

**Could Regional Economic Cooperation Generate  
Trade Creation and Trade Diversion Effects  
without Altering Trade Policies of Members?  
Preliminary Results from a Gravity Application to BSEC**

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**Abstract**

Black Sea Economic Cooperation (BSEC) zone formed in 1992 was one of the first formal initiatives that aimed to develop economic cooperation between countries that were once members of two adversary alliances of the Cold War era. Greece and Turkey, the NATO-affiliated members of BSEC, became partners with their formerly communist neighbors: Albania, Armenia, Azerbaijan, Bulgaria, Georgia, Moldova, Romania, Russian Federation and Ukraine. The partnership required cooperation in quite a comprehensive list of areas including trade but without providing a basis for any preferential treatment for trade between members. The purpose of this paper is to consider the BSEC experience in seeking an answer to whether regional economic cooperation in the broader sense could lead to any trade creation/diversion effects even when the cooperating partners do not liberalize their trade policy among themselves and/or harmonize their policy towards third parties. For this purpose, the paper evaluates the effects of BSEC on regional trade flows by investigating, in particular, the magnitude of any trade creating effects BSEC might so far have generated upon regional flows, and tries to assess the significance of the role it might have played in hindering the diverted trade that had been going on among its members that were once partners within the Council of Mutual Economic Assistance (CMEA or COMECON). The empirical part of the investigation is carried out by employing the gravity framework. A salient feature of the empirical analysis in the paper is the use of pooled time series and cross-section observations within a gravity framework. The empirical results obtained revealed that the formation of BSEC significantly affected trade flows in the region consistently leading to increased trade volumes among members, and causing variations in the volume of trade between members and non-members.

**Keywords** : Black Sea Economic Cooperation (BSEC), Trade Creation/Diversion, Gravity Models.

**JEL Classification** : F14 and F15.

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## **1. Introduction**

Prior to the disintegration in the late 1980s of the Soviet Bloc and then the Soviet Union itself, most of the economies in Eastern Europe were members of CMEA/COMECON (Council of Mutual Economic Assistance) that was formed to divert trade away from the market economies in the West.<sup>1</sup> The development under Soviet planning of strong input-output linkages between industries in different countries/republics led to a significant degree of complementarity between member economies. This complementarity successfully diverted trade away from non-members facilitating the maintenance of high degrees of in-bloc self-sufficiency. The feasibility of barter trade among members also contributed to this process by helping these countries overcome their hard currency constraints (Gultekin and Mumcu, 1996). Following the collapse of the Soviet Bloc and hence CMEA, both the ex-Soviet republics gaining independence, and the formerly socialist nations of Eastern Europe became exposed to competition among the market economies for global markets. A considerable portion of trade in these markets was controlled by regional trade blocs. So, when Turkey, a neighboring market economy, called for the formation of a regional economic cooperation zone among the countries around the Black Sea in 1990, Armenia, Azerbaijan, Bulgaria, Georgia, Moldova, Romania and Russia immediately responded by sending their representatives to Ankara, Turkey to discuss the project. At the end of the Ankara meeting, the representatives declared officially that they agreed to form a Black Sea Economic Cooperation (BSEC) zone together with Turkey. Other transition economies in the region also viewed Turkey as a likely source of financial and technical assistance, and the group was soon joined by Ukraine first and then Albania. Greece also applied to join in and was granted membership. With the signing of BSEC Summit Declaration in July 1992 in Istanbul,<sup>2</sup> BSEC was born as one of the first regional

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<sup>1</sup> The only exceptions were (former) Yugoslavia and Albania (which joined in 1949 but withdrew in 1962).

<sup>2</sup> The full text of the BSEC Summit Declaration can be found in BSEC (1995), pp. 3-6. On-line versions of the document can be accessed at either of the following URLs:

<http://www.mfa.gov.tr/grupf/bsec7.htm> and <http://turkey.org/turkey/bsec7.htm>.

organizations aiming to develop economic cooperation between the members of two adversary alliances of the Cold War era: NATO and the Warsaw Pact.<sup>3</sup>

At the time of the formation of BSEC, only the NATO-affiliated members, Greece and Turkey, had market economies, whereas the other nine were still centrally planned economies with practically no private sector involvement in economic activities. Due to this special composition of its membership, and the special nature of their experience, BSEC emerged as, and has remained, a special regional arrangement (Sayan and Zaim, 1998).<sup>4</sup> It has worked since 1992 to facilitate the growth of natural (as opposed to diverted) trade between its members. However, instead of requiring its members to reduce or eliminate any conventional (tariff or non-tariff) barriers within the cooperation zone, BSEC aimed to help relax *structural* constraints preventing larger volumes of trade between members by contributing to the transition process its ex-socialist members had to go through.

The purpose of this paper is to consider the experience of BSEC in seeking an answer to whether regional economic cooperation in the broader sense could lead to any trade creation/diversion effects even when the cooperating partners do not liberalize their trade policy among themselves and/or harmonize their policy towards third parties. For this purpose, the paper evaluates the effects of BSEC on regional trade flows by investigating, in particular, the magnitude of any trade creating effects BSEC might so far have generated upon regional flows, and tries to assess the significance of the role it might have played in hindering the diverted trade that had been going on among its members that were once partners within CMEA. The empirical part of the investigation is carried out by employing the gravity framework.

The organization of the paper is as follows. The next section describes the nature of cooperation within BSEC. Section 3 explains the implementation of the gravity model and presents

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<sup>3</sup> The Council of Baltic Sea States (CBS) formed a few months before BSEC is another similar organization. See, OECD (1997) for information on the membership composition and the goals of CBS.

<sup>4</sup> Another reason why BSEC is so special is that it is perhaps the only regional cooperation organization in which some of the members impose trade embargos upon others. Azerbaijan and Armenia, for example, have been at odds for a long time due to their dispute over Nagorno-Karabagh and do not have any trade relations. Similarly, Turkey which backs Azerbaijan in the dispute, has been applying a trade embargo upon Armenia. Despite some border trade going on between Armenia and Turkey, official trade statistics of Turkey show zero trade to this country (Sayan and Zaim, 1998).

estimation results. Finally, Section 4 completes the paper with a general discussion of findings and conclusions to be drawn.

## **2. The Nature of the Cooperation through BSEC**

By conventional trade theory, the fundamental motivation behind regional arrangements is to improve the welfare of members through a reduction or elimination of barriers to trade in the region. The members of the regional arrangement would enjoy welfare gains as long as welfare-improving *trade creation* (TC) effects exceed welfare-reducing *trade diversion* (TD) effects. TC arises when domestic production in a certain sector of a member country is replaced, in part or as a whole, by imports from another member which has a *comparative advantage* in the production of that sector's output. Since the member with a comparative advantage is, by definition, a country which produces that output at a lower cost, i.e., more efficiently, there are welfare gains associated with trade creation. TD, on the other hand, occurs when the elimination of barriers upon imports from partners lowers the cost of those imports below the cost of imports from more efficient third parties, as the latter remains artificially high due to the maintenance of restrictions on third party imports. Naturally, such a switch from more to less efficient producers would decrease the importing member's welfare.

