Trade Creation and Trade Diversion in the Black Sea Economic Cooperation Area: A Gravity Approach

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The Institute of Economics and Social Sciences of Bilkent University

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ABSTRACT

Trade Creation and Trade Diversion in the Black Sea Economic Cooperation Area: A Gravity Approach

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This thesis considers the performance of one of the pioneer examples of the new form of regional arrangements, namely the Black Sea Economic Cooperation Organization starting from its establishment and from an international trade theory perspective and with reference to trade creation and trade diversion effects. To do this, a simple gravity model is used where the exports of country i to country j depend on the GDP's of the exporting and the importing countries and the distance between the capitals. The estimates from the models are used to calculate External Trade Creation, and Gross Trade Creation effects measuring the impact of BSEC on trade flows in the region.

Keywords: BSEC, Gravity Model, Trade Creation, Trade Diversion

ÖZET

KARADENİZ EKONOMİK İŞBİRLİĞİ ALANINDA TİCARET OLUŞUMU VE TİCARET DAĞILIMI: GRAVİTY YAKLAŞIMI

GÜLNİHAL MAHMUTOĞLU

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Bu çalışmada, yeni bölgesel anlaşmaların en önemli örneklerinden olan Karadeniz Ekonomik İşbirliği Anlaşması başlangıcından bu yana , uluslararası ticaret teorisi perspektifiyle, ticaret oluşumu ve ticaret sapmaları referans alınarak incelenmistir. Newton kanunlarından esinlenerek, i ülkesinin j ülkesine ihracatının iki ülkenin gayrisafimillihasılalarına ve de aralarındaki uzaklıklara bağlı olduğu bir çekim modeli uygulanmıştır. Buradaki tahminler kullanılarak KEİ'nın üye ülkeler ve dünya üzerindeki etkisini yansıtan ETC ve GTC hesaplanmıştır.

Anahtar Kelimeler: KEİ, Çekim Modeli, Ticaret Oluşumu, Ticaret Sapması

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CHAPTER I: INTRODUCTION

Nations trade with each other for the same reasons that individuals engage in exchange of goods: to maximize their utility. Unlike individuals, however, the nations prefer, and act to create, a system where they could freely export their products to others while imposing restrictions on imports from them. Since this is sure to attract retaliation, it is an impossible goal for any individual country to achieve. The alternative, then, is to form regional groupings through which members can offer some sort of preferential treatment to each other but restrict imports from non-members.

Conventionally, such regional arrangements have taken different forms varying from free-trade zones to customs unions or even economic unions. There is a wide and well-established literature theoretically or empirically evaluating the welfare effects of these regional arrangements on member as well as non-member countries. Following the disintegration of the Soviet Bloc and the end of Cold War, however, looser forms of regional arrangements that promote improved market access rather than preferential treatment began to appear in various parts of the world, especially in Europe. The recent trend is to promote cooperation between so-called transition states and their neighbors with market economies. While this trend can be viewed as a revival of regional cooperation efforts of the Cold War era (such as RCD), the new regional initiatives can be argued to try genuinely to help transition states integrate into the world economy by relying less on purely political motivations. So, the new initiatives aim to promote cooperation towards improved market access for all, rather than

integration among members and as such they require no, or at most minimal, commitments from member countries towards harmonization of trade (i.e., commercial) policies against third parties. They emphasize, instead, cooperation in such areas as the improvement of regional channels for trade (e.g., regional transportation and communications networks), reformation of banking procedures and harmonization of other regulations for financing of trade, development of common product standards etc.

This thesis considers the performance of one of the pioneer examples of this new form of regional arrangements, namely the Black Sea Economic Cooperation organization (BSEC) starting from its establishment, especially from an international trade theory perspective and with reference to its potential in generating trade creation/diversion effects. BSEC was formally established in 1992 to promote cooperation between two countries with relatively well-functioning market economies, Greece and Turkey, and nine transition economies including the then newly independent republics of former Soviet Union: Albania, Armenia, Azerbaijan, Bulgaria, Georgia, Moldova, Romania, Russian Federation and Ukraine.

In the conventional trade theory sense, the fundamental motivation behind any regional arrangement is to improve the welfare of members through an elimination of barriers to trade within the region. But the welfare gains often come at the expense of others outside the arrangement. The welfare changes resulting from the formation of regional arrangement are analyzed with reference to trade creation and trade diversion effects on members and non-members. Trade creation (TC) follows when domestic production of a certain product in a member country is replaced, partly or entirely, by imports from another member which has a *comparative advantage* in the production of that product. Since the member with the comparative advantage produces that output more efficiently, i.e., at a lower cost, there are welfare gains associated with trade creation.

However, the integration may also create trade diversion (TD) with welfare reducing effects. Trade diversion arises when the removal of trade barriers artificially lowers the cost of imports from members below the cost of imports from more efficient third parties that remain subject to restrictions. Naturally, such a switch from more to less efficient producers lowers the welfare of importing member but as long as the size of trade creation effect exceeds that of trade diversion, the integration would produce net welfare gains for the members.

While this is the standard framework for analyzing the potential welfare effects of any regional initiative, using it in the context of BSEC case requires special attention to be paid to its peculiar characteristics. Unlike other regional agreements, BSEC membership does not imply receiving preferential treatment from others within the group. Likewise, BSEC membership does not require strong commitments towards harmonization of commercial policies vis-a-vis third parties. In other words, there are no conventional trade barriers (e.g., tariffs or quotas) to be removed through cooperation within BSEC. As a result, trade diversion or trade creation effects in the conventional sense are not likely to arise following the formation of BSEC. Yet, BSEC still has the potential to increase the welfare of member countries by helping lower/eliminate certain *structural* barriers to trade between the members. These structural barriers have been formed over a long period and most of them are hard to remove even if there is political agreement on the need for their removal (Sayan, 1997). Thus, BSEC may generate TC effects, at best, in a different sense than the conventional definition of the concept, and it will be able to do so only to the extent that it facilitates the elimination of these long-lasting barriers. Some of the structural barriers are related to the lack or the inefficiency of channels for trade. Given the poor transportation and communications infrastructure in the ex-socialist members, this is an

obstacle that physically prevents larger volumes of trade between any pair of members, and is a lot more difficult to tackle than conventional trade barriers which can be removed instantly. The other barriers have to do with the ideological differences between ex-socialist members and the other two and existed until shortly before the formation of BSEC: The lack of private capital accumulation, and the absence of private trading companies and commercial banks in the latter group, and the lack of common product standards hindered trade in many sectors leaving room only for trade in raw materials and primary commodities.

So, at the time of its formation, the following observations characterized the patterns of trade among BSEC members: i) a relatively high volume of diverted trade that had been going on among ex-socialists members because of the artificially created complementarity and interdependence between the economies of ex-socialist members (Gültekin and Mumcu, 1996), and ii) relatively insignificant volumes of trade between Greece and Turkey, on the one hand, and between these two countries and other members despite the geographic proximity of the countries (Sayan, 1998).

This thesis tries to evaluate the experience of BSEC against this background and looks for an answer to whether regional economic cooperation could lead to any trade creation or trade diversion effects despite the fact that the partners have not liberalized trade policy among themselves nor harmonized it towards third parties. The purpose of the thesis, therefore, is to investigate the effects of BSEC on regional trade flows so as to evaluate the BSEC's potential for affecting regional welfare. For this purpose, the gravity framework is used as a tool for the analysis of trade flows between countries under consideration.

The gravity model has widely been used in empirical trade literature since the publication in 1962 of Jan Tinbergen's book, *Shaping the World Economy*. Aitken

(1973), utilizing cross sectional trade flows data attempted to isolate the major factors which have defined European trade relations over the period 1951-1967. Using dummy variables, he estimated the impact of the European Economic Community (EEC) and the European Free Trade Association (EFTA) on member countries. For that purpose, he estimated a cross sectional equation for each year between 1951 and1967. To test the existence and size of the integration effects, he chose a base year free of integration effects and used the estimated parameters for that year to measure gross trade creation (GTC) as defined by Balassa (1967) and trade diversion effects. More recently, Maurel and Cheikbossian (1998) used a gravity model equation to see the effects of disintegration of Soviet Bloc. They investigated whether COMECON countries' trade flows have been able to catch up with the outside world regarding the trade potential. By estimating gravity equations over 14 years, they found that there is a potential for increase in trade volume and regional trade losses can be compensated by the increase in trade flows. When they took into account the high transportation costs in Eastern Europe, however, the conclusion does not hold. Trade potential reduces because the transportation costs matter and the only way to improve trade is to reduce transportation costs. Also, they inquire whether the cost of disintegration of the Soviet Bloc decrease or increase over time by looking at the relative weights of trade creation and external trade diversion.

Sayan and Zaim (1998) used a gravity model with Turkey being a reporting country. The set of partner countries included BSEC members and a number of Middle Eastern countries: Egypt, Iran, Israel, Jordan and Syria. Sayan (1997) extended the set of reporting countries to Turkey, Greece and Romania and tried to evaluate the performance of BSEC with special reference to regionalism versus globalism debate. He investigated if BSEC has created a bias in any direction. He argued that whether any

arrangement could be considered as complementary or a substitute for globalization efforts would depend on the direction of the bias, and calculated the effects that BSEC had on trade flows within the region to estimate the direction and size of the bias. The conclusion was that BSEC is not expected to cause trade diversion but is likely to have caused trade creation which supports the idea that BSEC is a complement to globalization in the region.

The plan of the thesis is as follows: The next chapter presents an overview of of Black Sea Economic Cooperation and discusses why it is different from other regional organizations. Chapter III develops the conceptual framework, explains the empirical model and discusses the theory to evaluate BSEC. The estimation findings are presented and discussed. Chapter IV discusses the findings of the thesis.

CHAPTER II: BSEC

Following the end of Cold War, and the integration of the Soviet Union, the countries around the Black Sea have been able to take bold steps in moving over the animosities. The major changes in the area have opened up the way for Turkey to assume a leadership role in the formation of an economic cooperation zone in the Black Sea region.

The regional cooperation was intended not only to generate gains for the nations involved but also to bring peace and stability to the region. Turkey having a secular, democratic regime and a free market economy was a good candidate to take the leadership role. Part of the public hoped that the project would give Turkey a dominating influence over the other states, possibly increasing the country's chance for full membership in EU. Others viewed it as an alternative to seeking the EU membership. In any case, this was a chance for Turkey to confirm its status as a regional leader, and the idea was supported by the Turkish public. The member countries were also supportive as they needed help in in getting integrated into the global economy. The first plan was to form a free trade zone but the project turned into a leaner form since the countries agreed on an organization which would require initially fewer commitments. The first formal meeting was held in Ankara in 1990 with the participation of officials from Turkey, Bulgaria, Romania, Armenia, Azerbaijan, Georgia, Moldova and Russian Federation. At the Ankara meeting, the participating countries announced their intention to establish BSEC. With Ukraine joining in later, the Foreign Ministers got together in Istanbul in 1992, and agreed to sign the

declaration for the formation of BSEC. Finally, the BSEC Summit Declaration was signed on June 25, 1992 in Istanbul by the Presidents of eleven states including Greece and Albania following the approval of their request for membership. (Sayan and Zaim,1998)

BSEC Summit Declaration (BSEC 1995) stated that the cooperation would be based on" the potential of the Participating States and opportunities for enhancing the mutually advantageous economic cooperation arising from their geographic proximity and from the reform process and structural adjustments"(Article 3). By signing the Declaration the member countries confirmed their "intention to develop economic cooperation as a contribution to the CSCE(Conference on Security and Cooperation in Europe) process, to the establishment of a Europe-wide economic area, as well as to the achievement of a higher degree of integration of the Participating States into the World Economy" (Article 5).

The articles addressing peace and security issues reflect the security concerns in the region. BSEC was indeed formed under special conditions including the unresolved problems among ex-Soviet Republics, bilateral conflicts between Armenia and Azerbaijan, Moldova and Romania, and Turkey and Greece. The already existing tensions in the region pointed to the need to maintain stability in the region, thereby assigning BSEC a political mission. Furthermore at the time of the formation of BSEC, all member countries except for Greece and Turkey practically had centrally planned economies. Although they now are considered transition economies trying to complete the integration to the world economy BSEC might be considered as one of the first organisations to be formed between centrally planned economies and market economies. This has to be considered while evaluating the performance of BSEC.

In order to evaluate this performance, a conceptual framework is needed. The trade theory concepts of trade creation and trade diversion can be used for this purpose but some caution is needed in interpreting trade creation/diversion effects in the context of BSEC. Both effects follow from preferential treatment and concessions provided by each member to the others in the group. Trade creation, in particular, arises when domestic production in a certain sector of a member country is replaced by imports from another member which produces that good more efficiently. Trade diversion, on the other hand, arises when a member stops importing from a non-member and switches to imports from a member even though the cost of doing that is higher as compared to imports from the non-member country that is not eligible for concessions offered to members.

BSEC does not require members to offer trade concessions, in the conventional sense, to other members. The members have agreed, in fact, that "their economic cooperation will be developed in a manner not contravening their obligations and not preventing the promotion of the relations of the Participating States with third parties, including international organizations as well as the EC and the cooperation within the regional initiatives " (Article 7). In the Declaration, it has been agreed that "the economic cooperation will be promoted gradually and, while determining the priorities in this process" the members will take into account the specific economic conditions, interests and concerns of the countries involved and particularly the problem of the countries in transition to market economy" (Article 10). As such, it would be difficult to classify BSEC as an example to any of the regional agreements such as preferential trade agreements or economic unions. The closest BSEC would get to these traditional forms of regional arrangement would be a preferential trade agreement which requires the parties to lower barriers among themselves. Under these conditions, trade diversion

effects are not likely to arise due solely to BSEC membership. Even though there is some diverted trade going on between the ex-socialist countries, this should be viewed as a trend that started before the formation of BSEC. Trade creation, on the other hand, can arise due to BSEC since BSEC aims to lower barriers which can cause TC. As stated in the BSEC Summit Declaration, the members have agreed, indeed to promote their cooperation by contributing "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" (BSEC Summit Declaration). It should be noted, however, that the obstacles here refer to the structural barriers rather than tariff and non-tariff barriers. There are two types of structural barriers one of which referring to the socio-economic structure and the other referring to the industry specific structural problems. The socio-economic barriers are related to the ideological differences, long time animosities, differences in trade regimes and hard currency constraints. The industry specific factors have to do with the lack of channels that would facilitate trade. (Sayan and Zaim, 1998).

The Soviet Bloc members had considerable trade between each other. This was as a result of the similarity of trade regimes and the possibility of barter trade among them that they carried to avoid hard currency constraints. Also the high degree of interdependence; the existence of strong input-output linkages, can explain the diverted trade between the ex-socialists (Gultekin and Mumcu,1996). The structural barriers explained above are hard to remove since they arise from socio-economic structures. There has to be a structural transformation and takes time. Thus, unlike the conventional trade theory framework, there are dynamic effects that need to be considered while evaluating the performance of BSEC. The benefits of the organization to members depend on the speed of the structural transformation. The structural

transformation will be completed eventually and, these economies will become enabled to overcome their hard currency constraints. To the extent it contributes to this process, BSEC will facilitate the integration of these countries into the world economy.

The removal of the second type of structural barriers referred to as the inefficiency of channels requires reorganisation in many sectors. The poor transportation infrastructure and communications infrastructure is another structural barrier which prevents larger volumes of trade. BSEC aims to help in the process through the Working Group on Transport and Communications that has been set up very early in the beginning.

The members have declared that they will also take concrete steps in the process by identifying, developing, and carrying out, with the participation of their competent organisations projects of common interest in the following areas: "..standardisation of and certification of products; energy, mining and processing of mineral raw materials; tourism; agriculture and agro-industries; veterinary and sanitary protection; health care and pharmaceutics; science and technology." BSEC initiated cooperation in the fields of harmonization of customs regulations and speeding up of customs formalities, and easing national visa regulations which would facilitate travel in the BSEC area. These proved to prevent large volumes of trade although they may not seem like important concerns for other regional initiatives. The incompatibility of banking regulations caused some exporters to lose potential market share, for example. The lack of capital private capital accumulation in ex-socialist members has been a real problem for BSEC but the members showed determination to create a market economy led by private enterprise as has been made clear in Article 13.

In 1992, the participating states founded the BSEC Council. The aim of the Council is to ensure regular interaction between national business communities of the

participating states and inter-governmental bodies of the Black Sea Economic Cooperation. The Council is active in identifying private and public investment projects, developing a network of useful contacts through the existing channels of bilateral business councils.

Since its formal establishment, BSEC has developed its organizational structure, containing necessary intergovernmental, interparliamentary, inter-business and financial components. BSECC is the inter-business component. The intergovernmental component consists of the decision making body the Meeting of the Ministers of Foreign Affairs (MMFA) of the Participating States, the Sessional Officials Meeting, the Working Group of Experts which deal with concrete spheres of the BSEC activities. A Permanent International Secretariat was established in Istanbul. The Secretariat assumed full responsibilities in 1994. The interparlimentary component was established in 1993 and decided to form PABSEC aiming to strengthen the pluralistic democratic structure and political stability in the BSEC area.

The members have never viewed the Black Sea Economic Cooperation as a privileged organization with complicated procedures for admission to full membership for those who would decide to join in. It has been solemnly declared that those states which have committed themselves to the provisions of the Summit Declaration on the Black Sea Economic Cooperation could join, with the approval of the Participating States. The principle of openness has been a factor differentiating BSEC from other organizations. Organizations or firms from non-member countries were always given the opportunity to take part in the implementation of projects of common interest to members.

Furthermore the Rules of Procedure provide that any state, international or regional wishing to obtain an observer status in BSEC will submit an application to the

BSEC Chairman. Each application was decided to be considered on a case by case basis. Observer status is currently granted to a state for a renewable period of two years and to international organizations for an unlimited period. At the present time the following states have the observer status: Poland, Tunisia, Egypt, Israel, Slovakia. The international organizations in the observer status are: BSEC Council and International Black Sea Club.

CHAPTER III: THEORY, DATA and EMPIRICAL MODEL

3.1.Theory

An economic model describing international trade flows can be formulated in many ways. Despite a lack of theoretical foundations (Bikker, 1987; Havemann and Hummels, 1997) the simple gravity model has been a very popular tool because of its empirical performance. The model which consists of only one equation in three explanatory variables came out the be the simplest model explaining bileteral trade flows. The simplicity becomes useful when trade flows among a large number of countries, need to be considered and when the data on such variables as exchange rates and prices are difficult to find or not reliable at all.

This is the case for transition economies in BSEC as the central planning practices utilized in these countries have made market determined exchange rates and relative price signals irrelevant to resource allocation decisions thereby making conventional trade theory inapplicable.

These factors explaining the bilateral trade flow are

i) GNP of the reporting country

ii) GNP of the exporting country

iii) Distance between two countries

The model in its simplest form can be represented by the following equation.

$$E_{i,j} = A * Y_i^{\beta} * Y_j^{\theta} * Dist_{ij}^{\delta}$$

$E_{i,j}$ = value of exports from country i to country j

$Y_{i(j)}$ = GDP of country i(j)

$Dist_{ij}$ = Distance between two countries

Inspired by Newtonian laws of gravity, the model is built on these three factors based on the argument that the trade flows between two countries must be positively related to economic masses and inversely related to the distance between them. The economic rationale behind this is that the amount of exports that a country is able to supply depends on its market size, which can be represented by its GNP. Likewise, the amount of imports that can be demanded by a particular country will depend on its market size, as represented by its GNP. Moreover, volume of trade will be inversely related to geographic distance between the two countries since this will affect the transportation costs in terms of freight charges and cost of time.

In order to estimate any trade creation effects BSEC might have created, a regional dummy variable is introduced to distinguish BSEC members from other countries in the data set. This dummy variable is supposed to represent the effects of BSEC in trying to remove the structural barriers preventing larger volumes of trade. Another dummy variable differentiating COMECON members is used to see whether BSEC might have had an effect on reversing the diverted trade that had been going on between ex-socialist members. The estimation is carried out by pooling cross section- and time series data as in Sayan (1997).

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

$$E_{ij,t} = A * Y_{i,t}^{\beta} * Y_{j,t}^{\theta} * Dist_{ij}^{\delta} * \prod_k (DMY^k)_{i,t}^{\mu(k)}$$

$E_{ij,t}$: Exports of BSEc member I to country j in year t (in millions of US dollars);

$Y_{i,t}$: GDP of BSEC member i in year t;

$Y_{j,t}$: GDP of BSEC member j in year t;

$Dist_{ij}$: The distance between the capital of the country i and that of country j (hundreds of miles);

$(DMY^k)_{i,t}$: The value of the k^{th} dummy variable distinguishing country i from others at time t;

Π_k : Product sign indexed over $k \in (0,1,2)$

3.2.Conceptual Framework

The rationale behind any regional organization is to increase the welfare of the member countries and possibly the other countries. The net welfare gains depend on the relative magnitudes of trade creation (TC) and trade diversion (TD) effects. *Trade creation* originates when the domestic production in one sector of the member country is replaced by imports from another member which has a comparative advantage in that sector. As a comparative advantage implies to produce a more efficient production, this increases the welfare. Organization can also have welfare reducing trade diversion effects. *Trade diversion* results from a switch to less efficient producers. When the organization is formed, the elimination of barriers on imports from members artificially lowers the cost of the imports below the costs of imports from more efficient third parties. Trade diversion has welfare reducing effect both on the importing country and the third parties.

The economists are interested in seeing whether the regional organizations are welfare improving on a global scale, or they only improve the welfare of the members. Since the interest is in the welfare implications for the world, the trade creation effects

need to be redefined. Gross trade creation as defined by Balassa (1967) refers to the increase in trade among members of a trading community after integration, regardless of whether the additional trade replaces domestic production or non-member exports. Gross trade creation reflects the effect on the member countries. External trade creation (ETC) on the other hand, refers to the integration caused increase in trade between members and non-members. The net effect on the world can be found by the difference between ETC and TD as discussed by Aitken. (1973)

3.3. DATA and ESTIMATION

The unreliability of exchange rate data posed difficulties in carrying out the estimation, particularly because the dollar values of GDP's based on exchange rate conversions were not possible to use. In order to insure comparability of GDP values across countries Purchasing Power Parity (PPP) equivalents of GDP's were used for all countries in the data set. The GDP data were obtained from on-line editions of World Fact Book published by U.S. Central Intelligence Agency and various issues of the country reports published by the Economist Intelligence Unit.

Table 3.1: *GDP(billions of dollars)*

	1992	**1992**	**1993**	**1993**	**1994**	**1994**
	gdp1	gdp2	gdp1	gdp2	gdp1	gdp2
Bulgaria	34.1	34.1	33.9	33.9	33.7	33.7
Greece	82.9	82.9	93.2	93.2	93.7	93.7
Moldova	16.2	11.0	14.2	10.3	14.2	8.2
Romania	63.4	63.4	63.7	63.7	64.7	64.7
Russia	865.5	760	781.4	711.9	678.2	636.2
Turkey	219.0	219.0	312.4	312.4	305.2	305.2
Ukraine	226.6	197.8	199.4	168.4	156.8	130.4
Hungary	55.4	55.4	57.0	57.0	58.8	58.8
Poland	167.6	167.6	180.4	180.4	191.1	191.1
Croatia	21.8	21.8	16.4	16.4	12.4	12.4

The time period was restricted to 1992-1994 due to the impossibility of finding complete data on trade flows beyond this period.

The distances are measured between the capitals of respective countries; Bulgaria, Greece, Moldova, Romania, Russia, Turkey, Ukraine, Hungary, Poland, Croatia and are listed in the some order as the countries: Sofia, Athens, Kishinev, Bucharest, Ankara, Kiev, Budapest, Warsaw, Zagreb.

The distance figures were obtained using the on-line distance calculator at http://www.indo.com/distance. The figures are in hundreds of miles (as the crow flies) and are repoted in the table below.

Table 3.2: *DISTANCES*

	Rom	Turkey	Greece	Bulgaria	Russia	Moldova	Ukraine	Poland	Hungary	Croatia
Bulgaria	1.83	5.30	3.24	-	11.04	4.00	6.35	6.90	3.82	4.23
Greece	4.57	5.12	-	3.24	13.84	6.72	9.23	10.13	6.88	6.69
Moldova	2.22	5.23	6.72	4.00	7.13	-	2.53	5.18	4.52	6.20
Romania		4.58	4.57	1.83	9.34	2.22	4.68	6.12	3.94	5.08
Russia	5.49	11.07	8.50	11.04	-	7.13	4.69	7.04	9.73	11.64
Turkey	4.58		5.12	5.30	11.07	5.23	7.33	10.32	8.51	9.44
Ukraine	4.68	7.33	9.23	6.35	4.69	2.53	-	4.29	5.52	7.43
Hungary	3.94	8.51	6.88	3.82	9.73	4.52	5.52	3.65	-	1.93
Poland	6.12	10.32	10.13	6.90	7.04	5.18	4.29	-	3.65	5.23
Croatia	5.08	9.44	6.69	4.23	11.64	6.20	7.43	5.23	1.93	-

Annual trade flow data for Bulgaria, Greece, Moldova, Romania, Russia, Turkey, Ukraine, Poland, Hungary, Croatia were obtained from PC TAS, the trade data based of the WTO as well as from UN sources and various issues of the Economist Intelligence Unit (EIU) country reports. There were 90 bilateral trade flows for each year.

