Effects of quotas on Turkish foreign trade: A gravity model

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ABSTRACT

Turkey's role as a world trade participant has grown in recent years, particularly as the country is capitalizing more on its unique geopolitical position. Given the important trade volume and rooted relations between Turkey and the EU, their trade and economic relations should be paid due attention and steps should be taken to further improve these relations. Turkey is the biggest economy in a Customs Union (CU) with EU but not in EU, along with Andorra, Monaco, and San Marino. When it joined the CU in 1996, Turkey has removed all customs duties and equivalent charges as well as quantitative restrictions. However some EU countries imposes quota limits to the Turkish road transporters that may indirectly restricts the trade between Turkey and the related country. In this study, we investigate the effect of road transport quotas on Turkish foreign trade with EU countries. A gravity model that is estimated with panel data from 18 selected EU countries between 2005 and 2012 is used for this purpose. Furthermore, as one of the leading sectors using road transportation for Turkey's export to EU countries, textile sector is analyzed as a case study. The results indicate that quotas have significant effects on Turkish total exports via road transport as well as the Turkish textile exports to EU countries. The estimated amount of the loss of the exports of Turkey to the selected countries in analyzed time period is 10.6 billion $ in Turkey's total exports via road transport, and 5.65 billion $ in Turkey's total textile exports. Therefore, it can be concluded that the quota limitations are against CU regulations because they do not limit not on the road transportation but also the trade between parties.

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1. Introduction

Although world trade has grown twice as fast as world Gross Domestic Product (GDP) in the past decades (Liu and Xin, 2011), in the last quarter of 2008, world trade flows experienced a sharp and sudden collapse and declined by about 12% in 2009, according to the World Trade Organization (WTO). This figure exceeded the decline of 5.4% in GDP for the same period. Although European countries are recovering from significant difficulties brought about by the global economic crisis, there are rising concerns about the sustainability of sovereign debt in a number of those countries. However, several European countries continue to be among the most competitive economies in the world (Sala-i-Martin et al., 2012).

Despite the economic crises faced by many countries, Turkey's economy grew by 0.5% in 2012, with a GDP per capita of US $10,666 in 2012 (US$8,626 in 2009) (Worldbank, 2014). It has managed to grow over recent years and is now cited as one of the best performing emerging economies in the world. However, Turkey's ratio of exports to GDP is around 25%, and is lower than for some developed and emerging countries, such as Germany, where exports represent 49% of GDP. In China, this ratio is 27% and in Italy it is 30% (Schwab, 2013; Gros and Selçuki, 2013). Within this comparative setting, Turkey also has great importance in the role of an interconnection among the European Union (EU), the Middle East, and the Caucasus, as well as the Mediterranean, Aegean, and Black Seas (Mueller, 2007). Although Turkey's exports have been competitive, on average, over the past decade, their level of dynamism has fallen according to OECD projections (OECD, 2012), which show that Turkey's export growth rate for goods and services is behind other emerging countries, such as South Korea and China (Gros and Selçuki, 2013). The EU is Turkey's most important trading partner, even though its share of Turkey's exports has fallen from 56.4% in 2000 to 31.5% in 2012 (Trademap, 2014). The decline in the EU's share is probably mostly a result of the relative decline of the EU economy compared, in particular,

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with the more dynamic markets in the Middle East and other natural resource-rich countries (Gros and Selçuki, 2013). Additionally, the operations between Turkey and EU countries are regulated by a set of bilateral and multilateral agreements that restrict quantity and capacity by limiting the number of permits available for a truck to make a journey between jurisdictions. Francois (2005) underlines that Turkish manufacturing exports to the EU are subject to technical barriers. Additionally, the Turkish authorities would claim that the road transport quota limits submitted by some European countries provide important barriers to an increase in the trade potential that could emerge if these limits were cancelled (Togan, 2012). Therefore, one of the basic aims of this study is to investigate the validity of this hypothesis.

Road transport quotas are carried out through licenses allocated to a specific county by a destination or transit country. In the particular case, for instance, an EU country allocates a certain number of licenses to Turkey to be used by Turkish trucks. The maximum number of licenses is determined annually. This condition implies that, in a given year, if all licenses allocated to Country X are used, further trucks of Country X cannot cross the border of the country issuing the transport license. There are several types of road transport licenses, including a bilateral permit, transit permit, third country permit, multiple permit, and return load permit. For example, to be able to export goods from Country X to Country Y by road transport, the truck carrying the freight has to have transit permits for all transit countries en route from Country X to Country Y, and it has to have a bilateral permit for Country Y. Moreover, bilateral and transit permits can only be used once by a truck; for the next transport movement using the same truck, another permit is necessary. On the other hand, multiple permits can be used as often as required in the specified year.