While this is the standard framework for analyzing the potential welfare effects of regional arrangements formed to facilitate trade among market economies, applying it to the case of BSEC requires special attention to be paid to the peculiar characteristics of member economies and the nature of cooperation within BSEC. This warning follows from the fact that unlike other forms of regional arrangements among market economies, the BSEC agreement does not directly provide for any trade preferences for countries within the group (OECD, 1997). Since it does require strong commitments towards harmonization of commercial policies vis-a-vis third parties, or reductions in tariff or non-tariff measures for trade among members, cooperation through BSEC would not change the relative costs in domestic markets of imports from member and non-member countries. For this reason, neither trade diversion nor trade creation effects in the sense described above are likely to arise due solely to BSEC membership. However, by helping sources of imports get diversified for each of its members, BSEC could potentially help reverse the trend of diverted trade that had been going on between ex-Soviet Bloc partners prior to its formation. If realized, this would naturally have a welfare-improving impact upon members. BSEC could also help increase the welfare of its members by lowering barriers to trade between the member countries. But unlike those analyzed in the existing integration literature, the

barriers in this context are not of the type that the nations artificially erect by introducing tariff and non-tariff measures of protection which, once decided, could be removed instantaneously. Instead, the barriers to trade between BSEC members are structural barriers that have been formed over long periods of time, and even in the presence of political will, most of them can not be eliminated as quickly as conventional barriers (Sayan, 1997; Sayan and Zaim, 1998). Yet, to the extent BSEC is successful in facilitating reductions in these barriers, it will help create trade in a slightly different sense than the one suggested by the conventional definition of TC.

It is the recognition of the special structural conditions of the members that shaped the cooperation arrangement expected of BSEC to create. It was recognized during the multilateral talks preceding the establishment of BSEC that full economic integration would not be an *a priori* commitment for the participants, even though consideration to such integration could be given later on in the process of cooperation.<sup>5</sup> Cooperation would be developed gradually by taking into account "the specific economic conditions, interests and concerns of the countries involved, and particularly the problems of the countries in transition to market economy" (Article 10). The priorities for different areas of cooperation would be determined in the process with "the achievement of a higher degree of integration of the Participating States into the world economy" (Article 5) set as a major goal. Within this framework, the participating states agreed (Article 14) to promote cooperation by contributing, among others,

... to the expansion of their mutual trade in goods and services and ensuring conditions favorable to such development by continuing their efforts to further reduce or progressively eliminate *obstacles* of all kinds, in a manner not contravening their obligations towards third parties. [Emphasis Added.] (BSEC, 1995: 5)

Given the special composition of BSEC membership, the reference in this Article to the reduction/elimination of "obstacles" must not be viewed as a call for a removal of conventional barriers to trade. It must be viewed, instead, as a call for cooperation towards a relaxation of structural constraints that played a more important role in preventing larger volumes of pre-BSEC trade between members –especially between transition economies joining BSEC, on the one hand, and Greece and Turkey, on the other. In fact, Greece was a full member of the EU and Turkey was negotiating a

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<sup>5</sup> In fact, a "Declaration of Intent for the Establishment of BSEC Free Trade Area" was signed in February 1997 as a further step of cooperation. The actual formation of such a free trade area, however, is not likely in the near future. (For the text of the "Declaration of Intent," see, PABSEC, 1997).

Customs Union agreement with it, at the time of the formation of BSEC. So, there was actually little leeway for BSEC to set the levels of conventional barriers independently and without contravening the commitments with third parties. Hence, BSEC could have a potentially significant effect on trade flows in its area only through its contribution to the removal of structural "obstacles" that had prevented larger volumes of trade between Greece and members. In other words, the potential of BSEC to generate any trade creation effects, or to reverse the diversion of trade between ex-CMEA partners joining BSEC would depend on its ability to tackle the structural obstacles that existed prior to its formation.

Some of these structural obstacles have to do with the lack or inefficiency of channels for trade, and act to suppress all bilateral trade flows between members (with the possible exception of trade between Greece and Turkey).<sup>6</sup> The others cover ideological differences once existed between members that belonged to different alliances of the Cold War era, and the associated differences in their trade regimes. Coupled with the artificially created complementarity or interdependence between the economies of ex-socialist members, these structural factors had effectively created two different patterns of pre-BSEC trade between current members: i) the sizable but largely diverted trade among former Soviet Bloc countries, and ii) relatively insignificant volumes of trade these countries had with Greece and Turkey, despite the geographic proximity between the two groups.

Given the initial lack of private capital accumulation, and the absence of private trading companies and commercial banks (Maurel and Cheikbossian, 1998), there were no barriers that could easily be removed by BSEC for the purposes of welfare gains through increased trade. In fact, part of the pre-BSEC trade that happened to take place between pairs of current members (e.g., Turkey and Romania, or Greece and Bulgaria) was trade between NATO and Warsaw Pact members that was carried out despite serious difficulties posed by regulations restricting trade across blocs in some sectors; differences in property rights and trade regimes (forcing Greek and Turkish exporters to deal only with inefficiently operating state trading companies and banks), and hard currency constraints that the then-

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<sup>6</sup> As noted in Maurel and Cheikbossian (1998), the transportation costs in the Eastern European area were higher than the average for the rest of the world. The high transportation costs can be attributed to the inefficiency of channels for regional trade.

centrally planned members faced.<sup>7</sup> Likewise, the lack of common product standards prevented trade in many sectors, limiting it to mostly raw materials and primary commodities.

As for the role of structural factors that result from the lack or the inefficiency of trade channels, the meager state of transportation and communications infrastructure that is still common to many areas of ex-socialist members needs to be considered. Under the circumstances, increasing the volume of trade would again take more than a(n) reduction/elimination of tariff and non-tariff barriers through a trade liberalization agreement. Even in the complete absence of such conventional measures of protection, the poor infrastructure for transportation and a lack of dependable communications facilities would have imposed structural barriers, physically preventing larger volumes of bilateral trade between any pair of the members, including those Warsaw Pact/CMEA members (Sayan, 1996).

While some of these structural barriers such as ideological differences had been removed before the establishment of BSEC,<sup>8</sup> others remained. The peculiarity of the nature of structural obstacles assigned BSEC special roles no regional organization assumed before. The absence of a private sector and the associated lack of private capital accumulation in ex-socialist members posed exceptional difficulties. As this could act as a major hindrance to economic cooperation, the organization assumed the task of helping the structural transformation of these members by contributing to the creation of a market economy led by the private sector: Article 13 of the Declaration required cooperation in all fields to be achieved by identifying, developing and carrying out projects of common interest through an active participation of *private enterprises* and *firms*, reflecting the organization's commitment to the market economy.

