporated into the model by unit cost between origin and destination or via detailed evaluation of various cost components including insurance and taxes. Here only physical aspect of transportation is considered, but actual costs are much more intricate than the costs presented in the simple Spatial Price Equilibrium Model. To illustrate, various forms of taxes and transaction costs before after delivery of goods and services are some of those. These intricate costs are also analyzed similarly.

When the transport cost is further detailed within a new conceptualization, it provides a wide range of analysis potentials. These are the content and scope of this study. There are other forms of cost having similar influence on interregional trade: We can call these costs **transaction costs** containing not only i) distance based transport cost, but also ii) law and regulation based customs, tariffs, and duties visa expenses, time and effort spent to reach from one side to another, and iii) the costs associated with achieving reliable durable relations after satisfying the parties across. In sum, in order to facilitate trade, first, there should be a room for arbitrage, then, there should be healthy contacts and connections between different market actors, if they are in different countries, these interactions require compliance with various institutional structures. In the meantime, it requires interpersonal contacts beyond the scope of laws and regulations and physical distances. Interpersonal contacts are more likely based on socio-cultural similarities and differences beyond the basic economy. Productive interpersonal contacts as a form of socio-cultural aspects may provide competitive advantage.

The *physical costs* are reduced through well-defined and implemented infrastructures (roads, bridges, tunnels, railways, pipelines, energy lines, airports, telecommunication networks, etc.). The *institutional costs* are reduced together with proper amendments in the structure of existing laws and regulations, and institutional settings. The *cost of reaching the counterparts and establishing reliable relations* can be reduced through taking advantage of socio-cultural similarities and common historical heritages all the while minimizing the adversaries of socio-cultural mismatches.

Consequently, the first form of cost is handled through *physical bridges*, the second form of costs is handled through *institutional bridges*, and the last group of costs is reduced through *socio-cultural bridges*.

Outcomes of the Reduction in Transaction and Transport Costs: There are three main outcomes of reductions in transport and transaction costs. These are i) *changes in hinterland*, ii) *changes in quantity produced and traded*, iii) *changes in welfare*.

Changes in hinterlands: Decreases in transaction and transport cost enable firms to reach wider market areas and so larger populations. This makes firms produce higher quantities and be more competitive in the market. Increasing hinterland makes trading regions more competitive with larger scale of production.

Changes in quantity produced and traded: Trade reduces the selling price of goods in the high demand regions and increases the quantity produced in selling regions. Although there are some degrees of price increases in selling regions and that may be considered as adversary for the consumers in those regions, the benefit of export provides net economic gain to the selling regions.

Changes in welfare: Both selling and buying regions are net gainers from trade. The exporting regions produce in more quantities at higher prices, and importing region consumes more quantities at lower prices. Both regions are the beneficiaries of trade and receivers of net social payoff. Along with a facilitated trade, an economic growth is actualized. The lower the transport and transaction costs, the higher the welfare gains from trade. While enabling firms to produce in more quantities and taking advantage of scale economies, these gains make firms more efficient and competitive. Besides, consumers' surpluses are not limited only to its value, but also, they become a source of multiplier effect in the economy when they are consumed with other goods and services or used as a saving for investments. Aside from these benefits, transport sector by itself can be a source of economic growth and development. For instance, transport sector earnings, fees from road tolls, entry and exit fees from borders, shares from the shipment of oil and gas are a form of contributions to the economy by themselves.

In reverse way, any removal or destruction of bridges leads to higher transport and transaction costs and so less trade, loss of scale of firms and their competitiveness, and overall welfare losses in all regions.

III. GROWTH AND DEVELOPMENT POLICIES IN TURKEY

Turkey's Gross Domestic Product has been tripled since 2000, (Figure 5) which corresponds to an average of 5.6% annual growth rate. Figure 6 presents the foreign trade component of the economic growth. Although there are some volatilities, in the last 20 years, there is a significant growth in foreign trade. Moreover, in the last three years, while the import values declined significantly, the export values remained stable around \$150 billion. During this period, Turkey suffered various international and local terrorist attacks and had to endure a major economic burden brought by an influx of 3 million refugees coming from southern border of Turkey as a result of the problems in Syria and Iraq. During this period, Turkey came to the brim of a hot conflict with Russia due to ongoing operations in Syria, and this adversely affected Turkish-Russian mutual trades. Table 1 and Figure 7 present Turkey's main export partners sorted from highest to lowest in shares and in values for the records of year 2016. As can be seen in the table and the figure, Turkey's top six main trade partners are Germany, England, Iraq, Italy, USA, and France.

In a normal condition, the easiest trade is the one among close parties and neighbors. In Table 2 which is derived from CIA World Factbook , major export partners of Turkey are presented along with that of the six developed countries' export partners (the USA, Germany, France, Canada, Japan, and UK). It is striking that these developed countries make trade mainly i) with their neighbors within very close distances where the transport costs are minimum, ii) with their long-term partners having close legal, institutional, and organizational ties dating back to emergence of merchant classes in Europe, and iii) the countries having common sources of culture, such as religion, language and ethnicity. In Table 2, Turkey's situation is quite different in that she tries to make trade primarily with the countries that are not her neighbors. Turkey's trade share with her neighbors is very volatile and remains low. Only Iraq and Iran made the list among her neighboring countries, and the remaining ones, namely Greece, Bulgaria, Georgia, Syria are not in the list at all. As can be seen from Table 1, before the social movement of "Arab Spring" Turkey's export ties with her southern and eastern neighbors had been on the rise until 2012. However, with the start of the Syrian civil war in 2011, the trade share with Iran dropped dramatically, whereas with Iraq, the decline was gradual.