Two criteria were used for non-BSEC countries to be included in the sample.

a)comparability of distances

b)availability of data

The general form of the equation used in estimation is given below

$$E_{ij,t} = A * Y_{i,t}^{\beta} * Y_{j,t}^{\theta} * Dist_{ij}^{\delta} * \prod_k (DMY^k)_{i,t}^{\mu(k)}$$

$E_{ij,t}$: Exports of BSEC member i to country j in year t (in millions of US dollars);

$Y_{i,t}$: GDP of BSEC member i in year t;

$Y_{j,t}$: GDP of BSEC member j in year t;

$Dist_{ij}$: The distance between the capital of the country i and that of country j (hundreds of miles);

$(DMY^k)_{i,t}$: The value of the k^{th} dummy variable distinguishing country i from others at time t;

$\prod_k$: Product sign indexed over k=(0,1,2)

Linearizing the equation and adding the stochastic disturbance term gives the estimable form:

$$\ln E_{ij,t} = A + \beta \ln Y_{i,t} + \theta \ln Y_{j,t} + \delta \ln DST_{ij} + \sum_k \mu(k) \ln(DMY^k)_{i,t} + \ln u_{i,t}$$

Two dummy variables were included to distinguish BSEC countries and former COMECON countries. The BSEC dummy is intended to help in seeing whether there is any trade creation effect the establishment of BSEC might have. The COMECON dummy is intended to show if BSEC has helped reverse the diverted trade going on between the ex-COMECON countries. The dummy variables were allowed to take the value of either e, the base to the natural logarithms, or one. BSEC dummy takes the value e if the country is a BSEC member at time t, and one if not. All the member countries were assigned the value e for the years 1993 and 1994 and value one for the year 1992. The argument behind the dummy value being assigned as one for 1992 is that it would be impossible for BSEC membership to have any effects right after the signing of BSEC Summit Declaration in July 1992. The COMECON dummy takes the

value e for the countries that were not former COMECON members and takes the value one for the countries that were once members.

The gravity model performed well with cross section data for each year from 1992 to 1994. The parameters were significant and the signs were consistent with the theory. After seeing the significant results for each year the data was pooled. The results were again all significant as reported in Table 3.3 below, where the numbers in parentheses show t-statistics.

Table 3.3: *ESTIMATION RESULTS BASED ON POOLED TIME SERIES AND CROSS SECTION DATA: 1992-1994 with 90 CROSS SECTION OBSERVATIONS*

Constant	ln GDP of the Reporting Country	ln GDP of the Partner	ln DST	ln BSEC Dummy	ln CMCN Dummy	R^2
9.7423 (23.93)	1.3128 (19.38)	1.2105 (19.99)	-1.8646 (-16.55)			0.9986
9.1534 (20.37)	1.4169 (22.52)	1.2436 (18.70)	-1.9726 (-15.23)	0.29543 (3.065)		0.9984
9.6879 (24.02)	1.3552 (19.96)	1.2234 (21.69)	-2.0310 (-17.34)		0.48251 (3.816)	0.9910
9.3631 (20.88)	1.4438 (23.17)	1.1893 (17.42)	-2.0705 (-15.17)	0.24399 (2.559)	0.49419 (3.169)	0.9984

The results indicate that the simple gravity model explains the bilateral exports between the reporting countries well. The second model where the BSEC dummy is included shows that BSEC membership has a positive effect on exports of BSEC members considered. The results in the third line are for the case where only COMECON dummy is used. The COMECON dummy is positive and significant also.

When both dummy variables are used, the estimated parameters are still significant. BSEC membership has a positive effect on BSEC members and the COMECON membership affects BSEC exports.

The calculations of trade creation effects distinguish two types of effects: Gross Trade Creation (GTC) effects upon members, and External Trade Creation (ETC) effects on third parties. Having in mind that ETC is defined as the integration caused increase in trade between members and non-members. ETC effects were calculated by finding the difference between actual and projected values of exports as shown in the following tables.

Table 3.4: *PROJECTED VALUES OF EXPORTS 1993 (millions of US dollars)*

	Hungary	Poland	Croatia
Romania	41.2	73.1	5.7
Turkey	79.0	222.4	14.4
Greece	24.0	47.1	5.6
Bulgaria	19.1	25.5	3.5
Russia	205.0	1512.1	32.5
Moldova	4.4	13.9	0.5
Ukraine	98.2	633.9	12.5

Table 3.5 : ETC 1993(millions of US dollars)

	Hungary	Poland	Croatia	*Total*
Romania	(43.9)	53.1	2.0	11.2
Turkey	55.1	157.4	5.8	218.3
Greece	(10.4)	(0.6)	(1.4)	(12.4)
Bulgaria	(1.9)	4.2	1.2	3.5
Russia	(2,575.1)	240.9	(194.5)	(2,528.7)
Moldova	1.4	12.6	0.4	14.4
Ukraine	(82.8)	434.9	0.7	352.8

The change in the exports of the countries in the first column to the countries Hungary, Poland and Croatia are seen in the table above. It can be said that the Romanian exports to Hungary has decreased by USD 43.9 millions after the integration. The parentheses show the negative values. The negative values show that trade diversion has taken place.

***Table 3.6:** PROJECTED VALUES 1994*

	Hungary	Poland	Croatia
Romania	43.6	80.0	4.1
Turkey	79.6	231.3	10.0
Greece	25.1	50.8	4.0
Bulgaria	19.6	27.2	2.5
Russia	176.8	1346.2	19.2
Moldova	4.6	14.9	0.4
Ukraine	74.4	495.8	6.5

***Table 3.7:** ETC(millions of dollars) 1994*

	Hungary	Poland	Croatia	*Total*
Romania	(75.0)	65.0	(6.5)	(16.5)
Turkey	31.2	146.7	(5.8)	172.1
Greece	(15.6)	(3.5)	(2.9)	(21.9)
Bulgaria	(3.4)	10.0	(8.2)	(1.7)
Russia	(1,562.6)	(93.7)	(163.8)	(1,820.1)
Moldova	0.1	13.6	0.2	14.0
Ukraine	(230.0)	301.2	(44.0)	27.2

For the calculation of ETC effects the parameter estimates from the simple gravity equation without the BSEC dummy were substituted into the simple gravity equation (i.e., $E_{i,j} = A * Y_i^{\beta} * Y_j^{\theta} * Dist_{ij}^{\delta}$) so as to project the values of BSEC exports that

would have been observed had BSEC not been formed. Subtracting the resulting export values from actual exports would yield the ETC estimates presented.

Table 3.8: *GTC 93(millions of dollars)*

	Bulgaria	Greece	Moldova	Romania	Russia	Turkey	Ukraine
Bulgaria	-	50.6	4.0	26.2	349.7	22.1	63.3
Greece	105.7	-	0.1	21.6	130.3	30.2	8.7
Moldova	1.4	0.1	-	12.2	113.3	0.1	9.3
Romania	13.3	17.8	21.8	-	195.4	37.7	34.1
Russia	121.5	49.4	68.6	56.4	-	129.3	617.1
Turkey	62.2	30.8	7.4	71.0	394.5	-	120.9
Ukraine	28.6	8.4	4.5	26.8	1,133.1	10.1	-
Totals	332.8	157.1	106.3	214.1	2,316.3	229.4.4	853.4

Table 3.9: *GTC 94(millions of dollars)*

	Bulgaria	Greece	Moldova	Romania	Russia	Turkey	Ukraine
Bulgaria	-	105.7	3.1	26.1	307.8	34.2	48.7
Greece	81.4	-	0.9	36.1	140.3	43.2	38.7
Moldova	2.6	0.4	-	12.2	135.6	0.9	31.4
Romania	19.9	22.8	23.7	-	250.7	38.4	38.4
Russia	13.7	62.2	121.7	53.0	-	209.8	1,126.5
Turkey	62.2	26.9	5.2	64.1	267.3	-	136.9
Ukraine	34.2	20.8	17.5	24.3	1,761.2	19.5	-
Total	213.9	239.0	172.1	215.9	2,862.9	346.0	1,420.6

In calculating GTC estimates the parameter estimate for BSEC dummy is needed. Given that the GTC effects are defined as BSEC caused increases in the exports of BSEC members to other members , the estimated coefficient of BSEC dummy can be interpreted as the factor by which exports of three reporting countries to other members is increased. Dividing actual exports through the base of natural logarithm raised to BSEC coefficient gives the projected values. GTC can be found by looking at the difference of actual exports and projected exports.

CHAPTER IV: CONCLUSION

The purpose of the thesis was to evaluate the performance of BSEC from an international trade theory perspective and with reference to trade creation and trade diversion effects. To see the effects, the gravity framework was used in four different versions. In the first version, the exports of country i to country j were explained very well by GDP's of the exporting country and the importing country and the distance between the capitals of the countries. In the second version where a dummy variable for BSEC membership was included, the results indicated that BSEC had a positive effect on members` exports. In the third version, BSEC dummy was left out and the COMECON dummy was included. The parameter for this COMECON dummy turned out to be positive and significant indicating that former COMECON members` trade among themselves tend to decline. Finally, in the fourth version, both BSEC and COMECON dummies were included. The coefficients in all the models were consistent with the theory. The coefficients of the GDP's were positive and the coefficient of the distance was negative. The GDP's reflecting the economic potential of the countries showed that they had a positive effect on exports. Distance parameter, on the other hand, had a negative value as expected.

It was discussed that the net effect on the world could be found by the difference between ETC and TD effects. Based on the ETC results, it can be seen that Romania, Greece, Bulgaria, and Russia have had trade diversion effects for 1994, and Turkey, Moldova, and Ukraine had external trade creation effects for 1994. As for

1993, Greece and Russia experienced trade diversion effects and Bulgaria, Moldova, Turkey, Ukraine and Romania experienced trade creation effects.

In terms of gross trade creation effects, Russia had the highest value and Moldova had the lowest value for both 1993 and 1994 in interpreting these results, it should be kept in mind that the gross trade creation is defined as the BSEC-caused increases in the exports of BSEC members to other members.

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APPENDIX

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*####### ESTIMATION OF EXPORTS TO BSEC #######
*########################  OVER 1992-1994 PERIOD  ########################
*#################### WITH BSEC DUMMY CHANGING AFTER 1992 ##################

*############## DOUBLE-LOG FORM WITH DEPENDENT VARIABLE AS LEX ##############
*############ WITH AND WITHOUT USING BSEC DUMMY AS A SLOPE DUMMY #########
*
* Turkish, Greek and Romanian exports and imports are in dollars (the
* slight inconsistency between bilateral trade figures for Turkey vs.
* Greece and Romania was taken care of by using the data reported by
* Turkish and Greek sides).
*
* Armenia is excluded because of the lack of significant trade bet-
* ween Armenia, and Greece and Romania in 1992, and no trade between
* Armenia and Turkey due to the Turkish embargo.
*
* PPP Value of Current GDP is in billions of dollars for all countries
* and populations are in millions. For the PPP GDP data of other count-
* ries, two different series are available (GDPOTH1 and GDPOTH2), and
* both are tried here.
*
* Distances under DIST1 are between capitals of each country whereas
* those under DIST2 are from the major ports --that is, from Istanbul
* (for Turkey), from Athens (for Greece) and from Kostence (for Roma-
* nia)-- to either the capitals or major ports of BSEC countries (Var-
* na for Bulgaria;  Kostence for Romania, Novorosilsk
* for Russia; Istanbul for Turkey; Odessa for Ukraine, ), and are measured
* in hundreds of miles (as the crow flies).
*
* The data is organized in the following way: The first 6 rows show
* the values of relevant variables to explain Romanian trade with BSEC
* countries (ordered alphabetically as , Bulgaria,
* , Greece, Moldova, Romania, Russia and Ukraine. The next six
* rows show the relevant variables for Turkish trade with BSEC count-
* ries (ordered alphabetically as , Bulgaria,Greece , Moldova, Romania,
* Russia,  Ukraine). The following six
* rows have the same information with Greece being the reporting co-
* untry and BSEC members ordered alphabetically as ,
* Bulgaria, Moldova,Romania,  Russia, Turkey and Ukraine.The Remaining BSEC
* countries follow.   Then comes Croatia, Hungary and Poland.
* The following group of rows are for Turkish, Greek and Romanian trade,
* respectively, with Hungary and Poland and Croatia. (ex-COMECON countries
in Europe
* that are not members of BSEC)
*
* In this version, three dummy variables are used individually and simul-
* taneously. One dummy, BSECDMY, distinguishes BSEC members from non-mem-
* bers by taking the value of e for members, 1 for non-members). In this
* version, this dummy takes the value of 1.0 even for members in 1992.The
* second dummy looks into whether the economy in question is a former mem-
* ber of COMECON or not (CMCNDMY: e for an non-COMECON country, 1 for an
* ex-COMECON member), whereas the third one checks whether the country has
* a common border with the reporting country (BRDRDMY: e for countries with
* common borders, 1 for others).
```

```
*
* TRADE DATA SOURCES: DIE Web Site and DIE Publications for Turkey;
*                     PC/TAS Database CDs for Romania and Greece.
sample 1 270
read year exp imp gdpofrc gdpprtn1 gdpprtn2 dist1 dist2 popother

1992   116094000     84149000   63.4    34.1    34.1  1.83   0.95    8.54
1993   102279000     51875000   63.7    33.9    33.9  1.83   0.95    8.47
1994   102193000     77618000   64.7    33.7    33.7  1.83   0.95    8.43
1992    67743000    10711600    63.4    82.9    82.9  4.57   5.44   10.30
1993    84311000     69495000   63.7    93.2    93.2  4.57   5.44   10.30
1994   141149000     89329000   64.7    93.7    93.7  4.57   5.44   10.40
1992    71730000    120452000   63.4    16.2    11.0  2.22   1.55    4.35
1993    94181000     85185000   63.7    14.2    10.3  2.22   1.55    4.36
1994    47868000     92479000   64.7    14.2     8.2  2.22   1.55    4.35
1992   414518000    687336000   63.4   865.5   760.0  5.49   4.35  148.70
1993   220394000    764069000   63.7   781.4   711.9  5.49   4.35  148.40
1994   207256000    980245000   64.7   678.2   636.2  5.49   4.35  148.30
1992   256111867    173073099   63.4   219.0   219.0  4.58   2.58   58.60
1993   277428000    147227000   63.7   312.4   312.4  4.58   2.58   59.80
1994   250731000    150174000   64.7   305.2   305.2  4.58   2.58   61.10
1992   104469000    148107000   63.4   226.6   197.8  4.68   1.74   52.15
1993   104690000    133270000   63.7   199.4   168.4  4.68   1.74   52.18
1994    94848000    150070000   64.7   156.8   130.4  4.68   1.74   51.91
1992    72233525    224542426  219.0    34.1    34.1  5.30   1.87    8.54
1993    86205000    243244000  312.4    33.9    33.9  5.30   1.87    8.47
1994   133663000    195431000  305.2    33.7    33.7  5.30   1.87    8.43
1992   145704678     88150991  219.0    82.9    82.9  5.12   3.49   10.30
1993   118151000    120461000  312.4    93.2    93.2  5.12   3.49   10.30
1994   168854000    105065000  305.2    93.7    93.7  5.12   3.49   10.40
1992       14786      1742058  219.0    16.2    11.0  5.23   4.12    4.35
1993      390000     28908000  312.4    14.2    10.3  5.23   4.12    4.36
1994     3628000     20453000  305.2    14.2     8.2  5.23   4.12    4.35
1992   173073099    256111867  219.0    63.4    63.4  4.58   2.58   22.79
1993   147227000    277428000  312.4    63.7    63.7  4.58   2.58   22.76
1994   150174000    250731000  305.2    64.7    64.7  4.58   2.58   22.73
1992   441886236   1040816301  219.0   865.5   760.0 11.07   5.49  148.70
1993   505332000   1542330000  312.4   781.4   711.9 11.07   5.49  148.40
1994   820250000   1044910000  305.2   678.2   636.2 11.07   5.49  148.30
1992    35848182     90002545  219.0   226.6   197.8  7.33   4.14   52.15
1993    39452000    472706000  312.4   199.4   168.4  7.33   4.14   52.18
1994    76285000    535071000  305.2   156.8   130.4  7.33   4.14   51.91
1992   166830000    160494000   82.9    34.1    34.1  3.24   4.49    8.54
1993   197995000    413418000   93.2    33.9    33.9  3.24   4.49    8.47
1994   413418000    318064000   93.7    33.7    33.7  3.24   4.49    8.43
1992     1610000      9264000   82.9    16.2    11.0  6.72   6.72    4.35
1993     2474000       320000   93.2    14.2    10.3  6.72   6.72    4.36
1994     1692000      3389000   93.7    14.2     8.2  6.72   6.72    4.35
1992   107116000     67743000   82.9    63.4    63.4  4.57   5.44   22.79
1993    69495000     84311000   93.2    63.7    63.7  4.57   5.44   22.76
1994    89329000    141149000   93.7    64.7    64.7  4.57   5.44   22.73
1992   112086000    387108000   82.9   865.5   760.0  8.50   8.95  148.70
1993   193099000    509285000   93.2   781.4   711.9  8.50   8.95  148.40
1994   243285000    548400000   93.7   678.2   636.2  8.50   8.95  148.30
1992    88150991    145704678   82.9   219.0   219.0  5.12   3.49   58.60
1993   120461000    118151000   93.2   312.4   312.4  5.12   3.49   59.80
1994   105065000    168854000   93.7   305.2   305.2  5.12   3.49   61.10
1992     2713000       486000   82.9   226.6   197.8  9.23   7.18   52.15
1993    32962000     33957000   93.2   199.4   168.4  9.23   7.18   52.18
1994    81474000    151423000   93.7   156.8   130.4  9.23   7.18   51.91
1992   160494000    166830000   34.1    82.9    82.9  3.24   4.49   10.30
1993   413418000    197995000   33.9    93.2    93.2  3.24   4.49   10.30
1994   318064000    413418000   33.7    93.7    93.7  3.24   4.49   10.40
1992    25693000      8198000   34.1    16.2    11.0  4.00   2.34    4.35
```

1993	5639000	15760000	33.9	14.2	10.3	4.00	2.34	4.36
1994	10119000	12261000	33.7	14.2	8.2	4.00	2.34	4.35
1992	84149000	116094000	34.1	63.4	63.4	1.83	0.95	22.79
1993	51875000	102279000	33.9	63.7	63.7	1.83	0.95	22.76
1994	77618000	102193000	33.7	64.7	64.7	1.83	0.95	22.73
1992	819151000	1009873000	34.1	865.5	760.0	11.04	5.07	148.70
1993	475156000	1367204000	33.9	781.4	711.9	11.04	5.07	148.40
1994	536592000	1203468000	33.7	678.2	636.2	11.04	5.07	148.30
1992	224542426	72233525	34.1	219.0	219.0	5.30	1.87	58.60
1993	243244000	86205000	33.9	312.4	312.4	5.30	1.87	59.80
1994	195431000	133663000	33.7	305.2	305.2	5.30	1.87	61.10
1992	167470000	226832000	34.1	226.6	197.8	6.35	2.69	52.15
1993	111847000	247486000	33.9	199.4	168.4	6.35	2.69	52.18
1994	133583000	190503000	33.7	156.8	130.4	6.35	2.69	51.91
1992	1009873000	819151000	865.5	34.1	34.1	11.04	5.07	8.54
1993	1367204000	475156000	781.4	33.9	33.9	11.04	5.07	8.47
1994	1203468000	536592000	678.2	33.7	33.7	11.04	5.07	8.43
1992	387108000	112086000	865.5	82.9	82.9	13.84	8.95	10.30
1993	509285000	193099000	781.4	93.2	93.2	13.84	8.95	10.30
1994	548400000	243285000	678.2	93.7	93.7	13.84	8.95	10.40
1992	73979000	46529000	865.5	16.2	11.0	7.13	4.53	4.35
1993	442974000	268067000	781.4	14.2	10.3	7.13	4.53	4.36
1994	530200000	475800000	678.2	14.2	8.2	7.13	4.53	4.35
1992	687336000	414518000	865.5	63.4	63.4	9.34	4.35	22.79
1993	764069000	220394000	781.4	63.7	63.7	9.34	4.35	22.76
1994	980245000	207256000	678.2	64.7	64.7	9.34	4.35	22.73
1992	1040816301	441886236	865.5	219.0	219.0	11.07	5.46	58.60
1993	1542330000	505332000	781.4	312.4	312.4	11.07	5.46	59.80
1994	1044910000	820250000	678.2	305.2	305.2	11.07	5.46	61.10
1992	4429740000	241260300	865.5	226.6	197.8	4.69	3.44	52.15
1993	4429740000	241260300	781.4	199.4	168.4	4.69	3.44	52.18
1994	6885300000	4404200000	678.2	156.8	130.4	4.69	3.44	51.91
1992	8198000	25693000	16.2	34.1	34.1	4.00	2.34	8.54
1993	15760000	5639000	14.2	33.9	33.9	4.00	2.34	8.47
1994	12261000	10119000	14.2	33.7	33.7	4.00	2.34	8.43
1992	9264000	1610000	16.2	82.9	85.1	6.72	6.72	10.30
1993	320000	2474000	14.2	93.2	93.2	6.72	6.72	10.30
1994	3389000	1692000	14.2	93.7	93.7	6.72	6.72	10.40
1992	120452000	71730000	16.2	63.4	63.4	2.22	1.55	22.79
1993	85185000	94181000	14.2	63.7	63.7	2.22	1.55	22.76
1994	92479000	47868000	14.2	64.7	64.7	2.22	1.55	22.73
1992	46529000	73979000	16.2	865.5	760.0	7.13	4.53	148.70
1993	268067000	442974000	14.2	781.4	711.9	7.13	4.53	148.40
1994	475800000	530200000	14.2	678.2	636.2	7.13	4.53	148.30
1992	1742058	14786	16.2	219.0	219.0	5.23	4.12	58.60
1993	28908000	390000	14.2	312.4	312.4	5.23	4.12	59.80
1994	20453000	3628000	14.2	305.2	305.2	5.23	4.12	61.10
1992	23187000	24779000	16.2	226.6	197.8	2.53	1.10	52.15
1993	17425000	36241000	14.2	199.4	168.4	2.53	1.10	52.18
1994	68561000	122709000	14.2	156.8	130.4	2.53	1.10	51.91
1992	226832000	167470000	226.6	34.1	34.1	6.35	2.69	8.54
1993	247486000	111847000	199.4	33.9	33.9	6.35	2.69	8.47
1994	190503000	133583000	156.8	33.7	33.7	6.35	2.69	8.43
1992	486000	2713000	226.6	82.9	82.9	9.23	7.18	10.30
1993	33957000	32962000	199.4	93.2	93.2	9.23	7.18	10.30
1994	151423000	81474000	156.8	93.7	93.7	9.23	7.18	10.40
1992	24779000	23187000	226.6	16.2	11.0	2.53	1.10	4.35
1993	36241000	17425000	199.4	14.2	10.3	2.53	1.10	4.36
1994	122709000	68561000	156.8	14.2	8.2	2.53	1.10	4.35
1992	148107000	104469000	226.6	63.4	63.4	4.68	1.74	22.79
1993	133270000	104690000	199.4	63.7	63.7	4.68	1.74	22.76
1994	150070000	94848000	156.8	64.7	64.7	4.68	1.74	22.73
1992	241260300	4429740000	226.6	865.5	760.0	4.69	3.44	148.70
1993	2412603000	4429740000	199.4	781.4	711.9	4.69	3.44	148.40

1994	4404200000	6885300000	156.8	678.2	636.2	4.69	3.44	148.30
1992	90002545	35848182	226.6	219.0	219.0	7.33	4.17	58.60
1993	472706000	39452000	199.4	312.4	312.4	7.33	4.17	59.80
1994	535071000	76285000	156.8	305.2	305.2	7.33	4.17	61.10
1992	43567000	26218000	167.6	34.1	34.1	6.90	6.96	8.54
1993	31600000	21329000	180.4	33.9	33.9	6.90	6.96	8.47
1994	39826000	17194000	191.1	33.7	33.7	6.90	6.96	8.43
1992	52074000	71008000	167.6	82.9	85.1	10.13	10.13	10.30
1993	64597000	47624000	180.4	93.2	93.2	10.13	10.13	10.30
1994	61591000	54287000	191.1	93.7	93.7	10.13	10.13	10.40
1992	4486000	2113000	167.6	16.2	11.0	5.18	5.18	4.35
1993	2280000	1315000	180.4	14.2	10.3	5.18	5.18	4.36
1994	3335000	1331000	191.1	14.2	8.2	5.18	5.18	4.35
1992	66542000	30377000	167.6	63.4	63.4	6.12	6.54	22.79
1993	36357000	19963000	180.4	63.7	63.7	6.12	6.54	22.76
1994	27165000	14932000	191.1	64.7	64.7	6.12	6.54	22.73
1992	72398000	1351002000	167.6	865.5	760.0	7.04	9.12	148.70
1993	644459000	1271250000	180.4	781.4	711.9	7.04	9.12	148.40
1994	902910000	1439965000	191.1	678.2	636.2	7.04	9.12	148.30
1992	86650000	186304000	167.6	219.0	219.0	10.32	8.80	58.60
1993	62171000	64980000	180.4	312.4	312.4	10.32	8.80	59.80
1994	31861000	84597000	191.1	305.2	305.2	10.32	8.80	61.10
1992	188170000	161893000	167.6	226.6	197.8	4.29	5.99	52.15
1993	184896000	198975000	180.4	199.4	168.4	4.29	5.99	52.18
1994	257430000	194585000	191.1	156.8	130.4	4.29	5.99	51.91
1992	39261000	17762000	55.4	34.1	34.1	3.82	5.00	8.54
1993	23293000	20958000	57.0	33.9	33.9	3.82	5.00	8.47
1994	32190000	23061000	58.8	33.7	33.7	3.82	5.00	8.43
1992	60489000	35514000	55.4	82.9	85.1	6.88	6.88	10.30
1993	57778000	34368000	57.0	93.2	93.2	6.88	6.88	10.30
1994	42162000	40653000	58.8	93.7	93.7	6.88	6.88	10.40
1992	0.0000001	0.00000001	55.4	16.2	11.0	4.52	4.52	4.35
1993	6976000	3039000	57.0	14.2	10.3	4.52	4.52	4.36
1994	9872000	4465000	58.8	14.2	8.2	4.52	4.52	4.35
1992	178338000	80811000	55.4	63.4	63.4	3.94	5.10	22.79
1993	183833000	85074000	57.0	63.7	63.7	3.94	5.10	22.76
1994	198514000	118685000	58.8	64.7	64.7	3.94	5.10	22.73
1992	1406985000	18675170000	55.4	865.5	760.0	9.73	9.05	148.70
1993	1360543000	2780157000	57.0	781.4	711.9	9.73	9.05	148.40
1994	804495000	1739406000	58.8	678.2	636.2	9.73	9.05	148.30
1992	97117000	26964000	55.4	219.0	219.0	8.51	6.54	58.60
1993	95245000	23930000	57.0	312.4	312.4	8.51	6.54	59.80
1994	32283000	48320000	58.8	305.2	305.2	8.51	6.54	61.10
1992	117091000	142765000	55.4	226.6	197.8	5.52	5.62	52.15
1993	115000000	181000000	57.0	199.4	168.4	5.52	5.62	52.18
1994	229474000	304394000	58.8	156.8	130.4	5.52	5.62	51.91
1992	1978000	19669000	21.8	34.1	34.1	4.23	6.12	8.54
1993	3581000	2269000	16.4	33.9	33.9	4.23	6.12	8.47
1994	4969000	10714000	12.4	33.7	33.7	4.23	6.12	8.43
1992	14626000	9675000	21.8	82.9	85.1	6.69	6.69	10.30
1993	15939000	7018000	16.4	93.2	93.2	6.69	6.69	10.30
1994	12456000	6871000	12.4	93.7	93.7	6.69	6.69	10.40
1992	0.0000001	0.00000001	21.8	16.2	11.0	6.20	6.20	4.35
1993	0.00000001	118000	16.4	14.2	10.3	6.20	6.20	4.36
1994	117000	144000	12.4	14.2	8.2	6.20	6.20	4.35
1992	1899000	3941000	21.8	63.4	63.4	5.08	6.47	22.79
1993	3382000	3718000	16.4	63.7	63.4	5.08	6.47	22.76
1994	5098000	10649000	12.4	64.7	64.7	5.08	6.47	22.73
1992	144783000	202255000	21.8	865.5	760.0	11.64	10.66	148.70
1993	144783000	226943000	16.4	781.4	711.9	11.64	10.66	148.40
1994	151021000	182993000	12.4	678.2	636.2	11.64	10.66	148.30
1992	11408000	14742000	21.8	219.0	219.0	9.44	7.33	58.60
1993	20491000	8627000	16.4	312.4	312.4	9.44	7.33	59.80
1994	13875000	15752000	12.4	305.2	305.2	9.44	7.33	61.10

1992	5632000	9446000	21.8	226.6	197.8	7.43	7.29	52.15
1993	9885000	11796000	16.4	199.4	168.4	7.43	7.29	52.18
1994	11721000	50495000	12.4	156.8	130.4	7.43	7.29	51.91
1992	80811000	178338000	63.4	55.4	55.4	3.94	5.10	55.40
1993	85074000	183833000	63.7	57.0	57.0	3.94	5.10	10.32
1994	118685000	198514000	64.7	58.8	58.8	3.94	5.10	10.32
1992	30377000	66542000	63.4	167.6	167.6	6.12	6.54	57.00
1993	19963000	36357000	63.7	180.4	180.4	6.12	6.54	38.52
1994	14932000	27165000	64.7	191.1	191.1	6.12	6.54	38.60
1992	3941000	1899000	63.4	21.8	21.8	5.08	6.47	4.80
1993	3718000	3382000	63.7	16.4	16.4	5.08	6.47	4.80
1994	10649000	5098000	64.7	12.4	12.4	5.08	6.47	4.80
1992	26964000	97117000	219.0	55.4	55.4	8.51	6.54	55.40
1993	23930000	95245000	312.4	57.0	57.0	8.51	6.54	10.32
1994	48320000	32283000	305.2	58.8	58.8	8.51	6.54	10.32
1992	186304000	86650000	219.0	167.6	167.6	10.32	8.80	57.00
1993	64980000	62171000	312.4	180.4	180.4	10.32	8.80	38.52
1994	84597000	31861000	305.2	191.1	191.1	10.32	8.80	38.60
1992	14742000	11408000	219.0	21.8	21.8	9.44	7.33	4.80
1993	8627000	20491000	312.4	16.4	16.4	9.44	7.33	4.80
1994	15752000	13875000	305.2	12.4	12.4	9.44	7.33	4.80
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1993	34368000	57778000	93.2	57.0	57.0	6.88	6.88	10.32
1994	40653000	42162000	93.7	58.8	58.8	6.88	6.88	10.32
1992	71008000	52074000	82.9	167.6	167.6	10.13	10.13	57.00
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1994	23064000	32190000	33.7	58.8	58.8	3.82	5.00	10.32
1992	26218000	43567000	34.1	167.6	167.6	6.90	6.96	57.00
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1993	2269000	3585000	33.9	16.4	16.4	4.23	6.12	4.80
1994	10714000	4969000	33.7	12.4	12.4	4.23	6.12	4.80
1992	1867517000	1406985000	865.5	55.4	55.4	9.73	9.05	55.40
1993	2780157000	1360543000	781.4	57.0	57.0	9.73	9.05	10.32
1994	1739406000	804495000	678.2	58.8	58.8	9.73	9.05	10.32
1992	1351002000	723298000	865.5	167.6	167.6	7.04	9.12	57.00
1993	1271250000	644459000	781.4	180.4	180.4	7.04	9.12	38.52
1994	1439965000	902910000	678.2	191.1	191.1	7.04	9.12	38.60
1992	202255000	144783000	865.5	21.8	21.8	11.64	10.66	4.80
1993	226943000	144783000	781.4	16.4	16.4	11.64	10.66	4.80
1994	182993000	151021000	678.2	12.4	12.4	11.64	10.66	4.80
1992	0.0000001	0.0000001	16.2	55.4	55.4	4.52	4.52	55.40
1993	3039000	6976000	14.2	57.0	57.0	4.52	4.52	10.32
1994	4465000	9872000	14.2	58.8	58.8	4.52	4.52	10.32
1992	2113000	4486000	16.2	167.6	167.6	5.18	5.18	57.00
1993	1315000	2280000	14.2	180.4	180.4	5.18	5.18	38.52
1994	1331000	3335000	14.2	191.1	191.1	5.18	5.18	38.60
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1993	118000	0.00000001	14.2	16.4	16.4	6.20	6.20	4.80
1994	144000	117000	14.2	12.4	12.4	6.20	6.20	4.80
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1993	181000000	115000000	199.4	57.0	57.0	5.52	5.62	10.32
1994	304394000	229474000	156.8	58.8	58.8	5.52	5.62	10.32
1992	161893000	188170000	226.6	167.6	167.6	4.29	5.99	57.00
1993	198975000	184896000	199.4	180.4	180.4	4.29	5.99	38.52
1994	194585000	257430000	156.8	191.1	191.1	4.29	5.99	38.60
1992	9446000	5632000	226.0	21.8	21.8	7.43	7.29	4.80

1993	11796000	9885000	199.4	16.4	16.4	7.43	7.29	4.80
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1993	174222000	165510000	180.4	57.0	57.0	3.65	3.65	10.32
1994	172477000	210352000	191.1	58.8	58.8	3.65	3.65	10.32
1992	31742000	32248000	167.6	21.8	21.8	5.23	5.23	4.80
1993	27163000	36737000	180.4	16.4	16.4	5.23	5.23	4.80
1994	37622000	45149000	191.1	12.4	12.4	5.23	5.23	4.80
1992	143063000	179353000	55.4	167.6	167.6	3.65	3.65	57.00
1993	165510000	174222000	57.0	180.4	180.4	3.65	3.65	38.52
1994	210352000	172477000	58.8	191.1	191.1	3.65	3.65	38.60
1992	102737000	42045000	55.4	21.8	21.8	1.93	1.93	4.80
1993	78188000	54039000	57.0	16.4	16.4	1.93	1.93	4.80
1994	100124000	68353000	58.8	12.4	12.4	1.93	1.93	4.80
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1993	54039000	78188000	16.4	57.0	57.0	1.93	1.93	10.32
1994	68353000	100124000	12.4	58.8	58.8	1.93	1.93	10.32
1992	32248000	31742000	21.8	167.6	167.6	5.23	5.23	57.00
1993	367370000	27163000	16.4	180.4	180.4	5.23	5.23	38.52
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1992	1.000000000	1.000000000	2.718281828
1993	1.000000000	1.000000000	2.718281828
1994	1.000000000	1.000000000	2.718281828
1992	1.000000000	1.000000000	1.000000000
1993	1.000000000	1.000000000	1.000000000
1994	1.000000000	1.000000000	1.000000000

