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The Transaction Sector in the Bulgarian Economy*

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Abstract

The paper explores the dynamics of the transaction sector in the Bulgaria economy. The size of the transaction sector is regarded as an indicator for measuring the level of development of market institutions and the intensity of the division of labour within the economy. The calculations show an increase in the transaction sector in the country within the period 1997 to 2003 from about 37% to more than 52% percent of GDP. This is below the size reported for other industrialized and transition economies. The calculations indicate that the Bulgarian economy is in a dynamic process of catching up with Western and other transition countries. The reason for the slow transition process towards market economy in Bulgaria is to some extent due to a slow implementation and establishment of market institutions in the economy.

Keywords: Bulgaria, transaction sector, measuring transaction costs, division of labour

JEL Classifications: P27, O11, O47, O52, H6

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INTRODUCTION

The concept of transaction costs is one of the most powerful explanations of economic phenomena such as the existence of enterprises or the failure of markets. Despite the importance of transaction costs, approaches to measuring them (Wang, 2003) are still poorly developed (see Benham and Benham, 2000). In particular, few studies aim at measuring the transaction costs of whole economies. Wallis and North (1986) create the concept of the transaction sector for estimating the transaction costs in an economy. They show that the transaction sector expanded in the US economy within a period of one hundred years. The rise of the transaction sector, which reflects an increase in transaction costs over time, can be explained by an increase in the specialization and diversification of labour in an economy.

The method of Wallis and North has also been used for calculating the transaction sector of Australia, New Zealand and some European countries. These follow-up studies on industrialized countries consider different time spans. Despite definitional changes and despite the application in different countries there are similar outcomes: the transaction sector—as a percentage of GDP—rises in time varying between 45% and over 60% of GDP in industrialized countries for the last decades of the 20th century. These figures imply that roughly half of the GDP in industrialized countries is required to make markets and hierarchies work. Certainly, this general note does not mean that the non-transaction part of GDP shrinks or stagnates according to absolute figures. Yet, this begs the question whether it is efficient for an economy when about half of its GDP is related to the transaction sector.

We know that in successful economies the transaction sector has grown to a considerable size over the years. Therefore, we assume that the size of the transaction sector is positively correlated with the division of labour in a society: the larger the percentage of GDP related to activities and industries in the transaction sector, the more intensive the division of labour is. Furthermore, studies in developed countries show that the transaction sector accounts for more than 60% of GDP. Thus, the size of the transaction sector can be assumed to be related to economic development in general and can be considered an indicator for measuring the level of development of market institutions and the intensity of the division of labour within the economy in particular.

Our leading hypothesis is that the transaction sector of a former socialist economy rises in the transitional period due to the emergence of and the increase in market transactions, the differentiation of the division of labour within a country as well as the increasing international economic integration. Thus, the rise of the transaction sector *indicates* institutional as well as structural changes in an economy. We calculated the transaction sector

in a transitional economy in order to elucidate these changes. To reach our objectives, we used the study of Wallis and North (1986) as a starting point and focused on Bulgaria between 1997 and 2003. We came to the conclusion that this sector in transition countries is lagging behind as compared to its size in industrialized Western economies but that a catching-up process has begun in Eastern Europe.

The paper is structured as follows. Section two provides a survey of the concept of the transaction sector. In section three we discuss relevant points from the literature. In section four we draw attention to the Bulgarian economy between 1997 and 2003. In section five we present our descriptive results which are analysed in section six by using indicators for government performance. Finally, a conclusion follows.

CONCEPTUALIZING THE TRANSACTION SECTOR

Wallis and North (1986, p. 96) strive to reach ambitious goals in their paper, i.e., to develop a concept of transaction costs which encompasses heterogeneous definitions, and also to introduce the concept of the transaction sector in the national accounting system. Once such a sector is introduced, a reflection on the development processes of economies from a transaction costs approach becomes possible. The concept of the transaction sector is an auxiliary construct for measuring part of the transaction costs in an economy. The basic idea is as follows: transaction costs are defined as the costs related to the realization of exchange in an economy (Wallis and North, 1986, p. 97). All economic activities and actors related to them are divided in two categories: those that are associated with exchange constitute the 'transaction sector' and the ones that are not, constitute the 'transformation sector'. In consequence, all economic activities and also all actors in an economy belong to one of the two sectors. Finally, the ratio of both sectors in the GDP is estimated.[1]

While this idea is persuasively simple, its application is tricky. Developing specific criteria for activities and actors that are related to the transaction sector is a very disputable endeavour. Wallis and North do not, in fact, measure the transaction costs of an economy, but what they call transaction services (1986, p. 99).[2] Transaction services are activities that result from using markets, i.e., the costs recorded in official statistics. Transaction costs of activities that are not recorded in official statistics, e.g., the ones on black markets or in the informal economy, are excluded from their approach. In other words, the transaction sector contains

[1] For an interpretation and relation between transaction sector and transaction costs compare North and Wallis (1994) and Löchel (1995).