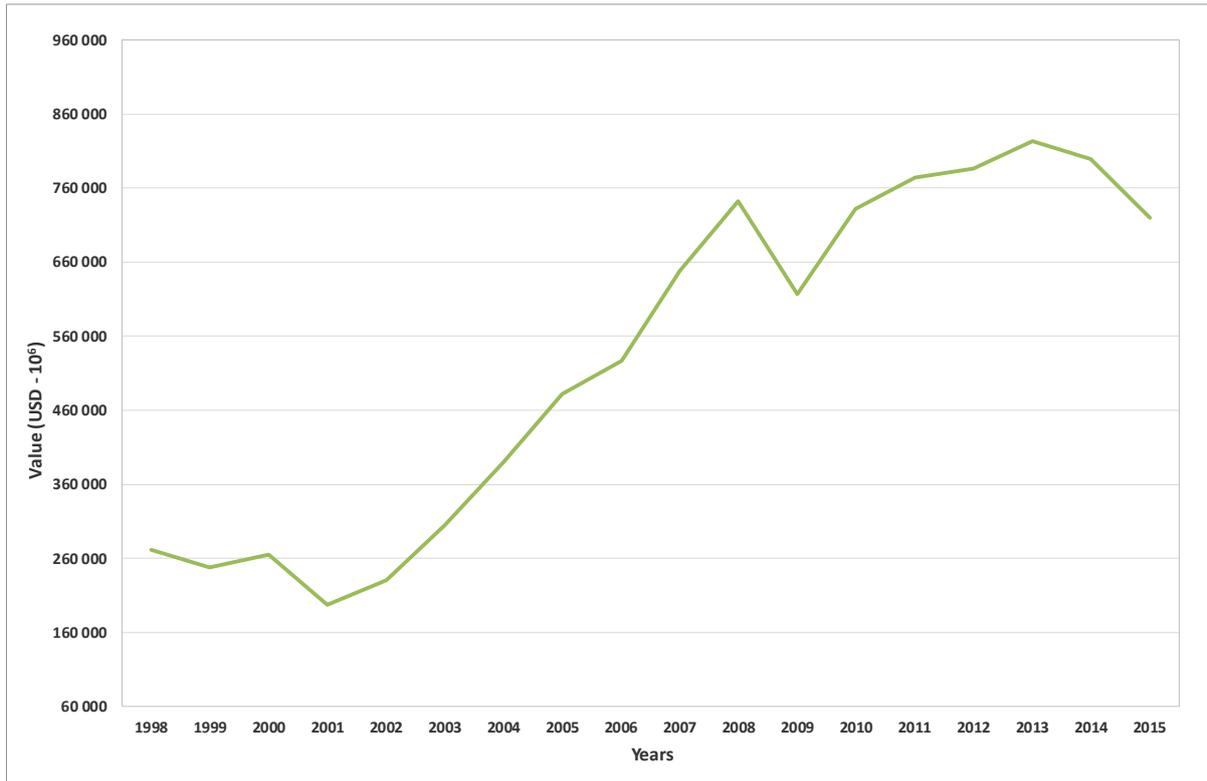


Figure 5: Gross Domestic Product (In 1998 prices - \$)