```
*print exp imp gdpofec gdpprtn1 gdpprtn2 dist
genr lex=log(exp)
genr lim=log(imp)
genr lyrc=log(gdpofrc)
genr lyprtnr1=log(gdpprtn1)
genr lyprtnr2=log(gdpprtn2)
genr ldst1=log(dist1)
genr ldst2=log(dist2)
genr lbsecdmy=log(bsecdmy)
genr lcmcndmy=log(cmcndmy)
genr lbrdrdmy=log(brdrdmy)
genr lpopoth=log(popother)
*genr pcyrc= gdpofrc/poprc
*genr pcyprtn1= gdpprtn1/popother
*genr pcyprtn2= gdpprtn2/popother
*genr lpcyrc=log(pcyrc)
*genr lpcyprt1=log(pcyprtn1)
```

```
*genr lpcyprt2=log(pcyprtn2)
*genr yrcbsec=gdpofrc*bsecdmy
*genr ypr1bsec=gdpprtn1*bsecdmy
*genr ypr2bsec=gdpprtn2*bsecdmy
*genr lyrcbsec=log(yrcbsec)
*genr yp1bsec=lyprtnr1*lbsecdmy
*genr yp2bsec=lyprtnr2*lbsecdmy

*print gdpofrc yrcbsec
pool lex lyrc lyprtnr1 ldst1 /ncross=90 same
pool lex lyrc lyprtnr1 ldst2 /ncross=90 same
pool lex lyrc lyprtnr2 ldst1 /ncross=90 same
pool lex lyrc lyprtnr2 ldst2 /ncross=90 same
pool lex lyrc lyprtnr1 ldst1 lbsecdmy /ncross=90 same
pool lex lyrc lyprtnr1 ldst1 lbsecdmy lcmcndmy/ncross=90 same
pool lex lyrc lyprtnr1 ldst2 lbsecdmy /ncross=90 same
pool lex lyrc lyprtnr2 ldst1 lbsecdmy /ncross=90 same
pool lex lyrc lyprtnr2 ldst2 lbsecdmy /ncross=90 same
pool lex lyrc lyprtnr1 ldst1 lcmcndmy /ncross=90 same
pool lex lyrc lyprtnr1 ldst2 lcmcndmy /ncross=90 same
pool lex lyrc lyprtnr2 ldst1 lcmcndmy /ncross=90 same
pool lex lyrc lyprtnr2 ldst2 lcmcndmy /ncross=90 same
pool lex lyrc lyprtnr1 ldst1 lbrdrdmy /ncross=90 same
pool lex lyrc lyprtnr1 ldst2 lbrdrdmy /ncross=90 same
pool lex lyrc lyprtnr2 ldst1 lbrdrdmy /ncross=90 same
pool lex lyrc lyprtnr2 ldst2 lbrdrdmy /ncross=90 same
pool lex lyrc lyprtnr1 ldst1 lbsecdmy lpopoth/ncross=90 same
pool lex lyrc lyprtnr1 ldst2 lbsecdmy lpopoth/ncross=90 same
pool lex lyrc lyprtnr2 ldst1 lbsecdmy lpopoth/ncross=90 same
pool lex lyrc lyprtnr2 ldst2 lbsecdmy lpopoth/ncross=90 same
pool lex lyrc lyprtnr1 ldst1 lcmcndmy lpopoth/ncross=90 same
pool lex lyrc lyprtnr1 ldst2 lcmcndmy lpopoth/ncross=90 same
pool lex lyrc lyprtnr2 ldst1 lcmcndmy lpopoth/ncross=90 same
pool lex lyrc lyprtnr2 ldst2 lcmcndmy lpopoth/ncross=90 same
pool lex lyrc lyprtnr1 ldst1 lbrdrdmy lpopoth/ncross=90 same
pool lex lyrc lyprtnr1 ldst2 lbrdrdmy lpopoth/ncross=90 same
pool lex lyrc lyprtnr2 ldst1 lbrdrdmy lpopoth/ncross=90 same
pool lex lyrc lyprtnr2 ldst2 lbrdrdmy lpopoth/ncross=90 same


stop
```

*

```
*********************************************************************
Hello/Bonjour/Aloha/Howdy/G Day/Kia Ora/Konnichiwa/Buenos Dias/Nee Hau
Welcome to SHAZAM - Version 7.0  -  JUN 1994 SYSTEM=PHARLAP  PAR=   500
|_*######## ESTIMATION OF EXPORTS TO BSEC ########
|_*#########################  OVER 1992-1994 PERIOD  ########################
|_*#####################  WITH BSEC DUMMY CHANGING AFTER 1992 #################
|_*##############  DOUBLE-LOG FORM WITH DEPENDENT VARIABLE AS LEX ##############
|_*############  WITH AND WITHOUT USING BSEC DUMMY AS A SLOPE DUMMY #########
|_*
|_* Turkish, Greek and Romanian exports and imports are in dollars (the
|_* slight inconsistency between bilateral trade figures for Turkey vs.
|_* Greece and Romania was taken care of by using the data reported by
|_* Turkish and Greek sides).
|_*
|_* Armenia is excluded because of the lack of significant trade bet-
|_* ween Armenia, and Greece and Romania in 1992, and no trade between
|_* Armenia and Turkey due to the Turkish embargo.
|_*
|_* PPP Value of Current GDP is in billions of dollars for all countries
|_* and populations are in millions. For the PPP GDP data of other count-
|_* ries, two different series are available (GDPOTH1 and GDPOTH2), and
|_* both are tried here.
|_*
|_* Distances under DIST1 are between capitals of each country whereas
|_* those under DIST2 are from the major ports --that is, from Istanbul
|_* (for Turkey), from Athens (for Greece) and from Kostence (for Roma-
|_* nia)-- to either the capitals or major ports of BSEC countries (Var-
|_* na for Bulgaria;  Kostence for Romania, Novorosilsk
|_* for Russia; Istanbul for Turkey; Odessa for Ukraine, ), and are measured
|_* in hundreds of miles (as the crow flies).
|_*
|_* The data is organized in the following way: The first 6 rows show
|_* the values of relevant variables to explain Romanian trade with BSEC
|_* countries (ordered alphabetically as , Bulgaria,
|_* , Greece, Moldova, Romania, Russia and Ukraine. The next six
|_* rows show the relevant variables for Turkish trade with BSEC count-
|_* ries (ordered alphabetically as , Bulgaria,Greece , Moldova, Romania,
|_* Russia,  Ukraine). The following six
|_* rows have the same information with Greece being the reporting co-
|_* untry and BSEC members ordered alphabetically as ,
|_* Bulgaria, Moldova,Romania,  Russia, Turkey and Ukraine.The Remaining BSEC
|_* countries follow.   Then comes Croatia, Hungary and Poland.
|_* The following group of rows are for Turkish, Greek and Romanian trade,
|_* respectively, with Hungary and Poland and Croatia. (ex-COMECON countries in Europe
|_* that are not members of BSEC)
|_*
|_* In this version, three dummy variables are used individually and simul-
|_* taneously. One dummy, BSECDMY, distinguishes BSEC members from non-mem-
|_* bers by taking the value of e for members, 1 for non-members). In this
|_* version, this dummy takes the value of 1.0 even for members in 1992.The
|_* second dummy looks into whether the economy in question is a former mem-
|_* ber of COMECON or not (CMCNDMY: e for an non-COMECON country, 1 for an
|_* ex-COMECON member), whereas the third one checks whether the country has
|_* a common border with the reporting country (BRDRDMY: e for countries with
|_* common borders, 1 for others).
|_*
|_* TRADE DATA SOURCES: DIE Web Site and DIE Publications for Turkey;
|_*                     PC/TAS Database CDs for Romania and Greece.
|_sample 1 270
|_read year exp imp gdpofrc gdpprtn1 gdpprtn2 dist1 dist2 popother
   9 VARIABLES AND      270 OBSERVATIONS STARTING AT OBS       1

|_sample 1 270
|_read year  bsecdmy cmcndmy brdrdmy
   4 VARIABLES AND      270 OBSERVATIONS STARTING AT OBS       1

|_*print exp imp gdpofec gdpprtn1 gdpprtn2 dist
|_genr lex=log(exp)
|_genr lim=log(imp)
|_genr lyrc=log(gdpofrc)
|_genr lyprtnr1=log(gdpprtn1)
|_genr lyprtnr2=log(gdpprtn2)
|_genr ldst1=log(dist1)
|_genr ldst2=log(dist2)
|_genr lbsecdmy=log(bsecdmy)
|_genr lcmcndmy=log(cmcndmy)
|_genr lbrdrdmy=log(brdrdmy)

|_genr lpopoth=log(popother)
|_*genr pcyrc= gdpofrc/poprc
```

```
|_*genr pcyprtn1= gdpprtn1/popother
|_*genr pcyprtn2= gdpprtn2/popother
|_*genr lpcyrc=log(pcyrc)
|_*genr lpcyprt1=log(pcyprtn1)
|_*genr lpcyprt2=log(pcyprtn2)
|_*genr yrcbsec=gdpofrc*bsecdmy
|_*genr yprlbsec=gdpprtn1*bsecdmy
|_*genr ypr2bsec=gdpprtn2*bsecdmy
|_*genr lyrcbsec=log(yrcbsec)
|_*genr yp1bsec=lyprtnr1*lbsecdmy
|_*genr yp2bsec=lyprtnr2*lbsecdmy
|_*print gdpofrc yrcbsec

|_pool lex lyrc lyprtnr1 ldst1 /ncross=90 same
POOLED CROSS-SECTION TIME-SERIES ESTIMATION
    90 CROSS-SECTIONS AND      3 TIME-PERIODS
    270 TOTAL OBSERVATIONS
DEPENDENT VARIABLE = LEX
...WARNING..TOO FEW DEGREES OF FREEDOM, DN OPTION USED

MODEL ASSUMPTIONS:
    SAME ESTIMATED RHO FOR EACH CROSS-SECTION
    DIAGONAL PHI MATRIX

OLS COEFFICIENTS
   1.9814       1.8915      -2.9343       5.1747

RHO VECTOR
  0.61134       1.3132      0.91474       1.0571      0.41788
  0.52573      -0.23076      1.0038       0.53494       1.1395
  0.85715       0.85552      1.1927       0.92257      0.57787
  0.70566       1.2100     0.76929E-01     1.0684      0.83749
  0.18023       1.0021      0.73007       1.1239       1.1153
   1.4376       1.2189       1.6367       1.0708      0.59459
   1.0811      -0.43102      0.99057       1.3611     -0.27359
  0.19159       1.1257     0.53877E-01   0.69863E-01   0.16234
  0.42524       0.33350      0.78896      0.80258      0.98786
   1.3671       0.53213      1.6286       0.83317      0.82971
  0.81856      -0.60595E-01   0.98781      0.93926      0.23601
   3.4301       1.6038       1.1339       0.46563       1.8282
   1.3473       1.1972       1.8353       1.0932       1.5161
   2.1164       0.31408      0.61045      0.93846      0.90274
  0.46998       1.1266       1.0898       0.57462      0.82978
   1.0457       0.90121      1.2888     -0.40163E-01    1.1721
 -0.44300E-01    2.3500      0.85468       3.1121       1.6444
   1.4660       0.94260      1.3131       1.6513      0.81282

SAME ESTIMATED RHO FOR ALL CROSS-SECTIONS =  0.22707

VARIANCES (DIAGONAL OF PHI MATRIX)
  0.42966E-01   0.65802       2.5798       1.6871      0.10974
  0.14412       0.15144       1.2242       16.015      0.60201
   1.9412        5.2869       3.0872      0.50624      0.59143
   1.5039       1.5092        2.9816       3.6394       7.1136
  0.66135E-01    4.6563       1.4136       3.1635       6.1630
  0.57261       3.3742      0.65327      0.68949       1.6706
   7.0491       3.6930       4.0733       3.6442       1.3132
   1.0114       4.0876       7.9336       1.1856      0.10187
   7.5649       1.1844      0.77144      0.38765      0.44266
  0.40116       6.3803       1.9470       2.7061       1.3789
   2.2461       313.45       2.9593       2.3131      0.74028
  0.69514       3.0670       5.6516       430.95       1.6308
   5.6447       2.1955       2.0491       1.2946      0.93890
   2.5142      0.27812       1.2203       1.6146       1.3197
  0.55815       3.0388      0.67398      0.29890       6.3714
   3.3078       1.3136       5.4175       306.69       1.1585
   255.80      0.92661       3.0576       4.2282     0.85759E-01
   1.5546     0.30173E-01     2.5708       1.7446       5.8758

BUSE [1973] R-SQUARE = 0.6584       BUSE RAW-MOMENT R-SQUARE = 0.9986
BUSE [1979] R-SQUARE =-2.7278
VARIANCE OF THE ESTIMATE-SIGMA**2 =  0.65874
STANDARD ERROR OF THE ESTIMATE-SIGMA =  0.81163
SUM OF SQUARED ERRORS-SSE=   175.22
MEAN OF DEPENDENT VARIABLE =   17.304
LOG OF THE LIKELIHOOD FUNCTION = -404.844


VARIABLE   ESTIMATED  STANDARD   T-RATIO        PARTIAL STANDARDIZED ELASTICITY
  NAME    COEFFICIENT   ERROR     266 DF   P-VALUE CORR. COEFFICIENT  AT MEANS
```

```
LYRC        1.3128      0.6774E-01    19.38      0.000 0.765      0.3120      0.3371
LYPRTNR1    1.2105      0.6056E-01    19.99      0.000 0.775      0.2877      0.3108
LDST1      -1.8646      0.1126       -16.55      0.000-0.712     -0.1684     -0.1865
CONSTANT    9.7423      0.4072        23.93      0.000 0.826      0.0000      0.5630

|_pool lex lyrc lyprtnr1 ldst2 /ncross=90 same
POOLED CROSS-SECTION TIME-SERIES ESTIMATION
    90 CROSS-SECTIONS AND      3 TIME-PERIODS
    270 TOTAL OBSERVATIONS
DEPENDENT VARIABLE = LEX
...WARNING..TOO FEW DEGREES OF FREEDOM, DN OPTION USED

MODEL ASSUMPTIONS:
    SAME ESTIMATED RHO FOR EACH CROSS-SECTION
    DIAGONAL PHI MATRIX

OLS COEFFICIENTS
   1.6844       1.6429      -1.7779       5.2516

RHO VECTOR
  0.79337       1.1614       0.92526      1.0839       1.2361
  0.85366      0.89657       0.98555     0.53517       1.1834
  0.90254      0.87615        1.1158     0.83478      0.83150
  0.58148       1.1947       0.18807      1.0553      0.73201
 -0.48374      0.92235       0.12595      1.2500       1.1859
  0.42809E-01  0.95034       0.20080      1.0380      0.33576
   1.0922     -0.62098       0.98428     0.85364     -0.22989
  0.44389       1.2206       0.11697     0.25967      0.78425
  0.30197      0.46314       0.83076     0.82159      0.85108
 -0.29616E-01  0.25315        1.5994     0.36563      0.91615
  0.83125     -0.61793E-01   0.99564     0.92935     -0.56374E-02
   1.7832       1.4199        1.1211     0.48020       1.6923
   1.3862       1.2961        1.6464      1.0556       1.7511
   1.7130      0.72033       0.75844    -0.43804E-01  0.92604
  0.41683       1.1102        1.0494     0.60951      0.88449
   1.0323     -0.24945        1.2860    -0.39314E-01   1.1858
 -0.20741E-01   1.6188       0.51074      3.2865      0.78423
   1.3314       1.0526        1.1558      1.3199      0.82685