[2] For an earlier note on transaction services see North and Wallis (1982).

the costs related to initiating and performing exchange of services and goods on markets and also those that are necessary to protect private property rights. In detail, the transaction sector includes four categories.

(1) *Transaction industries in the private sector:* these are industries that Wallis and North associate directly with transaction activities, e.g., trade, financial intermediaries, insurance, real estate activities.

(2) *Transaction costs within firms in the non-transaction industries:* transaction activities also occur within hierarchies (private firms) in the non-transaction industries. An example is the control of workers by managers in a mining enterprise. In order to include these activities in the transaction sector, Wallis and North identify specific occupations (called 'type I professions'). These occupations are, for instance, managers, foremen, accountants, guards, etc.

(3) *Transaction services in the public sector:* the services provided by the government so that exchange can be carried out, are included in the transaction sector. Especially the costs related to formal institutions that guarantee the enforcement of contracts and secure property rights are to be mentioned, e.g., the national defence or the police.

(4) *Transaction costs in the non-transaction services:* Transaction activities occur also within the public sector in the non-transaction services, for instance, education, health service, or sanitation. Here, again, specific activities are identified through occupations and added to the transaction sector. Table 1 summarizes the four categories.

Tab. 1: Transaction and Non-Transaction Industries and Services

Private Sector		**Public Sector**	
(1) Transaction Industries	**(2) Non-Transaction Industries**	**(3) Transaction Services**	**(4) Non-Transaction Services**
Finance	Agriculture	Public administration	Education
Insurance	Construction	Public order	Health
Real estate	Mining	Defence	Rail/Air transport
Wholesale trade	Manufacturing	Postal services	Public utilities
Retail trade	Transport/Storage		Social welfare
	Services		Communications

Source: Originally by Dollery and Leong (199, p. 209), here adapted.

The above categorisation is rather disputable and Wallis and North (1986) themselves elaborate on its problems. Nevertheless, it is the first attempt to develop an applicable pattern for estimating the size of the transaction sector. The result of their study is that the transaction

sector of the US economy increased from 26% in 1870 to more than 54% in 1970. In the next section we sum up the essential points of criticism on the approach and provide a short review of the modification of this approach as used in follow-up studies.

REVIEW OF THE LITERATURE

In his comment Davis (1986) picks holes in the arguments of Wallis and North. He does not only criticise the interpretation of the results, but also outlines several problems related to the proposed measuring concept. His criticism can be summarized as follows. The first problem is that of classification. The classification of industries in transaction and non-transaction industries is controversial as well as the classification of public services. Moreover, the sorting of occupations within the non-transaction industries is questionable, too. Davis (1986, p. 152) notes that the results of the study are primarily dependent on the classification, and he states that slight redefinitions may induce considerable changes in the results. The second problem is the one of statistical data compilation. The data that Wallis and North use for their estimations is collected for quite different purposes, major flaws can thus occur when using the data for measuring the transaction sector.[3] The third problem refers to the assumption that the activities of an individual (according to his/her occupation) can, in general, be either subsumed under transaction activities or under non-transaction activities. However, in reality, individuals in all occupations perform both types of activities, e.g., a farmer is a producer and a manager at the same time (Davis, 1986, pp. 152-155). A fourth problem, mentioned by Wallis and North (1986, p. 99) themselves, is that only the costs of market transactions are mirrored in the transaction sector. Transaction costs of activities that are not recorded in official statistics do not appear in the data.

In our view, the first of the above mentioned problems is basically one of definition. Classifications can easily be criticised, however, it takes time to develop better concepts if the goal is to construct a transaction sector in the system of national accounting. Existing classifications used by official statistics cannot be ignored. Nevertheless, the pattern developed for the US economy needs adjustment when employed for measuring the transaction sector in other economies. Since classification is merely a problem of definitions, we do not consider it impossible to solve when referred to different national contexts. The second and the third problem can be solved by collaboration between scientific institutions

[3] "While that definition may be intellectually adequate, it is not operationally so, and it can serve as no more than a rough guide for an attempt to actually disaggregate and recombine a myriad of statistics collected with a variety of purposes in mind." (Davis, 1986, p. 152).

and statistical offices. Data should be collected with *the purpose* to measure the transaction sector.[4] The fourth problem, the measuring of the transaction costs of not recorded activities, is beyond the scope of this paper.