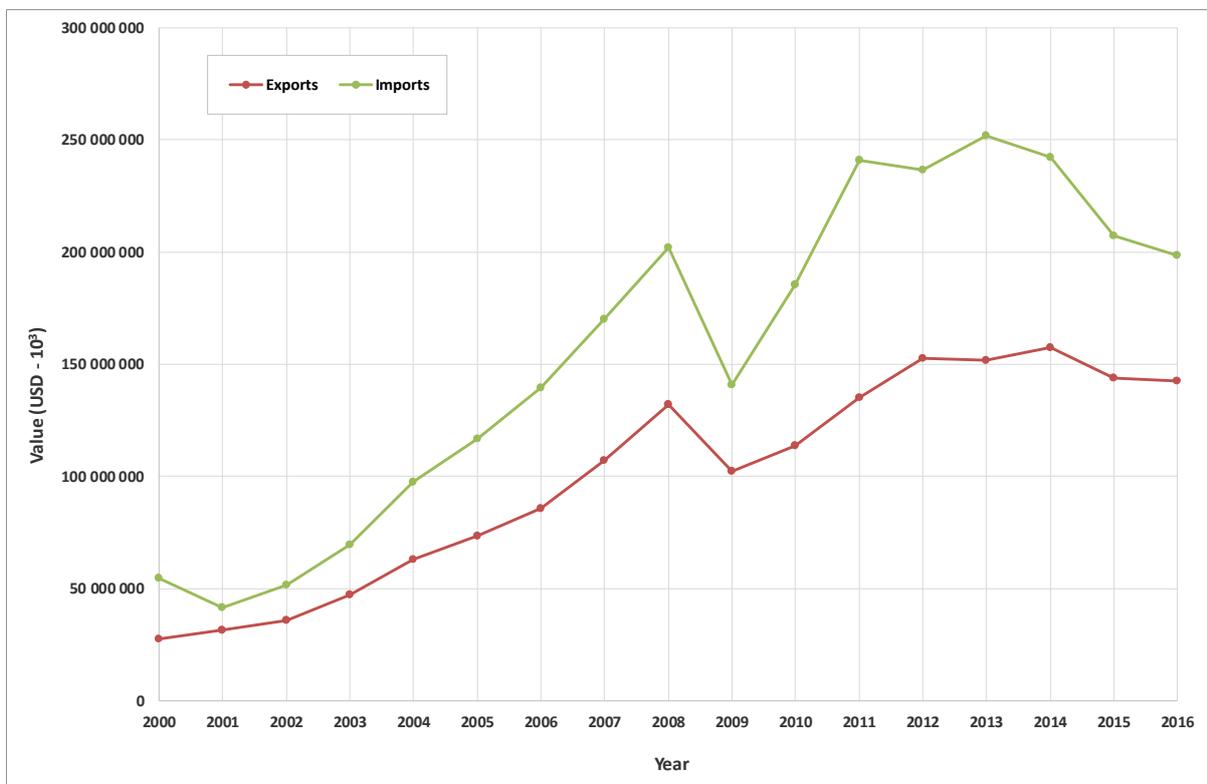


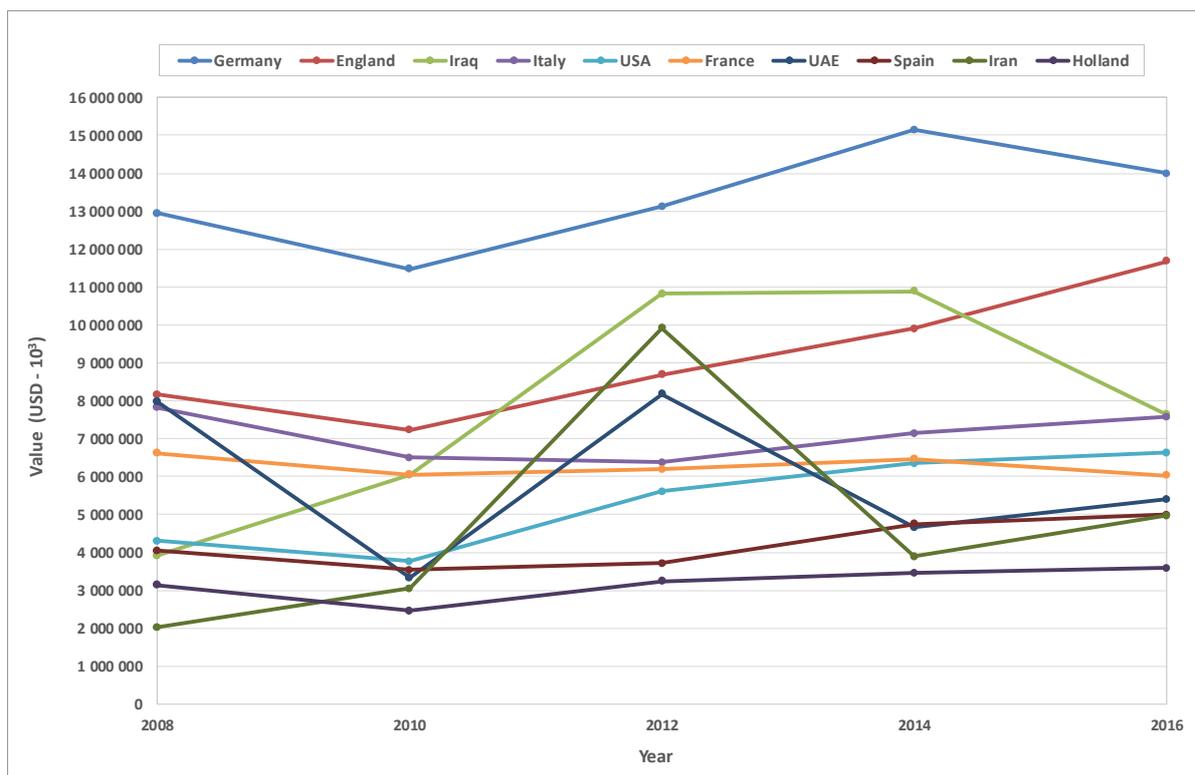
Figure 6: Foreign trade by years, 2000-2016

Source: <http://www.tuik.gov.tr> (Last visit: May 2016)

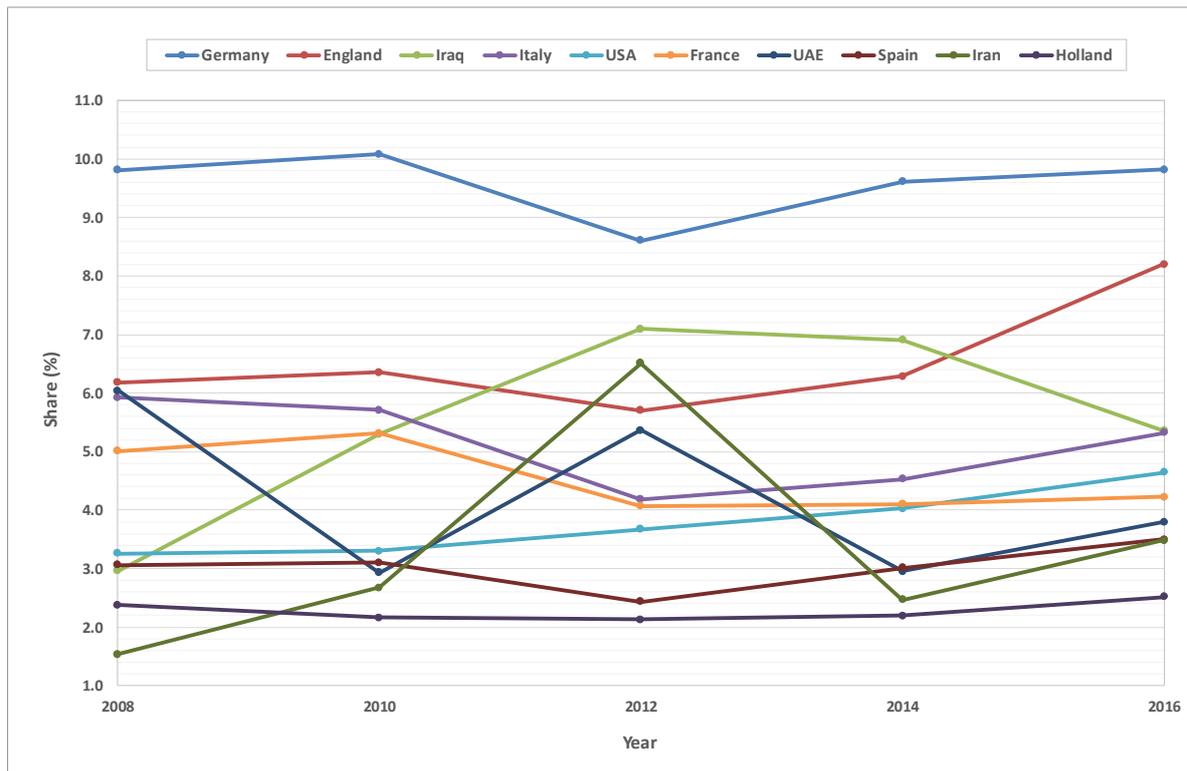
Table 1: Exports by country and year, share in total exports (%)

