

## FROM THE EDITOR

This “Special Issue” is devoted mainly to **small and medium-sized enterprises in transition countries**. Small and medium-sized enterprises (SMEs) play a crucial role in each economy, but this is particularly true for the countries in transition. Seven articles analyse problems related to the SME. Section **Other Articles** contains one paper on the population quality concept. Section **Reports** ends this issue with a report from the International Conference on Income and Wealth on the World which was held in Cracow, Poland, August 28 – September 2, 2000.

There are the following seven articles devoted to the SMEs:

1. ***Barriers to SMEs Finance and Growth – From Theory to Practice*** (By M. Mateev from Bulgaria). The paper identifies and discusses some important barriers in the development of small and medium sized enterprises in Bulgaria. Most of them are common for other transition countries, but some relate entirely to the Bulgarian economy. The analysis of the barriers is followed by proper recommendations for the authorities and various institutions, which can contribute to a further development of SMEs more significantly.
2. ***Doing Research on SME Performance in the European Transition Economies*** (by K. Liuhto from Finland)). This article aims at solving some mysteries concerning the relationship between ownership and SMEs performance. The author shows that privatisation should not be considered the ultimate destination, but the means to improve efficiency of a firm. Moreover, the article does not allow us to draw a definite conclusion on a deterministic correlation between foreign ownership and organisational success. Even if foreign ownership would not be the engine of organisational transformation, foreign companies can be regarded as a lubricant of that engine. This means that the ex-socialist companies have to assume the main responsibility for putting transformation into practice. Foreign companies can only play a guiding role in the overall transformation.
3. ***Analysis of Factors Determining the Survival Capacity of Small and Medium-Sized Enterprises*** (by F. Blawat, P. Dominiak, J. Ossowski from Poland). The main purpose of this article is to identify the major factors that account for the survival (continuation of activities) of small and medium-sized enterprises in the manufacturing industries in Poland on the basis of the sample survey results. All examined enterprises are located in the Gdansk

region. In this paper, the chi-square test and econometric logit analysis are used to determine factors influencing the ability of an enterprise to survive.

4. ***Development of small enterprises in Poland. Results of a sample survey conducted in the province of Gdansk*** (by M. Szreder from Poland). The paper presents the results of the sample survey of small enterprises operating in one of the largest Poland's regions, the Province of Gdansk. The survey was conducted by a group of researchers from Poland, Britain and Greece in December 1999, and it covered a random sample of enterprises which employed from 10 to 49 employees. The survey focuses on competitive advantages of the small firm sector, employment and labour conditions, the knowledge about European Union's markets, financial situation, and factors determining the development of this sector in transition economies.
5. ***Small Enterprises in the Region of Lublin in Poland and Their Attitudes to European Union*** (by F. Blawat, J. Ossowski and K. Zieba from Poland). The goal of the paper is to present results of a sample survey in the fields: commercial activity and competitiveness, technological level and changes, employment and prospects for the development of the Polish small enterprises. The level of knowledge of Polish entrepreneurs about European markets and their expectations after Poland accession to European Union are also examined.
6. ***Research On The Profile of the Successful Polish Small Enterprise in the European Context Using Logit Analysis*** (by S.Ghatak, G.Manolas, K.Rontos and I.Vavouras from Greece) . The purpose of this paper is to investigate the characteristics of the successful SMEs in the European context and to construct a model that will enable users to predict the probability of an enterprise to survive and develop in this environment. Moreover, since SMEs in Greece play a vital role in the economy, as it happens in the case of Poland, and the characteristics of Polish SMEs are much closer to that of Greece than to any other EU country, the Greek experience could provide some useful lessons to the Polish SMEs. At this point it is important to clarify the different classification systems of SMEs in Poland and in Greece according to the employment criterion. In Greece, according to the traditional practice, SMEs are those enterprises which employ 0-99 persons. They are classified in three sub-categories, namely "microenterprises" (0-9 employees), "small enterprises" (10-19 employees) and "medium-sized enterprises" (20-99 employees). Firms employing more than 100 persons are considered as "large enterprises", while the relevant EU criterion for SMEs is up to 500 employees. The corresponding classification of SMEs in Poland is 0-5 employees for "microenterprises", 6-50 employees for "small enterprises" and 51-200 employees for "medium-sized enterprises".
7. ***Measures and Patterns of Central Bank Independence in Transition Economies*** (by J. Ilieva, N. M Healey from the UK). This paper provides an attempt to quantify the Central Bank Independence (CBI) incorporating

*legislative and behavioural* approach. A set of indices designed to capture some special features of actual independence of central banks in transition economies is then developed. Major trends in the independence of the central banks in transition economies are discussed and compared with results for developed and developing countries. An attempt is made to triangulate the estimates of central bank independence by comparing the results from surveys of central bankers with those from surveys of independent academic institutions. The results show that central bank independence is higher in the transition economies planning early EU accession than in other transition economies; moreover, in the former group independent experts rate independence at least as great as central bankers themselves, while in the latter group the reverse was the case.

The second part of this issue under the title **Other articles** contains only one article prepared by A. Sagradov from Russia entitled *Population Quality: Concept and Its Application to Analysis of Sociodemographic Change in Russia*. The author assumes that population quality is manifested in some personal characteristics which, integrated at the total population level, take shape of measurable qualitative characteristics. These characteristics are expressed in some general indicators: health – in life expectancy at birth, fertility – in total fertility rate, nuptiality – in male nuptiality rate, education – in share of employees with secondary and tertiary education, skill – in average monthly wage. Population quality formation is treated as a result of a changing system of demographic dispositions. Since special surveys prove that print media play the key role in behaviour formation in Russia, results of content analysis of publications in the most popular daily newspapers are used for model estimation of comparative values (ratings) of the demographic dispositions and the corresponding qualitative characteristics. Evolution of the ratings and the general indicators in Russia in 1955-1995 is studied in the article. The research shows quite close statistical relations of changes of the general indicators to changes of the ratings which may be used for certain amplification of population projections.

There is also one **report** on the 26th General Conference of the International Association for Research in Income and Wealth (IARIW) held in Cracow, Poland, from August 28 to September 2, 2000 prepared by G. Rosiek.

Jan Kordos  
The Editor

## **BARRIERS TO SMEs FINANCE AND GROWTH – FROM THEORY TO PRACTICE**

**Miroslav Mateev<sup>1</sup>**

### **ABSTRACT**

The paper identifies and discusses some important barriers in the development of small and medium sized (SMEs) enterprises in Bulgaria. Most of them are common for other transition countries, but some relate entirely to the Bulgarian economy. The analysis of the barriers is followed by proper recommendations for the authorities and various institutions, which can contribute in further development of SMEs more significantly.

**Key words:** SMEs, business support infrastructure, entrepreneurship, institutional and legal environment.

### **Introduction**

In 2000 the European Commission has decided to open accession negotiations also with the countries from the so-called “second wave” – Slovakia, Latvia, Lithuania, Bulgaria and Romania. The prospective member countries have completely different starting points in terms of the convergence process. The negotiations with them have started with the evaluation of different number of topics, which are 6 for Bulgaria. One of them is Small and Medium Sized Enterprises (SMEs) sector. In this context special attention should be paid to summarizing the relevant experience of the EU member state countries and those that belong to the first wave of negotiations started in 1998 (Poland, Hungary, Slovenia, the Czech Republic and Estonia). It is also important to discuss the manner in which preparation for membership can trigger further changes in the SMEs sector and the effect of those changes on the transformation process before and after full membership.

The main aim of the paper is to investigate the current state of the Bulgarian economy and especially of the sector of SMEs, and the main barriers before SMEs finance and growth in Bulgaria. As in most of the transition countries the

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main need for developing the SMEs sector in Bulgaria is to establish the necessary institutional, legal and business framework to support and facilitate the development of entrepreneurship. It includes basic reforms such as changing registration and reporting procedures, reforming banking and tax system, as well as steps to eliminate corruption and bureaucracy, which still impede entrepreneurship in our country. To reach this objective we are going to research the existing institutional and legal environment, business support infrastructure and hampered access for SMEs to financial sources.

### **1. Bulgarian economy during the period 1996-1999**

One of the main issues of the unique and specific transition in Bulgaria from centrally planned to a market economy is the building up of a strong small business sector. This is extremely important for our country due to the fact that the non-privatised enterprises still dominate the Bulgarian economy. That is why the entrepreneurs and the owners of small firms should be aware of the pros and cons of the current economic environment and business conditions.

The period 1996 – 1998 was extremely difficult for the Bulgarian economy. After the relatively low economic growth in 1994, 1995 and the first half of 1996 the financial sector entered into a deep crisis, which reflected on the whole economy of the country. As a result in 1996 and 1997 a sharp decrease of the Gross Added Value (GAV) was observed, as well as an increase in the inflation rate and even reaching hyperinflation levels in the first two months of 1997. As a consequence a sharp fall in the real income of the population was registered.

In 1996 the Gross Domestic Product (GDP) decreased compared to the preceding year by 10.1 %<sup>1</sup>, which is the biggest decrease of this indicator since 1991. In 1997 a new fall was registered by another 7 % but this was due completely to the sharp crises of the economy in the first half of the year. The fall of the GDP in the first quarter of 1997 was 22.7 % and during the second quarter – 13.3 % compared to the same periods in 1996. This was due to the sharply decreased internal demand of the population as a result of the fast fall of the real income in the country, as well as of the extremely low investment activity of both the companies and the population. The low investment activity was determined by the extremely unstable economic situation in the country, which narrowed the horizons for planning of companies' activities, as well as by the high price of the investment products.

During the second half of 1997, immediately after the start of the economic policy of the new government, the main element of which was to introduce a Currency Board in the country, a period of stabilisation of the Bulgarian economy commenced. During the last two quarters of 1997 growth has been registered by 2% and 3% respectively. The period of economic growth continued during the

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<sup>1</sup> The Report for SMEs in Bulgaria 1996-1999, Agency for SMEs, 2000, p. 13.

next two years. Thus, in 1998 the GDP increased by 3.5% and for the first nine months of 1999 the data of the National Statistics Institute shows 2% growth (see Fig.1). In 1999 the pace of economic growth slowed down. To the negative impact of the two external shocks of 1998 – the Asian and Russian crises, the crisis in Kosovo was added. In spite of this the GDP growth for the whole year reached 2.5%<sup>2</sup>.

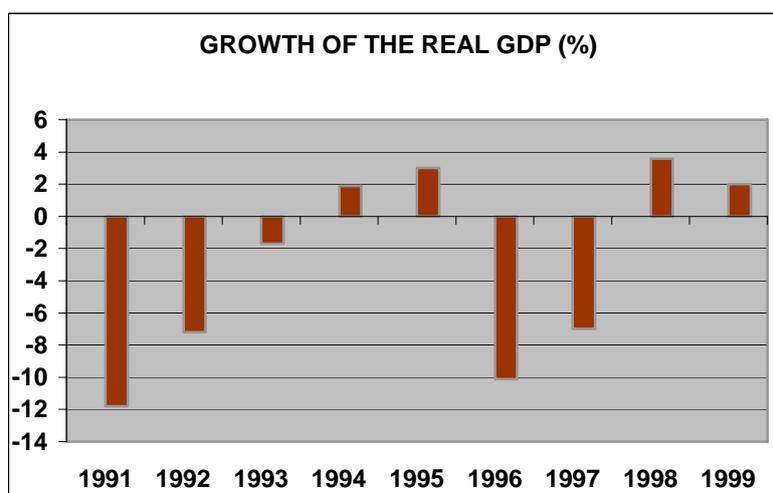


Figure 1

During the period 1996 – 1999 the Bulgarian economy has undergone several periods with different dynamics of price levels. In 1996 the inflation rate sharply increased. In the beginning of the year prices increased by 1% – 2% on the average per month, but in May and from then on the same indicator varied between 15% and 25%. At the end of the year when the economic crisis sharpened, Bulgaria faced a hyperinflation cycle. In January 1997 the consumption price increased by 43.5% and in February 1997, by another 242.7%. The entrance of an interim government, which started implementing a new economic policy, continued by the government elected by the new National Assembly, as well as the introducing of Currency Board in the middle of 1997 were amongst the main factors which stabilised the price dynamics. During the second half of the year the monthly inflation levels fell down to 1%. Stabilisation of inflation continued over the next two years, as the values of this indicator for 1998 were 1% (December 1998 compared to December 1997) and for 1999 – 6.2% (December 1999 compared to December 1998) – see Fig.2.

Fixing the exchange rate when introducing the Currency board in the country played a stabilising role for the dynamics of the prices in two aspects. On

<sup>2</sup> The Report for SMEs in Bulgaria 1996-1999, Agency for SMEs, 2000, p. 15.

the one hand, that increased the predictability of the environment for the producers who used import raw materials, as well as for the importers of end-user goods. The trust of the economic entities in the stability of the economic policy, implemented by the government, has increased. On the other hand, the export prices of the goods appeared to serve as a restrictive factor for the increase of the internal prices of the local producers.

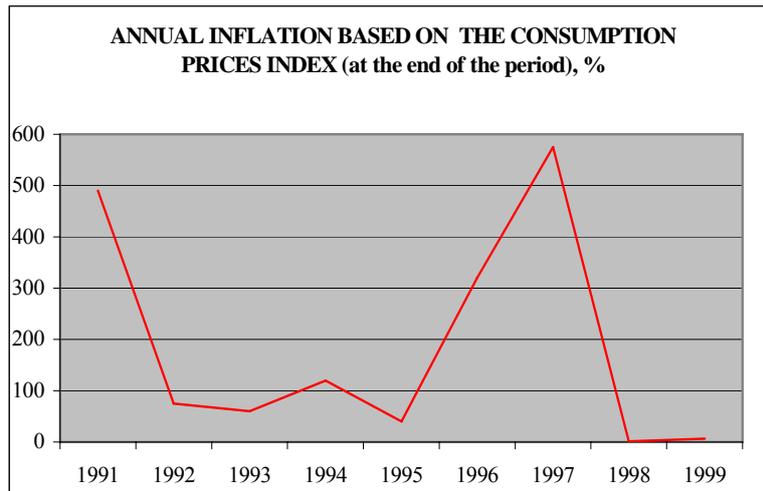


Figure 2

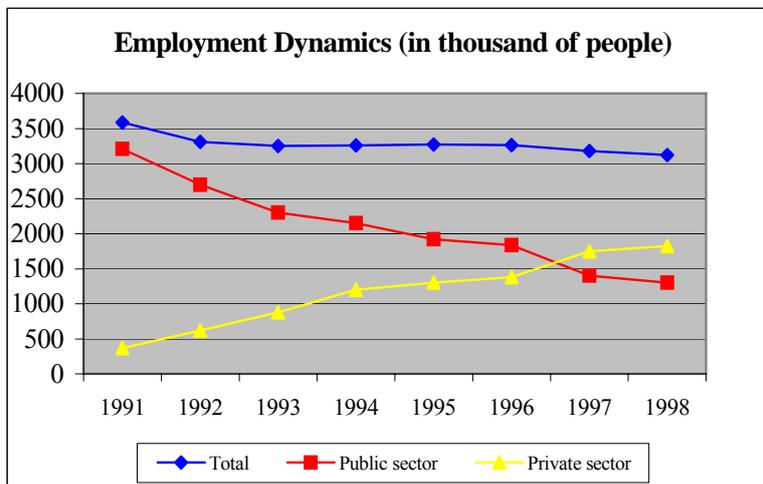
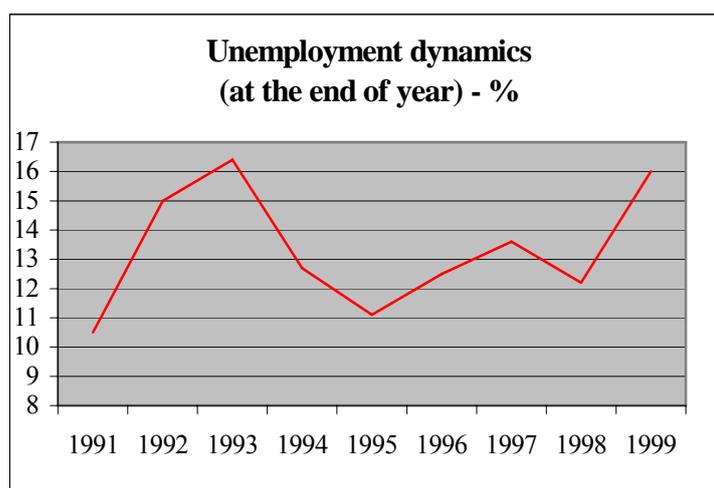


Figure 3

A typical trend for the transition period in Bulgaria to a market economy is the decrease of the number of employed people. The period 1990-1993 is characterised by fast reduction of employment and forming a group of

unemployed people, who for the most part were unqualified and with low education level, thus with minimum chances for finding a job. In the period 1994-1996 the number of employed people has stabilised and even has recorded a small increase, at the same time when a growth of the GDP has been registered. In 1996 together with the sharpening of the crisis of the Bulgarian economy a gradual decrease in the number of employed people commenced. This was mainly due to the acceleration of structural reform in the country of which the privatisation or liquidation of former state-owned enterprises was the basic element. It can be considered that in 1996-1997 the Bulgarian economy was functioning with a bigger number of employed people than the optimum number necessary for generating the income during this period. For the period 1996-1998 the number of employed people decreased by 5%<sup>1</sup>. In 1997 the number of employed in the private sector exceeded that in the public sector. This trend continued in 1998 when the percentage of the employed people in the private sector reached 58.6% (see Fig.3).



**Figure 4**

As a result of speeding up the structural reform in the country and the still low demand for labour the number of unemployed has increased, as at the end of 1999 it equalled 17% of the workforce in Bulgaria and their number has increased by 45 000 people or by 8% compared to the end of 1997 (see Fig. 4). The workforce decreased by 150 000 people (4,2%) at the end of 1999 compared to the end of 1997 and the coefficient of economic activity (ratio: workforce/population below 15 years old or retired people) decreased from 51.6%

<sup>1</sup> The Report for SMEs in Bulgaria 1996-1999, Agency for SMEs, 2000, p. 18.

at the end of 1997 to 49.2% at the end of 1999<sup>1</sup>. This level of the economic activity is low both compared to the preceding years and to the other countries of Central and Eastern Europe<sup>2</sup>. According to the data of the observations made by the National Statistics Institute on the workforce about 50% of the unemployed people in Bulgaria are long terms unemployed, i.e. with a period of unemployment longer than 12 months.

After introducing the Currency Board in Bulgaria and the reduction of the inflation rate to less than 10% annually, a period of gradual increase of actual salaries in the country commenced (see Fig.5). A new legislative mechanism for regulating the increase of the salaries in the public sector has been adopted, which connected their dynamics with the financial state of the companies and the level of servicing their liabilities to different groups of creditors. This was aimed at improving the financial discipline of state companies. The dynamics of the salaries in the private sector affirms that private entrepreneurs have maintained strict income policy in their companies and probably they have bound the dynamics of the resources, paid as salaries, with the dynamics of the efficiency of labour. The aim of the government is that the same principle be applied in the change of incomes of salaries in the state companies. According to data of the Ministry of Labour and Social Policy for 1999 these companies in their major part observe the legislation in this sphere and their behaviour comes closer to that of the private employers.



**Figure 5**

In 1996 and 1997, unlike the preceding years, the Bulgarian economy realised a positive balance on its current account of the payment balance. For

<sup>1</sup> The Report for SMEs in Bulgaria 1996-1999, Agency for SMEs, 2000, p. 19.

<sup>2</sup> The Regular Report of the European Commission on Bulgaria's progress toward accession, October 1999.

1996 it equalled 0.8% of the GDP and reached 4.1% of the GDP for 1997. To a great extent it was due to the positive trade balance during this period. For 1996 it was USD 187 million and in 1997 it increased up to USD 368.9 million. In 1997 exports increased only by 0.7% compared to 1996, while imports decreased by 3.1% compared to the same period<sup>1</sup>. In 1999 the Bulgarian currency devaluated significantly compared to the USD as a result of the devaluation of the EURO, to which the BGN is bound with on the international markets. This, however, has not influenced much the dynamics of Bulgarian exports, which has proved once again that more significant impact on this indicator is due to other factors, such as the low compatibility of the Bulgarian producers, still shrinking external demand and low international prices of key Bulgarian exports.

In 1999 the import of investment products increased quickly (by about 25%), which is an indicator for the increased investment activity in Bulgarian economy. As a result of the increased real income of the population, the export of goods has also increased. This fact is a little bit disturbing and poses the question to what extent the Bulgarian producer is compatible and possesses the potential to meet the increased demand in the country. For 1999, according to data of the Bulgarian National Bank (BNB), the deficit of the trade balance reached USD 836 million and of the current account of the payment balance – USD 479.3 million.

## **2. Bulgarian economy in the first half of 2000**

### ***Real sector***

According to data quoted by the National Statistics Institute, the Gross Domestic Product (GDP) has increased by 4.8% during the first three months of the year 2000 as compared to the same period for the previous year<sup>2</sup>. As per current year prices the value of the produced GDP can be calculated as BGL 5,188 billion and as per last-year prices it is BGL 5,001 billion. Thus GDP per capita is BGN 632 or USD 319. The Gross Added Value (GAV) has increased by 4.9% and now equals 85.1% of the GDP. Fifty-eight per cent of it has been produced in the services sector, 32.7% in industry, and 9.3% in agriculture. From January to March the private sector has produced a GAV of BGN 2,739 billion which is 62% of the added value in the entire economy. The share of the private sector has increased by 12% as compared to the same period for the year 1999 (the National Statistics Institute claims that this is due mainly to the privatisation of Neftochim Ltd.). The government forecast, as agreed with the International Monetary Fund (IMF), indicates an increase of 4% for the year 2000 and 5% for the year 2001.

Unemployment is 18.19% for the month of June, dropping by 0.67 points compared to the month of May. The fact that the number of unemployed people

<sup>1</sup> The Report for SMEs in Bulgaria 1996-1999, Agency for SMEs, 2000, p. 20.

<sup>2</sup> The National Statistics Institute Bulletin for January-March, 2000.

has remained relatively stable and the trend has only slightly changed may be accounted for by the factors of seasonal work, newly created vacancies and careful staff reduction. At the end of June the number of unemployed people was 696,551. At the same time the percentage of unemployment has increased as compared to the same period for the previous year when it was 12.75%.

### ***Foreign sector***

The current account deficit has increased up to USD 374.1 million during the first four months of the year. For the same period in 1999 the current account deficit was USD 341.4 million. According to data quoted by the BNB<sup>1</sup>, at the end of April the trade deficit has increased up to 370.3 USD million as compared to the USD 324 million for last April. This increase in the deficit is due to the higher international prices of petroleum. In April export increased by 12.8% as compared to last April thus reaching USD 335.5 million, while import dropped by 2% and reflect a total value of USD 393 million. The improved foreign environment, including the continuing restoration of the European economies, the increased key prices for Bulgarian export and their relatively low base in April 1999, has determined this considerable increase in export. For the period of January-April import amounted to USD 1.810 billion and increased by 21.1% compared to the same period in 1999. Export was USD 1.440 billion and increased by 23.1% compared to the same period for the previous year.

### ***Fiscal sector***

The Ministry of Finance estimates that by the end of the year 2000 the revenues in the consolidated budget will reach BGN 10.128 billion or 43.2% of the GDP. This is a conservative estimation and it envisages that revenues will exceed 8-10% including tax payments receipts of between 4-6%. The revised expectations for the expenditures in the consolidated budget are of BGN 10.484 billion or 44.7% of the GDP with fixed non-interest payments of 89% of the total expenditures or 39.7% of the GDP. Thus it can be expected that the budget deficit for the year 2000 will be around 1% of the GDP where the primary surplus will amount to 3.5% of the GDP. The official budget deficit for the year 2000 is estimated at 1.5% of the GDP.

### ***Financial sector***

According to data quoted by the National Statistics Institute<sup>2</sup>, the consumer prices index for the month of June is 100.13. The inflation for the same month is 0.13% and with the accumulation from the beginning of the year it reaches 2.61%.

At the end of June the EUR/USD exchange rate was 0.95560 and the USD/BGN exchange rate was 2.04670. In the middle of July the USD/BGN

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<sup>1</sup> The Bulgarian National Bank Report for January – June 2000.

<sup>2</sup> The National Statistics Institute Bulletin for April - June 2000.

exchange rate continued to change in accordance with the EUR/USD exchange rate on the global market. The inter-bank trade was focused on servicing the sales of US Dollars by companies, which have accumulated Bulgarian currency to cover their tax payments. At the end of each month local companies make their routine payments to the budget, including VAT and other corporate taxes.

According to data provided by the BNB<sup>1</sup>, since May the monthly amount of new loans in BGN in the banking system has increased from BGN 122.4 million to BGN 156.09 million (+27.48%). Short-term loans have increased from BGN 75.71 million to BGN 97.72 million (+29.07%). The monthly increase of long-term loans is (+24.88%) and their total amount in the banking system has increased from BGN 46.74 million to BGN 58.37 million. In June the number of loans granted in foreign currencies in the banking system continued to drop, and namely for loans in USD by (-31.7%) and for loans in EUR by (-2.9%). The total amount of short and long-term loans in USD is 8.23 million and in EUR 16.22 million.

In June the amount of deposits in BGN in the banking system dropped from BGN 2405.9 million to BGN 2397.0 million. In comparison to the month of May the reported decrease for the banking system is (-0.37%). Deposits on demand show a slight increase (+0.6%). Fixed-term deposits in the banking system have dropped by (-1.83%). Apart from the business activity typical for the season, the deposit base of the system has also been affected by the tax payments of companies to the budget at the end of the first six months. The BGN equivalence of deposits in foreign currencies in the banking system has dropped from BGN 3067.1 million to BGN 2954.4 million. If calculated in US Dollars, this amount is USD 1443.5 million at the end of June or by USD 15.3 million less than the amount in May. The deposit base in foreign currencies has been affected by the lower exchange rate at the end of this period and the decrease of fixed-term deposits typical for the season.

An comparative analysis<sup>2</sup> of the key macroeconomic indicators for the period 1996-2000 is given in Table 1.

**Table 1.** Key Indicators

INDICATORS	1996	1997	1998	1999	2000
<b>ACTIVITY</b>					
GDP (real % change)	-10.9	-6.9	3.5	2.4	5
GDP (Euro bn)	7.8	9	10.9	11.3	12.7
GDP per capita (EURO bn)	939	1086	1324	1371	1544

<sup>1</sup> The Bulgarian National Bank Report for January-June 2000.

<sup>2</sup> Source of data: The Report of the Institute for Market Economy: "Conditions for Conducting of Business: 1999 – 2000", The Bulgarian National Bank Reports and the National Statistics Institute Bulletins for 1996 – 1999.

GDP per capita (USD m, % change)	-28.4	15.7	21.9	3.6	12.6
<b>Components of GDP (%)</b>					
Production	30.6	25.3	25.5	23.4	
Agriculture	12.4	23.8	18.7	15.1	
Services	51.5	40.5	44.7	48.8	
<b>Structure of the employed (%)</b>					
Agriculture	24.4	25.3	25.7		
Services	27.5	32	30.8		
<b>Real investments</b>	11.4	12.8	15.1	17.1	19.6
<b>Real investments growth (%)</b>	-22	-22.1	16.4	20	19.22
Foreign direct investments (USD m)	256	636	220	755	1000
Share of the economy in private proprietors (%)	45	50	63	75	75
<b>TRADE</b>					
Trade with EU (%)	37.6	41	46.5	52	53
EXPORT to EU (%)	39.1	43.3	49.7	55	56
IMPORT to EU (%)	35.1	37.3	45	50	51
Current account (% of GDP)	0.9	4.3	-0.5	-5.7	-5.4
<b>Fiscal balances (% of GDP)</b>					
Budget balance	-11	-3.1	1.1	-1.3	-1
State debt	124.6	106.8	86.7	71	68.4
Prices	-	-	-	-	-
CPI inflation (%)	123	1082	22.3	1.8	6.6

### 3. Barriers to SMEs finance and growth

The analysis of the existing barriers before the Small and Medium-Sized Enterprises (SMEs) is based on three separate studies:

1. A study requested by the *Center for Economic Development* and implemented by the research team of Vitosha Research Co., and based on group discussions with participation of:

- Representatives of branch associations of SMEs in Bulgaria
- Representatives of small and medium-sized companies
- Representatives of financial institutions in Bulgaria
- Representatives of institutions responsible for state policy in the sector of SMEs

The main objectives of the research conducted are as follows:

- a) To identify the main problems that SMEs in Bulgaria have to cope with in the period of transition to a market economy;
- b) To compare different points of view of representatives of different interested parties, as regards the problems of SMEs;

c) To formulate concrete proposals for solving major problems before SMEs in Bulgaria in the period of accession.

2. A study of the Institute for Market Economy in the framework of the project “Rules, Regulations and Transaction Costs in Transition Bulgaria”, financed by the *Individual Research Support Scheme* of the Open Society Institute, Budapest.

The main objective of this research is to make an attempt of identifying and roughly measuring of transaction costs incurred by SMEs from the private sector in Bulgaria. That will provide an opportunity to take them away or simply to reduce them at a later stage, which will stimulate production and will increase the competitiveness of SMEs. The research is based on a sample that includes 120 micro- and small enterprises operating on the territory of 21 regional centers in Bulgaria in the sphere of production, trade and services. The methodology applied is based on a questionnaire, which concerns 4 types of costs:

- Costs of entering the bussines;
- Operating costs of the enterprise;
- Costs of contracting and implementing the contracts;
- Costs of transforming or abandonment of business.

3. A study requested by the *UK Know How Fund* and implemented by Bannock Consulting Ltd. in the framework of the project “Bulgaria Reform of Administrative Barriers to SME Development”, with an active particiaption of the Institute for Market Economy.

The main objective of the research is to determine the existing administrative barriers before SMEs, namely the so-called “compliance costs”. Individual interviews with representatives of 20 enterprises, 12 of them – micro, 7 –small and 1 – medium-sized firms, have been conducted. The research includes interviews with representatives of the Agency for SME, of governmental departments and agencies, donors, financial institutions, other consultants and institutes working in this field as well. Expected results of the research include reformed regulations and administrative procedures in selected areas, and a Government commitment to development of effective mechanisms and an agenda for continued deregulation. Based on the analysis of the results of these three studies we may identify the main barriers before SMEs in Bulgaria. They can be classified as follows:

### ***3.1. Barriers arising from existing legislative framework***

The existing legislative framework for development of SMEs in Bulgaria consists of a great number of legislative acts, norms and orders, regulating different aspects of SMEs activities, as well as different sectors of economic activities in the country. One of them is the Act for SMEs, adopted in September 1999. Within the period of 1998-1999 the Bulgarian Parliament has voted 314 Acts, 107 of which (according to a research of the Institute for Market Economy)

have direct or indirect impact on the private sector growth. A review of the existing legislation shows<sup>1</sup> that as whole the legislative framework, which concerns with the sector of SMEs, is characterised by inconsistency, instability and contradiction; the procedures are time consuming and intricate; there are too many license and permit regimes and too many loopholes as well; concrete mechanisms for encouraging the SMEs are also missing; there is a lack of tax alleviation and financing schemes outside the banking legislation. Thus the existing normative framework does not sufficiently stimulate the development of SMEs and their sustainability, and the lack of a special unified legislation for SMEs strongly impedes their operations. That's why the effect the legislation has on SMEs is dubious and contradictory (for 56 % of the Respondents).

The efforts should be devoted to overcoming the existing disadvantages of the legislation and achieving of much better harmonization between different legislative norms (very often one and the same matter has been treated simultaneously in several acts, which hampers in principal its right application). The main difficulty here is connected with the SMEs heterogeneity. No matter if it is just a family business aimed at providing a certain service or it is a new entrepreneurship targeted to fill a given niche in the market space and connected with a concrete production, it is much difficult to define certain activities as strictly typical for SMEs. Despite of their wide diversification the following potential advantages and disadvantages of SMEs may be determined:

1. A main advantage of SME is its flexible structural organisation and its endurance to outside shocks. The SMEs flexibility that has to do with making effective fast changes in production aspects and their abilities to undertake simultaneously several activities are traditionally connected with small and medium business and have been important factor for its competitiveness.

2. SMEs are characterized by relatively high costs of observing the tax legislation and other forms of government regulation, especially if they operate internationally. Enterprises in Bulgaria and especially those from the sector of small and medium business are confronted with more and more complex legislative, tax and administrative environments, in which they have to start and successfully run their business.

To overcome these barriers a wide spectrum of different schemes and activities has been designed in many West European countries to stimulate the process of start-up and development of SMEs. They provide a support to the process of registration of a new enterprise (so-called "one stop shop" approach) and concern specific measures for improving technological and economic environment, removing the existing financial and administrative barriers, and protection of entrepreneurs interests from unfair competition.

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<sup>1</sup> The Report for SMEs in Bulgaria 1996 – 1999, The Agency for SMEs, 2000; The Report of the Center for Economic Development: "SMEs and Competitiveness", 2000 and the Report of the Institute for Market Economy: "Legal and Legislative Reform – an Impact On the Private sector", Newsletter of IME, March-July 2000.

### 3.2. Financial and related barriers

Financing the SMEs activities in Bulgaria is one of the main preconditions for future development of the Bulgarian economy, as well as for achieving an economic growth. To set this in motion it is necessary for the commercial banks to provide a special lending policy to the sector of SMEs. Recently the commercial banks apply a very restrictive policy when granting loans to SMEs. The reason is that the prevailing part of the banks prefer to minimise risk and possess low return assets, and at the same time granting of loans to SMEs is non-attractive for them because of few objective reasons, such as high costs incurred when lending small credits, impossibility for SMEs to provide the required collateral etc. Taken into account the specificity of SMEs financing a number of financial instruments, especially designed to SMEs, have been developed as follows:

- Micro-lending schemes;
- Risk capital financing;
- Credit guarantee schemes etc.

The policy of international financial institutions such as IMF, WB, EBRD etc. is aimed either at providing specific forms of financing, directly intended to SMEs or encouraging the bank system in order to ensure a much easier access to bank loans for SMEs. The most frequently used forms are<sup>1</sup>:

- Participation in risk capital funds;
- Joint venture with local banks with aim to increase their capital base and improve bank's corporate management;
- Providing bank to bank loans;
- Co-financing of local projects with participation of local and foreign banks;
- Providing direct credit lines with a state guarantee

#### A) Problems of bank lending in Bulgaria

According to the current legislation in Bulgaria the bank lending process is subject to a permit regime and strict control. The bank is "a joint stock company, which deals with public attracting of deposits and uses the attracted cash resources for granting credits and for investments on its own account and on its own risk"<sup>2</sup>. The Regulation Order # 9 of the Bulgarian National Bank (BNB) determines the criteria for assessment of risk expositions of the banks and forming provisions that are necessary to cover the risk of losses<sup>3</sup>. In practice banks evaluate SMEs as highly risky and require collateral of more than 125% in order to guarantee themselves at eventual provision. The size of collateral depends on

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<sup>1</sup> Mateev, M. and M. Kilova, "Schemes and Forms of Micro-Financing of Small and Medium-Sized Business in Bulgaria", *Economy*, issues 11 and 12, 2000.

<sup>2</sup> The Act for Banks adopted on 1<sup>st</sup> of July 1997.

<sup>3</sup> According to the Order # 9 banks may apply more detailed and rigorous inside classification of the risk expositions following the criteria established by the internal bank rules for lending activities.

the terms of the credit – the longer the term is the higher the guarantees requested by the bank are. Banks look more often for collateral with quick liquidity (such as gold, blocked deposits in BGN or in foreign currency, state securities or half of the value of the first in order mortgage). They are also restricted in regard to the type of property, which the bank may accept as collateral, in case of a mortgage. Even mortgages on real estate are not highly valued as the properties (estates) are with low liquidity and their real estimation is a problem.

According to the data provided in the Report of the Agency for SMEs during the year 1999 the average interest rate on granted long-term loans in BGN was 15% for the private sector. For short-term loans in BGN the average interest rate for private enterprises was 14% respectively. Interest rates on new credits in USD are on average 10% for short-term financing and 14% for long-term financing. Interest rates on new loans in EURO are on average 9% for short-term and 11% for long-term loans<sup>1</sup>.

What is the current policy of the commercial banks when granting loans to SMEs? After the Currency Board was introduced, the BNB supervision regime over the commercial banks in Bulgaria strengthened and banks became too cautious when granting new loans, especially to the sector of SMEs. Till now that policy has not been changed too much. Banks grant mostly short-term loans for working capital when a guaranteed collateral is made available (between 120% and 180% of the total amount of the requested loan) and preferably to clients with good reputation. Despite the permanent tendency of diminishing the basic interest rate, the interest rates on bank loans preserve their relatively high levels.

According to various researches<sup>2</sup> on SMEs development conducted in the last few years more than half of the firms interviewed pointed out the financial barriers (lack of initial capital, lack of financing for working capital и shortage of recourses for investment activities) among the three major difficulties that hamper SMEs when starting-up their activities. At the same time only 20-30% of SMEs have applied for loans. The reasons for that could be seen mainly in the conditions under which the credit resource is being supplied and the impossibility of SMEs to comply with them. Researches show that during the last 2-3 years the majority of the requested loans have been used for working capital and their size was up to \$ 10 000. According to the Report of the Agency for SMEs the decision of a bank whether to approve a certain request for loan or to reject it depends, to a certain extent, on the collateral provided against the requested loan and on a second place – on the size of the firm and its financial state.

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<sup>1</sup> The Report for SMEs in Bulgaria 1996-1999, The Agency for SMEs, 2000, p. 25.

<sup>2</sup> The Bulletin of the Foundation for Entrepreneurship Development: “*The State of Small Business in Bulgaria in 1998*” (a research of 650 SMEs in Bulgaria conducted by Sova-5 and published by the FED), The Research of the Center for Economic Development: “*SMEs and Competitiveness*”, 2000 etc.

It is obvious that at present the process of bank lending in Bulgaria is strongly limited. According to the data provided by BNB at 30.06.2000 only around 31.5% of all profitable assets in the bank system are in the form of outstanding loans. In principal banks avoid investing their free resources in loans, despite of the stable macroeconomic environment and other positive tendencies that have occurred after the Currency board is introduced. It could be affirmed that a real well developed lending market is missing. In practice it is impossible for a small enterprise to receive a standard loan. Taken into account the fact that SMEs sector creates around 30% of GDP we may conclude that 1/3 of the Bulgarian economy is devoid of granting loans. The problem is much more serious when one takes into consideration another fact – SMEs are the main source of employment in the economy and the hampered access to financial resources increases strongly the risk of higher unemployment.

*B) Problems for SMEs when apply for bank loans*

The specificity of the problems connected with financing and granting loans to SMEs in the transition period to a market economy is mostly determined by the character of and the extent to which the economic, legislative and socio-cultural conditions under which the SMEs operate in Bulgaria are developed. The research conducted show that SMEs come into collision with a great number of difficulties when applying for and receiving a bank loan. According to the Respondents among the most considerable impediments for SME's access to bank loans are the conditions of obtaining the loans. There are a few main barriers here:

- **Level of interest rate**

The average interest rate demanded for bank loans is between 14% and 18% and the representatives of SMEs consider it too high. According to the Respondents (29%) this rate of interest is unbearable for the larger part of SMEs, which operate with an average profit of 10-15%. That is also applicable to the loans granted by the Incentive Bank that was established to support the development of SMEs in Bulgaria. From the viewpoint of the financial institutions, however, this rate of interest is based on the market situation and is considered to be normal for the Bulgarian circumstances. Moreover the international financial institutions classify our country as a very risky market (and the required risk premium is higher, respectively) and set explicit conditions for granting loans at market interest levels.

- **Size and type of required collateral**

Very often SMEs are not in position to provide collateral that complies with the bank requirements for granting medium- and long-term loans. The size of the required collateral varies from 120% to 200% of the amount of the granted loan thus making it unattainable and even economically unprofitable for the enterprise (for 66% of the Respondents). Banks prefer as collateral a real estate mortgage in

compliance with the regulations of the Order # 9 of the BNB. From the viewpoint of the financial institutions, there are several basic reasons for demanding such high collateral:

- First, the low liquidity of the collateral resulting mainly from the limited and undeveloped markets in the country;
- Second, the conservative central bank regulations in regard to the requirements for capital adequacy of the commercial banks, assessment of their risk expositions and forming provisions for covering the risk of losses;
- Third, the existence of certain legal regulations according to which granting of unduly secured loans can be subject to a legal persecution.

- **Criteria for assessment of the economic state of loan applicants**

The financial state of the enterprise and its credit history are among the basic criteria for granting loans. In practice, these conditions happen to be an invincible obstacle for starting SMEs, which cannot meet such criteria. Besides, a great part of the loan applicants – the small and medium-sized enterprises – conceal part of their profits and, for that reason, they cannot provide reliable information about their activities. It is a very frequent phenomenon that the small enterprises have no business plan and accounting documents to verify the turnover of their activities.

- **Impossibility of SMEs to make long-term financial forecast and guarantee revenues**

This “barrier” is directly related to the previous one. The absence of a long-term firm strategy and hence of any financial planning is, above all, a result of the unstable economic environment as well as of the fact that the entrepreneurs very often underestimate the necessity for scientific management of their business.

- **Expenses and clumsy procedure related to granting loans and a long period for decision-making that creates uncertainty and additional expenses for SMEs**

Granting a loan also incurs expenses for SMEs, which they cannot always afford. These expenses mainly refer to the preparation of a business plan, the fees for overall loan servicing, etc. Hiring business consultants is usually unaffordable for small enterprises (for 77% of the Respondents).

- **Requirements for participation of SMEs with their own funds in the business project**

In many cases, the participation funds which the entrepreneur is required to have at the moment of granting a loan are excessively high. For many entrepreneurs the availability of such an amount of free resources would make seeking loans pointless. When applying for credit SMEs have minimum or zero

funds of their own and it means that they expect almost 100 % funding by the bank.

- **Requirements for minimum turnover or high minimum loan size**

In practice, there is no significant difference for the banks in the expenses on granting and servicing large and small loans. From this perspective and especially in such situations when the demand exceeds the supply, it is more favorable for the bank to attract a small number of big clients rather than many small loan applicants.

- **Additional requirements set by the banks**

A typical example of this is the requirement that an account should be opened at the same bank from which the loan is requested. When receiving loans from several financial institutions the respective number of accounts should be opened incurring expenses for their servicing.

- **Unwillingness of the commercial banks to grant investment loans to SMEs**

Seeking such loans is related to the overall technological and economic state of SMEs in the country. The needs of financial resources for starting SMEs, renewal of the outdated equipment in the privatized companies, increasing the production quality and the competitiveness of SMEs – all these factors determine the priority significance of the investment loans. According to the representatives of bank institutions the lack of credit resources is not an obstacle for development of the process of granting investment loans.

- **Other circumstances hampering the access of SMEs to bank loans**

Here it should be mentioned the excessive emphasis that the banks put on the collateral rather than on the future financial result when taking decision on granting a loan. Such circumstances can also be a low economic and legal culture of the loan applicants. To overcome this barrier the representatives of SMEs have proposed the following measures:

- First, organising a special business training in which a leading role is assigned to the branch associations and non-governmental organisations;
- Second, establishing with the help of the branch associations a network for counseling services, which can support the entrepreneurs in preparation of business plans;
- Third, establishing special credit lines at relieved conditions as in some cases no presentation of a business plan is required and in other cases – they are prepared free of charge with the active support of the funding institution.