Notwithstanding, we think that the transaction costs within the informal sector (cf. De Soto, 1987; Stone, Levy and Paredes, 1996; and Gancheva, 2000 for Bulgaria) should be considered in the future especially if the objective is to measure the transaction costs of a national economy. Bearing in mind that the shadow economy accounted for more than 32% of GDP in the mid-1990s in Bulgaria (cf. Schneider and Enste, 2002, p. 34; also Johnson, Kaufmann and Shleifer, 1997; Kyle et al., 2001), it is indispensable to include the related transaction costs into the measuring system in future analyses.

It may well be Davis's critique to explain why the original approach of Wallis and North was not replicated for some time.[5] Dollery and Leong (1998) are the first who apply the method to another country. They show a similar pattern of growth of the transaction sector for the Australian economy for the period 1911 to 1991 as observed before for the US. They adapted the concept of Wallis and North to the system of national accounting making, in this way, its application easier. Hazledine (2001) replicates the method in order to investigate the transaction sector of New Zealand between 1956 and 1998. In two further conference papers by Ghertman (1998) and Dagnino-Pastore and Farina (1999) the original idea is taken up. First, Ghertman (1998) introduces a comparative approach by comparing the transaction sector of four developed countries for the period 1960 to 1990 and points out the difficulties of cross-national comparisons. Second, Dagnino-Pastore and Farina (1999) use the concept for the emerging economy of Argentina. The transaction sector increased there from 25% of GDP in the 1930 to about 35% in the 1990s, thus showing a level considerably below the one in developed economies.

The original interpretation on the growth of the transaction sector provided by Wallis and North (1986) arouses a wave of criticism. Wallis and North claim that the increase in the

[4] For the Bulgarian economy the first attempt has been made to develop concepts for measuring transaction costs on the micro level, i.e., within organisations, and to aggregate data for the whole economy (see Chobanov, Egbert and Giuredzheklieva 2006; Chobanov, Egbert and Sedlarski 2007). The concept aims at measuring the percentage of transaction and non-transaction *activities* in all occupations. In consequence, for each type of occupation, the percentage of working time spent on *activities* in the two sectors can be estimated. Similarly, in their analysis of selected West German industries Reichhardt (1995), Bischoff and Bohnet (2000) and Bischoff (2002) use data from official statistics on workers' activities in order to classify transaction and transformation *activities* in each industry. While their study is a noteworthy attempt to develop an alternative concept of measuring the transaction sector, it is not easily applicable to other countries. Another approach focusing on transaction *tasks* is suggested by van Dalen and van Vuuren (2005) with an objective to estimate the transaction sector of the Dutch economy.

[5] For other critical comments compare Parker (1988, pp. 432-433) and Löchel (1995). For a defence of the original position see Wallis and North (1988).

transaction sector (as a concept for measuring transaction costs) slows down economic growth. This simplistic statement is discussed by the authors themselves (North and Wallis, 1994). What must be considered is whether productivity increases, not only in the transaction sector but also in the transformation (production) sector of the economy. The issue is analysed for some industries of the German economy (Löchel 1995; Reichhardt 1995; Bischoff and Bohnet 2000; Bischoff 2002). For instance, Löchel (1995) argues that the rise of the transaction sector reflects a shift of employment in the primary and secondary sector to employment in the tertiary sector. According to his assumptions, the transaction sector of an economy is only part of the tertiary sector and it is exactly that part which dynamically grows. In other words, structural change is most noticeable in those industries which are typically considered to belong to the transaction sector and it is exactly in these industries where productivity is the highest (cf. Bischoff 2002).

While the aforementioned studies focus on countries with a tradition in market economy, it is a great step forward to apply the approach to a transitional country. It is Eissrich (2001) who first does that, yet he focuses on a shorter period of time. He finds out that the transaction sector considerably rose for several countries between 1995 and 1997.[6] Sulejewicz and Graca (2005) go further by analysing the transaction sector of the Polish economy between 1996 and 2002. Similar to Eissrich (2001), they focus on a shorter time span within the transition period of the Polish economy. One of their major contributions is the adaptation of the classification used by Dollery and Leong (1998) to the NACE standard classification, thus allowing a replication of their study with identical classifications of industries and activities in other EU countries.[7] The result of their study shows a drastic increase in the transaction sector (as a percentage of GDP) in a comparatively short period of time. In the next chapter we follow the concept developed by Wallis and North (1986), applied by Dollery and Leong (1998) and adapted by Sulejewicz and Graca (2005) in order to analyse a period of seven years of the Bulgarian economy.