SAME ESTIMATED RHO FOR ALL CROSS-SECTIONS =  0.23862

VARIANCES (DIAGONAL OF PHI MATRIX)
  0.97545E-01   2.1773        3.1982      0.89676      0.17043
   1.4953      0.73798       0.95424      16.349      0.75685
   4.0322       6.8476        8.0848     0.25851       2.0411
  0.65029       1.3100        3.5129      8.7371       3.6703
  0.58018E-01  0.78937      0.82261E-01   0.41569       1.7660
  0.55839E-01   2.2638       0.10214      2.0616      0.53258
   3.4126       3.2018        4.6013      2.2361       1.4750
   1.4640      0.86011        8.5776      1.3296      0.96888
   4.9350       1.8300       0.95349     0.30210      0.23799
  0.22947       2.6684        2.0612     0.14708       3.6907
   2.2505       312.82        6.5290      2.3488      0.52437
   1.3130       4.7663        4.3850      441.15       2.1438
   3.5461      0.57900        1.4336      3.9249      0.38055
   3.4227      0.49653        1.2111     0.53962       1.3762
  0.42353       2.3570        2.4312     0.33227       9.1032
   3.7149     0.17539E-01      3.9306      306.65      0.94212
   262.67       1.7709       0.16275      3.5621      0.31151
   2.0277      0.33890        5.8693      4.1818       6.2151

BUSE [1973] R-SQUARE = 0.8440       BUSE RAW-MOMENT R-SQUARE = 0.9987
BUSE [1979] R-SQUARE =-3.3300
VARIANCE OF THE ESTIMATE-SIGMA**2 =  0.80928
STANDARD ERROR OF THE ESTIMATE-SIGMA =  0.89960
SUM OF SQUARED ERRORS-SSE=   215.27
MEAN OF DEPENDENT VARIABLE =   17.304
LOG OF THE LIKELIHOOD FUNCTION = -418.868


VARIABLE    ESTIMATED  STANDARD    T-RATIO        PARTIAL STANDARDIZED ELASTICITY
  NAME     COEFFICIENT   ERROR     266 DF    P-VALUE CORR. COEFFICIENT  AT MEANS
LYRC        1.3913      0.4462E-01   31.18      0.000 0.886      0.3306      0.3573
LYPRTNR1    1.2979      0.5330E-01   24.35      0.000 0.831      0.3084      0.3333
LDST2      -1.3001      0.7806E-01  -16.66      0.000-0.714     -0.1469     -0.1154
CONSTANT    7.7384      0.3177       24.35      0.000 0.831      0.0000      0.4472

|_pool lex lyrc lyprtnr2 ldst1 /ncross=90 same
POOLED CROSS-SECTION TIME-SERIES ESTIMATION
    90 CROSS-SECTIONS AND      3 TIME-PERIODS
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    270 TOTAL OBSERVATIONS
DEPENDENT VARIABLE = LEX
...WARNING..TOO FEW DEGREES OF FREEDOM, DN OPTION USED

MODEL ASSUMPTIONS:
    SAME ESTIMATED RHO FOR EACH CROSS-SECTION
    DIAGONAL PHI MATRIX

OLS COEFFICIENTS
   1.9996       1.8996      -3.0172       5.3292

RHO VECTOR
  0.16870       1.3853       1.0122       1.0924       0.97009
  0.30596      -0.87375      1.0302       0.47212       1.1733
  0.87633       0.83436      1.2118       1.1110       0.47527
  0.72624       1.1953      0.23367E-01   1.0702       0.89181
  0.66674       0.97657      0.70316      1.1403        1.1204
   1.5082       1.4773       1.7862       1.0622       0.55132
   1.0832      -0.49061      0.99031      1.3899       -0.25633
  0.91816E-01   1.1346      0.69581E-01 -0.18494       0.37900
  0.43389       0.38112      0.75506      0.80395      -0.52056
   1.5563       0.54015       1.6058      0.80383       0.80171
  0.81938      -0.74086E-01  0.98652      0.91357       0.18324
   2.6471       1.6395       1.1497       0.44645       1.8096
   1.3051       1.2073       1.8487       1.1055        1.4649
   2.2751       0.48183      0.71013      0.90277       0.89161
  0.41186       1.1344       1.1049       0.51371       0.80737
   1.0477       0.90952      1.3018      -0.36701E-01   1.1589
 -0.41806E-01   2.7354       0.86375      3.2955        1.4137
   1.5351       0.97164      1.3625       1.7538       0.79247

SAME ESTIMATED RHO FOR ALL CROSS-SECTIONS =  0.21661

VARIANCES (DIAGONAL OF PHI MATRIX)
  0.46930E-02  0.49449       4.4516       1.6266       0.15354
  0.97110E-01  0.96904E-01    1.5285       13.209       0.81763
   1.7859       4.7482       2.6506       1.6334       0.43783
   1.3387       1.8359       2.9064       3.2176        10.631
  0.12845       5.1695       1.2100       3.8578        5.8061
  0.47025       5.4608      0.51439      0.87771        1.5257
   6.6346       3.4327       3.5728       3.7954        1.3508
  0.99496       3.7195       8.1446       1.6158       0.14483
   7.4150       1.3688      0.61316      0.28094       0.14484
  0.50975       6.1499       2.1730       2.4021        1.1204
   1.9731       305.00       2.5863       2.6218       0.68619
  0.94665       2.8101       5.3532       422.92        1.4903
   6.2089       2.0847       2.5755       1.0395        1.1423
   2.2628      0.35118       1.3560       1.4332        1.1302
  0.47568       2.7662      0.50091      0.22920        5.9268
   2.9965       1.6506       5.1077       308.12        1.3793
   256.72      0.76357       3.6248       3.9872       0.18562
   1.3021      0.94938E-01   2.1010       1.4282        5.5879

BUSE [1973] R-SQUARE = 0.6810       BUSE RAW-MOMENT R-SQUARE = 0.9993
BUSE [1979] R-SQUARE =-2.8531
VARIANCE OF THE ESTIMATE-SIGMA**2 =  0.68682
STANDARD ERROR OF THE ESTIMATE-SIGMA =  0.82875
SUM OF SQUARED ERRORS-SSE=    182.69
MEAN OF DEPENDENT VARIABLE =    17.304
LOG OF THE LIKELIHOOD FUNCTION = -408.859


VARIABLE    ESTIMATED   STANDARD    T-RATIO        PARTIAL STANDARDIZED ELASTICITY
  NAME     COEFFICIENT    ERROR     266 DF    P-VALUE CORR. COEFFICIENT  AT MEANS
LYRC         1.3505      0.6908E-01   19.55      0.000 0.768      0.3209      0.3468
LYPRTNR2     1.2747      0.5990E-01   21.28      0.000 0.794      0.3128      0.3224
LDST1       -2.0101      0.9354E-01  -21.49      0.000-0.797     -0.1815     -0.2011
CONSTANT     9.5717      0.3954       24.21      0.000 0.829      0.0000      0.5532

|_pool lex lyrc lyprtnr2 ldst2 /ncross=90 same
POOLED CROSS-SECTION TIME-SERIES ESTIMATION
    90 CROSS-SECTIONS AND      3 TIME-PERIODS
    270 TOTAL OBSERVATIONS
DEPENDENT VARIABLE = LEX
...WARNING..TOO FEW DEGREES OF FREEDOM, DN OPTION USED

MODEL ASSUMPTIONS:
    SAME ESTIMATED RHO FOR EACH CROSS-SECTION
    DIAGONAL PHI MATRIX
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 OLS COEFFICIENTS
    1.6984        1.6653       -1.8590        5.3264

 RHO VECTOR
   0.50254        1.1709        1.0004        1.1197        1.3025
   0.82122       0.91947        1.0152       0.47927        1.1857
   0.91983       0.86154        1.1191        1.1164       0.81852
   0.59941        1.1785       0.13867        1.0561       0.81309
   0.43931       0.86529        1.1125        1.3439        1.2007
   0.53627E-01    1.4156       0.36996        1.0359       0.26704
    1.0942      -0.65664       0.98340       0.90693      -0.18529
   0.41647        1.2585       0.13123      -0.17017E-01   0.80971
   0.31733       0.50483       0.81679       0.82964      -0.95612
   0.66234E-02   0.25038        1.5714       0.12049       0.91216
   0.83357      -0.74804E-01    0.99529       0.90744      -0.40054E-01
    1.7151        1.4300        1.1347       0.46331        1.7074
    1.3412        1.3179        1.7741        1.0576        1.7063
    1.7437       0.76776       0.83084      -0.30496       0.92000
   0.35994        1.1171        1.0514       0.56455       0.88310
    1.0332       0.37872        1.2951      -0.36796E-01    1.1736
  -0.19817E-01    1.6845       0.58725        3.3951       0.73366
    1.3568        1.0629        1.1676        1.3459       0.81150

 SAME ESTIMATED RHO FOR ALL CROSS-SECTIONS =  0.22867

 VARIANCES (DIAGONAL OF PHI MATRIX)
   0.19280E-01    1.9768        4.9876       0.91634       0.28933
    1.3998        1.0359        1.2125        13.750        1.0201
    4.0732        6.4859        7.7362        1.0372        1.8487
   0.55772        1.6472        3.3628        8.3760        5.8448
   0.95882E-01   0.84445       0.12552       0.54854        1.5382
   0.52299E-01    3.6212       0.14310        2.4787       0.52571
    3.0910        3.0277        4.0738        2.1889        1.5484
    1.4571       0.65671        8.8149        1.3604        1.3318
    4.9041        2.1491       0.84862       0.23738       0.14699
   0.22943        2.4906        2.2929       0.12868        3.4741
    2.0530        304.99        6.2310        2.5742       0.52423
    1.6554        4.6614        4.1991        433.38        2.0577
    3.8586       0.50268        1.8012        3.6766       0.46798
    3.3171       0.60434        1.3418       0.48660        1.2521
   0.37113        2.2502        2.2455       0.27068        8.9624
    3.5114       0.20552E-01    3.8380        307.63        1.1135
    263.20        1.5917       0.23914        3.4691       0.20433
    1.8641       0.22070        5.3716        3.7531        5.9646

 BUSE [1973] R-SQUARE = 0.8452       BUSE RAW-MOMENT R-SQUARE = 0.9989
 BUSE [1979] R-SQUARE =-3.1645
 VARIANCE OF THE ESTIMATE-SIGMA**2 =  0.75704
 STANDARD ERROR OF THE ESTIMATE-SIGMA =  0.87008
 SUM OF SQUARED ERRORS-SSE=    201.37
 MEAN OF DEPENDENT VARIABLE =    17.304
 LOG OF THE LIKELIHOOD FUNCTION = -412.469


 VARIABLE    ESTIMATED   STANDARD    T-RATIO         PARTIAL STANDARDIZED ELASTICITY
   NAME     COEFFICIENT    ERROR      266 DF    P-VALUE CORR. COEFFICIENT  AT MEANS
 LYRC         1.3718      0.4359E-01   31.47      0.000 0.888      0.3260      0.3522
 LYPRTNR2     1.2593      0.5045E-01   24.96      0.000 0.837      0.3090      0.3185
 LDST2       -1.3495      0.6720E-01  -20.08      0.000-0.776     -0.1524     -0.1198
 CONSTANT     8.1771      0.2955       27.67      0.000 0.862      0.0000      0.4726

 |_pool lex lyrc lyprtnr1 ldst1 lbsecdmy /ncross=90 same
 POOLED CROSS-SECTION TIME-SERIES ESTIMATION
     90 CROSS-SECTIONS AND      3 TIME-PERIODS
     270 TOTAL OBSERVATIONS
 DEPENDENT VARIABLE = LEX
 ...WARNING..TOO FEW DEGREES OF FREEDOM, DN OPTION USED

 MODEL ASSUMPTIONS:
     SAME ESTIMATED RHO FOR EACH CROSS-SECTION
     DIAGONAL PHI MATRIX

 OLS COEFFICIENTS
    1.9793        1.8453       -2.9007       0.71477        4.9977


 RHO VECTOR
  -0.19497       0.52669       0.77229        1.1382       0.11916
   0.84073      -0.46292       0.93108       0.60975       0.93341
   0.93241       0.92640       0.89839       0.60886      0.89300E-01
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   0.90124        1.2488       0.19448       0.94612       0.66138
   0.88602E-01    0.81359      0.45913       0.85109       0.99109
   0.72251        1.3794       0.81502       1.2474        0.72993
   0.99251       -0.47955      0.81304       1.5869       -0.26692
   0.22006        0.95711      0.12554       0.19244       0.30111
   0.51896        0.57474      0.30338       0.29676       0.93130
   0.77973        0.65734      1.4098        0.95306       0.43968
   0.60912       -0.47840E-01  0.78257       0.75072       0.78662E-01
   0.14733        1.5317       0.99702       0.47322       2.0972
   1.1915         0.98637      2.3836        1.0748        1.7168
   1.8609        -0.43334      0.18209       0.97833       0.92390
   0.62727        1.1051       1.0681        0.71019       0.86476
   1.0431         0.86766      1.2593       -0.50086E-01   1.2312
  -0.52690E-01    1.8680       0.82478       2.7177        0.69596E-02
   1.3620         1.0081       1.2530        1.5134        0.86869

 SAME ESTIMATED RHO FOR ALL CROSS-SECTIONS =  0.23151

 VARIANCES (DIAGONAL OF PHI MATRIX)
   0.21953       0.56874       2.1059        2.0823        0.52586
   0.22808       0.37111       2.0108        16.046        1.2859
    2.2663        5.8423       2.6319       0.30911       0.80512
    1.4977        2.0805       2.0910        3.1108        6.6585
   0.38897        4.6128       1.6237        2.9230        5.1625
   0.37995        2.0309      0.41241        1.0476        1.6654
    6.0101        4.5282       3.7770        2.6630       0.63027
   0.86285        3.3852       6.4436       0.84496       0.16537
    6.5329       0.90143       0.81700       0.46924        1.0750
    1.0559        5.7427       2.8738        3.0004        1.3734
    2.1910        304.30       2.6751        2.3076        1.2696
   0.51308        2.1446       4.9368        431.59       0.95001
    5.0651        1.8410       1.2811        2.0532       0.45573
    3.1732       0.18605      0.89972        2.1620        2.0351
    1.0704        3.8628       1.2489       0.72182        7.5241
    4.3489       0.65835       6.3866        302.00       0.54929
    252.23        1.4571       1.9599        4.8948       0.23912E-01
    2.1547       0.34206E-01   3.4500        2.5880        7.3336

 BUSE [1973] R-SQUARE = 0.6917       BUSE RAW-MOMENT R-SQUARE = 0.9984
 BUSE [1979] R-SQUARE =-2.5929
 VARIANCE OF THE ESTIMATE-SIGMA**2 =  0.68712
 STANDARD ERROR OF THE ESTIMATE-SIGMA =  0.82892
 SUM OF SQUARED ERRORS-SSE=   182.09
 MEAN OF DEPENDENT VARIABLE =   17.304
 LOG OF THE LIKELIHOOD FUNCTION = -420.072


 VARIABLE    ESTIMATED  STANDARD    T-RATIO        PARTIAL STANDARDIZED ELASTICITY
   NAME     COEFFICIENT   ERROR      265 DF   P-VALUE CORR. COEFFICIENT  AT MEANS
 LYRC         1.4169     0.6293E-01   22.52     0.000 0.810     0.3367     0.3638
 LYPRTNR1     1.2436     0.6650E-01   18.70     0.000 0.754     0.2955     0.3193
 LDST1       -1.9726     0.1296      -15.23     0.000-0.683    -0.1782    -0.1973
 LBSECDMY     0.29543    0.9640E-01    3.065    0.002 0.185     0.0292     0.0080
 CONSTANT     9.1534     0.4494       20.37     0.000 0.781     0.0000     0.5290

 |_pool lex lyrc lyprtnr1 ldst1 lbsecdmy lcmcndmy/ncross=90 same
 POOLED CROSS-SECTION TIME-SERIES ESTIMATION
     90 CROSS-SECTIONS AND      3 TIME-PERIODS
     270 TOTAL OBSERVATIONS
 DEPENDENT VARIABLE = LEX
 ...WARNING..TOO FEW DEGREES OF FREEDOM, DN OPTION USED

 MODEL ASSUMPTIONS:
     SAME ESTIMATED RHO FOR EACH CROSS-SECTION
     DIAGONAL PHI MATRIX

 OLS COEFFICIENTS
    1.9883        1.8278       -2.9591       0.66830       0.33286
    5.0918

 RHO VECTOR
  -0.19410       0.23192       0.78082        1.1344       0.63644
   0.78206      -0.46027        1.0187       0.60436       0.91602
   0.91414       0.91993       0.92057       0.65300       0.14953
   0.88116        1.2477       0.15258       0.94949       0.67511
   0.80541E-01   0.83792       0.38804       0.87781        1.0009
   0.56445        1.3729       0.92138        1.2247       0.71477
   0.99949      -0.55788       0.82773        1.5638      -0.14008
   0.17487       0.97145       0.16247       0.19800       0.19013
   0.50057       0.61723       0.36384       0.12402       0.92635
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   0.69196       0.63598       1.4644       0.94602       0.47647
   0.56906      -0.49344E-01   0.80185      0.77934       0.15911E-01
   0.58490       1.5275        1.0091       0.47171       2.0094
    1.1897       1.0073        2.2081        1.0741       1.7486
    1.8461      -0.56957       0.75471E-01  0.97724       0.92629
   0.65534       1.1011        1.0674       0.72975       0.86372
    1.0433       0.85974       1.2543      -0.51352E-01   1.2455
  -0.53957E-01   1.8426        0.82026       2.6815       0.12094E-02
    1.3556       1.0310        1.2558        1.5190       0.87755

 SAME ESTIMATED RHO FOR ALL CROSS-SECTIONS =  0.23141

 VARIANCES (DIAGONAL OF PHI MATRIX)
   0.20360       0.31212       2.0740       1.8192       0.62343
   0.17218       0.36359       2.5527       15.925        1.2017
    1.9319       5.4706        2.6868       0.34362      0.83827
    1.2304       2.6235        1.9817       2.3206       6.7533
   0.36649       5.1835        1.2133       3.2075       5.4563
   0.19431       2.1292       0.48829       1.4096       1.5526
    6.2304       4.1365        3.8575       3.0305       0.80516
   0.82133       3.5563        7.0372       0.86615      0.14108
    6.2279       1.2842       0.87103       0.30933      1.0152
   0.97065       5.3203        3.3132       2.8085       1.4164
    1.6609       304.33        2.7998       2.6782       1.1521
   0.59242       2.2873        4.0902       430.28       1.0741
    5.7301       1.4185        1.4840       2.1167       0.39263
    3.2147      0.18688       0.85708       2.2581       2.1708
    1.2388       3.9655        1.3060       0.84309      7.5800
    4.5499      0.58262        6.5694       301.39       0.46120
    251.63       1.5246        1.8654       4.9743       0.25099E-01
    2.1768      0.48879E-01    3.3336       2.5824       7.6436

 BUSE [1973] R-SQUARE = 0.6951       BUSE RAW-MOMENT R-SQUARE = 0.9984
 BUSE [1979] R-SQUARE =-2.7175
 VARIANCE OF THE ESTIMATE-SIGMA**2 =  0.67975
 STANDARD ERROR OF THE ESTIMATE-SIGMA =  0.82447
 SUM OF SQUARED ERRORS-SSE=   179.45
 MEAN OF DEPENDENT VARIABLE =   17.304
 LOG OF THE LIKELIHOOD FUNCTION = -416.884


 VARIABLE    ESTIMATED  STANDARD    T-RATIO        PARTIAL STANDARDIZED ELASTICITY
   NAME     COEFFICIENT   ERROR      264 DF    P-VALUE CORR. COEFFICIENT  AT MEANS
 LYRC         1.4438     0.6231E-01   23.17      0.000 0.819      0.3431     0.3707
 LYPRTNR1     1.1893     0.6825E-01   17.42      0.000 0.731      0.2826     0.3054
 LDST1       -2.0705     0.1365      -15.17      0.000-0.682     -0.1870    -0.2071
 LBSECDMY    0.24399     0.9534E-01    2.559     0.011 0.156      0.0241     0.0066
 LCMCNDMY    0.49419     0.1559        3.169     0.002 0.191      0.0391     0.0057
 CONSTANT     9.3631     0.4485       20.88      0.000 0.789      0.0000     0.5411

 |_pool lex lyrc lyprtnr1 ldst2 lbsecdmy /ncross=90 same
 POOLED CROSS-SECTION TIME-SERIES ESTIMATION
     90 CROSS-SECTIONS AND      3 TIME-PERIODS
     270 TOTAL OBSERVATIONS
 DEPENDENT VARIABLE = LEX
 ...WARNING..TOO FEW DEGREES OF FREEDOM, DN OPTION USED

 MODEL ASSUMPTIONS:
     SAME ESTIMATED RHO FOR EACH CROSS-SECTION
     DIAGONAL PHI MATRIX

 OLS COEFFICIENTS
    1.6796       1.6100      -1.7039      0.44943       5.0955


 RHO VECTOR
   0.24943       0.97636       0.85214       1.1275       0.71944
   0.98200       0.93862       0.93621      0.58169       1.1126
   0.95865       0.92240        1.0292      0.63487       0.64162
   0.77303        1.2586       0.27244       1.0044       0.57675
  -0.40529       0.57975      -0.64502E-01  0.47818        1.0564
   0.25031E-01    1.0864       0.44496       1.1512       0.42719
    1.0289       -0.60659      0.88710       1.1571       -0.19319
   0.46672       0.99635       0.16881      0.32755       0.90095
   0.36175       0.58930       0.53631      0.41941       0.79655
  -0.30458E-01   0.36389        1.5318      0.48312       0.77895
   0.69963      -0.53550E-01   0.91569      0.81367       0.33601E-03
    1.2765        1.3672        1.0293      0.48555        1.7116
    1.2729        1.1128        2.2937       1.0518        1.5605
    1.6420       0.58495       0.56362      0.36650       0.93605
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   0.53215        1.0970        1.0454       0.68796       0.89249
    1.0316        2.4521        1.2685      -0.45249E-01    1.2204
  -0.25047E-01    1.5268       0.27565        3.0289       0.83534
    1.2905        1.0409        1.1400        1.2859       0.85760

 SAME ESTIMATED RHO FOR ALL CROSS-SECTIONS =  0.24325

 VARIANCES (DIAGONAL OF PHI MATRIX)
   0.22986        1.8813        2.9472        1.1426       0.42705
    1.4646       0.98512        1.4195        16.252        1.1654
    4.2032        7.1323        7.3225       0.12400        1.9626
   0.63864        1.6145        2.8967        7.9878        3.6791
   0.25568       0.90121       0.33641       0.46583        1.3662
   0.40759E-01    1.3716       0.91035E-01    2.3277       0.41025
    2.9396        3.8504        4.5752        1.5351       0.92059
    1.2356       0.69136        7.5240        1.0334        1.0185
    4.0142        1.5630       0.87317       0.29521       0.64691
   0.60175        2.1790        2.8007       0.19242        3.3799
    2.0844        305.86        5.9847        2.2197       0.92708
    1.0670        3.7641        3.7636        442.24        1.4710
    3.0019       0.37427       0.85679        4.7684       0.21074
    3.8873       0.30421       0.94202       0.70447        1.8365
   0.67655        2.7932        3.1042       0.61065        9.9034
    4.3836      0.76389E-01     4.3462        303.28       0.53182
    260.24        2.3075      0.64197E-01     3.9067       0.63113
    2.4925       0.73830        7.0439        5.3465        7.2702

 BUSE [1973] R-SQUARE = 0.8200       BUSE RAW-MOMENT R-SQUARE = 0.9982
 BUSE [1979] R-SQUARE =-3.0285
 VARIANCE OF THE ESTIMATE-SIGMA**2 =  0.77976
 STANDARD ERROR OF THE ESTIMATE-SIGMA =  0.88304
 SUM OF SQUARED ERRORS-SSE=   206.64
 MEAN OF DEPENDENT VARIABLE =   17.304
 LOG OF THE LIKELIHOOD FUNCTION = -422.830


 VARIABLE   ESTIMATED  STANDARD   T-RATIO        PARTIAL STANDARDIZED ELASTICITY
   NAME    COEFFICIENT   ERROR     265 DF   P-VALUE CORR. COEFFICIENT  AT MEANS
 LYRC        1.3880     0.4463E-01   31.10     0.000 0.886     0.3298     0.3564
 LYPRTNR1    1.2462     0.5625E-01   22.15     0.000 0.806     0.2962     0.3200
 LDST2      -1.2927     0.9290E-01  -13.92     0.000-0.650    -0.1460    -0.1148
 LBSECDMY   0.25102     0.8753E-01   2.868     0.004 0.174     0.0248     0.0068
 CONSTANT    7.7688     0.3569       21.76     0.000 0.801     0.0000     0.4490

 |_pool lex lyrc lyprtnr2 ldst1 lbsecdmy /ncross=90 same
 POOLED CROSS-SECTION TIME-SERIES ESTIMATION
     90 CROSS-SECTIONS AND      3 TIME-PERIODS
     270 TOTAL OBSERVATIONS
 DEPENDENT VARIABLE = LEX
 ...WARNING..TOO FEW DEGREES OF FREEDOM, DN OPTION USED