*C) Problems of commercial banks when granting loans to SMEs.* these problems can be grouped in the following directions:

- **Problems related to the legislative environment, including:**

- a) Requirements for bank capital adequacy, assessment of risk expositions and forming provisions for covering the risk of losses;
  - b) Impossibility for appealing against some of the actions and decisions of the BNB in the court and unnecessarily requirement for formal authorisation by the National bank for a number of operations typical for bank business;
  - c) Penalty responsibility for bank officers who have granted unsecured and unrepaid loans;
  - d) Lack of correspondence of the National accounting standards with the International accounting standards in regard to the process of granting loans;
  - e) Frequent changes in the tax legislation and customs (tariff) regime;
  - f) Extremely difficult collection of bank (account) receivables;
  - g) Prohibition for the privatised enterprise to sell or lodge assets for the period of up to 10 years after its privatisation for deals that concern payments by installments, repayment of debts of the privatised enterprise, implementation of the investment program.
- **Problems related to the business environment, including:**
    - a) Unstable and dynamic business environment in which enterprises cannot make long-term forecast for their activities. High corporate and other taxes hamper the investment activities of SMEs in Bulgaria;
    - b) Limited and undeveloped markets in the country that leads to low liquidity of the required collateral. The most of SMEs possess assets (plant and equipment) that are, to a great extent, obsolete and cannot be used as collateral against an investment loan before the bank.
  - **Subjective problems such as:**
    - a) Banks often do not possess debt capital with an appropriate term structure that limits the granting of long-term investment loans;
    - b) Lack of sufficient training and motivation of the bank officers when granting and servicing loans to SMEs – qualification and skills of the bank staff need to be further improved.

### ***3.3. Barriers arising from trade policy in the light of joining Bulgaria to the EU***

When the role of SMEs in economic development of each country is assessed one should also take into consideration the impact of recently applied trade policy, as a part of the external process of European integration and globalisation, on the competitiveness of SMEs. Role and place of SMEs in Bulgarian foreign trade (import and export) have been considered in the Report of the Agency for SMEs for the period 1996-1999<sup>1</sup>. Although the share of SMEs in export is relatively small – around 1/5 of the entire export of the country, we have

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<sup>1</sup> The Report for SMEs in Bulgaria 1996-1999, The Agency for SMEs, 2000, p. 59-60.

to consider the fact that in some sectors like agriculture, construction, trade, hotels, hostels and catering services, transport and tourism, this share considerably exceeds 50%. Considering the import the picture is much different – here the share of SMEs is around 1/3 of the total import. SMEs play an important role in the import of goods to meet the internal demand of end-user products, mainly in agriculture, trade, construction, hotels and catering services. In many cases these are specialised foreign trade firms rather than direct producers.

All these figures are an indicator of the unrealised potential of SMEs for expansion of foreign trade exchange of the country, as well as of the underestimated role of this sector by the government institutions responsible for development and implementation of the trade policy of the country. Globalisation as a character of the external transition of the country to market economy leads to a considerable increase of the requirements on the competitiveness of all firms, including SMEs, which is an essential problem for small countries with open economy like Bulgaria. An increase of the competitiveness of SMEs could be pursued into two directions:

- First, providing a free access of the import executed by SMEs to the internal market and thus creating a competitive environment for local production;
- Second, improving the access of export production of these enterprises to external markets through target oriented export policy and concrete measures for stimulation of their export activities.

Indisputable achievement of the Bulgarian transition period to a market economy is the liberalisation of the trade and currency regimes<sup>1</sup>. At the current stage the state regulation in regard to the internal market is aimed at stimulating competition and defining clear (transparency) rules for trade activities (through the Act for Defending Competition and the Act for Defending Consumers). As regards the foreign trade policy the main instruments for an overall reconstruction of the economy are the new Foreign trade regime and the Customs tariff<sup>2</sup>. They create a favourable business climate for SMEs to function in Bulgaria. The trade agreements with many countries also create new opportunities for expanding the role of SMEs in export of the country and thus developing much better environment for their export activities, without stimulating them directly. The most important agreement among them is the membership of Bulgaria in the World Trade Organisation (WTO), which expanded the opportunities for Bulgarian SMEs to take advantage of the processes of liberalisation of the world trade and globalisation of the production for achieving concrete economic goals. At the same time it is a guarantee for observing the multilaterally set rules for executing the international trade and implementing a reasonable and transparency trade policy. That is of extreme importance for those SMEs that do not possess

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<sup>1</sup> The EBRD Transition Report 1999, p. 202.

<sup>2</sup> A new Customs Tariff was introduced in January 1998 based on the International Harmonized Commodity Description and the Coding system. A new Act for Customs has been adopted in January 1999 as well.

enough tools and possibilities to fight against unfair competition at the international markets.

Which are the main problems and barriers before SMEs arising from the existing foreign trade policy in the country? The results of researches regarding SMEs development in Bulgaria allow distinguishing the following barriers:

**1.** Lack of sufficient protection of Bulgarian producers from unfair foreign competition. The Respondents (69%) have pointed out that one of the serious threat for Bulgarian SMEs is the competition of the subsidised import from the European Union (EU). Moreover subsidising the export of the West European countries makes the Bulgarian goods non-competitive not only at the internal market, but as well as at the markets of third countries. That is why according to the representatives of the branch associations that have been interviewed the government has to provide a reasonable protection of the Bulgarian producers within the existing tendency of liberalisation of the foreign trade. Such protection is necessary as Bulgarian SMEs be able to adapt themselves to the conditions of the increased global competition.

A necessary but not sufficient step in this direction is the opportunity for Bulgarian government to negotiate with the EC that the production to be imported from the EU with “zero duties” will not be subsidised (but even in this case the state stimulation for agricultural producers from the EU countries will continue to exist although not as a direct subsidiary to export). Another important step is to provide SMEs with easily accessible information for the requirements of the integrated European market (the Single market). Adaptation of Bulgarian producers and exporters to these requirements could not be achieved without an active intervention of the state aimed at:

- Simplifying the administrative and legislative framework necessary for SMEs development;
- Improving the financial environment and increasing the access of SMEs to financial resources;
- Facilitating the access of SMEs to new markets, organising training on marketing and quality management and quick introducing the corresponding European standards (e.g. ISO 9000).

**2.** Lack of appropriate conditions for stimulating export. The researches conducted by the *UK Department for International Development (DFID)* and the *Foreign Investment Advisory Service (FIAS)*<sup>1</sup> show that the state represented by the government does not run a target oriented policy that may create the necessary preconditions for stimulating Bulgarian exports. There is a lack of sufficient interest in the society for the necessity of development of national strategy for stimulating exports and significant improvement of the effectiveness of different government structures assigned with similar tasks (e.g. the Center for stimulating

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<sup>1</sup> The Report of Foreign Investment Advisory Service (FIAS): “Bulgaria - Administrative Barriers to Investment”, November 1999.

exports, the Agency for export insurance etc.). The 1999 Report of the EC on Bulgaria's progress towards accession pointed out that "there is no a foreign trade strategy and an overall effective policy for opening Bulgarian economy"<sup>1</sup>. This fact is confirmed by an analysis of the volume, dynamic and structure of Bulgarian foreign trade during the last 10 years. During the period 1992-1999 the trade has increased by 12.5% from \$ 8.4 billion to \$ 9.4 billion as for the same period the export has increased by only 1.2% and amounts to \$ 4 billion, while the import has recorded an increase by 22.4% and reached \$ 5.5 billion. In 1999 the country registered once again a negative trade balance that is the biggest one from the beginning of the period and amounts to \$ 1.5 billion. By June 2000 r. the trade saldo is again negative and amounts to \$ 819 million<sup>2</sup>.

According to the Respondents (87%) the exceptionally high quality requirements to producers are the main barrier before Bulgarian exports, especially to the EU countries. The certification of SMEs for adopted systems of quality control in correspondance with the ISO 9000 standard is the most often applied requirement. The process itself requires participation of consultants, certified organisations and laboratories (in Bulgaria there are not more than 250 certified labs by August 2000) and considerable financial costs. The existing opportunities for stimulating Bulgarian exports according to the Respondents are the following:

- Lending exports against commodity collateral. Very often big foreign trade deals cannot be executed because of impossibility of SMEs to provide for such a loan.
- Negotiating fixed export quotas both with EU and other countries that are large importers (for the period 1992-1999 the export to the countries of EU has recorded the biggest increase – 80.9%, to Balkan countries – only 3.3% and the biggest is the decrease of the export to Russia – 72.3%).
- For some trade agreements (e.g. those with Russia for delivery of gaz and nuclear fuel) a payment of the deliveries against Bulgarian goods might be included in the contract.
- Activating the role of Bulgarian trade foreign offices. In some important for Bulgaria country partners trade representative offices are not still opened, in others – they do not work enough effectively.
- Creating better conditions for participation of Bulgarian SMEs in fairs and trade exhibitions as exclusively important for establishing trade contacts and partnerships.
- Running broad advertises and information campaigns in masmedia with the support of the state as to popularise Bulgarian goods abroad.

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<sup>1</sup> The Regular Report of the European Commission on Bulgaria's progress towards accession, October 1999.

<sup>2</sup> The Report of the Institute for Market Economy: "SMEs and Competitiveness", 2000, p. 31

3. Problems arising from forthcoming accession of Bulgaria to the EU. According to the Respondents (36 %) the main priority here is the need for quick adoption of the European norms and directives in this area and the solution depends entirely on the state initiative. Major obstacle again is the lack of sufficient information in regard to both the directives themselves and the required by them methods for control and monitoring of the production processes.

#### ***3.4. Barriers arising from tax and insurance policy***

In regard to the financial and especially tax legislation, the frequently change of the legal framework has unfavorable effect on SMEs because of several main reasons. Bulgarian legislation is, to some extent, a product of working out the separate laws “ad hoc” without harmonisation of the terms and the concepts as well as of the established specific legislative order. The adoption of different laws is, to a great extent, due to the pressure of external factors (for example under the pressure for fast harmonisation of Bulgarian legislative norms with the European ones), instead of the conduction of a subsequent legislative policy. Shaping the laws is not always a result of preliminary research of the relevant matter and the experience of the countries with developed market economy. Sometimes an adoption of foreign legal arrangements and laws is taken place without conforming them to the national peculiarities. General interpretation and application of the tax laws is not always ensured, which leads to adoption of huge number of sub-normative acts, decrees and interpretation letters that often has an opposite effect. Taxes have to be imposed in order to regulate the investing behaviour of economic subjects and individuals instead of killing every entrepreneurial initiative.

In Bulgaria taxation of SMEs does not differ from common taxation in the country. Companies that are registered as sole proprietors, which does not always mean they are small or medium-sized enterprises according to the requirements of the Act for SMEs, are to pay throughout the year advance tax instalments according to the Act for Corporate Income Taxes. At the end of the year, they form taxable income under the requirements of the Act for Personal Income Taxes. On a separate note a so-called “Act for Patent taxes” exists, which as a mode of taxation is in contradiction with the Constitution of Bulgaria (article 60), as it is not conformed to the personal incomes. There is a sole alleviation in the Act for corporate income taxes concerning the small enterprises according to which at a level of taxable income up to BGN 50 000 they pay 20 per cent income tax. This is the only existing tax preference for SMEs in Bulgaria.

Based on the research conducted the main problems arising from the existing tax-insurance system can be grouped as follows:

- **First, size of the taxes and the tax-insurance burden**

As whole the Respondents (85 %) consider that total tax and insurance burdens are too high (all taxes that a company pays are above 40% on average per year). According to the representatives of SMEs the size of the income taxes is to be diminished. The insurance payment is also too high and for that reason many SMEs do not pay fees on social securities, health insurance's, professional qualification, and unemployment fund to their employees. This problem can be solved easily and fast through introduction of a system of tax stimulation and tax alleviation. A good example of that are France and Great Britain, where the tax alleviation system is best developed in comparison with the other countries of the EU. In the first country there is a minimum tax rate and it is defined on the basis of enterprise turnover. It plays as a credit against the income tax due for the present and the following two fiscal years. In Great Britain the alleviation's are incorporated in the tax legislation of the country and the limits for the turnover are voted each year within the budget. All this has a positive effect on the relatively higher share of the small and medium sized enterprises in these two countries.

Two aspects may be considered when one assesses the impact of indirect taxation, namely the VAT regime and its implication. On the one hand, Bulgarian system of VAT should be put in line with the requirements of the unified system of VAT of the Single market that will create the necessary stable tax environment and will facilitate Bulgarian SMEs in their foreign trade activities. On the other hand, the current VAT system discriminates SMEs in comparison with the "big" enterprises, because it treats them only as "bearers" of the tax burden, but not as tax liable entities. In order to become tax liable entities, the firms should be registered under the Act for VAT and its annual turnover should exceed 75.000 BGN for the last 12 months. This registration threshold is too high in comparison with similar requirements in the EU countries.

The rules according to which the tax credit can be reimbursed represent another important problem that has a negative impact on the economic activities of SMEs. The tax regulatory orders that treat this matter are changing each fiscal year with a tendency to become more and more restrictive in respect to the tax liable entities. These constant changes in the Act for VAT do not allow establishing clear tax legislation and take us away from those EU regulations that are aimed at simplification and improvement of the administrative and regulatory business environment. For example, there are different tax schemes for stimulating SMEs that operate in different member states of the EU – alleviated, simplified, deduction etc. regimes. The system of differentiated VAT rates that is already known in almost all EU countries can also be introduced, but according to the 3-year stand-by agreement with the IMF, Bulgaria took the obligation to maintain only one tax rate for VAT (20%).

- **Second, effectiveness of the tax administration duties**

Almost all representatives of SMEs that have been interviewed (58%) reproach the process of administration of tax-insurance policy. SME activities are considerably hampered by a very complex bureaucratic system that is recently applied to the tax and insurance policy. It takes too much time and increases the costs for SMEs. That concerns the conditions for reimbursement of the tax credit<sup>1</sup> as well. In many cases the existing administrative procedures have been unnecessarily complicated, additional requirements and new heavy rules have been unofficially added, and that on its own turn creates conditions for corruption. According to the National Insurance Institute the most serious problem in regard to the administration of the insurance (security) relationships concerns the filling in the so-called “information register” for SMEs. Creation of a State Agency for Revenues that will alleviate the administrative procedures concerning collection of taxes and insurance payments and will create the necessary transparency in the tax-insurance relationships, is the first positive step in that direction.

- **Third, different treatment of taxable entities**

26 per cent of the Respondent consider as extremely heavy barrier before SMEs in Bulgaria the existing regime of non-equal treatment of different taxable entities. That conclusion mostly refers to the production enterprises and starting-up SMEs, which are not registered under the Act for VAT and do not issue tax invoices. That makes them non-competitive and as a result they either joint the “grey economy” or being gradually pushed out of the market they go into bankruptcy. That is why as far as a decrease of the registration threshold is one possible direction for changing the existing Act for VAT<sup>2</sup> towards harmonisation of our legislation with the European norms, another one could be an adoption of models for alleviated regimes of VAT payments. An alternative direction for changing the tax regime is an introduction of equal base for taxation of all taxable entities, which will create conditions for legitimisation of SME turnovers and reporting them at the “legal” market.

- **Fourth, existing tax payment discipline and taxpayers culture**

57 per cent of the representatives of SMEs consider that the tax discipline and culture among them is very low at present. The most of SMEs hide their profit and thus avoid tax payment or do not pay social and health insurance's. According to the Respondents the main reason for such behaviour is the unfavourable economic environment in the country that fails to ensure appropriate

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<sup>1</sup> According to the achieved agreements with the IMF the time period for recovering the tax credit to firms is reducing from 6 to 4 months from January 2001 onwards.

<sup>2</sup> This change will concern unfavorably retailers, individuals dealing with craft activities and those that provide services using personal labor, because they are not registered under the Act for VAT. To overcome this barrier such change should be accompanied with an introduction of alleviation regime of payment of VAT for these entrepreneurs.

conditions for small business development. There certainly is a mutual dependence between the limited opportunities for financing and lending to SMEs and the tax payment evasion as the hidden profit is the only source for SMEs development and growth. They consider the economic motivation as one of the most important conditions for strengthening the financial discipline of taxpayers and increasing the tax collection efficiency. The administrative measures and stronger audit procedures that have been recently applied in the country (which are subject to continuous changes in the tax legislation) are not enough to motivate taxpayers. There have been some suggestions in this direction:

1. Creating opportunities for partial VAT reimbursement to the end-users of goods; this possibility will stimulate SMEs to disclose much bigger part of their actual turnover, which now remains in the "gray economy".
2. Removing the obstacles before SMEs when a legal tax document for "small" payments and deals has to be received. This problem concerns the relationships with some governmental departments and agencies that provide different kind of payable services as well.
3. Creating opportunities for training SME managers that will result in improving the tax discipline and economic culture of Bulgarian taxpayers and entrepreneurs. The investments in business education and training are considered to be very important and much more useful than the advertise campaigns in mass media with a doubtful effect.

### ***3.5. Barriers arising from state policy concerning SMEs development***

We talk about a consecutive state policy aimed at stimulating and supporting the SMEs development since 1997. Besides the laws and regulations concerning the SMEs sector that have already been discussed an institutional framework necessary to formulate and implement the state policy in regard to SMEs has been created during the last two years. A National strategy for SMEs development has also been adopted. Bulgaria has jointed different programs of the EU for stimulating SMEs development; a process of harmonisation with the EU legislation in this field has already begun. The institutional framework involves the following state institutions and organisations assigned with the SMEs sector:

1. Agency for SMEs created in 1997 as a government body, which has to assist the state in developing and implementing the new government policy for stimulating SMEs activities. The Act for SMEs has been adopted in September 1997 by the help of the Agency.
2. Consultative board for SMEs created under the Act for SMEs, which is a state-public consultative body for evaluation of the impact of legislation on SMEs, with participation of representatives of different ministries, chambers, unions and branch associations of small and medium businesses. An information strategy for registration of companies and a database for SMEs have also been developed.

3. Partnership network of state, governmental and non-governmental institutions and business organisations for achieving a synergy effect of the support policy for SMEs: business centres, technological parks, incubators and innovation centers. The Agency for SMEs is working in collaboration with the Bulgarian Industrial Chamber, the Bulgarian Trade-Industry Palace, the National Association of Municipalities, etc.

The National strategy for stimulating SMEs development and the Work program for its accomplishment adopted in 1988 play a significant role in the process of creating well-developed sector of small and medium-sized enterprises. The strategy is aimed at establishing a favourable institutional, legal, administrative, financial and competitive environment that stimulates the development of SMEs in Bulgaria. Despite of all initiatives, the question about the role of the state remains contradictory and in most cases a negative attitude towards it and its policy, concerning SMEs, is prevailing. The definite position of the Respondents is that the state has to build such favourable economic and legislative environment where it is only possible for SMEs to run a normal business. According to the answers of their representatives that have been interviewed the main problems concerning the relationships between the state and SMEs are:

a) Disturbed dialogue between the state and SMEs that reflects the way of responding of the state institutions towards their suggestions. The slow reaction towards the suggestions of the branch associations or the absence of such raises a serious skepticism to the intentions of the state to conduct a constructive dialogue with the representatives of small and medium businesses and to support effectively SMEs development. Reasons for such attitude are motivated, on the one hand, with the withdrawal of the state from the direct support to SMEs and, on the other hand, with the non-efficient management of the financial resources that it owns.

b) Overall negative attitude of the state to the private business. 24 per cent of the Respondents consider that the policy the state formulates and executes is based on the presumption that Bulgarian entrepreneur is a potential offender. That is why the philosophy of a big part of Bulgarian legislation and the way of arranging the administrative procedures are oriented towards preventing from different breaches that has certainly an opposite effect. A great number of the problems of SMEs are local and concern their relationships with the municipality administration.

c) Clumsy procedures for registration of newly established firm and starting-up a new business that takes lots of time and requires increasing costs<sup>1</sup>. Besides the big firms and especially the big foreign companies have a privilege status compared to Bulgarian SMEs. All the researches have devoted a special attention

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<sup>1</sup> The Research of the Institute for Market Economy: "Rules, Regulations and Transaction Costs in Transition Bulgaria", 2000.

to the necessity of decreasing the number of permit/license regimes<sup>1</sup>. The representatives of SMEs make a direct connection between the existence of multiple permit regimes and clumsy administrative procedures on the one hand and the widespread corruption among the government clerks on the other hand. Distrust in the state institutions and doubts for corruption and privilege attitude towards some companies have also been expressed by the Respondents in regard to the distribution of funds coming from different international programs.

It will be interesting to present here the results of the survey done by the Institute for Market Economy. It has carried out a personal interview survey of 20 firms between the 1<sup>st</sup> and 16<sup>th</sup> of June 2000. The survey was designed to collect data on compliance costs<sup>2</sup> borne by the Respondents: 12 of them are SMEs in 0-10 employee size band, 7 in the 11-50 size band and one in 51-200 size band. Some 40 per cent of the Respondents were registered for VAT, that is they have had a turnover in excess of BGN 75 000. Table 2 shows the average number of days per year per Respondent firm spent on various types of regulatory requirements. Building permissions (27.7 man-days) are the heaviest time burden even though the results show that 75 % of firms were not involved in this activity during the year of survey. Consumer protection burden that appears to relate to the activities of local authorities in enforcing standards seems very high. However, if social security, National Insurance Institute registration and other tax formality requirements are added together then these are among the single heaviest burdens (19.8 man-days). Health and safety (14.1) and employment requirements are prominent (12.4), as is licenses/permits (15.9). The total of 155 man-days per enterprise appears high but it needs to be remembered that it includes the man-days equivalent of paid out costs to bookkeepers, accountants, etc as well as the man-days equivalent of bribes.

**Table 2.** Average costs of compliance and non-compliance per firm<sup>3</sup>

	<b>Average compliance costs per enterprise in man-days p.a.</b>
1. Building permissions	27.7
2. Consumer protection, quality of products	20.5
3. Licenses/permits	15.9
4. Safety policy	14.1
5. Health, safety and working environment	12.4

<sup>1</sup> This recommendation is also stated in the last Regular report of the EC on the Bulgaria's progress towards accession, November 2000.

<sup>2</sup> Compliance costs are administrative costs for business of dealing with regulatory requirements and include the costs of owner and staff time and paid-out costs for bookkeepers, accountants and other professionals as well as fees paid for licenses and registration. Firms, which choose not to comply wholly or partly with the regulations, also may bear time and paid-out costs in terms of penalties, fines and corruption payments (bribes).

<sup>3</sup> Resource of data: Inception Report: "Bulgaria Reform of Administrative Barriers to SME Development", Bannock Consulting Ltd., 2000.

6. Premises	10.5
7. Control and inspection	8.9
8. Social security and employee's income tax	7.7
9. Payment of profit tax, VAT etc.	7.1
10. Labour contracts, maternity leaves, etc	5.7
11. National Insurance Institute registration	5.0
12. Comments on legislation and policy	4.3
13. Sector specific: import/export, vehicles	3.6
14. Court registration	2.6
15. Fire prevention	2.4
16. Company reports	1.9
17. Qualification courses	1.6
18. BULSTAT registration	1.0
19. Provision of information	0.9
20. Collective bargaining	0.8
21. Applying for donations and deductions	0.1
<b>TOTAL:</b>	<b>154.8</b>

d) Low efficiency of the administration of the state institutions that provide support to SMEs activities. For example, the most of Respondents evaluate the activities of the Agency for SMEs as ineffective. The same is true for the activities of the Center for Export stimulation that has to supply information not only on forthcoming fairs and commercial exhibitions but also on the conditions for participation of Bulgarian producers and traders in them. The prevailing attitude towards the activities of so-called "business incubators", which status is arranged in the Act for SMEs, is that they are very ineffective – practically they do not provide any support to the starting SMEs.

e) Insufficient role of the state towards an active assignment of public orders to the Bulgarian SMEs. The Respondents point out here, for example, the production of food and the possibility for the budget organisations to announce tenders for supplying with food products made in Bulgaria.

f) Unclear status of the branch associations. In this respect a new legislation on their legal status is necessary, as well as some opportunities for an active participation of the branch association in shaping the state policy towards SMEs should be available.

#### **4. Recommendations against the barriers**

As a result of the conducted studies and analyses of the barriers before SMEs the following recommendations on improving financial and legislative framework and enhancing the competitiveness of SMEs in Bulgaria can be made:

1. Supporting the entrepreneurs at the stage of preparation of the required documents for applying for a loan from a financial institution. The support can be in one of the following forms:

- a) Organising specific business education at the stage of preparation of economic background of the business plans for applying for a loan;
  - b) Providing consulting services from the branch associations as to help entrepreneurs in preparing business projects.
2. Alleviating the requirements for capital adequacy of the banks, evaluation of their risk expositions and forming provisions for covering the risk of losses – mainly by changes in the related orders of the BNB (Orders # 8, 9 and 11).
3. Sharing the existing risk. It can be distributed between different institutions and through different schemes, namely:
- a) Establishing so-called Guarantee funds with an active participation of the state, which recently is the most widespread form. A great significance for encouraging starting-up of SMEs, financing of research activities or feasibility studies is attributed to the specialised risk funds, because there is no financing towards such projects in the moment.
  - b) Opening up credit lines and creating of schemes for financing from international donors, which share the risk with Bulgarian banks. Such credit lines provide long-term financing and a free of charges period for the principle. Usually the foreign donors provide non-paid consulting services, for example, for preparation of business plans etc.
  - c) Sharing the risk with the insurance companies. Such opportunities, that are used very rarely, have been offered by the Agency for Export Insurance (AEI). In this way through making an insurance contract with the Agency, the quality of collateral can be increased against some banks. The insurance bill (promissory note) of the AEI may be used as additional low risk collateral when short-term loans are granted.
  - d) Creating opportunities for an easy access of SMEs to funds for working capital and investment loans. That can be reached through introduction of standardized procedures for granting and managing loans from the commercial banks. It may result in reducing the costs on credit activities and accelerating the lending process.
  - e) Using alternative recourses for financing SMEs activities, for example, through granting loans from non-financial institutions.
  - f) Using non-specific forms for bringing closer the interests of banks and branch associations for achieving more favorable conditions for granting loans to SMEs. An active exchange of information between banks and branch associations may support this process.
  - g) Strengthening the role of the state that will make the support to the process of granting loans to SMEs stronger. As to achieve it specific rules for development of the Incentive bank's activities should be established, which can make the process of lending easier, specific schemes for encouraging the starting-up entrepreneurs should be introduced as well.

Such recommendations for abolishing the existing barriers can be made towards the other sectors – tax and insurance policy, foreign trade and customs

policy, etc. The goal is that favorable conditions for developing and encouraging the small and medium business in Bulgaria have to be created towards:

- Facilitating the access of SMEs to financial recourses including bank loans and financing schemes that provide capital for newly established enterprises.
- Decreasing the tax and insurance burdens and introducing preferences and stimuli especially designed for SMEs, enhancing the tax culture and discipline of entrepreneurs.
- Introducing measures for encouraging exports and defending Bulgarian SMEs from unfair competition at the conditions of strong liberalisation of the foreign trade.
- Strengthening the role of the state and alleviation of the heavy and clumsy administrative procedures and license regimes, decreasing the corruption among the government officials.
- Enhancing entrepreneurial culture and organisation of a specific business education that helps SMEs in doing business-projects to apply for a credit.

## **5. Conclusion**

At present SMEs have limited funding sources. The unclear legal framework restrains donors from providing significant funds for micro and small enterprise lending. Programs that disbursed loans through commercial banks have secured larger credit lines, but have also compromised some of their social objectives. In order to minimize operating expenses and improve efficiency levels, banks prefer to serve a small number of clients while loan sizes constantly increase. Although credits are given to small and medium-sized enterprises, the needs of micro-enterprises are not usually addressed.

The restrictive and unclear legal framework does not facilitate access to public and/or private capital either. Micro-finance institutions (MFIs) that exist do not have access to the capital markets, since they cannot issue equity that can be leveraged with borrowed funds. MFIs may not attract deposits as well. None of the existing supportive programs may access to voluntary savings of the general public for the purposes of leveraging the MFIs on-lending capacity. Relevant regulations and efficient supervisory mechanisms for MFIs would attract private institutional investment as well as banks participation in providing debt capital and/or equity investment.

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## DOING RESEARCH ON SME PERFORMANCE IN THE EUROPEAN TRANSITION ECONOMIES

Kari Liuhto<sup>1</sup>

### ABSTRACT

This article aimed at solving some mysteries concerning the relationship between ownership and SME performance. The article shows that privatisation should not be considered the ultimate destination, but the means to improve efficiency of a firm. Moreover, the article does not allow us to draw a definite conclusion on a deterministic correlation between foreign ownership and organisational success. Even if foreign ownership would not be the engine of organisational transformation, foreign companies can be regarded as a lubricant of that engine. This means that the ex-socialist companies have to assume the main responsibility for putting transformation into practice. Foreign companies can only play a guiding role in the overall transformation.

**Key words:** Ownership change, company performance, transition economies.

### 1. From One Big State Factory to an Expanding Private Firm Network

In analysing the development of the enterprise population in ex-socialist countries, it should be remembered that state companies in the former centrally planned economies formed one economic entity, within which they were closely integrated to another's operations, at least in principle<sup>2</sup>. Kozminski (1993, 7) emphasises the close integration of enterprises by describing the socialist system as "*one big factory*". Central planning preferred a small enterprise population, as it was less demanding to control a small number of large companies than a large number of small companies.

Leadership change in the ex-USSR in the mid-1980s began a comprehensive reform (*perestroika*), which started the development of business legislation in the Soviet Union and elsewhere within the socialist bloc. Legislative improvements

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<sup>2</sup> The socialist economies were more vertically than horizontally integrated. The enterprises were relatively closely integrated to the administrative organs above them but fairly loosely integrated to the activity of other enterprises (Conyngham, 1982).

gave fuel to an enterprise boom, and consequently, skyrocketed the number of new private firms. Russia can be taken as an example of the boom. The Russian enterprise sector has multiplied over 15 times in less than a decade. According to Blasi et al. (1997, 25), “*at the beginning of 1991 the Russian Federation had approximately 23,766 mid-sized and large industrial enterprises and 170,000 smaller ones, mostly retail shops*”. By the beginning of the year 2000, some 3,0 million enterprises had been registered in Russia (RSC, 2000). According to the European Commission’s Regular Reports, over 95% of the enterprises can be regarded to belong to SME group in the Central and East European transition economies (EU Commission, 1999).

Despite the rapid expansion of the enterprise population, the SME domination and the privatisation of enterprise activities, economic performance has stumbled in most of the ex-socialist economies after the abandonment of the one big state factory ideology. Poland, the Slovak Republic and Slovenia are, so far, the only ex-socialist economies to reach their pre-transformation GDP level. In the Commonwealth of Independent States (the CIS) the economic recovery has been substantially slower. The CIS has experienced an almost 50 per cent drop in its GDP during the years 1989-1998 (EBRD, 1999).

The giant growth in the number of the private enterprises, together with the economic collapse, is just one example of the economic mysteries surrounding the European transition countries. In order to solve this puzzle, *this article discusses the linkage between ownership and SME performance and provides some tentative explanations for these mysteries*. The explanations are based on the author’s 10-year-experience in conducting empirical enterprise studies in the former socialist countries (Liuhto, 1999a).

## **2. A Literature Review on the Impact of Ownership upon SME Performance**

As the majority of the enterprise population in the European transition economies is formed by small and medium-sized companies, most of studies investigate SMEs, though they do not mention this fact explicitly. This chapter summarises some of the empirical research on the enterprise performance.

To begin with, some scholars indicate that private ownership positively influences enterprise performance in Central and Eastern European countries (the CEECs). For example, Frydman et al. (1998, 2) suggest that “*private ownership dramatically improves corporate performance, and that its impact is the strongest enhancing a firm’s ability to generate revenues*”.

Although the research above emphasises the role of private ownership in accelerating enterprise performance in the CEECs, it is therefore rather puzzling that some researchers argue that privatisation has not led to a considerable improvement of performance in the largest ex-Soviet republic. Romanov (1996, 233) states that “*the Russian government is obviously disappointed that*

*privatisation of enterprises has not brought fast positive shifts in management and in the growth of efficiency*".

As employee-privatisation is a rather widely used privatisation mode, it is enlightening to go briefly through the literature on the impact of employee-ownership on enterprise performance. According to Filatotchev et al. (1996, 91), "*compared to conventional shareholders, employee-owners who are unable to freely sell their shares may prefer the firm to make decisions that benefit them in the short term (such as through higher pay-outs of profits in the form of higher wages, the maintenance of employment, and correspondingly lower levels of investment). With virtually all their human and financial capital tied up in one enterprise, employee shareholders may seek to reduce risks by voting for excessive product diversification by the firm*".

Although the above research implicitly indicates a weak performance of employee-owned firms in Russia, not all the academics have found a linkage between employee-ownership and weak organisational performance. For example, Jones and Mygind (1998, 1) state that "*the key obstacle to enhance performance does not appear to be employee ownership [in Estonia]*".

Some scholars have noted that private start-ups improve their performance faster than other companies. For example, Bilsen and Konings (1996) have found that young enterprises improve their performance more frequently than do old companies in the CEECs. Also Liuhto's (1999b) research indicates that the private start-ups did improve their productivity more frequently than the privatised companies in the CIS, though the majority of their capital stock would have moved into private hands.

Liuhto (2000) concludes that the transition path is a more important factor in explaining organisational performance change than that of ownership structure or organisational age. The transition path of privatised companies can be characterised as organisational revolution whereas the transition path of private start-ups can be described as organisational evolution in a revolutionary business environment. On the basis of empirical findings, he suggests that organisational relativism should be integrated into the analyses of the enterprise performance.

The EBRD, in collaboration with the World Bank, has implemented one of the largest surveys in the former socialist bloc when they studied over 3000 enterprises in 20 transition economies. The report (1999, 142-143) indicates that "*while the survey cannot indicate whether privatisation or a specific type of owner has brought about better performance because the relative quality of firms prior to privatisation and ownership change is not known, several other studies have been able to investigate this question. It is striking that in all of the available studies that make adjustments for the effects of selection, privatisation has been found to have a positive impact*". To put it differently, even if these organisations did not find empirical support for the relationship between private ownership and performance, these institutions seem to be committed towards suggesting a correlation between privatisation (private ownership) and positive performance.

In addition to the discussion on the private owner impact, the foreigner impact has received a lot of attention in the literature. Some studies stress the importance of foreign direct investment (FDI) in the transformation of post-socialist economies. According to the EBRD (1998, 82), "*FDI contributes to the transition and economic performance across the region [the former socialist countries] in three major ways. First, FDI may directly increase capital accumulation. Second, it raises the productivity of the enterprise sector and benefits export performance. Third, it generates technological and organisational benefits for domestic suppliers and competitors*". Hertzfeld (1991, 91) argues that "*direct foreign investment is a fundamental engine of social change in the [former] Soviet Union*".

Purju (1998) backs the significance of foreign ownership, as it leads to a better financial position and easier penetration into foreign markets. Similarly, Varblane and Ziatick (1999) state that FDI plays an important role in promoting export growth through opening new markets and the provision of managerial marketing know-how and financial resources needed for exporting. Finally, the EBRD (1999, 144) states that "*firms with foreign ownership tend to perform better than state-owned firms*".

Despite pro-foreigner arguments, the empirical evidence also shows that foreign influence is not a pre-condition for successful organisational transition. For example, Akimova and Schwödiauer (1998, 20) state that "*[organisational] restructuring can start successfully even in the absence of foreign investment*". Besides, scholars suggest that market economy practices are not always effective in the transition economies, and therefore, foreign practices should be adjusted to local circumstances. For instance, Holt et al. (1994, 136-137) state that "*... any universalist assumption concerning direct transferability of Western values, management techniques, or organisational expectations is erroneous. ... The Russians do not want to feel subordinated to a system adapted from Western practices; they want to create a new economic and social system unique to their culture. They recognize the value of adopting principles and practices that are proven effective, but do not want to unconditionally accept any model that we [‘Westerners’] might propose*".

Arenkov and Rakhmatullina (1999, 17) emphasise the need for the optimal balance between Western and Eastern practices as follows: "*they [international companies operating in Russia] have to find a balance between standardisation and adaptation to local market conditions. Being global these companies generally use standardised approach in their product and communication strategies. Adaptation to local condition takes place mostly in packaging and advertising texts, slogans and in some cases trade mark names according to cultural and legal requirements*".

The fact that the post-socialist managers do not want to digest all Western influences is not perhaps as illustrative an indication that market economy practices are not directly transferable to the former socialist countries as the fact that foreign managers are sometimes forced to adopt local practices in their

managerial behaviour. For example, a Finnish manager stated that “*the management models that I have learned did not apply in Russia, and thus I had to start to learn a totally new basis for my thinking*” (Suutari, 1996, 262-263).

The literature review on the company ownership-performance relationship reveals that the conclusions drawn on this relationship are rather counterintuitive. In order to solve the mysteries arising from the above discussion, the author brings forward some tentative explanations for these contradictory findings.

### **3. Solving Mysteries Linked to the Impact of the Ownership on SME Performance**

In order to explain the heterogeneous empirical results on the linkage between private ownership and performance<sup>1</sup>, it should first be emphasised that private companies do not form a homogenous enterprise group. The literature review emphasises the need for separating the conclusions on privatised companies and private start-ups since performance in these groups deviate significantly. The need to separate privatised and private companies is just an empirical example why researchers conducting empirical studies should not only explore the ownership structure but also ownership development in the company.

Second, one cannot stress enough the fact that receiving accurate and reliable data on enterprise ownership and performance is extremely difficult in transition economies. As researchers do not usually have access to official data banks, they are forced to collect this data from the companies. Researchers, conducting empirical studies, face a managers' reluctance to reveal performance data since in less stable post-socialist business environments managers may fear that their performance data ends up in the hands of competitors, taxation authorities or even organised crime.

In order to make data collection possible, scholars are sometimes forced to reduce the accuracy of performance data by inquiring about percentages instead of exact figures. Paradoxically, researchers may even have to use non-numeric scales in measuring performance since inquiring about numeric performance data may lead to a massive non-response or deliberately distorted answers.

All in all, data access problems deteriorate considerably the possibilities of studying the correlation between any organisational variable and organisational performance. Data access difficulties may even become a source of misleading

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<sup>1</sup> Relatively seldom, studies describe explicitly how they treat the ownership issues i.e. they do not specify whether private ownership means complete private ownership (100%), an absolute majority (over 50%) or a relative majority (the largest ownership share). Besides, it should not be forgotten that due to secret ownership arrangements, a company can be in private hands though officially it may seem that the major owner is a state or a municipality. Even if the number of these secret ownership arrangements is not considerable, and hence they do not bias survey findings, the possibility of such a secret ownership arrangement should be taken into consideration when the case studies are to be conducted.

information if the researcher is not aware of the limitations of his/her data (Michailova & Liuhto, 2000).

Third, academics themselves are sometimes creating mysteries when they do not acknowledge the difference between performance state and performance change. Surprisingly, sometimes even experienced researchers draw conclusions about the advancement of the company despite the fact their empirical material allows them to take a stand only on performance improvement.

A practical example of the difference between performance state and performance improvement can be taken from high jumping. The world record holder has considerable difficulties to improve his/her record by even one centimetre, whilst an amateur can improve his/her record rather easily, by several centimetres but despite the amateur's faster advancement, the amateur's record lies well below that of the champion.

To formulate the above idea into economic language, a more advanced company has probably more difficulties in improving its performance than a less advanced one but despite faster performance improvement in a less advanced firm it may become bankrupt in the transition process. In other words, even fast performance improvement does not suffice if the company is exposed to free international competition and the company's financial resources will be used up before it is able to reach the minimum competitiveness level.

Fourth, enterprise performance is multisided phenomenon. For example, one performance indicator may show strong performance whilst another may suggest weak performance. Therefore, it is important that research reports explicitly which performance indicator has been measured and takes into consideration those limitations related to the performance indicator used<sup>1</sup>. Moreover, the industry-specific effect is often forgotten in the evaluation of the enterprise performance. To put it differently, studies sometimes neglect the fact that strong performance in one industry can be weak in another.

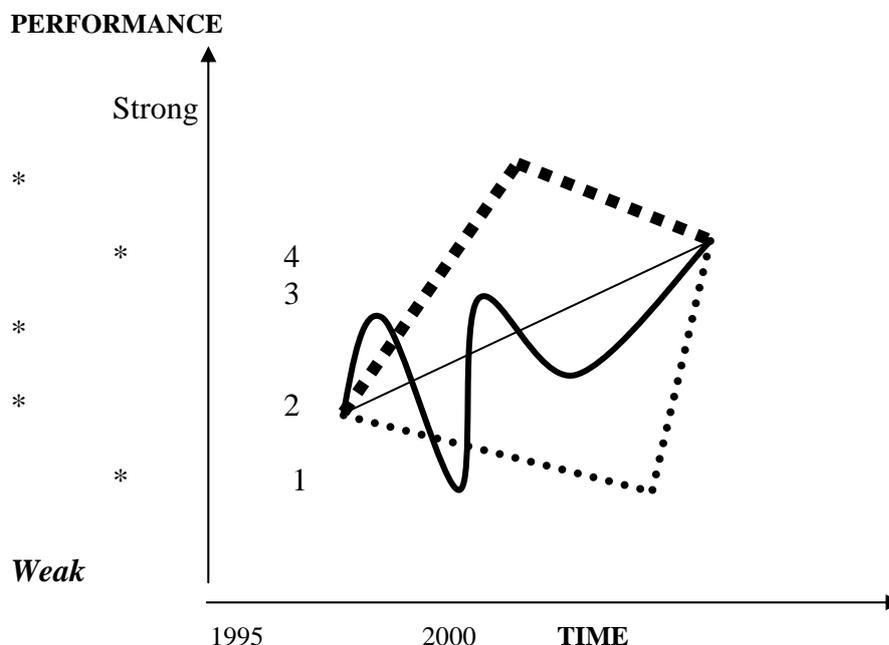
Fifth, the specification of the time period in measuring performance change is often rather vague. In this context, it seems appropriate to be reminded that the company management may sacrifice their short-term performance in order to obtain their long-term performance. Therefore, it can be recommended that researchers pay more attention to the time period-related factors when reporting their results.

Sixth, even if the enterprise performance in two points of time would be the same, it does not imply that performance change would be identical during the period studied. Table 1 describes four different performance change patterns, where the performance state is the same at the beginning and the end of the measuring period. The following table stresses the fact that understanding enterprise performance change requires an overall comprehension of the enterprise transition.

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<sup>1</sup> For instance, Campbell (1976) has identified thirty distinct effectiveness criteria.