THE TRANSACTION SECTOR IN THE BULGARIAN ECONOMY (1997 – 2003)

In contrast to the US, Australian, New Zealand or Dutch economy, the Bulgarian economy experienced dramatic changes within the last century. The transformations in the economy are

[6] Eissrich (2001) chooses definitions of the transaction industries different from those of Wallis and North (1986), that is why the results are not fully comparable.

[7] NACE: Nomenclature statistique des Activités économiques dans la Communauté Européenne.

the consequence of radical changes in the political sphere and go hand in hand with the territorial amendment in the first half of the 20th century, i.e., after the Balkan Wars 1912/1913, the First and the Second World Wars. The last two fundamental transition processes started in 1946 and 1989, respectively. After Bulgaria joined the Axis Powers in the Second World War, the USSR declared war on Bulgaria in 1944 and the red army occupied the country. Since the Western Allies made no effort to oppose the USSR in exercising power in Bulgaria, in 1946 the country became a People's Republic. In the ensuing modernization process the country altered from a rather agrarian country into an industrialised one. When Bulgaria turned to democracy and market economy in 1989, the 45-year socialist period left an industrialized country, with a high degree of urbanisation and equipped with good human capital. The peaceful revolution of November 1989 induced political changes and consequently a turn to a capitalist system. In the following years the rather erratic economic policy, partly due to several new governments within a few years—failed to stabilize the economy. The repercussions were high inflation rates, a slowly developing and instable private banking sector, a considerable rise of the shadow economy, high unemployment rates, slow privatization, to mention but a few.[8]

Due to the dramatic changes in the political and economic sphere in the last century, which are also reflected in the measuring methods of official statistics, we currently see no possibility to measure the transaction sector in a longitudinal study.[9] The data that we use include the years from 1997 onwards. Two reasons made us decide to start with 1997. First, a currency board was implemented in mid-1997, so that the monetary policy of the country became predictable and led, finally, to macroeconomic stabilization indicated by moderate inflation rates and economic growth. Second, the official statistics was then adjusted to EU classifications. The type of classification before the adjustment makes it nearly impossible for us to use official statistics from 1990 to 1996.[10] For our purpose we closely follow the classifications of the transaction sector developed by Sulejewicz and Graca (2005), which is based on the NACE classification. However, several specific adaptations are necessary for the Bulgarian context and they are outlined in the appendix.

[8] For an overview of the Bulgarian reforms in the first half of the 1990s compare the articles in Jones and Miller (1997).

[9] To our knowledge, there exists no study measuring the transaction sector of a socialist economy.

[10] Similar problems are reported by Eissrich (2001) for the early 1990s and also by Sulejewicz and Graca (2005) for Poland.

THE RESULTS

In what follows we offer an overview of the results. First, we present the cumulative figures (as a percentage of GDP) of the Bulgarian transaction sector and after that we look at the four categories separately. We then interpret the results referring to developments in the Bulgarian economy. As expected one can find a considerable rise of the transaction sector between 1997 and 2003, i.e., from below 40% to about 52% of GDP (see tab. 2). The aggregated transaction sector shows a dynamic increase from 1997 to 1999, while in the years to follow this dynamic process slows down and the sector seems to level off at slightly above 50%.

Tab. 2: Transaction Sector of the Bulgarian Economy 1997–2003

	1997	**1998**	**1999**	**2000**	**2001**	**2002**	**2003**
Total Private Sector	**30.01**	**31.29**	**35.12**	**37.72**	**38.81**	**39.61**	**38.80**
(1) Transaction Industries	28.8	29.6	33.2	35.8	36.4	37.1	36.1
(2) Non-transaction Industries	1.21	1.69	1.92	2.32	2.41	2.51	2.70
Total Public Sector	**7.43**	**10.69**	**12.4**	**12.94**	**12.90**	**13.87**	**13.89**
(3) Transaction Services	3.72	6.37	7.91	8.67	8.82	9.71	9.60
(4) Non-transaction Services	3.71	4.32	4.49	4.27	4.08	4.16	4.29
Total Private and Public Sector	**37.53**	**41.98**	**47.52**	**50.66**	**51.71**	**53.48**	**52.69**

Source: authors' calculations.

(1) Transaction industries in the private sector

Concerning the transaction industries in the private sector, we could observe a considerable increase between 1997 and 2003 (see tab. 3). The highest increase occurs between 1998 and 2000. The distinct rise of all three types of industries (financial intermediaries, trade and repairs, real estate) can be explained by the liberalisation of the Bulgarian economy. Trade and repairs rose because in this time span large foreign owned consumer stores and supermarkets started to invest in the Bulgarian market. The essential aspect which leads to the growth of trade can be seen in the fixed exchange rate of the local currency to the German Mark and, consequently, to the Euro. The introduction of the currency board stabilizes the economy fundamentally and has a positive impact on trade and the inflow of FDI, the latter rising sharply in 1997 as compared to 1996. It is also the time when financial intermediaries (mainly commercial foreign banks and insurance companies) became more active in Bulgaria after a great number of Bulgarian banks in the mid-1990s went bankrupt.