The fields of cooperation were identified through a rather extensive list. While the establishment of BSEC economic area was meant to serve first to the promotion of economic cooperation (especially trade and industrial cooperation), it would also cover science and technology, and the environment as well as the following areas where concrete steps towards cooperation were required:

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<sup>7</sup> Even shortly after the emergence of BSEC, the lack of banking regulations for the financing of international trade in some of the ex-socialist members of BSEC proved to be a major obstacle causing many Turkish exporters to ignore orders from these countries (Sayan and Zaim, 1998).

<sup>8</sup> As a matter of fact, BSEC could not have been formed, had these ideological differences remained.

transport and communications, including their infrastructure; informatics; exchange of economic and commercial information, including statistics; standardization and certification of products; energy; mining and processing of mineral raw materials; tourism; agriculture and agro-industries; veterinary and sanitary protection, and health care and pharmaceuticals (Article 13).

The steps that BSEC has so far taken to help overcome the structural obstacles can best be described in reference to its organizational structure. In order to secure the active participation of private sector in accomplishing the projects of mutual interest, the BSEC Council (BSECC) was founded in 1992. The purpose of BSECC is to provide open channels for regular interaction between national business communities of the members and governmental bodies of the BSEC. For this purpose, the BSECC develops and maintains a network of useful contacts through bilateral business councils and chambers of commerce and similar national organizations.<sup>9</sup> The Council operating through the Permanent Secretariat based in Istanbul is currently active in identifying private and public investment projects that are of common interest to members.<sup>10</sup>

The BSECC acts as the business component of a larger organizational structure which also includes governmental, parliamentary, and financial components, and a permanent international secretariat working under the supervision of the BSEC Sessional Chairman. The Parliamentary Assembly (PABSEC), the parliamentary component of BSEC, was created in 1993 by the representatives of member countries other than Bulgaria and Greece. The governmental component consists of the decision-making body, i.e., the Meeting of the Ministers of Foreign Affairs (MMFA), the Sessional Officials Meeting, and the Working Groups (WGs) of Experts. These WGs are subsidiary bodies established by the MMFA to deal with concrete issues of cooperation in the areas listed above. Some of the WGs established so far are: WG on Agriculture and Agro-Industry, WG on Banking and Finance, WG on Energy, WG on Environmental

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<sup>9</sup> National and bilateral organizations with which the BSECC maintains regular contact are as follows: Albania-Chamber of Commerce and Industry; Azerbaijan-State Committee of Foreign Economic Relations; Bulgaria-Bulgarian-Turkish Business Council; Georgia-State Committee of Foreign Economic Relations; Greece-Council for Greek-Turkish Economic Cooperation; Moldova-Ministry of Trade and Material Resources; Romania-Romanian Electricity Authority; Russian Federation-Ministry of Foreign Economic Relations; Turkey-Foreign Economic Relations Board; and Ukraine-Chamber of Commerce and Industry.

<sup>10</sup> For example, the Council reviewed project proposals for the modernization of small and medium-sized enterprises in Bulgaria so as to recruit international partners to carry out the promising ones.

Protection, WG on Exchange of Statistical Data and Economic Information, WG on Promotion of Technology Transfer, WG on Cooperation in Science and Technology, WG on Cooperation in Tourism, and WG on Avoidance of Double Taxation. These WGs have been instrumental in completion of several projects designed to develop cooperation in respective fields including the establishment of the BSEC Coordination Center for the Exchange of Statistical Data and Economic Information, and the Black Sea Trade and Development Bank (BSEC, 1995). Headquartered in Salonika, Greece, the bank represents the financial component of the BSEC structure and is in the process of becoming the principal source of financing for implementation of joint regional projects (Sayan and Zaim, 1998).

Joint regional projects mostly focus on areas which will help relax structural constraints affecting the efficiency of channels for trade. Considering the importance of the issue, a Working Group (WG) on Transport and Communications was set up very early at the beginning of the cooperation through BSEC. Later in December 1993, this WG was divided into two as the Working Group on Transport and the Working Group on Communications. Some of the projects recommended by these WGs have already been completed, including the establishment of fiber optic communications networks and radio link systems to connect Turkey to i) Bulgaria, Romania and Moldova (KAFOS); ii) Italy, Ukraine and Russia (ITUR), and iii) Azerbaijan and Georgia (DOKAP). The work on other projects aiming to integrate highways, railways and maritime lines so as to improve the efficiency of transportation networks among members is currently under way. (Sayan, 1996).<sup>11</sup>

To summarize, BSEC has so far used its limited financial resources to help its members in the process of both socio-economic transformation and the improvement of infrastructure, by initiating cooperation in a number of fields, some of which would probably not be typical priority areas for other regional organizations formed by market economies.<sup>12</sup> The question now is whether

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<sup>11</sup> In addition to such major projects whose sizable financing needs require governmental agreements, private sector initiatives were encouraged as in the case of the proposal considered by the BSECC for the construction of a viaduct to connect Romania and Bulgaria over the Danube (Sayan, 1996).

<sup>12</sup> Such as establishing a parliamentary assembly like PABSEC to work for strengthening the pluralistic democratic structure and political stability in the BSEC area. Other fields of cooperation that are more directly related to the trade potentials of members included the standardization of products to be traded, and harmonization of customs regulations. BSEC had also to form an *ad-hoc* WG (WG on Travel of

cooperation in such areas is likely to have affected the patterns and volumes of trade within the BSEC area. This question is taken up in the next section which investigates the potential of regional cooperation through BSEC to generate trade creation and trade diversion effects.

### 3. The Effects of BSEC on Regional Trade Flows

#### 3.1. The Choice of Empirical Model

Possible effects of BSEC on regional trade flows are investigated in this section using a simple gravity model. Inspired by the Newtonian laws of gravity,<sup>13</sup> the model is based on the argument that trade flows between two countries must be positively related to their economic "masses" represented by their GDPs, and inversely related to the distance between them.<sup>14</sup> From an economic point of view, the rationale behind the argument is that the potential of a country to supply (export) products demanded by others depends on its own size as measured by its GDP, whereas the foreign demand for these products itself depends, to a large extent, on the income (size) of the demanding (importing) country. Thus, demand and supply potentials of trading partners can be measured by their respective GDPs. For any given pairs of respective GDPs, the bilateral trade potential will also be affected by the geographical distance between the countries: Trade volumes will vary inversely with the distance since longer distances will increase the transportation costs in terms of both freight charges and transportation time. So, in its simplest form, the model can be represented by the following equation:

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Businessmen) to assure speeding up of customs formalities, and easing national visa regulations and the like so as to facilitate travel in the BSEC area by businessmen of member countries.