**Table 1.** Four Change Patterns Indicating the Same Performance Level in 1995 and in 2000



**Legend:**

- Pattern 1  = After prolonged deterioration, fast advancement  
(Typical case – privatisation of state company)
- Pattern 2  = Non-linear advancement  
(Typical case – private start-up in highly turbulent field of industry)
- Pattern 3  = Linear advancement  
(Typical case – gradual adjustment process of a foreign owned subsidiary)
- Pattern 4  = After fast advancement, slight deterioration  
(Typical case – a market leader in increasing competition)

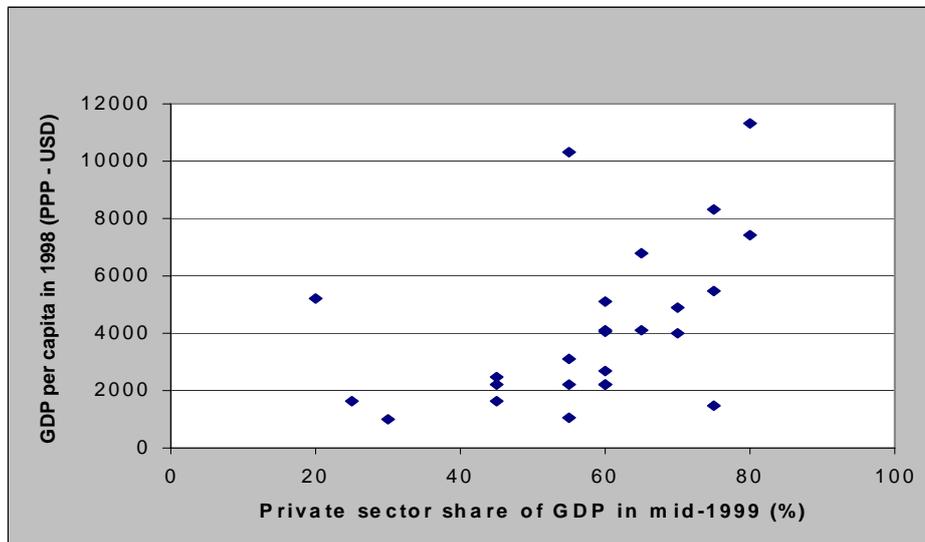
Seventh, the impact of the transition route-specific features should be kept in mind when reporting the results. As neither transition economies nor their companies are following the same transition route, the findings do not necessarily apply to all transition economies or to all enterprises. Therefore, conclusions based on the empirical evidence collected from the CEECs countries can be completely misleading in the CIS context, or vice versa.

Eighth, a distinction between research significance and economic significance should be acknowledged. Studies often treat enterprises equally in the analysis despite the substantial difference in their economic importance. For instance, even if the performance of an enterprise with 15 employees is

considerably less significant for the macroeconomic output than the performance of the corporation with 15,000 employees, this difference is taken too seldom into account when researchers analyse quantitative test results.

Due to variances in the economic importance of the companies, the macroeconomic data may provide a more accurate answer to the question, what is the linkage between private ownership and economic performance, than might the microeconomic data. Table 2 may aid in answering this question. The following table indicates a rather clear relationship between a larger private sector and a higher economic performance.

**Table 2.** A Comparison of GDP and Private Sector in Transition Economies



Sources: EBRD (1999) and CIA (2000)

Even if a large private sector share of the GDP and a high GDP per capita seems to be related, it does not mean that all enterprises should be privately owned. Both private and state-owned companies can operate effectively depending on the situation. Moreover, it is sometimes necessary to include social performance criteria in the evaluation of the overall performance. It might be an inappropriate decision for instance, to privatise the national mail system if the privatisation causes substantial distribution malfunctions in peripheral regions despite the fact that privatisation would increase financial performance.

Although many of the issues described above are also valid when discussing the foreign ownership effect, they are not repeated when the special issues concerning foreign-owned companies are introduced. A fruitful starting point for the discussion concerning the impact of foreign ownership on performance is the common belief according to which foreign-owned companies spread market

economy practices in transition economies and foreign ownership is the major variable in explaining good organisational performance.

Before drawing a conclusion, a few supplementary questions may need answering. First, it should be asked whether foreign companies are able to transfer their practices into transition economies or do they have to adapt their organisational culture to the local business environment. When answering this question, it should be kept in mind that though certain management practices have proven to be effective in a market economy, it does not mean that they would be directly transferable to transition conditions.

Both the adaptation of suitable foreign practices and their adaptation into the local business culture are probably the key words for a strong performance, not the complete imitation of foreign management culture. The question is more, which foreign methods can be copied and which local practices should be employed, than whether either foreign management methods or local practices alone are the best strategy. The above idea emphasises the need for balance between foreign management methods and local practices rather than to argue the superiority of either international standardisation or local adaptation.

The optimal balance between standardisation and local adaptation is so much a context-related factor that it is not possible here to provide any recommendation for a synergistic harmony between them. Besides, it should be mentioned that this harmony is most likely to change over time as the transition progresses and hence, it is more than inappropriate to suggest any universal or permanent solution.

Although it is impossible to propose any universal balance between foreign and local methods, it might, nevertheless, be presumed that the relative importance of local adaptation may decrease as the transformation progresses, since the ex-socialist business environments and companies operating there are becoming more open to the influence of international business. The above assumption does not deny the importance of the local context and cultural features in the post-socialist business, even in the future, but on the contrary, this presumption stresses the fact that in the early phases of transition, the need for local adaptation can be overemphasised but along with progress in the transition, the role of local adaptation may diminish.

The discussion above questions the economic rationality of using foreign management practices without an adjustment to transition economies. Another issue which should be emphasised is the fact that foreign management practices are not synonymous with market economy practices. Surprisingly often, researchers erroneously assume that foreign ownership automatically creates a channel for market economy practices to flow into a transition economy. It should be noted here that some of the foreign companies originate from other ex-socialist countries, and hence, it can be questioned whether, for instance, the Belarus companies which have established a subsidiary in another transition country are able to distribute advanced market economy practices there.

On the microeconomic level, a researcher may wonder whether a foreign parent company has to possess the ownership majority to be able to distribute its management culture in its subsidiary or does the ownership proportion have any practical relevance for assessing the flow of foreign management culture into a company operating in the transition economy. On the macroeconomic level, the following question may appear; should a researcher evaluate the effect of some foreign country depending on her investment share of the total foreign investment stock or is the percentage of the companies from the entire foreign business population a more adequate indicator in revealing the effect of that foreign country.

A researcher may feel a special uncertainty about how he/she should treat a foreign subsidiary registered, for instance, by a German company, which is ultimately owned by a Japanese corporation. In other words, is the researcher studying the impact of the German or the Japanese management culture on enterprise performance?

Should a scholar find the division of foreign investors by country a less rational alternative, he/she might satisfy themselves by classifying foreign-owned companies into two country categories: (1) Western (non-ex-socialist) and (2) non-Western (ex-socialist companies). Even if the researcher would decide to conduct the distribution suggested above, it would not solve all the mysteries involved in defining the real ownership of the enterprise. In this context, it should not be forgotten that a Western-based company is not necessarily a Western-owned company.

To rephrase this mystery, Russians among their Eastern colleagues have transferred a considerable amount of capital outside their country and established a multitude of companies in the West<sup>1</sup>. These Western-based but Eastern-owned companies often make investments back in their homeland. Cyprus can be taken as an example of such capital flows between Russia and Cyprus. During 1993-99, Cyprus, was with a 21 per cent stake, the second most important country to lay investments in Russia (Bradshaw, 2000). The majority, if not all, of the FDI coming from Cyprus is Russian by origin. It seems evident that these Western-based but Eastern-owned companies do not spread advanced management practices in transition economies.

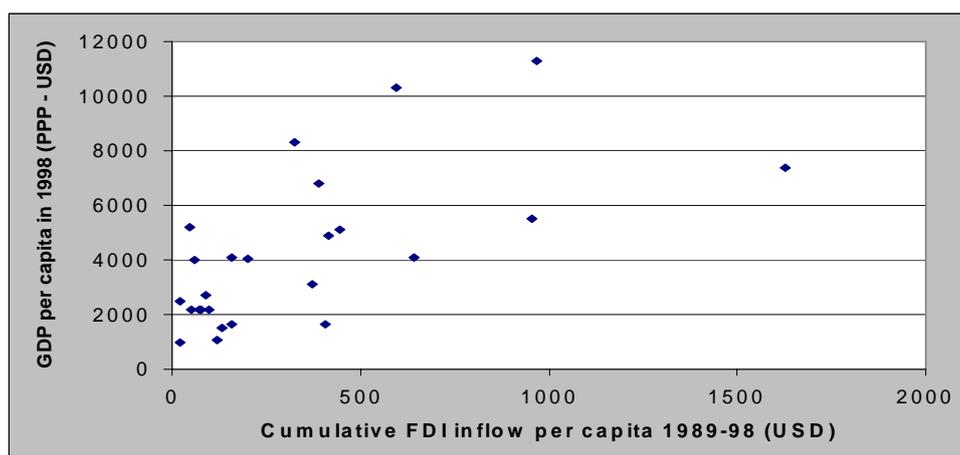
In addition to the country of origin discussion, it's open to conjecture whether the foreign effect is the explanatory variable for the positive enterprise performance or whether the main determinant is the accumulated investment capital, regardless of the country of origin. To move this discussion to the

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<sup>1</sup> There are many estimations about the capital flight from Russia. According to one estimation, the capital flight from Russia was almost USD 70 billion during 1994-1997 (The Problem of Capital Flight from Russia, 1999). The Fitch IBCA organisation estimates that the capital flight from Russia was USD 136 billion during 1993-1998 (Kauppalehti, 1999). According to the Russian Ministry of Internal Affairs, some 60,000 Russian companies have been registered in taxation havens (Kuorsalo et al., 1999, 120).

macroeconomic level, it can be asked whether a high FDI inflow caused the positive transition, or on the contrary, is progress in transition the main reason for the growing FDI inflow (see Table 3).

**Table 3.** A Comparison of GDP and FDI Development in Transition Economies



Sources: EBRD (1999) and CIA (2000)

The table above indicates a linkage between a high GDP level and a FDI inflow. Despite the linkage, it does not necessarily mean that a strong FDI-inflow determines a high GDP level. In fact, the explanation can be the opposite. A high GDP level may cause a foreign company to invest in particular transition economy.

As it is an uneasy task to solve such a 'chicken vs. egg' dilemma, a more adequate way to explain the correlation can be the 'bicycle pedal' model. According to the bicycle pedal model both phenomena occur almost simultaneously, not sequentially, as proposed by the 'chicken vs. egg' explanation. In the bicycle model, the ultimate explanation for the economic development is less important than the dynamism itself.

The bicycle pedal approach assumes that success strengthens the possibilities for future success, and correspondingly, poor performance makes it even more difficult to break free from the vicious circle, regardless of whether the ultimate explanation was either GDP or FDI factor. Therefore, it is important that policy-makers in transition economies follow continuously that the economic environment offers fruitful ground for dynamism. In fact, the dynamism factor can be a more important competitive factor for transition economies searching out their place in the world economy than are their economic resources or population potential.

If the discussion is brought back from the macroeconomic level to the microeconomic one, the risk of the 'foreigner success' bias involved, especially in

the case studies, should be taken into account. Although some case studies adequately conclude that the foreign ownership has been important for organisational success in that particular company, this does not naturally mean that all firms with foreign ownership would be successful.

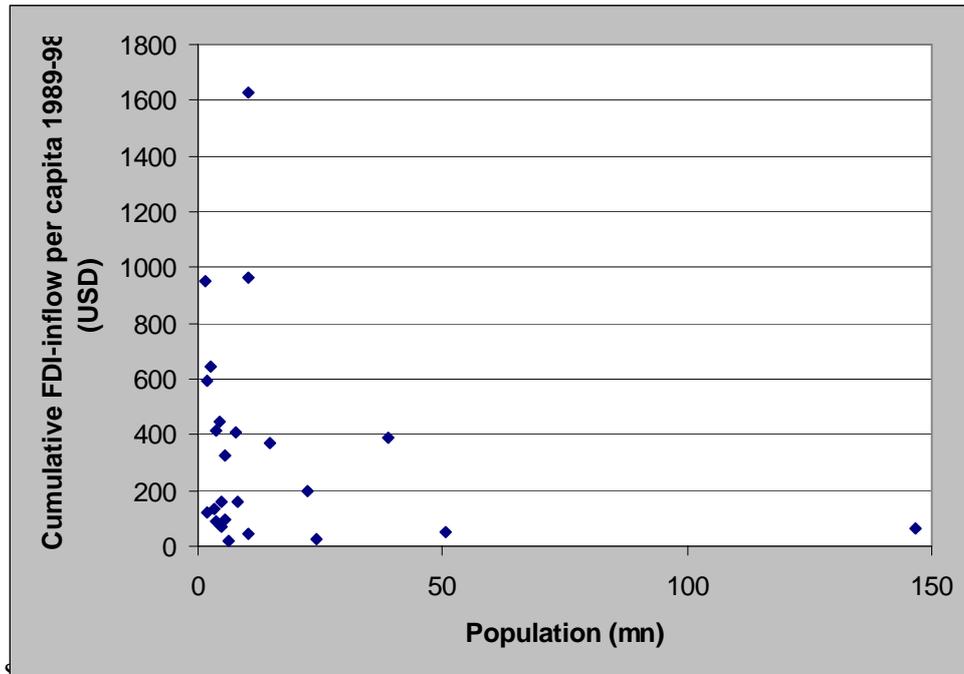
For example in Russia, only some 15,000 companies with foreign ownership were active, out of approximately 45,000 registered foreign companies. As two-thirds of the registered foreign companies do not operate on a permanent basis, it might be appropriate to reconsider, before a sign of equality is put up between foreign ownership and organisational success in Russia (RSC, 2000).

Researchers should be reminded that studying a successful foreign company automatically produces a success story but does not allow the researcher to conclude that the ultimate explanation for the success is the foreign ownership. Therefore, researchers should be advised to study not only the shining stars but also include in their case studies those foreign companies which have ceased their operations. Only a few studies have been conducted on the less successful foreign companies because it is more difficult to trace these black stars and their ex-management is usually less reluctant to take part in the researches than is the management of successful companies (e.g. Hadjikhani & Johanson, 1999).

Although the role of the foreign parent company in providing access to foreign markets has been justifiably noted by some academics, a foreign parent company does not automatically aim at aiding its subsidiary in a transition economy to get access into Western markets. In fact, the situation can be the opposite. The foreign parent may aim, by establishing a subsidiary in a transition economy, at penetrating the Eastern market. Besides, by acquiring an Eastern firm, the foreign parent may even aim at buying a possible competitor out of market. Therefore, it is extremely important that research activities do not focus only on foreign ownership issues but also on the strategy of the foreign parent.

Even if many issues related to the foreigner effect have been questioned, the article does not deny the fact that especially, the best foreign companies are ahead of local companies and hence, they guide organisational transformation. The forerunner position of the most successful foreign companies can be a factor, which forces or tempts local companies to imitate the managerial practices of their more advanced foreign competitors. Due to such an organisational spillover effect, the importance of foreign companies should not be underestimated, though foreign ownership itself does not necessarily determine a faster transformation speed.

In the light of the existing empirical findings, it is perhaps too early to draw definite conclusions on a unanimous correlation between foreign ownership and organisational success before further studies have been conducted. Despite the need for further studies, it may be assumed that the role of foreign direct investment becomes visible rather easily, especially in small transition economies, whereas in large transition countries foreign companies can be regarded as more of a lubricant than the engine of the transformation (see Table 4).

**Table 4.** A Comparison of Population Size and FDI-Inflow in Transition Economies

#### 4. Getting Rid Of Mysteries

This article aimed at solving some mysteries concerning the relationship between ownership and SME performance. Although I have presented some findings that question the superiority of private ownership, I do not argue that private ownership would not lead to better organisational performance after the privatisation is successfully over. It is very likely that privatised companies will improve their performance significantly or they will disappear. Both these phenomena would increase the performance of the private enterprise population.

Hence it can be argued, that little by little, the negative impact of the privatised companies on the performance of the private enterprise population will diminish and thereafter, private companies will be performing better than the non-private enterprise population. However, it is too early to estimate the time period necessary, after which the negative impact of the privatised companies on the performance of the private enterprise population will disappear.

While have stated this pro-privatisation argument, it should not be forgotten that the company can be effectively, or alternatively poorly, managed both by the state and private owners, depending on the management's ability. Privatisation

per se should not be considered the ultimate destination, but the means to improve economic and social efficiency. Social efficiency should not be totally forgotten in the transition process since the economy and the enterprises forming it should serve the society and its well-being, not vice versa.

It is perhaps too early to draw a definite conclusion on a deterministic correlation between foreign ownership and organisational success. Before producing any deterministic conclusions it should be questioned whether the explanation for the organisational success has been foreign ownership or accumulated capital, regardless of the country of origin. Second, many studies erroneously assume that foreign ownership is synonymous with the inflow of advanced management practices. It should also be remembered that an Eastern investor can be behind a foreign company. Third, foreign ownership does not necessarily guarantee access to foreign markets, but on the contrary, a foreign parent company may aim at preventing the entry of the Eastern firm into the Western market by acquiring it.

Even if foreign ownership would not be the engine of organisational transformation, foreign companies can be regarded as a lubricant of that engine. This means that the ex-socialist companies have to assume the main responsibility for putting transformation into practice. Foreign companies can only play a guiding role in the overall transformation. Although the foreign firms are not the locomotive of the transitional ship it does not mean that their guiding role would be insignificant.

Although the share of foreign-owned companies is relatively small in the total enterprise population, the importance of foreign companies should not be underestimated since they may lead organisational transformation. The forerunner position of the most advanced foreign companies can be a factor which forces or tempts local companies to imitate the managerial practices of their more advanced foreign competitors. Due to such an organisational spillover effect, the importance of foreign companies should not be underestimated, though the foreign ownership itself does not necessarily mean a faster transformation speed.

This article has analysed some mysteries concerning the relationship between company ownership and SME performance. This paper shows that some of these mysteries prevail more in literature than in reality. In order to clean the literature from unnecessary mysteries, scholars should intensify research efforts, focus research objectives, conduct more accurate analyses and report them more clearly.

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## **SMALL ENTERPRISES IN THE REGION OF LUBLIN IN POLAND AND THEIR ATTITUDES TO EUROPEAN UNION<sup>1</sup>**

**Franciszek Bławat, Jerzy Ossowski, Krzysztof Zięba<sup>2</sup>**

### **ABSTRACT**

The goal of the paper is to synthesise results of a sample survey in the fields: commercial activity and competitiveness, technological level and changes, employment and prospects for the development of the Polish small enterprises. There is also presented some level of knowledge of Polish entrepreneurs about European markets and their expectations after Poland accession to European Union.

### **1. Introduction**

The research presented below was conducted among a sample of small enterprises operating in the province of Lublin. The definition of a “small enterprise”, used for determining the population for the research was based on, is in full accordance with the one accepted by the European Union for research purposes. Thus such small enterprises employ from 10 up to 49 employees, although due to inaccuracy of statistical data obtained a few smaller enterprises entered the surveyed sample.

The enterprises included in the population represent most of NACE sectors. However a few sections were excluded. First of all, there were some sectors specific for some regions of the country only. In some other sectors (for instance: mining sector) extensive structural changes were being made and so they were also excluded from the research. In addition to the sectors mentioned above, the ones in which enterprises are typically large (for example: energetic).

As the result, the examined population consists of 16 branches as it is shown in the table below. No selection has been conducted as far as ownership and legal

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status are concerned, which means the population contains both private and state-owned enterprises, sole proprietors, partnerships, limited companies and others. Within each branch the 5% representation was randomly chosen. Since some of the enterprise chosen were expected to refuse to take part in the survey, an additional list of reserve enterprises was created. This comprised of 33% of the number of enterprises selected for the primary list in each branch. In case of refusal from any of the enterprises from the primary list, it was replaced by the first enterprise from the reserve list.

The province of Lublin is located in Southeast of Poland neighbouring Ukraine and Belarus. Much of its area is used for agricultural purposes and the industrialisation of this region is rather moderate.

All the enterprises included in the sample were active according to the data obtained for 30<sup>th</sup> June 1999.

**Table 1.** Population of small enterprises, sample size and reserves

NACE sectors/branches	Population	Sample	Reserve
Production	774	40	15
15	271	14	5
17-19	144	7	2
	42	2	1
23-26	92	5	2
27-28	59	3	1
29-33	62	3	1
34-35	8	1	1
20+36+37	96	5	2
Construction	310	16	5
Wholesales and retail trade and repairs	745	38	12
50	109	6	2
51	309	16	5
52	327	16	5
Hotels and restaurants	90	5	2
Transport, storage and communication 60-64	81	4	1
a. Financial intermediation 65-67	224	11	4
Services for enterprises, renting, real estate	373	19	6
Total:	2597	133	45

Source: own calculation

## 2. General characteristics of the enterprises

The examined sample consisted of 135 enterprises from the region of Lublin. Most of the enterprises were private (125 companies, which is about 92.6% of the sample; while only 10-7.4% – were from the public sector).

*The most common activity regarded by interviewees as the basic one was “trade” in the wide sense of this term. 32 enterprises (23.7% of the sample) declared this as main subject of their activity.*

The majority of companies turned out to be individual businesses or individuals’ partnerships (Table 2). Together these types of legal status cover slightly more than 70% of the sample, with nearly 43% share of individual businesses alone. There is also a significant share of limited liability companies, which is estimated for as much as 20%. Among minor types of legal status there are state owned enterprises (4.4%), co-operatives (1.5%), joint stock companies (3.7%) and others. These numbers seem to reflect quite a characteristic structure of the SMEs sector in Poland.

**Table 2.** Organisational forms of enterprises

Legal status	Number	Percentage
Sole proprietors	58	42,96
Partnerships	37	27,41
Ltd companies	26	19,26
State-owned	6	4,44
Joint stock	5	3,70
Co-operative	2	1,48
Other	1	0,74
<b>TOTAL</b>	<b>135</b>	<b>100,00</b>

Source: own calculation

There is no exaggeration in a statement that the SMEs sector in Poland is absolutely dominated by the domestic capital. Over 97% of enterprises are based on the domestic capital. The region of Lublin does not seem to be any exemption and is very likely to illustrate the situation in whole SMEs, where the presence of foreign capital is a rare case.

The structure of the SMEs sector, regarding the legal status of enterprises, is rather stable. The companies are very unlikely to change this status and the vast majority of them (95% of the examined sample) have not changed it for the last three years. The change of the legal status applies mostly to former state owned companies; in these cases the change of legal status may be a part of a more complex process of transformation leading to privatisation of the enterprise.

As it was shown above SMEs are highly unlikely to change the legal status. This can give some hints regarding the time of establishing the companies. Provided that few enterprises changed their legal status the question about the

duration of the present status leads to some conclusions on the possible date of establishing the enterprise (Table 3). For more than 70% of the sample the present status has not been changed since 1990 or later. It seems to be quite obvious that a great number of the examined enterprises were established after 1989 when the transition process had been started. That shows a very positive influence of the transition process on the SMEs sector in Poland and a great increase of economic activity in the population.

**Table 3.** Enterprises by age (of the last legal status)

Age of firms	Number	Percentage
Up to 5 years	66	48,9
6-10 years old	45	33,1
11-15 years old	8	5,9
15-20 years old	12	8,9
21 and more	4	3,0
TOTAL	135	100,0

Source: own calculation

A typical SME is a complete start-up; that is the case of 86% of the examined sample, a few enterprises were created by an establishing organ, and these contributed to 6.7% of the sample. Other set-ups seem to be rather incidental.

In general, Polish SMEs are not the owners of any other enterprises. 96% of examined companies do not own any other Polish enterprises and less than 3% claim to own another Polish enterprise. At the first glance it seems quite clear that Polish SMEs are not very likely to possess any foreign enterprises and this conclusion does not lead to any mistake. In the examined sample of SMEs from the region of Lublin none of the companies turned out to be such an owner.

### 3. Commercial activity and competitive situation

Subcontracting is not very popular with the examined SMEs although one third of them claim to have something to do with it. While 69% of companies do not operate as a subcontractor, for 6.7% of the sample it accounts for 20% of the output, 4.4% claim that 40% of output is dedicated for subcontracting. For 5.2% of the sample it is 50% of the output and the share of those who are subcontractors only is the same.

The local market seems to be the most important for the SMEs from the sample (Table 4). Even though 7.4% of companies do not supply the local market with their products at all, the vast majority depends completely on the local market – this accounts for 61.5% of all the examined enterprises. Between those

extremes there are companies sharing their products among the local market and other markets.

**Table 4.** Distribution of sales for local, national and foreign markets

Markets	Percentage of sales					
	0,0	Up to 25	26-50	51-75	76-99	100
Local	7,4	7,4	7,4	6,7	9,6	61,5
National	64,4	11,1	9,6	5,9	3,7	5,2
Foreign	86,7	8,9	2,2	0,0	1,4	0,7

Source: own calculation

Two third of the enterprises do not deal with other voivodships market (Table 4). In spite of 5.2% of the sample, which supplies the output to this market only, other companies are not very eager to make such expansion.

There are few exporters in the sample (Table 4). Their number accounts for less than 15% as those, who do not export at all, contribute to nearly 87%. In the sample there is only one "pure" exporter and the share of export in the total output for the majority of exporters is not greater than 25%.

The export destination is significantly influenced by the geographical location of the sample. The region of Lublin is located in the Southeast part of Poland, neighbouring to Ukraine and other countries of the former Soviet Union including Russia itself. That is probably why Ukraine and Russia are the most frequently mentioned destinations in spite of the fact that the Polish export to those countries declined in last two years. Germany, which is said to be the most important trade partner for Poland, is far less popular than the countries mentioned above.

83% of exporters have not used any bank loans for export sales in last two years. Some others used bank loans; still those loans were not preferential ones. None of the exporters have used any State Treasury guarantees in the recent two years.

Most of the non-exporters are simply satisfied with the domestic market and that is the reason for not trying to export. Export is not considered as a risky activity; only two companies (1.5% of the sample) indicated the unacceptable level of risk connected with foreign partners or exchange rate fluctuation. The main obstacles are those of an organisational nature; among them there are: difficulty finding a foreign partner, lack of specialists and means for promotion abroad. These reasons are important for about 12 % of the examined sample. Nearly 10% of the examined enterprises tried to improve their export or to start exporting because they were not completely satisfied the domestic market. Approximately half of them indicated insufficient domestic demand as a main reason for export, while the other half stated that exporting is more profitable than selling on the domestic market. Few companies (less than 3% of the examined

population) export in order to gain experience before Polish accession to the European Union.

Franchising is not common within the examined sample. Most of the enterprises do not use franchising either as a franchiser or as a franchisee and such companies account for as much as 93% of all questioned. The greatest number believe that franchising is of no good in their branch – 44.4%, and a great many do not know anything about it – 32.6%. Another 15% of the sample are not interested in franchising as the initial fee is too high or it would impose a limitation on the company independence. Those answers are equally popular. However 7% of questioned enterprises deals with franchising. The most common reasons for it are the need for gaining help from other enterprises from the system and getting experience of other companies – these reasons are equally important for the interviewees.

Nearly forty percent of the enterprises believe their very important competitive advantage is the price of products or services. Fewer companies state the instant acting on the market is their advantage. This opinion is shared by almost 30 % of the examined population. The attractiveness and modernity of products is thought to be an important advantage by over 42% of questioned companies. More than a half of interviewees indicated the quality of products to be advantageous over other competitors and that shows that quality may be more important from the enterprises' point of view than prices. About forty percent of examined enterprises try to compete by low costs of production.

In the opinion of examined enterprises a good reputation is not very important when competing with others (only 25% of the sample is of the opposite opinion). That seems to be a little strange as the quality of product is commonly indicated as very important. Perhaps the interviewees do not believe that the brand has a significant influence on the sales.

Few companies try to compete through marketing and promotion. Over 96% of the enterprises that had been examined claimed these are not their advantages over competitors.

Generally, the SMEs do not compete by being open to their customers' needs. Less than a quarter of the examined companies feel that such openness is the source of competitive advantage over other competitors.

It is worth noticing that in the table above all the answers delivered by the respondents do not sum up to a hundred percent. That is due to a fact they were allowed to give up to three answers.

**Table 5.** Ranking of competitive advantages of enterprises

Advantages	Percentage
1. Quality of products	51,8
2. Attractiveness and modernity of goods and services	42,2

3. Low costs of production	39,3
4. Price of goods and services	38,5
5. Promptitude (speed) of acting	29,6
6. Reputation of the firm	25,9
7. Open attitude to consumers demand	23,7
8. Efficient marketing	3,7

Source: own calculation

The vast majority of questioned enterprises are fairly satisfied with the demand for their products. Nearly 90% of them believe the demand for the products is just equal to their production possibilities. 6.7% of the examined population wish the demand was greater than it is now so that it would be adjusted to their production possibilities. Half of this share accounts for those who do not have sufficient possibilities to produce enough to meet the whole demand.

**Table 6.** The demand for products offered by the enterprises

The demand for products offered by the enterprises is:	Number	Percentage
Lower than production possibilities	9	6,67
Equal to production possibilities	119	88,15
Higher than production possibilities	5	3,70
Empty	2	1,48
Total	135	100,00

Source: own calculation

Foreign companies do not seem to be a serious threat for Polish SMEs, especially in their own opinions. Only 3.7% of the enterprises think of foreign ones as the major competitors; another 3% of the sample feel that both foreign and domestic enterprises are their major competitors. Nearly 90% of enterprises believe that other Polish companies are the major competitors. Slightly less than 6% of the questioned enterprises did not choose any option. Does it mean they cannot feel any competition at all?

Hardly any of the examined enterprises produces on the basis of imported raw material and components. Only two enterprises imported them in 1998 and 1999. The value of this import was 200,000 and 1,200 000 złotych for those enterprises in 1998 (which accounted respectively for the 20% and 70% shares in total input). This import increased in 1999 by approximately 25% to the values of 250,000 and 1,500,000 złotych (which

is 30% and 75% of total input). The countries of origin there were: Germany, Italy and The Netherlands.

#### 4. Technological levels of small firms and their developments prospects

The technological level of the examined enterprises is estimated by the respondents mostly as medium (43.7%) and high (54.8%) (Table 7). Other opinions are very rare and account for less than 2% of the examined population.

**Table 7.** Technological level of enterprises

Technological level of the enterprise is:	Number	Percentage
Very low	1	0,74
Medium	59	43,70
High	74	54,81
Very high	1	0,74
Total	135	100,00

Source: own calculation

Opinions about the technological level of products offered by the enterprises are quite similar to those about the level of the enterprise. The most characteristic difference though is that in general the former is higher estimated than the latter. The share of “medium level” in the population (regarding the product) is about 37%, which is significantly less than for the enterprise level, while the share of “high level” is almost 59%, which is on the contrary higher than for the enterprise level.

Computers (IT tools) are widely used for office purposes. Over a half of the enterprises (54%) claim to use them to a significant extent. While approximately 35% of the enterprises declare that IT tools are used but not too much, only 10% of the population do not use them in office work. That makes office work one of the most frequent applications for computers, computer networks and others.

However the most popular application for IT tools is accountancy. Nearly sixty percent (58.52%) of those questioned claim to use them to a great extent and further 40% declared to use them to some extent. Only a tiny minority of less than 1.5% of the examined population does not use IT tools for accountancy related purposes at all.

**Table 8.** Technological level of products offered by enterprises

Technological level of the company products is:	Number	Percentage
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Low	1	0,74
Medium	50	37,04
High	79	58,52
Very high	2	1,48
Empty	3	2,22
Total	135	100,00

Source: own calculation

IT tools are far less popular with distribution and marketing. There is a great share of those who claim to use them to some extent and that contributes to 48% of the questioned enterprises. The most extreme opinions have almost the same shares. Slightly over a quarter (27%) do not use them at all whereas there is a similar number (25%) of those, who are of the opposite opinion and claim to use IT tools widely.

The least popular area for the application of IT tools is the area of production. The proportions here seem to be quite contrary to the previous applications. Nearly sixty percent (58.5%) do not use them at all, a little over a quarter (28%) use them to a slight extent while only 12% use them to a great extent. It seem to be a little weird as more than half of the enterprises stated that technological levels of the company and products are high and in the same time there are not many of them using computers and other IT tools for production purposes.

**Table 9.** Using computers and computer networks in the commercial activities  
(Percentage)

Are there any IT tools used:	No	Yes, but not extensively	Yes, extensively	Empty
In office work	10,37	35,56	54,07	0,00
In accountancy	1,48	40,00	58,52	0,00
In distribution and marketing	26,67	48,15	25,19	0,00
In production process	58,52	28,15	11,85	1,48

Source: own calculation

The use of Internet is similar the IT tools use for production. Most of the examined population does not use it and they account for 51%. Those who use it to some extent contribute to 36% and only 11.8% use Internet to a significant extent. What is interesting, most of those who use IT tools to a great extent for production, use also Internet to some (44%) and to a great (44%) extent. Only 12% of this group do not use Internet. It may lead to a conclusion that using

computers for production and using Internet are related to the overall level of technology used in the enterprise.

**Table 10.** Using Internet by small enterprises

Does the enterprise use Internet	No	Yes, but not extensively	Yes, extensively	Empty
Percentage	51,11	36,30	11,85	0,74

Source: own calculation

*There are almost twice as many enterprises not co-operating with raw material providers and goods producers (64.4%) as those who co-operate (35%) (as can be seen from Table 11).*

Not very many enterprises occurred to co-operate with research institutes, universities, etc. This only applies to slightly more than 7% of the examined population while nearly 93% of it do not try any co-operation.

A great number of enterprises even do not co-operate with any consumers' organisations. This is true for 80% of the questioned enterprises whereas the rest of them (20%) confirm they co-operate with such organisations.

Just a few enterprises (3.7%) co-operate with other organisations than mentioned above.

**Table 11.** Formal co-operation with other enterprises over the last five years

PARTNERS	Percentage
Suppliers of raw materials or equipment	35,6
Consumers organisations and other	23,7
Research institutes, consulting firms or universities	7,4

Source: own calculation

62% of the enterprises declared that the co-operation is profitable for them. As the problem of profitability does not apply to over 35.6% of the population the vast majority claim the co-operation is good for them. Only 2.2% are of the opposite opinion.

R&D departments are not frequently reported. 85.2% of the companies do not have such a department, another 8.9% claim to employ just one person for an R&D position. More than one person happens to be employed in the rest of enterprises. So as a result not more than 6% of the examined population may have a real R&D department.

Slightly less than 70% of companies did not introduce any new or technologically improved goods (Table 12). The other 30% did introduce such products, which may account for the generally good opinion about the high technological level of the products.

Most of enterprises do not seem to be very innovative. Some new production methods were introduced in 16% of the enterprises, while the rest of them, which account for more than 83% of the population, did not.

The organisational structure of the examined enterprises is rather stable. During past two years no major organisational changes were made in more than 80% of enterprises. Nearly 20% of the examined sample decided to make such changes during the mentioned period.

Hardly any of the enterprises (1,5%) introduced any significant organisational and property changes. An overwhelming majority of 98.5% of the population did not do it and this fact corresponds with the earlier question of legal status changes.

**Table 12.** Proportion of firms, which introduced organisational and technological changes in 1998-1999

(a) SPECIFIC CHANGES INTRODUCED	(b) Percent age of firms
1. Technologically new or improved products or services	30,37
2. Major organisational changes	19,26
3. Technologically new or improved methods of producing goods or services	16,30
4. Restructuring, mergers, take-overs	1,48

Source: own calculation

Almost none of the questioned enterprises tried to get any external financial support. Five enterprises that tried to do so account for merely 3.7% of the population. One of them (0.74%) got an official government department support; one tried to get the support from a self-government institution but it was in vain. The rest of three enterprises focused on private investor support and one of them managed to gain it while two others were unsuccessful.

The number of Polish SMEs that do not make any investments is greater than those that make them. 58.5% of companies claim that no investments were made in 1999. Those, that made investments in this year, account for 41.5% of all examined enterprises.

All the investments were based on three financial sources (Table 13). The most important are profits. Thirty enterprises made investments out of profits and this group accounts for 22.2% of the entire examined population. Two other popular ways of making investments were owners' capitals (22 enterprises –

16.3% of the population) and bank loans (21 enterprises – 15.6% of the population).

**Table 13.** Ranking of sources financing investment outlays

Sources	Percentage
1. Profit	22,3
2. Owners' capital	16,3
3. Bank loans	15,6

Source: own calculation

What is a little bit surprising, Polish SMEs in the region of Lublin seem not to use leasing at all, since it was not indicated as a financial source for any investments by any of the enterprises.

The number of enterprises that did not increase their fixed assets during the period of 1998-1999 is more or less the same as the number of those, which did not make any investments in 1999. The difference between those numbers is about one percent. This leads to a conclusion that the group of enterprises making investments and increasing fixed assets is rather stable. The group of enterprises increasing their fixed assets extensively is not very numerous and accounts for 4.4% of the entire examined population.

Only one enterprise from the entire examined sample, which contributes to 0.74% of the population, is going to cease operating and that is because of difficulty gaining financial means. More than 99% of enterprises have intention of developing.

The interviewed enterprises were asked to indicate one or two basic sources of financing their economic activity.

Self-funds gained from sales are the essential source of finance for 99.3% of the population so this is unquestionably the most important source of all possible. Bank loans are quite common source of finance. 40% of the enterprises claim to use them for financial support. Hardly any enterprise use government subsidies. Over 99% of the population do not use them. Neither shares nor debentures are issued in order to gain an additional finance source. Among other sources of gaining finance one enterprise indicated knowledge as such a source.

The majority of enterprises do not find getting a bank loan difficult and the opinion of more than 65%. Quite a large group (18.5%) does not know whether it is difficult to get such a loan or not. Nearly 6% of interviewees complained of too strict bank requirement and 9.6% of interviewees claim there is too much documentation needed.

The majority of examined enterprises did not take any loans in recent two years. These account for 54.1%. The most popular with the enterprises was a

floating credit, taken by nearly 30% of the enterprises. Investment credits were used by slightly over 5% and other kinds of credit were taken by almost 3% of the questioned companies.

**Table 14.** Types of credit used by small enterprises in 1998-1999

Type of credit	Percentage of enterprises
None	54,07
Domestic investment credit	5,19
Floating credit	29,63
Other credit	8,15

Source: own calculation

4.4% of the enterprises did not answer the question about the forecasted revenue. Most of those that did (37% of the entire population) believe it will be less than 1million zł. Those claiming it should be between 1 and 3-million zł account for 27.4%. In general the high is the revenue the smaller is the group. And so, the revenue between 3 and 5 million zł is expected by 18.5% of enterprises. Still fewer enterprises (8.15% of the population) would suggest it is going to be between 5 and 10 million. 4.4% of the population believe the revenue to be more than 10 million zł. Over 91% of all enterprises investigated gained profit in 1997. About 3% experienced a loss and the question was not answered by nearly 6%.

The share of those that gained a profit a year later increased to 95.6%. The rest of enterprises claim to have achieved a loss.

The expectations for 1999 were slightly worse than for the previous year. The number of enterprises expecting a loss almost doubled and accounted for 7.4%. The share of those expecting a profit decreased from over 95% to 92.6% of the whole population.

In spite of a confidentiality guarantee over 28% of the population did not answer the question about the exact value of the revenue gained in 1998. 48% of the enterprises that gained a profit in 1998 were not willing to reveal its value. More than 66% of the enterprises that encountered a loss did not want to inform the interviewers about its value.

The most common option regarding the objectives for the enterprises was a gradual development, which is declared by 41.5% of interviewees (Table 15). There are slightly more enterprises planning a rapid development (approx. 30%) than enterprises trying to keep the status quo of the enterprise unchanged (27.7%). A few enterprises have other goals: 1.5% want to change the profile and 0.74% want to limit the enterprise activity.

**Table 15.** Expansion objectives

Expansion objectives	Percentage
1. Fast expansion	29,63
2. Gradual expansion	41,48
3. Maintain present size	26,67

Source: own calculation

The interviewees' predictions regarding the future are quite optimistic (Table 16). On the average one out of three questioned claims to maintain the existing turnover and this result corresponds to some extent to the number of those who want to keep the status quo of their enterprises. Generally, the higher is the predicted increase of turnover, the smaller is number of enterprises that claim to achieve it. A slight increase in turnover (up to 5%) is forecasted by 22% of the population. An increase between 5 and 10% is expected for a little more than 25% of the questioned enterprises. An increase higher than 10% is only anticipated by less than 15%. Merely 1.5% of the population suggests that the turnover should decrease in next two years to come.

**Table 16.** Opinion about the future of the enterprise

During next 2 years the enterprise intends to:	Percentage
Decrease turnover	1,48
Maintain the existing turnover	36,3
Increase turnover by 5% or less	22,22
Increase turnover by 5% -10 %	25,19
Increase turnover by more than 10%	14,81

Source: own calculation

There were six main factors considered as main chance for the enterprise development possibilities (Table 17). 65.2% of interviewees believe that the most important one is good qualifications of the employees, although the opinion about a good knowledge of the market as such a chance is evens more common – 67.4%. The advantage of using modern technologies seems to be more important for development (24.4%) than promotion and advertising indicated only by 13.3%. 6.4% of the interviewees found it difficult to state what the main chances are. Only 1.5% of managers think of high qualifications as the main chance for development.

**Table 17.** Main factors for the enterprise development

(a) Main factors	(b) Perc
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	enta ge
Good knowledge about market	67,4
High qualification of employees	65,2
Implementation of new technologies	24,4
Promotion of advertising	13,3
High qualification of managers	1,5

Source: own calculation

The central authorities may help the development of the SMEs sector in Poland. First of all the tax rate should be lowered and that is the opinion of over 80% of the interviewees. According to the opinion of 44.4% of the enterprises the interest rate should be lower. Any support for exporters is declared as needed by 4.4%. A little bit surprising is the fact that almost 26% of the questioned enterprises suggest that the domestic market should be protected with customs duties and tariffs. Hardly any enterprise noticed foreign companies as competitors though they can see the need for such protection.

## 5. Employment and working conditions

Although the sample was selected according to the definition of a small enterprise not employing less than 10 people, during the survey it has occurred that a small fraction of the sample consist in fact of the ones employing less than 10 employees.

Table 18 presents the actual distribution of enterprises by the number of employees in 1997, 1998, and 1999. There is a tendency for small enterprises to gradually increase their employment level over time. The average size of small firms in terms of number of employees has increased from 15.1 in 1997 and 16.1 in 1998 to 17,14 in 1999.

**Table 18.** Enterprises according to their size in 1997-1999

Number of employees	Percentage share of enterprises		
	1997 (December)	1998 (December)	1999 (December)
10 or less	13,33	12,59	6,67
11 – 15	55,55	55,55	54,07
16 – 25	18,51	22,96	28,89
26 – 35	2,22	2,22	2,96
36 – 45	3,70	2,96	3,70
46 and more	6,66	2,96	5,18

Source: own calculation

In 1997 and 1998 half of the surveyed enterprises employed 13.4-13.5 persons or less. In 1998, half of them employed 14,1 people or less. The information from the Table 18 exhibits also a small increasing proportion of medium enterprises from the sample (16-25 employees), accompanied by a decreasing share of the smallest units.

With regard to the sex of employees in small business sector, the average proportion of female has increased from 28.78% in 1997 to 30.23% in 1998 and 30.60% in 1999.

Education level of employees in population of small enterprises in 1999 is given in Table 19.

**Table 19.** Percentage of employees according to their education in October 1999

Higher	Post-secondary	Secondary	Basic vocational
12,44%	6,60%	48,60%	32,36%

Source: own calculation

The surveyed enterprises were asked about the main ways, which they apply to obtain required skills and qualifications of their employees. Over 37% of the enterprises try to improve the professional skills of their employees by gaining professional experience.

Training aimed at gaining professional skills is organised when it is needed but only in 14% of the examined enterprises. Nearly 86% of the companies does not provide their employees with such training.