 MODEL ASSUMPTIONS:
     SAME ESTIMATED RHO FOR EACH CROSS-SECTION
     DIAGONAL PHI MATRIX

 OLS COEFFICIENTS
    2.0003        1.8592       -2.9912       0.82106       5.0747


 RHO VECTOR
   0.96185E-01  0.25675       0.84981        1.1559       0.38804
   0.63852      -0.36512       0.97032       0.56070        1.0055
   0.94682       0.91711       0.82166       0.79901      -0.67921E-01
   0.95231        1.2456       0.14232       0.91656       0.71577
   0.44342       0.77249       0.36826       0.85979       0.96871
   0.49791        1.5457       0.50039        1.2409       0.71242
   0.97608      -0.51421       0.76619        1.5769      -0.18392
   0.10471       0.92381       0.15496      -0.77601       0.56054
   0.54794       0.64667       0.16793       0.16939      -0.66224E-01
   0.92724       0.69162        1.3998       0.94593       0.31519
   0.56283      -0.60519E-01   0.72703       0.70473       0.27753E-01
   0.53210        1.5490       0.98525       0.45491        2.2515
    1.1313       0.94526        2.1408        1.0792        1.6750
    1.9078      -0.27119       0.25290       0.97186       0.91986
   0.61395        1.1084        1.0728       0.69656       0.85839
    1.0447       0.87829        1.2651      -0.48449E-01    1.2191
 -0.52449E-01    1.9758       0.83445        2.7898        1.7989
    1.3863      -1.4609        1.2772        1.5643       0.86164

 SAME ESTIMATED RHO FOR ALL CROSS-SECTIONS =  0.22024
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 VARIANCES (DIAGONAL OF PHI MATRIX)
   0.26783       0.44422       3.7051        2.1791       0.65501
   0.15517       0.40289       2.4569        13.049        1.6304
    2.2553        5.3910       2.2348        1.1550       0.72623
    1.4369        2.5396       1.8926        2.6858        9.8873
   0.54171       5.0918        1.4585        3.5029        4.8275
   0.30696       3.7264       0.30676        1.3313        1.5385
    5.6183       4.3689        3.3022        2.7219       0.64186
   0.80931       3.0478        6.5563        1.0340       0.26923
    6.4942       1.1173       0.73306       0.40260       0.59346
    1.2769       5.6396        3.2488        2.7572        1.1886
    1.9535       294.77        2.3364        2.6013        1.2989
   0.68130       1.8867        4.6283        423.54       0.79729
    5.5521       1.7205        1.6602        1.8241       0.54689
    3.0178      0.19345       0.94914        2.0712        1.9051
    1.0089       3.7383        1.0848       0.65109        7.2688
    4.1404      0.85413        6.2803        302.66       0.64900
    252.39       1.2965        2.3417        4.7718     0.26200E-01
    1.9677    0.65071E-02      3.0312        2.2735        7.1625

 BUSE [1973] R-SQUARE = 0.6882       BUSE RAW-MOMENT R-SQUARE = 0.9991
 BUSE [1979] R-SQUARE =-2.0334
 VARIANCE OF THE ESTIMATE-SIGMA**2 =  0.67290
 STANDARD ERROR OF THE ESTIMATE-SIGMA =  0.82030
 SUM OF SQUARED ERRORS-SSE=   178.32
 MEAN OF DEPENDENT VARIABLE =   17.304
 LOG OF THE LIKELIHOOD FUNCTION = -417.851


 VARIABLE    ESTIMATED   STANDARD    T-RATIO         PARTIAL STANDARDIZED ELASTICITY
   NAME     COEFFICIENT    ERROR      265 DF    P-VALUE CORR. COEFFICIENT  AT MEANS
 LYRC         1.3849      0.6334E-01   21.87     0.000 0.802     0.3291      0.3556
 LYPRTNR2     1.2539      0.6165E-01   20.34     0.000 0.781     0.3077      0.3171
 LDST1       -1.9360      0.1282      -15.10     0.000-0.680    -0.1749     -0.1937
 LBSECDMY    0.31160      0.9564E-01    3.258    0.001 0.196     0.0308      0.0084
 CONSTANT     9.3030      0.4512       20.62     0.000 0.785     0.0000      0.5376

 |_pool lex lyrc lyprtnr2 ldst2 lbsecdmy /ncross=90 same
 POOLED CROSS-SECTION TIME-SERIES ESTIMATION
     90 CROSS-SECTIONS AND      3 TIME-PERIODS
     270 TOTAL OBSERVATIONS
 DEPENDENT VARIABLE = LEX
 ...WARNING..TOO FEW DEGREES OF FREEDOM, DN OPTION USED

 MODEL ASSUMPTIONS:
     SAME ESTIMATED RHO FOR EACH CROSS-SECTION
     DIAGONAL PHI MATRIX

 OLS COEFFICIENTS
    1.6936        1.6337       -1.7740       0.52560       5.1101


 RHO VECTOR
  -0.10788       0.93186       0.91236        1.1450       0.97666
   0.97437       0.97326       0.97760       0.53553        1.1442
   0.98236       0.91666        1.0128       0.89861       0.58280
   0.83272        1.2509       0.23620       0.99416       0.65745
  0.45603E-01    0.49505       0.31427       0.56647        1.0315
   0.47781        1.5508       0.64571        1.1547       0.36648
    1.0161       -0.62095       0.86058        1.2597      -0.10801
   0.44235       0.93804       0.19287      -0.68570E-01    0.93125
   0.39274       0.64538       0.45229       0.30545       -0.45546
  0.64867E-01    0.39137        1.5097       0.21290       0.74453
   0.67116      -0.65777E-01    0.89764       0.77376     0.39429E-01
    1.2514        1.3633        1.0234       0.46960        1.7348
    1.2085        1.0623        2.2874        1.0526        1.6996
    1.6517       0.63609       0.63251       0.31265       0.93306
   0.50866        1.1012        1.0461       0.67008       0.89458
    1.0323        7.5427        1.2735      -0.43940E-01    1.2101
 -0.25363E-01     1.5570       0.38496        3.0699       0.81567
    1.3028        1.0435        1.1473        1.3004       0.84993

 SAME ESTIMATED RHO FOR ALL CROSS-SECTIONS =  0.23352

 VARIANCES (DIAGONAL OF PHI MATRIX)
   0.17326       1.6887        4.6176        1.2432       0.58462
    1.3772       1.3148        1.7418        13.525        1.4816
    4.3618       6.8287        6.9835       0.65311        1.8006
   0.59742       2.0111        2.6766        7.6056        5.7054
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   0.30757       0.96698       0.40704       0.56827       1.1561
   0.68858E-01   2.4730        0.16212       2.8162        0.38183
   2.6369        3.7393        4.0805        1.4443        0.97781
   1.2122        0.51492       7.7106        0.99491       1.3939
   4.0025        1.8987        0.80247       0.24949       0.39655
   0.66122       2.0360        3.1404        0.14415       3.1934
   1.8959        297.40        5.6890        2.4080        0.98787
   1.3273        3.6333        3.5501        434.43        1.3613
   3.2310        0.29852       1.1069        4.5960        0.24739
   3.8702        0.35687       1.0171        0.66992       1.7503
   0.62667       2.7646        2.9770        0.54598       9.9199
   4.2421        0.47004E-01   4.3426        303.79        0.62841
   260.34        2.1599        0.84365E-01   3.8790        0.50668
   2.3933        0.59094       6.6716        4.9857        7.0852

BUSE [1973] R-SQUARE = 0.7968       BUSE RAW-MOMENT R-SQUARE = 0.9982
BUSE [1979] R-SQUARE =-2.9936
VARIANCE OF THE ESTIMATE-SIGMA**2 =  0.72607
STANDARD ERROR OF THE ESTIMATE-SIGMA =  0.85210
SUM OF SQUARED ERRORS-SSE=   192.41
MEAN OF DEPENDENT VARIABLE =   17.304
LOG OF THE LIKELIHOOD FUNCTION = -418.280


VARIABLE    ESTIMATED   STANDARD    T-RATIO        PARTIAL STANDARDIZED ELASTICITY
  NAME     COEFFICIENT    ERROR      265 DF    P-VALUE CORR. COEFFICIENT  AT MEANS
LYRC         1.3522      0.4563E-01   29.63     0.000 0.876     0.3213     0.3472
LYPRTNR2     1.1592      0.5982E-01   19.38     0.000 0.766     0.2845     0.2931
LDST2       -1.2236      0.9437E-01  -12.97     0.000-0.623    -0.1382    -0.1086
LBSECDMY    0.23329      0.9189E-01    2.539    0.012 0.154     0.0230     0.0063
CONSTANT     8.3722      0.3660       22.88     0.000 0.815     0.0000     0.4838

|_pool lex lyrc lyprtnr1 ldst1 lcmcndmy /ncross=90 same
POOLED CROSS-SECTION TIME-SERIES ESTIMATION
    90 CROSS-SECTIONS AND      3 TIME-PERIODS
    270 TOTAL OBSERVATIONS
DEPENDENT VARIABLE = LEX
...WARNING..TOO FEW DEGREES OF FREEDOM, DN OPTION USED

MODEL ASSUMPTIONS:
    SAME ESTIMATED RHO FOR EACH CROSS-SECTION
    DIAGONAL PHI MATRIX

OLS COEFFICIENTS
   1.9944       1.8614      -3.0170       0.48937       5.2961


RHO VECTOR
  0.57055       1.7015       0.91243       1.0624        1.2667
  0.43103      -0.26729E-01   1.0553       0.53375       1.1159
  0.83804       0.85057       1.1895       0.93205       0.61531
  0.67019       1.1730       0.38034E-01   1.0732        0.83861
  0.14870       1.0013       0.64961       1.1126        1.1122
   1.8308       1.2315        1.5543       1.0483        0.57977
   1.0802      -0.61910       0.99121       1.4123       -0.18273
  0.14012       1.1231       0.10926       0.84714E-01   0.27449E-01
  0.40555       0.44505       0.80540       0.66091       0.97979
   1.1181       0.50726       1.5544       0.82877       0.83618
  0.77790      -0.61527E-01   0.98815       0.94398       0.55712E-01
   2.6381       1.5873        1.1563       0.46413        1.8133
   1.3149       1.2405        1.8617        1.0896        1.5802
   2.0553       0.99080E-01   0.43158       0.94624       0.91043
  0.55710       1.1173        1.0851       0.64353       0.83238
   1.0457       0.89120       1.2774      -0.42989E-01    1.1888
 -0.46973E-01    2.2097       0.84717        3.0087        1.7315
   1.4416       0.89139       1.3134        1.6465       0.83614

SAME ESTIMATED RHO FOR ALL CROSS-SECTIONS =  0.22688

VARIANCES (DIAGONAL OF PHI MATRIX)
  0.36565E-01   0.23144       2.5040        1.3368       0.28913
  0.92283E-01   0.17872       2.0738        15.855       0.54101
   1.4888        4.7902       3.1602       0.57973       0.68453
   1.1299        2.3781       2.8024        2.3765        7.2538
  0.64890E-01    5.5745      0.79895        3.6231        6.5976
  0.23173        3.4644      0.79622        1.2553        1.5208
   7.3542        3.1137       4.1983        4.1806        1.5338
  0.95830        4.3407       8.7054        1.1985       0.96776E-01
   7.0559        1.7467      0.89333       0.10641       0.41299
  0.34715        5.7239       2.6672        2.4560        1.4683
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    1.3964        312.91        3.1598        2.9208       0.58461
   0.83730        3.2607        4.2794        429.14        1.8179
    6.6795        1.5171        2.3583        1.4173       0.74891
    2.6072       0.23149        1.0627        1.7729        1.5330
   0.77140        3.2305       0.77216       0.44098        6.5219
    3.6436        1.1043        5.7374        305.41       0.91916
    254.61        1.0345        2.8026        4.3742      0.69145E-01
    1.6181      0.96167E-02     2.4711        1.7876        6.3812

 BUSE [1973] R-SQUARE = 0.6787       BUSE RAW-MOMENT R-SQUARE = 0.9991
 BUSE [1979] R-SQUARE =-2.3499
 VARIANCE OF THE ESTIMATE-SIGMA**2 =  0.67276
 STANDARD ERROR OF THE ESTIMATE-SIGMA =  0.82022
 SUM OF SQUARED ERRORS-SSE=   178.28
 MEAN OF DEPENDENT VARIABLE =   17.304
 LOG OF THE LIKELIHOOD FUNCTION = -402.936


 VARIABLE   ESTIMATED  STANDARD   T-RATIO        PARTIAL STANDARDIZED ELASTICITY
   NAME    COEFFICIENT   ERROR     265 DF   P-VALUE CORR. COEFFICIENT  AT MEANS
 LYRC        1.3552     0.6790E-01  19.96     0.000 0.775     0.3221     0.3480
 LYPRTNR1    1.2234     0.5640E-01  21.69     0.000 0.800     0.2907     0.3141
 LDST1      -2.0310     0.1171     -17.34     0.000-0.729    -0.1834    -0.2032
 LCMCNDMY   0.48251     0.1264       3.816    0.000 0.228     0.0382     0.0056
 CONSTANT    9.6879     0.4034      24.02     0.000 0.828     0.0000     0.5599

 |_pool lex lyrc lyprtnr1 ldst2 lcmcndmy /ncross=90 same
 POOLED CROSS-SECTION TIME-SERIES ESTIMATION
     90 CROSS-SECTIONS AND      3 TIME-PERIODS
     270 TOTAL OBSERVATIONS
 DEPENDENT VARIABLE = LEX
 ...WARNING..TOO FEW DEGREES OF FREEDOM, DN OPTION USED

 MODEL ASSUMPTIONS:
     SAME ESTIMATED RHO FOR EACH CROSS-SECTION
     DIAGONAL PHI MATRIX

 OLS COEFFICIENTS
    1.6853       1.6290      -1.7874       0.17321       5.2894


 RHO VECTOR
   0.79710       1.1777       0.92501       1.0864       1.3027
   0.85173      0.89483        1.0136      0.53470       1.1819
   0.90040      0.87514        1.1149      0.84191      0.83536
   0.55662       1.1793       0.17590       1.0570      0.73219
  -0.56257      0.93038       0.83909       1.2358       1.1837
   0.12827      0.95802       0.15935       1.0341      0.31257
    1.0919     -0.67094       0.98450      0.93380     -0.18687
   0.43358       1.2176       0.13802      0.26148      0.78083
   0.28986      0.49399       0.83500      0.78305      0.84064
 -0.22177E-01   0.23149        1.5655      0.30800      0.91715
   0.81943   -0.62093E-01      0.99573      0.93122   -0.44288E-01
    1.7318       1.4156        1.1285      0.47993       1.6800
    1.3704       1.3230        1.7081       1.0551       1.7584
    1.7011      0.70092       0.71314   0.16436E-01      0.92827
   0.45544       1.1066        1.0488      0.63256      0.88447
    1.0324      -1.3551        1.2818   -0.40264E-01      1.1920
 -0.21298E-01    1.6025       0.47174       3.2523      0.79213
    1.3248       1.0508        1.1539       1.3170      0.83421

 SAME ESTIMATED RHO FOR ALL CROSS-SECTIONS =  0.23877

 VARIANCES (DIAGONAL OF PHI MATRIX)
   0.10175       1.8078        3.1985      0.78461      0.26292
    1.4089      0.71831        1.2120       16.285      0.72030
    3.7814       6.6266        8.2024      0.27092       2.1296
   0.55595       1.5967        3.4103       7.9661       3.6883
   0.58018E-01   0.90598       0.10904      0.46381       1.8192
   0.56741E-01    2.2774     0.97370E-01     2.4197      0.50053
    3.4717       3.0122        4.6915       2.3417       1.5852
    1.4075      0.88859        8.9551       1.3326      0.93112
    4.7551       2.1162        1.0011      0.18017      0.22972
   0.23332       2.5167        2.3540      0.12827       3.7761
    1.8813       312.63        6.6880       2.5670      0.52097
    1.4073       4.8702        3.8616       440.65       2.2309
    3.8100      0.43077        1.5079       4.0420      0.33704
    3.4668      0.46175        1.1424      0.55448       1.4519
   0.48198       2.4017        2.5249      0.38437       9.1870
    3.8408    0.22606E-01      3.9942       306.17      0.85561
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    262.33       1.8440       0.13570       3.5927       0.33982
    2.0584       0.38931       5.8840       4.2673       6.4140

 BUSE [1973] R-SQUARE = 0.8349       BUSE RAW-MOMENT R-SQUARE = 0.9986
 BUSE [1979] R-SQUARE =-3.3121
 VARIANCE OF THE ESTIMATE-SIGMA**2 =  0.80849
 STANDARD ERROR OF THE ESTIMATE-SIGMA =  0.89916
 SUM OF SQUARED ERRORS-SSE=   214.25
 MEAN OF DEPENDENT VARIABLE =   17.304
 LOG OF THE LIKELIHOOD FUNCTION = -419.466


 VARIABLE   ESTIMATED  STANDARD   T-RATIO        PARTIAL STANDARDIZED ELASTICITY
   NAME    COEFFICIENT   ERROR     265 DF   P-VALUE CORR. COEFFICIENT  AT MEANS
 LYRC        1.3896     0.4530E-01   30.68     0.000 0.883     0.3302     0.3568
 LYPRTNR1    1.2854     0.5518E-01   23.29     0.000 0.820     0.3055     0.3301
 LDST2      -1.3055     0.7826E-01  -16.68     0.000-0.716    -0.1475    -0.1159
 LCMCNDMY -0.54861E-03  0.1072     -0.5117E-02 0.996 0.000     0.0000     0.0000
 CONSTANT    7.7924     0.3243       24.03     0.000 0.828     0.0000     0.4503

 |_pool lex lyrc lyprtnr2 ldst1 lcmcndmy /ncross=90 same
 POOLED CROSS-SECTION TIME-SERIES ESTIMATION
     90 CROSS-SECTIONS AND       3 TIME-PERIODS
     270 TOTAL OBSERVATIONS
 DEPENDENT VARIABLE = LEX
 ...WARNING..TOO FEW DEGREES OF FREEDOM, DN OPTION USED

 MODEL ASSUMPTIONS:
     SAME ESTIMATED RHO FOR EACH CROSS-SECTION
     DIAGONAL PHI MATRIX

 OLS COEFFICIENTS
    2.0077       1.8775      -3.0699       0.32882       5.4156


 RHO VECTOR
   0.37310       1.7085       1.0109       1.0978       1.2720
   0.20718      -0.75344      1.0567       0.47209      1.1666
   0.86348       0.83052      1.2090       1.1066       0.51330
   0.70271       1.1724       0.20264E-02  1.0731       0.89147
   0.65387       0.97782      0.64445      1.1318       1.1181
    1.7988       1.4756       1.7006       1.0486       0.53991
    1.0826      -0.61742      0.99079      1.4144      -0.18329
   0.50985E-01   1.1325       0.10683     -0.19580      0.32709
   0.42001       0.44979      0.76988      0.70870     -0.55062
    1.4949       0.52283      1.5559       0.80017      0.80767
   0.79208      -0.74456E-01  0.98683      0.91858      0.61164E-01
    2.3642       1.6277       1.1659       0.44570      1.8175
    1.2864       1.2370       1.8396       1.1022       1.5011
    2.2243       0.37943      0.60589      0.91146      0.89812
   0.48490       1.1274       1.1003       0.57618      0.80925
    1.0478       0.90373      1.2935      -0.38610E-01  1.1683
  -0.43502E-01   2.5924       0.85909      3.2297       1.4412
    1.5142       0.96203      1.3627       1.7478       0.81052

 SAME ESTIMATED RHO FOR ALL CROSS-SECTIONS =  0.21668

 VARIANCES (DIAGONAL OF PHI MATRIX)
   0.44460E-02  0.22781       4.3471       1.3759       0.30861
   0.76963E-01  0.10784       2.1589       13.156       0.76056
    1.4715       4.4183       2.7010       1.6996       0.49331
    1.0807       2.4664       2.8111       2.3734       10.682
   0.12415       5.8371       0.80542      4.2006       6.0936
   0.24546       5.5083       0.60062      1.2909       1.4244
    6.8358       3.0456       3.6619       4.1922       1.5213
   0.96623       3.8857       8.7018       1.5956       0.12936
    7.0380       1.7824       0.68712      0.10407      0.14319
   0.45709       5.6791       2.6877       2.2339       1.1770
    1.4012       304.78       2.7210       3.0682       0.59014
    1.0653       2.9345       4.4032       421.88       1.6086
    6.9606       1.6132       2.8194       1.1185       0.98501
    2.3173       0.30325      1.2209       1.5297       1.2663
   0.60719       2.8854       0.56105      0.31157      6.0201
    3.2188       1.4747       5.3112       307.21       1.1883
    255.92       0.82894      3.4133       4.0748       0.16446
    1.3392       0.62593E-01  2.0403       1.4597       5.9320

 BUSE [1973] R-SQUARE = 0.6863       BUSE RAW-MOMENT R-SQUARE = 0.9993
 BUSE [1979] R-SQUARE =-2.7470
 VARIANCE OF THE ESTIMATE-SIGMA**2 =  0.68659
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STANDARD ERROR OF THE ESTIMATE-SIGMA =  0.82861
SUM OF SQUARED ERRORS-SSE=    181.95
MEAN OF DEPENDENT VARIABLE =    17.304
LOG OF THE LIKELIHOOD FUNCTION = -405.736


VARIABLE    ESTIMATED   STANDARD    T-RATIO         PARTIAL STANDARDIZED ELASTICITY
  NAME     COEFFICIENT    ERROR      265 DF    P-VALUE CORR. COEFFICIENT  AT MEANS
LYRC         1.3721      0.6870E-01   19.97      0.000 0.775     0.3261     0.3523
LYPRTNR2     1.2470      0.5960E-01   20.92      0.000 0.789     0.3060     0.3153
LDST1       -2.0935      0.9672E-01  -21.65      0.000-0.799    -0.1891    -0.2094
LCMCNDMY    0.45806      0.1287        3.559     0.000 0.214     0.0363     0.0053
CONSTANT     9.6368      0.3940       24.46      0.000 0.833     0.0000     0.5569

|_pool lex lyrc lyprtnr2 ldst2 lcmcndmy /ncross=90 same
POOLED CROSS-SECTION TIME-SERIES ESTIMATION
    90 CROSS-SECTIONS AND      3 TIME-PERIODS
    270 TOTAL OBSERVATIONS
DEPENDENT VARIABLE = LEX
...WARNING..TOO FEW DEGREES OF FREEDOM, DN OPTION USED

MODEL ASSUMPTIONS:
    SAME ESTIMATED RHO FOR EACH CROSS-SECTION
    DIAGONAL PHI MATRIX

OLS COEFFICIENTS
   1.6985       1.6640      -1.8598      0.15263E-01   5.3299


RHO VECTOR
  0.50478       1.1724       1.0004       1.1200       1.3029
  0.82100      0.91935       1.0171      0.47927       1.1857
  0.91966      0.86145       1.1191       1.1162      0.81892
  0.59722       1.1773      0.13762       1.0563      0.81302
  0.43518      0.86644       1.1513       1.3417       1.2005
  0.73671E-01   1.4155      0.36738       1.0356      0.26485
   1.0941     -0.66103      0.98343      0.91405     -0.18110
  0.41553       1.2581      0.13307     -0.16539E-01  0.80946
  0.31625      0.50725      0.81724      0.82658     -0.95548
  0.36807E-02  0.24840       1.5685      0.11281      0.91226
  0.83255     -0.74817E-01  0.99530      0.90768     -0.40661E-01
   1.7114       1.4296       1.1354      0.46330       1.7063
   1.3400       1.3204       1.7764       1.0575       1.7088
   1.7426      0.76644      0.82753     -0.29808      0.92023
  0.36411       1.1167       1.0513      0.56720      0.88309
   1.0332      0.36496       1.2947     -0.36881E-01   1.1741
 -0.19864E-01   1.6826      0.58481       3.3923      0.73477
   1.3561       1.0627       1.1674       1.3456      0.81224

SAME ESTIMATED RHO FOR ALL CROSS-SECTIONS =  0.22869

VARIANCES (DIAGONAL OF PHI MATRIX)
  0.19787E-01   1.8901       4.9821      0.88818      0.31712
   1.3796       1.0296       1.2792       13.744       1.0089
   4.0109       6.4348       7.7643       1.0406       1.8691
  0.53565       1.7202       3.3411       8.1933       5.8434
  0.94216E-01  0.87296      0.13862      0.56143       1.5504
  0.54234E-01   3.6219      0.14007       2.5683      0.51891
   3.1049       2.9834       4.0956       2.2150       1.5775
   1.4437      0.66297       8.9070       1.3599       1.3200
   4.8586       2.2218      0.85930      0.20907      0.14712
  0.22894       2.4545       2.3646      0.12650       3.4941
   1.9662       304.97       6.2689       2.6283      0.52552
   1.6801       4.6857       4.0742       433.31       2.0778
   3.9245      0.46818       1.8218       3.7042      0.45495
   3.3269      0.59437       1.3224      0.48963       1.2694
  0.38361       2.2603       2.2673      0.28147       8.9816
   3.5410     0.19308E-01    3.8525       307.51       1.0899
   263.12       1.6084      0.22980       3.4758      0.20987
   1.8710      0.23057       5.3756       3.7734       6.0118