<sup>13</sup> The Newtonian Law of Universal Gravitation states that two particles with masses  $m_1$  and  $m_2$ , and separated by a distance "d" are attracted to each other by a force, F, acting along the line joining the particles, and the degree of attraction between two objects is directly proportional to the product of their masses and inversely proportional to the square of the distance between them, i.e.,

$$F = G \cdot (m_1 \cdot m_2) / d^2$$

where G is a universal constant having the same value for all pairs of particles.

<sup>14</sup> The gravity model as a tool for the analysis of trade flows between countries was first introduced in the 1960s. For an early example, see Tinbergen (1962). Brief surveys of gravity literature can be found in Deardorff (1984) and Haveman (1997). An early application of the gravity framework to trade flows within BSEC area can be found in Togan (1994) where the estimation was based on cross section observations alone. Sayan (1997) and Sayan and Zaim (1998) present estimation results based on pooled cross-section and time series BSEC data.

$$E_{i,j} = \mathbf{x} \cdot Y_i^\xi \cdot Y_j^\eta \cdot \text{DIST}_{ij}^{\ddot{a}} \quad (1a)$$

where  $E_{i,j}$  is the value of exports from country  $i$  to country  $j$  ( $i \neq j$ );  $Y_{i(j)}$  is the GDP of country  $i$  ( $j$ );  $\text{DIST}_{ij}$  is the distance between the countries (usually between major ports or capitals of each country),<sup>15</sup> and  $\mathbf{x}$ ,  $\xi$ ,  $\eta$ , and  $\ddot{a}$  represent parameters. Given cross-section data on exports, respective GDPs and the distances between the economic centers of  $n$  countries, parameters of the equation can be estimated. Similarly, when the dependent variable is taken as imports by country  $i$  from country  $j$  ( $i \neq j$ ),  $M_{i,j}$ , the relevant equation would be

$$M_{i,j} = \mathbf{m} \cdot Y_i^\mu \cdot Y_j^\lambda \cdot \text{DIST}_{ij}^\tau \quad (1b)$$

In both cases, the estimated parameters are expected to be positive for  $\xi$ ,  $\eta$ ,  $\mu$  and  $\lambda$ , and negative for  $\ddot{a}$  and  $\tau$  whereas estimated values for  $\mathbf{x}$  and  $\mathbf{m}$  can be either positive or negative.<sup>16</sup>

Despite a lack of solid theoretical foundations (Bikker, 1987; Haveman and Hummels, 1997), the simple gravity model has performed well empirically, and proved to be popular tool for empirical analysis in a variety of circumstances (see Deardorff, 1984, and, Oguledo and MacPhee, 1994 for surveys of the gravity literature). It is especially useful when trade flows among a large number of countries need to be considered. Furthermore, its simplicity makes it particularly attractive when data on other variables that are thought to have a significant effect on trade patterns are either not available or not reliable as in the case of transition economies. The central planning practices previously employed in these countries made relative price signals and market determined exchange rates irrelevant to resource allocation decisions thereby rendering conventional trade theory inapplicable.<sup>17</sup> This unreliability of exchange rate and price information for these countries imposed the choice of the gravity framework here, which, for the purposes of empirical investigation in this section, was extended in two directions.

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<sup>15</sup> As in the original Newtonian formulation given in Footnote 13, the masses of the bodies could be treated as concentrated at their centers so that the distance between two bodies is measured by the distance between their centers.

<sup>16</sup> Because of the symmetry between  $E_{i,j}$  and  $M_{j,i}$  (i.e., since  $E_{i,j} = M_{j,i}$ ), estimating parameters in only one of the equations in (1a) and (1b) would usually suffice. However, (the linearized versions of) both equations are estimated here since complete data on bilateral export flows could not be found for all countries and all periods in the sample. This point will be explained in greater detail later.

<sup>17</sup> For this reason, gravity framework was commonly employed in the overwhelming majority of studies on trade flows among transition economies or flows between these countries and the rest of the world See, for example, Van Bergeijk and Oldersma (1987), Havrylysyn and Pritchett (1991), Erzan, Holmes and Safadi (1992), Baldwin (1994), Éltető and Szemplér (1996), Maurel and Cheikbossian (1998).

First, to be able to estimate any trade creating effect the establishment of BSEC might have created on regional flows, a dummy variable was introduced to distinguish BSEC members from other countries in the sample. This dummy variable is thought to have the potential to represent the effects of BSEC-organized efforts towards relaxing the structural obstacles preventing larger volumes of trade. Likewise, in order to see whether BSEC might have played a role to reverse the diverted trade that had been going on among its ex-socialist members, another binary variable was used as a dummy to differentiate ex-CMEA partners from others. Secondly, the estimation was carried out by pooling cross-section and time series data. Since gravity model parameters are typically estimated using cross-section data alone, this is a salient feature of the empirical analysis here –see also, Sayan (1997) and Sayan and Zaim (1998).<sup>18</sup> The employment of pooled data enables the model to capture the possible trade effects resulting from the dynamic nature of structural transformation that ex-communist members of BSEC have undertaken.

The general form of gravity equations used as a basis for parameter estimation is given below:

$$E_{ij,t} = \alpha \cdot Y_{i,t}^{\xi} \cdot Y_{j,t}^{\eta} \cdot \text{DIST}_{ij}^{\alpha} \cdot \prod_k (\text{DMY}^k)_{i,t}^{\nu(k)} \quad (2a)$$

$$M_{ij,t} = m \cdot Y_{i,t}^{\mu} \cdot Y_{j,t}^{\lambda} \cdot \text{DIST}_{ij}^{\tau} \cdot \prod_k (\text{DMY}^k)_{i,t}^{\omega(k)} \quad (2b)$$

where  $E_{ij,t}$  ( $M_{ij,t}$ ) : Exports (Imports) by BSEC member  $i$  to (from) country  $j$  in year  $t$  (in millions of US dollars);  
 $Y_{i,t}$  : GDP of the BSEC member  $i$  in year  $t$  ;  
 $Y_{j,t}$  : GDP of country  $j$  in year  $t$  ;  
 $\text{DIST}_{ij}$  : The distance between country  $i$  and country  $j$  (in hundreds of miles);  
 $(\text{DMY}^k)_{i,t}$  : The value at time  $t$  of the  $k^{\text{th}}$  dummy variable distinguishing country  $i$  from others by some criterion;  
 $\prod_k$  : Product sign indexed over  $k \in \{0,1,2\}$ .

and the Greek characters represent parameters to be estimated.