Less than 5% of the enterprises train those newly employed so that they could gain professional skills. Nearly 30% try to gain professional skills by employing specialists from outside the enterprise. More than 90% of the enterprises do not make their employees improve their skills at their own expense.

No written strategy can be found in 92% of the interviewed enterprises. Most of them believe there is no need for such a strategy; they account for 40% of population. Over 27% do not have any written strategy as they do not provide any training and further 10% provide it only on request. More than 8% have no time to work this strategy out and approximately 4% are not able to create it. Among those that have the strategy 4.4% of the population made it to popularise the idea of training whereas slightly more than 2% wanted to involve all level management in it.

Finding suitable candidates for employees is easy and that is the opinion of the vast majority of interviewees – 97%. Only less than 3% encountered some difficulty in this kind of situation.

Trade unions are not particularly common in the SMEs sector in Poland. They are not present in almost 95% of the enterprises. 4.4% of the interviewed

companies indicated that there is a trade union operating, but less than 1% of the population deal with more than one trade union.

## 6. Knowledge and opinions about European Union

There are 20.7% of the population that claim to possess a low level of knowledge of European Union members' markets, which is slightly more than the amount of those that believe their knowledge is of a high level as they account for 16.3%. The most neutral option – medium level was chosen by nearly 63% of the interviewees.

The influence of the Polish accession to the EU is thought to be positive for the majority of the interviewed enterprises. However 41.5% of the population is of the opposite opinion. Most of those that evaluate it as positive tend to think it is going to be easier to sell on the EU markets after the accession (24.4% of the population); others claim that it is going to increase the effectiveness (12.6%) and profitability of production (9.6% of the population). 7.4% of the interviewees did not answer this question.

The overwhelming majority of the enterprises did not take any action connected with the Polish accession to the EU – they account for 83.7% of all. The most important actions taken are as follows (in order of frequency): employees' qualification improvement (7.4%), product quality improvement (3.7%) and technology improvement (3%). Only one enterprise out of the entire examined population (0.74%) analysed the needs of the UE markets.

In another question respondents were asked to evaluate some specific changes in Polish regulations, which are likely to take place as a result of Poland's accession to the EU (see Table 20).

**Table 20.** Evaluation of impact of expected changes in Polish business regulations after accession to EU (percentage)

Expected changes	Negative	Likely negative	Neutral	Likely positive	Positive
Unification of regulations related to technical norms and standards	2,96	4,44	22,96	54,07	15,56
Mutual recognition of business certificates	2,96	3,70	20,00	52,59	20,74
Exclusion of customs duty documents	1,48	6,67	34,81	34,07	22,96
More freedom in capital flows between countries	0,74	8,15	46,67	35,56	8,89

Source: own calculation

In the opinion of most of the interviewees effects of harmonisation of technical regulations and standards when accessing the EU are going to be rather favourable – 54% of opinions. Even more enthusiastic about it are 15.6% of the population. About 23% believe it is going to have no effects. According to the opinion of 3% of the population the effects are going to be unfavourable while 4.4% claim they are going to be rather unfavourable.

Mutual recognition of technical regulations and standards when accessing the EU is going to have rather positive effects (52.6%) or even definitely positive ones (20.74%). Roughly the same number (20%) claims that the effects are going to be neutral. Opposing to this opinion account for 3% – according to them the expected effects should be unfavourable, and for 3.7% claiming they are going to be rather unfavourable.

There are almost equal numbers of those that believe the effects of elimination of customs documentation when accessing the EU are going to be neutral – 34.8%, or rather favourable – 34%. The group of those believing they are going to be favourable is smaller and contributes to 23% but this is much more than the share of those thinking of them completely negatively – 1.5%, or rather negatively – 6.7%.

**The effects of liberation of capital movements when accessing the EU according to the greatest number of interviewees will have no apparent effects. Only 0.74% of the population would claim that the effects are going to be negative and 8% would state they should be rather negative. Those that are enthusiastic account for 8.9% and those who believe the effects will be rather positive contribute to 35.6% of the entire population.**

## **Conclusions**

The purpose of this paper was to report the results of the survey of crucial problems of small enterprises in region of Lublin in Poland. The most significant findings in this study are:

- The majority of the Polish small businesses are typical start up enterprises by the age under ten years, which operate as sole proprietors (43%) or partnerships (27%) and limited companies (19%),
- The large proportion of enterprises sell their products almost exclusively in local markets, there are few exporters in the sample,
- The entrepreneurs indicate as the significant advantages of their firms: quality, attractiveness and modernity of products, relatively low prices and

production costs, speed of acting, good reputation of the firm and open attitude to consumers demands,

- Technological level of enterprises and products is assessed as high or medium,
- The majority of the entrepreneurs plan gradual or even fast expansion but till now only 40% made investments for fixed assets,
- The investors prefer their own financial sources (owners capital and profits) as the bank loans are too expensive,
- The owner-managers rather overestimate their competencies and employees' qualifications. They declared good knowledge about market and do not feel the need their own and their staff to train professional skills or to prepare written business plan of firm strategy,
- The impact of the Polish accession to the European Union is thought to be rather positive however about 40% of interviewers have negative opinions.

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**DEVELOPMENT OF SMALL ENTERPRISES  
IN POLAND.  
RESULTS OF A SAMPLE SURVEY CONDUCTED  
IN THE PROVINCE OF GDANSK<sup>1</sup>**

**Mirosław Szreder**

**ABSTRACT**

The paper presents the results of the sample survey of small enterprises operating in one of the largest Poland's regions, the Province of Gdansk. The survey was conducted by a group of researchers from Poland, Britain and Greece in December 1999, and it covered a random sample of enterprises which employed from 10 to 49 employees. The survey focuses on competitive advantages of the small firm sector, employment and labour conditions, knowledge about European Union's markets, financial situation, and factors determining the development of this sector in transition economies.

*Key words:* small enterprises, economies in transition, sample survey.

**1. The role of small enterprises in market economies**

Small and medium-sized enterprises (SMEs) has largely contributed to the successful development of many industrialised countries. They have served as "*a kind of experimental laboratory for a market economy*" (see: Braun [1996], p. 32). They have been innovative (with regard to their products and technologies) and have been flexible (with regard to their customers, employees, and capital resources). The small firm sector gains competitive advantages if the products or services offered need to be provided close to customers. SMEs are also important subcontractors and customers of large companies in all market economies.

After decades of fascination of large and very large companies both in centrally planned economies and in market economies, since the 80's one can observe a growing interest in the development of smaller units. Some economists

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call this phenomenon a re-emergence or re-birth of small enterprises.<sup>1</sup> There are many reasons for re-emergence of SMEs on the demand and supply side. They are discussed in a number of interesting papers and books including: Sengenberger, Loveman, Piore, (ed.) [1996], Acs [1996], *Small Firms as Foreign Investors: Case Studies from Transition Economies* [1996], Agmon, Drobnick [1994].

In transition economies the development and the impact of SMEs depend on the design and implementation of privatisation policies, economic and political stability, and access to financial resources. In Poland, the small firm sector is the fastest growing sector in the economy, the most important job creator which accounts for constantly increasing share of Poland's GNP. The activity of this sector and its role within the national economy are analysed by a number of research centres and government institutions, including Central Statistical Office (CSO), which conducts an annual sample survey on about 110 thousand small firms registered across the whole country. Although this survey seems to be the most comprehensive statistical description of the small firm sector, the size of the sample and its composition are not sufficient for making inference about particular parts of the population at de-central locations (e.g. in provinces). A research group representing: University of Gdansk, technical University of Gdansk, Kingston University (Great Britain), and Panteion University (Greece) has for the second time performed such a survey for the Province of Gdansk. The last survey was carried out in December 1999, and it covered a sample of 239 small enterprises selected according to the stratified sampling technique. The surveyed enterprises represent a majority of NACE categories, including: industry, construction, trade, transport, and others. The study population in the province of Gdansk consisted of 4706 small economic units in December 1999. Thus, the sample size exceeded slightly 5 per cent of the population size.

According to the official definition of small enterprises (see the next chapter), the population under investigation covers all economic units which employ from 10 to 49 employees. This means that the survey did not cover the smallest enterprises which employ less than 10 persons.

## **2. Definition of a small enterprise**

In one of the most interesting publications on the role of SMEs in market economies (Acs [1996] p. 114-115) it is said that: "Small enterprise or small- and medium-sized enterprises are elusive concepts. They do in fact hide a large heterogeneity in the types of the firms". Criteria for defining and structuring the SME sector are different in different countries, and depend on the institutional

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<sup>1</sup> A good example of this shift of interest is the book Sengenberger W., Loveman G., Piore M.J., (ed.), *The re-emergence of small enterprises: Industrial restructuring in industrialised countries* published by International Institute for Labour Studies, Geneva, 1990.

and historical context. The main criteria are: legal status (as in France), the ownership status (as in Hungary), the distinction between "craft" and "industrial" firms (as in Germany), independent or subordinate firms (as in Japan), and so forth. In European Union recommendation no. 96/280/WE dated from April 1996 a small firm is described as an independent economic unit which employs less than 50 employees, whose turnover does not exceed 5 000 thousand euro. Apart from small enterprises, there exist smaller units, called micro-enterprises which employ less than 10 employees.

The criterion for structuring the SME sector in Poland is the annual average of employment level in the enterprise. According to the recent legislation act called "Law on Economic Activity", approved by the Polish Parliament in 1999, the number of employees in a small enterprise is less than 50, and in medium-sized one ranges from 50 to 249 employees. So called micro-enterprises, which until 1999 were defined as those which employ 5 employees or less, and at present are defined as those which employ 9 persons or less, are covered by a sample survey performed each year by CSO. At the end of 1999 the number of registered micro-enterprises (with less than 10 employees) was 2623 thousand (see: Economic Activity of Enterprises Employing up to 9 Employees, Central Statistical Office, 2000, p. 8).

Unlike the CSO survey, we concentrated on enterprises which employed 10-49 employees. They form the small firm sector, and the activity of those which operate in the Province of Gdansk is described in the following sections of the paper.

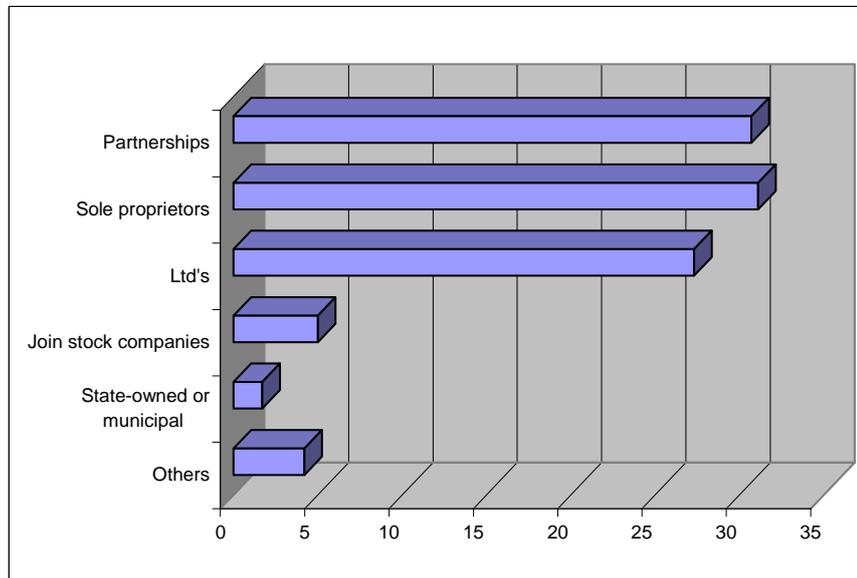
### 3. General characteristics of small enterprises

The surveyed enterprises represent mainly private sector of the economy (94.5%), only 5.5% belong to public sector.

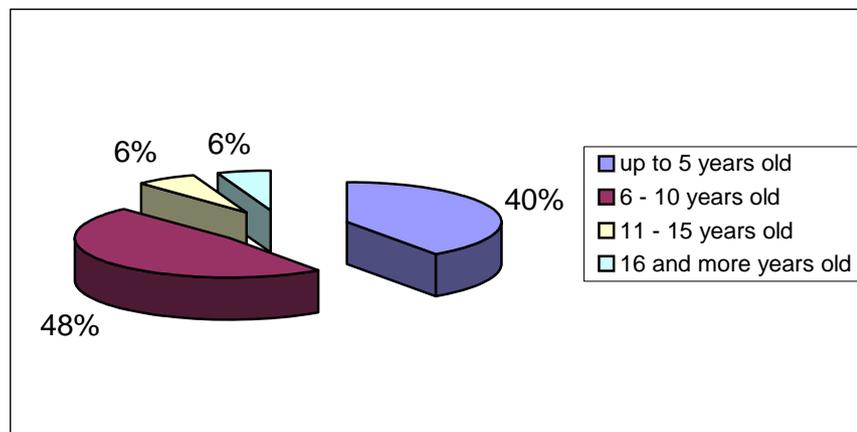
With regard to the source of the capital, 93% of the enterprises claim to be entirely Polish. Only 2% of enterprises have been established as economic units with 100% of foreign capital. A small proportion of enterprises (around 5 per cent) have been established and operating with the use of foreign and internal capital combined.

The most common organisational forms of small enterprises are: sole proprietors and partnerships. Like in other countries in transition, for example in Bulgaria (see *Mateev* [1998], p. 157-174), Polish private firms tend to be very small with the majority of family based businesses and self-employment. The organisational forms and legal types of small enterprises do not change frequently. Only 4.6% of surveyed enterprises are now operating in different form than they used to three years ago.

#### **Diagram 1.** Organisational forms of enterprises



**Diagram 2.** Small enterprises by age



The survey indicates that a vast majority of small enterprises are not more than 10 years old (see Diagram 2). However, it should be pointed out that the average life-time of small enterprises (7.7 years) has increased over the last three years (see Balicki, Ghatak, Szreder [1998]). This may suggest that the rate of survival for the small economic units has been an increasing function of time, and consequently, an increasing function of more stable business environment in transition economies. It may also reflect lessons which the enterprises have learnt about operating in market economy in the last decade.

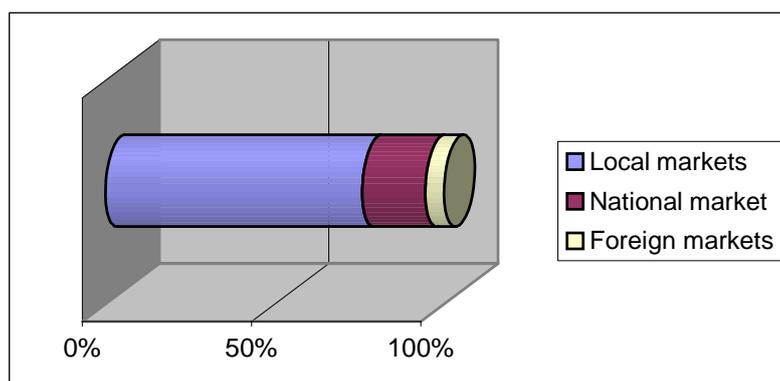
Three quarters of small enterprises have been established as a result of an individual initiative of their proprietors, and nearly 20% as a spin-off or buy-out of the assets of another company.

Although the investment rate for the sector of small firms has been high in Poland since the beginning of market reform, enterprises seem to be reluctant to expand through making investments in other firms. Less than 9% of small enterprises claim to be co-owners of other Polish firms, and only 2.5% declare their participation in existing foreign companies.

#### 4. Commercial activity and competitive situation

Majority of small enterprises do not operate on the basis of licensing, subcontracting or franchising. Although each of those can be viewed as a form of joint venture without co-ownership and a good way for an enterprise to be involved in transferring new technologies, only 38% of small enterprises operate as subcontractors, and only 3% use franchising. Those firms which are involved in subcontracting claim that 48% of their total output on the average is connected with subcontracted work. Nearly one out of ten small enterprises in Poland operates entirely on the basis of subcontracting. Franchising, which commonly offers new technology and *know how* to the franchise, seems to be unpopular in Poland, primarily because it is not well known. Nearly 45% of small enterprises have never heard about or considered using franchising. Another 34% argue that franchising is not used in this particular economic activity in which they are involved.

**Diagram 3.** Spatial distribution of sales



The large proportion of enterprises which exceeds 75% in the Province of Gdansk sell their products and provide services almost exclusively in local markets. Another 19% of enterprises operate on national market, and the remaining 6% sell their output abroad (Diagram 3).

The share of small enterprises in the population of firms which export their goods and services remains low, and has not shown any tendency to increase or decrease over the last three years. Those enterprises which exported their goods in 1998 estimate that their export in 1999 will be slightly smaller than a year before and will attain the amount of 9 965 thousand zlotys per one firm, compared with 9 985 thousand zlotys in 1998. On the other hand, the exporters expect that the share of export in their total output will increase from 42% in 1998 to 46% in 1999. Majority of them rely on their own financial resources in penetrating foreign markets. Over the last two years only 20% have used bank credits to fulfil their export contracts. One out of 200 exporters has succeeded in applying for government subsidised credits for exporters, and none has obtained government guarantees for payments connected with selling goods abroad. Those figures reflect that the government program of promoting the participation of entrepreneurs in Polish export has not been working well. The program needs to be reviewed with respect to: variety of measures it involves, access to those measures, and their efficiency. Implementation of an efficient program of stimulating Poland's export would not only have a positive influence on the level of state's current account, but also would prepare Polish enterprises to compete with their foreign counterparts. The results of our survey exhibit that more than 80% of all small enterprises have made no efforts to export their goods and services. The main three reasons for this involve:

- high domestic demand, which 59% of enterprises find sufficient for selling their output,
- lack of expertise and professional staff members in the field of international trade, which prevent 8% of enterprises from taking steps to export their products,
- lack of demand abroad for goods and services offered (3.5% of respondent's views).

It seems interesting that those enterprises which export their products argue that a primary reason for doing this is not insufficient domestic demand but their desire to gain experience in international trade before Poland gets involved in close collaboration with other economies as a member of European Union.

With regard to competitive advantages of small enterprises, the surveyed firms were asked to indicate up to three their main advantages over competitors. The results of the ranking are given in Table 1.

**Table 1.** Ranking of competitive advantages of small enterprises

Advantages	Average rank
Quality of goods and services	0.57

Price of goods and services	0.50
Attractiveness of goods and services	0.37
Reputation of the enterprise	0.35
Speed and efficiency in market activity	0.34
Open attitude to consumer's demands	0.28
Relatively low costs of production	0.24
Efficient marketing and promotion	0.10

More than half of small enterprises suggest that their main competitive advantages are: quality of output, and prices of goods and services offered. They find Polish enterprises their main competitors. Only 17% consider foreign companies or Polish and foreign ones combined as main competitors.

Not all small enterprises utilise their whole production capacity. More than a quarter perceive demand for their products and services to be smaller than their production capacity. 61% estimate the demand to be approximately equal to the production capacity, and 12% argue that the demand exceeds the firm's capacity.

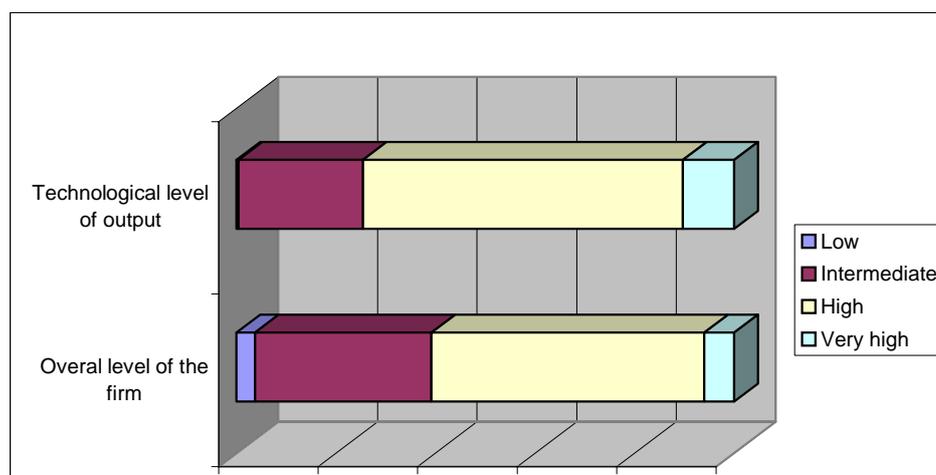
## 5. Development of small firms

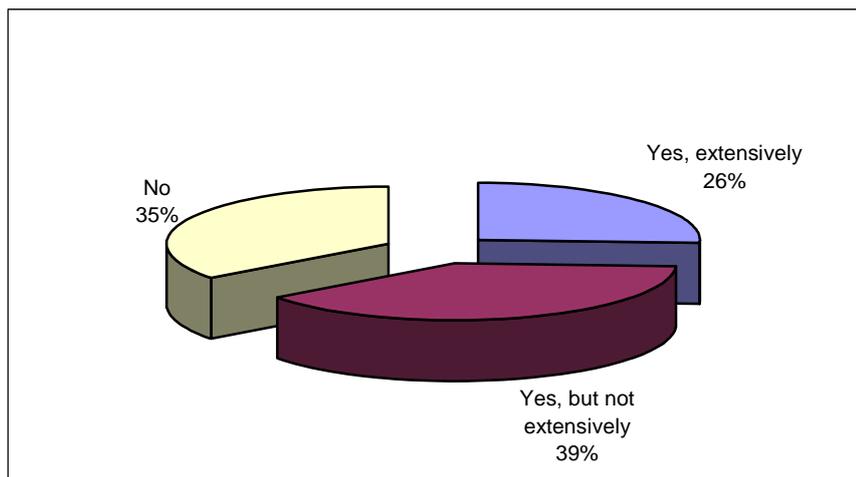
The surveyed firms were asked to assess their overall technological level, including machinery, equipment, and the technological level of their products (see Diagram 4).

In neither of the two assessments there were indications that the technological level was "very low", a category which was present in both relevant questions in the questionnaire.

Majority of enterprises use computers and computer networks in their commercial activities. Nine in ten firms use computers in secretarial jobs or in accounting, seven in ten have employed computers in marketing and sales, and half of the surveyed enterprises use computers directly in manufacturing processes. The degree of utilisation of computer technologies depends on the domain of their use by the firm. The most extensive use is declared by the enterprises in relation to secretarial works and accounting, and less extensive – in marketing, sales, and manufacturing.

**Diagram 4.** Technological level of enterprises and their products



**Diagram 5.** Using Internet by small enterprises

More than one third of all small enterprises do not use Internet in their economic activity (see Diagram 5).

In order to better adjust themselves to market economy requirements, some firm have established formal collaboration with other enterprises and organisations over the last five years:

- 77% have been collaborating with suppliers of raw materials or equipment;
- 13% have been collaborating with research institutes, consulting firms or universities;
- 8% have developed formal co-operation with consumer's organisations and with others.

More than 97% of those enterprises which have started collaborating with other organisations consider the collaboration useful and fruitful.

The attitude of the firm's management towards policy of development may be reflected by the fact of existence or not an R&D department in the firm. Such departments tend to exist in large companies, but our survey exhibits that about 6% of small enterprises possess such a department, too. It employs 2 persons on the average. The development of an enterprise may also be viewed in terms of technological or organisational changes taking place in the enterprise, including an introduction of technologically improved products, getting access to *know how*, designing and implementing more efficient organisational structures in the enterprise. Table 2 shows percentage of small enterprises which have introduced organisational or technological changes in the period 1998-1999.

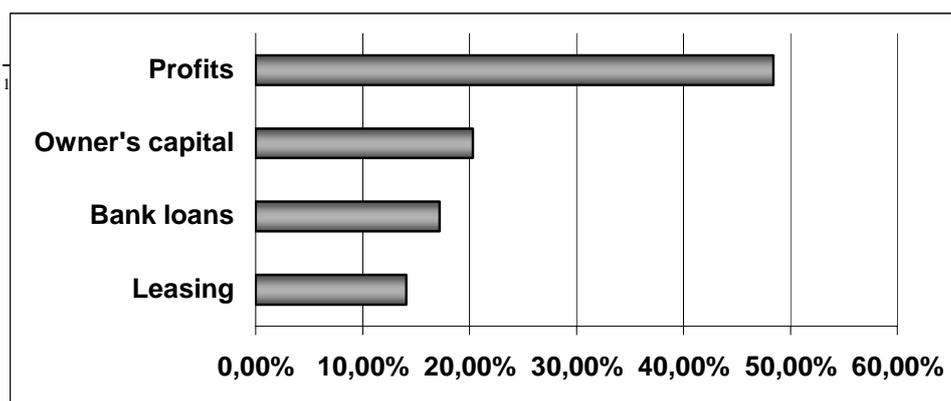
**Table 2.** Proportion of small firms which introduced organisational or technological changes in 1998-1999

Specific changes introduced	Percentage of firms
Technologically new or improved products or services	49%
Technologically new or improved methods of producing goods or services	15%
Major organisational changes (e.g. in management procedures, quality control)	21%
Restructuring, mergers, take-overs	7%

The results of the survey indicate that the development of small firms is most commonly financed from their own financial resources. Only 7.5% of enterprises receive external financial support for their development from either Polish government based institutions, or local institutions, industrial associations, EU programmes, and others.

Investment rate has been relatively high in Polish enterprises since the beginning of market reforms which started in 1990. Our survey shows that the proportion of small enterprises operating in the province of Gdansk which incurred investment outlays in 1999 reached 49.4%.<sup>1</sup> They invested mainly in machinery, equipment and means of transport. For financing investment purchases small enterprises use primarily their own generated profits (see Diagram 6). Nearly 60% of enterprises claim that their fixed assets have increased over the last two years, and a quarter of them argue that it was an essential increase.

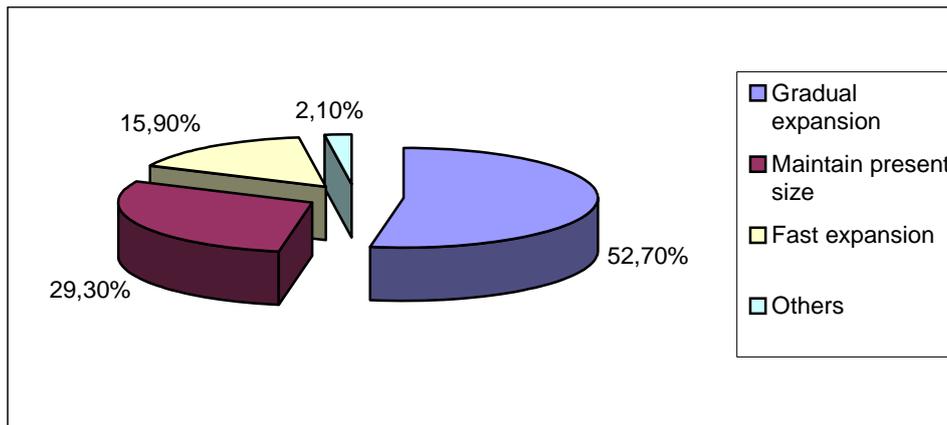
**Diagram 6.** Sources of financing investment outlays



**Diagram 7.** Expansion objectives of small enterprises

The respondents were asked several questions related to the development of their businesses in the near future. Only one out of 239 respondents does not want to continue to run his/her enterprise in the future. The remaining 238 ones declare that they want to continue and develop their economic activity. This reflects a great deal of optimism and confidence among entrepreneurs, larger than in previous years (see: Balicki, Ghatak, Szreder [1998]). The most common objective of small enterprises for the next three years is to develop and expand gradually (see Diagram 7).

Within the next two years, i.e. 2000-2001, the largest proportion of enterprises (35%) intend to increase their output by 5% - 10%. About 29% want to increase the output by more than 10%, 13% of respondents expect an increase in output which will not exceed 5%, and the remaining 23% want to keep their output at the same level as it was in 1999. The surveyed enterprises claim that the main factors which will enable them to achieve the development goals are:<sup>1</sup>



- high qualifications of employees (66.5%),
- good knowledge about market (57.7%),
- promotion and marketing (18.8%),
- implementation of new technologies (17.2%).

It seems interesting that less than 5% of respondents regard high qualifications of managers as a key factor in reaching the company's development objectives. Respondents undervalue the role of professional management and good decision making in the firm's activity and development.

Small enterprises expect some measures to be taken by the central government to support their development in the future. First of all, many of them (72%) are in favour of lower taxes which would make their products and services

<sup>1</sup> Respondents were allowed to indicate up to 2 main factors, and therefore the sum of percentages in brackets exceeds 100.

more competitive in a global market. Lower interest rate, which would make bank loans more available to small enterprises, is expected by 43% of respondents. There are many more enterprises (30%) which would like the government to protect the internal market using tariffs and taxes, than those who would like the government to support the exporters (only 8%). This seems to be a potentially dangerous attitude, as it reflects reluctance of a large proportion of enterprises to face with international competition. For small enterprises and for the economy as a whole a government programme which would support Poland's export rather than restrict import opportunities would be in short and long run much more appropriate. To change the common attitude of enterprises in this respect seems to be a great challenge to government organisations, and to international institutions (e.g. EBOR, European Commission).

## 6. Employment and labour conditions

The population of enterprises under investigation consists of those economic units which employ from 10 to 49 employees. Table 3 presents the actual distribution of enterprises by the number of employees in 1997, 1998, and 1999. There is a tendency for small enterprises to gradually increase their employment level over time. The average size of small firms in terms of the number of employees has increased from 18.37 in 1997 to 18.85 in 1999.

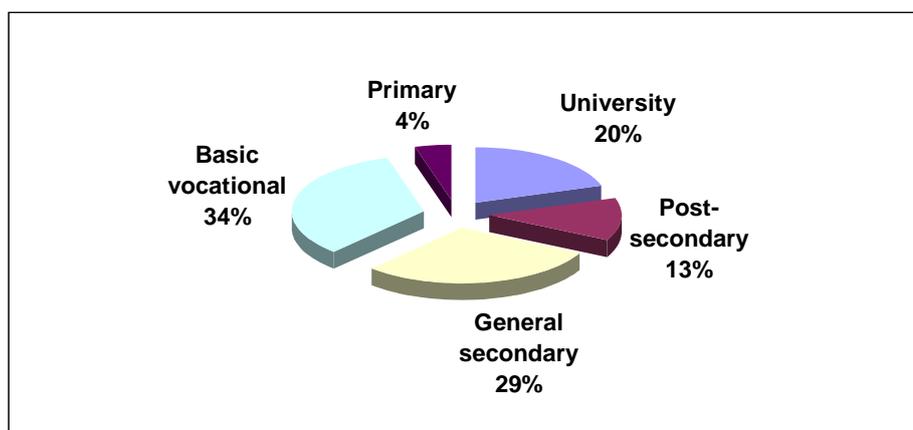
**Table 4.** Enterprises according to their size in 1997-1999

Number of employees	Percentage share of enterprises		
	1997 (Dec.)	(1998 (Dec.)	1999 (Oct.)
10 or less	23,5	19,7	18,7
11 – 15	37,5	38,1	35,8
16 – 25	23,5	23,9	26,8
26 – 35	5,2	6,4	4,7
36 – 45	8,0	9,6	10,6
46 and more	2,3	2,3	3,4

In 1997 half of the surveyed enterprises employed 13 people or less, whereas in 1999 half of them employed 15 employees or less. The data from Table 4 exhibit also an increasing proportion of large enterprises, accompanied by a decreasing share of the smallest units.

With regard to the sexes of employees in small business sector, the average proportion of female ones attains 34% and has not changed over the last three years.

Education level of employees in the population of small enterprises is given in Diagram 8.



**Diagram 8.** Employees by education level

Small enterprises attract larger proportion of highly educated employees than the average for the whole economy, which does not exceed 8% (see: Statistical Yearbook 1998, p. 120).

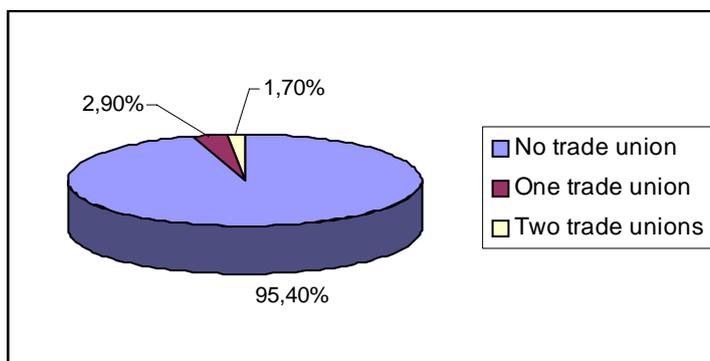
The surveyed enterprises were asked about the main ways they apply to obtain required skills and qualifications of their employees. It has turned out that within the last three the most common ways were:

- developing skills of employees through gaining experience in the job (44%),
- recruiting employees who meet the enterprise's skills requirements (42%),
- providing training to persons employed (19%),
- The least popular ways to obtain skills needed are:
- motivating employees to undertaking training in their own time, (6%),
- providing initial training to apprentices and other trainees (5%).

Among small enterprises only about 9% have a written plan or programme for continuing vocational training. The majority, who have not worked out any policy in this area claim that the main reasons are:

- no need for drafting a programme given the size of the enterprise (53%),
- the enterprise by rule does not provide any training to its employees (21%),
- they do not have time to develop a vocational training programme (10%),
- training is provided only when requested by employees or supervisors (7%).

Limited interest of small enterprises in providing vocational training to their employees may be explained by the current situation on the labour market in Poland where large supply of reasonably well skilled people enables the enterprises to recruit qualified persons and make little in the field of providing vocational training to existing workforce. Only 13.2% of small enterprises indicate that they have difficulties in hiring people with specific qualifications. The remaining 87% have not experienced such difficulties.

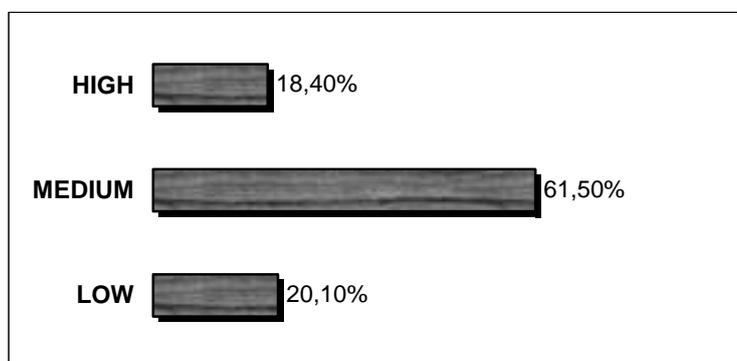
**Diagram 9.** Presence of trade unions in small enterprises

In many countries so called “unionisation” in the population of small enterprises tends to be lower than in medium-sized or large companies (see: Sengenberger, Loveman, Piore, (ed.) [1996], p. 39 and 188). For example in Japan in 1985, the unionisation rates were 60, 24, 7 and 0.5 per cent for firms with 500+, 100-499, 30-99, and 1-29 employees respectively. The same applies to British and French private sector, where less than 25% (GB) or less than 10% (F) of small enterprises recognise trade unions. Polish unionism covers even smaller fraction of small firms (see Diagram 9). In enterprises in which trade unions exist and act, nearly a quarter of the total workforce are members of the trade unions. We have identified no enterprise in the sample in which the proportion of trade union members exceeds half of the total workforce.

## 7. Knowledge and opinions about European Union markets

Since 1990 Poland has made much efforts to adjust itself to EU standards in the area of political, economic and social activities. It is assumed that in about four years time Poland will receive full membership in European Union. In our survey we asked the surveyed firms few questions about possible influence of Poland’s accession on the sector of small enterprises. First of all, it is worth noting that most commonly managers of small enterprises describe their knowledge about EU markets as medium (see Diagram 10).

**Diagram 10.** State of knowledge about EU markets



Two out of ten enterprises claim that they know little about the markets of European Union.

About 30% of small enterprises afraid that Poland’s accession to EU will have negative impact on their economic activities. The remaining 69.6% expect positive consequences of Poland’s membership in EU. The latter ones indicate the following positive aspects of being a part of common European market (in order of importance):

- expected increase in productivity of Polish enterprises,
- more opportunities for selling products to other member states,
- expected increase in profitability of small Polish enterprises.

However, regardless of the above opinions, the majority of them (81%) have taken no action which could help them to adjust to the requirements of the common market. Only 6.9% have taken steps to increase skills and qualifications of their employees, and few (4%) have made analysis of demand and needs in European markets, and less than 3% of enterprises could afford to implement technological innovations in recent years as a part of their adjustment to common European market.

In another question respondents were asked to evaluate some specific changes in Polish regulations which are likely to take place as a result of Poland's accession to EU (see Table 5).

**Table 5.** Evaluation of the impact of expected changes in Polish business regulations after accession

<b>Expected changes</b>	<b>Negative</b>	<b>Likely negative</b>	<b>Neutral</b>	<b>Likely positive</b>	<b>Positive</b>
Unification of regulations related to technical norms and standards	3.4	8.0	17.3	35.0	36.3
Mutual recognition of business certificates	2.9	6.3	12.2	32.8	45.8
Exclusion of customs duty documents	2.9	5.0	16.0	29.0	47.1
More freedom in capital flows between countries	2.7	11.2	23.8	32.6	29.6

The data obtained show that all the changes listed in table 4 are commonly rated by respondents as being positive or likely positive. Nevertheless, it is worth noting that among all those changes, the small enterprises are most afraid of freedom in capital mobility within European Union. They presumably fear that the inflow of large amount of capital to Poland may threaten the existence of small economic units represented by respondents.

## **8. Financial information**

Financial information in our survey has been deliberately confined to only several questions in which the respondents were expected to give the figures or indices which would not be regarded by them as uncomfortable or touchy. A large number of previous surveys confirm that the managers in Polish enterprises tend to be very reluctant to release any financial data connected with their activities. Therefore, the information on financial aspects of small firms which we have received may not be sufficient for some kinds of analyses.

The interviewed enterprises were asked to indicate one or two basic sources of financing their economic activity. The results obtained are:

- 1) revenues from selling goods and services (95.4%),
- 2) bank credits (25.9%),
- 3) shares and bonds (1.7%),
- 4) government's and other kinds of subsidies (1.3%),
- 5) others (1.7%).

Some European economists suggest that in a number of countries small economic units tend to complain about their discrimination in obtaining bank loans. Our previous study, which covered the smallest Polish enterprises, indicated that a certain proportion of enterprises found that their access to bank loans was limited. After three years since the last survey, 46.4% of small enterprises claim that they have not difficulties in getting a bank credit. Another 32.6% have never applied for a credit, and consequently are not able to express their opinions in this matter. The proportion of those who have got problems with access to bank loans attains 17.5% of all small enterprises. Enterprises from this group equally often complain about:

- 1) too many documents which need to be submitted with a credit application form and
- 2) too restrictive policy of banks in relation to the reliability of the applicant.

In recent two years (1998-1999) nearly 55% of small enterprises have not used bank loans in their activities. The other 45% used mainly investment credits from banks operating in Poland (see Table 6).

**Table 6.** Types of credits used by small enterprises in 1998-1999

Type of credit	Percentage of enterprises
None	54.9
Domestic investment credit	15.5
Foreign investment credit	1.7
Credit for financing current capital	19.7
Investment credit and credit for purchasing current capital	2.1
Other	6.1

Out of the total number of 239 enterprises covered by the survey 199 answered the question about the predicted revenue in 1999 (see Table 7).

**Table 7.** Distribution of revenues in small firms in 1999 (predicted)

Revenue in million Polish zlotys	Valid percentage of enterprises
Less than 1.0	29.6
1.0 - 3.0	36.7
3.0 - 5.0	17.1
5.0 - 10.0	10.6

10.0 and more	6.0
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The interviewed firms indicate that their gross profit has been increasing since 1997, and compared to that year it was on the average by 18.3% higher in 1998, and by 22.6% higher in 1999. There are two things worth of noting with regard to the share of enterprises which have managed to generate net profit in the period 1997-1999. Firstly, the proportion of economic units which are able to generate profit is high. Secondly, it does not show any tendency to increase or decrease over the last three years. In 1997 the proportion attained 86.4%, in 1998 – 86.1%, and in 1999 (according to forecasts made by respondents) – 87.1%. In 1998 the average revenue in the population of small enterprises reached 3263 thousand zlotys, the average profit among those who succeeded to generate it attained 395 thousand zlotys, and average loss – 69 thousand zlotys.

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## **ANALYSIS OF FACTORS DETERMINING THE SURVIVAL CAPACITY OF SMALL AND MEDIUM-SIZED ENTERPRISES<sup>1</sup>**

**Franciszek Bławat, Piotr Dominiak, Jerzy Ossowski<sup>2</sup>**

### **ABSTRACT**

The main purpose of this article is to identify the major factors that account for the survival (continuation of activities) of small and medium-sized enterprises in the manufacturing industries in Poland on the basis of a statistical sample. All investigated enterprises are located in the territory of the Gdańsk region. In this paper, the chi-square test and econometric logit analysis are used for distinguishing between statistically important categories of the studied factors determining the ability of enterprises to survive or the probability of liquidation of an enterprise.

### **1. Theoretical framework**

The problems of survival or discontinuance of activities of the SMEs have been amply discussed in the economic literature. The concept of discontinuation (discontinuance) of activities covers a lot of various situations, which cannot be uniformly assessed. We have to agree with Cochran [Cochran 1981] and with Bruno and Leidecker [Bruno, Leidecker 1988], that it is difficult to find two authors who would define the term in an identical way.

In the most recent publication on the subject, Watson, Everett [1996] use the term "failure", even though the discontinuation of activities does not always mean a total failure. That is why most authors adopt a very wide definition of "**discontinuance of activities**" where, besides liquidation resulting from the death of the owner, loss of health, retirement, bankruptcy, escape from insolvency, such phenomena like passage to more profitable business (change in the branch of activity) or sale of the company to another owner are included. In general, two cases may be distinguished:

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- a) Actual discontinuance of business (when enterprises cease to operate [i.a. Bates 1995, Stanworth 1995, Dekimpe, Morrison 1991, Bates, Nucci 1989, Dunne, Roberts, Samuelson 1989])
- b) Change of the owner or the legal status of enterprises (*discontinuance of ownership*) [i.a. Williams 1993, Baldwin, Gorecki 1991, Phillips, Kirchoff 1989, Stewart, Gallagher 1986].

The group of researchers, who use the concept of bankruptcy or liquidation, inflicting loss to creditors adopts a clearly narrower approach to the discontinuance of business. Many studies are based on this type of definition [based on a rather formal but pragmatic approach adopted by a renowned company like Dun and Bradstreet], see eg. Fredland, Morris [1976], Hall, Young [1991], Lowe, McKenna, Tibbits [1991], and Cahill [1980].

A less frequently applied definition, although with a long tradition [Ulmer, Nielsen 1947], relates to businesses that discontinue their activities being **disposed to prevent further future losses by owners and creditors**. This is a concept conceived more broadly than the former, being at the same narrower than the first one. There is, however, an inherent weakness in it because it is difficult to unequivocally state the reasons for the discontinuation of business activities.

Cochran [1981] proposed a slightly broader definition. He argued that we have to do with **a failure of the business capital when it is not able to make of it before it entails a loss in the capital**. In spite of practical difficulties, resulting from the lack of statistical data, Gaskill and Van Aucken [1993] as well as Smallbone [1990] applied this definition. The results of the two latter research projects indicate that the discontinuation of activities described in this way explains between 71.4% to 88% of all cases of discontinuation of operating activities of SMEs.