Tab. 3: Transaction Industries in the Private Sector

	1997	1998	1999	2000	2001	2002	2003
Real Estate	15.4	16.8	18.1	17.5	18.0	18.2	17.1
Financial Intermediaries	1.8	1.7	02.1	3.1	3.3	4.1	4.5
Trade and Repairs	11.6	11.1	13.1	15.2	15.2	14.8	14.5
Total	**28.8**	**29.6**	**33.2**	**35.8**	**36.4**	**37.1**	**36.1**

Source: authors' calculation based on National Statistical Institute (NSI) data: Statistical Yearbook 1998-2004.

(2) Non-transaction industries in the private sector

The transaction costs within firms in the non-transaction industries rose according to the classification of occupations which we chose to consider as belonging to the transaction sector (see appendix). In sum, the increase is from 1.2% of GDP in 1997 to 3.1% in 2003 (see tab. 4). Except in agriculture, hunting and forestry a remarkable upsurge (in percent) is to be found in the other industries. This is largely due to the increased number of occupations which we classify as belonging to the transaction sector (for instance managers, accountants, etc.) resulting from the privatization of most enterprises in these industries.

Tab. 4: Non-transaction Industries in the Private Sector

	1997	1998	1999	2000	2001	2002	2003	2004
Agriculture, Hunting and Forestry	0.15	0.20	0.19	0.18	0.17	0.16	0.15	0.14
Construction	0.08	0.13	0.17	0.19	0.20	0.20	0.23	0.24
Mining and Quarrying	0.01	0.01	0.02	0.05	0.05	0.06	0.06	0.07
Manufacturing (industrial)	0.77	1.03	1.13	1.34	1.37	1.42	1.47	1.55
Transport, Storage, Communication	0.07	0.11	0.14	0.22	0.25	0.28	0.33	0.60
Hotels and Restaurants	0.05	0.10	0.13	0.16	0.18	0.18	0.23	0.25
Services: Municipal, Social, Other	0.08	0.11	0.14	0.18	0.19	0.21	0.23	0.25
Total	**1.21**	**1.69**	**1.92**	**2.32**	**2.41**	**2.51**	**2.70**	**3.10**

Source: authors' calculations based on National Statistical Institute (NSI) data: Statistical Yearbook 1998-2004.

(3) Transaction services in the public sector

The percentage of transaction services in the public sector also rose (see tab. 5) from 3.7% in 1997 to 9.6% in 2003. The expenses of the state administration considerably increased between 1997 and 1999, remaining almost constant after that. This can be explained by the efforts the government spent on improving state administration in the transition period. These efforts include the establishing of a new ministry (Ministry of State Administration) which

aims at improving the efficiency of public administration during the transition period. The expenses for the national defence also increase and can be explained by the Bulgarian preparation for joining NATO (in 2004). The delay in reforming the juridical system is reflected in the figures: in comparison with the state administration, defence and public security where reforms started in the mid-1990s, the juridical system was not reformed. As a matter of fact, the country is notoriously known for slow reforms of the juridical system which even hampered EU accession and which may well have contributed to the increased corruption and criminality.

Tab. 5: Transaction Services in the Public Sector

	1997	1998	1999	2000	2001	2002	2003
State Administration,	1.14	2.52	3.52	3.52	3.56	3.55	3.43
Justice System: Attorneys, Prosecutors, etc.	0.16	0.29	0.30	0.39	0.41	0.54	0.54
National Defence	1.70	2.17	2.46	2.82	2.74	3.09	3.09
Public Security and Fire Protection	0.73	1.40	1.63	1.95	2.11	2.52	2.54
Total	**3.72**	**6.37**	**7.91**	**8.67**	**8.82**	**9.71**	**9.60**

Source: authors' calculations based on data from the Bulgarian Ministry of Finance.

(4) Non-transaction services in the public sector

The transaction costs within non-transaction services remained more or less stable (tab. 6) according to the classification of occupations which we use. Concerning 'transport, storage and communication' as well as 'services', one can assume that the decrease in transaction costs in these categories is a consequence of the privatization and a shift of occupations from the public into the private sector (see the increase for these categories in tab. 4).