Country	2016	2015	2014	2013	2012	2011	2010	2009	2008	2007
Germany	9.8	9.3	9.6	9.0	8.6	10.3	10.1	9.6	9.8	11.2
England	8.2	7.3	6.3	5.8	5.7	6.0	6.4	5.8	6.2	8.0
Iraq	5.4	5.9	6.9	7.9	7.1	6.2	5.3	5.0	3.0	2.7
Italy	5.3	4.8	4.5	4.4	4.2	5.8	5.7	5.8	5.9	7.0
USA	4.6	4.4	4.0	3.7	3.7	3.4	3.3	3.2	3.3	3.9
France	4.2	4.1	4.1	4.2	4.1	5.0	5.3	6.1	5.0	5.6
UAE	3.8	3.3	3.0	3.3	5.4	2.7	2.9	2.8	6.0	3.0
Spain	3.5	3.3	3.0	2.9	2.4	2.9	3.1	2.8	3.1	4.3
Iran	3.5	2.5	2.5	2.8	6.5	2.7	2.7	2.0	1.5	1.3
Holland	2.5	2.2	2.2	2.3	2.1	2.4	2.2	2.1	2.4	2.8
Saudi Arabia	2.2	2.4	1.9	2.1	2.4	2.0	1.9	1.7	1.7	1.4
Israel	2.1	1.9	1.9	1.7	1.5	1.8	1.8	1.5	1.5	1.5
Egypt	1.9	2.2	2.1	2.1	2.4	2.0	2.0	2.5	1.1	0.8
Switzerland	1.9	3.9	2.0	0.7	1.4	1.1	1.8	3.9	2.2	0.9
Romania	1.9	2.0	1.9	1.7	1.6	2.1	2.3	2.2	3.0	3.4
Poland	1.9	1.6	1.5	1.4	1.2	1.3	1.3	1.3	1.2	1.3
Belgium	1.8	1.8	1.9	1.7	1.5	1.8	1.7	1.8	1.6	1.6
Bulgaria	1.7	1.2	1.3	1.3	1.1	1.2	1.3	1.4	1.6	1.9
China	1.6	1.7	1.8	2.4	1.9	1.8	2.0	1.6	1.1	1.0
Algeria	1.2	1.3	1.3	1.3	1.2	1.1	1.3	1.7	1.2	1.1

Source: <http://www.tuik.gov.tr> (Last visit: May 2016)



a) Values (\$)



b) Shares in total (%)

Figure 7: Turkey's export partners (<http://www.tuik.gov.tr>)

Table 2: Major countries' main export partners

Countries	Export Partners (2010)
USA:	Canada 20.1%, Mexico 11.7%, China 5.5%, Japan 5.1%, Germany 4.2%, UK 4.1%
Germany:	France 10.2%, US 6.7%, Netherlands 6.7%, UK 6.6%, Italy 6.3%, Austria 6%, China 4.5%, Switzerland 4.4%
France:	Germany 14.4%, Italy 8.7%, Spain 8.3%, UK 7.8%, Belgium 7.6%, US 5.8%, Netherlands 4.1% (2008)
Canada:	US 77.7%, UK 2.7%, Japan 2.3%
Japan:	US 17.8%, China 16%, South Korea 7.6%, Taiwan 5.9%, Hong Kong 5.1%
UK:	US 13.8%, Germany 11.5%, Netherlands 7.8%, France 7.6%, Ireland 7.5%, Belgium 5.3%, Spain 4.1%
Turkey	
(2010):	Germany 9.6%, France 6.1%, UK 5.8%, Italy 5.8%, Iraq 5%
(2012):	Germany 8.6%, Iraq 7.1% , Iran 6.5% , UK 5.7%, UAE 5.4%, Russia 4.4%, Italy 4.2%, France 4.1% (2012)
(2015):	Germany 9.3%, UK 7.3%, Iraq 5.9% , Italy 4.8%, US 4.5%, France 4.1%

Source: CIA World Factbook: <https://www.cia.gov/>

Turkey's growth and development in the last two decades can be attributed to many different policies and internal dynamics. However, in this study, three major policy components are the focus of attention. These policy approaches are related to *closing gaps, handling discontinuities, solving incompatibilities between and/or among geographic, administrative, socio-cultural and economic entities*. Increasing accessibilities have resulted in significant economic growth and development power in Turkey. In the coming section, there are specific

policies geared towards closing various forms of distances, gaps, and discontinuities, incompatibilities in three broad categories. These are as follows:

Physical Bridges - Infrastructure Policies: When compared with Germany, France, and England, Turkey has a comparatively similar population size; however, in many respects she has been short of utilizing her available national scale in terms of natural and human resource capabilities due to, but not limited to, insufficient and low-quality infrastructures leaving cities and regions work unilateral and almost disconnected. This deficiency also hinders the country from taking advantage of its geostrategic character of being between continents of Asia, Europe, and Africa. Hence, Turkey's economic size and scale are limited as compared to these countries with similar population size.