Very often the only source of information about companies which discontinue their activities is the fact of their **deregistration or failure to renew registration**. In such circumstances it is not possible to say anything about the reasons for such development. It may as well mean the disappearance from the register (e.g. failure to meet the requirements related to the necessity to be registered), but not the discontinuation of activities. It is stressed by Fuller in his extensive study of the trends in the SME sector in the United Kingdom [Fuller, 1994 p.62].

In conclusion it may be said that the estimations of chances of survival or discontinuation of activities depend to a large extent on the way we define those facts, as well as on the kind of information used as the base for those estimations. Watson and Everett [1996] listed the results of 25 different types of analyses, of the reasons stating for the discontinuation of activities. The comparison of the so-called failure rates quoted by their authors allows us to identify huge discrepancies – from several to more than 80 percent. It is also worth noting that those discrepancies result both from the adoption of different definitions of failure (discontinuation of activity) as well as from the kinds and size of analysed

populations. Thus it is very difficult to formulate any generalisations which could allow us to create any consistent theory of the survival of SMEs on such a base.

In our study we have adopted the following definitions:

**Small and medium – sized enterprises** (SMEs), are the companies which employ up to 200 employees.

**Microenterprises** are the firms that employ up to 5 employees.

**Small enterprises** are the firms that employ from 6 to 50 employees.

**Medium-sized enterprises** are the firms that employ from 51 to 200 employees.

The **industry** of a particular enterprise was determined on the basis of the REGON register and the European Classification of Activities.

The enterprises were considered as **liquidated**, i.e. those that discontinued their activities, if they disappeared from the REGON, registered maintained by the Voivodship Statistical Office in Gdańsk<sup>1</sup>. It means, that a company existing in 1992 with a given statistical number was not registered there in November 1996. It could, however, function in another legal form or outside the territory of the Gdańsk voivodship.

**By a change in the character of business activity** we understand a situation where the company functioned both in 1992 and in 1996, but the profile of its activities (according to the European Classification of Activities) was subject to change to such an extent, that it could not be classified under any of the studied branches of industry (i.e. the food processing, wood processing, clothing or textile industries).

As **companies, which survived**, i.e. those, which continued their activities, **were** considered those firms, which in 1996 were entered in the register under the same statistical numbers<sup>2</sup>. It has, however, to be mentioned here, that there is no certainty whether those companies actually conducted any business activity. The situation is that not all that discontinue their business activities fulfil the duty of striking off their companies from the REGON system.

**The mortality rate of enterprises** expresses the relation between the number of enterprises which discontinued their activities (were liquidated according to the above definition) to the total number of the given group of enterprises (in the analysed sample).

## 2. The purpose, stages and methods applied in the research project

### 2.1. The Purpose of the Research Project

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<sup>1</sup> That is why in the present paper we use interchangeably the notion of "a liquidated enterprise" or "a company which ceased to operate", but always according to the above definition.

<sup>2</sup> In the following sections of the paper we use interchangeably the term "an enterprise, which survived" or "an enterprise, which continues its business".

The basic purpose of our research is to determine the main factors that account for the survival (continuation of activities) of small and medium-sized enterprises in the manufacturing industries in Poland on the basis of a statistical sample.

## 2.2. Stages of Research

The research was carried out in three subsequent stages:

**Stage 1** covered the specification of potential factors conditioning the ability to survive or the possibility of liquidation of an enterprise.

**Stage 2** covered the statistical assessment of individual factors determining the ability of an enterprise to survive or the probability of liquidation of an enterprise.

**Stage 3** included an econometric, multifactorial analysis concerning the ability to survive or the possible liquidation of an enterprise.

An initial hypothesis is formulated concerning the influence of the following set of factors on the ability to survive or the probability of liquidation of an enterprise:

1. Type of industry of the enterprise in question;
2. Size of the enterprise;
3. Sex of the entrepreneur;
4. Formal education of the entrepreneur;
5. Technological level of machinery and equipment according to the assessment made by the entrepreneur;
6. Existence or lack of existence of problems in acquiring bank loans as signalled by the entrepreneur;
7. Planned rate of growth of the company sales;
8. Obstacles to development perceived by the entrepreneur;
9. Spread of recipients of the company products.

The contingency tables are constructed on the basis of accumulated statistical material [Wayne W.D., 1984, p.327-338]. In those tables the number of enterprises noted as continuing the activity and the number of liquidated enterprises were assigned to each isolated category of the analysed factor. These numbers are defined as **observed frequencies ( $O_{ij}$ )**, where:

$i$  – number of categories of the analysed factor, ( $i=1,2,3,\dots,k$ ),

$O_{i1}$  – number of functioning enterprises characterised with the  $i$ -th category,

$O_{i2}$  – number of liquidated enterprises characterised with the  $i$ -th category.

Prior to the proper statistical analysis, a descriptive analysis was carried out, using structural indices calculated according to the following procedure:

$r_{i1} = [O_{i1} / O_i] 100\%$  – percentage share of functioning enterprises in the total

number of enterprises characterised with the  $i$ -th category,

$r_{i2} = [O_{i2} / O_i] 100\%$  – percentage share of liquidated enterprises in the total

number of enterprises characterised with the  $i$ -th category,

$O_i = O_{i1} + O_{i2}$  – number of enterprises characterised with the  $i$ -th category of the analysed factor.

Conclusions reached on the basis of statistical analysis have been subject to statistical verification with the chi-square test. To achieve this aim, the **expected values ( $E_{ij}$ )** are calculated on the basis of average shares and the number of enterprises characterised with the  $i$ -th category ( $O_i$ ). Please note that the **observation of small differences between the observed and expected values would indicate that the isolated category does not differentiate the ratios of functioning companies from the liquidated ones.** When those differences are substantial it can be assumed that the isolated category exerts a meaningful influence on the change of ratio of prospering businesses related to the liquidated ones. Thus the given category or groups of categories of the observed factor may be initially considered as important from the point of view of the capacity of the enterprise to function or to be liquidated. In order to assure the objective character of our conclusions, the statistical practice suggests the verification of two alternative hypotheses:

$H_0$  : the classification criteria are independent of each other,

$H_1$  : the classification criteria are dependent on each another.

In order to verify the null hypothesis in relation to the alternative on the basis of observed and expected frequencies, the chi-square value is calculated according to the following formula:

$$\chi^2 = \sum \frac{[O_{ij} - E_{ij}]^2}{E_{ij}}$$

The value calculated according to the above presented formula is then compared with the value of  $\chi^2_\alpha$  taken from the chi-square distribution tables at  $(2-1)(k-1) = (k-1) = df$  degrees of freedom and probability  $\alpha$ . Thus the two following situation can appear:

A:  $\chi^2 > \chi^2_\alpha$

B:  $\chi^2 < \chi^2_\alpha$

**In situation A**, the zero hypotheses are rejected in favour of the alternative hypothesis. It means, that the applied classification criterion is dependent on each other. In other words the **distinguished categories of the studied factor are statistically important in shaping the ratio of functioning companies to the total number of studied enterprises.** The possible random events, which could lead to meaningful differentiation may be assigned the probability equal to  $\alpha$ . Of course, the lower is the value of  $\alpha$ , the higher is the certainty of conclusions about the influence of distinguished categories of the analysed factor on the survival capacity of the enterprise or on its liquidation [Luszniewicz, Słaby, 1996, p.144].

**In case of the situation B** we say that there are no grounds to reject the null hypothesis about the independence of the applied classification criteria. In our study it would mean that the **distinguished categories of the analysed factor differentiate the structure of companies into those which function and those which were liquidated randomly.**

In the present report, the value of probability  $\alpha = 0.05$  has been adopted as the initial critical value. In cases when there were no grounds to reject the null hypothesis for the sake of the alternative one, we looked for such probability  $\alpha_g$  at which chi-square is less than the calculated chi-square. Thus the probability  $\alpha_g$  of the influence of random factors on the perceived differentiation of structures has been indicated. If in the initial step of the research procedure the number of categories was larger than two, then in the next step some categories were aggregated looking for such solutions which would assure the lowest possible probability of random events leading to the differentiation of structures. As a result, we state in the analysed tables, [besides the critical value taken from the chi-square test tables for the probability  $\alpha = 0.05$ ], the critical values of the test for the probability  $\alpha_g$ . This procedure is based on the following two basic assumptions:

- the number of liquidated enterprises in relation to the total number of studied enterprises was relatively small,
- the capacity of the enterprise to function further or to be liquidated may depend on several factors.

Within this framework, the research has been carried out with the use of **econometric logit analysis** [Theil H., 1979, p.638-642]. Initially we assume that the continuation of business activity depends on several factors. The present research was confined to the three-factor analysis because of the small size of the sample. The analysed factors for the number of  $j = 1, 2, 3$  were included in the form of dummy variables  $x_j$ . These variables are defined in the following way:

$$\begin{aligned} x_j &= 1, \text{ when the given category is observed,} \\ x_j &= 0, \text{ when the given category is not observed.} \end{aligned}$$

Note that in case of inclusion of three variables of this kind, we will have to do with eight combinations to which eight relative frequencies of possibilities of functioning of enterprises could be assigned:

$$p_i = \frac{OV_i}{O_i}$$

where:  $OV_i$  - the number of enterprises continuing their activities at the  $i$ -th combination of categories characterised with dummy variables,  
 $O_i$  - total number of enterprises noted for the  $i$ -th combination of categories characterised by dummy variables.

On the base of  $p_i$  it is possible to calculate the odds of functioning of an enterprise at the given combination of factor categories. The odds are calculated according to the following formula:

$$CH_i = \frac{p_i}{1 - p_i} \tag{1}$$

The amount calculated this way tells us about the number of functioning enterprises per one liquidated enterprise at the  $i$ -th combination of categories of analysed factors. Since that amount should assume only positive values, the factorial model of odds can be presented as follows:

$$CH_i = \exp(\beta_0 + \beta_1 x_{i1} + \beta_2 x_{i2} + \beta_3 x_{i3} + u_i), \tag{2}$$

where:  $\beta_j$  - structural parameters of the model,

$u_i$  - disturbance term.

In order to estimate the structural parameters, both sides of the equation (2) should assume a logarithmic form. We could then adopt the following form:

$$\ln CH_i = \beta_0 + \beta_1 x_{i1} + \beta_2 x_{i2} + \beta_3 x_{i3} + u_i, \tag{3}$$

For the purpose of this report the above model was estimated with the help of the Generalised Least Squares method:

$$b = (X'V^{-1}X)^{-1} X'V^{-1}y, \tag{4}$$

where:  $y$  - is the vector of observed odds

$X$  - is the matrix of combinations of categories of analysed factors plus a constant,

$$V^{-1} = P'P$$

$P$  - is the diagonal matrix of weights  $w_i$  for the  $i$ -th combination of categories,

$w_i = O_i / 185$  - is the share of the total number of enterprises noted for the  $i$ -th combination of categories in the total number of analysed enterprises.

Finally the estimated form of our model is as follows:

$$FCH_i = \exp(b_0 + b_1 x_{i1} + b_2 x_{i2} + b_3 x_{i3}) \tag{5}$$

On the basis of fitted odds ( $FCH_i$ ) the theoretical probabilities ( $Fp_i$ ) could be estimated according to the following formula:

$$Fp_i = \frac{1}{1 + \exp(-b_0 - \sum b_j x_{ij})} \tag{6}$$

The above values were presented in the attached tables in percentage terms. While concluding this section of the report let us remark that on the basis of the estimated model, it is possible to determine the conditional changes in odds resulting from the existence or lack of existence of particular categories.

### **2.3. Sample Characteristics<sup>1</sup>**

In 1992, as many as 186 SMEs were involved in manufacturing activities in the following industrial branches: food processing, wood processing, textile and clothing industries (the latter ones were considered together).

All companies were located in the territory of the Gdańsk region. Nearly two-thirds of them were firms individually owned by natural persons (without any legal personality).

Those enterprises were selected at random from among private SMEs working in the above industries and located in the above area, entered in the REGON register, maintained by the Voivodship Statistical Office in Gdańsk. The register covered 1624 SMEs meeting those criteria.<sup>2</sup> Then, 120 companies from each industry were selected at random (in total 360 companies). Because of various circumstances it was possible to reach and receive responses to questionnaires from 186 of them.

In November 1996 we addressed the Voivodship Statistical Office for the second time asking it to check, which of the formerly studied businesses were still listed in the register. This check was made according to the REGON statistical numbers of 1992, and, additionally, according to the firms' names. Thus it was possible to set up a list of companies which after 4 years, were still present in the register (i.e. probably, but not certainly, continuing their business activity) and another list of liquidated firms. Altogether, 185 functioning and liquidated enterprises were identified. This number determines the size of the analysed sample.

## **3. Single factor analysis of determinants shaping the survival capacity of enterprises**

### **3.1 The Branch of Industry and the Survival Ability of an Enterprise**

Table 1.1. presents information about the functioning and liquidated enterprises according to industry. Two inferences may be derived from the study of the table:

- the average survival capacity of the studied enterprises is relatively high, because out of 185 firms as many as 150, i.e. 81% were still in operation while only 35, i.e. 19% were liquidated;

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<sup>1</sup> For detailed information cf. [Dominiak, Bławat 1992]

<sup>2</sup> The REGON system did not cover all the microenterprises (with less than 5 employees).

- there are perceivable differences in the capacity of companies to continue operations in the three studied industrial branches; the highest capacity to survive was manifested in the wood processing industry, where 86% of companies managed to survive, while the worst capacity to survive was manifested in the clothing industry enterprises (only 77% of companies managed to survive).

Thus a question arises whether the survival capacity of an enterprise is in a statistically meaningful way influenced by the industry in which the company operates.

If we undertake the statistical analysis of results of calculations presented in Table 1.1 we find, that the null hypothesis assuming independence of classification should be rejected for the sake of an alternative hypothesis at the level of probability  $\alpha_g = 0.5$  only. It would mean that perceivable differences in structures are due to as much as 50% to random factors. Thus a question is raised whether the obtained result is not due to excessive disaggregation of categories. This could be the reason for the decrease of differences between cases assigned to particular industries. That is why in further analysis, two ways of disaggregation were considered. The first way consisted in combining the food processing industry with the clothing industry, creating an aggregate presented in Table 1.2 as F&C. This aggregate is opposed to the wood processing industry. This way of aggregation is supported by the fact that the clothing industry and the food processing industry is characterised with higher mortality rates that the wood processing industry.

While performing the statistical analysis of results included in Table 1.2 we rejected the null hypothesis at the probability of  $\alpha_g = 0.289$ . It would indicate that the observable differentiation of structures could be assigned to random factors with a probability  $\alpha_g = 0.289$ . A question arises then whether this method of aggregation allows for the best manifestation of the differentiation of structures. In this situation let us consider an alternative way of aggregation of industries.

According to the other way of aggregating industries, industries manifesting the lowest mortality rates, that is the food processing and the wood processing industries are combined together. This aggregate is presented in Table 1.3. as F & W, opposing it to the clothing industry.

**Table 1.1.** Classification of companies according to branch structure Observed and expected frequencies of survival (Sur) and liquidation (Lq) of enterprises

Branches	Observed frequencies $O_{ij}$			Expected frequencies $E_{ij}$			Percentage share	
	Sur	Lq	Total	Sur	Lq	Total	Sur	Lq
Food	45	10	55	44,59	10,41	55	82%	18%
Clothing	57	17	74	60	14	74	77%	23%
Wood	48	8	56	45,41	10,59	56	86%	14%

<b>Total</b>	150	35	185	150	35	185	81%	19%
$\chi^2_{0,05}=5,99$			$\chi^2=1,596$			$\alpha_g=0,4502$		

Source: own calculation

**Table 1.2.** Classification of companies according to branch structure Observed and expected frequencies of survival (Sur) and liquidation (Lq) of enterprises

Branches	Observed frequencies $O_{ij}$			Expected frequencies $E_{ij}$			Percentage share	
	Sur	Lq	Total	Sur	Lq	Total	Sur	Lq
<b>F&amp;C</b>	102	27	129	104,59	24,41	129	79%	21%
<b>Wood</b>	48	8	56	45,41	10,59	56	86%	14%
<b>Total</b>	150	35	185	150	35	185	81%	19%
$\chi^2_{0,05}=3,84$			$\chi^2=1,124$			$\alpha_g=0,2891$		

where: F&C = Food + Clothing

Source: own calculation, see table 1.1.

**Table 1.3.** Classification of companies according to branch structure Observed and expected frequencies of survival (Sur) and liquidation (Lq) of enterprises

Branches	Observed frequencies $O_{ij}$			Expected frequencies $E_{ij}$			Percentage share	
	Sur	Lq	Total	Sur	Lq	Total	Sur	Lq
<b>F&amp;W</b>	93	18	111	90	21	111	84%	16%
<b>Clothing</b>	57	17	74	60	14	74	77%	23%
<b>Total</b>	150	35	185	150	35	185	81%	19%
$\chi^2_{0,05}=3,841$			$\chi^2=1,321$			$\alpha_g=0,2503$		

where: F&W = Food + Wood

Source: own calculation, see table 1.1.

In logical terms, the separation of the clothing industry and the aggregation of the wood processing industry with the food processing industry is supported with the following arguments:

- the clothing industry has the largest number of enterprises in the studied population of companies.
- the clothing industry is characterised with the highest mortality rate.

These facts are also important in the statistical analysis.

Statistical analysis of information contained in Table 1.3 indicates, that from the point of view of factorial analysis, it is more appropriate to aggregate the food and the wood processing industries than to aggregate the food processing and the clothing industries. We should observe that under the present circumstances it could be assumed that the role of random events in differentiating structures

should be assigned the probability of about 0.25. In other words, the perceived fact which indicated that 77% of the clothing industry enterprises demonstrated their capacity to survive (were not liquidated) in comparison with 84% of enterprises of the remaining industries may be considered as a statistically relevant source of differentiation with a probability of  $1-\alpha_g = 0.75$ .

After the aggregation of industrial branches regardless of the methodology applied, the discrepancy between the highest and the lowest mortality rate decreases from 9 to 7 percentage points. The difference resulting from different methods of aggregation applied is expressed with the level of mortality rates. The second way of aggregation produces clearly higher indices than the first one.

### *3.2 The Size of the Enterprise and Its Capacity to Survive*

According to the adopted classification procedure, the largest is the group of small enterprises, which constitute half of all analysed businesses. The smallest group is made of medium-sized enterprises. There are only 15 of them, i.e. 8% of the total. In this group, the food processing industry is dominant. The other industries are dominated by microenterprises. The food processing enterprise is distinguished by the presence of a very small number of microenterprises, 3/4 of the total number of firms' employ from 6 to 10 people.

The breakdown of enterprises into particular industries according to the size of their employment is as follows:

The clothing industry:

- microenterprises - 60%
- small companies - 35%
- medium-sized companies - 5%

The food processing industry:

- microenterprises - 10%
- small companies - 74%
- medium-sized companies - 16%

The wood processing industry:

- microenterprises - 50%
- small companies - 44%
- medium sized companies - 6%

On the basis of the analysis of Table 2.1. it is possible to formulate an initial hypothesis that the probability of survival and development of an enterprise is the highest in the case of medium-sized companies (87%), it is slightly lower in the case of smaller enterprises (85%), and the lowest among the microenterprises (76%).

On the basis of statistical analysis of values contained in Table 2.1 it can be said that the null hypothesis assuming the independent character of the studied structure may be rejected with the probability of  $\alpha_g = 0.289$ . It means that thirty percent the **perceived differences** in the functioning of the enterprises may be

due to random factors. It may be discerned that the aggregation of the so-called small and medium-sized enterprises in the analysed case should improve the results of statistical reasoning stressing the influence of the size of the enterprise on their ability to operate. The situation prevailing under conditions of aggregation of small and medium-sized enterprises is presented in Table 2.2.

**Table 2.1.** Classification of companies related to their size Observed and expected frequencies of survival (Sur) and liquidation (Lq) of enterprises

Size	Observed frequencies $O_{ij}$			Expected frequencies $E_{ij}$			Percentage share	
	Sur	Lq	Total	Sur	Lq	Total	Sur	Lq
Micro	59	19	78	63,24	14,76	78	76%	24%
Small	78	14	92	74,59	17,41	92	85%	15%
Medium	13	2	15	12,16	2,84	15	87%	13%
<b>Total</b>	150	35	185	150	35	185	81%	19%
$\chi^2_{0,05}=5,99$			$\chi^2=2,63$			$\alpha_g=0,2683$		

Where: Micro - companies employing less than 6 employees

Small - companies employing more than 5 employees and less than 51 employees

Medium - companies employing more than 50 employees.

Source: own calculation

Statistical analysis of values given in Table 2.2 indicates that we may tend to prefer the hypothesis assuming dependence between the criteria of classification with the probability of  $1-\alpha_g = 0.893$ . The fact, that only 76% of very small enterprises retained their capacity to function further in comparison with 81.1% of small and medium sized enterprises may be considered as resulting from random factors with an *ex post* probability  $\alpha_g = 0.1067$ . **Thus the size of the enterprise may be considered as one of the more important determinants of the firm's capacity to survive or to be liquidated.**

**Table 2.2.** Classification of companies related to their size Observed and expected frequencies of survival (Sur) and liquidation (Lq) of enterprises

Size	Observed frequencies $O_{ij}$			Expected frequencies $E_{ij}$			Percentage share	
	Sur	Lq	Total	Sur	Lq	Total	Sur	Lq
Micro	59	19	78	63,24	14,76	78	76%	24%
S&M	91	16	107	86,76	20,24	107	81.1%	18.9%
<b>Total</b>	150	35	185	150	35	185	81%	19%
$\chi^2_{0,05}=3,84$			$\chi^2=2,602$			$\alpha_g=0,1067$		

where: S&M - Small enterprises + Medium-sized enterprises

Source: own calculation, see table 2.1.

### 3.3. The Sex of the Entrepreneur and the Survival Capacity of the Enterprise

Men tend to more frequently become business owners than women - there were 69% of men among the owners of the analysed small and medium-sized enterprises while 31% of them were women. Such a pattern of ownership result from very differentiated structures of the analysed industries. In the wood processing industry, only one enterprise is run by a woman; i.e. is less than 2% of the total number of enterprises in the industry. In the food processing industry, the male domination is still visible; but the proportion of female-entrepreneurs is 17%. On the other hand, in the clothing industry, female entrepreneurs tend to dominate the picture. The ratio of male to female entrepreneurs is like 1:2.

Thus we observe a major role of women in the clothing industry and the dominance of male entrepreneurs in the remaining two industries. Those facts support the aggregation of the food and wood processing industries in order to contrast them with the clothing industry.

Thus it seems obvious that the conclusions based on the analysis of data contained in Table 3 correspond to the observations based on Table 1. Better chances of survival for men who tend to dominate in the wood and food processing industries. The highest mortality rates are found among firms in the clothing industry run by women. Taking into consideration all the industries we can say that every sixth enterprise run by a man and every fourth by women.

Statistical analysis allows us to conclude that the observed structural differences may be assigned in about 16.4 percent cases to random events. **It would indicate the fact that the sex of entrepreneur is one of the relevant factors influencing the capacity of an enterprise to function.**

**Table 3.** Classification of companies according to sex of entrepreneurs Observed and expected frequencies of survival (Sur) and liquidation (Lq) of enterprises

Sex	Observed frequencies $O_{ij}$			Expected frequencies $E_{ij}$			Percentage share	
	Sur	Lq	Total	Sur	Lq	Total	Sur	Lq
Men	108	21	129	104,59	24,41	129	84%	16%
Women	42	14	56	45,41	10,59	56	75%	25%
Total	150	35	185	150	35	185	81%	19%
$\chi^2_{0,05}=3,84$			$\chi^2=1,936$			$\alpha_g=0,1641$		

Source: own calculation.

### 3.4. Formal Education of the Entrepreneur and the Survival Capacity of the Enterprise

The owners/managers of analysed businesses have usually acquired medium (45%) or higher education (35%). Others have usually graduated from vocational schools; only one entrepreneur finished his formal education at primary school level only. Education is considered as one of the more important elements of entrepreneur's competencies. It is then only a natural supposition that higher level of education is helpful in running a business and creates a better chance for its survival. At first sight, the data of Table 4 seems to confirm this proposition. Companies run by entrepreneurs with higher education survived in 88% of total cases. It is interesting, however, that the second group showing the highest survival capacity is made of businesses run by entrepreneurs with the lowest formal education (82%). On the other hand entrepreneurs with medium level of education (only 76%) show the worst survival capacity.

On the basis of the chi-square statistics it has been found that the observed differences in structures may be assigned in 18.8% cases to random factors. The fact that the share of liquidated companies is lower in the case of enterprises run by people with vocational or higher education in comparison to the share of liquidated companies run by people with medium – level education may indicate that the capacity of companies to survive is determined by other factors than the formal education of the entrepreneur. These determinants may be made of acquired experience or managerial skills of the entrepreneur.

The relationship between the functioning of the enterprises and the level of formal education of their owners/managers does not have, then, an unequivocal character. On the basis of the research it can be observed, that the most efficient and those most adversity to obstacles are those entrepreneurs who have acquired higher (mainly technical) or vocational level of schooling.

**Table 4.** Classification of companies according to business owners' level of education Observed and expected frequencies of survival (Sur) and liquidation (Lq) of enterprises

Education	Observed frequencies $O_{ij}$			Expected frequencies $E_{ij}$			Percentage share	
	Sur	Lq	Total	Sur	Lq	Total	Sur	Lq
Low	32	7	39	31,62	7,38	39	82%	18%
Medium	62	20	82	66,49	15,51	82	76%	24%
High	56	8	64	51,89	12,11	64	87,5%	12,5%
Total	150	35	185	150	35	185	81%	19%
$\chi^2_{0,05}=5,991$			$\chi^2=3,343$			$\alpha_g=0,1879$		

Where: Low = a+b

Medium = c+d

High = e+f++g+h

a+b - Elementary and vocational school - (low level)

- c - Secondary technical school
- d - General secondary school
- e - Higher engineering education
- f - Higher economic education
- g+h - Other higher education

Source: own calculation.

### ***3.5. The Assessment of the Technical Level of Machinery and Equipment and the Survival Capacity of Enterprises***

The owners/managers of analysed enterprises have heavily invested in them using their own capital; the machinery of the subject enterprises was self-financed in over 90 percent (93%). Other sources of finance have been used in very isolated cases. Own sources of finance have definitely contributed to the installation of much cheaper, used machinery. Only 40% of enterprises fully use new machinery. Such a situation is met nearly equally in all three branches of industry, since that index varies from 37% in the food processing industry to 44% in the wood processing industry, while in the clothing industry it also amounts to 40%. It has also influenced the age of the used machinery. According to studies of 1993 1/3 of machines were from 6 to 10 years old and 1/5 of machines were still older. However, slightly more than 40% of machines were not more than 5 years old. The most modern machinery is used in the clothing industry, where over half (52%) machines are not more than 6 years old. In the wood processing industry there are 41% of them while in the food processing industry only 29% so. In the latter industry there is the relatively highest number of enterprises with a longer period of operation. Many of these enterprises functioned already under the former economic system (that is prior to 1989). Thus the existence of a relatively older set of machinery seems to be quite natural.

The age of the machinery indirectly indicates their technical level. Its precise definition is practically impossible to formulate since there is no uniform methodology in the area. Besides that the analysed industries have their specific character and differ as far as the pace of technological progress applied in them is concerned. Under such circumstances an attempt was made to determine the technological level on the base of the opinion of the entrepreneurs. To this end a four-degree scale was used, where the following levels were distinguished: high, medium, low and very low. Low percentage of responses (2%) indicating very low level suggests aggregating that responses with responses indicating the low technological level of machinery used (altogether 18%). 11% of owners/managers estimate the technological level of machinery used as high. So nearly 70% of respondents described the technological level of machinery they used as medium.

These responses indicate a high correlation of assessment of the technological level of machinery used with their age. The highest percentage of entrepreneurs who assessed the technological level of machinery used as high is found in the clothing industry (16,5%) while in the wood processing industry it

amounts to - 11% and in the food processing industry to only 5%. These indices have to be treated with much care, since the interviewed entrepreneurs do not necessarily have adequate knowledge about the most modern machinery used in their industry. Besides that the notions such as high, medium and low have a highly subjective character. Anyhow it is worth to consider, whether there is any causal relationship between the technological level of machinery and the capacity of a given enterprise to survive or be liquidated.

**Table 5.** Classification of companies according to the technological standard of machines assessed by the owners of enterprises Observed and expected frequencies of survival (Sur) and liquidation (Lq) of enterprises

Technology. Standard	Observed frequencies $O_{ij}$			Expected frequencies $E_{ij}$			Percentage share	
	Sur	Lq	Total	Sur	Lq	Total	Sur	Lq
<b>High</b>	12	9	21	17,03	3,97	21	57%	43%
<b>Medium</b>	107	23	130	105,41	24,59	130	82%	18%
<b>Low</b>	31	3	34	27,57	6,43	34	91%	9%
<b>Total</b>	150	35	185	150	35	185	81%	19%
$\chi^2_{0,05}=5,991$			$\chi^2=10,23$			$\alpha_g=0,006$		

Source: own calculation.

The results of research presented in Table 5 are highly astonishing. The more so if we bear in mind, that it can be inferred from the analysis of statistical material that the observed differentiation of structures may only in 5% be assigned to random factors. This differentiation would not arise any doubts unless a paradoxical situation was observed that the decidedly highest percentage of liquidated companies could be found among those enterprises, which described the technological level of their machinery as very high. Out of 21 such enterprises only 12 (57%) survived, and 9 (43%) were liquidated. It is difficult to identify the grounds for such a situation. Perhaps the relatively small number of enterprises assessing the technological level of their machinery as very high played a role here. It is also not excluded that some of the entrepreneurs assessed the level of their machinery too optimistically. This supposition is confirmed that the highest number of liquidated companies is found in the group of enterprises, which assessed the technological level of their machinery as low (only 9%). Was it not due to the fact that those entrepreneurs assessed their machinery very cautiously or even pessimistically? If, however, we reject those suppositions, a hypothesis remains that the survival capacities of an enterprise are determined primarily by other factors than the technological level of machinery used. These may be factors dependent from the owner/manager like his competence or factors characterising the environment of the enterprise.

### 3.6. Barriers to Growth and the Survival Capacity of the Enterprise

That is why in further analysis the relationship between the survival capacity of the enterprise and factors, which may be considered as barriers to growth of small businesses will be considered. At the end of 1992 the respondents were asked to indicate one out of ten, in their opinion the most important barrier to growth of their company gave the following answers:

- insufficient demand for products-services - 35,5%
- lack of financial resources - 25,0%
- insufficient area of production plant - 13,0%
- burdensome character of legal and administrative rules - 6,5%
- difficulties in recruiting appropriate staff - 4,0%
- insufficient production capacity of machinery installed - 3,0%
- difficulties in getting parts and raw materials - 3,0%

Nearly 2% of respondents did not see any barriers to growth and 8% mentioned some other difficulties. Quite interesting is the fact that the demand barrier was mentioned at the first place. Actually the entrepreneurs had difficulties in believing, that the market mechanism would solve the problem of permanent product deficits so quickly after the application of shock price therapy, when the planned economy was not able to cope with them for half a century. That is why such a high percentage of respondents perceived insufficient demand as a barrier and many of them did not understand that such a situation is quite normal in a market oriented economy. As far as particular industries are concerned, the entrepreneurs in the clothing industry (45%) and least frequently in the wood processing industry most frequently mentioned the demand barrier. (34%). Such results of research is not astonishing at all since the clothing industry has long traditions in Poland and the supply of clothing industry is quite substantial. Besides that large amounts of cheap clothing arrived from abroad. Taking into consideration the general impoverishment of society it is obvious that deficient demand is perceived in this industry as a particularly troublesome barrier.

**Table 6.1.** Classification of companies according to barriers to growth voiced by entrepreneurs Observed and expected frequencies of survival (Sur) and liquidation (Lq) of enterprises

Barriers to growth	Observed frequencies $O_{ij}$			Expected frequencies $E_{ij}$			Percentage share	
	Sur	Lq	Total	Sur	Lq	Total	Sur	Lq
<b>Demand*</b>	62	21	83	67,30	15,70	83	75%	25%
<b>Other*</b>	88	14	102	82,70	19,30	102	86%	14%
<b>Total</b>	150	35	185	150	35	185	81%	19%
$\chi^2_{0,05}=3,84$			$\chi^2=3,997$			$\alpha_g=0,0456$		

where: Demand\* - a+g+k

Other\* - b+c+d+e+f+h+i+j

a - insufficient demand for products

b - difficulties in recruiting adequate employees,

c - constraints imposed on supply of raw materials and semi-finished products,

d - lack of financial resources,

e- Lack of managerial and organisational skills,

f - excessive legal and administrative controls,

g- excessive indebtedness,

h - insufficient productive capacities of machinery installed

i - insufficient productive capacities of machinery installed,

j - none,

k - other

Source: own calculation.

Lack of financial resources being the second most painful barrier to growth appears to be a barrier, which is relatively easy to break. Out of 44 entrepreneurs, who mentioned this barrier in the first place only three (7%) liquidated their businesses.

The barrier of financial resources can be overcome i.a. with the help of bank loans. Difficulties in acquiring them were mentioned not only by 44 above-mentioned respondents. They were accompanied by further 38 others, who claimed that they were having troubles with getting loans. The overall group of such people constituted 56% of the total number of respondents.

**Table 6.2.** Classification of companies related to credit problems Observed and expected frequencies of survival (Sur) and liquidation (Lq) of enterprises

Credit Problems	Observed frequencies $O_{ij}$			Expected frequencies $E_{ij}$			Percentage share	
	Sur	Lq	Total	Sur	Lq	Total	Sur	Lq
No	68	13	81	65,68	15,32	81	84%	16%
Yes	82	22	104	84,32	19,68	104	79%	21%
<b>Total</b>	150	35	185	150	25	185	81%	19%
$\chi^2_{0,05}=3,841$			$\chi^2=0,773$			$\alpha_g=0,3792$		

Source: own calculation.

In such a situation a question appears whether entrepreneurs who complained of the difficulties with getting loans liquidated their companies more often than those, who did not declare such problems. Table 6.2 gives an answer to the above question. As it could be anticipated, the mortality rate among enterprises which had difficulties with getting access to credits was higher by 5 percentage points than the mortality rate of the remaining ones. Relatively small difference in the level of mortality rates in the two analysed groups of enterprises

indirectly corresponds with the conclusion that the barriers of financial resources do not play a significant role. It is also confirmed by statistical analysis, which suggests, that the perceived differentiation of structure result in nearly 37.9% from purely random events.

The other barriers were relatively rarely mentioned and the enterprises, which mentioned them proved to have a high capacity to survive. This suggests aggregating all the enterprises mentioning all barriers to growth except those, which mention the barrier of demand. The survival and the rate of mortality depending on the demand barrier and the remaining barrier to growth are shown in Table 6.1. The data contained in it suggest that every fourth company complaining of demand barrier and every seventh company complaining of other barriers to growth be liquidated. (Table 6.1).

The statistical analysis allows recognising that the perceived differences in structures can be assigned in less than 5% cases to random factors. It means, that the demand barrier may play an important role in the determination of the possibilities of functioning of the enterprise in comparison with other barriers.

### 3.7. The Planned Rate of Growth and the Survival Capacity of an Enterprise

At the end of 1992 every fourth entrepreneur expected a decline in sales revenue in the following year. In that group as many as 70% entrepreneurs were considering a probable failure of their enterprises. The largest number of people with a pessimistic vision of the future could be found in the clothing industry (76%), while the smallest number of such people was in the food processing industry (67%). Later research confirmed that the pessimism was justified to a certain extent only. Among the enterprises threatened with failure the mortality rate is actually the highest, yet it is not as high as it could be anticipated from the expectation of entrepreneurs. The most astonishing is also the fact, that the next group that can be distinguished because of high mortality rate is the group of enterprises run by entrepreneurs who anticipated an increase in sales. It is very risky, however, to draw conclusions in this matter since the size of the group of entrepreneurs who anticipated an accelerated growth in sales was relatively small: it amounted to 24 firms only. 5 enterprises from this group were liquidated. If 4 firms of this group were liquidated only, this group would be classified among enterprises with the lowest mortality rate.

**Table 7.** Classification of companies according to planned rate of sales growth  
Observed and expected frequencies of survival (Sur) and liquidation (Lq) of enterprises

Planned rate	Observed frequencies $O_{ij}$			Expected frequencies $E_{ij}$			Percentage share	
	Sur	Lq	Total	Sur	Lq	Total	Sur	Lq
Accelerate	19	5	24	19,46	4,54	24	79%	21%
Slow	67	12	79	64,05	14,95	79	85%	15%

<b>Zero</b>	30	7	37	30	7	37	81%	19%
<b>Negative</b>	34	11	45	36,49	8,51	45	76%	24%
<b>Total</b>	150	35	185	150	35	185	81%	19%
$\chi^2_{0,05}=7,815$			$\chi^2=1,669$			$\alpha_g=0,6438$		

Source: own calculation.

These conclusions are confirmed by statistical analysis indicating that the observed differentiation of structures has a purely random character what is further confirmed with the values of the chi-square statistics.

### 3.8. The Number of Recipient Types and the Survival Capacity of Enterprises

The last factor that influences the survival capacity of enterprise is the number of recipients understood here as retail shops, wholesalers, production enterprises or direct consumers.

In line with the expectations, the entrepreneurs who were selling their products to only one type of recipient were more often threatened with the liquidation of the company than other entrepreneurs were.

**Table 8.** Classification of companies according to the number of type recipients  
Observed and expected frequencies of survival (Sur) and liquidation (Lq) of enterprises

Number of recipients	Observed frequencies $O_{ij}$			Expected frequencies $E_{ij}$			Percentage share	
	Sur	Lq	Total	Sur	Lq	Total	Sur	Lq
<b>One</b>	65	19	84	68,11	15,89	84	77%	23%
<b>More</b>	85	16	101	81,89	19,11	101	84%	16%
<b>Total</b>	150	35	185	150	35	185	81%	19%
$\chi^2_{0,05}=3,84$			$\chi^2=1,373$			$\alpha_g=0,2413$		

Source: own calculation.

This conclusion cannot be considered as very strong in the statistical sense. The statistical analysis suggests that the observed differentiation of structures may result in about 24.1% from purely random grounds.

## 4. Logit analysis of determinants shaping the survival capacity of enterprises

### 4.1. General Remarks

The single factor analysis allowed us to identify a set of factors, which can be considered as important in determining the chance of survival of an enterprise. Taking the conclusions formulated in the former part into consideration the following factors have to be taken into account:

- 1) the type of industry,
- 2) size of the enterprise,
- 3) sex of the entrepreneur,
- 4) type of barriers to growth perceived by the entrepreneur.

As far as the first factor is concerned, it was found that categories which indicate whether the enterprise operates in the clothing industry or in other industries, e.g. is wood or food processing industries are important. Thus the following variable was defined in the analysed logit models:

**BR<sub>i</sub>** – dummy variable that takes on a value of one in the *i*-th case, i.e. when the enterprises are classified into the food and wood processing industries (F&W) and zero in case when the enterprises are classified into the clothing industry.

In case of the factor that determines the size of the enterprise it was found that the chance for possible liquidation of the enterprise thus the chance for its survival depends on the fact of whether the enterprise is very small, i.e. whether it is a microenterprise (employing 5 or less people), or whether it is small or medium - sized(S&M). In the logit models the variable characterising this factor was defined in the following way:

**SI<sub>i</sub>** – dummy variable that takes the value of one in a case when the companies have the size of a microenterprise and the value of zero otherwise, i.e. when the enterprise is small or medium-sized.

In case of the factor that describes the sex of the entrepreneur the variable was defined according to the following formula:

**SX<sub>i</sub>** – a dummy variable that takes the value of one when the entrepreneur is a woman and that takes the value of zero, when the entrepreneur is a man.

The unifactoral analysis concerning the barriers to growth perceived by the entrepreneur indicated that on the background of the remaining categories the constrained demand appeared to be an important element accounting for the potential liquidation of a firm. As a result this category is contrasted to other categories characterising the barriers to growth in logit models. In further considerations this factor was included in the form of a variable defined in the following manner:

**DE<sub>i</sub>** – a dummy variable that takes on the value of one when the enterprises signalled demand **capital** limitations and the value of zero otherwise.

Partial chi-square tests have confirmed the relevance of factors distinguished above. A question arises then whether joint appearance of a certain combinations of factors would allow determination of the probability of survival or of liquidation of an enterprise with sufficient precision.

#### **4.2. The Type of Industry, Size of the Enterprise and Signalled Barriers to Growth and the Probability of Survival of the Enterprise**

On the basis of theoretical solutions in the introductory part of the report the first variant of a model is considered as follows:

$$\ln CH_i = \beta_0 + \beta_1 BR_i + \beta_2 SI_i + \beta_3 DE_i + u_i, \quad (7)$$

where:  $CH_i = \frac{p_i}{1-p_i}$

$p_i$  - relative frequency of the  $i$ -th event (appearance of a combination),

$i$  - 1,2,...,8 - number of observed events (combinations),

Actual values of  $p_i$  were presented in percentage terms in Table 10. The same Table shows the sets of values adopted by the BR, SI and DE variables. Using that information structural parameters of the discussed model were estimated with the help of the Generalised Method of Least Squares with a diagonal matrix of weights  $\{\text{diag}[w_i]\}$  described in the methodological part of the report. The results of estimations can be presented as follows:

$$Fw_i \ln CH_i = 1.7834w_i + 0.274 w_i BR_i - 0.435 w_i SI_i - 0.494 w_i DE_i, \quad (8)$$

(6.69)                      (1.07)                      (1.79)                      (2.28)

$$R^2 = 0.973, \quad F(3, 4)\text{-statistic} = 47.18 [0.001]$$

The symbol  $F \ln CH_i$  was used to designate the theoretical (fitted) values of the logarithm of the explained variable. In brackets, under the estimates of structural parameters the values of T-ratios were located. These values are used to verify the following alternative hypotheses:

$$H_0 : \beta_i = 0,$$

$$H_0 : \beta_i \neq 0.$$

It was found that in the case:

- of the  $\beta_0$  parameter, the null hypothesis may be rejected at the  $\alpha=0.003$  level of significance,
- of the  $\beta_1$  parameter, the null hypothesis may be rejected at the  $\alpha=0.345$  level of significance,
- of the  $\beta_2$  parameter, the null hypothesis may be rejected at the  $\alpha=0.149$  level of significance

- of the  $\beta_3$  parameter, the null hypothesis may be rejected at the  $\alpha=0.085$  level of significance

It means that in the statistical sense the influence of the variable illustrating the type of industry (BR), on the probability of survival of an enterprise, may be assumed to be insignificant. The highest statistical significance was expressed by the variable showing the demand barriers (DE). The variable, showing the size of enterprises (SI), appeared to be in significant.

Let us note that the value of the F statistics allows us to consider the joint influence of analysed variables on the explained variable with a probability equal to 0.999. Thus lower values of partial t-ratios may result from the association among explained variables.