Tab. 6: Non-transaction Services in the Public Sector

	1997	1998	1999	2000	2001	2002	2003	2004
Education	1.32	1.60	1.72	1.79	1.65	1.73	1.76	1.80
Health and Social Security	0.92	1.13	1.14	1.04	0.99	1.06	1.17	1.25
Transport, Storage and Communication	1.03	1.02	1.01	0.86	0.86	0.82	0.80	0.56
Services: Municipal, Social, Personal, Others	0.17	0.21	0.22	0.21	0.21	0.20	0.20	0.22
Gas, Electricity, Water Supply	0.27	0.36	0.40	0.37	0.37	0.35	0.36	0.36
Total	**3.71**	**4.32**	**4.49**	**4.27**	**4.08**	**4.16**	**4.29**	**4.19**

Source: authors' calculations based on National Statistical Institute (NSI) data: Statistical Yearbook 1998-2004.

Since in this paper we consider the changes in the transaction sector within seven years only, we think it is not justifiable to compare our results with longitudinal studies as those of Wallis and North (1986) or Dollery and Leong (1998). Nevertheless, a transaction sector of more than 50% of GDP as it is in Bulgaria in 2002 and 2003 seems to be a typical result for an East European post-socialist country during the transition period. The transaction sector has yet not reached a level typical for countries in Western Europe like France (63% in 1990), USA (62% in 1990) or Japan (56% in 1990) (cf. Ghertman 1998). However, since we follow Sulejewicz and Graca (2005), similarities between our study of the Bulgarian economy and their study on the Polish economy are to be noticed (see tab. 7).

Tab. 7: The Transaction Sector in Transitional Economies

Country	1996	1997	1998	1999	2000	2001	2002	2003
Bulgaria		37.5	41.9	47.5	50.6	51.7	53.4	52.6
Poland*	49.6	51.9	57.4	61.5	63.4	64.6	67.2	

* Sulejewicz and Graca (2005).

The transaction sector of the Bulgarian economy is smaller and started to grow later than that of the Polish economy. This result can be explained by the delay of economic reforms in Bulgaria. Reforms were implemented in Bulgaria much later than in Poland and in consequence, the market economy started developing several years later. We may speak of a time lag if we compare the years within which both economies reach the same size of the transaction sector. This time lag is approximately about 4 to 5 years and well reflects the difference between the shock therapy in Poland and the gradualist reforms in Bulgaria. In the next section we show the correlation between the development of the transaction sector and governance performance.

THE SIZE OF THE TRANSACTION SECTOR AND GOVERNANCE PERFORMANCE

We assume that the institution of the state plays is an important role in transitional processes. The state provides institutions which facilitate the division of labour, secure property rights and foster market exchange. Assumingly an increase in the transaction sector, which echoes

an increase in transaction costs as a percentage of GDP in our study, is reflected by a growing efficiency of state institutions. In the following we consider governance performance as a proxy for the quality of state institutions. Governance performance can be monitored by governance indicators (cf. Kaufmann, Kraay and Mastruzzi, 2006 and the references in their paper). In this section we use a regression analysis to test how the growth of the transaction sector is related to governance indicators. We follow Kaufmann, Kraay and Mastruzzi (2006) who use six aggregated indicators of governance performance: voice and accountability (VA), political stability (PS), government effectiveness (GE), regulatory quality (RQ), rule of law (RL), and control of corruption (CC). Table 8 shows the values of these governance indicators for Bulgaria (1996-2005).

Tab. 8 Values of Governance Indicators for Bulgaria

		Indicators					
Year		**VA**	**PS**	**GE**	**RQ**	**RL**	**CC**
1996		0,11	-0,08	-0,64	-0,02	-0,14	-0,71
1997	*	0,27	0,14	-0,83	0,18	-0,22	-0,63
1998		0.43	0,36	-1,03	0,39	-0,31	-0,56
1999	*	0,48	0,22	-0,57	0,27	-0,26	-0,38
2000		0,54	0,09	-0,12	0,15	-0,22	-0,20
2001	*	0,52	0,25	-0,06	0,37	-0,14	-0,19
2002		0,51	0,41	0,00	0,59	-0,07	-0,19
2003		0,50	0,36	-0,07	0,58	-0,06	-0,09
2004		0,57	0,06	0,00	0,64	-0,08	-0,03
2005		0,59	0,16	0,23	0,63	-0,19	-0,05

* Mean smoothed values

Source: Kaufmann, Kraay and Mastruzzi (2006).