Turkey, especially after 2000, has been extensively investing in projects that are intended to solve problems caused by spatial fractions and disconnectedness among various cities and regions namely in the areas of transportation (seaway, railway, highway, air, pipelines for energy and water, power lines, and energy grids), telecommunication, and banking and finance. Among these are the following; extensive dual carriageway construction projects throughout the country, highways between major metropolitan cities (Figures 8-9), east-west direction highways called the Northern Marmara Highway, new bridges (Figure 10) and tunnel projects connecting two sides of the Bosphorus (Figure 11a-11b), tunnel projects between regions to overcome seasonal road blocks, high speed rail networks between major cities, large number of airports including the one in Istanbul which is planned to be the largest in the world (Figure 12), international routes (Figure 13), and pipelines for natural gas and petroleum (Figure 14), privatization of the state owned telecommunication firm and enabling cellular phone infrastructures for private companies, and creation of efficient banking infrastructure. In addition to these, metro lines and high-speed commuter bus lines have been constructed in the metropolitan cities to facilitate intra-city movements, among which the MARMARAY (Figure 11a) in Istanbul deserves a special mention for its capacity to provide an easy commuting alternative between the two sides of the Bosphorus under the sea.

Some of the projects put into place within Turkey are not only for the benefit of the country, but also provide benefits to international community. In other words, the geography of Turkey itself can be considered as a bridge over which various international air, land, and sea flows are hauled such as the Trans-European Highways (TEM), Northern Marmara Highway (KMO) (Figure 13), the Trans Anatolia Natural Gas Pipeline Project (TANAP), Baku-Tiflis Pipelines (Figure 14), the Third International Airport project in Istanbul, the Silk Road project

planned to combine Europe, Central Asia and East Asia (Figure 15). In Figure 3c *marble textured area* represents the benefits for Turkey for enabling and reducing the cost to a reasonable level, whereas the benefits for the international community is shown with *blue colored area*. Under various international agreements, Turkey has been providing an easement of passage to the international community. In the meantime, she utilizes the network for her own demands and uses too.

Similar to the SPEM parameters introduced by Samuelson (1952), Krugman's (1991) *transport cost* is the critical parameter for the creation of *home market effect*. Turkey with the above-listed transport investments has been reducing the geographic obstructions and thus the cost of transportation not only within the country, but also in the region between Europe and Asia. Declining transport costs make Marmara Region (containing Istanbul) a center of industrial and business concentration and base for growth of the country by creating *agglomeration economies* with many firms getting advantage of *scale economies*. In the meantime, the country itself has become more accessible by the surrounding countries and continental areas with increasing extent. Furthermore, this bridge type geostrategic advantage makes Turkey an indispensable component of international community and a benefit generating valuable partner within surrounding regions.

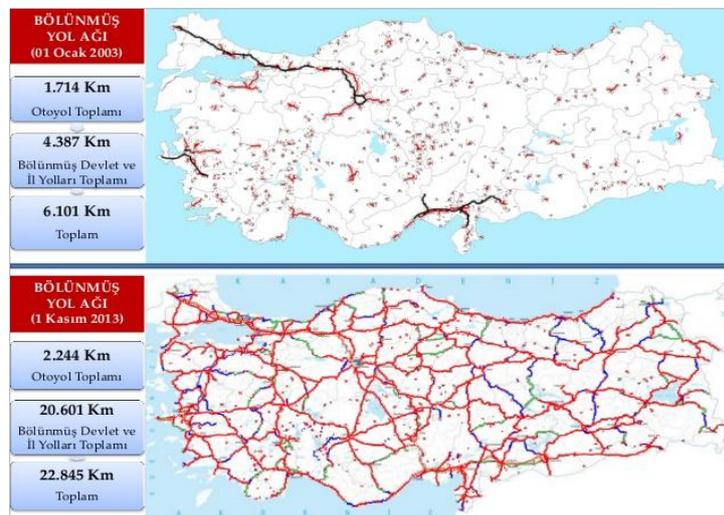


Figure 8: Dual carriageway construction projects (began in 2003 and actualized in 2013)

Source: KGM

<https://image.slidesharecdn.com/sayistaysunumu-141017020154-conversion-gate02/95/sayistay-sunumu-72-638.jpg?cb=1413512167> (last visit May 22, 2017)