### 3.2. Data and Estimation

The data problems posed special difficulties in carrying out the estimation. The unreliability of exchange rate data, in particular, made it impossible to use dollar values of GDPs based on

<sup>18</sup> In the gravity literature, the studies that consider the effects of changes over time typically repeat cross-section analysis for different years. See, for example, Aitken (1973) or Maurel and Cheikbossian (1998).

exchange rate conversions.<sup>19</sup> To assure comparability of GDP data across countries, Purchasing Power Parity (PPP) equivalents of GDPs were used for all countries in the sample. PPP equivalents of GDP (in billions of dollars) were obtained from various issues of the country reports published by the Economist Intelligence Unit (EIU), and from various on-line editions of the World Fact Book published by the U.S. Central Intelligence Agency (CIA).

The impossibility of finding complete data on bilateral flows after 1994 restricted the time period under consideration to 1992-1994. The time index,  $t$ , in equations (2a) and (2b) was chosen accordingly so as to have  $t \in \{1992, 1993, 1994\}$ . Annual data on values of exports could be found for only three of the BSEC members, Greece, Romania and Turkey, over the entirety of 1992-1994 period and for all countries of destination in the sample, i.e., the set of importing partners both within and outside BSEC.<sup>20</sup> The set of reporting countries,  $i$ , was therefore chosen such that  $i \in \{\text{Greece, Romania, Turkey}\}$ . This implies that of the 272 possible bilateral export flows for each year, only 48 could be taken into account if exports equation alone were estimated.<sup>21</sup> Since  $E_{i,j} = M_{j,i}$  by definition, the estimation of gravity equation for imports as well makes it possible for 48 additional flows –i.e., the exports by (imports from) each of the remaining 16 countries to (by) each of Greece, Romania and Turkey– taken into consideration. So, estimation of exports and imports separately enables us to consider 96 of 272 bilateral flows for each year, or 288 of the 816 flows over the three year period from 1992 to 1994.

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<sup>19</sup> During the relatively short period of time since they put an end to central planning practices, transition economies in BSEC have experienced a sharp decline in the value of their domestic currencies and real GDPs. Wildly fluctuating exchange rates for some countries implied a nominal depreciation against the dollar of local currencies by hundreds of times a year. In addition, six of the eleven members of BSEC are brand-new economies that used to be regions within another country (i.e., Soviet Union) just before the establishment in 1992 of BSEC. Some of them issued their own currency to replace the ruble which itself fluctuated wildly over the sample period. Thus, reliable GDP data in dollars were not available for these economies, and it was impossible to convert GDP data measured in domestic currency terms into common dollar terms by using exchange rates.

<sup>20</sup> The data on Turkish exports/imports were obtained from the Web site of Turkish State Institute of Statistics (SIS) at <http://www.die.gov.tr/BSEC/bsec.html>, and were also available in various issues of *Foreign Trade Statistics* published by Turkish State Institute of Statistics. For Greece and Romania, trade figures reported in the 1996 edition of the PC/TAS data base of the WTO were used.

<sup>21</sup> Given that the number of countries in the sample is 17, i.e., since  $n=17$ , there are a total of  $n(n-1)=17.16=272$  bilateral export values for each year. The number of export flows from each of the three members to the remaining 16 countries is 16, and for three member countries for which complete data were available, 48 of these bilateral flows could be accounted for.

In choosing non-BSEC countries to be included in the sample, two criteria were observed: i) comparability of their distances to exporting countries as importer partners within BSEC, and ii) availability of data. Based on these criteria, the following countries were included in the sample: Hungary and Poland that used to be partners with ex-socialist members of BSEC within CMEA, and Egypt, Iran, Israel, Jordan and Syria, Middle Eastern countries that have maintained relatively strong trade ties with both Greece and Turkey.<sup>22</sup> So, the set of partner countries,  $j$ , is such that

$j \in \{\text{Albania, Azerbaijan, Bulgaria, Georgia, Greece, Moldova, Romania, Russian Federation, Turkey, Ukraine, Hungary, Poland, Egypt, Iran, Israel, Jordan and Syria}\}$ .

Linearizing equation (2a) and adding the stochastic disturbance term,  $u_{i,t}$ , yield the estimable form below:

$$\ln E_{ij,t} = \alpha + \xi \cdot \ln Y_{i,t} + \eta \cdot \ln Y_{j,t} + \delta \cdot \ln DST_{ij} + \sum_k v(k) \cdot \ln(DMY^k)_{i,t} + \ln u_{i,t} \quad (3a)$$

Similarly, the following form was used for imports:

$$\ln M_{ij,t} = \beta + \mu \cdot \ln Y_{i,t} + \lambda \cdot \ln Y_{j,t} + \tau \cdot \ln DST_{ij} + \sum_k \omega(k) \cdot \ln(DMY^k)_{i,t} + \ln v_{i,t} \quad (3b)$$

where  $v_{i,t}$  is the stochastic disturbance term.

Two dummy variables indexed by  $k$  ( $k \in \{\text{BSEC, CMEA}\}$ ) were allowed to take the value of either  $e$  (the base to the natural logarithm) or one. The BSEC dummy took  $e$  if country  $i$  is a BSEC member at time  $t$ , and 1 if not. So, for all member countries, this binary variable was assigned the value of  $e$  for 1993 and 1994. For 1992, on the other hand, the value of BSEC dummy was taken to be 1 even for member countries since it would be impossible for BSEC membership to have any effects immediately after the signing of BSEC Summit Declaration in July 1992. The CMEA dummy (that was introduced to take the possibility of continuation of diverted trade between Romania and other ex-CMEA members into consideration) was allowed to take the value of  $e$  for the countries that are not former CMEA members, and 1 for others. Different versions of the model were estimated using a combination of variables using pooled data over the

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<sup>22</sup> This set of countries includes two with observer status in BSEC (Egypt and Poland), one that seeks the observer status (Jordan) and one that seeks full membership (Iran). A member country, Armenia, on the other hand, is excluded from the analysis on account of the lack of official trade between itself and Turkey, and the rather small volumes of trade it has with Greece and Romania.

1992-1994 period with 48 cross-section observations for each year. The results from estimation of each version are presented in Tables 1 and 2 below where t-ratios are given in parentheses.