We test how much a rise of the transaction sector (TS) changes governance performance (GP). We expect that the former leads to an improvement of the latter. For measuring this, we use the elasticity of governance performance with respect to the transaction sector $\varepsilon_{GP(TS)}$ defined by

- $$\varepsilon_{GP(TC)} = \frac{\frac{dGP}{GP}}{\frac{dTS}{TS}} \cong \frac{\frac{GP_1 - GP_0}{GP_0}}{\frac{TS_1 - TS_0}{TS_0}},$$

with an increase in the transaction sector from an initial level of TS_0 to a level of TS_1, and a change of governance performance from the corresponding initial level GP_0 to the

corresponding level of GP_1. For calculating $\varepsilon_{GP(TS)}$, we apply the following log-linear regression for the years 1997 to 2003:

- $\log GP_i = \alpha + \beta \log TS_i + u_i$.

One see that the elasticity of governance performance is equal to β.

- $\varepsilon_{GP(TS)} = \beta$.

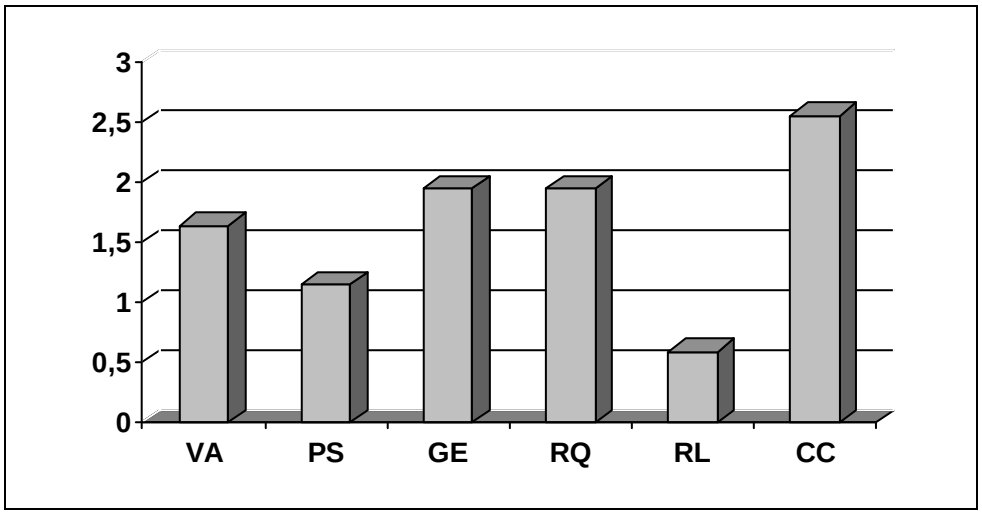
In order to consider the impact of the transaction sector (TS) on each of the six governance indicators, we construct regressions and calculate the elasticity of each governance indicator with respect to the transaction sector. The results are given in table 9 and figure 1.

Tab. 9: Elasticity of Governance Indicators

	Regression	**Substituted Coefficients**	**Elasticity**
VA	$\log(VA_i) = \alpha + \varepsilon_{VA(TC)} \log TC_i + u_i$	LOG(VA) = -7.135206531 + 1.642967644*LOG(TC)	$\varepsilon_{VA(TC)} = 1.64$
PS	$\log(PS_i) = \alpha + \varepsilon_{PS(TC)} \log TC_i + u_i$	LOG(PS) = -5.905852968 + 1.151401096*LOG(TC)	$\varepsilon_{PS(TC)} = 1.15$
GE	$\log(2 + GE_i) = \alpha + \varepsilon_{GE(TC)} \log TC_i + u_i$	LOG(2+GE) = -7.084595637 + 1.949885492*LOG(TC)	$\varepsilon_{GE(TC)} = 1.95$
RQ	$\log(RQ_i) = \alpha + \varepsilon_{RQ(TC)} \log TC_i + u_i$	LOG(RQ) = -8.672609214 + 1.95202236*LOG(TC)	$\varepsilon_{RQ(TC)} = 1{,}95$
RL	$\log(1 + RL_i) = \alpha + \varepsilon_{RL(TC)} \log TC_i + u_i$	LOG(RLP1) = -2.487278977 + 0.5901541866*LOG(TC)	$\varepsilon_{RL(TC)} = 0.59$
CC	$\log(1 + CC_i) = \alpha + \varepsilon_{CC(TC)} \log TC_i + u_i$	LOG(CCP1) = -10.33255578 + 2.562900751*LOG(TC)	$\varepsilon_{CC(TC)} = 2.56$

As shown in table 1 all elasticities of the governance indicators (with the exception of RL) are higher than 1. This proves the assumption that the increase in the transaction sector has a positive influence on governance performance, since the improvement of these indicators is faster than the growth of the transaction sector. The only exception is the indicator RL (rule of law) which is also positive but which increases slower than the transaction sector. This again, is indicative of the fact that reforms in the juridical system have been much slower than reforms in other areas.