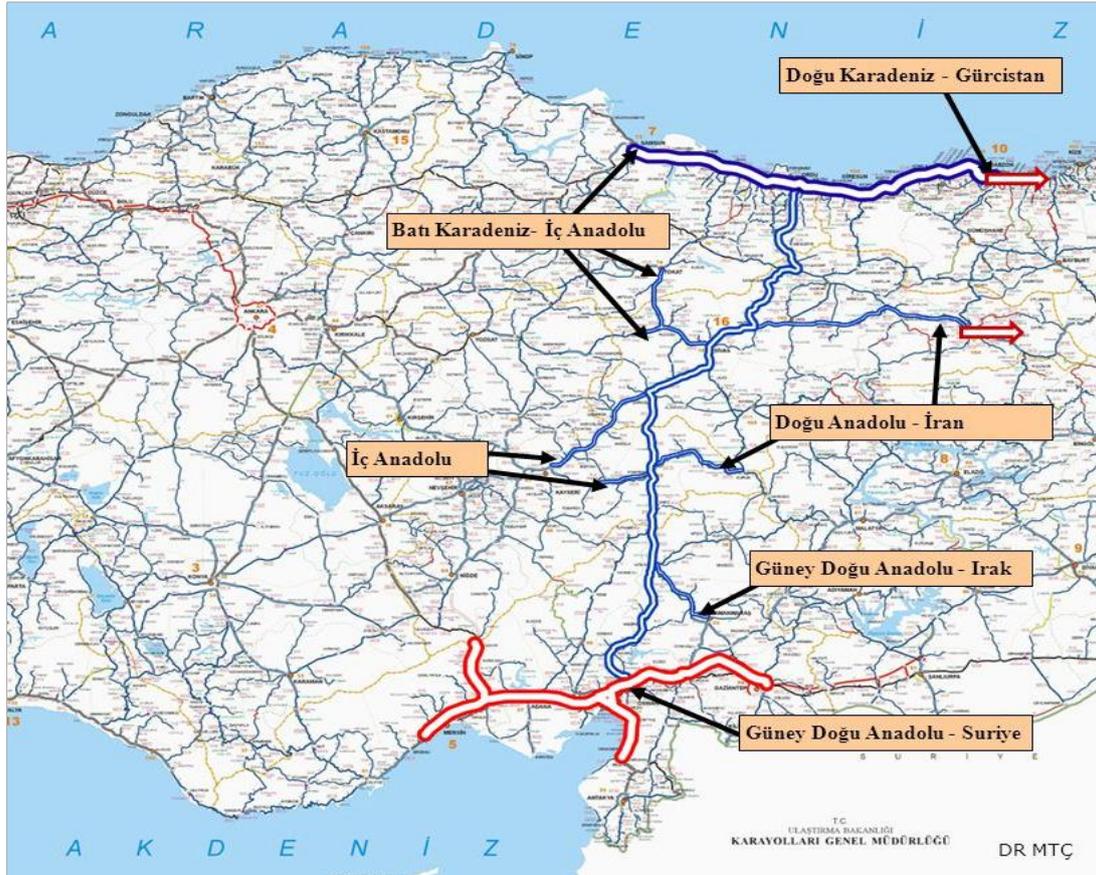


Figure 9: North-south bound the Black Sea-Mediterranean highway projects with inland east-west links

Source: KGM

<http://slideplayer.biz.tr/slide/1960081/7/images/8/Do%C4%9Fu+Karadeniz+-+G%C3%BCrcistan.jpg> (last visit May 22, 2017)



<http://www.sozcu.com.tr>
a) Bosporus Bridge (15 July Martyrs' Bridge)



<http://www.cnnurk.com>
b) Fatih Sultan Mehmet Bridge



<http://www.mavikocaeli.com.tr>
c) Yavuz Sultan Selim Bridge



<http://t24.com.tr>
d) Osmangazi Bridge in the Gulf of Kocaeli

Figure 10: Bridges over Bosphorus and Gulf of Kocaeli (last visits May 22, 2017)

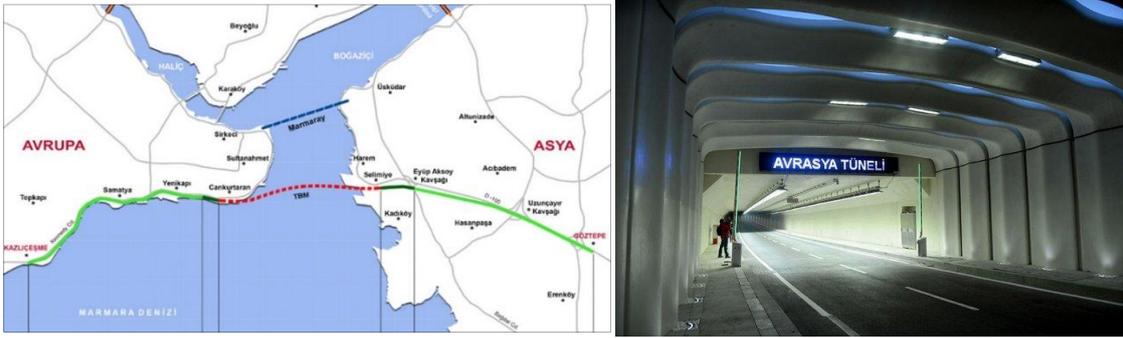


Figure 11: AVRASYA Tunnel

Source: <http://www.sozcu.com.tr>, <http://www.gazetevatan.com> (last visit May 22, 2017)

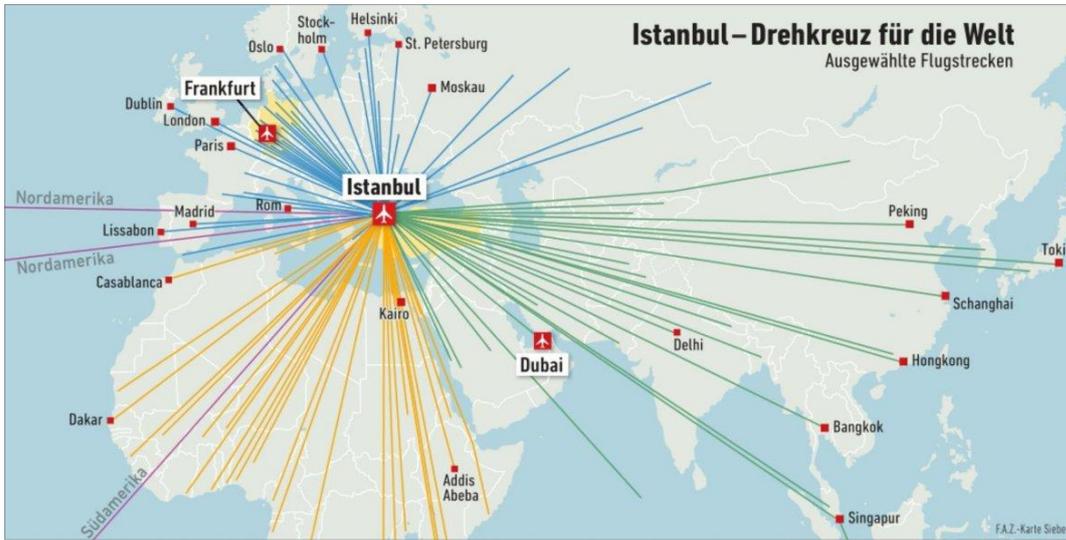


Figure 12: The Third International Airport in Istanbul

Source: <http://www.turkiyegazetesi.com.tr/gundem/458984.aspx> (last visit May 22, 2017)