Using the estimated form of the model we find that the perception of the demand barrier (DE=1) under conditions of zero-fixed combinations of the remaining categories leads to a decrease in the average odds of survival of an enterprise by  $[(\exp-0.494)-1]100=-38.98\%$ . It should find confirmation in the estimated probabilities. While analysing theoretical values of relative frequencies presented in percentage terms in Table 9, we find that the appearance of the demand barrier with the corresponding other categories unchanged, led to a decrease in the probability of survival of enterprises:

- from the level of 83.51% to 75.55%,
- from the level of 88.67% to 82.69%,
- from the level of 79.38% to 70.14 %,
- from the level of 85.61% to 78.40%.

**Table 9.** Classification of companies according to branch structure, to their size and to barriers to growth voiced by entrepreneurs Observed and expected frequencies of survival (Sur) and liquidation (Lq) of enterprises

Branch	Size of enterprise	Type of barriers	Number of observations			Variable			Actual frequen. in % $P_i$	Fitted Frequent. in % $Fp_i$
			Sur	Lq	Total	BR	SI	DE		
	Micro	Demand	7	5	12	1	1	1	58,33%	75,55%
F&W		Other	18	3	21	1	1	0	85,71%	83,51%
	S&M	Demand	22	4	26	1	0	1	84,62%	82,69%
		Other	46	6	52	1	0	0	88,46%	88,67%
	Micro	Demand	17	6	23	0	1	1	73,91%	70,14%
Cloth.		Other	17	5	22	0	1	0	77,27%	79,38%
	S&M	Demand	9	4	13	0	0	1	69,23%	78,40%
		Other	14	2	16	0	0	0	87,50%	85,61%
Total			150	35	185					

Source: own calculation.

Similarly we can determine the change in the odds resulting from the size of the enterprise. On the basis of estimated structural parameters we find that in

cases when the company was very small ( $SI = 1$ ) in comparison with the case of when it was small or medium-sized ( $SI = 0$ ), *ceteris paribus*, it led to an average decrease of odds for survival of the company by about  $[(\exp(-0,435)-1)]100 = -35,3\%$ . It is expressed in the theoretical values of probabilities of survival of firms. While analysing theoretical values of relative frequencies presented in percentage terms we find that the appearance of a very small (micro) enterprise with other categories unchanged led to a corresponding decrease in the probability of survival of an enterprise:

- from the level of 82.69% to 75.55%,
- from the level of 88.67% to 83.51%,
- from the level of 78.40% to 70.14 %,
- from the level of 85.61% to 79.38%.

On the other hand if the enterprise operates in the food or the wood processing industries ( $BR = 1$ ) then, in relation to the enterprise of the clothing industry ( $BR = 0$ ), *ceteris paribus*, the odds for its sustained operation would increase by some  $[\exp(0.274)-1]100 = 31.52\%$ . And conversely, if the enterprise operated in the clothing industry ( $BR=0$ ) then its odds for sustained operation in relation to the food and the wood processing industries ( $BR=1$ ), *ceteris paribus*, would decrease by some  $[(\exp(-0.274)-1)]100 = -23,97\%$ . While comparing this value, with the assessment of the decrease of the chance of sustained operation of the enterprise with the above estimations, we find an answer to the lower value of the T-ratio. Let us observe that the analysis of theoretical relative frequencies expressed in percentage terms indicates that when the enterprise operates in the clothing industry, *ceteris paribus*, it led to a decrease in the probability of the survival of the enterprise:

- from the level of 75.55% to 70.14%,
- from the level of 83.51% to 79.38%,
- from the level of 82.69% to 78.40%,
- from the level of 88.67% to 85.61%.

As we see, in the last case the differences between the theoretical levels of relative frequencies are the smallest, which is compatible with the earlier analysis of significance of parameters.

#### **4.3. The Type of Industry, Size of the Enterprise and Sex of the Entrepreneur and the Probability of Survival of the Enterprise.**

Trying to find the possibly best solution to a change in the formerly analysed model was introduced in the next step. In place of the variable presenting the demand barrier (DE) another variable expressing the sex of the entrepreneur was introduced. Thus the analytical form of the model looks as follows:

$$\ln CH_i = \beta_0 + \beta_1 BR_i + \beta_2 SI_i + \beta_3 SX_i + u_i \quad (9)$$

Structural parameters of the above model were estimated with the use of a procedure comparable to the formerly applied one. The structural form of the model can be presented in the following way:

$$Fw_i \ln CH_i = 1.7765 w_i + 0.146 w_i BR_i - 0.568 w_i SI_i - 0.2604 w_i SX_i \quad (10)$$

(7.698)
(0.63)
(4.49)
(1.073)

$$R^2 = 0.9947, \quad F(3, 4)\text{-statistic} = 252.54 [ > 0.001 ]$$

Let us remark, that the generally very good fitting of the model to the empirical data is accompanied by an insignificant parameter appearing at the variable which characterises the branch of industry (BR). It would suggest that the other two variables characterising the size of the company (SI) and the sex of the entrepreneur (SX) are correlated with the branch of industry. Thus they may serve as proxies of the variable which signifies the type of industry in question. Thus, theoretical calculations of relative frequencies were made on the basis of the above model only for the sake of purely illustrative considerations. The results of those computations are presented in Table 10.

**Table 10.** Classification of companies according to branch structure, to their size and to sex of entrepreneurs. Observed and expected frequencies of survival (Sur) and liquidation (Lq) of enterprises

Branch	Size of	Sex of	Number of observations			Variable			Actual Frequency. in % P <sub>i</sub>	Fitted frequency. in % Fp <sub>i</sub>
			Sur	Lq	Total	BR	SI	SX		
	enterpr.	entrepr.								
	Micro	Woman	1	1	2	1	1	1	50,00%	74,91%
F&W		Man.	24	7	31	1	1	0	77,42%	79,48%
	S&M	Woman	5	1	6	1	0	1	83,33%	84,05%
		Man	63	9	72	1	0	0	87,50%	87,24%
	Micro	Woman	23	8	31	0	1	1	74,19%	72,07%
Cloth.		Man	11	3	14	0	1	0	78,57%	77,00%
	S&M	Woman	13	4	17	0	0	1	76,47%	82,00%
		Man	10	2	12	0	0	0	83,33%	85,53%
Total			150	35	185					

Source: own calculation.

**4.4. The Size of the Enterprise, Sex of the Entrepreneur and the Signalled Demand Barrier and the Probability of Survival of the Enterprise**

On the basis of conclusions concerning the former models another version of the model was considered, where the influence of such factors as the size of the enterprise (SI), the sex of the entrepreneur (SX) and demand-related limitation of

growth of the enterprise signalled by the entrepreneur (DE) on the probability of survival of the enterprise were considered. At present the analytical form of the model looks as follows:

$$\ln CH_i = \beta_0 + \beta_1 SI_i + \beta_2 SX_i + \beta_3 DE_i + u_i \quad (11)$$

The estimated version of the above model has the following characteristics:

$$Fw_i \ln CH_i = 2.0245 w_i - 0.434 w_i SI_i - 0.346 w_i SX_i - 0.522 w_i DE_i, \quad (12)$$

(19.745)                      (2.202)                      (1.33)                      (2.63)

$$R^2 = 0.982, \quad F(3, 4)\text{-statistic} = 72.59 [0.001]$$

The above model has better statistical properties than the formerly discussed models. It is confirmed by equalised t-ratios, which allow rejection of the null hypothesis assuming that one of the parameters is equal to zero with a relatively high probability.

It was found that in case:

- of the  $\beta_0$  parameter, the null hypothesis may be rejected at the  $\alpha < 0.001$  level of significance,
- of the  $\beta_1$  parameter, the null hypothesis may be rejected at the  $\alpha = 0.092$  level of significance,
- of the  $\beta_2$  parameter, the null hypothesis may be rejected at the  $\alpha = 0.255$  level of significance,
- of the  $\beta_3$  parameter, the null hypothesis may be rejected at the  $\alpha = 0.058$  level of significance.

It means that only in the case of the  $\beta_2$  parameter the conclusions are less reliable. It is worth observing at the same time that in the case of such models the free term parameter has a substantial significance. In this case the value of t-ratio is definitely the highest in comparison to the formerly discussed models. At present we may formulate a number of conclusions concerning the odds and thus at the same time the estimated probability of the sustained operation of the enterprise.

**Table 11.** Classification of enterprises according to their size and to sex of entrepreneurs and to barriers to growth voiced by entrepreneurs. Observed and expected frequencies of survival (Sur) and liquidation (Lq) of enterprises

Size of	Sex of	Type of	Number of observations			Variable			Actual frequency. in %	Fitted frequency. in %
			Sur	Lq	Total	SI	SX	DE		
enterpr	entrepr.	barriers								
	Woman	Demand	12	5	17	1	1	1	70,59%	67,33%
Micro		Other	12	4	16	1	1	0	75,00%	77,64%

	<b>Man</b>	<b>Demand</b>	12	6	18	1	0	1	66,67%	74,45%
		<b>Other</b>	23	4	27	1	0	0	85,15%	83,08%
	<b>Woman</b>	<b>Demand</b>	9	4	13	0	1	1	69,23%	76,07%
<b>S&amp;M</b>		<b>Other</b>	9	1	10	0	1	0	90,00%	84,27%
	<b>Man</b>	<b>Demand</b>	22	4	26	0	0	1	84,62%	81,80%
		<b>Other</b>	51	7	58	0	0	0	87,93%	88,34%
<b>Total</b>			150	35	185					

Source: own calculation.

Using the estimated form of the model we find that the appearance of the demand barrier ( $DE = 1$ ) with zero-fixed combinations of other categories leads to an average decrease of the odds of survival of the enterprise by  $[(\exp(-0.522) - 1)]100 = -40.64\%$ . It should also be reflected in the estimated probabilities. While analysing the theoretical values of relative frequencies expressed in percentage terms in Table 11 we find that the appearance of the demand barrier with the other categories unchanged led to the following decreases of the probability of sustained operation of enterprises:

- from the level of 77.64% to 67.33%,
- from the level of 83.08% to 74.45%,
- from the level of 84.27% to 76.08 %,
- from the level of 88.34% to 81.80%.

Under conditions of stabilisation of the remaining categories, the fact that the entrepreneur is a woman ( $SX=1$ ) in comparison to the alternative, when the entrepreneur is a man, leads to a decrease of the probability for a sustained operation of an enterprise by  $[(\exp(-0.346) - 1)]100 = -29.25\%$ . While analysing the information contained in Table 11 we find that under conditions of other categories left without change, the fact, that the entrepreneur is a woman leads to the decrease of the estimated probability for a sustained operation of the company:

- from the level of 74.45% to 67.33%,
- from the level of 83.08% to 77.64%,
- from the level of 81.80% to 76.08%,
- from the level of 88.34% to 84.27%.

The conditional analysis of the influence of the size of the enterprise on the probability of its sustained operation leads to the following conclusions. When other categories remain unchanged, the fact that a given company is very small ( $SI=1$ ) in comparison with a small or a medium-sized company ( $SI = 0$ ) leads to an average decrease of the odds for its sustained operation by about  $[(\exp(-0.434) - 1)]100 = (-35.18\%)$ . This is confirmed by an analysis of estimates of relative frequencies contained in Table 11. Let us note that under conditions of other categories unchanged, the fact that an enterprise is very small, leads to a decrease of estimated probability of its sustained operation :

- from the level of 76.08% to 67.33%,
- from the level of 84.27% to 77.64%,

- from the level of 81.80% to 74.45%,
- from the level of 88.34% to 83.08%.

## **Conclusions and Recommendations**

The single factor analysis indicated that **all selected determinants** shaping the capacity of the SMEs to survive proved to be significant in the statistical sense. The factor of perception of the demand barrier by the enterprise proved to be particularly significant.

The research results indicate also a strong correlation between some factors. For this reason the most important factors were selected as proxies.

The logit analysis confirmed the reasonableness of adoption of such a methodological approach. Thus, from among the factors, which characterise the profile of the entrepreneur, his/her sex was selected. The factors related to the profile of the enterprise are represented by its size measured by the number of employees. The demand barrier as perceived by the entrepreneurs represents the group of the remaining factors. Presentation of the above three factors in a model has the best statistical properties. It allows us to say that the highest odds for sustained operation are with small and medium-sized enterprises managed by a man, who did not complain of the demand barrier. On the other hand, the highest probability of failure of an enterprise exists among microenterprises managed by women, who perceive the demand barrier as the main obstacle for growth and survival. Because of the strong correlation between the three factors such as the size of the enterprise, the type of industry where it operates and the sex of the entrepreneur it may also be said that the smallest chances for sustained operations were found in the clothing industry.

The purpose of the research project, that is determination of relevant factors determining the survival (continuation) of activities of small and medium-sized enterprises in Poland's manufacturing industry was accomplished to a significant degree.

The presented conclusions have to be accepted with much caution, because of the following reasons:

- the size of the statistical sample limited the possibilities of multifactorial analysis,
- it was not possible to ascertain the age of enterprises, which may also exert an important influence on their capacity to survive.

The latter problem should definitely become a subject of further research. It is interesting to consider whether there are any significant differences in the odds of survival of companies which functioned before the system transformation (i.e. which were set up before 1989) and the companies, which were established at a later date.

It is known that starting from 1990 there was an explosion of entrepreneurship in Poland expressed in the dynamic growth of the number of newly established private enterprises. Further research should also cover a larger number of industries and non-manufacturing areas of activity. It was not established either, whether the analysed industries can be considered as representative of the whole economy of Poland. From the research results it can be inferred that they could be not a representative sample of companies since their mortality rates is rather low, which contravenes the general opinion (not tested with any systematic research) that the mortality rate of SMEs in Poland is high.

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## RESEARCH ON THE PROFILE OF THE SUCCESSFUL POLISH SMALL ENTERPRISE IN THE EUROPEAN CONTEXT USING LOGIT ANALYSIS

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### ABSTRACT

The purpose of this paper is to indicate the profile of the small Polish enterprise which has a higher probability to succeed into the European environment.

Logit analysis used to meet the above purpose has the power to explore the factors that are simultaneously associated with the success of the small Polish enterprise after the accession of Poland into the E.U. Moreover the exact probability of a S.E with certain characteristics to succeed is predicted.

The analysis provides evidences that the Region of establishment, the branch of economic activity, the ownership of other enterprises, the extent of internet use, the knowledge level of E.U's markets and the enterprise's difficulty to get a loan are factors of great importance for the survival of the small Polish enterprise in the European context.

**Key Word:** small Polish enterprises, logit analysis, probability of enterprises survival.

### 1. Introduction

Small and Medium sized Enterprises (SMEs) have a crucial role to play in many economies, be they developed or transitional. In the OECD area, for example, the share of SMEs to total employment is between 40 and 80 percent, while their share to GDP is between 30 and 70 percent.

Poland, as a transition economy has undergone a period of major economic transformation during the last decade. This time, the transformation is taking place in the context of its future economic and monetary integration with the European Union (EU) countries. It must be stressed that economic adjustments

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need to be rapid as Poland is willing to be in the front line of the countries that will soon enter the EU. In this economic transformation, Polish SMEs have an important role to play. Since they constitute a large part of the Polish economy in terms of output and employment, their survival and development are going to exert a significant impact on Poland's readiness for accession and on its successful European future. For these reasons, it is of a great importance to estimate the ability of SMEs in Poland to survive and develop and the factors that are likely to determine their survival and growth in the European perspective.

The integration of markets, due to the European Union, the removal of constraints and the emergence of new competitive incentives affect SMEs in five main ways:<sup>1</sup>

- through the reduction of administrative procedures for international trade, which allow a better exploitation of economies of scale and scope;
- through the improved efficiency in firms resulting from innovations, which are induced by more competitive markets;
- through the adjustments between industries, on the basis of a fuller play of comparative advantages;
- through more dynamism and an improved flow of innovations, new processes and new products;
- through stronger economic growth in the long run, which leads to new market opportunities.

The purpose of this paper is to investigate the characteristics of the successful SME in the European context and to construct a model that will enable us to predict the probability of an enterprise to survive and develop in this environment. Moreover, since SMEs in Greece play a vital role to the economy as it happens in the case of Poland, and the characteristics of Polish SMEs are much closer to that of Greece than to any other EU country, the Greek experience could provide some useful lessons to the Polish SMEs. At this point it is important to clarify the different classification systems of SMEs in Poland and in Greece according to the employment criterion. In Greece, according to the traditional practice, SMEs are those enterprises which employ 0-99 persons. They are classified in three sub-categories, namely "microenterprises" (0-9 employees), "small enterprises" (10-19 employees) and "medium-sized enterprises" (20-99 employees). Firms employing more than 100 persons are considered as "large enterprises", while the relevant EU criterion for SMEs is up to 500 employees. The corresponding classification of SMEs in Poland is 0-5 employees for "microenterprises", 6-50 employees for "small enterprises" and 51-200 employees for "medium-sized enterprises".

The paper is organized as follows. Section II provides a review of the relevant literature on the Greek SMEs. Section III presents the methodology

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<sup>1</sup> See OECD (1997), page 25.

followed and the data used, while the next section provides the empirical results of the study. Finally, section V draws conclusions and makes some policy recommendations.

## **2. Lessons for the Polish SMEs from their Greek counterparts**

Small and medium sized enterprises play an important role in the Greek economy. The contribution of SMEs to manufacturing value added is about 30%, while their contribution to total employment is also high, ranging from 60 to over 90 percent in sectors like trade and manufacturing, and around 30 percent in sectors like public utilities and mining. However, although SMEs are vital for the Greek economy, the existing literature on this topic is rather limited. In this section we review the main studies published on the Greek SMEs, focusing on those that could provide some useful lessons for their the Polish counterparts.

A German Development Institute (1978) has analysed the impact of Greek entry in the European Community on some sectors of the Greek small and medium sized industry. The sectors included in the study were textiles, dressing, leather and metal products. The conclusion was that the SMEs in Greece faced serious competitive disadvantages as far as their financing and quality of products are concerned, in comparison with their competitors in the EU.

Acs and Audretsch (1990) tested the hypothesis that in the American and Greek manufacturing, the SME share is negatively related to the existence of structural barriers to entry and the efficiency differential between small and large firms. However, the SME share is positively related to the extent to which small firms rely on a strategy on innovation. Structural barriers are measured by advertising, industry capital/labor ratios, concentration ratios and the minimum efficient size. USA manufacturing data support the prediction of their model, which however is only partially supported in the case of Greece. In the case of Greek manufacturing, market size as a measure of structural barriers had strong negative impact on the share on SMEs, while import penetration was insignificant. On the other hand, the impact of relative capital intensity and relative efficiency was very significant. Finally, it was found that the extent of the negative impact of structural barriers on the USA manufacturing was higher than that on the Greek manufacturing.

Lymperaki (1991), using data from a sample of 787 enterprises, found that the competitiveness of the Greek SMEs had decreased between 1974 and 1983. Most "new" enterprises were associated with a better economic performance in comparison with the "older" ones, while in general SMEs had a better performance as compared with large enterprises, as far as employment, debt burden and effectiveness is concerned.

Chassid and Katsos (1992), using data from a study of EIU (1983), examined the factors that influence the creation of SMEs in ten European countries, including Greece. They found that there is a positive correlation

between the number of firms (dependent variable) and the unit labor costs and the rate of extension of the market (exogenous variables). On the contrary, the cost of money and the existence of a special policy for SMEs did not exert statistically significant effect.

Droukopoulos and Thomadakis (1993) also examined the determinants of the presence of SMEs in Greece, using data from the 1988 census of industry. They found that the presence of SMEs is smaller in capital intensive sectors and is not influenced by advertising expenditures. Among the variables that have a positive contribution to the development of the SMEs is the relative efficiency in use of factors of production.

Giannitsis (1993) found that the size of industrial units influences positively their R&D expenditures. His research work was based on a sample of 93 3-digit sectors of the manufacturing establishments census.

Anagnostaki and Louri (1994, 1995) estimated the determinants of entry in Greek manufacturing industry. Their empirical results show that the export performance of a sector, the expected profits and the size of the sector are some of the variables that influence positively the entry of a new enterprise in the Greek industry, while the unit labor costs and the import penetration are some of the variables that influence the entry negatively.

The opinion of the owners/managers of European enterprises on the impact of the Single Market Program (SMP) was a research objective in 1995 on a sample of 13500 enterprises of industry and services (Eurostat, 1996). As the survey had been carried out, 2.5 years after the introduction of the SMP, the owners/managers provided their views on the basis of their experience rather than their forecasts or expectations. Nevertheless, referring to the views of European enterprises owners/manages, the direction of the SMP effect on enterprises was not clear, since 40% of them in industry and 63 % in services had no opinion about the positive or negative effects of SMP on their firm. 33 percent stated success and 27% failure of the program in industry and 16% and 21% respectively in services. The results for the success/failure for their sector in their country were slightly different in industry (25% and 31%), but quite similar in services (16% and 22%). As far as their sector in the whole EU was concerned, the percentages were 29% and 20% in industry and 15% and 14% in services. Services seem to be influenced by the SMP in a negative way in comparison to industry.

In Greece the owners/managers opinion seem to be more pessimistic than the EU average (NSSG, 1997). The findings of a logit model constructed for Greek enterprises and based on the raw data of the above survey, indicate that the positive impact of the SMP on the Greek enterprises is strongly associated with the sector of economic activity in which the enterprise is found and the involvement of the firm in other enterprises. It is also associated with their size and, in a weaker way, with the region of establishment.

In an OECD study (OECD, 1997) on the process of globalisation in the OECD countries, the effects of globalisation on the development of SMEs in Greece had also been examined. According to this work, the main pull factor for globalisation for the case of Greece had been the entry of the country into the EU and the elimination of the trade barriers. This has opened up new markets and acted as a push factor by placing more competitive pressure on Greek firms, with SMEs to take advantage of opportunities to internationalize their activities. An analysis of the SMEs export-to-sales ratio was used as an indicator of internationalization in ten 3-digit manufacturing industry sectors, while industries were selected for comparison on the basis of the highest proportion of SMEs in each sector, in the years 1983 and 1991. The existing differences in these two years showed that the export propensity of SMEs seems to have increased in relation to that of large firms and that there has been a shift from consumer goods sectors to intermediate and capital goods sectors. Moreover, based on a series of interviews conducted, the study presents factors that impede the globalisation of activities by Greek SMEs. The most important of these factors are as follows:

- 1) the high costs of domestic financing in Greece;
- 2) the bureaucratic complications and disincentives for undertaking export activities;
- 3) the distance and the transport barriers between Greek producers and the main potential export markets of Western Europe; and finally
- 4) the passive response of the SMEs to the shock of entry to the EU reflecting their inability to design and implement international expansion strategies. The last factor is due to their small size. Small enterprises seem to be primarily oriented toward domestic markets.

Finally, Liargovas and Tsipouri (1997) examined the possible implications of the White Paper on development, employment and competitiveness on the Greek SMEs, the R&D activities and the society of information. Referring to the SMEs, the authors pointed out the differences that exist between the Greek SMEs and their EU counterparts. They argue that, although SMEs in Greece are associated with a better economic performance in terms of employment, debt burden and effectiveness, in comparison with the large enterprises, they are extremely small according to the EU standards and they face serious disadvantages on the production technology, the quality of the produced goods, the access to markets and to financial mechanisms. Finally, the authors express their doubts if the implication of the White Paper will help the Greek SMEs since the White Paper does not provide interventions on the required structural changes of firms.

### **3. Data and Methodology**

The data used in this paper have been derived from a special statistical survey carried out in Poland in the last quarter of 1999. In fact, this survey is a

basic action of the research program entitled: “An Empirical Study of Small and Medium Sized Enterprises in Poland: Phase II” which is financed by the EU Program PHARE.

An extent questionnaire consisting of 58 questions was employed and a large amount of data was gathered. A representative part of these data will be presented into the next section. Professional enumerators were used in order to gain the maximum quality and to minimize the non-sampling error.

The sample consist of 376 small enterprises, that employed from 10 to 49 persons. The sample was 5% of the total. A proportionate stratification sampling method was used. The stratification factor was the sectors of economic activity selected in the survey. For the purposes of this study small enterprises were defined as those with less than 50 employees but data about enterprises with less than 10 employees were considered as unreliable for not having enough knowledge about the European environment. They were excluded from the sample frame and consequently from the survey.

The survey covers two Regions of Poland: Gdansk and Lublin. The sample was drawn separately in the two regions. As the two regions have differences in their economic characteristics, many important conclusions could be extracted. Finally, the selected sectors of economic activity are those of utmost importance for the transformation of the Polish economy.

To meet the aims of our paper, we use the dichotomous logit analysis. A Conditional Forward Stepwise Method has also been selected. A Logit Analysis is deemed as useful for our investigation as we wish to identify the structural factors that are associated with a dependent variable which is defined by the choice of individual firms over a finite and unordered set of alternatives. More specifically, we study the positive or negative influence of the accession of Poland to the European Union on the performance of the small enterprises. In the logit regression analysis, the dependent variable can be a dummy (dichotomous) variable with value ‘1’ if the enterprise is going to be influenced advantageously and the value ‘0’ if it is not. Predicted values could be quantitative or categorical variables. In the latter case, the prediction capability of the model is increasing if the values and the direction of ‘b’ coefficients predicted for every one of the categories of explanatory variables rise. Positive coefficients indicate a greater probability of an enterprise to be influenced advantageously due to the accession of Poland to the E.U, whilst negative coefficients indicate a lower probability of this kind. A second useful rule is that the larger a positive estimated coefficient of a variable’s category, the higher the probability of a unit (enterprise) included into this category to have the characteristic (positive influence) indicated by the dependent variable and the larger a negative coefficient the lower the probability (Knapp M.et al, 1982). Formula 1 proves the above statements. Then, using this method we can explore the positive or negative influence that an enterprise with certain characteristics could have from the accession of Poland to the E.U.

For our model, we use the maximum likelihood approach. The statistical significance of ‘b’ coefficients has been tested by the Wald statistic which is equal to the square of the well known ‘t-statistic’ as it is preferred in the case of logit analysis. We also use special tests to avoid missing good candidates that have been hypothesized to be significantly correlated in the past literature (Harissis K., 1986). The model’s overall goodness of fit is tested by the likelihood ratio test statistic. After choosing the best model, the probability of an enterprise with certain characteristics and economic performance to be positively influenced due to the possible accession to the EU can be predicted by using the following formula :

$$P = \frac{1}{1 + e^{-\sum \beta}} \tag{1}$$

where  $\beta$  are the regression coefficients of the categories to which the enterprise belongs. The expression  $e$  denotes the exponential function. In this way we can predict the probability of an enterprise of a certain size, belonging in a certain branch of economic activity and established in a certain place to be positive influenced by the accession of Poland to the E.U. The  $\beta$  coefficients used in the formula are those correspond to the certain size, branch of economic activity or place.

Many authors have discussed methods that have been proposed for estimating logistic models (Nerlove and Press, 1973, Phrtmes, 1978) and some others have revised these methods (Harissis, 1986, Knappe et al, 1982 and Skovgaard, 1990). A brief description of the logit model is also undertaken here.

Let  $P_i$  be the probability that the  $i$ th enterprise will have a positive influence from the Poland’s accession to the EU and let  $Q_i = 1 - P_i$  be the probability that the enterprise will have a negative impact from the accession. In the specification of the model it is natural to define  $P_i$  as an ordinate of a cumulative distribution function (CDF) since  $P_i$  lies between zero and one, i.e.

$$P_i = F(t) \tag{2}$$

where  $F(.)$  is a distribution function. If  $f(.)$  is the associated density function, then we have

$$P_i = \int_{-\infty}^t f(z) dz \tag{3}$$

This expression will be made more specific in the context of the subject examined by expressing the upper limit  $t$  as a function of the characteristics and the performance of the individual enterprise having the view. Thus, we may put

$$t = X_i \beta \tag{4}$$

where  $X_i = (X_{i1}, X_{i2}, \dots, X_{ik})$  is a vector of the determinants of the probability of “having a positive or negative impact” and  $\beta$  is a vector of unknown coefficients.

Hence equation (3) can be written

$$P_i = \int_{-\infty}^{X_i\beta} f(z)dz = F(X_i\beta) \quad (5)$$

$$\text{and } Q_i = 1 - P_i = 1 - F(X_i\beta) \quad (6)$$

defining

$$Y_i = 1 \text{ if the } i\text{th enterprise has a positive impact} \\ = 0 \text{ otherwise}$$

then we have

$$\Pr \{Y_i = 1\} = F(X_i\beta) \quad (7)$$

$$\Pr \{Y_i = 0\} = 1 - F(X_i\beta) \quad (8)$$

Assuming that  $F(\cdot)$  is taken to be cumulative distribution function of the standardized logistic distribution; viz.:

$$F(t) = \frac{1}{1+e^{-t}}, \quad -\infty < t < \infty \quad (9)$$

then we can define the logit  $p_i$  by using (2), (4), (9) as

$$\text{logit of } P_i = \frac{1}{1+e^{-X_i\beta}} \quad (10)$$

or

$$\log \frac{P_i}{1-P_i} = X_i\beta \quad (11)$$

The model can be estimated by maximizing the likelihood function

$$L(Y_i/X_i) = \prod_{i=1}^n [F(X_i\beta)]^{Y_i} [1-F(X_i\beta)]^{1-Y_i}$$

The log likelihood is

$$L = \sum_{i=1}^n Y_i \ln F(X_i\beta) + \sum_{i=1}^n (1-Y_i) \ln [1-F(X_i\beta)] \quad (13)$$

setting to zero the first and second order derivatives of the above equation with respect to  $\beta$  and specifying the cdf,  $F(\cdot)$ , we can obtain an estimator of  $\beta$ .

We emphasize the use of non linear methods of estimation, such as logit and probit analysis when a number of qualitative variables have to be tested for their association with a set of alternatives as these models assume that all explanatory factors determine the dependent variable simultaneously. Alternative methods that could be used are either test  $\chi^2$  in cross tabulated data or multiple regression analysis. Neither of these two methods could be considered satisfactory. The former assumes that the various casual factors work quite independently of each other in deterring the variable examined, whilst the latter overcomes these problems only to provide results which are neither statistically efficient nor unambiguously determined when the dependent variable is a dummy variable<sup>1</sup>.

The logit analysis suggested here overcomes these problems and provides a powerful tool for the examination of discrete decisions or points of views in this or other areas (Knapp M. et al 1982).

#### 4. Empirical Results

In our logit model, the dependent variable  $Y_i$  is the views of owners/managers about the influence of the accession of Poland to the European Union on the performance of their enterprises. In fact,  $Y_i$  will be a dichotomous variable taking the value 1 if the owner/manager of the enterprise believes that the accession of Poland to the EU will influence the performance of the enterprise “advantageously” and the value 0 otherwise.

The answer “advantageously” could be accepted only when at least one reason is indicated out of the five listed in the questionnaire. These reasons are: Better access on EU members’ markets, better access on other countries’ markets, increase of the production effectiveness, any other reason.

Presenting the first result of our research concerning the views of the owners of the enterprises about the influence of the accession in the EU, we can say that almost two thirds of them are optimistic [i.e. 61.4 %] while 35.3 % are pessimistic. Another 5.1 % did not respond. The main expectations of those who predicted a positive performance in the EU are the easier possibilities of selling of goods in the EU and an increase in production efficiency.

The independent variables of our model are categorical variables of two types. The first category reveals the structural characteristics of the enterprises. The second category represents several aspects of the economic performance of the enterprises that determine their ability to survive under the increased competition that they will face within the EU. The explanatory variables initially examined and the categories in which they had been divided are provided in Table 1.

**Table 1.** Explanatory variables initially examined, by performance factors

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<sup>1</sup> See Goldberger (1964) and Norlone and Press (1973).

Variable	Code	Category
STRUCTURAL CHARACTERISTICS		
Region of Establishment	X59	Gdansk Lubelskie
branch of Econ. Activity	X1a	Manufacturing Construction Trade Hotels-Restaurants Transport-Storage- Communication Financial Intermediation Other Services
Extent of Internet use Sector	V25 V03	Public private
Legal Status	V04	State owned and communal Enterprise Individuals' Partnership Individuals' Bussiness Joint Stock LTD other
Leg.Status change in recent 3 years	V06	No Yes
Size	X39	Up to 19 employees 20-39 employees More than 39 employees
COOPERATION FACTOR Ownership of other enterprise(s)	X9	No Yes
Is the enterprise based on franchising?	X17	No Yes
DEGREE OF OPENESS		
Main destination of production	X12	Local market National Market

Variable	Code	Category
		International Market Mixed
Orientation of competitors	V20	Domestic Foreign Both
Ownership of any foreign enterprise	X10	No Yes
Efforts made to export/increase exports	X16	No Yes
R & D FACTOR Technological level of the enterprise	V22	Medium High Very High
Technological level of the products/serv.	V23	Medium High Very High
I.D Used in the production process	V24d	No Yes, slightly Yes, in a significant extent
Extent of Internet use	V25	No use Yes, in a slight extent Yes, in a significant extent
Formal cooperation with R & D institutions	V26b	No Yes
Existence of R & D department	X28	No Yes
Innovation introduced in 1998-99	X29	No Yes
STAFF QUALITY FACTOR & TRAINING Higher education employees as % of		

Variable	Code	Category
total employees	X40a	Up to 19% 20-49 % More than 49 %
Training the employees when is needed	V42b	No Yes
Existence of written policy for training	V43	No Yes
KNOWLEDGE ABOUT E.U Knowledge level of E.U's markets	V48	High Madium Low
Action towards the accession of Poland to the E.U	V50	No Yes
FINANCING-DEGREE OF CREDIT SYSTEM DEVELOPMENT		
Are banks loans essencial for the enterprise's finance?	V52b	No Yes
Is there any difficulty for the enterprise to get a loan?	X53	No Yes No attempt to get a loan so far

The importance of each explanatory variable and the expected relation of them to the depended variable is discussed as follows.

First of all, economic activity (X1a), region of establishment (X59), sector (V03), legal status (V04), legal status change (V06) and size (X39) are structural factors of great importance for a country in transition, like Poland. As far as each separate region is concerned, Gdansk has different economic characteristics than Lublin and it is useful to see how SMEs in different regions have different future within the EU. The SMEs in Gdansk are assumed to present better opportunities to gain positively from Poland's accession to the EU. The size of the enterprise seems to be an important factor for the enterprise to be competitive in the wide market of the EU. Given that only small enterprises are examined in the present paper, it is expected that the larger the enterprise, the higher the probability of a positive impact from the accession of Poland to the EU, as large enterprises

benefit from scale economies. We stress that the number of employees is used to express the size of the enterprises. This variable is not fully representative of the size especially where the enterprise is capital intensive. Unfortunately, other variables such as the value of sales that could represent better the size of the enterprise and that had been included in the questionnaire had an extremely low response rate. The branches of economic activity that are more likely to have a successful performance in the competitive environment of the EU market are of a great importance. Finally, privatization is considered as a very important factor for enterprises to survive of the previously planned economy countries. The sector ( public/private), the legal status and the change in legal status change are employed to examine the influence of privatization for the enterprises' survival. Private enterprises are expected to have a higher probability to survive in the EU market.

The degree of international competitiveness is a factor of great importance when the success of an enterprise which is entering into a wider market is examined. The origin of competitors (V20) provides evidence whether or not the enterprise has already been affected by the international competition. It is expected that the indigenous enterprises will be better prepared when the barriers come fall down. It is also expected that if an enterprise is already producing for international markets, it will have a natural advantage after the accession of Poland in the EU in relation to those producing for the national or local market (X12). Finally, if efforts are made by the enterprises to export or to increase the exports (X16), it is obvious that they have a better understanding of the future competitive conditions that will be created after Poland's accession in to the EU and are prepared to perform under these conditions. It is expected that enterprises working to this direction will have higher chances to survive in the Single European Market. These factors could be expressed by the term "degree of openness" as it indicates the degree to which the enterprise is already open to international competition.

Another way for an enterprise to survive under conditions of a stronger competition is its cooperation with other Polish or foreign enterprises. Cooperation can be expressed by alliances, participation with other enterprises in order to create a group of enterprises, franchising, venture capital firms, etc. Cooperation of the above kind permits the enterprises to get to the optimum size, to overcome financial problems and to approach more readily both national and international markets. This factor is sought to be captured in our model by the variables X9, X10 and X7.

The R & D factor is generally recognized as crucial for productivity growth and competitiveness in both the microeconomic and macroeconomic level (Basant and Fikkert, 1996, Lichtenberg and Siegel, 1991). This factor is important in both the developing and in transition countries as the technological problems of these countries are not always perfectly understood. Most of the variables employed in our model represent several aspects of the R&D factor that have been suggested

by the standard literature or are used in the construction of more complicated and sophisticated technology indices (Palaskas,1999). The economic significance of every single variable is obvious (V22, V23, V24d, V25, V26b, X28 and X29). The definition of these variables are clear, since they are derived directly from the questionnaire, except variable X29 (innovation introduced in 1998-99). This variable takes the answer “Yes” if at least one of the following actions was taken during 1998-99 :

- New or technologically improved goods (services) produced
- More modern production methods are introduced
- Significant organisational changes are introduced
- Significant organisational-property changes introduced.

The staff quality and specialization factor is represented by the percentage of higher education employees in the total number of employees (X40a). The higher this percentage the higher the specialisation of the staff and the higher the probability of a successful performance in the EU. Training the employees when needed cover the policy of the enterprise to keep their employees informed with the new techniques and methods (V42b). Next variable “existence of written policy for training” (V43) reveals the amount of research about the staff training needs and the implementation of the training according to a certain program. A positive answer to these questions provides an advantage to the enterprise to have a positive impact after the accession of Poland to the EU. Here we could mention that in recent times, one of the main reasons that made Ireland the 7<sup>th</sup> most competitive country in the world is the attention that has been paid to education and training of the labor force.

The knowledge of enterprises’ owners/managers about the EU countries’ markets (V48) and the action taken by the enterprises towards the accession of Poland to the EU (X50) are two variables with obvious associations to the issue examined.

Finally, the extent to which the credit system is constraining the financing of the enterprise (X52b) and the difficulty of an enterprise to get a bank loan (X53) represent the degree of credit system’s development and the access of the enterprise to that system. As own-funds of enterprise are not always sufficient to finance investments nowadays, the development of the credit system as a basic source of financing and an easy access to that system are supposed to have a positive impact on the survival of the enterprises, especially in the new and competitive European economic environment.

In the light of the above analysis, we can now define our logit model by the following general equation containing all the above variables :

$$Y_i = f ( X_{59}, X_{1a}, V_{03}, V_{04}, V_{06}, X_9, X_{10}, X_{12}, X_{16}, X_{17}, V_{20}, V_{22}, V_{23}, V_{24D}, V_{25}, V_{26b}, X_{28}, X_{29}, V_{30}, X_{39}, X_{40a}, V_{42b}, V_{43}, V_{48}, V_{52b}, X_{50}, X_{53} )$$

where independent variables are defined in table 1.

The results of this model are provided in table 2, model 1. Statistically significant associations with the performance of the enterprises after the accession of Poland to the EU are as follows:

The region of establishment (X59), the existence of formal cooperation with R & D Institutions (V26b) and the difficulty to get a bank loan (X53). The overall fitness of the model is excellent as indicated by the Likelihood Ratio Test statistics (39.28,  $P=0.0002$ )

In model 1, where numerous independent variables are employed, the factors finally included in our analysis are reduced because of the missing values in several variables. So, in model 1 from the 376 cases of the sample, only 182 remain in the logit analysis. In many cases, the categories of the variables have less than 5 cases (redundancies), causing problems to test the model's efficiency. To overcome this problem, a number of independent variables of no significance in model 1 and with a large number of missing values are removed from the model. Efforts have been made to ensure that the remaining variables represent all factors/groups of variables which we discussed earlier in this section (table 1). The results of the new conditional forward logit procedure are provided in model 2 of table 2.

**Table 2.** Models created by the use of conditional forward logit method

Variable	MODEL 1	MODEL 2	MODEL 3	MODEL 4
	Wald statistics (Sign. Level)	Wald statistics (Sign. Level)	Wald statistics (Sign. Level)	Wald statistics (Sign. Level)
X59	2,81 (0,09)	2,72 (0,0978)	2,82 (0,09)	4,87 (0,03)
X1a	...	9,79 (0,13)	11,97 (0,06)	14,58 (0,02)
V03	...	...	...	...
V04	...	...	...	...
V06	...	...	...	...
X9	...	...	3,43 (0,06)	3,22 (0,07)
X10	...	...	...	...
X12	...	...	...	...
X16	...	...	...	...
X17	...	...	...	...
V20	...	...	...	...
V22	...	...	...	...
V23	...	...	...	...
V24d	...	...	...	...
V25	...	5,25 (0,07)	6,79 (0,03)	7,96 (0,018)
V26b	2,73 (0,10)	...	...	...
X28	...	...	...	...
X29	...	...	...	...
V30	...	...	...	...
X39	...	...	...	...
X40a	...	...	...	...
V42b	...	...	...	...

	MODEL 1	MODEL 2	MODEL 3	MODEL 4
Variable	Wald statistics	Wald statistics	Wald statistics	Wald statistics
	(Sign. Level)	(Sign. Level)	(Sign. Level)	(Sign. Level)
V43	...	...	...	
V48	...	2,02 (0,15)	15,73 (0,0004)	17,21 (0,0002)
V52b	...	...		
X50	...	...		
X53	5,17 (0,07)	3,63 (0,16)	3,87 (0,14)	3,20 (0,20)
Constant	0,29 (0,59)	0,41 (0,52)	2,27 (0,13)	2,34 (0,12)
Cases	182	270	309	346
LRTS (P)	39,28 (0,0002)	67,37 (0,00)	77,98 (0,00)	88,70 (0,00)

Notes: LRTS=Likelihood Ratio Test Statistic

By... Denotes that the Variable was included in the model but rejected as no statistical significant.

If the variable did not included in the Model there is no indication in the cell (blank).

To keep a variable in the model, the significant level of b coefficient must be  $b < 0,20$  using reasonable parcimony criterion.

In Model 3, we show a new application according to the same criteria of removing variables. The structural characteristics and almost one variable from each factor remains in the model. The stability of the successive models is obvious and the increase in the statistical significance of the remaining variables is considerable.

In the final model 4, the method is repeated after the removal of all the rejected variables in model 3. According to this methodology in model 4, only 30 cases are rejected because of missing data and as a result of this procedure the number of variables finally included in the model is increasing in comparison to model 1. We can also notice that between models 2 and 3-4, there is only one change in the statistically significant variables. Variable V26b (existence of a formal cooperation with research institutions) is replaced by the variable V48 (knowledge of the E.U countries' markets). Finally, We can see that significance level is improving in the most of the variables coefficient. To summarize, the region of establishment (X59), the branch of economic activity (X1a), the ownership of other Polish enterprises (X9), the extent of the Internet use (V25), the knowledge of EU countries' markets and the difficulty to get a loan (X53) are according to our model, the major explanatory factors that are associated with the direction of influence to the performance of the enterprise which will be caused by the accession of Poland to the EU ( $P < 0,20$ ). As we noticed earlier, these factors are very important for the subject examined but we also notice that some more important factors as the size (X39) and factors related to the staff quality (X40a, V42b and V43) are rejected from the models constructed. As far as the size of the enterprise is concerned, we could mention that differences in performance may appear among the small, medium and large enterprises rather than within small enterprises. On the other hand some variables as the

participation of higher education employees to the total (X40a), the existence of formal cooperation with research institutes (v26b) and with consumers' organizations (V26c) have a high percentage of missing values (15 or 20 %). Hence, these variables were left out.