**TABLE 1. ESTIMATION RESULTS BASED ON POOLED DATA:**  
1992-1994 with 48 CROSS SECTION OBSERVATIONS (Dependent Variable:  $\ln E_{ij,t}$ )

<i>Constant</i>	<i>ln GDP of the Reporting Country</i>	<i>ln GDP of the Partner Country</i>	<i>ln DST</i>	<i>ln BSEC Dummy</i>	<i>ln CMEA Dummy</i>	<i>R<sup>2</sup> (BUSE R<sup>2</sup>)</i>
13.611 (19.77)***	0.7268 (5.683)***	0.7681 (9.023)***	-1.2577 (-4.374)***			0.997 (0.50)
14.148 (28.60)***	0.6886 (7.471)***	0.8855 (11.760)***	-1.7361 (-7.980)***	0.2018 (2.564)**		0.999 (0.67)
13.624 (15.87)***	0.7246 (4.432)***	0.7115 (8.076)***	-1.1717 (-3.571)***		0.3341 (1.366)#	0.995 (0.40)
14.298 (17.73)***	0.6781 (4.346)***	0.7160 (7.744)***	-1.4808 (-5.059)***	0.2174 (2.688)***	0.4394 (2.008)**	0.996 (0.42)

\*\*\* : Significant at 99%

\* : Significant at 90%

\*\* : Significant at 95%

# : Not significant at a level, 90% or higher.

**TABLE 2. ESTIMATION RESULTS BASED ON POOLED DATA:**  
1992-1994 with 48 CROSS SECTION OBSERVATIONS (Dependent Variable:  $\ln M_{ij,t}$ )

<i>Constant</i>	<i>ln GDP of the Reporting Country</i>	<i>ln GDP of the Partner Country</i>	<i>ln DST</i>	<i>ln BSEC Dummy</i>	<i>ln CMEA Dummy</i>	<i>R<sup>2</sup> (BUSE R<sup>2</sup>)</i>
14.900 (16.69)***	0.4211 (2.292)**	1.1039 (7.180)***	-1.7457 (-4.215)***			0.994 (0.28)
15.088 (19.25)***	0.3464 (2.110)**	1.1838 (8.394)***	-1.8630 (-4.875)***	0.1673 (2.152)**		0.996 (0.37)
14.145 (14.30)***	0.5452 (2.688)***	1.1308 (7.253)***	-1.7452 (-3.926)***		0.2216 (0.733)#	0.993 (0.31)
14.043 (16.66)***	0.4906 (2.647)***	1.2274 (8.683)***	-1.4808 (-5.059)***	0.2240 (3.091)***	0.3256 (1.244)#	0.995 (0.44)

\*\*\* : Significant at 99%

\* : Significant at 90%

\*\* : Significant at 95%

# : Not significant at a level, 90% or higher.

### 3.3. The Effects of BSEC on Trade Flows

These results indicate that the simple gravity model (the first lines in Tables 1 and 2) explains bilateral exports between the reporting BSEC members and the set of importing countries in the sample very well. Moreover, the BSEC membership has a positive effect (that is statistically significant at the 95% confidence level) on exports/imports of BSEC members considered (the second lines in Tables 1 and 2). The results in the third lines of the tables are for the case where the only binary variable introduced is the CMEA dummy. In that case, the sign of CMEA dummy is positive but the estimated parameter is not significantly different from zero at a confidence level of 90% or higher –implying that CMEA membership in the past does not affect BSEC exports. When both dummy variables are introduced simultaneously, on the other hand, the estimated parameters for both turn out to be positive and significantly different from zero at the 95% level in the case of exports (the last line in Table 1). Given that the value of CMEA dummy is higher (at  $e$ ) for the countries that are *not* former CMEA members, this result implies that for any given level of GDPs and distances, BSEC members are likely to export more to trade partners that are not former CMEA members, providing additional evidence that the formation of BSEC tends to help offset trade diverting effects of CMEA over time. In the case of imports, on the other hand, CMEA dummy turns out to be not significantly different from zero, regardless of whether it has been introduced along with the BSEC dummy or all by itself. Again, common CMEA membership in the past does not appear to affect trade flows.<sup>23</sup>

As for trade creation (TC) in the sense applicable to BSEC, the following calculations were made. These calculations distinguish two types of effects resulting from regional cooperation within BSEC: Gross Trade Creation (GTC) effects upon the members, and External Trade Creation Effects (ETC) on the third parties. Following Balassa (1967), GTC is used here to refer to total increase in trade between *members* resulting from cooperation, regardless of whether extra trade created replaces relatively inefficient domestic production or not. ETC, on the other hand, refers to total increase in trade between members and non-members following the formal establishment of cooperation. With these definitions in mind, the results in the first two lines of Tables 1 and 2 were used to calculate the estimated values of GTC and ETC effects of BSEC as in Aitken (1973). Since the ETC effects are defined, in the present context, as the BSEC-caused increases in the exports/imports of BSEC

members to/from non-members, the parameter estimates from the simple gravity equation without the BSEC dummy were substituted into equations (1a)/(1b) so as to project the values of BSEC-exports/imports that would have been observed had BSEC not been formed. Subtracting the resulting export/import values from actual values of the respective trade flows would yield ETC estimates presented in Tables 3a and 3b for exports, and Tables 4a and 4b for imports.

**TABLE 3a.** ESTIMATES of EXTERNAL EXPORT CREATION 1993 (Millions of Current USD)

<i>Countries</i>	<i>Projected Values of Exports</i>			<i>Estimates of ETC</i> *		
	<b>Greece</b>	<b>Romania</b>	<b>Turkey</b>	<b>Greece</b>	<b>Romania</b>	<b>Turkey</b>
Hungary	43.4	66.4	80.1	-5.5	50.6	-42.6
Poland	64.7	92.5	152.2	-7.5	-72.3	82.6
Egypt	84.0	39.3	204.1	-7.1	61.7	-12.7
Iran	56.9	46.1	220.2	-42.6	35.7	69.3
Israel	43.1	23.7	150.1	50.5	30.2	-69.9
Jordan	10.4	6.0	37.7	14.9	36.9	67.3
Syria	49.6	29.9	213.0	-11.8	102.8	25.8
<b>TOTALS</b>	<b>352.1</b>	<b>303.9</b>	<b>1,057.4</b>	<b>-6.7</b>	<b>142.8</b>	<b>94.0</b>

\* Actual exports minus the projected value of exports that would have been observed in the absence of BSEC, as given in columns 2 to 4 (estimated using pooled data for 17 countries over the 1992-1994 period without the dummy variable for BSEC membership).

**TABLE 3b.** ESTIMATES of EXTERNAL EXPORT CREATION 1994 (Millions of Current USD)

<i>Countries</i>	<i>Projected Values of Exports</i>			<i>Estimates of ETC</i> *		
	<b>Greece</b>	<b>Romania</b>	<b>Turkey</b>	<b>Greece</b>	<b>Romania</b>	<b>Turkey</b>
Hungary	44.7	68.8	80.6	-5.1	92.1	-22.3
Poland	67.9	97.7	156.4	-0.1	-83.8	93.0
Egypt	90.1	42.4	214.4	12.6	115.4	-19.9
Iran	58.1	47.4	220.4	-49.0	-18.8	29.5
Israel	45.5	25.2	155.2	60.7	69.9	22.9
Jordan	14.0	8.1	50.0	14.9	27.5	61.7
Syria	46.4	28.1	194.9	2.5	117.7	59.0
<b>TOTALS</b>	<b>366.7</b>	<b>317.7</b>	<b>1,071.9</b>	<b>36.5</b>	<b>320.0</b>	<b>223.9</b>

\* Actual exports minus the projected value of exports that would have been observed in the absence of BSEC, as given in columns 2 to 4 (estimated using pooled data for 17 countries over the 1992-1994 period without the dummy variable for BSEC membership).