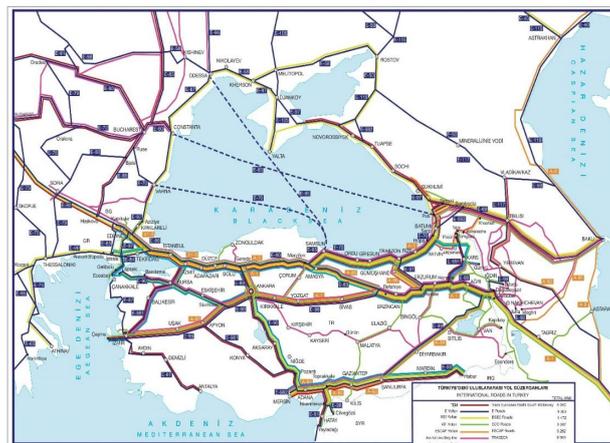


Figure 13: International routes passing through Turkey

Source: KGM

<http://www.kgm.gov.tr/Sayfalar/KGM/SiteTr/Projeler/UluslararasıProjeler/uluslararasıYolGuzargahi.aspx> (last visit May 22, 2017)

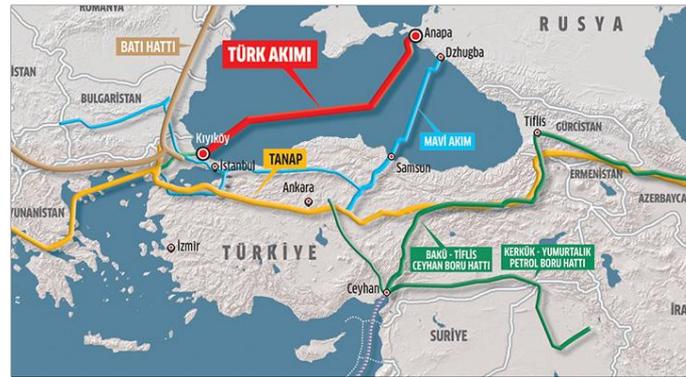


Figure 14: Turkey is as an energy corridor

Source: <https://guncelturkiye.com> (last visit May 22, 2017)

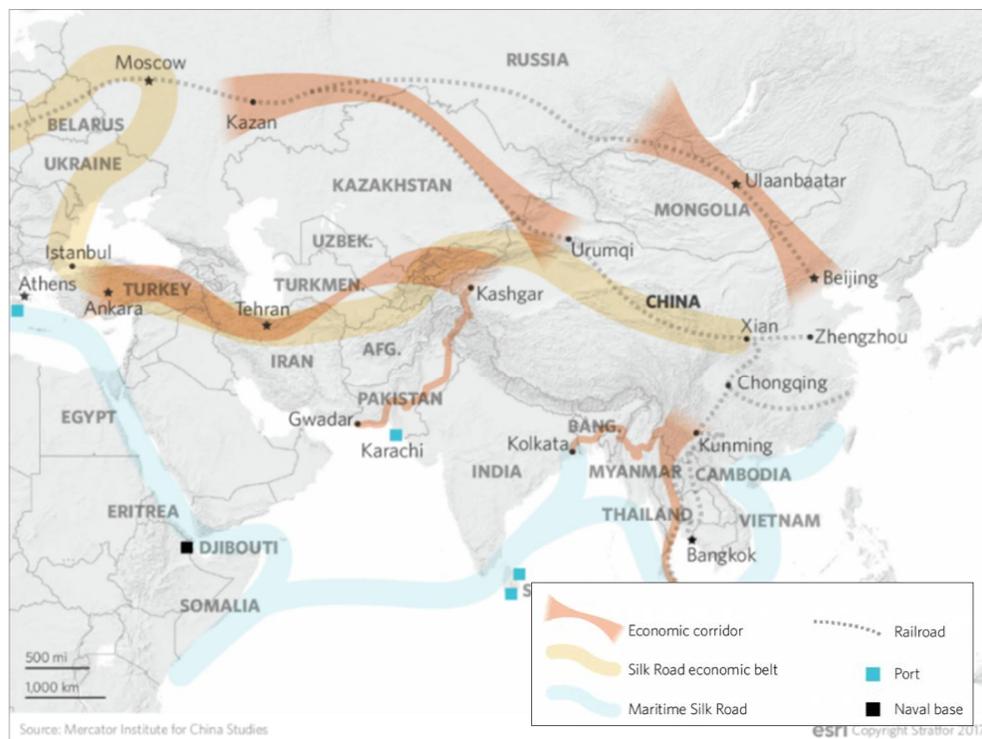


Figure 15: 21st Century Silk Road project and Turkey

Source: https://worldview.stratfor.com/article/southeast-asia-notch-chinas-belt-and-road-initiative?utm_source=Twitter&utm_medium=social&utm_campaign=article (last visit May 26, 2017)

Institutional Bridges - Amendments in Laws and Regulations: Coming out of the ruins of the First World War, and after the collapse of Ottoman Empire, the young Republic of Turkey made a radical decision breaking from its past and turned its face to the west. In order to adapt to the western institution, Turkey adopted many legislations from various European countries during the early decades of its foundation (for example the Turkish Civil Code, Criminal Code, Turkish Commercial Code, Administration Law, etc.). However, over the years, these laws and codes have required updates and amendments in line with the changing needs

of the society. Especially during 1980s, President Özal led liberalization movement which brought about numerous institutional adjustments in many laws, regarding privatizations, convertibility of Turkish currency (TL) for international trade, which aimed at reducing restrictions on import, export, and trades and travels. Özal's policies are succinctly phrased in three forms of freedoms: These are i) *freedom of speech and expression*, ii) *freedom of thought and faith*, iii) *freedom of entrepreneurship*.

Quoting from North (2003) "*Institutions are made up of formal rules, informal constraints and their enforcement characteristics*". Therefore, "the formal rules" aspect of the institutional compatibility is mostly established by the western-based laws and their amendments. However, "informal norms of behavior" and "informal constraints" are harder to achieve, since they require creation of peaceful *socio-cultural* environment among nation's various internal groups, and on various internal issues so that the neglected feelings of not only minorities but also majorities are being cared for.