**Table 3.** Explanatory variables in Model 4

Variable	Category	Code	Frequency
Region of Establishment		X59	
	Gdansk	1	223
	Lubelskie	2	123
branch of Econ. Activity		X1a	
	Manufacturing	1	70
	Construction	2	41
	Trade	3	139
	Hotels-Restaurants	4	12
	Transport-Storage-		
	Communication	5	26
	Financial Intermediation	6	10
	Other Services	7	48
Ownership of other enterprise(s)		X9	
	No	1	322
	Yes	2	24
Extent of Internet use		V25	
	No use	1	137
	Yes, in a slight extent	2	133
	Yes, in a significant extent	3	76
Knowledge level of E.U's markets		V48	
	High	1	62
	Madium	2	220
	Low	3	64
Enterprise's difficulty to get a loan		X53	
	No	1	185
	Yes	2	64
	Never try to get a loan	3	97

In table 4, we can see the values of b- coefficient in the categories of each variable included in model 4, and their statistical significance. Considerable evidence of the enterprises of certain category to have a higher probability for survival associated with Poland's accession are provided. We remind that the larger a positive coefficient of a characteristic's (variable's) category the higher the probability of an enterprise belonging in this category to be positive influenced and the larger a negative coefficient the lower the probability.

**Table 4.** Results of the Conditional Forward Logit Model 4 fitted on Polish Enterprises sample data

Variable	Category	Code	b coef.	S.E	Wald Stat	Sign.level
Region of Establishment		X59				
	Gdansk	1	0,31	0,14	4,87	0,027
branch of Econ. Activity		X1a			14,58	0,024
	Manufacturing	1	-1,87	1,48	1,6	0,2
	Construction	2	-1,26	1,49	0,71	0,39
	Trade	3	-1,23	1,47	0,7	0,4
	Hotels-Restaurants	4	5,54	8,69	0,41	0,52
	Transport-Storage-Communication	5	-1,05	1,54	0,47	0,49
	Financial Intermediation	6	-0,3	1,74	0,03	0,86
Ownership of other enterprise(s)		X9				
	No	1	-0,73	0,41	3,21	0,07
Extent of Internet use		V25			7,96	0,019
	No use	1	-0,48	0,2	3,73	0,05
	Yes, in a slight extent	2	-0,36	0,19	3,68	0,05
Knowledge level of E.U's markets		V48			17,21	0,0002
	High	1	0,67	0,26	6,55	0,01
	Medium	2	0,28	0,19	2,32	0,13
Enterprise's difficulty to get a loan		X53			3,2	0,2
	No	1	0,32	0,18	3,11	0,08
	Yes	2	-0,26	0,22	1,35	0,24
Constant			2,32	1,52	2,35	0,12

As was expected, enterprises in Gdansk region have a higher probability than enterprises at Lublin to be positively influenced from the Poland's accession to the EU and consequently to survive ( $b=0,31$ ,  $P=0,027$ ). In comparison to Lubelskie, Gdansk has a higher proportion of enterprises with:

- orientation of their production to the international markets,
- advantages over their competitors as far as price and quality of the products, the reputation of the enterprise, the effectiveness of the marketing and promotion, the technological level of the products/services,
- formal cooperation with providers
- On the other hand, Lubelskie in comparison to Gdansk, has a higher proportion of enterprises with:

- Higher efficiency;
- advantages over their competitors as far as the attractiveness and modernity of their products and services and the relatively low cost of production,
- formal cooperation with consumers' organizations,
- existence of R & D Department,
- investments made on fixed assets in 1999.

**Table 5.** Sample Polish enterprises by branch of economic activity and the impact of Poland accession expected on them

Branch of Economic Activity	Impact of Poland accession to the E.U		
	Negative	Positive	Total
Manufacturing	38	32	70
Construction	18	23	41
Trade	56	83	139
Hotels-Restaurants	0	12	12
Transport-Storage-			
Communication	5	21	26
Financial Intermediation	1	9	10
Other Services	5	44	49
Total	123	224	347

Test  $\chi^2 = 39,6$   $P = 0,00$

The tourism sector (hotels and restaurants) also has a higher probability to be positively influenced by the accession of Poland to the EU. Polish owners/managers of enterprises operating in the above sector consider that the fall of barriers will increase the tourists towards Poland from the rest EU countries. It is important that all owners/managers in this branch of economic activity are optimistic about their future in the EU markets (see table 5). Their optimistic views might arise because of their high rate of profitability, since all of them are profitable (see table 6). The sectors of manufacturing, construction, trade and other services seem to have a higher probability for suffering from a negative impact from the accession to the EU. The owners/managers may believe that they have no advantage in comparison to the other enterprises in the developed European countries as indicated by the negative  $b$  coefficients. The findings should be viewed with some caution as most of the branches of economic activity are not statistically significant even at 25 % level (table 4). Sectoral differences referring to the probability of survival in to the European context appeared in both Greece and Poland. This fact provides additional evidence that enterprises are convinced that several sectors will be effected in a different way from the accession of their country to the EU. According to the Italian experience, a positive effect from the participation in the European Single Market took place in

sectors with comparative advantages, while the medium and high technology sectors suffered from the increased competition after participation ( Monako T., 1994).

**Table 6.** Sample Polish enterprises by branch of economic activity and profitability during 1998

Branch of Economic Activity	Profitability during 1998		
	Profit	Loss	Total
Manufacturing	62	9	71
Construction	39	3	42
Trade	128	8	137
Hotels-Restaurants	9		9
Transport-Storage-			
Communication	19	4	23
Financial Intermediation	7	1	8
Other Services	41	7	48
Total	305	32	338

Test  $\chi^2 = 8,8$   $P = 0,72$

The enterprises that did not co-operate with other Polish enterprises ( $X_9=1$ ) have a higher probability to be influenced in a negative way from the accession of Poland to the EU in comparison to those with a participation of this kind ( $b = -7.32$ ,  $P = 0.07$ ). The creation of groups and the official synergy among the enterprises seems to be very important in Poland. The fact that this factor had been proved important also in the case of Greece, provides a generalized view that enterprises, especially in developing and transition countries, are convinced that co-operation is essential for their development in the context of the wider European market.

The extent of using the Internet by the enterprise ( $X_{25}$ ) is of high statistical significance ( $P = 0.018$ ) and is going to influence the future of the enterprise in the European context in a positive way as it was expected. According to the model, enterprises with no use of Internet ( $V_{25}=1$ ) or with a slight use of Internet ( $V_{25}=2$ ) have a higher probability to be effected in a negative way after the elimination of the barriers ( $b_1 = -0.38$  and  $b_2 = -0.36$ ) in comparison with those which use the Internet to an significant extent {  $b_3 = 0.74$  } (1). This variable is the only one in the model from those examined which captures the R & D. The importance of the Internet use for the Polish enterprises may be connected with the possibility of development of the

(1) : The value of  $b_3 = 0,74$  is provided by the fact that  $\sum b_1 = 0$  for each variable

$$\square b_3 = -(-0,38 - 0,36) = 0,74 \square$$

electronic trade, which is expected to cover a considerable part of future trade.

The level of knowledge that the enterprises have about the European Union members' markets is highly associated with the impact expected from the Poland's entrance to the EU ( $P=0.0002$ ). Enterprises with a high level of knowledge have the highest probability to be positively influenced ( $b_1=0.6696$ ,  $P=0.01$ ). In addition, enterprises with medium level knowledge about European markets have a higher probability for positive influence ( $b_2=0.28$ ,  $P=0.13$ ) than these with low knowledge.

Enterprises which did not meet any problems to get a bank loan ( $V53=1$ ) have also a higher probability to be positively influenced from the entrance of Poland to the EU ( $b_1=0.32$ ,  $P=0.08$ ) than those which meet problems ( $b_2=0.26$ ,  $P=0.24$ ) or they did not try to get a loan so far. The access to the credit system in order to finance the investments or current obligations seems to be a crucial characteristic for the Polish enterprise success in the European Single Market. It is also an important problem as 18% of the enterprises declare that they have a problem to get a loan while another 28% did not try to get a loan so far and did not know nothing about the difficulties of the whole procedure. A 40 % of those having such a difficulty determine two main problems here. The very strict requirements of banks regarding the credibility of the creditor and the bureaucratic system for a loan application. These factors indicate the existence of problems in both the credit system and the credibility of the enterprises. The existence of difficulties to get a loan seems to spread to all branches of economic activity as it is indicated by the results of the chi square test computed after the cross tabulation of the two variables X1a and X53 ( $X^2 = 121$ ,  $P=0.43$ ).

Finally, the positive Constant Coefficient ( $b=2.32$ ,  $P=0.12$ ) indicates that for the whole sample of enterprises examined a positive impact is expected from Poland's accession to the EU according to the views of the people running these enterprises.

To summarize, enterprises in Gdansk, in the tourism sector, with participation to other Polish enterprises, using Internet to a significant extent, with a high knowledge of the EU countries' markets and having no problems in getting a bank loan, are expected to have a higher probability to be positively effected by Poland's accession to the EU according to their owners/managers views.

The probability of an enterprise to have a positive influence from Poland's accession to the EU is calculated using formula 1 and the b coefficients provided in table 4 for the particular categories of each significant variable. Probabilities lie between 0 and 1, with 0 indicating certainty for an enterprise to have negative influence from the Poland entrance to the EU and 1 indicating certainty of it to have a positive influence.

For the total number of enterprises examined, where the constant coefficient is the only one introduced in the formula 1, the probability of an enterprise to be positively influenced by the accession of Poland to the EU is 0.91 or 91 %. The probability is reaching the value of 1 or 100 %, indicating a certainty of positive

effect, in the case of an enterprise in Gdansk, in tourism sector, with participation to other Polish enterprises, using internet to a significant extent, with a high knowledge of the EU markets and having no problems to get a bank loan.. Taking another example of the opposite side, i.e an enterprise established at Lubelskie, with its activity in the sector of manufacturing, with no participation to other Polish enterprises, with no use of Internet, with no knowledge of the EU countries' markets and finally with difficulties to get a bank loan, the probability of a positive influence is drastically falling down to 0.10 or 10 %.

## **5. Conclusions**

Poland is a country in transition and its accession to the EU is in progress. The extent to which this accession process influences Polish enterprises is very important to the whole economy. So it is of vital importance to predict these factors and to determine their economic influences.

The characteristics and the performance of the Polish enterprises in this study are associated with the views of their owners about the perceived impacts on them emerging from their country's accession to the EU.

Logit analysis is employed to measure this association using data from a special statistical survey carried out during the end of 1999. The analysis provides evidences that the majority of Polish managers are optimistic about the impact that Poland's accession to the EU is going to have on their enterprises. According to our analysis, the probability of an enterprise to have a positive impact from this accession reach the 91 %.

This optimization view is associated following the required statistical criteria with factors such as the region of the enterprise's establishment, the branch of economic activity, the participation to other enterprises, the extent of Internet use, the level of knowledge of EU countries' markets and the existence of problems associated with the financial system.

The importance of the variables and their categories that have been proved by the analysis as the explanatory factors of an enterprise to be positively effected by the entrance of Poland to the EU and the considerable decreasing probability from 100 % to 10 % if these characteristics became from positive to negative, indicates the general directions of the policy that must be implemented :

- Regional policy to improve the performance of the enterprises in the less favored regions. An integrated study of regional economic disparities must precede this policy. As far as the Lubelskie region gap in relation to Gdansk region, the results of our study summarized in last section must be fully examined.
- Strengthening the enterprises tendency to participate to other enterprises, to create groups and in general to improve their competitiveness through cooperation.

- As Poland seems to have an advantage in tourism, the economic activity of this sector should be encouraged. General speaking the sectors with comparative advantage in Poland should be determined in order to get additional economic incentives for their development in the European context.
- Efforts from enterprises must be made and initiatives from the state must be provided in order to develop the sector of telecommunications. The future role of telemarketing in sales should be exploited by the small Polish enterprises.
- Information should be given by the state and official organizations about the needs and the other characteristics of the markets in the European countries.
- Finally, the Polish enterprises should have easier access to the banking and credit system. Banks and other financial agencies should reduce the bureaucratic barriers for a loan application and should change the criteria of a loan provision in order to be based more and more on the prospects of an enterprise and less and less on its assets.

The above strategy will provide incentives to the Polish enterprises to survive and to be developed in the environment of increased competition of the Single European Market.

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## MEASURES AND PATTERNS OF CENTRAL BANK INDEPENDENCE IN TRANSITION ECONOMIES

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### ABSTRACT

This paper provides an attempt to quantify the Central Bank Independence (CBI) incorporating *legislative* and *behavioural* approach. A set of indices designed to capture some special features of actual independence of central banks in transition economies is then developed. Major trends in the independence of the central banks in transition economies are discussed and compared with results for developed and developing countries. An attempt is made to triangulate the estimates of central bank independence by comparing the results from surveys of central bankers with those from surveys of independent academic institutions. The results show that central bank independence is higher in the transition economies planning early EU accession than in other transition economies; moreover, in the former group independent experts rate independence at least as great as central bankers themselves, while in the latter group the reverse was the case.

**Key words:** central bank independence, central bank independence index, transition economies **JEL:** E52, E58.

### 1. Introduction

Central Bank Independence (referred to hereafter as CBI) has become focus of increased interest both for academics and policy-makers world-wide in the

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recent two decades. Transition economies took active part in this process since the very start of the 1990s, which marked the collapse of the central planning. In their case, the CBI tendency coincided with the process of constructing a two-tier banking system. The newly established central banks followed the monetary design of the European Central Bank (referred to hereafter as the ECB). This has become particularly evident in the middle and late 1990s when most of the legislative reforms resulted in increase of the independence of the central banks from the central governments.

One rationale behind this tendency is that an independent central bank has become a requirement for joining the single currency bloc. Another rationale comes from the economic theory, suggesting that an independent central bank is associated with lower inflation. This theory was advanced by Barro and Gordon (1983), Kydland and Prescott (1977) and Rogoff (1985). Their studies were supported by extensive empirical research, mostly done for OECD countries (Bade and Parkin 1988, Grilli, Masciandro and Tabellini 1991, Cukierman, Webb and Neyapti 1992, Eijffinger and Schaling 1993, Elgie and Thompson 1998). So far, the most comprehensive study was done by Cukierman (1992), covering 70 countries. This study did not, however, find any robust relationship between CBI and inflation performance in developing countries. The implication drawn was that developing countries have high CBI accompanied by high inflation. One explanation may be that in these countries, legislation is not widely respected and upheld, i.e. there is gap between legislation and reality. We therefore draw a distinction between legislative (or nominal) CBI and actual (or real) CBI.

This paper aims to extend the research of the above authors and to provide a more comprehensive measurement of CBI, with particular reference to transition economies. The CBI index developed in this paper embraces both legislative and behavioural approaches towards quantification of the CBI, thus aiming to reveal the idiosyncrasy of the surveyed countries. Triangulation techniques are applied to verify the credibility of the collected data. The CBI index is first constructed to measure the CBI in transition economies. The study is then extended to cover both developed and developing countries, in order to test the robustness of the new index. A second reason for expanding the study is to plot together CBI in a world-wide scale and to detect patterns (if any).

This paper contains two main sections. The first one surveys the empirical literature on CBI and the major CBI indices with special reference towards the legislative and behavioural approaches. Indices developed by Bade and Parkin, Grilli *et al* (1991) and Cukierman *et al* (1992) are applied to measure CBI in four transition economies (Bulgaria, Czech Republic, Poland and Romania).

The second section focuses on the actual independence of the central bank. A set of indices designed to capture some special features of the actual independence of central banks in transition economies is developed. A triangulation technique is applied to test whether central bankers and the public (here universities) perceive the independence of the central bank (referred to

hereafter as the Bank) in the same way and whether there are some patterns in the understanding of CBI by these two groups in CEE and Commonwealth of Independent States (CIS). Finally, the section plots together the results obtained so far from 97 countries and compares transition economies with developed and developing countries.

The major findings are summarised in the conclusion and guidelines for future research work are explored.

## 2. Surfing the empirical literature on CBI and some major concepts

Empirical work on the relationship between CBI and macroeconomic performance started with the attempts to quantify CBI. The economic literature distinguishes two dominating approaches towards quantifying the CBI: *legislative* and *behavioural* approaches. This section introduces some major indices, broadly used in the empirical literature to measure CBI in the developed countries. It draws some comparisons, trying to detect their deficiency when applied to measure CBI in transition countries.

### 2.1 Legislative versus behavioural approaches

Employing the *legislative* approach the CBI is defined on the ground of the enhanced legislative provision in the country. Following Grilli et al (1991) CBI is defined as *political* and *economic*. *Political* independence covers issues related to the monetary policy formulation and the autonomy of decision-making. It deals with appointments to the Bank's board, term of their office, setting the objectives, etc, as envisaged in the central bank's charter. *Economic* independence is defined in the context of the Bank's ability to control the instruments of monetary policy like commercial banks' supervision, discount rates, etc. Debelle and Fischer (1994, p197) come from the same legislative stand-point to introduce *goal* and *instrument* independence of the central bank. By *goal* independence they imply the Bank's freedom to set its own monetary goals thus narrowing the implied by Grilli et al (1991) in the term political independence. The *instrument* independence, as defined by the same authors, broadens the economic independence of Grilli et al. The Bank's instrumental freedom is its choice over the instruments to achieve its monetary goals, whereas in Grilli et al it is limited to instruments, which facilitate access of the government to the Bank's credit.

The *behavioural* approach was pioneered by Cukierman (1992), who measured the turnover-rates for central bank governors. He assumes that the higher the turnover-rate, the lower the actual independence of the central bank. Another indicator he takes into consideration is 'political vulnerability', defined as the political transitions and resulting changes of the central bank governors. Cukierman concludes that it is actual independence that matters in developing countries. The latter finding was confirmed by Eijffinger and De Haan (1996) who suggest that CBI is negatively related to inflation when the legal indices are

taken into account in developed countries and actual indices in developing countries.

Given the stable, in terms of change, legislative provision in developed countries and its exogenous nature regarding the economy it would have no powerful explanatory power for the economic developments in the country (Cukierman 1996, p.8). Therefore most of the empirical studies on this relationship are cross-sectional (Eijffinger and De Haan, 1996, p.28). On the contrary behavioural indices are endogenous with respect to the economy, which makes them more vulnerable to reverse causality (Cukierman 1996, p8).

## **2.2 Some major concepts and empirical evidence for OECD countries**

The early indices of CBI tended to be predominantly based on the legislative provision in the OECD countries thus limiting their relevance for developed economies only.

Bade and Parkin (1988) pioneered the first quantification of CBI based on a simple questionnaire consisting of three questions:

- (i) Is the central bank the final policy authority?
- (ii) Is there a government official (with or without voting power) on the policy board?
- (iii) Are more than half of the policy board members independently appointed by the government?

The questionnaire is Yes/No based and it runs from four, indicating maximum independence to one, standing for the least independent central bank. Compared to later developed indices of CBI (e.g. to Grilli *et al* (1991), Cukierman (1992), Cukierman *et al* (1992), *etc*) the monetary objectives, otherwise considered as one of the most important attribute of CBI, are missing. In terms of the nature of the asked questions it appears to cover the defined as political independence of the central bank (Grilli *et al* 1991) thus dropping the economic (or instrument) aspects of the CBI.

Eijffinger and Schaling (1993, p.64) provide further development of the BP index, outlining the following feature as determinants of the CBI: (I) appointment of central bank board; (ii) relationship between the central bank and the government regarding the monetary policy formulation and (iii) the policy goals of the central Bank. Therefore the criteria they apply when constructing their index similar to the ones used by Bade and Parkin (1988), keeping questions (ii) and (iii), but modifying the first question to be:

- (i) Is the bank the sole final authority; is this authority not entrusted to the central bank alone, or is it entrusted completely to the government?

thus emphasising the importance of the autonomous monetary decision making.

The index advanced by Grilli *et al* (1991) is far broader, covering, as mentioned above, the economic and political aspects of the CBI.

The political CBI part of the questionnaire starts with questions defining governors' appointment and tenure, which according to their index should be longer than five years. The implicit assumption here is that a five-year mandate is equal to or exceeds the government's term and this strengthens the independence of the central bank. This assumption is questionable as in some countries the mandate of the government exceeds five years and hence a positive answer to this question does not necessarily greater independence. The questions asked by Bade and Parkin are extended to cover issues like objectives (i.e. whether the monetary stability is one of the objectives), whether the governmental approval of the monetary policy is needed and provisions, strengthening central bank's position in case of conflict with the government.

Economic independence as approached by Grilli *et al.* (1991) deals with the credit facilities that the central bank provides to the government, the discount rate, commercial banks' supervision and the possibility for participation on the primary market for public debt.

Grilli *et al.* questionnaire is also Yes/No based and each "Yes" brings a score. The higher the overall score the higher would be the independence of a given bank.

The CBI indices developed by Cukierman, Webb and Neyapti (1992) provide a quantitative illustration of central bank independence giving numerical weights to each question. The questions are classified into four major clusters, each of which has got its own weight. The first cluster concerns the activities of the governor such as term of the office, dismissal, appointment, and opportunity to hold another governmental position. The second one contains variables regarding the policy formulation: who formulates the monetary policy, resolution of conflicts and involvement in the budgetary process. The third cluster ranks the objectives of the central bank: where the major objective is price stability rather than being one amongst a number of other objectives of the Bank. The last one concerns limitations on lending to the government. Every answer corresponds with a certain numerical coding. The higher the numerical coding the greater CBI. The maximum coding equals one and the minimum equals zero. Cukierman, Webb and Neyapti indices provide more precise measure of CBI compared with the previous ones, as there is a wider range of possible answers, showing what stands between Yes and No.

So far most indices are mainly designed for OECD countries and do not necessarily capture fully CBI in transition and developing countries. The legislative status of the Bundesbank was enhanced in many of the indices aiming to measure the CBI thus scoring the Bundesbank with highest possible independence. The transition economies have adopted the constitution of the Bundesbank thus legislatively granting their central banks a high degree of independence. However, the evidence from these countries shows that the use of the legislative approach does not reveal the 'actual' independence and there are some other issues that should be taken into consideration as well. We therefore

refer to the 'legislative' indices as indices of 'nominal independence', but they do not necessarily match those of 'actual independence' when transition and developing countries are in question.

The Table 1 applies the indices developed by Bade and Parkin, Grilli *et al* and Cukierman *et al* in four transition economies, those are Bulgaria, Czech Republic, Poland and Romania.

**Table 1.** Nominal and actual central bank independence

Country	Bade and Parkin (1989) <sup>a</sup>	Grilli et al (1991) <sup>b</sup>	CWN <sup>c</sup>
Bulgaria	4	15	0.83
Czech Republic	4	12	0.73
Poland	4	15	0.84
Romania	4	11	0.66
ECB	3	14	Na
Germany	N/a	14	0.66
Netherlands	2	10	0.42

\* Bade and Parkin, Grilli *et al* (1991) and Cukierman *et al* (1992) indices for the transition economies are obtained from the country chapters in Healey, N. and Z. Wisniewski (1999)

<sup>a</sup> Data for ECB, Germany and Netherlands obtained from Eijffinger and Schaling (1993), this index runs from four standing for maximum CBI to one indicating the least independence.

<sup>b</sup> Data for ECB, Germany and Netherlands is taken from Alesina and Grilli (1992), the index runs from sixteen (Maximum CBI) to zero (least CBI)

<sup>c</sup> Data for Germany and Netherlands is taken from Cukierman, Webb and Neyapti (1992), the index runs from one (most independent Bank) to zero (least independent Bank).

Table 1 shows that applying the discussed above indices, the transition economies in question enjoy greater CBI compared to ECB and Germany, which otherwise are considered to be perhaps the most independent banks.

Some studies suggest that this legislative approach is less relevant for developing countries, because the law may be less respected than in developed economies. Fischer (1995) suggests this may be because there are key features of the legislation system not captured by the existing indices.

### 3. One more index

This paper takes the critique above into account when constructing an index of CBI based on existing indices, but extended to capture special features associated with the idiosyncrasies of transition (and developing) economies, i.e. it tries to capture actual independence. It therefore incorporates both legislative and behavioural approaches towards quantifying CBI. The assumption here is that legislative and actual independence may diverge when there are traditions in the

country with the power of the legislation, or existence of other legislation, which may conflict the central bank charter. These two aspects of CBI should be taken into account when attempting to measure it. Furthermore, the understanding of the respondents should be checked whenever possible and this is done in this study by employing triangulation technique. There are two institutions in each country approached to participate in this survey: the central bank and researchers based at academic institution qualified to answer the relevant questions. The rationale of doing so is to test whether the central bankers overstate their independence or vice versa and whether there are any patterns in the responses of the two groups.

### **3.1 The new index**

The set of indices was constructed with the aim of detecting special features of these economies, which have not previously been captured empirically, and whose independence may have been overstated as a result. It is comprised of five sections: (i) objectives and monetary policy formulation, (ii) appointments, (iii) legislation and traditions, (iv) the banking sector, (v) financing the central government. Some discriminating questions were added to enrich the new index by including issues not reflected in the formal legislation. For example, some countries have traditions as powerful as legislation *per se*, although their existence does not show up in the formal legislative provisions. Six countries in our sample have (or had) traditions (see the Appendix for details), which conflict the central bank charter (Albania, Azerbaijan, Bulgaria, Kazakhstan, Mongolia and Russia). Another way in which the central bank charter may be bypassed or overridden is by issuing new laws. This has been a case in some countries, where often a decree (or the so-called ‘law for the budget’) by the government obliges the central bank to absorb the excess supply of government securities. Five countries in this sample have some ‘other law’, which was breaching the formal central bank legislation.

Another important ‘behavioural’ aspect of the index is whether there are non-completions of the term of office of the central governor. Cukierman (1992, p.383) uses the turnover rate of central bank governors as a proxy for actual independence. His presumption is that a higher turnover of central bank governors indicates lower CBI. Thirteen transition countries (65 per cent) in this sample report one or more non-completions of the term of office of their central bank governors.

Interference in the lender-of-last-resort function of the central bank is an important aspect of CBI, especially in countries engaged in the privatisation of the banking sector or where the banking sector is dominated by the state. In the face of a liquidity crisis, many transition government are unwilling to allow state bank to go bankrupt, particularly if this bank is on the privatisation list. In countries retaining a major state banking sector, there is even less chance that a bankruptcy could take place. Most of the transition countries experienced such interference during the banking crises in the middle and late 1990s (early 1990s for Poland).

The central bank then had to refinance the banks with liquidity problems, at the cost of its anti-inflationary stance. Eight countries in this sample, out of 23, indicated interference in the lender-of-last-resort function (Bulgaria, Czech republic, Kazakhstan, Lithuania, Mongolia, Romania, Russia and Slovak Republic).

The coding technique applied to ‘quantify’ the responses was similar to the one employed earlier by Bade and Parkin (1988) and Grilli *et al* (1991), *etc.* At the beginning of the survey, each positive answer used to bring one score and each negative answer did not bring any score. This technique was used for a very short period of time and it was explained in the cover letter accompanying the questionnaire. The higher the overall results, the higher the independence. This technique was altered very soon with the feedback provided by the Bank of Netherlands Antilles. The Bank modified the negative statements in the questionnaire into positive thus changing the answers from “no” to “yes” where appropriate. For instance, the statement: “There are no appointments to the Central Bank Board made by the Government” was transformed into “There are appointments to the Central Bank Board made by the Government”. The corrections in the returned questionnaire had a tremendous impact on the outlook of the questionnaire as all the statements were transformed into questions aiming as much as possible clearance, which totally changed the employed coding technique, used by the other authors. And finally, the above statement appeared as: Are there any appointments to the Central Bank Board made by the Government? Statements indicating independence of the respective central bank, irrespectively of whether the answer is “yes” or “no” are bringing one score and higher score stands for higher independence. Then we dropped the explanation of the scoring technique from the cover letter but provided it when requested, after the questionnaire was returned filled in. The scoring technique is enclosed below. Each positive statement is checked, while the negative are left blank. The enclosed questionnaire is filled-in to demonstrate the maximum CBI score (See Figure 1 for details).

### **Figure 1: The Coding Technique**

#### ***A) Objectives and policy formulation***

1. Is the price stability the major and/or only objective of the Central Bank?
2. Has there been any Government interference in formulation of the monetary policy within the last 5 years?
3. Is there any Government or political control of the Central Bank’s budget?

#### ***B) Appointments***

4. Is the Central Bank Governor appointed by the Government?
5. Is there legislative provision for dismissal of the Governor?

6. Can the Central Bank Governor hold governmental or political office?
7. Does the Central Bank Governor's term of office exceed the maximum term of the Government?
8. Does the Central Bank's Board office exceed the maximum term of the Government?
9. Are there any appointments to the Central Bank Board made by the Government?
10. Are there any Government representatives attending Central Bank Board meetings with/without voting/veto rights?
11. Does the Government consult (e.g. nominates candidates) the bodies appointing the Governor and the Central Bank Board?
12. Have there been any non-completions of the Central Bank Governor(s) term of office within the last ten years?

**C) Legislation and tradition**

13. Has the Central Bank legislation been changed within the last 5 years? (if yes, which year)
14. Has the Central Bank legislation been breached within the last 5 years?
15. Are there any 'other laws' (in the country) that conflict with the Central Bank Constitution (evidence of breaching the Central Bank charter within the last 5 years)?
16. Are there traditions that interfere with the Central Bank Charter (e.g. Central Bank Governor or/and Board Members resigning with change of the Government)?
17. Are there provisions, which strengthen the Central Bank's position in case of conflict with the Government?

**D) The Banking Sector**

18. Is the banking supervision entrusted to the Central Bank?
19. Is the banking supervision entrusted to the Central Bank alone?
20. Has there been Government or political interference in fulfilling/not fulfilling the 'Lender-of-last-resort' function of the Central Bank for the last 5 years?

**E) Financing the Government**

21. Are advances permitted when financing the Government?
22. Are terms of lending controlled by the Central Bank or Bank charter when financing the Government?
23. Does the Central Bank participate on the primary market for public debt?

Overall Central Bank Independence 1.00

A pilot study testing the advanced here index was carried out measuring CBI in four transition economies (Ilieva and Healey, 2000). The outcome of the pilot study shows that, following the legislative approach, selected CEE countries (Bulgaria, Czech Republic, Poland and Romania) have very high CBI, much higher than the ECB and Bundesbank, whereas applying the new index the CBI reduces.

**Table 2.** Central Bank Independence in Time for Twelve OECD Countries

	Countries	Alesina	Eijffinger-Schaling	Cukierman LVAU (1980s)	Grilli <i>et al</i> (early 1990s)	Grilli <i>et al</i> (2000)	New Index 2000
1.	Australia	1	1	0.31	3	6	0.74
2.	Austria	-	3	0.58	3	6	0.78
3.	ECB	-	-	-	6	6	0.78
4.	Finland	2	3	0.27	-	5	0.7
5.	Greece	-	2	0.51	2	5	0.61
6.	Iceland	-	-	0.36	-	5	0.57
7.	Italy	1.5	2	0.22	4	5	0.70
8.	Japan	3	3	0.16	1	2	0.52
9.	Netherlands	2	4	0.42	6	6	0.70
10.	New Zealand	1	3	0.27	0	5	0.61
11.	Norway	2	2	0.14	-	5	0.65
12.	Portugal	-	2	-	1	6	0.65
13.	Sweden	2	2	0.27	-	8	0.87
14.	Switzerland	4	5	0.68	5	6	0.78
15.	UK	2	2	0.31	1	-	-
16.	US	3	3	0.51	5	4	0.70
	Average CBI	2.14	2.64	0.36	3.08	5.33	0.69

Adapted from Eijffinger and De Haan (1996), p.23.

*Note:*

The numbers in parenthesis show how the respective index ranks in scale zero to one thus allowing comparison between the different indices.

Alesina index runs from one to four; Eijffinger-Schaling index from one to five and Cukierman's LVAU from zero to one. GMT index runs from zero to sixteen, but for this comparison we have taken the political independence only, as defined by GMT. We have derived the GMT index for 2000 from our index.

- Data for ECB obtained from Alesina and Grilli (1992, pp.71-2).

The new CBI indices should not significantly affect the estimated independence of developed countries, since the gap between the legislative and the actual independence should be much smaller. Table 1 summarises four indices measuring the legal CBI in 22 OECD countries, using the indices developed by Alesina (1988, 1989), Grilli, Masciandro and Tabellini (1991), Eijffinger and Schaling (1993) and Cukierman's unweighted index of legal independence

(referred to hereafter as LVAU, 1992), compared to the new index. The higher scores indicate higher CBI.

Comparing Grilli et al index (1990s) and Grilli et al (2000), a significant increase in the CBI is noted. Provided the maximum score in the political CBI is eight and the maximum score in the new index is one, there is not a big difference in the overall CBI, as measured by the two indices, although the metric system used to quantify it is different.

### 3.2 Some patterns of CBI

Transition countries planning early accession to the EU (Czech Republic, Hungary, Poland and Slovenia) tend to have relatively higher overall CBI (0.69) compared to the average for transition economies (0.63). Details are provided in Table 2.

Having approached the central bankers, the survey then aims to test the credibility of the data collected by employing a triangulation technique. The latter involves approaching independent institution, e.g. academic institutions, in the respective country, using the same questionnaire approach to measure CBI. The rationale behind this approach is to test whether the central banks overstate their independence or *vice versa*. The research thus aims to improve the quality of the gathered data by counterbalancing the subjectivity of the respondents. Although the results are still preliminary, some conclusions can be drawn from the patterns in the surveyed transition countries.

Universities in CEE countries planning early accession to the EU rank CBI higher than the central bankers *per se* (e.g. Hungary 83 percent independence scored by universities and 70 per cent by the central bank, Poland 83 percent by universities and 72 percent by the central bank). A possible explanation is that the bank has a good reputation and credibility with the public and therefore the public scores it higher. The Czech Republic and Bulgaria are given the same score by the academic researchers and central bankers. In contrast is Macedonia, where the central bank has overstated its independence (0.74) compared with the result obtained from the university (0.7).

CIS countries reveal the opposite pattern compared to that described above. Universities score CBI only half as high as the central bank (e.g. Georgia 70 percent independence according to the central bank while the university scores it at 35 percent, Kyrgyzstan provide the same example: 70 percent CBI by the central bank and 35 percent by university, Belarus 43 percent by the Bank and 26 percent by the university).

**Table 3.** Triangulating the results in transition economies

No	Country	Central Bank	University
Eastern Europe and Baltic States			
1	Czech Republic	0.65	0.61
2	Hungary	0.7	0.83

3	Latvia	0.65	0.74
4	Poland	0.72	0.83
5	Bosnia and Herzegovina	0.70	0.70
6	Bulgaria	0.61	0.61
7	Macedonia	0.74	0.7
CIS Countries			
8	Belarus	0.43	0.26
9	Georgia	0.7	0.35
10	Kyrgyzstan	0.7	0.35
11	Russia	0.52	0.43

As mentioned earlier in this paper, the above results are still preliminary as some countries are still not 'covered' by the second phase of this survey. So far, the most homogenous responses were given by EU countries, where the statements given by the universities matched those provided by the central bank.

The CBI survey was extended to cover developed and developing countries aiming to test the robustness of the index in other countries than the transition ones. So far it covers 97 countries world-wide, twenty of which are OECD countries, 23 transition economies and 57 developing countries. The Czech Republic, Hungary and Poland became OECD members in the middle 1990s (respectively 1995 for Czech Republic and 1996 for Hungary and Poland) and therefore they have double entry in the table: both as OECD countries and transition economies.

A comparison between transition economies and developed and developing countries also allows some patterns in the CBI to be drawn. The CBI tends to be highest in OECD countries compared to transition and developing countries. The average CBI in OECD countries is 68 percent (the result stays unchanged with and without the newest three member states, which appear as transition economies as well). The average CBI is 52 percent in developing countries and the transition economies stand in between with 0.60 per cent average CBI.

#### 4. Conclusion

Following the legislative approach *per se* towards quantifying the CBI in transition economies shows that the legislative independence of their central banks is very high, far higher than most of the OECD countries. There are some clear patterns appearing in the CBI of transition economies. Countries planning early accession to the EU have higher CBI compared to the average of all transition countries. A comparison between transition countries and OECD and developing countries shows that transition economies have comparatively high overall CBI, still lower than the CBI in OECD countries. Developing countries have lowest average CBI in this sample.

Triangulation based on survey of independent academic experts to provide an alternative estimate of the independence of their respective national banks revealed an interesting result. In transition countries planning early accession to the EU, universities rated their central banks as being somewhat more independent than the central banks believed themselves to be; in contrast, in the CIS, independent experts viewed their central banks as much less independent than the central banks themselves had reported. Significantly, in most developed economies, there was no significant difference between the estimates of CBI obtained from the two groups. These results presumably reflect the gap between legislative and actual independence in the least advanced transition economies (i.e. that the public in the CIS has little confidence in the ability or willingness of their central banks to act according to their statutes), while in the pre-accession CEE states, the determination of the new central banks (supported by their governments) to prove their anti-inflation credentials has created an impression that they are more independent than their legislative status would otherwise suggest.

Broadening the triangulation of the results given by the central bankers with responses given by academics would help to capture patterns in the way the CBI is perceived and whether there is tendency in overstating it or *vice versa*. Matter of further research will also include testing the strength of the relationship between the macroeconomic performance and the CBI in the surveyed countries.

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## Appendix: Transition economies

Country	Q 1	Q 2	Q 3	Q 4	Q 5	Q 6	Q 7	Q 8	Q 9	Q 10	Q 11	Q 12	Q 13	Q 14	Q 15	Q 16	Q 17	Q 18	Q 19	Q 20	Q 21	Q 22	Q 23	Total (%)
Albania	*	*	*	*	-	*	*	*	*	-	-	-	-	*	-	-	-	-	-	*	-	*	-	0.48
Armenia	-	-	-	*	-	*	-	-	*	-	*	*	*	*	*	*	*	-	*	*	-	-	-	0.52
Azerbaijan	-	-	-	-	-	*	-	-	-	-	*	*	-	*	*	-	*	-	*	*	-	*	-	0.39
Belarus	*	-	-	-	*	*	*	*	-	-	*	-	*	-	-	*	-	-	-	*	-	*	-	0.43
Bosnia & Herz	*	*	*	-	*	*	-	*	-	*	-	*	*	*	*	*	-	*	-	*	*	-	*	0.7
Bulgaria	*	-	-	*	*	*	*	*	*	*	*	*	-	-	-	-	*	-	-	-	*	*	*	0.61
Croatia	*	*	*	*	*	*	*	-	*	-	-	-	-	-	*	*	-	-	-	*	-	*	-	0.52
Czech R.	*	*	*	*	-	*	*	*	*	*	*	-	*	*	*	*	-	-	-	-	-	*	-	0.65
Estonia	-	*	-	*	-	*	*	*	*	*	*	*	-	*	*	*	-	-	-	*	*	-	*	0.65
Georgia	*	*	*	*	-	*	*	*	*	*	*	-	-	*	*	*	-	-	-	*	*	-	*	0.7
Hungary	*	*	-	*	-	*	*	-	*	-	-	-	-	*	*	*	*	*	*	*	*	*	*	0.7
Kazakhstan	*	*	*	*	*	*	-	-	-	-	-	-	-	*	*	-	*	-	-	-	-	*	*	0.48
Kyrgyzstan	*	*	*	*	-	*	*	*	*	*	*	-	-	*	-	*	*	-	-	*	*	-	*	0.7
Latvia	*	*	*	-	-	*	*	*	-	-	*	*	-	*	*	*	*	-	-	*	-	*	*	0.65
Lithuania	*_	--	*_	**	*_	**	**	**	**	**	**	--	--	**	**	**	**	--	--	*_	**	**	**	0.7
Macedonia	*	*	-	*	*	*	*	*	*	*	*	-	-	*	*	*	-	-	-	*	*	*	*	0.74
Moldova	*	*	*	*	-	*	*	*	*	-	*	*	-	*	*	*	-	-	-	*	*	*	*	0.74
Mongolia	*	*	-	*	-	*	*	*	-	*	-	-	-	-	-	-	-	-	-	-	*	*	*	0.43
Poland	**	**	*_	**	--	**	**	*_	**	--	**	*_	--	**	**	**	**	*_	*_	**	**	--	**	0.72

Country	Q 1	Q 2	Q 3	Q 4	Q 5	Q 6	Q 7	Q 8	Q 9	Q 10	Q 11	Q 12	Q 13	Q 14	Q 15	Q 16	Q 17	Q 18	Q 19	Q 20	Q 21	Q 22	Q 23	Total (%)
Romania	*	*	*	*	*	*	*	*	*	*	*	-	-	*	*	*	-	-	-	-	-	-	-	0.61
Russia	*	-	-	*	*	*	*	*	*	*	*	*	-	-	*	-	-	-	*	-	-	-	-	0.52
Slovak R.	*	*	-	-	*	*	*	*	-	*	-	*	-	*	*	*	-	-	*	-	-	*	-	0.57
Slovenia	_*	**	--	**	**	**	**	**	**	_*	**	**	**	**	**	**	--	--	--	**	--	_*	_*	0.7
Overall CBI																								0.6

\*Some countries' central banks provided more than one answer, as indicated in the table, then the average is taken when calculating the overall CBI score. The answers bringing score are indicated with asterisk.

## **POPULATION QUALITY: CONCEPT AND ITS APPLICATION TO ANALYSIS OF SOCIODEMOGRAPHIC CHANGE IN RUSSIA**

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### **ABSTRACT**

The suggested concept stipulates that population quality is manifested in some personal characteristics which, integrated at the total population level, take shape of measurable qualitative characteristics. These characteristics are expressed in some general indicators: health – in life expectancy at birth, fertility – in total fertility rate, nuptiality – in male nuptiality rate, education – in share of employees with secondary and tertiary education, skill – in average monthly wage. Population quality formation is treated as a result of changing system of demographic dispositions. Since special surveys prove that print media play the key role in behaviour formation in Russia, results of content analysis of publications in the most popular daily newspapers are used for model estimation of comparative values (ratings) of the demographic dispositions and the corresponding qualitative characteristics. Evolution of the ratings and the general indicators in Russia in 1955-1995 is studied in the article. The research shows quite close statistical relations of changes of the general indicators to changes of the ratings which may be used for certain amplification of population projections.

### **1.Introduction to the Concept of Population Quality Analysis**

Since the end of eighties the population and development researchers have been conclusively demonstrating considerable intensification of interest in problems of human development and its economic impact (Ehrlich 1990; Griffin and Knight 1989, 1990; UNDP 1990, etc.) and symbolizing formation of a new development paradigm. In spite of this, the term “*population quality*” (which underlines human development analysis), its definition and methods of its estimation remain the blank sides of population investigation.

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At the same time, in the early nineties Russia has come into the period of a rapid and profound sociodemographic change which is not comprehensively studied up to the present. Periods of a changing lifestyle are always the weakest points in population forecasting. In this way, there hardly was a projection based upon one of the conventional methods, prepared around 1990 (when fertility and life expectancy declines had already begun) which relatively precisely forecasted real declines of life expectancy and total fertility rate in Russia for 1992-1995. It goes without saying that radical political and economic transformations in that country do affect living standard and population reproduction. Nonetheless, such transformations are not the only reason of actual changes, they also result from a long-term evolution of population quality.