BUSE [1973] R-SQUARE = 0.8493      BUSE RAW-MOMENT R-SQUARE = 0.9989
BUSE [1979] R-SQUARE =-3.1442
VARIANCE OF THE ESTIMATE-SIGMA**2 =  0.75630
STANDARD ERROR OF THE ESTIMATE-SIGMA =  0.86965
SUM OF SQUARED ERRORS-SSE=    200.42
MEAN OF DEPENDENT VARIABLE =    17.304
LOG OF THE LIKELIHOOD FUNCTION = -412.046
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VARIABLE    ESTIMATED   STANDARD    T-RATIO        PARTIAL STANDARDIZED ELASTICITY
  NAME     COEFFICIENT    ERROR      265 DF    P-VALUE CORR. COEFFICIENT  AT MEANS
LYRC         1.3694      0.4361E-01   31.40      0.000 0.888      0.3254      0.3516
LYPRTNR2     1.2677      0.5094E-01   24.88      0.000 0.837      0.3111      0.3206
LDST2       -1.3378      0.6811E-01  -19.64      0.000-0.770     -0.1511     -0.1188
LCMCNDMY -0.12378        0.1048       -1.181     0.239-0.072     -0.0098     -0.0014
CONSTANT     8.1590      0.2936        27.79     0.000 0.863      0.0000      0.4715

|_pool lex lyrc lyprtnr1 ldst1 lbrdrdmy /ncross=90 same
POOLED CROSS-SECTION TIME-SERIES ESTIMATION
    90 CROSS-SECTIONS AND      3 TIME-PERIODS
    270 TOTAL OBSERVATIONS
DEPENDENT VARIABLE = LEX
...WARNING..TOO FEW DEGREES OF FREEDOM, DN OPTION USED

MODEL ASSUMPTIONS:
    SAME ESTIMATED RHO FOR EACH CROSS-SECTION
    DIAGONAL PHI MATRIX

OLS COEFFICIENTS
   1.9138        1.8264       -2.4677       0.64640       4.7985


RHO VECTOR
  0.51485        1.2424       0.90139        1.0669      -0.61652E-01
  0.71359      -0.29120E-01    1.0514        0.52080       0.91345
  0.85109        0.84732       1.2329        0.91591       0.69230
  0.68622        1.1691      0.79981E-01     1.0726        0.84485
  0.33002        0.99811       0.62311        1.1113        1.1147
   1.5041        1.2448        1.5754         1.0740        0.63760
   1.0778       -0.45331       0.98782        1.3861       -0.26706
  0.29434        1.1148      0.55351E-01     0.15267       0.55468
  0.45508        0.26021       0.80522        0.79723       0.93215
  0.87582        0.49473        1.6325        0.80166       0.86489
  0.82522      -0.64140E-01     0.98672        0.93705       0.24923
 -0.92931        1.5602        1.1293        0.46812        1.8104
   1.3560        1.2032        1.8264         1.1355        1.5870
   2.0044        0.28939       0.61778        0.90214       0.91100
  0.43809        1.1198        1.0725        0.60371       0.84206
   1.0426        0.88425       1.2926      -0.43753E-01     1.1892
-0.40559E-01     2.7946       0.87212         3.1163       0.79318E-01
   1.3984        1.0413        1.2219         1.6999       0.83314

SAME ESTIMATED RHO FOR ALL CROSS-SECTIONS =  0.22707

VARIANCES (DIAGONAL OF PHI MATRIX)
  0.28369E-01    1.0816        2.0408         1.0309       0.12438
  0.48804      0.93743E-01     2.0275         15.003       0.28267
   1.7679        4.5706        2.2030        0.46432       0.97899
   1.2553        2.4735        2.9800         2.6617        7.8734
  0.76313E-01    4.3532       0.59788         3.4905        5.8457
  0.43022        3.5838       0.72845        0.58320        2.1155
   7.7936        3.6189        3.3608         3.8261        1.2951
   1.1450        4.4785        7.9253         1.2469       0.28461
   8.4070       0.96669       0.86572        0.31692       0.29886
  0.30059        5.3540        1.9170         1.6207        2.0096
   2.3675        311.44        1.8545         2.3761       0.73671
  0.33812        3.4202        5.5152         433.60        1.7556
   4.9777        1.8746        1.9371        0.61266       0.69871
   2.7057       0.25851        1.1862         1.3691        1.4176
  0.47702        2.9528        1.1397        0.34772        6.9418
   3.4023       0.81257        4.8015         304.65       0.90640
   256.85       0.42917        3.9885         4.0845       0.35386E-01
   1.8786     0.43119E-01      4.4206         1.4536        6.4045

BUSE [1973] R-SQUARE = 0.6634       BUSE RAW-MOMENT R-SQUARE = 0.9987
BUSE [1979] R-SQUARE =-2.9007
VARIANCE OF THE ESTIMATE-SIGMA**2 =  0.72122
STANDARD ERROR OF THE ESTIMATE-SIGMA =  0.84924
SUM OF SQUARED ERRORS-SSE=   191.12
MEAN OF DEPENDENT VARIABLE =   17.304
LOG OF THE LIKELIHOOD FUNCTION = -410.487


VARIABLE    ESTIMATED   STANDARD    T-RATIO        PARTIAL STANDARDIZED ELASTICITY
  NAME     COEFFICIENT    ERROR      265 DF    P-VALUE CORR. COEFFICIENT  AT MEANS
LYRC         1.3074      0.6645E-01   19.68      0.000 0.770      0.3107      0.3357
LYPRTNR1     1.2855      0.6394E-01   20.11      0.000 0.777      0.3055      0.3301
LDST1       -1.7171      0.1208      -14.21      0.000-0.658     -0.1551     -0.1718
LBRDRDMY  0.39111        0.1089        3.590     0.000 0.215      0.0333      0.0055
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CONSTANT    9.0906      0.4470        20.34      0.000 0.781      0.0000      0.5253

|_pool lex lyrc lyprtnr1 ldst2 lbrdrdmy /ncross=90 same
POOLED CROSS-SECTION TIME-SERIES ESTIMATION
    90 CROSS-SECTIONS AND      3 TIME-PERIODS
    270 TOTAL OBSERVATIONS
DEPENDENT VARIABLE = LEX
...WARNING..TOO FEW DEGREES OF FREEDOM, DN OPTION USED

MODEL ASSUMPTIONS:
    SAME ESTIMATED RHO FOR EACH CROSS-SECTION
    DIAGONAL PHI MATRIX

OLS COEFFICIENTS
   1.6442        1.5935       -1.2333        1.1268        4.5371


RHO VECTOR
  0.76490        1.1468       0.90570        1.0841       0.14875
  0.87982       0.93121        1.0547       0.50988       0.71246
  0.88676       0.85861        1.1623       0.82993       0.85267
  0.57272        1.1335       0.16803        1.0666       0.79591
 -0.29050       0.94962        1.4108        1.1439        1.1572
  0.81960E-01    1.1423        2.1818        1.0446       0.56017
   1.0827      -0.61802       0.98069        1.1876      -0.27223
  0.47666        1.1397       0.10500       0.30738       0.82578
  0.39997       0.31904       0.83960       0.79578       0.62920
  0.16820E-01   0.23901        1.6036      -0.75194E-02   0.92389
  0.83729      -0.67362E-01   0.99452       0.92723       0.75789E-01
  -1.0620        1.4120        1.1167       0.48104        1.6801
   1.4042        1.2822        1.6645        1.0960        1.7331
   1.6978       0.64180       0.75520      -0.50632E-01   0.93172
  0.32770        1.1028        1.0457       0.63691       0.88007
   1.0310      -0.85310        1.2987      -0.45531E-01    1.2142
 -0.19584E-01    3.2482       0.80565        3.2997       0.86647
   1.2868        1.0363        1.1199        1.3989       0.85185

SAME ESTIMATED RHO FOR ALL CROSS-SECTIONS =  0.23616

VARIANCES (DIAGONAL OF PHI MATRIX)
  0.75878E-01    2.6769        2.2193       0.36639       0.13040
   2.1774        1.3522        2.2630        14.644       0.18658
   2.9513        5.0850        4.3514       0.25224        2.5106
  0.61496        2.8790        3.3636        4.8666        5.5963
  0.59611E-01    1.3191       0.19298        1.2698        2.4503
  0.56138E-01    2.8101       0.14497        1.3138        1.1419
   5.3482        3.2056        3.4329        2.7751        1.3542
   1.5975        2.0024        8.3960        1.4399        1.5379
   6.5798        1.1531        1.0255       0.20188       0.14389
  0.24363        2.5777        2.0218       0.10052        4.3153
   2.3860        310.03        3.0259        2.3726       0.54183
  0.31848        4.8234        4.4523        442.71        2.1712
   3.1322       0.60530        1.4106        1.3600       0.29296
   3.4254       0.38526        1.1841       0.52704        1.4738
  0.32348        2.3592        2.9599       0.38539        9.1671
   3.6656       0.19468E-01    3.3792        303.61       0.66431
   262.73       0.43437        1.3474        3.4786       0.84734
   2.4365       0.92076        9.0027        2.7576        6.9384

BUSE [1973] R-SQUARE = 0.8457      BUSE RAW-MOMENT R-SQUARE = 0.9986
BUSE [1979] R-SQUARE =-3.2724
VARIANCE OF THE ESTIMATE-SIGMA**2 =  0.83916
STANDARD ERROR OF THE ESTIMATE-SIGMA =  0.91606
SUM OF SQUARED ERRORS-SSE=   222.38
MEAN OF DEPENDENT VARIABLE =   17.304
LOG OF THE LIKELIHOOD FUNCTION = -425.345


VARIABLE    ESTIMATED  STANDARD    T-RATIO        PARTIAL STANDARDIZED ELASTICITY
  NAME     COEFFICIENT   ERROR      265 DF    P-VALUE CORR. COEFFICIENT  AT MEANS
LYRC         1.3941     0.4559E-01   30.58      0.000 0.883      0.3313      0.3580
LYPRTNR1     1.2971     0.5269E-01   24.62      0.000 0.834      0.3082      0.3331
LDST2     -0.88180       0.1068     -8.260      0.000-0.452     -0.0996     -0.0783
LBRDRDMY   0.97611       0.1739      5.611      0.000 0.326      0.0830      0.0138
CONSTANT    6.8140       0.3475      19.61      0.000 0.769      0.0000      0.3938

|_pool lex lyrc lyprtnr2 ldst1 lbrdrdmy /ncross=90 same
POOLED CROSS-SECTION TIME-SERIES ESTIMATION
    90 CROSS-SECTIONS AND      3 TIME-PERIODS
    270 TOTAL OBSERVATIONS
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 DEPENDENT VARIABLE = LEX
 ...WARNING..TOO FEW DEGREES OF FREEDOM, DN OPTION USED

 MODEL ASSUMPTIONS:
     SAME ESTIMATED RHO FOR EACH CROSS-SECTION
     DIAGONAL PHI MATRIX

 OLS COEFFICIENTS
    1.9391        1.8433       -2.5983       0.58072       4.9776


 RHO VECTOR
   0.81374        1.2885        1.0090        1.1047      -0.53981E-01
   0.59107       0.29509        1.0589       0.45891        1.0904
   0.87092       0.82622        1.2542        1.1100       0.62288
   0.70913        1.1622      0.27079E-01     1.0733       0.89470
   0.70971       0.97341       0.58880        1.1289        1.1196
    1.5843        1.4689        1.7033        1.0645       0.59668
    1.0802      -0.50767       0.98766        1.4035      -0.27508
   0.20479        1.1236      0.70420E-01   -0.18816       0.60875
   0.46143       0.32254       0.77512       0.79823      -0.86515
    1.3517       0.50686        1.6078       0.77022       0.84383
   0.82567     -0.76893E-01     0.98521       0.91263       0.19577
    6.3711        1.5967        1.1449       0.44926        1.8152
    1.3122        1.2131        1.8424        1.1535        1.5190
    2.1410       0.46041       0.71474       0.86411       0.90048
   0.37865        1.1279        1.0832       0.54776       0.82292
    1.0448       0.89749        1.3052     -0.40085E-01     1.1724
 -0.38691E-01     1.5093       0.87776        3.2945        2.0042
    1.4551       0.65871        1.2549        1.8046       0.81355

 SAME ESTIMATED RHO FOR ALL CROSS-SECTIONS =   0.21675

 VARIANCES (DIAGONAL OF PHI MATRIX)
   0.44883E-02   0.83799        3.7116        1.0441       0.91361E-01
   0.31944       0.12914        2.3427        12.495       0.42821
    1.6479        4.1517        1.9130        1.5193       0.74625
    1.1345        2.7963        2.9035        2.3814        11.366
   0.14867        4.8464       0.52095        4.1598        5.5480
   0.35698        5.6645       0.57956       0.76405        1.9142
    7.3288        3.3809        2.9719        3.9615        1.3065
    1.0822        4.0848        8.1299        1.4902       0.38793
    8.2275        1.1299       0.69933       0.22990       0.14109
   0.37965        5.2409        2.1420        1.4801        1.6572
    2.0902        303.49        1.6439        2.6621       0.68225
   0.46865        3.1331        5.2486        425.50        1.6019
    5.5329        1.7995        2.4422       0.48656       0.88620
    2.4446       0.32584        1.3209        1.2370        1.2236
   0.41070        2.7145       0.88247       0.26873        6.4643
    3.0945        1.1165        4.5866        306.13        1.1174
    257.61       0.38766        4.5410        3.8801      0.23054E-01
    1.5893     0.29269E-02      3.6627        1.2001        6.0659

 BUSE [1973] R-SQUARE = 0.7440       BUSE RAW-MOMENT R-SQUARE = 0.9996
 BUSE [1979] R-SQUARE =-1.5938
 VARIANCE OF THE ESTIMATE-SIGMA**2 =  0.72190
 STANDARD ERROR OF THE ESTIMATE-SIGMA =  0.84965
 SUM OF SQUARED ERRORS-SSE=    191.30
 MEAN OF DEPENDENT VARIABLE =    17.304
 LOG OF THE LIKELIHOOD FUNCTION = -403.381


 VARIABLE    ESTIMATED   STANDARD    T-RATIO        PARTIAL STANDARDIZED ELASTICITY
   NAME     COEFFICIENT    ERROR      265 DF    P-VALUE CORR. COEFFICIENT  AT MEANS
 LYRC         1.3206     0.6391E-01    20.66      0.000 0.786      0.3138     0.3391
 LYPRTNR2     1.3488     0.5231E-01    25.79      0.000 0.846      0.3310     0.3411
 LDST1       -1.7502     0.1016       -17.22      0.000-0.727     -0.1581    -0.1751
 LBRDRDMY    0.42237     0.8887E-01    4.753      0.000 0.280      0.0359     0.0060
 CONSTANT     8.8729     0.4174        21.26      0.000 0.794      0.0000     0.5128

 |_pool lex lyrc lyprtnr2 ldst2 lbrdrdmy /ncross=90 same
 POOLED CROSS-SECTION TIME-SERIES ESTIMATION
     90 CROSS-SECTIONS AND       3 TIME-PERIODS
     270 TOTAL OBSERVATIONS
 DEPENDENT VARIABLE = LEX
 ...WARNING..TOO FEW DEGREES OF FREEDOM, DN OPTION USED

 MODEL ASSUMPTIONS:
     SAME ESTIMATED RHO FOR EACH CROSS-SECTION
     DIAGONAL PHI MATRIX
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 OLS COEFFICIENTS
    1.6609        1.6186       -1.3531        1.0416        4.6659


 RHO VECTOR
   0.37853        1.1553       0.99637        1.1265      -0.12389
   0.85159       0.94152        1.0582       0.45379        1.0470
   0.90671       0.84368        1.1638        1.1136       0.84110
   0.59031        1.1290       0.12113        1.0668       0.85127
   0.50598       0.90463        1.4179        1.1882        1.1701
   0.35314E-01    1.4413     -0.21103E-01     1.0410       0.50482
    1.0857      -0.65332       0.97973        1.2022      -0.27075
   0.44869        1.1602       0.11983     0.55301E-01     0.84032
   0.40717       0.38923       0.82635       0.80359      -0.68216
  -0.28242E-01   0.23653        1.5753      -0.42039       0.92005
   0.83930     -0.79410E-01     0.99411       0.90623     0.42727E-02
    6.7853        1.4223        1.1300       0.46461        1.6961
    1.3553        1.3027        1.7761        1.0967        1.7532
    1.7286       0.71037       0.82658      -0.30648       0.92593
   0.26756        1.1097        1.0476       0.59647       0.87887
    1.0319       0.26015        1.3075      -0.42614E-01     1.1968
  -0.18739E-01    3.1865       0.81074        3.4096       0.84266
    1.3096        1.0406        1.1296        1.4293       0.83745

 SAME ESTIMATED RHO FOR ALL CROSS-SECTIONS =   0.22659

 VARIANCES (DIAGONAL OF PHI MATRIX)
   0.12748E-01    2.4273        3.7472       0.40908     0.73724E-01
    2.0127        1.6900        2.5517        12.444       0.30811
    3.0444        4.8870        4.3037       0.99193        2.2708
   0.52804        3.2279        3.2429        4.8167        7.9846
   0.10666        1.3513       0.30859        1.4184        2.1404
   0.51405E-01    4.3170     0.99163E-01      1.6869        1.0169
    4.8160        3.0349        3.0577        2.7100        1.3754
    1.5745        1.6064        8.6285        1.3744        1.9327
    6.4553        1.4045       0.91402       0.15612       0.18383
   0.22900        2.4113        2.2463       0.12415        4.0445
    2.1797        302.75        3.0095        2.5946       0.52209
   0.46012        4.7145        4.2652        435.05        2.0839
    3.4460       0.52805        1.7694        1.3383       0.36730
    3.3190       0.48076        1.3110       0.47595        1.3420
   0.28738        2.2524        2.7250       0.31628        9.0204
    3.4718     0.17467E-01      3.3274        304.72       0.82166
    263.26       0.42030        1.4532        3.3922       0.62621
    2.2313       0.68260        8.1788        2.5047        6.6310

 BUSE [1973] R-SQUARE = 0.8534       BUSE RAW-MOMENT R-SQUARE = 0.9991
 BUSE [1979] R-SQUARE =-3.0081
 VARIANCE OF THE ESTIMATE-SIGMA**2 =  0.75723
 STANDARD ERROR OF THE ESTIMATE-SIGMA =  0.87019
 SUM OF SQUARED ERRORS-SSE=    200.67
 MEAN OF DEPENDENT VARIABLE =    17.304
 LOG OF THE LIKELIHOOD FUNCTION = -412.247


 VARIABLE    ESTIMATED   STANDARD    T-RATIO        PARTIAL STANDARDIZED ELASTICITY
   NAME     COEFFICIENT    ERROR      265 DF    P-VALUE CORR. COEFFICIENT  AT MEANS
 LYRC         1.3594      0.4224E-01   32.19      0.000 0.892      0.3231      0.3491
 LYPRTNR2     1.2155      0.5022E-01   24.20      0.000 0.830      0.2983      0.3074
 LDST2     -0.94575       0.9469E-01  -9.988      0.000-0.523     -0.1068     -0.0840
 LBRDRDMY   0.82590       0.1625       5.083      0.000 0.298      0.0702      0.0117
 CONSTANT    7.6269       0.3330       22.90      0.000 0.815      0.0000      0.4408

 |_pool lex lyrc lyprtnr1 ldst1 lbsecdmy lpopoth/ncross=90 same
 POOLED CROSS-SECTION TIME-SERIES ESTIMATION
     90 CROSS-SECTIONS AND       3 TIME-PERIODS
     270 TOTAL OBSERVATIONS
 DEPENDENT VARIABLE = LEX
 ...WARNING..TOO FEW DEGREES OF FREEDOM, DN OPTION USED

 MODEL ASSUMPTIONS:
     SAME ESTIMATED RHO FOR EACH CROSS-SECTION
     DIAGONAL PHI MATRIX

 OLS COEFFICIENTS
    2.0019        2.6390       -3.0430       0.64955      -0.86667
    4.2785

 RHO VECTOR
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 0.81817E-01 -0.65464      0.79846       1.0919      0.87814E-01
  0.56093     -0.46665       1.0726      0.59618       0.70679
  0.88993      0.87408      0.91305      0.71547       0.30705
  0.83502       1.2144      0.10819      0.91387       0.69980
 -0.23472      0.87198      0.40129      0.96215        1.0049
 -0.65407       1.3349      0.98668       1.2113       0.65014
   1.0021     -0.60621      0.84351       1.6071      -0.26331
  0.12213      0.97562      0.22725      0.24222      -0.73271
  0.50451      0.62206      0.31549     -0.11930       0.97579
  0.23454      0.62755       1.2812      0.88298       0.42702
  0.43397     -0.49996E-01  0.82393      0.81610      0.74801E-01
   1.0447       1.5774      0.99012      0.47060        1.7495
   1.2492      0.93078       2.2992      0.56612        1.3573
   2.1357     -0.37415      0.19617E-02   1.1992       0.49600
  0.49361       1.2230      0.50393      0.55732       0.96385
  0.77900       1.0060       1.3435     -0.42361E-01   1.3112
 -0.53721E-01  0.66353      0.93395       2.8873      -0.14985
   1.5868     -0.12515       1.4415      0.91033       0.87824

 SAME ESTIMATED RHO FOR ALL CROSS-SECTIONS =  0.23258

 VARIANCES (DIAGONAL OF PHI MATRIX)
   0.20537      0.16177       1.8299       2.0637      0.68117
   0.13968      0.33693       3.7074        16.324      0.95964
    2.1524       5.1995       2.2842      0.31343       1.1052
    1.4701       2.2591       2.2044       1.3409       6.4919
   0.32387       4.8418       1.7888       3.4912       5.1360
  0.79603E-01    2.1790      0.81451       1.0693       1.6176
    5.7574       3.8994       4.4922       2.9493      0.48045
   0.97696       3.2151       7.8495      0.98842      0.10373
    7.1155      0.82949      0.74556      0.27905      0.98602
   0.80935       5.9794       2.9450       2.7168       1.1878
    1.0889       306.78       3.4347       2.3572       1.4924
   0.75607       2.0438       2.9474       430.19       1.5094
    5.5401       2.1329       1.9061       2.9684      0.60859
    3.4750       1.2342       1.2741       2.3637       3.4122
    1.4785       4.0231       2.0572      0.98865       7.5133
    5.4455      0.64438       6.8398       276.49      0.59703
    256.25       1.7875       1.9464       5.5098      0.80307
    2.2548      0.76328E-01   3.1753       2.6172       7.2037

 BUSE [1973] R-SQUARE = 0.6953      BUSE RAW-MOMENT R-SQUARE = 0.9979
 BUSE [1979] R-SQUARE =-2.3675
 VARIANCE OF THE ESTIMATE-SIGMA**2 =  0.65415
 STANDARD ERROR OF THE ESTIMATE-SIGMA =  0.80880
 SUM OF SQUARED ERRORS-SSE=   172.70
 MEAN OF DEPENDENT VARIABLE =   17.304
 LOG OF THE LIKELIHOOD FUNCTION = -422.026


 VARIABLE    ESTIMATED  STANDARD    T-RATIO        PARTIAL STANDARDIZED ELASTICITY
   NAME     COEFFICIENT   ERROR      264 DF   P-VALUE CORR. COEFFICIENT  AT MEANS
 LYRC         1.4558     0.6635E-01   21.94     0.000 0.804     0.3460     0.3738
 LYPRTNR1     1.6041     0.1386       11.58     0.000 0.580     0.3812     0.4119
 LDST1       -1.9022     0.1463      -13.00     0.000-0.625    -0.1718    -0.1903
 LBSECDMY     0.24648    0.9199E-01    2.679    0.008 0.163     0.0243     0.0066
 LPOPOTH     -0.45304    0.1283       -3.530    0.000-0.212    -0.1020    -0.0795
 CONSTANT     8.7014     0.4270       20.38     0.000 0.782     0.0000     0.5029

 |_pool lex lyrc lyprtnr1 ldst2 lbsecdmy lpopoth/ncross=90 same
 POOLED CROSS-SECTION TIME-SERIES ESTIMATION
     90 CROSS-SECTIONS AND      3 TIME-PERIODS
     270 TOTAL OBSERVATIONS
 DEPENDENT VARIABLE = LEX
 ...WARNING..TOO FEW DEGREES OF FREEDOM, DN OPTION USED