The empirical results in Tables 3a and 3b reveal that total value of actual exports in the 1993- 1994 period by three BSEC members to non-member countries in the sample exceeds the total projected values under the assumption of no BSEC-effect. This implies that the formation of BSEC led

<sup>23</sup> This point could have been made more strongly if the set of reporting countries included other ex-CMEA members joining BSEC than Romania.

to external export creation. To be more precise, in both 1993-1994, Romania and Turkey managed to export more to non-member countries under consideration than they would have, had BSEC not been formed. Even Greece which, in 1993, earned slightly less than it would otherwise have, had net gains of 29.8 million dollars as the additional 36.5 million it received due to external export creation in 1994 offset its 1993 loss of 6.7 million dollars.

**TABLE 4a.** ESTIMATES of EXTERNAL IMPORT CREATION 1993 (Millions of Current USD)

<i>Countries</i>	<i>Projected Values of Imports</i>			<i>Estimates of ETC</i> *		
	<b>Greece</b>	<b>Romania</b>	<b>Turkey</b>	<b>Greece</b>	<b>Romania</b>	<b>Turkey</b>
Hungary	59.8	134.7	68.6	-10.3	33.0	18.1
Poland	108.5	222.8	174.8	-60.3	-19.0	-83.7
Egypt	154.4	67.2	260.1	300.0	19.3	-15.5
Iran	92.6	86.5	297.7	671.5	517.6	369.3
Israel	59.4	32.4	165.1	25.6	23.0	-43.3
Jordan	7.7	4.5	22.7	-1.8	-0.7	2.0
Syria	72.9	45.1	270.5	-65.6	-36.3	-20.2
<b>TOTALS</b>	555.3	593.2	1,259.5	859.1	536.9	226.7

\* Actual imports minus the projected value of imports that would have been observed in the absence of BSEC, as given in columns 2 to 4 (based on pooled data for 17 countries over the 1992-1994 period without the dummy variable for BSEC membership).

**TABLE 4b.** ESTIMATES of EXTERNAL IMPORT CREATION 1994 (Millions of Current USD)

<i>Countries</i>	<i>Projected Values of Imports</i>			<i>Estimates of ETC</i> *		
	<b>Greece</b>	<b>Romania</b>	<b>Turkey</b>	<b>Greece</b>	<b>Romania</b>	<b>Turkey</b>
Hungary	62.0	140.4	70.3	-16.0	25.6	-14.9
Poland	115.9	239.0	184.5	-69.6	-20.6	-115.4
Egypt	170.1	74.4	283.3	286.3	48.5	-159.0
Iran	95.2	89.3	302.3	413.6	353.8	390.1
Israel	64.0	35.0	175.6	20.3	23.1	-49.7
Jordan	11.9	6.9	34.6	-5.2	-3.8	-19.9
Syria	65.9	40.9	241.6	-65.9	-33.4	-197.7
<b>TOTALS</b>	585.0	625.9	1,292.2	563.5	393.2	-166.5

\* Actual imports minus the projected value of imports that would have been observed in the absence of BSEC, as given in columns 2 to 4 (based on pooled data for 17 countries over the 1992-1994 period without the dummy variable for BSEC membership).

A look at the results in Table 4a and 4b show that BSEC has had an even bigger impact on imports from non-members. By these results, the formation of BSEC seems to have contributed to the sizable increases in imports by Greece and Romania from non-BSEC countries considered. While this is true also for Turkey in 1993, this country appears to have imported less from its non-

BSEC trade partners in 1994 than it would have in the absence of BSEC. Like in the case of external export creation for Greece, however, the two year total is positive implying that Turkey, too, imported more from these countries over the 1993-1994 period than the case without BSEC.

Returning to the calculation of GTC, the parameter estimate for BSEC dummy is needed for this purpose. Given that the GTC effects are defined as the BSEC-caused increases in the exports/imports of BSEC members to other members, the estimated coefficient of BSEC dummy (0.2018 in Table 1 or 0.1673 in Table 2) would be interpreted as the factor by which exports/imports of three reporting countries to/from other members are increased. So, dividing actual exports through the base of natural logarithm (i.e., the value of the dummy for members) raised to 0.2018 (0.1673) would give the projected values of exports (imports) under the counterfactual assumption of no cooperation through BSEC. The differences between actual and projected values show the estimated values of GTC effects and are reported in tables below.

**TABLE 5a.** ESTIMATES of GROSS EXPORT CREATION 1993 (Millions of Current USD)

<i>Countries</i>	<i>Projected Values of Exports</i>			<i>Estimates of GTC</i> *		
	<b>Greece</b>	<b>Romania</b>	<b>Turkey</b>	<b>Greece</b>	<b>Romania</b>	<b>Turkey</b>
Albania	107.4	2.5	30.9	24.0	0.6	6.9
Azerbaijan	0.2	0.8	55.7	nil	0.2	12.5
Bulgaria	257.9	83.6	70.5	57.7	18.7	15.8
Georgia	1.4	1.1	28.2	0.3	0.3	6.3
Greece	-	55.6	96.5	-	12.4	21.6
Moldova	2.0	77.0	0.3	0.5	17.2	nil
Romania	75.9	-	123.9	17.0	-	27.7
Russian Federation	157.8	180.1	412.4	35.3	40.3	92.2
Turkey	126.2	245.8	-	28.2	55.0	-
Ukraine	26.9	85.6	32.2	6.0	19.1	7.2
<b>TOTALS</b>	<b>755.7</b>	<b>732.1</b>	<b>850.6</b>	<b>169.0</b>	<b>163.8</b>	<b>190.2</b>

\* Actual exports minus the projected value of exports that would have been observed in the absence of BSEC, as given in columns 2 to 4 (based on pooled data for 17 countries over the 1992-1994 period using the estimated value of the dummy variable for BSEC membership).