Fig. 1: Elasticity of Governance Indicators with Respect to the Bulgarian Transaction Sector



CONCLUDING REMARKS

Using the size of the transaction sector of an economy as an indicator for the intensity of the division of labour within a society but also internationally, it can be summarized that the Bulgarian economy underwent dramatic changes within a short period of time. The rise of the transaction sector between 1997 and 2003 in Bulgaria can be understood as a catching-up development of the economy. Due to the mentioned erratic economic policy in the first half of the 1990s, the country's economy experienced a stabilization process after the currency board was in power in mid-1997. From then on, institutional change accelerated resulting, for instance, in increased trade and FDI. Unfortunately, there is neither data available for the socialist period, nor for the first years of transition.

Despite the shortcomings of the method used in this study, our results fit to previous studies accomplished with the same method but for other countries. We expect additional insights concerning the size and the development of the transaction sector by applying more sophisticated research methods which focus on individual tasks and individual activities. However, for the time being these methods are still being developed and tested.

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APPENDIX

I. Classifications

In order to estimate the size of the transaction sector of the Bulgarian economy we follow Sulejewicz and Graca (2005) and Dollery and Leong (1998). In this paper we use equivalents from the NCEA-2003 for the categories (NCEA: National Classification of Economic Activities). Each of the NCEA-2003 categories is subdivided into private and public sector. However, there exist inconsistencies in the definitions of NCEA-2003. Sulejewicz and Graca divide the sectors into a market and non-market sector.

Transaction industries in the private sector: It is assumed that output represents an estimation of the resources used in the transaction activities in the private sector. The data about output are not subdivided into sub-sectors that is why 'insurance' cannot be separated from 'financial intermediaries' (cf., Sulejewicz and Graca 2005). There are data available for the category 'trade and repairs' but not for 'wholesale' and 'retails trade' separately. This lack of differentiation does not influence the size of the transaction sector as such. Information about the category 'postal services', which is used by Dollery and Leong (1998), is not collected separately in Bulgaria.

Transaction costs within firms in the non-transaction industries: A serious problem occurs when the transaction costs in the transformation industries have to be measured in the private and in the public sector. As such a detailed record of the activities is not available, the order we follow for our analysis is, first, to establish which occupations can be classified as belonging to the transaction sector. The occupations we consider are listed below (Wallis and

North (1986) call the occupations with a transaction character 'type I professions'). Second, we use the number of these types of jobs within each industry together with the average wage paid in order to estimate the labour costs for them.

The Bulgarian national categorization of occupations and positions is based on the International Standard Classification of Occupations (ISCO-88) by the International Labour Organization. The national particularities and traditions in the professional structure are reflected in the Bulgarian economic and statistical practice. Drawing upon this categorization of occupations and professions, we determine which of them can be considered as 'type I professions'. NSI collects data on the following nine classes: (1) legislators, senior officials and managers, (2) professionals, (3) technicians and associate professionals, (4) clerks, (5) service workers and shop and market sales workers, (6) skilled agricultural and fishery workers, (7) craft and related trades workers, (8) plant and machine operators and assemblers, (9) elementary occupations. We regard the first five occupations as belonging to the transaction sector since we think that the transaction element prevails in their activities.

There are no official data available for the number of the employed, as well as for the average annual salaries in the categories 'postal services', 'recreational, cultural and sporting activities', 'sewage and refuse disposal, sanitation'. For the last two subgroups data are available until the year 2000 only. After the change of the classification these industries become sub-groups. The subgroup 'postal services' is included in the sector 'transport, storage and communication'. The subgroup 'recreational, cultural and sporting activities' is included in the sector 'other community, social and personal service activities' together with the sub-sectors 'sewage and refuse disposal, sanitation' and 'other services'. There is information available for this sector from 2001 onwards. The sector 'other community, social and personal service activities' was introduced in the official statistics in 2000. Before that its sub-groups were included in other sectors.

The categories 'transport, storage, communication' and 'services: municipal, social, personal, other' include both, private sector as well as public sector categories. That is why these categories are in the group 2 and the group 4.

Transaction services in the public sector: The transaction sub-sector of the public sector is estimated on the basis of data, which describe state spending. According to Dollery and

Leong (1998) state spending on transaction activities defines the volume of transaction costs in this sub-sector. The individual categories of state spending of transaction nature have been expressed as a percentage of GDP in current prices. The category ‘State administration, public’ consists of the following subgroups: ‘executive and legislative bodies’ and ‘general services and science’. The other recorded categories are ‘justice and attorneys’, ‘national defense’ and ‘public security and fire protection’.