 MODEL ASSUMPTIONS:
     SAME ESTIMATED RHO FOR EACH CROSS-SECTION
     DIAGONAL PHI MATRIX

 OLS COEFFICIENTS
    1.6892       2.3462      -1.8068      0.37100     -0.81294
    4.4443

 RHO VECTOR
  -0.22927E-01  0.91974      0.87628       1.0726      0.64673
   0.87933      0.96298       1.0668      0.56732       1.0292
   0.92216      0.87681       1.0453      0.74172      0.72837
   0.67145       1.2428      0.19645       1.0040      0.62149
  -0.47506      0.70270     -0.39405E-02  0.84723       1.0887
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   0.87345       0.98429       -1.2487        1.1721       0.28007
    1.0428      -0.61567       0.90933        1.0586      -0.17796
   0.41049        1.0502       0.25702       0.35735       0.86520
   0.34749       0.63120       0.57539   -0.66126E-01      0.84844
  0.26614E-02    0.31568        1.4700    0.76386E-01      0.79793
   0.57874   -0.55994E-01       0.93439       0.88025   -0.27311E-02
    1.5334        1.3839        1.0381       0.48335        1.5545
    1.3442        1.0076        2.2407       0.74282       0.55687
    1.8278   -0.64068E-01       0.32791       0.71667       0.50266
   0.39427        1.2292       0.69675       0.53288       0.97009
   0.78736       0.15575        1.3629   -0.37596E-01        1.2981
  -0.25657E-01   0.81234       0.51899        3.1637       0.27067
    1.4682       0.78581        1.2332       0.95293       0.86550

 SAME ESTIMATED RHO FOR ALL CROSS-SECTIONS =  0.24392

 VARIANCES (DIAGONAL OF PHI MATRIX)
   0.13401       0.78849        2.6483        1.0877       0.55631
    1.3320        1.2041        2.7761        16.574       0.84766
    4.2002        6.5659        7.0508       0.12481        2.6624
   0.60343        1.7461        2.9194        5.3280        3.4015
   0.24646       0.86140       0.44824       0.57870        1.2385
   0.35378        1.4944   0.46759E-01        2.3669       0.45504
    2.6478        3.4967        5.2984        1.7434       0.76630
    1.3579       0.53507        9.1746        1.2571       0.72175
    4.4180        1.5135       0.81789       0.16781       0.55301
   0.58992        2.2652        2.8078       0.15373        3.2226
    1.0326        308.27        7.2866        2.3005        1.0611
    1.4594        3.7522        2.1411        441.44        2.2004
    3.3231       0.46897        1.3361        5.9703       0.36743
    4.2140        1.0534        1.2390       0.80415        3.0611
    1.0062        2.9028        4.1411       0.85138        10.027
    5.4598       0.13255        4.6758        279.07       0.57635
    264.21        2.7995   0.13684E-01        4.4261        1.5160
    2.5917       0.79834        6.7095        5.6477        7.1781

 BUSE [1973] R-SQUARE = 0.8068       BUSE RAW-MOMENT R-SQUARE = 0.9986
 BUSE [1979] R-SQUARE =-2.9944
 VARIANCE OF THE ESTIMATE-SIGMA**2 =  0.76498
 STANDARD ERROR OF THE ESTIMATE-SIGMA =  0.87463
 SUM OF SQUARED ERRORS-SSE=    201.96
 MEAN OF DEPENDENT VARIABLE =    17.304
 LOG OF THE LIKELIHOOD FUNCTION = -427.308


 VARIABLE    ESTIMATED   STANDARD    T-RATIO        PARTIAL STANDARDIZED ELASTICITY
   NAME     COEFFICIENT    ERROR      264 DF    P-VALUE CORR. COEFFICIENT  AT MEANS
 LYRC         1.3711      0.4752E-01   28.85      0.000 0.871      0.3258      0.3521
 LYPRTNR1     1.5021      0.1361       11.03      0.000 0.562      0.3570      0.3857
 LDST2       -1.3752      0.9207E-01  -14.94      0.000-0.677     -0.1553     -0.1221
 LBSECDMY     0.25047     0.8664E-01    2.891     0.004 0.175      0.0247      0.0068
 LPOPOTH     -0.33267     0.1341       -2.480     0.014-0.151     -0.0749     -0.0584
 CONSTANT     7.8440      0.3970        19.76     0.000 0.772      0.0000      0.4533

 |_pool lex lyrc lyprtnr2 ldst1 lbsecdmy lpopoth/ncross=90 same
 POOLED CROSS-SECTION TIME-SERIES ESTIMATION
     90 CROSS-SECTIONS AND      3 TIME-PERIODS
     270 TOTAL OBSERVATIONS
 DEPENDENT VARIABLE = LEX
 ...WARNING..TOO FEW DEGREES OF FREEDOM, DN OPTION USED

 MODEL ASSUMPTIONS:
     SAME ESTIMATED RHO FOR EACH CROSS-SECTION
     DIAGONAL PHI MATRIX

 OLS COEFFICIENTS
    2.0278        2.8793       -3.1715       0.80890       -1.1655
    4.3455

 RHO VECTOR
   0.94434       0.32487       0.91410        1.1083       0.31565
  -0.58887   -0.45637E-01        1.1029       0.51958       0.82142
   0.88655       0.83519       0.75803       0.92402       0.14848
   0.88675        1.2016   0.19023E-01       0.78893       0.77095
   0.19465       0.82257       0.26426       0.98303       0.97043
   0.34520        1.5842       0.81331        1.1889       0.57501
   0.97646      -0.54861       0.78874        1.6004      -0.11638
  -0.21364       0.92039       0.30632       -1.1133   -0.22103E-01
   0.52871       0.72332   0.43609E-01       0.67814      -0.54440
   0.39750       0.65920        1.2356       0.84069       0.16675
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   0.18303      -0.66994E-01  0.76382       0.76341       0.96202E-02
    1.2611        1.6650       0.94609       0.44376       1.7472
    1.1633       0.84172       2.0135        0.39730       1.2821
    2.4146      -0.33312       0.79207E-02   1.2819        0.36815
   0.44360        1.2808       0.32462       0.49554       0.97936
   0.67663        1.0406        1.3891      -0.35890E-01   1.2923
  -0.50062E-01   0.34903       0.96824       3.0842       -0.14164
    1.7761      -0.19495        1.6091       0.65200       0.87424

 SAME ESTIMATED RHO FOR ALL CROSS-SECTIONS =  0.21769

 VARIANCES (DIAGONAL OF PHI MATRIX)
   0.43745       0.27057        4.1320        1.9573       0.91397
   0.78978E-01   0.44423        5.2522        12.288        1.2918
    1.8982        4.2702        1.6286        1.7787       0.97655
    1.1850        2.8830        2.0468       0.69163        11.229
   0.45814        5.8732        1.6658        4.7394        4.4062
   0.15085        4.8338       0.65107        1.4295        1.2996
    4.8967        3.7652        3.9112        3.2607       0.45908
   0.93498        2.5528        8.7230        1.3399       0.15135
    6.6498        1.0742       0.58714       0.42675       0.48919
    1.0031        5.4262        3.4519        2.1484       0.87963
   0.73077        293.85        3.0251        3.0187        1.6046
    1.2282        1.5270        2.1035        419.59        1.2925
    6.6094        2.0321        2.8178        2.9704       0.75156
    3.1168        1.6288        1.4169        2.0689        3.6222
    1.5038        3.5913        2.1235       0.97321        6.8171
    5.4634       0.85945        6.4021        271.95       0.72975
    258.51        1.7362        2.3743        5.2184        1.1315
    1.8651       0.74299E-01    2.4704        2.3217        7.0018

BUSE [1973] R-SQUARE = 0.6623      BUSE RAW-MOMENT R-SQUARE = 0.9978
BUSE [1979] R-SQUARE =-2.2729
VARIANCE OF THE ESTIMATE-SIGMA**2 =  0.60862
STANDARD ERROR OF THE ESTIMATE-SIGMA =  0.78014
SUM OF SQUARED ERRORS-SSE=   160.67
MEAN OF DEPENDENT VARIABLE =   17.304
LOG OF THE LIKELIHOOD FUNCTION = -419.740


VARIABLE    ESTIMATED  STANDARD    T-RATIO        PARTIAL STANDARDIZED ELASTICITY
  NAME     COEFFICIENT   ERROR     264 DF   P-VALUE CORR. COEFFICIENT  AT MEANS
LYRC         1.3933     0.6805E-01   20.47     0.000 0.783     0.3311     0.3578
LYPRTNR2     1.5486     0.1338       11.57     0.000 0.580     0.3800     0.3916
LDST1       -1.8893     0.1581      -11.95     0.000-0.592    -0.1706    -0.1890
LBSECDMY    0.28413     0.9461E-01    3.003    0.003 0.182     0.0280     0.0077
LPOPOTH    -0.47170     0.1260       -3.745    0.000-0.225    -0.1062    -0.0828
CONSTANT    9.3487      0.4354       21.47     0.000 0.797     0.0000     0.5403

|_pool lex lyrc lyprtnr2 ldst2 lbsecdmy lpopoth/ncross=90 same
POOLED CROSS-SECTION TIME-SERIES ESTIMATION
    90 CROSS-SECTIONS AND      3 TIME-PERIODS
    270 TOTAL OBSERVATIONS
DEPENDENT VARIABLE = LEX
...WARNING..TOO FEW DEGREES OF FREEDOM, DN OPTION USED

MODEL ASSUMPTIONS:
    SAME ESTIMATED RHO FOR EACH CROSS-SECTION
    DIAGONAL PHI MATRIX

OLS COEFFICIENTS
   1.7081       2.6746      -1.9425       0.48309      -1.1984
   4.4078

RHO VECTOR
  0.79182       0.47626       0.97545       1.0793       0.86827
  0.81722        1.0082        1.0973       0.49175        1.0843
  0.94438       0.84410        1.0211        1.0500       0.68108
  0.69414        1.2298       0.99324E-01   0.97773       0.73321
 -0.14564       0.62943       0.44260        1.0309        1.0591
  0.97045        1.6278      -0.42337E-01    1.1853       0.13006E-01
   1.0245       -0.44243       0.87690        1.3340      -0.32986E-01
  0.31938       0.94025        0.33242      -0.13165       0.91586
  0.36638       0.71984        0.39669        1.2087      -0.72902
 -0.35763E-01   0.30244        1.4103        -2.8890       0.73172
  0.35647      -0.73110E-01    0.91329       0.84161       0.68922E-02
   1.4663        1.3978        1.0193        0.45858        1.5190
   1.2482       0.82254        2.1185        0.60163       0.47752
   1.9876      -0.11092        0.29381       0.20599       0.34567
  0.33372        1.3127       0.54043       0.45439        1.0019
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   0.66369      -0.12586       1.4232      -0.30477E-01   1.2772
  -0.22815E-01   0.53211       0.66829       3.2680       0.80098E-01
   1.6187       0.62955       1.3058       0.77187       0.86083

 SAME ESTIMATED RHO FOR ALL CROSS-SECTIONS =  0.23024

 VARIANCES (DIAGONAL OF PHI MATRIX)
   0.19945       0.38874       5.0289        1.0435       0.84562
    1.0604        1.9863       4.2416        12.838        1.1557
    4.0242        5.7019       6.1984        1.1799        2.5509
   0.40103        2.3161       2.6267        4.0183        6.4070
   0.27277        1.1040      0.64107       0.91584       0.82615
   0.81898        3.3229     0.59873E-01     2.9857       0.43919
    1.9746        3.4815       4.6675        1.7697       0.78210
    1.2972       0.23792       10.375        1.2565        1.1195
    4.1523        1.9165      0.63804       0.31492       0.39318
   0.62943        1.8371       3.2299       0.17638        2.7293
   0.62330        296.62       7.1169        2.8935        1.2012
    2.2126        3.3073       1.4024        430.75        2.1656
    4.0731       0.41545       2.1003        6.2268       0.46735
    4.0163        1.5937       1.4216       0.70566        3.4931
    1.0851        2.6541       4.4208       0.87440        9.6207
    5.7548       0.12653       4.4898        272.41       0.71284
    266.77        2.8893     0.26693E-01     4.3338        1.8057
    2.2809       0.66213       5.7650        5.3231        6.9758

 BUSE [1973] R-SQUARE = 0.7615      BUSE RAW-MOMENT R-SQUARE = 0.9983
 BUSE [1979] R-SQUARE = 2.7753
 VARIANCE OF THE ESTIMATE-SIGMA**2 =  0.67651
 STANDARD ERROR OF THE ESTIMATE-SIGMA =  0.82250
 SUM OF SQUARED ERRORS-SSE=   178.60
 MEAN OF DEPENDENT VARIABLE =   17.304
 LOG OF THE LIKELIHOOD FUNCTION = -421.274


 VARIABLE    ESTIMATED   STANDARD    T-RATIO        PARTIAL STANDARDIZED ELASTICITY
   NAME     COEFFICIENT    ERROR      264 DF    P-VALUE CORR. COEFFICIENT  AT MEANS
 LYRC         1.3118      0.4834E-01   27.14     0.000 0.858     0.3117      0.3368
 LYPRTNR2     1.4080      0.1411       9.980     0.000 0.523     0.3455      0.3560
 LDST2       -1.2172      0.9932E-01  -12.26     0.000-0.602    -0.1375     -0.1081
 LBSECDMY     0.29964     0.9056E-01   3.309     0.001 0.200     0.0296      0.0081
 LPOPOTH     -0.41131     0.1392      -2.954     0.003-0.179    -0.0926     -0.0722
 CONSTANT     8.7179      0.4145       21.03     0.000 0.791     0.0000      0.5038

 |_pool lex lyrc lyprtnrl ldst1 lcmcndmy lpopoth/ncross=90 same
 POOLED CROSS-SECTION TIME-SERIES ESTIMATION
     90 CROSS-SECTIONS AND       3 TIME-PERIODS
     270 TOTAL OBSERVATIONS
 DEPENDENT VARIABLE = LEX
 ...WARNING..TOO FEW DEGREES OF FREEDOM, ON OPTION USED

 MODEL ASSUMPTIONS:
     SAME ESTIMATED RHO FOR EACH CROSS-SECTION
     DIAGONAL PHI MATRIX

 OLS COEFFICIENTS
    2.0065       2.7293      -3.0906      0.47163E-01 -0.92287
    4.4034

 RHO VECTOR
   0.32956      -4.7280       0.92130       0.99947       0.34242
   0.25726      -0.64809       1.0747       0.52761       0.95554
   0.81071       0.80329       1.2066       0.94382       0.69813
   0.65442        1.2257     0.22052E-01     1.0607       0.86131
  -0.63748        1.0449       0.62489       1.1981        1.1161
    3.3054        1.1861       1.4035        1.1585       0.52465
    1.0822      -0.69447       0.98839       1.3864      -0.26810
   0.10322        1.1304       0.16520       0.11824     -0.99703E-01
   0.42190       0.41728       0.77669     0.76927E-01     0.98674
   0.20045       0.51583        1.5284       0.76668       0.80975
   0.68563     -0.61640E-01     0.98484       0.99087       0.19838
    3.2065        1.6230        1.1597       0.46340        1.7291
    1.3807        1.1354        1.9322       0.45634        1.5227
    2.4425      -0.28646       0.30208        1.2348       0.40225
   0.35732        1.2663       0.37120       0.41625       0.94846
   0.73690        1.0222        1.3807     -0.32632E-01     1.2951
  -0.46617E-01    0.44191       0.95088        3.1441     -0.39288E-01
    1.7561       0.73300        1.5615       0.81198       0.84074

 SAME ESTIMATED RHO FOR ALL CROSS-SECTIONS =  0.22840
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 VARIANCES (DIAGONAL OF PHI MATRIX)
   0.45081E-02  0.60693E-01   2.2637       1.7139       0.22654
   0.15633      0.11422       3.0769       16.341       0.36259
    1.8524       4.6984       2.6642      0.57137       1.0141
    1.4923       1.7390       3.1477       1.4707       6.9685
   0.59449E-01   5.0678       1.4413       3.9253       6.1170
   0.66886E-01   3.4989       1.1866      0.71291       1.6997
    6.7298       2.9002       4.8845       4.0003       1.0385
    1.2107       3.8766       9.2917       1.3372      0.11513
    8.1126       1.0585      0.70642  0.30404E-01      0.43879
   0.26722       6.5710       2.0820       2.4955       1.1712
   0.84942       315.42       3.8455       2.4966      0.91115
    1.0689       2.9094       3.2056       429.41       2.3000
    6.3001       2.3303       2.8304       2.2910       1.0095
    2.9022       1.3059       1.5218       1.8755       2.7894
   0.98951       3.2889       1.5359      0.57978       6.4755
    4.5227       1.2118       5.9961       279.06       1.0970
    259.65       1.2741       2.9409       4.9455      0.87528
    1.7278      0.76942E-01   2.4012       1.8247       5.8665

 BUSE [1973] R-SQUARE = 0.6698       BUSE RAW-MOMENT R-SQUARE = 0.9994
 BUSE [1979] R-SQUARE =-2.3087
 VARIANCE OF THE ESTIMATE-SIGMA**2 =  0.68055
 STANDARD ERROR OF THE ESTIMATE-SIGMA =  0.82495
 SUM OF SQUARED ERRORS-SSE=   179.66
 MEAN OF DEPENDENT VARIABLE =   17.304
 LOG OF THE LIKELIHOOD FUNCTION = -410.357


 VARIABLE    ESTIMATED   STANDARD    T-RATIO        PARTIAL STANDARDIZED ELASTICITY
   NAME     COEFFICIENT    ERROR      264 DF    P-VALUE CORR. COEFFICIENT  AT MEANS
 LYRC         1.4258     0.6598E-01    21.61     0.000 0.799     0.3388     0.3661
 LYPRTNR1     1.4449      0.1625       8.892     0.000 0.480     0.3434     0.3710
 LDST1       -2.0653      0.1056      -19.56     0.000-0.769    -0.1865    -0.2066
 LCMCNDMY    0.33694      0.1558       2.163     0.031 0.132     0.0267     0.0039
 LPOPOTH    -0.28165      0.1421      -1.981     0.049-0.121    -0.0634    -0.0494
 CONSTANT    9.3074       0.4458       20.88     0.000 0.789     0.0000     0.5379

 |_pool lex lyrc lyprtnr1 ldst2 lcmcndmy lpopoth/ncross=90 same
 POOLED CROSS-SECTION TIME-SERIES ESTIMATION
     90 CROSS-SECTIONS AND      3 TIME-PERIODS
     270 TOTAL OBSERVATIONS
 DEPENDENT VARIABLE = LEX
 ...WARNING..TOO FEW DEGREES OF FREEDOM, DN OPTION USED

 MODEL ASSUMPTIONS:
     SAME ESTIMATED RHO FOR EACH CROSS-SECTION
     DIAGONAL PHI MATRIX

 OLS COEFFICIENTS
    1.6937       2.5818      -1.8728     -0.31818      -1.0166
    4.3338

 RHO VECTOR
   0.32116       1.1706      0.93552       1.0028      0.33429
   0.76437      0.92226       1.0547      0.52827       1.1582
   0.87313      0.83084       1.1196      0.83399      0.85762
   0.54691       1.2432      0.14365       1.0491      0.76068
  -0.71215       1.0536     -0.13398       1.7298       1.2011
   0.61554      0.85437      0.22621       1.1237      0.24389
    1.0944     -0.69770      0.98188      0.65104     -0.27178
   0.40088       1.2636      0.19896      0.30098      0.75560
   0.32122      0.48374      0.81291      0.38902      0.89167
   0.18932      0.26213       1.5349      0.10543      0.91034
   0.74425  -0.62427E-01     0.99274      0.98507      0.11760
    1.9863       1.4337       1.1259      0.47909       1.5715
    1.4736       1.1584       1.7868      0.64653       1.1102
    1.9762  0.36706E-01      0.53552      0.11094      0.37208
   0.22966       1.2971      0.58482      0.38052      0.98939
   0.70689     -0.49710       1.4128  -0.28758E-01       1.2924
 -0.21503E-01   0.61250      0.84709       3.2909  0.96412E-01
   1.5889      0.60224       1.2852      0.84561      0.83671

 SAME ESTIMATED RHO FOR ALL CROSS-SECTIONS =  0.23921

 VARIANCES (DIAGONAL OF PHI MATRIX)
   0.11532E-01    1.0924       2.8417       1.0886      0.20121
    1.5227        1.0657       2.0635       16.867      0.49904
    4.4759        6.5932       7.5039      0.28191       2.8214
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    0.80602        1.0814        3.7054        6.2846        3.3488
    0.71710E-01    0.65520       0.18099       0.56139       1.4887
    0.16023        2.3244        0.10075       1.6244        0.68973
     2.9229        2.8592        5.3646        2.3181        1.0587
     1.7318       0.61159        9.6497        1.5968       0.68364
     5.6410        1.3189       0.81567      0.42488E-01     0.23243
    0.33083        2.9940        1.7589       0.21987        3.3470
     1.2193        315.18        7.8845        2.1891       0.74420
     1.7120        4.4957        2.8300        441.29        2.9106
     3.5659       0.89597        1.9404        5.3483       0.57836
     3.8216        1.4562        1.5960       0.66688        2.8344
    0.72600        2.4903        3.6660       0.54732        9.2478
     4.9568      0.51887E-01     4.2967        277.89        1.0394
     267.61        2.3621       0.10465        4.1956        1.4169
     2.1794       0.38251        5.6508        4.6194        5.9322

 BUSE [1973] R-SQUARE = 0.7951       BUSE RAW-MOMENT R-SQUARE = 0.9989
 BUSE [1979] R-SQUARE =-3.1664
 VARIANCE OF THE ESTIMATE-SIGMA**2 =  0.75466
 STANDARD ERROR OF THE ESTIMATE-SIGMA =  0.86871
 SUM OF SQUARED ERRORS-SSE=   199.23
 MEAN OF DEPENDENT VARIABLE =   17.304
 LOG OF THE LIKELIHOOD FUNCTION = -418.144


 VARIABLE   ESTIMATED  STANDARD   T-RATIO        PARTIAL STANDARDIZED ELASTICITY
   NAME     COEFFICIENT   ERROR     264 DF   P-VALUE CORR. COEFFICIENT  AT MEANS
 LYRC        1.3387     0.5022E-01   26.65     0.000 0.854     0.3181     0.3437
 LYPRTNR1    1.5765     0.1637        9.628    0.000 0.510     0.3746     0.4048
 LDST2      -1.3718     0.6659E-01  -20.60     0.000-0.785    -0.1550    -0.1218
 LCMCNDMY -0.18594      0.1413      -1.316     0.189-0.081    -0.0147    -0.0021
 LPOPOTH  -0.35670      0.1499      -2.380     0.018-0.145    -0.0803    -0.0626
 CONSTANT   8.0005      0.3883       20.60     0.000 0.785     0.0000     0.4624

 |_pool lex lyrc lyprtnr2 ldst1 lcmcndmy lpopoth/ncross=90 same
 POOLED CROSS-SECTION TIME-SERIES ESTIMATION
     90 CROSS-SECTIONS AND      3 TIME-PERIODS
     270 TOTAL OBSERVATIONS
 DEPENDENT VARIABLE = LEX
 ...WARNING..TOO FEW DEGREES OF FREEDOM, DN OPTION USED

 MODEL ASSUMPTIONS:
     SAME ESTIMATED RHO FOR EACH CROSS-SECTION
     DIAGONAL PHI MATRIX

 OLS COEFFICIENTS
    2.0218        3.1167       -3.1626      -0.40391       -1.3605
    4.3675

 RHO VECTOR
    1.1537      -0.32042        1.0811        1.0270      -0.73789E-01
 -0.82135E-02 -0.24836E-01      1.0815       0.42559        1.1107
  0.82783       0.74132        1.2661        1.2003       0.63239
  0.67657        1.2301      -0.20908E-01     1.0515       0.94485
  0.33195        1.0191        0.62332        1.2485        1.1308
 -0.24815        1.5459         1.4694        1.1964       0.41636
   1.0880      -0.70883        0.98601        1.4163      -0.26327
 -0.86783E-01    1.1550        0.19205       0.50321E-02 -0.76160E-01
  0.43423       0.38861        0.63564       0.98611       -1.5423
  0.78094       0.52810         1.4020       0.68047       0.70119
  0.65081      -0.80411E-01     0.98136       0.96469       0.25667
   2.5977        1.7234         1.1860       0.43451        1.7539
   1.3475        1.0936         1.9169       0.17635        1.4752
   3.1322      -0.18367        0.47635        1.4414       0.17957
  0.16029        1.4061       0.81285E-01    0.18997       0.96060
  0.55348        1.0657         1.4784      -0.18470E-01     1.2913
 -0.37431E-01 -0.66727E-01      0.99492        2.9990       0.66684E-01
   2.2801        1.0869         1.9437       0.32990       0.80784

 SAME ESTIMATED RHO FOR ALL CROSS-SECTIONS =  0.21324

 VARIANCES (DIAGONAL OF PHI MATRIX)
   0.10964      0.47236E-01     5.1648         1.6874       0.23754
   0.20642      0.84810E-01     3.6205         12.568       0.55719
    1.7506        3.9772         1.8465        2.4863       0.73973
    1.3627        1.5898         3.3348        1.2127        12.291
  0.77339E-01     5.5250         1.7565        5.1288        5.0367
  0.45767E-01     6.8436        0.90975       0.57733        1.5199
    5.5869        2.7031         4.2248        4.0952       0.92095
    1.3221        2.9646         9.5989        2.1091       0.91458E-01
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     7.9869       0.88271       0.35077       0.30078E-01   0.22627
    0.33454        6.3982        1.9168        2.0451       0.66972
    0.66186        304.06        3.3013        2.7642        1.0923
     1.6329        2.2432        2.9299        419.74        2.0102
     6.7922        2.8457        3.8390        2.2945        1.4771
     2.4273        1.9663        1.9302        1.4065        2.9183
    0.83443        2.5790        1.6408       0.46580        5.4565
     4.2778        1.8082        5.1293        274.33        1.5951
     264.29        1.2156        3.8768        4.4923        1.4972
     1.2646       0.23464        1.7181        1.5516        5.0888