**TABLE 5b.** ESTIMATES of GROSS EXPORT CREATION 1994 (Millions of Current USD)

<i>Countries</i>	<i>Projected Values of Exports</i>			<i>Estimates of GTC</i> *		
	<b>Greece</b>	<b>Romania</b>	<b>Turkey</b>	<b>Greece</b>	<b>Romania</b>	<b>Turkey</b>
Albania	169.2	3.8	48.5	37.8	0.9	10.8
Azerbaijan	0.0	2.1	108.0	0.0	0.5	24.1
Bulgaria	327.8	83.5	109.2	73.3	18.7	24.4
Georgia	3.1	7.9	54.8	0.7	1.8	12.3
Greece	-	115.4	138.0	-	25.8	30.9
Moldova	3.1	39.1	3.0	0.7	8.7	0.6
Romania	73.0	-	143.3	16.3	-	32.0
Russian Federation	192.9	169.4	670.4	43.1	37.9	149.9
Turkey	85.9	187.1	-	19.2	41.8	-
Ukraine	64.6	77.5	62.3	14.4	17.3	13.9
<b>TOTALS</b>	<b>919.6</b>	<b>685.8</b>	<b>1337.5</b>	<b>205.5</b>	<b>153.4</b>	<b>298.9</b>

\* Actual exports minus the projected value of exports that would have been observed in the absence of BSEC, as given in columns 2 to 4 (based on pooled data for 17 countries over the 1992-1994 period using the estimated value of the dummy variable for BSEC membership).

**TABLE 6a.** ESTIMATES of GROSS IMPORT CREATION 1993 (Millions of Current USD)

<i>Countries</i>	<i>Projected Values of Imports</i>			<i>Estimates of GTC</i> *		
	<b>Greece</b>	<b>Romania</b>	<b>Turkey</b>	<b>Greece</b>	<b>Romania</b>	<b>Turkey</b>
Albania	13.5	0.1	1.5	2.5	0.0	0.3
Azerbaijan	0.0	4.8	28.7	0.0	0.9	5.2
Bulgaria	173.6	57.5	205.8	31.6	10.5	37.5
Georgia	0.1	0.0	18.5	0.0	0.0	3.4
Greece	-	78.6	101.9	-	14.3	18.6
Moldova	0.3	72.1	24.5	0.0	13.1	4.5
Romania	57.5	-	254.4	10.5	-	46.3
Russian Federation	446.5	646.4	1,304.7	81.3	117.7	237.6
Turkey	121.3	128.3	-	22.1	23.4	-
Ukraine	29.8	112.7	399.9	5.4	20.5	72.8
<b>TOTALS</b>	<b>842.6</b>	<b>1,100.5</b>	<b>2,339.9</b>	<b>153.4</b>	<b>200.4</b>	<b>426.2</b>

\* Actual imports minus the projected value of imports that would have been observed in the absence of BSEC, as given in columns 2 to 4 (based on pooled data for 17 countries over the 1992-1994 period using the estimated value of the dummy variable for BSEC membership).

**TABLE 6b.** ESTIMATES of GROSS IMPORT CREATION 1994 (Millions of Current USD)

<i>Countries</i>	<i>Projected Values of Exports</i>			<i>Estimates of GTC*</i>		
	<b>Greece</b>	<b>Romania</b>	<b>Turkey</b>	<b>Greece</b>	<b>Romania</b>	<b>Turkey</b>
Albania	11.8	0.1	1.3	2.2	0.0	0.2
Azerbaijan	0.0	0.9	7.5	0.0	0.2	1.4
Bulgaria	260.9	49.9	165.4	47.5	9.1	30.1
Georgia	0.0	0.0	21.7	0.0	0.0	4.0
Greece	-	75.6	88.9	-	13.8	16.2
Moldova	4.3	78.2	17.3	0.8	14.2	3.2
Romania	119.4	-	193.6	21.7	-	35.3
Russian Federation	449.9	829.2	884.3	81.9	151.0	161.0
Turkey	142.8	148.3	-	26.0	27.0	-
Ukraine	124.2	127.0	452.6	22.6	23.1	82.4
<b>TOTALS</b>	1113.3	1309.2	1832.6	202.7	238.4	333.8

\* Actual imports minus the projected value of imports that would have been observed in the absence of BSEC, as given in columns 2 to 4 (based on pooled data for 17 countries over the 1992-1994 period using the estimated value of the dummy variable for BSEC membership).

The results in Tables 5a through 6b are similar to those in Tables 3a to 4b in the sense that they too point to BSEC-induced increases in trade among members. Differently from ETC estimates, however, GTC estimates consistently indicate that formation of BSEC lead to no reduction in exports or imports among members in any case, and increases both exports and imports in many cases, clearly implying a rise in trade volumes among members.

#### 4. Concluding Remarks

On the basis of evidence provided by the BSEC experience, this paper searched an answer to whether regional economic cooperation in the broader sense could lead to any trade creation/diversion effects even when the cooperating partners do not liberalize their trade policy among themselves and/or harmonize their policy towards third parties. For this purpose, the paper investigated the magnitude of trade creating effects of BSEC upon regional trade flows, and looked into its role in hindering the diverted trade that had been going on among its members that were once partners within CMEA.

The empirical results obtained within the framework of gravity model revealed that total actual value of trade by BSEC members to non-members in the sample exceeded the total projected values over the 1993-1994 indicating that the formation of BSEC led to external trade creation. As for external export (import) creation by the individual members considered during the 1993-1994 period, Turkey increased its exports (imports) by 317.9 (60.2) million dollars over the value it would have

received from (paid for) exports to (imports from) non-BSEC members in the sample. During the same period, the value of Romania's actual exports to these countries exceeded the value of export earnings this country would have collected in the absence of BSEC by 462.8 (930.1) million dollars. Even Greece which, in 1993, earned slightly less than it would otherwise have, had net gains of 29.8 million dollars as the additional 36.5 million it received due to external export creation in 1994 offset its 1993 loss. In terms of imports, Greece spent much more (1,402.6 million dollars) than it would otherwise have.

As for gross trade creation, all three countries enjoyed higher values of exports to/imports from other BSEC members in both 1993 and 1994. Of the three BSEC members considered, Turkey had the highest increases with a two-year total of 389.1 million dollars in additional exports and 760.0 million dollars in additional imports. The corresponding increases for Greece were estimated to be 374.5 million and 256.1 million dollars for exports and imports, respectively, whereas estimated rise in Romania's trade stood at 317.2 million dollars for exports and 438.8 million dollars for imports.

The BSEC experience must be studied further and extensively as BSEC could act as a role model for other regional initiatives. It has emerged as a regional initiative that encourages cooperation and improved market access rather than protection and preferential treatment. It has helped its members improve their ability to link up with the global economy and created welfare gains through increased trade for its members. As such, BSEC experience has been consistent with the ideals of globalism through regional cooperation as OECD and other international organizations recently began to promote. The support provided to such regional integration efforts is based on the argument that trade flows and foreign direct investment in neighboring countries act as powerful engines for economic growth and development of integrating economies, and regional integration could therefore serve to globalization by helping these countries integrate into the global economy (OECD, 1996). Even though it did not emerge as a regional integration per se, this was one of the goals that was explicitly set for BSEC at the time of its formation. In fact, the BSEC Summit Declaration reflected an early awareness of the potential role that regional cooperation could play in this area, and assigned a high priority to assistance to transition members struggling to get connected to the world economy.

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