Since the beginning of 1980s, but strongly after 2000s, the Turkish state has been encouraging trade, tourism, travel via bilateral agreements for visa and trade exemptions, reducing custom duties between agreed partners, and fulfilling free trade agreement with the relevant countries including European Free Trade Association (EFTA). Turkey has formalized the agreement for Arbitration Committee (Tahkim) to promote investment and trade. These forms of agreements reduce the transaction costs and eliminate many uncertainties, and endorse free and easy trade at the international level.

As part of the accession process to the European Union, Turkey has made numerous amendments in the constitution, and eliminated many restrictive laws going back to the military interventions in 1960 and 1980. The laws prohibiting various religious practices and use of local languages were used to create scar in the dignity of some segments of the population impairing the internal strength of the society. To illustrate, in the 3rd Harmonization Package prepared for the European Union contains amendment in this respect. These changes have created a positive environment in social-cultural domain, and provided a form of bridge between various segments of the society. These aspects are presented in the coming section as socio-cultural bridges.

As mentioned by North (2003) these policies are considered as formal aspects of institutional compatibility and have been successfully applied for nearly 40 years. In the last 20 years period, major changes were actualized during the EU accession process. In this study,

these formal changes to existing institutions that reduce the cost of transactions are called the *institutional bridges*.

Socio-Cultural Bridges - A New Approach for the Internal Diversities, Cross Border Neighboring Countries and Overseas Countries: The geographic location of Turkey provides her an outstanding geostrategic power, but at the same time makes her prone to a number of national and international risks and challenges. Historically speaking, Turkey has never taken part in the colonization process of the last centuries, but has always been the final destination for the refugees from the Balkans, the Caucasus, the Middle East, the Central Asia, etc. Despite her limited capability, Turkey has been involved in many serious international problems. She was the highest aid providing country to Somali during drought and famine in 2011. Since the beginning of Syrian internal war, Turkey has been providing safe place for nearly 3 million refugees from Syria. Today, Turkey is the third largest foreign aid providing country after the USA and England;² but the highest foreign aid providing country with regards to the per capita income.

In addition to financial aids, Turkey also supports infrastructure, cultural, medical, education, restoration, etc. projects in these less developed parts of the world via the Turkish Cooperation and Coordination Agency (TİKA). These types of approaches (various infrastructural supports and gratuitous foreign aids) improve Turkey's foreign relations and contributes her socio-economic effectiveness as well as bridging imaginary gaps between various geographies and cultures.

Turkey also tries to solve various internal socio-economic problems accumulated over the years by means of amendments in constitutions, laws and regulations mainly with regards to human rights and freedoms. In addition to common cultural heritages, these amendments enable Turkey to create peaceful environment through which interactions of humans and accessibility of various forms of capital increments, not only from every corner of the country but also throughout the world from places having (but not necessarily) emotional ties with Turkey. These advancements reduce the perceived distances and associated *transaction costs* between east and west within and out of the country. Then, as an outcome, Turkey becomes a preferred partner in the eyes of many developing nations as well as neglected and suppressed communities. These policies and legislative improvements build bridges covering informal

² <http://kdk.gov.tr/haber/turkiyenin-dis-yardimlari-2013/494>

aspects and nature of societies and open significant room for interactions. Therefore, the bridges built to overcome the existing emotional barriers are called the *Socio-Cultural Bridges*.

IV. CONCLUSION

Dwelling on the concept of SPEM, this study proposes a wider conceptual framework in explaining interregional and international trade policies. Turkey's consistent growth in the last few decades has shown a sharp contrast with those of other nations who have been in economic stagnation and crisis. What makes Turkey's case distinct is her extensive *bridging policies* taking advantage of all geo-economic, geo-cultural, geo-political, and geo-strategic advantages in reducing cost of transaction and transportation not only in the country but also in its geography.

In the last 20 years of trajectory of growth and development, Turkey's policy can be summarized as an extensive *bridging processes* geared i) towards closing of geographic gaps, barriers, and discontinuities through physical infrastructures and capital development projects, which we call *physical bridges*, ii) towards mending of legal, organizational, institutional mismatches within the country and across other countries, which we call *institutional bridges*; iii) towards establishing and re-establishing historic and cultural ties with both developed and developing countries within the frame of sincerity, trust, mutual benefits and understanding, which is different from colonialization practices of many developed countries, which we call *socio-cultural bridges*. Their payoffs have been seen in the progress and durability of economic growth and development of Turkey in the last two decades.

In the last two decades;

1. Turkey is one of the leading countries implementing massive infrastructure projects, such as large-scale bridges, tunnels, metro lines, airports, telecommunication networks, and water and energy networks, which provide efficiency in economic activities and offer competitive advantages in the world arena.

2. Along with the European Union's (EU) accession process, but not limited to it, Turkey has eliminated various internal legal, institutional, organizational mismatches and problems. In these changes, there are constitutional and legal amendments solving nearly hundred years of country's internal problems, and providing tax and visa exemptions to many countries in the world for better trade and interactions.

3. Turkey is the country with its democratically elected administration showing strong political stance against exploitation and injustice in the Globe by solving alienation within the

country and across other countries. This improves her international position and increases direct and indirect micro and macro supports to her throughout the world.

Finally, Turkey has been *handling all forms of transportation and transaction cost through the bridges* not only physically but also legally, institutionally, and even informally and emotionally. In this process, she has been taking advantage of geostrategic, geopolitical location, geo-cultural characteristics accumulated throughout history as a common heritage. These policies have taken one of the critical parameters of Samuelson's SPEM and Kurgman's Home Market Effect, and North's formal and informal rules of institutions, handling transportation and transaction costs. All works aimed to reduce the cost of transportation and transaction brings about positive welfare gain to the society. This has been the case for Turkey in her last 40, especially, the last 20 years of her growth and development.

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