 BUSE [1973] R-SQUARE = 0.7033       BUSE RAW-MOMENT R-SQUARE = 0.9987
 BUSE [1979] R-SQUARE =-2.3108
 VARIANCE OF THE ESTIMATE-SIGMA**2 =  0.67349
 STANDARD ERROR OF THE ESTIMATE-SIGMA =  0.82066
 SUM OF SQUARED ERRORS-SSE=   177.80
 MEAN OF DEPENDENT VARIABLE =   17.304
 LOG OF THE LIKELIHOOD FUNCTION = -414.966


 VARIABLE    ESTIMATED   STANDARD    T-RATIO        PARTIAL STANDARDIZED ELASTICITY
   NAME     COEFFICIENT    ERROR      264 DF    P-VALUE CORR. COEFFICIENT  AT MEANS
 LYRC         1.4169      0.6524E-01   21.72      0.000 0.801     0.3367     0.3638
 LYPRTNR2     1.6404      0.1646        9.966     0.000 0.523     0.4026     0.4148
 LDST1       -1.9614      0.1298      -15.11      0.000-0.681    -0.1771    -0.1962
 LCMCNDMY  0.90619E-01    0.1637       0.5537     0.580 0.034     0.0072     0.0010
 LPOPOTH   -0.45120       0.1495      -3.017      0.003-0.183    -0.1016    -0.0792
 CONSTANT    8.9356       0.4220       21.17      0.000 0.793     0.0000     0.5164

 |_pool lex lyrc lyprtnr2 ldst2 lcmcndmy lpopoth/ncross=90 same
 POOLED CROSS-SECTION TIME-SERIES ESTIMATION
     90 CROSS-SECTIONS AND      3 TIME-PERIODS
     270 TOTAL OBSERVATIONS
 DEPENDENT VARIABLE = LEX
 ...WARNING..TOO FEW DEGREES OF FREEDOM, DN OPTION USED

 MODEL ASSUMPTIONS:
     SAME ESTIMATED RHO FOR EACH CROSS-SECTION
     DIAGONAL PHI MATRIX

 OLS COEFFICIENTS
    1.7142       3.1457      -2.0353     -0.86013      -1.6250
    4.1544

 RHO VECTOR
    1.1332       1.1526       1.0791       1.0220     -0.52728E-01
   0.65706      0.95524       1.0708      0.42594       1.1992
   0.88648      0.77520       1.1348       1.2426      0.84679
   0.55802       1.2110     0.53734E-01    1.0436      0.89899
   0.37185      0.97590     -0.13441       1.9814       1.2634
   0.73424       1.5569     0.40846E-01    1.1733     0.89180E-01
    1.0965     -0.67769      0.97804      0.63231     -0.24105
   0.33003       1.4897      0.23102     -0.98287E-01  0.80388
   0.35151      0.48163      0.71857      0.40655E-01 -0.75073E-01
   0.13538      0.26499       1.2262     -0.19958      0.88876
   0.71428     -0.82532E-01  0.99041      0.96800      0.20933
    1.9325       1.4911       1.1466      0.44955       1.5667
    1.4340       1.0672       1.9226      0.41206       1.1769
    2.3702     0.11077E-01    0.62341     -5.7469      0.13708
  0.35537E-01    1.4992      0.32927      0.14568       1.0492
   0.49523      0.15443       1.5370     -0.12839E-01   1.2891
 -0.14586E-01   0.19170       1.0094       2.7546     -0.11088
    1.9705     0.84289E-01    1.4454      0.51751      0.80557

SAME ESTIMATED RHO FOR ALL CROSS-SECTIONS =  0.22072

VARIANCES (DIAGONAL OF PHI MATRIX)
   0.14000      0.88470       5.7198       1.1993      0.23689
    1.4062       2.0650       2.7290       13.134      0.81660
    4.7178       5.9939       6.2908       1.8815       2.5635
   0.71145       1.0013       3.7188       5.8158       6.9337
  0.87360E-01   0.66476      0.23734      0.90561      0.91034
   0.24306       4.8119     0.87425E-01    1.4391      0.79973
    2.0298       2.6979       4.5237       2.2220      0.89845
    1.8552      0.21694       10.023       1.7622       1.1697
    5.8336       1.1107      0.47644     0.21336E-01   0.35320
   0.28814       2.8213       1.5377      0.33605       2.5751
    1.0125       303.75       7.5465       2.4368      0.94384
    2.5330       3.8304       2.6023       431.29       2.8268
    3.9762       1.3417       2.8766       5.5998      0.90524
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    3.4765        2.4903        2.0888        0.56977       3.4180
   0.71554        2.0746        3.9968        0.50218       8.4635
    5.2308       0.10362        3.9113         269.47       1.5360
    272.43        2.4934       0.29119        4.0526       2.0077
    1.7574       0.22302        4.4652        4.2191       5.1901

 BUSE [1973] R-SQUARE = 0.7697       BUSE RAW-MOMENT R-SQUARE = 0.9986
 BUSE [1979] R-SQUARE =-2.6508
 VARIANCE OF THE ESTIMATE-SIGMA**2 =  0.63939
 STANDARD ERROR OF THE ESTIMATE-SIGMA =  0.79962
 SUM OF SQUARED ERRORS-SSE=   168.80
 MEAN OF DEPENDENT VARIABLE =   17.304
 LOG OF THE LIKELIHOOD FUNCTION = -408.729


 VARIABLE    ESTIMATED   STANDARD    T-RATIO        PARTIAL STANDARDIZED ELASTICITY
   NAME     COEFFICIENT    ERROR      264 DF   P-VALUE CORR. COEFFICIENT  AT MEANS
 LYRC         1.2558     0.4973E-01   25.25     0.000 0.841     0.2984     0.3224
 LYPRTNR2     1.5169      0.1640       9.249    0.000 0.495     0.3722     0.3836
 LDST2       -1.2047     0.8087E-01  -14.90     0.000-0.676    -0.1361    -0.1070
 LCMCNDMY -0.42805        0.1458      -2.937    0.004-0.178    -0.0339    -0.0049
 LPOPOTH  -0.40291        0.1557      -2.587    0.010-0.157    -0.0908    -0.0707
 CONSTANT   8.7264       0.3907       22.34     0.000 0.809     0.0000     0.5043

 |_pool lex lyrc lyprtnr1 ldst1 lbrdrdmy lpopoth/ncross=90 same
 POOLED CROSS-SECTION TIME-SERIES ESTIMATION
     90 CROSS-SECTIONS AND      3 TIME-PERIODS
     270 TOTAL OBSERVATIONS
 DEPENDENT VARIABLE = LEX
 ...WARNING..TOO FEW DEGREES OF FREEDOM, DN OPTION USED

 MODEL ASSUMPTIONS:
     SAME ESTIMATED RHO FOR EACH CROSS-SECTION
     DIAGONAL PHI MATRIX

 OLS COEFFICIENTS
    1.9424        2.6730       -2.6482       0.60211      -0.92441
    4.0400

 RHO VECTOR
   0.99560        1.4890       0.90731       0.99853      -0.17600
   0.52858       0.19212        1.0791       0.51449       0.36428
   0.80562       0.79321        1.2504       0.93648       0.75908
   0.63745        1.2008     0.27060E-01      1.0562       0.86703
  -0.45941        1.0430       0.50371        1.1850        1.1159
    1.4773        1.2124        1.3793        1.1741       0.57053
    1.0792      -0.69452       0.98590        1.4051      -0.26486
   0.20766        1.1200       0.16175       0.18604       0.28147
   0.45041       0.33917       0.79137     0.32711E-01     0.95160
 -0.12232E-01    0.48390        1.5333       0.72585       0.84871
   0.70591     -0.64840E-01     0.98342       0.98833       0.22356
    2.6924        1.5828        1.1513       0.46587        1.6978
    1.3944        1.1358        1.9261       0.31893        1.4906
    2.3258      -0.29183       0.32160        1.2350       0.41314
   0.32193        1.2627       0.45638       0.43497       0.95446
   0.73611        1.0214        1.3899    -0.35868E-01       1.3030
 -0.42958E-01  -0.62143E-01     0.95942        3.1606      -0.14679
    1.6595      -0.11366        1.3953       0.76713       0.85278

 SAME ESTIMATED RHO FOR ALL CROSS-SECTIONS =  0.22846

 VARIANCES (DIAGONAL OF PHI MATRIX)
   0.58642E-02   0.18677        1.7956        1.1137       0.20602
   0.39337       0.12016        4.1334        15.397       0.19089
    1.7441        4.1166        1.8840       0.52206        1.4762
    1.3035        2.5657        3.1552       0.98729        7.6635
   0.56749E-01    4.6710       0.73262        4.2099        5.7714
   0.49606E-01    3.6845        1.2680       0.56290        2.1025
    7.3804        2.9017        4.1307        4.1181        1.0086
    1.3133        4.2067        9.1888        1.4262       0.12118
    8.9922       0.80058       0.77792     0.27123E-01     0.30071
   0.24892        5.6648        1.9817        1.5520        1.7079
   0.97730        313.59        2.6132        2.4918       0.93486
   0.58145        3.2072        3.2212        432.08        2.4374
    5.5275        2.0944        2.6706        1.5139       0.82166
    3.0691        1.2810        1.5003        1.6127        2.8723
   0.86997        3.1809        2.0475       0.61849        6.9901
    4.5968       0.77962        5.3546        277.22       0.90444
    260.76       0.63703        3.8438        4.7838       0.91821
    2.0194     0.91347E-01      4.0281        1.5433        6.3334
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 BUSE [1973] R-SQUARE = 0.6878      BUSE RAW-MOMENT R-SQUARE = 0.9992
 BUSE [1979] R-SQUARE =-2.6670
 VARIANCE OF THE ESTIMATE-SIGMA**2 =  0.73533
 STANDARD ERROR OF THE ESTIMATE-SIGMA =  0.85752
 SUM OF SQUARED ERRORS-SSE=   194.13
 MEAN OF DEPENDENT VARIABLE =   17.304
 LOG OF THE LIKELIHOOD FUNCTION = -416.827


 VARIABLE   ESTIMATED  STANDARD   T-RATIO        PARTIAL STANDARDIZED ELASTICITY
   NAME     COEFFICIENT   ERROR     264 DF   P-VALUE CORR. COEFFICIENT  AT MEANS
 LYRC        1.3699     0.6730E-01   20.35     0.000 0.782     0.3256     0.3518
 LYPRTNR1    1.7664     0.1276       13.84     0.000 0.648     0.4198     0.4536
 LDST1      -1.7008     0.1322      -12.87     0.000-0.621    -0.1536    -0.1701
 LBRDRDMY   0.50294     0.1365       3.684     0.000 0.221     0.0428     0.0071
 LPOPOTH   -0.53020     0.1046      -5.068     0.000-0.298    -0.1194    -0.0930
 CONSTANT    8.2093     0.4399       18.66     0.000 0.754     0.0000     0.4744

 | pool lex lyrc lyprtnrl ldst2 lbrdrdmy lpopoth/ncross=90 same
 POOLED CROSS-SECTION TIME-SERIES ESTIMATION
     90 CROSS-SECTIONS AND      3 TIME-PERIODS
     270 TOTAL OBSERVATIONS
 DEPENDENT VARIABLE = LEX
 ...WARNING..TOO FEW DEGREES OF FREEDOM, DN OPTION USED

 MODEL ASSUMPTIONS:
     SAME ESTIMATED RHO FOR EACH CROSS-SECTION
     DIAGONAL PHI MATRIX

 OLS COEFFICIENTS
    1.6543       2.3504      -1.3399       1.0989     -0.84093
    3.8529

 RHO VECTOR
   0.38184       1.1793      0.91262      0.99587     -0.89482E-01
   0.80995      0.94132       1.0702      0.50400      0.65951E-01
   0.85544      0.81369       1.1645      0.84283      0.87306
   0.50547       1.1683      0.11413       1.0638      0.81509
  -0.77741       1.0299       1.1435       1.2804       1.1642
   0.66512       1.0881       2.1497       1.1159      0.47160
    1.0847     -0.68829      0.97922       1.1653     -0.27203
   0.42503       1.1530      0.20466      0.33809      0.80644
   0.39337      0.39947      0.83271      0.26103      0.69520
   0.26552      0.21631       1.5658     -0.46589      0.92107
   0.74092     -0.68180E-01  0.99156      0.97303      0.77874E-01
    4.8148       1.4166       1.1337      0.47970       1.5641
    1.4496       1.2156       1.8414      0.55111      0.72949
    1.8930     -0.41989E-01  0.48959      0.21690      0.46749
   0.23806       1.2470      0.68899      0.48248      0.96432
   0.76545     -0.38318       1.4028     -0.38580E-01   1.2957
  -0.21098E-01  0.12392      0.93578       3.3092      0.35296
    1.4605      0.82385       1.1988      0.90019      0.86423

 SAME ESTIMATED RHO FOR ALL CROSS-SECTIONS =  0.23781

 VARIANCES (DIAGONAL OF PHI MATRIX)
   0.11073E-01   1.1820       1.9748      0.37634      0.18549
    2.0416       1.6804       4.3239       15.020      0.13807
    3.0244       4.6978       4.1357      0.28744       3.3906
   0.62738       2.9695       3.4381       2.7472       5.2313
   0.65864E-01   1.3209      0.31148       1.5366       2.2145
   0.24778       2.8491      0.29668       1.3395       1.1276
    4.8362       2.7651       4.1382       2.9507       1.0813
    1.7472       1.6730       9.8593       1.7010       1.1415
    6.9521       1.0180      0.95383      0.22991E-01  0.12685
   0.39940       2.6689       2.0589      0.20190       4.0789
    1.0679       311.94       4.0633       2.4939      0.68060
   0.55212       4.7021       2.5062       441.82       2.9765
    3.4625      0.63902       1.9591       2.4025      0.42895
    3.8182       1.1503       1.4336      0.64937       2.7949
   0.64100       2.5196       4.1446      0.64659       9.3791
    4.8441     0.60775E-01    3.7631       277.76      0.66959
    266.65      0.67008       1.1005       4.0614       1.8876
    2.5868       1.0329       8.6552       3.1026       6.9420

 BUSE [1973] R-SQUARE = 0.7878      BUSE RAW-MOMENT R-SQUARE = 0.9989
 BUSE [1979] R-SQUARE =-3.1293
 VARIANCE OF THE ESTIMATE-SIGMA**2 =  0.78248
 STANDARD ERROR OF THE ESTIMATE-SIGMA =  0.88458
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 SUM OF SQUARED ERRORS-SSE=   206.58
 MEAN OF DEPENDENT VARIABLE =   17.304
 LOG OF THE LIKELIHOOD FUNCTION = -426.527


 VARIABLE   ESTIMATED  STANDARD   T-RATIO        PARTIAL STANDARDIZED ELASTICITY
   NAME    COEFFICIENT   ERROR     264 DF   P-VALUE CORR. COEFFICIENT  AT MEANS
 LYRC        1.3398    0.5330E-01   25.14     0.000 0.840     0.3184     0.3440
 LYPRTNR1    1.4562    0.1260       11.56     0.000 0.580     0.3461     0.3739
 LDST2     -0.95680    0.1063      -9.002     0.000-0.485    -0.1081    -0.0849
 LBRDRDMY    1.0085    0.1869       5.397     0.000 0.315     0.0858     0.0142
 LPOPOTH   -0.21636    0.1140      -1.898     0.059-0.116    -0.0487    -0.0380
 CONSTANT    7.1219    0.4063       17.53     0.000 0.733     0.0000     0.4116

 |_pool lex lyrc lyprtnr2 ldst1 lbrdrdmy lpopoth/ncross=90 same
 POOLED CROSS-SECTION TIME-SERIES ESTIMATION
     90 CROSS-SECTIONS AND      3 TIME-PERIODS
     270 TOTAL OBSERVATIONS
 DEPENDENT VARIABLE = LEX
 ...WARNING..TOO FEW DEGREES OF FREEDOM, DN OPTION USED

 MODEL ASSUMPTIONS:
     SAME ESTIMATED RHO FOR EACH CROSS-SECTION
     DIAGONAL PHI MATRIX

 OLS COEFFICIENTS
    1.9704       2.8676      -2.8051      0.54374      -1.1670
    4.2661

 RHO VECTOR
    1.1591      -0.62606      1.0720       1.0391     -0.43143E-02
   0.19346       0.64028      1.0823      0.41893       0.82813
   0.81086       0.73540      1.3103       1.1846       0.71554
   0.63479        1.1961    -0.24724E-01    1.0127       0.93834
   0.46075        1.0102      0.42324       1.2090        1.1258
   0.34605        1.5243       1.4270       1.1658       0.47301
    1.0836      -0.68361      0.98463       1.4506      -0.27093
   0.11000E-01    1.1369      0.21376      -0.20688       0.42616
   0.44592       0.42142      0.71353       1.6781       -1.1163
   0.21456       0.47933       1.5133      0.63693       0.79602
   0.62387      -0.82482E-01  0.98070      0.95838       0.16344
    3.8051        1.6579       1.2007      0.43810        1.7215
    1.3266        1.1292       1.8834      0.12734        1.4773
    2.8022      -0.21570      0.39888       1.3084       0.27443
   0.23258        1.3404      0.26284      0.32510       0.94684
   0.63310        1.0486       1.4492     -0.26820E-01    1.2981
  -0.36934E-01  -0.34414      0.98094       3.1986      -0.12755
    1.9496      0.58657E-01    1.5606      0.42529       0.83692

 SAME ESTIMATED RHO FOR ALL CROSS-SECTIONS =  0.21494

 VARIANCES (DIAGONAL OF PHI MATRIX)
   0.11154      0.53452E-01    4.2327      0.93563       0.20054
   0.23169      0.24575        5.3891       11.941       0.27924
    1.3775       3.3027        1.3601       2.3132        1.1527
   0.97324       2.9966        3.2232      0.54432        12.883
  0.90562E-01    5.6992       0.63989       5.6227        5.0854
  0.64033E-01    6.9444        1.0466      0.76091        1.7338
    6.4489       2.6073        3.5982       4.5599       0.98833
    1.2851       3.4743        10.052       1.8689       0.18699
    8.3666      0.96603       0.48617     0.80721E-01    0.25112
   0.26641       5.1331        2.2492       1.2001        1.1643
   0.54224       302.63        2.2985       3.1558       0.88794
   0.98501       2.6535        2.4788       421.25        2.2147
    6.6442       2.0031        3.7759       1.5157        1.0689
    2.5882       1.6372        1.7144       1.2887        2.8531
   0.82252       2.6218        1.8996      0.54547        6.0391
    4.3455       1.1280        4.7686       275.10        1.1688
    263.73      0.65381        4.5385       4.3819        1.1420
    1.5198     0.71833E-01     2.9516       1.2532        5.8794

BUSE [1973] R-SQUARE = 0.6863      BUSE RAW-MOMENT R-SQUARE = 0.9985
BUSE [1979] R-SQUARE =-2.3507
VARIANCE OF THE ESTIMATE-SIGMA**2 =  0.65838
STANDARD ERROR OF THE ESTIMATE-SIGMA =  0.81141
SUM OF SQUARED ERRORS-SSE=   173.81
MEAN OF DEPENDENT VARIABLE =   17.304
LOG OF THE LIKELIHOOD FUNCTION = -407.873
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 VARIABLE    ESTIMATED   STANDARD    T-RATIO         PARTIAL STANDARDIZED ELASTICITY
   NAME     COEFFICIENT    ERROR      264 DF    P-VALUE CORR. COEFFICIENT  AT MEANS
 LYRC         1.2776     0.6878E-01   18.58     0.000 0.753     0.3036     0.3281
 LYPRTNR2     1.7590     0.1114       15.79     0.000 0.697     0.4316     0.4448
 LDST1       -1.5693     0.1482      -10.59     0.000-0.546    -0.1417    -0.1570
 LBRDRDMY    0.47224     0.1278       3.696     0.000 0.222     0.0402     0.0067
 LPOPOTH    -0.61648     0.9866E-01  -6.249     0.000-0.359    -0.1389    -0.1082
 CONSTANT    8.8286      0.4088      21.59      0.000 0.799     0.0000     0.5102

|_pool lex lyrc lyprtnr2 ldst2 lbrdrdmy lpopoth/ncross=90 same
POOLED CROSS-SECTION TIME-SERIES ESTIMATION
    90 CROSS-SECTIONS AND      3 TIME-PERIODS
    270 TOTAL OBSERVATIONS
DEPENDENT VARIABLE = LEX
...WARNING..TOO FEW DEGREES OF FREEDOM, DN OPTION USED

MODEL ASSUMPTIONS:
    SAME ESTIMATED RHO FOR EACH CROSS-SECTION
    DIAGONAL PHI MATRIX

OLS COEFFICIENTS
   1.6772       2.6493      -1.5453      0.97536      -1.1861
   3.9955

RHO VECTOR
   1.1892       1.2435       1.0589       1.0234      0.48703E-01
  0.72676      0.95720       1.0725      0.41486      0.77694
  0.86895      0.76491       1.1736       1.2040      0.86639
  0.44968       1.1706     0.23408E-01    1.0623      0.90066
  0.26400      0.98230       1.2454       1.3612       1.1941
  0.79414       1.5209       2.6957       1.1204      0.31441
   1.0907     -0.54979       0.97694      1.2652     -0.25630
  0.34325       1.2078      0.26418     0.26271E-02   0.82805
  0.38526      0.50356      0.79292       1.4375      0.14553
  0.23473      0.16752       1.5305       4.3228      0.91035
  0.65882    -0.85244E-01    0.99011      0.95367     0.20928E-01
   3.1555       1.4468       1.1837      0.45413       1.5549
   1.3670       1.1977       1.8894      0.38780      0.81112
   2.1021    -0.34678E-01    0.50161      -2.5288      0.30721
  0.16692       1.3422      0.53529      0.37870      0.99000
  0.64359     -0.45057       1.4710    -0.29412E-01    1.2863
-0.16853E-01  -0.11105      0.98654       3.2664      0.13487
   1.6303      0.67789       1.2646      0.66677      0.85200

SAME ESTIMATED RHO FOR ALL CROSS-SECTIONS =  0.22436

VARIANCES (DIAGONAL OF PHI MATRIX)
  0.76441E-01  0.65287       4.2078      0.33248      0.17105
   1.6675       2.4857       5.7288       11.978      0.21408
   2.8484       4.1078       3.7939       1.6618       3.1591
  0.40515       3.4221       3.3549       2.1398       8.7894
 0.79880E-01    1.5642      0.52284       2.0197       1.6378
  0.56515       5.2818      0.17861       1.8074      0.94258
   3.7976       2.5957       3.6322       3.0608       1.0569
   1.6965       1.0143       10.963       1.6625       1.5761
   6.4782       1.3203      0.70211      0.10844      0.38339
  0.35447       2.2602       2.3077      0.39764       3.4526
  0.59980       301.82       4.2165       3.1464      0.68721
   1.0584       4.2911       1.8122       431.11       2.9672
   4.3224      0.56405       2.9092       2.7475      0.55653
   3.5128       1.6576       1.6514      0.54632       3.0424
  0.68482       2.1874       4.1638      0.62283       8.7804
   4.9495    0.62283E-01     3.5359       273.20      0.87988
   269.59      0.85640       1.1726       3.8922       1.9440
   2.1382      0.75145       7.0659       2.8659       6.5367

BUSE [1973] R-SQUARE = 0.7623       BUSE RAW-MOMENT R-SQUARE = 0.9982
BUSE [1979] R-SQUARE =-2.7866
VARIANCE OF THE ESTIMATE-SIGMA**2 =  0.64835
STANDARD ERROR OF THE ESTIMATE-SIGMA =  0.80520
SUM OF SQUARED ERRORS-SSE=   171.16
MEAN OF DEPENDENT VARIABLE =   17.304
LOG OF THE LIKELIHOOD FUNCTION = -414.025


VARIABLE    ESTIMATED   STANDARD    T-RATIO         PARTIAL STANDARDIZED ELASTICITY
  NAME     COEFFICIENT    ERROR      264 DF    P-VALUE CORR. COEFFICIENT  AT MEANS
LYRC         1.2823     0.5027E-01   25.51     0.000 0.843     0.3047     0.3293
LYPRTNR2     1.2712     0.1313       9.681     0.000 0.512     0.3119     0.3215
LDST2       -0.86750    0.1116      -7.776     0.000-0.432    -0.0980    -0.0770
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LBRDRDMY   0.69356      0.1840        3.769      0.000 0.226      0.0590      0.0098
LPOPOTH   -0.20908      0.1280       -1.633      0.104-0.100     -0.0471     -0.0367
CONSTANT    8.3007      0.4095        20.27      0.000 0.780      0.0000      0.4797
|_stop
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