Turkey is the one of four countries in a Customs Union (CU) with EU but not a member of EU, along with Andorra, Monaco, and San Marino (http://en.wikipedia.org/wiki/European_Union_Customs_Union). Therefore EU countries cannot apply any trade quotas to Turkish products according to CU regulations. However EU countries can apply road transport quota to Turkish trucks because Turkey is not in EU. In other words, Turkey is the only country subject to "road transport quota" but not to "trade quota".

Transport quotas to Turkey have been implemented by 24 of the 27 EU member states. These quotas cause serious problems for Turkish exports to EU countries and are accepted by the Turkish freight forwarders as serious obstacles to the free movement of goods between Turkey and the EU. The goods shipped from Turkey cannot arrive in the destination country using the most economical means of transport and the transit passes are costly. The quotas also cause significant delays in the delivery of goods. A one-day delay in the transportation of goods decreases the trade volume by 1% (Liu and Xin, 2011).

According to CU regulations, practices resulting in unnecessary costs for the import or export of a commodity are considered charges, having equivalent effects as customs duties. The unnecessary fuel consumed by Turkish road carriers, or any additional costs that arise owing to the prolongation of the transportation period, are paid by Turkish industrialists. Therefore, Turkish industrialists are faced with unfair competition and unfair trade. In fact, this is not only Turkey's problem. This situation also has a negative effect on foreign investors in Turkey. As more than 70% of foreign investors are from the EU, one can conclude that the quotas also have negative effects on the international competitiveness of the EU economy.

The Turkish authorities claim that Turkey's annual export loss because of the quotas is at least US$7 billion and that the quotas for goods shipped from Turkey are arguably one of the most important reasons that Turkey's exports to the EU cannot reach an adequate. Therefore, the aim of this research is to analyze the validity of the hypothesis that trade volume between Turkey and EU countries is negatively affected by the quotas. The analysis is conducted through an econometric study based on the gravity model. For this purpose, Turkey's exports to selected EU countries are analyzed in a panel-data framework for the period from 2005 to 2012.

On the other hand, one of the important industries suffering from road transport quotas is the textile sector. As road transportation is faster than rail and sea as well as cheaper than air, trucking is the most preferred means of transport for goods in which customer demand can be fickle and efficient response time required. Turkey is chosen as one of the largest suppliers of the European apparel companies particularly for its ability to provide short response time and low costs. The country's competitive advantage in the textile sector lies in the use of trucks, for short transportation time. Therefore, quotas on road transportation are expected to primarily affect Turkish textile exports to European countries. The textile sector thus offers the opportunity to analyze the relationship between road transport quotas and exports through a case study of the Turkish textile sector.

The second section provides a literature review on the application of gravity models in the analyses of international trade. The third section provides the framework for the gravity model that is proposed to investigate the impact of quotas on international trade. The fourth section analyzes the empirical results for Turkey's exports via road transportation, and highlights the impact of the quotas through estimated coefficients. The fifth section focuses on the textile sector as a case study, and finally, conclusions and further suggestions are given.

2. Literature survey of the gravity approach to trade

The gravity model aims to analyze spatial interactions among different kinds of variables by using the general idea of the gravity theory in physics. The first application of this approach in the econometric domain is the seminal paper of Tinbergen (1962) on international trade relations. The first theoretical explanation for the gravity model, based on the properties of expenditure systems, was provided by Anderson (1979). Later studies to improve the theoretical basis of the model include Helpman and Krugman (1985), Bergstrand (1989), and Deardorff (1998). Moreover, the gravity model has been applied quite successfully in several social science fields. We refer interested readers to Sen and Smith's (1995) survey paper for different applications of the model.

Gravity equations have been used as a basic tool to model international trade for many years (Brun et al., 2002; Redding and Venables, 2004; Liu and Xin, 2011; Novy, 2013). According to the gravity model, the flow between any two points increases in direct proportion to the population and/or the economic activity level between these points and in inverse proportion to the distance between the points.

Generally, these models relate bilateral trade flows to country-specific characteristics of trading partners and analyze the impact of trade frictions, such as distance, geography, free trade agreements, and border effects (Soloaga and Winters, 2001; Antonucci and Manzocchi, 2006; Jayasinghe and Sarker, 2008; Okubo, 2004; Baier and Bergstrand, 2007). The likely impact on trade of Turkey's EU membership has been analyzed by Antonucci and Manzocchi (2006) using a gravity model. Rose (2000) analyzes the impact of the European Monetary Union on trade. Gil–Pareja et al. (2008) analyze the effects of monetary agreements on trade flows, using a sample of 25 Organization for Economic Co-Operation and Development (OECD) countries. The study shows that all the monetary agreements considered have a statistically significant and