There are three theoretical approaches to population quality definition in modern demographic literature. The first one presupposes that population quality is a set of various personal and social characteristics – physical health, stamina, intelligence, moral qualities, mental capacity, and attained skills or qualifications – which are of a genetic origin and influenced by eugenics and/or social measures including investment in health and education (Fairchild 1939; Hauser and Duncan 1966; Thomlinson 1965; United Nations 1973, etc.). Advocates of that approach emphasize that population quality relates to development and income levels but warn that differential birth rate can affect population quality (Sauvy 1969; Soloway 1990; Thompson 1930).

The specificity of the second approach (Larmin 1974; Steshenko 1981; Tkachenko 1978; Valentei 1991, etc.) is that the population quality is considered to be a complex of population structures (class, social, health, educational, professional, skill, marriage, age, sex, ethnic) which, according to the Marxist tradition, are determined by a mode of production and quality of manpower. Henchmen of that approach tend to widen the sphere of examination beyond the subject of demography and usually oppose population quality with population reproduction (Foteeva 1984; Medkov, Shelestov, Korostelev 1987) or regard improvements in population quality as a means of fertility control (Xueyuan Tian 1989).

The third approach is based upon a human capital theory. There is practically a common set of characteristics of population quality – health, education, qualification, production experience – in the literature forming that approach (Becker and Lewis 1973; Schultz T.P. 1981; Schultz Th.W. 1981, etc.). Considerable attention to demographic behaviour and microeconomic analysis of interaction of population quality and household income are the distinctive features of this approach. It should be emphasized that the afore-mentioned papers devoted to human development are also closely connected with this approach although “human development” paradigm unlike “human capital” concept “puts people at the center of development, regards economic growth as a means and not an end” (UNDP 1994: 4).

Everything points to the fact that adherents of all three approaches exclude fertility from the number of population quality characteristics. Nevertheless, such a position is not generally accepted. Several scholars thought that fertility (or procreative ability) is one of the key components of population quality (Lorimer 1945; Vichnevski 1982). Unfortunately, these scholars were not directly engaged in elaboration of population quality theory and that idea was not developed.

### ***Measurement of the Population Quality and Demographic Behaviour***

The population quality concept stipulates that population quality is manifested in some personal characteristics which can be integrated at the total population level and take shape of empirically observable and measurable qualitative characteristics of health (and/or mortality), fertility<sup>1</sup>, nuptiality, education and skill. Qualitative characteristics are necessary and sufficient to determine both the current demographic regime and its economic impact. Moreover, these qualitative characteristics correspond with the most critical needs: to live a longer life, to have children, to contract a marriage, to be well educated, to have an interesting job providing access to resources necessary for a decent standard of living.

There are lots of personal traits – imbecility, kindness, loyalty, stamina, etc. (some of them are inherited) – which can hardly be integrated at the total population level. Some other traits – criminality, intelligence, religiosity, sexuality, etc. (we must carefully take the environment into account when we estimate these traits) – can be integrated but have only intermediate effect on population dynamics. Finally, age and sex structures of population themselves are the results of certain fertility and mortality levels and in a sense they can be called “secondary characteristics”. Anyhow, all these attributes are not considered characteristics of population quality or qualitative characteristics. However, the suggested insertion of education and skill into a number of qualitative characteristics is necessary to explain demographic behaviour and demographic transition phenomena, whereas formal demography methods are frequently limited.

Each qualitative characteristic can be expressed either in a system of showings representing its different aspects (suppose, health – in showings of mortality, morbidity, disability, etc.) or in some general indicator. In the empirical work below I use life expectancy at birth for both sexes as a general indicator of

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<sup>1</sup> There is a comprehensive work of Bongaarts and Watkins (1996) which points out to interrelation between human development and changes of reproductive behaviour and implies that human development concept may suggest some explanations for fertility transition. In spite of fruitfulness of this approach and taking into account that human development leads to a further fertility decline (in the long run – beyond the zero-growth threshold), the concept of sustainable human development has to include analysis of fertility (and nuptiality) variables integrated into a composite indicator as one of its components.

health; total fertility rate – as a general indicator of fertility; male (of 16 years and over) nuptiality rate – as a general indicator of nuptiality; share of employees with more than primary education – as a general indicator of education; average monthly wage of employees – as a general indicator of skill.<sup>1</sup>

The term “population quality” does not substitute any set of sociodemographic variables but gives an accent to their unity as interconnected components of population change and serves to explain their dynamics. Population quality is formed in response to socioeconomic, technical, cultural, ecological and other conditions of life. However, none of them can influence straightly and definitely. Living conditions influence human behaviour while the latter is the basis of population quality formation. This means that any qualitative characteristics can change only as a result of a particular activity. Since time and financial resources necessary for such an activity are always limited, individuals (households) or population as a whole have to show a preference for some qualitative characteristics and to allocate time and available resources. Individuals give their preferences in accordance with the values they assign to the needs of improvement in different qualitative characteristics. It should be taken into account that preferences of an average individual are influenced by the society, which encourages (enhancing prestige and showing respect) satisfaction of its requirements. The ratio between the ascribed values represents the system of demographic dispositions (attitudes).<sup>2</sup>

Until recently much attention was fixed on the valuation of demand for improvements in some demographic characteristics (namely, of demand for longevity and health) as well as on the specificity of realization of some

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<sup>1</sup> The average monthly wage of employees is the most debatable general indicator. While labor productivity is considered to be the adequate indicator of the skill level, calculation of national income remains one of the weakest points of statistics in Russia. Moreover, it is practically impossible to collect really comparable data for comparatively long period, especially for the regions of Russia. At the same time, the author has conducted three surveys (in 1990 – in Moscow region (N=188), in 1994 – in Bryansk and Kaluga regions (N=219), in 1996 – in Orel and Tula regions (N=136)) which included questions concerning skill evaluation. There were questions: “Which criterion from the list below is the most precise characteristic of skill level (education diploma, qualification certificate, result of qualification test, salary (wages), number of inventions, position, other)?” and “What is the most powerful stimulus to raising productivity of your work?” 84-91% of those answered the former question pointed to “salary (wages)” as the most precise criterion of the skill level, and 94-98% of those answered the latter question indicated “salary (wages) growth” as the most powerful stimulus to increase labor productivity. Hence, in this study I use average monthly wage of employees as a general indicator of skill.

<sup>2</sup> Term “demographic” is applied here to the characteristics of health (mortality), fertility, nuptiality, education, skill and in that context it may be considered as not very rigorous. Nevertheless, as far as the population quality formation is treated in the study from the reproductive point of view, since education and skill are weighty components of social mobility as a process considered by demography (Bogue 1969: 5), the term “demographic” is used with regard to problems of population quality as a whole and to system of dispositions determining its formation.

demographic dispositions (in particular, marital and reproductive) considered unchangeable. In this connection, my approach to population quality is to treat its formation as a result of a changing system of demographic dispositions. Such changes are the results of transforming living conditions and evolution of the age structure of population because different age groups have different needs (e.g. expressed in different desired number of children).

Attitudinal data is widely employed in psychological and sociological analysis but not in demographic behaviour prediction. Since the late sixties it is generally assumed that because of usual inconsistency between attitudinal data and demographic behaviour disposition measurement must be recurrent, based on multiple-item instrument, more related to a general attitude and not to a single statement of opinion in a given situation (Fishbein 1967; Bogue 1970, etc.).

In attempt to follow these prerequisites I employed a content analysis of the most wide-spread national daily newspapers in Russia – “Izvestiya”, “Pravda”, “Komsomolskaya Pravda”, “Trood”, “Selskaya Zhyzn”, “Sovetskaya Rossia” (the latter had been very popular before the *perestroika* when it began to present news only in orthodox *bolshevik* interpretation).

The fact, that the modern life style is characterized by “cosmopolitaness” manifesting in such things as interaction through the media of communication (Williams 1970), conclusively proves content analysis of newspapers to be a helpful technique for quantitative analysis of attitudes. Moreover, this technique is of particular significance for the analysis of population behaviour in Russia.

The totalitarian system of the Soviet Russia, upholding the principles of primacy of public interests, formation of public opinion “from above”, idealization of authorities, have promoted strengthening of mass media role in public consciousness and culture pattern formation in Russia. In a situation of monoparty system and thorough ideologization prevailed in the Soviet Russia, the media did serve as the key means of “education of the masses” (especially as subscriptions to certain newspapers were compulsory for the corresponding groups of population: “Pravda” – for the members of the Communist Party of the Soviet Union, “Komsomolskaya Pravda” – for the members of the Leninist Young Communist League of the Soviet Union, “Trood” – for the most active members of Trade Unions, “Izvestiya” – for the members of different Soviets of Working People’s Deputies). All this favored to maintain a single informative space called up to form a desirable behaviour.

Special surveys based upon Minnesota Multiphasic Personality Inventory (Dahlstrom and Welsh 1960) show that sensitiveness to public opinion, conformity to social norms, acceptance of the goals and style of behaviour propagandized by mass media, docility and disparagement of personal interests are the distinctive components of the culture pattern in Russia (Kasiyanova 1994). Consequently, the frequency of occurrence (in print media) of terms describing the qualitative characteristics and contextual meanings of these terms may be used for model estimation of comparative values (ratings) of the corresponding

dispositions and, thus, for modeling of intentions to change qualitative characteristics and for prediction of behaviour as far as intentions mediate between attitudes and behaviour. Because print media is regarded as playing the key role in formation of behaviour, it is expected that the more often designations of any qualitative characteristic appear in newspapers the more likely that the rating of the corresponding qualitative characteristic will be larger.

The designations of the qualitative characteristics (health, fertility, nuptiality, education, skill) and the terms mentioned in “Multilingual Demographic Dictionary” (IUSSP 1982) which are semasiologically connected with those designations serve as categories of analysis in examining print media. The rating of a disposition –  $R_{i,t}$  – is therefore estimated as a portion of the given category of content:

$$R_{i,t} = (2P_{i,t} + M_{i,t}) / \sum (2P_{i,t} + M_{i,t}),$$

where, for the qualitative characteristic  $i$  in year  $t$ ,  $P_{i,t}$  and  $M_{i,t}$  are, respectively, the numbers of cases when the corresponding terms turns out the principal and minor ones (thus, the sum of  $R_{i,t}$  is equal to 1).

The complex of  $R_{i,t}$  describes the priorities of behaviour and characterizes a rational response of population to living conditions. In that case each qualitative characteristic’s general indicator describes the level of the corresponding need satisfaction. Since in everyday life in mass consciousness, the quantitative expression of a need is formed under the influence of living conditions of the upper social class (or in the most prosperous regions) so each qualitative characteristic’s general indicator can be compared with its maximum (or optimum, desirable) and minimum levels:

$$I_{i,t} = 1 - \left| \frac{X_{i,\max} - X_{i,t}}{X_{i,\max} - X_{i,\min}} \right|,$$

where  $I_{i,t}$  is the index of qualitative characteristic  $i$  in year  $t$ ;  $X_{i,t}$  is the general indicator of qualitative characteristic  $i$  in year  $t$ ;  $X_{i,\max}$  and  $X_{i,\min}$  are, respectively, the maximum (or optimum, desirable) and the minimum values of the corresponding general indicator.<sup>1</sup>

The latter formula is somehow an improved version of deprivation indicator used in the human development index construction (UNDP 1990). The suggested modification concerns application of moduli. That allows to calculate the index of fertility (in that case I take 2.15 for the optimum value of TFR) whether actual TFR is higher than necessary for the replacement level or not.

<sup>1</sup> There are the following minimum and maximum values of the general indicators: 25–85 years – for life expectancy at birth; 0.3 (or 4.0 – when actual TFR is higher than 2.15)–2.15 – for total fertility rate; 300–800 – for male nuptiality rate; 400–1000 – for share of employees with more than primary education; 50–800 rubles (1985 prices) – for average monthly wage of employees. These minimum and maximum values most adequately reflect real variation in the general indicators in the regions of Russia in 1960-1995.

Hence, the population quality index for year  $t$  ( $PQI_t$ ) can be measured using the following formula:

$$PQI_t = \sum (R_{i,t} I_{i,t})$$

General indicators of the qualitative characteristics used for  $I_{i,t}$  and  $PQI_t$  computations are different by their origin: some of them are lifetime indicators of a reference year's synthetic cohort and true period indicators while the other ones – are not. In spite of this, I consider it possible to abandon attempts to make these indicators highly compatible to each other on the technical level. While realizing the limitations of this decision I suppose it does not contradict the main approach.

It is interrelation between the changes of general indicators and the corresponding ratings which is the key question in population quality analysis. Making an assumption that sociodemographic processes can be described by means of deterministic model, abstracting from conditions and factors in changes of the ratings of demographic dispositions, the relations between the general indicators and the ratings (lagged 5-year and 10-year periods to take into consideration the lag between decision-making and behaviour results) of the qualitative characteristics may be set out in the following form:

$$X_{i,t} = a_0 + a_1 X_{i,t-5} + a_2 R_{i,t-5} + a_3 R_{i,t-10},$$

where  $a_0, \dots, a_3$  are coefficients of regression equation calculated on the basis of the least-square method using time-series data collected at quinquennial intervals.

If theoretical values of  $X_{i,t}$  calculated using the latter equation conform statistically to available actual data, the suggested approach to population quality study will prove to be of certain forecasting potential. Such a projection must not be regarded as a controversy with conventional methods of demographic projection. Nevertheless, it may be used for amplification of sociodemographic projections, especially in periods of changing life style.

## 2. Evolution of Demographic Dispositions in Russia

Demographic dispositions are formed under the influence of social norms (both formal and informal) and current changes of living conditions. In Russia up to the beginning of the 20<sup>th</sup> century, entering into a marriage and bearing child traditionally kept the leading positions in the system of demographic dispositions. Moreover, just early marriage and large family were generally and implicitly internalized in Russian Empire.

The vast area and geographical location of Russia, the necessity to open up and to defend its territory were the main reasons calling forth strong mores and folkways for high fertility. Some of them were institutionalized into formal norms in the second half of the 18<sup>th</sup> century and after the emancipation (1861) which

resulted in a distribution of lots of land according to family size (Shpilevskiy 1871). The other norms remained informal but also favored high fertility (e.g., that son of the head of household who had smaller family than his brothers usually left home and his own family and went away in search of a living but sent earnings to the father's household thus providing his brothers and their families; furthermore, well-educated but childless son of the head of household stood a worse chance to inherit his father's household than almost illiterate son but with a large family (Arsenyev and Petrushevskiy 1991)).

The same factors that were promoting high fertility in Russian Empire, impeded improvement in skills (for the residents of such a vast and rich country like Russia raising the productivity of labor was considered foolish (Melikyanz 1993)) and education (impossibility to consolidate acquired knowledge in everyday life implicated mounting of relapsing illiteracy (Petrov 1896)), made individual's health and life unimportant (Berdyayev 1918) thus blocking human self-actualization.

All these national peculiarities were established and supported on the basis of Russian Orthodox outlook. Its essential components implied primacy of spirituality, theopathy and theocentrism (unlike anthropocentrism in Western Europe), "oblivion of personality in God", clerical escapism. The domination of Orthodox form of religious outlook, including its system of dogmata and worship (maintained by positive aspects of religious activity, e.g. in struggle for unity and sovereignty of Russia), strengthening of clerical influence upon education (up to the 19<sup>th</sup> century there was state-clerical monopoly of book-printing in Russia unlike development of private book-printing in Western Europe), actual submission of education to Russian Orthodox Church<sup>1</sup>, practical liquidation of secular primary education and its substitution by parish schools (especially, in rural areas with 87% of total population of Russian Empire in 1897) went on in Russia up to the beginning of the 20<sup>th</sup> century and depreciated importance of education.

The above-mentioned predispositions deeply ingrained and handed down in postfigurative society of the Russian Empire. In this connection and in view of relatively slow speed of behaviour response, the Russians could be socialized to accept the norms of high education and qualification levels, of a longer and healthy life span only along with profound social transformations. At the same time, sweeping transformations in the country (Stolypin's<sup>2</sup> land reform of 1906-

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<sup>1</sup> In 1817-1824 there was the United Ministry of Ecclesiastical Affairs and Public Education in Russian Empire, in 1866-1880 the Chairperson of Synod (The Supreme State-Clerical Directing Body in Russian Empire) also headed Ministry of Public Education.

<sup>2</sup> Stolypin, Peter (1862-1911) – the Minister for Internal Affairs and Chairman of Council of Ministers of Russian Empire (1906-1911). Stolypin's land reform was aimed at elimination of communal ownership of land, development of farmer system of land-tenure, increase in agricultural production, intensification of inner migration and opening up outlying districts of Russia.

1911, the 1917 revolution and the ensuing civil war, the cultural revolution of 1921-1929, the industrialization of 1929-1940, the collectivization of agriculture of the early 1930s, the post-Stalin liberalization) came in conflict with the traditional norms, so only drastic alteration of the system of value orientations propagandized by mass media could consolidate momentous change in behaviour. In Russia such a drastic alteration had revealed itself in steady rise of the ratings of health, education and qualification.

If Stolypin's land reform had based itself on unreality (at least – in short time) of adoption of high values of education and skill (Stolypin 1991: 10-11) and had hardly attached importance to propaganda of these values then the cultural revolution of 1921-1929, on the contrary, was aimed to provide all citizens with ample opportunities to accept the norms of comparatively high education and skill levels, healthy life style. In this respect the *Likbez* (abbr. "*Likvidatsiya bezgramotnosti*") – elimination of illiteracy) program introduced in December 1919 was extremely significant because it envisaged that literate persons including students and pupils (according to the census of 1897, the highest literacy rate in Russia fell on the age group of 12-15 years: 58.9% for males and 22.4% for females) had to teach illiterate persons of 8-50 years old in schools, club-houses, reading-halls and even individually at home. Thus, the *Likbez* program not only promoted growth of literacy rate (28.4% of 9-49 years old population in 1897; 44.1% - in 1920; 87.4% - in 1939; 98.5% - in 1959) but also was the key cause of a decay of postfigurative traditions and a start of cofigurative ones (with certain prefigurative elements) leading to accelerated break with the norms of high fertility and, especially, nuptiality (as a result of propaganda in 1920s of "family dying off" theory (Bukharin 1923)) and to fundamental changes in the system of demographic dispositions.

The relation of socioeconomic conditions and themes of publications in daily newspapers to estimations of ratings of the qualitative characteristics will be considered starting with 1955 (table 1). This period is quite sufficient for statistical estimation of the dependences of the general indicators on the qualitative characteristics ratings.

**Table 1.** Ratings of the Qualitative Characteristics, Russia, 1955-1995

<b>Year</b>	<b>Health</b>	<b>Fertility</b>	<b>Nuptiality</b>	<b>Education</b>	<b>Skill</b>
1955	0.298	0.185	0.078	0.152	0.287
1960	0.301	0.160	0.082	0.213	0.244
1965	0.292	0.118	0.086	0.249	0.255
1970	0.294	0.120	0.081	0.290	0.215
1975	0.290	0.116	0.079	0.306	0.209
1980	0.298	0.122	0.083	0.321	0.176
1985	0.303	0.120	0.077	0.331	0.169

1990	0.270	0.050	0.085	0.347	0.248
1995	0.306	0.038	0.098	0.352	0.206
2000 (projection)	0.300	0.055	0.115	0.355	0.175

One can notice more or less even combination of ratings of the qualitative characteristics in 1955. Though ratings of health and skill had already outrun ratings of fertility and nuptiality, health-fertility and skill-fertility ratings differences made up only 55-60% while rating of fertility even still exceeded rating of education. In spite of quinquennial variations in the most of the ratings observed in 1955-1995, downward tendencies of ratings of fertility and skill and upward tendencies of ratings of education and nuptiality are quite clear.

As for the change of rating of education, it is explained by natural strengthening of educational impact and by striving for consolidation of high value of education in people's consciousness. The perception of high value of education ensured comparatively high educational standard in Russia. It is preserved even in the middle of 1990s when financing of the education sector and access to high quality secondary and tertiary education are decreasing along with deepening of income polarization.

The downward tendency of skill rating characterizes the growing incapability of the Russian economy to absorb new technologies and equipment, to improve management. It is extremely significant that this downward tendency was suspended twice: in 1960-1965 and in 1985-1990. Both cases fell on the years subsequent to early Brezhnev's and early Gorbachev's reforms. At the same time, inconsistency of these reforms soon brought to naught their positive effect and weakened encouragement in mass media of raising qualifications.

The upward tendency of the rating of nuptiality had grown out of influence of conflicting factors. On the one hand, the theory of "family dying off" kept on operating in the form that everything connected with family affairs was proclaimed "a manifestation of narrow-mindedness". Divorces by reason of bad housekeeping, "lack of love" and separation for making career actually came to be encouraged in cinema, fiction and mass media. On the other hand, face-to-face interviews based on direct questions showed that the family continued to hold one of the leading positions in the Russian value system and the family more and more often came to be suggested as means of solution of different everyday and social problems, or as means facilitating the execution of some aims. Finally, in spite of the fact that in present-day Russia single life and, especially, life in the parents household is much more cost-effective than family life in own household, family is treated as the best asylum from stress and diseases. Predominance of the former factors in Brezhnev's period caused a decrease of rating of nuptiality in 1965-1985, while predominance of the latter factors in 1985-1995 caused an increase in this rating.

Dealing with changes of rating of fertility in 1955-1995, it is possible to mark out three periods. The first one – from 1955 to 1965 (that period had likely been starting earlier) – was characterized by a rather fast decline of rating of

fertility which prolonged the long-term trend beginning at the turn of the 19<sup>th</sup> and 20<sup>th</sup> centuries although interrupted by the post-war (the Second World war) spell. The second period – from 1965 to 1985 – was characterized by a certain stabilization of the rating due to some pronatalist measures and their propaganda in mass media (pre-natal allowances equaled to 100% of the wage for all working women during their pregnancy leaves, children's allowances for low-income families (1973-1974); allowances for all previously working women during their one-year post-natal leaves, preservation of the previous job position for all working women during their one-and-a-half-year post-natal leaves, raising of the low-income threshold for children's allowances payment (1981-1983), etc.). The third period – from 1985 to 1995 – was characterized by a return to the long-term trend of fertility rating decline intensified by a rapid slump of living standard in Russia in 1991-1994 when the national newspapers (but for a few biased publications in "Sovetskaya Rossia" as well as in other oppositional papers of small circulation) did not give much prominence to fertility problems. Changes of rating of health are much more difficult to interpret than changes of other ratings of the qualitative characteristics. That depends on a small-scale changeability of health rating and on its frequency. Nevertheless, there were two substantial falls and two rises of health rating. The first fall – in 1960-1975 – was a result of traditional and deliberate hushing up important problems. Since the early 1960s the population of Russia began to pass on to the stage of epidemiological transition characterized by a considerable growth of prevalence of chronic and delayed degenerative diseases. All these processes required adequate and expensive transformations of health service which could hardly be ensured in the Soviet Russia during the arms race. In such a situation hushing up health problems (even in special literature publications of morbidity and mortality data were suppressed since the second half of the 1960s) was a natural phenomenon but it led to spreading of morbid life style and ignorance of bailout measures for care of public health improvement. Preparation for the 22<sup>nd</sup> Olympic games (conducted in Moscow in 1980), intensification of population aging and rousing interest for health problems (to a certain degree connected with the deaths in the governing body in 1982-1984), Gorbachev's freedom of press and anti-alcoholic campaign (1985) caused the first rise of the health rating in 1975-1985. The second fall of the health rating – in 1985-1990 – became a result of politicizing of mass media, of their intentions to bring to light unknown past and current facts when political economic and development problems (including questions of qualification, labor productivity, effectiveness of education) were of a paramount concern so health problems came to play only the second fiddle. That fall of the health rating gave way to the next rise in 1990-1995 when the stress, decline in living standard caused rapid drop of life expectancy (as a result of growing mortality from the main causes of death, especially from accidents, poisonings and traumas). In response to such a situation almost all national daily newspapers had been publishing articles about "extinction of Russia" giving much attention to

health problems, comparing levels of life expectancy in Russia and other countries.

The frequency of appearance of skill's categories in print media has been substantially declining since 1995 (especially since the beginning of 1998 due to aggravation of economic crisis). At the same time, ratings of fertility and nuptiality keep on rising as a result of realization of demographic crisis consequences. All the years since 1995 health and education ratings have remained relatively stable but showed certain tendencies toward decrease and increase, correspondingly. That helps us to make some extrapolations concerning the probable levels of these ratings in 2000 (table 1) based upon assumption that the present trends of the ratings will hold out in 1999-2000.

### 3. Statistical Dependencies of the General Indicators on the Qualitative Characteristics Ratings

The following analysis is designed to establish statistical dependencies of the general indicators of the qualitative characteristics on the corresponding ratings. Only the official statistical data obtained during general censuses of 1959, 1970, 1979, 1989, micro censuses of 1985, 1994 and in vital registration (but for male nuptiality rates for 1965 and 1975 when the mean quantity for 1959-1989 was employed for the lack of official data) were processed to calculate the general indicators (table 2) used in regression equations constructed to measure these statistical dependencies.

In table 3 there are coefficients of regression equations demonstrating relationships between changes of the general indicators of the qualitative characteristics and the corresponding ratings.

Numbers are approximated to the third digit after a decimal point for presentation in the table only; \*  $p \geq 0.99$ ; #  $p \geq 0.95$ ; +  $p \geq 0.70$

The conducted comparison of actual and theoretical values of the general indicators shows a reasonably good agreement between them (table 3). That allows to use the estimates of the ratings as predictors of the general indicators of the qualitative characteristics. Thus, the projected values of the general indicators for 2000 and 2005 (table 2) were obtained using our projections of the ratings for 2000 and the regression equations coefficients calculated on the basis of the general indicators of the qualitative characteristics and their ratings for 1955-1995.

**Table 2.** General Indicators of the Qualitative Characteristics, Russia, 1959-2005

Year	Life Expectancy at Birth, Both Sexes (years) <sup>#</sup>	Total Fertility Rate <sup>#</sup>	Male Nuptiality Rate per 1000 males	Number of Employees with Secondary and Tertiary Education	Average Monthly Wage (rubles, 1985)
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			of 16+)*	(per 1000) <sup>#</sup>	prices) <sup>#</sup>
1959-60	67.91	2.62	692	440	83.1
1965	69.91	2.14	714	537	99.0
1970	68.81	1.97	716	656	126.1
1975	68.13	1.97	714	771	153.2
1979-80	67.72	1.89	708	803	177.7
1985	68.08	2.06	736	878	201.4
1989-90	69.38	2.02	718	915	263.3
1994-95	64.64	1.39	723	977	128.6
2000 (projection)	68.40	1.45	730	983	163.8
2005 (projection)	70.43	1.56	731	991	181.9

<sup>#</sup> vital registration data; \* census data

**Table 3.** Coefficients of Regression Equations for the General Indicators of the Qualitative Characteristics Calculations

	Life Expectancy at Birth	Total Fertility Rate	Male Nuptiality Rate	Number of Employees with Sec. & Tert. Education	Average Monthly Wage
a <sub>0</sub>	10.303	1.623	588.873	-178.448	770.860
a <sub>1</sub>	-0.339	-0.393	0.214	0.145	-0.544
a <sub>2</sub>	157.360	8.313	867.342	3509.389	-1200.643
a <sub>3</sub>	117.932	1.224	-1165.452	-620.560	-1168.128
Chi-square	0.023*	0.003*	0.525*	1.314 <sup>#</sup>	3.143 <sup>+</sup>

Any future changes of the ratings and general indicators are likely to cause some elaboration of the regression equations coefficients. In that connection, for example, it is interesting to compare coefficients for TFR calculations obtained on the basis of 1955-1995 data (table 3) with the coefficients obtained on the basis of 1955-1990 data. The latter ones are the following: a<sub>0</sub>=1.616; a<sub>1</sub>=-0.366; a<sub>2</sub>=8.022; a<sub>3</sub>=1.122. Hence, TFR in Russia in 1995 as projected on the basis of 1955-1990 data is 1.41 (quite acceptable precision of the approximation bearing in mind the actual TFR (table 2)). As for life expectancy at birth, the corresponding coefficients obtained on the basis of 1955-1990 data are the following: a<sub>0</sub>=2.774; a<sub>1</sub>=-0.048; a<sub>2</sub>=104.930; a<sub>3</sub>=128.839. Thus, the life expectancy at birth in Russia in 1995 as projected on the basis of 1955-1990 data is 66.83 (quite correct forecasting a real life expectancy decline (table 2)). It means that rapid fertility and life expectancy declines in Russia in 1990-1995 could be forecasted in 1990 on the basis of the population quality concept while the demographic projections prepared even in the early 1990s and based on formal methods (Andreev, Darskiy, Kharkova 1993; Bos, Vu, Levin, and Bulatao 1992, etc.) failed to determine the actual trends.

Viewed as a whole, the growth of the coefficient  $a_0$  reflects, *ceteris paribus*, slowing down of the speed of general indicator's response to social transformations, the growth of positive coefficient  $a_1$  – reflects strengthening of a previous trend of the general indicator (negative coefficient  $a_1$  characterizes unsteadiness of previous trend and its forthcoming change into the opposite one), increase in the modulus of coefficients  $a_2$  and  $a_3$  – reflects as increase in sensitivity of the general indicator to public opinion (negative coefficients  $a_2$  and  $a_3$  characterize reverse relation between changes of the general indicator and the frequency of occurrence in print media of the corresponding terms while positive coefficients  $a_2$  and  $a_3$  characterize a direct relation).

In view of the fact that the qualitative characteristics are measured by means of essentially different general indicators, the only method of comparison of their sensitiveness to changes of the ratings is to estimate impacts of equal augmentations of the ratings (say, by 0.001) on increases in the indices of the qualitative characteristics. The corresponding impacts equal to 0.007 for index of education, 0.004 – for index of fertility, 0.003 – for index of health, 0.002 – for index of nuptiality, and (-0.002) – for index of skill. Along with the necessary intensification of social areas financing, regard to these estimations of public opinion influence and their effectiveness are the critical factors in elaboration of the national and regional sociodemographic programs in the present-day Russia.

#### 4. Conclusion and Discussion

The “Population quality” is one of the key terms in population and human development studies. Elaboration of the population quality concept is based upon realization of system approach to sociodemographic processes, possibility of a complex analysis of population reproduction trends, investigation of population behaviour response to changing conditions of life. In Russia formation of demographic behaviour is to a large extent determined by sensitivity to public opinion, conformity to social norms and the style of behaviour propagandized by mass media. The research obviously shows quite close statistical relations of the general indicators of the qualitative characteristics to the ratings of the qualitative characteristics determined on the basis of content analysis of daily newspapers.

Though the media's impact upon human behaviour is considered to be a specific feature of a modern society, the question concerning application of the suggested method to analysis of sociodemographic changes in other countries is left open. Its solution is considerably complicated by problems of “text interpretation” (due to linguistic difficulties) and requires a team-work of scholars from different countries. Moreover, the possibility of an application of the suggested method to the analysis of long-run sociodemographic changes in post-Soviet Russia is a question of particular importance especially taking into account deformations of single informative space and reinforcement of the regional media (at the same time, the course of the

Presidential elections in Russia in 1996 and 2000 has confirmed that the media goes on playing the key role in human behaviour formation). In other case it would be possible to speak about a radical turn in regularity of demographic behaviour formation in that country.

The population quality index may be computed without calculation of ratings – as an arithmetical mean of the qualitative characteristics indices. In such a case the population quality index will represent an alternative to other composite indices (the physical quality of life index, demographic transition index, human development index, etc.) but it will describe the key aspects of a vital activity more thoroughly and will reflect the components of population reproduction more comprehensively. The population quality index will certainly enable to assess sociodemographic situation in a complex, to compare the latter with some optimum situation, to rank countries (regions), to gauge level of sustainability of demographic regime and to measure sociodemographic impact upon economy and environment.

Computation of correlation of macroeconomic variables – GDP per head, national income per head, etc. – on PQI is the easiest method of sociodemographic impact measurement either in a retrospective researches or in interregional analysis. In such a way, the coefficient of correlation between PQI and per head value of gross regional product in the regions of Russia equaled to 0.466 in 1985, 0.554 – in 1990, 0.616 – in 1995. Although the figures are difficult to interpret, these relations are likely to show the growth of sociodemographic impact upon the economy in Russia. Other and more sophisticated methods may be based on insertion of PQI into some modifications of the Cobb-Douglas production function.

In the mid-1990s human resources made up 64 per cent of the world's wealth. Human development became the ultimate aim and the key factor of economic growth. A better grasp of what population quality means, how is it measured and why its change will improve our understanding of demographic processes and its interrelations with economic dynamics. The inclusion of attitudinal data in the population quality deterministic model will also help to amplify population analysis and formal population projections, especially in the periods of a changing life style.

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## **REPORT**

### **INCOME AND WEALTH ON THE WORLD**

#### **International Association for Research in Income and Wealth 26<sup>th</sup> General Conference, Cracow, Poland August 28 - September 2, 2000**

The 26<sup>th</sup> General Conference of the International Association for Research in Income and Wealth (IARIW) was held in Cracow, Poland, August 28 – September 2, 2000. These conferences are organised every two years in different cities of the world. The IARIW Council selects the city where the conference is to be held. The former, 25<sup>th</sup> jubilee conference was held in Cambridge in 1998. The co-organiser of the 26<sup>th</sup> IARIW Conference in Cracow was the Central Statistical Office of Poland (CSO).

In September 1947 at an international conference in Washington convened on the initiative of economists and statisticians from the United States and the United Kingdom, the International Association for Research in Income and Wealth was established. Distinguished economists and statisticians from all over the world, often performing important functions in international organisations and scientific or governmental institutions are members of the IARIW. The seat of the Association is in New York. IARIW is engaged in, i.a., research on income and wealth, conducts comparisons of national income on an international scale, is concerned with problems of statistical methodology. The scope of the problems and the rank that members of the Association possess in the academic world cause that it makes one of the important opinion-making centres influencing the behaviour of businessmen and investors. Since 1966 the IARIW has been editing a quarterly entitled *The Review of Income and Wealth* publishing on its columns conference materials, lectures and articles of world-famous economists and statisticians. The publishing activities are financially assisted by the Alfred P. Sloan's Foundation. Moreover, the works of the Association are assisted by central banks, statistical offices, scientific institutes and tertiary education institutions.

Representatives from the world of science as well as statisticians from 26 countries of Europe, North America, Asia, Australia and Africa took part in the conference. Moreover, representatives of international organisations and institutions, i.a., from OECD and Eurostat were present too. Jointly, about 190 persons took part in the conference. The meetings were conducted in form of

plenary sessions and so-called parallel sessions. During the four conference days over 60 lectures were presented. They were divided into thematic groups.

Plenary sessions:

1. Factor Productivity and Technological Change
2. International Standards for Income Distribution Statistics
3. Measures of Economic Well-Being

Parallel sessions:

1. Economic Performance and Income Distribution
2. Balance Sheets
3. Environmental Accounting
4. Household Budget Expenditures and Budget Standards
5. Measures of Poverty and Social Exclusion
6. Measurement of Government and Other Non-Profit Institutions
7. Construction and Use of Social Accounting Matrices
8. Discussion on chosen papers - i.a., concerning:
  - a) Topics in National and Historical Accounting and Productivity Comparisons,
  - b) Issues in Income Distribution.

Separate papers were reviewed by invited discussants, and then participants of the sessions discussed or asked questions, which were answered by the authors of lectures presented.

The conference was opened by President of the CSO, T. Toczyński. In his speech he presented basic aspects of co-operation between science and statistics, particularly in the field of methodology of surveys, co-operation of Polish statisticians with international institutions as well as with European statistical offices and the Canadian and the American Bureau. Moreover, the President presented an outline of development of Polish national and regional accounts. The Cracow's vice-president J. Jedliński greeted the participants of the conference on behalf of self-governmental bodies of the city. Then, on behalf of the IARIW's authorities the conference was opened by the chairman of the Council, A. Harrison from OECD.

During the first plenary session on *Factor Productivity and Technological Change*, presided by B. Kondrat – the CSO's vice-president and D. Blades from OECD, papers connected with productivity and technological changes were presented, e.g. L. Zienkowski from the Research Centre for Economic and Statistical Studies of the CSO and the Polish Academy of Sciences gave a lecture on *Labour and Capital Productivity in Poland*. In his paper, the author presented an analysis of labour productivity and capital productivity in Poland by kinds of activities in years 1985-1998, an analysis of productivity in industry by branches in years 1991-1998 and results of calculations on the increase in labour productivity in years 1992-1999. Next the following papers were devoted to

investment outlays, value of fixed assets and productivity in two Asian countries: South Korea and Taiwan in the second half of XXth century (by B. van Ark and M. Timmer from the Netherlands). P. Schreyer from France presented in his paper (*Contribution of Information and Communication Technologies to Output and Productivity Growth: A Study of the G7 Countries*) the importance and influence of information and communication technology on the growth of output and productivity on the example of G7 countries. A scientific outlook on the problem of capital and productivity was presented in the paper *On Capital and Productivity: Harrodian and Keynesian Measures* by Canadian scientists T. Rymes and R. Durand.

During the second plenary session entitled *International Standards for Income Distribution Statistics* papers dealing with different outlooks on income distribution, sources of data as well as methods and techniques of estimation were presented. This session was presided by P. van der Laan from the Statistics Netherlands. The discussion on wealth and on income from the economic point of view, definition of income and its components as well as consumption and depreciation were presented in the paper *Overview of the Proposed Standards for Income Distribution Statistics*. The authors described an approach to income not only as a statistical category (featured in the SNA'93), but quoted its interpretations made by economists in the past as well. It was pointed out, that the measurement of well-being should not be made only on the basis of income. The level of consumption is also very important in the evaluation of well-being. The subject matter of data comparability on income distribution among countries was discussed in the paper entitled *Making Cross-Country Comparisons of Income Distributions*. The authors of this paper T. Smeeding, I. Castles, M. Ward and H. Lee, who are members of the International Expert Group on Household Income Statistics, the so-called Canberra Group (the name is given after an Australian town, where the first meeting of this group was held), deal with household income statistics. The differences in the quality of data (especially if they are derived from different sources such as statistical, administrative or tax sources) and the importance of presenting data in one currency, e.g., in PPP, were pointed out.

The third plenary session presided by A. Sharpe from the Canadian Centre for the Study of Living Standards dealt with the *Measures of Economic Well-Being*. Four papers were presented during this session. A very interesting paper was presented by L. Osberg and A. Sharpe from Canada - *Estimates of an Index of Economic Well-Being for OECD Countries*. The authors proved, that economic well-being of the society depends mainly on the level of the four elements:

- the average string of consumption,
- aggregated accumulation of production resources,
- inequalities in the distribution of individual incomes,
- the lack of certainty of future incomes.

However, the authors pointed out that some occurrences, as e.g. recession, may have negative influence on the magnitude of these components of well-being through lower average consumption, greater inequalities and lower capital accumulation in generating future profits. Based on data for the last 25 years, the authors concluded that the rate of economic well-being increases more slowly than the real gross domestic product per capita, which is universally applied as a measure of well-being. Data for six OECD countries: Australia, Canada, the US, Norway, Sweden and the UK served as an illustration. Then, Mr Heinz-Herbert Noll in his paper entitled *The European System of Social Indicators: An Instrument for Social Monitoring and Reporting* presented the idea and an outline of basic elements of the structure of European System of Social Indicators. This system will allow to identify and define two aspects: social divergence and inequality on one hand, and the strength of social relations and bonds on the other hand. However, this system is in the process of creation, and detailed indicators as well as time series of data for chosen domains of life will be defined.

From my point of view, the first parallel session on general aspects of economic activity and income distribution entitled *Economic Performance and Income Distribution* conducted by T. Garner from the American Bureau of Labor Statistics was very interesting. C. Grün and S. Klasen from Germany gave an interesting lecture on *Growth, Income Distribution, and Well-Being in a Comparative Perspective*, where they presented not only the measures of well-being and their application, but an analysis of international arrangements and comparisons of data reflecting the level of well-being as well. These measures are, above all: gross domestic product and gross national product per capita as well as derivative measures of Atkinson, Sen and Dagum. This subject matter was also presented in the paper of Spanish scientists J. Ruiz-Huert, L. Ayala and R. Martinez entitled *Inequality, Growth and Welfare: An International Comparison*. The subjects under discussion were trends of average income and inequality in eleven countries of the OECD and an analysis of the growth of households incomes in OECD and member countries. The next three papers of this session were devoted to distribution of incomes in three countries: Slovakia, Italy and Germany before and after their unification.

The second parallel session presided by F. Lequiller from INSEE, France was devoted to *Balance Sheets*. Two first papers concerned depreciation. The first one prepared by B. M. Fraumeni and W. Herman from the Bureau of Economic Analysis, US entitled *The Measurement of Depreciation, Capital Stocks, and changes in Stocks in the US National Income and Product Accounts* included their experiences acquired during elaboration of the new methodology of depreciation, which was introduced in 1996. Moreover, the paper contained a comparison of the former and the present methodology, a definition of depreciation elaborated by the BEA and a set of data on changes in net resources of the productive capital in years 1996-1998. In the second paper entitled *The Theory of Economic*

*Depreciation and the SNA* P. Hill from the UK referred to different concepts of depreciation theory and its importance for principles accepted in the System of National Accounts. He explicated more widely the theory of depreciation with the processes of consumption of fixed capital, technological progress and quality changes - than it was presented in the SNA. The next papers of this session were connected with the range and contents of balance sheets (presented the components of balance sheets), making use of data derived from balance sheets in the analysis or considered the possibilities of changing the range of balance sheets and presenting them in a more useful way. Similar considerations were enclosed in the paper *Making Use of National and Sectoral Balance Sheets* prepared by S. Thompson from the Australian Bureau of Statistics.

The consecutive session organised by A. Harrison from OECD was on *Environmental Accounting*. The *Integrated Environmental and Economic Accounting Manual: SEEA 2000* was presented by the so-called London Group on Environmental Accounting. It is composed of six chapters, i.a., asset accounts, flow accounts, environmental protection expenditure, valuation and economic integration. Three discussants K. Blackburn from Australia, U. Reich from Germany and A. Vanoli from France presented a commentary to this draft. Questions asked during the discussion were answered by authors of the chapters of "SEEA-2000".

The subject matter of household budget expenditures was discussed on the session organised by D. Johnson from the American Bureau of Labor Statistics. One of the papers presented during this session prepared by a team of authors from the Bureau of Labor Statistics, the US was entitled *A Century of Family Budgets in the United States*. It contained a history of surveys on household budgets in the United States during the last 100 years, as well as a general outlook on standards and definitions in this field. Moreover, the authors prepared very interesting compilations and comparisons of household budget expenditures by kinds of expenditures and types of households. Another interesting paper presented the connection of data on household expenditures with the measurement of the level of poverty entitled *Using Expenditure Data in the Measurement of Poverty: A Comparison of Australia and the UK* The authors-P. Saunders, J. Bradshaw and M. Hirst discussed new methods of determining the threshold of poverty. The presented compilations suggest that there are no great differences in the proportions of particular kinds of expenditures depending on the type of a household.

Problems connected with the measurement of poverty were also discussed on the session *Measures of Poverty and Social Exclusion* presided by S. Jenkins from the Institute for Social and Economic Research from the United Kingdom. Nine papers were prepared for this session, in which the authors dealt with the problem of defining poverty – through the measurement of well-being and wealth – from the economic point of view, based on the examples of such countries as Italy, the United Kingdom, Spain or Zambia. Moreover, the paper of a Polish scientist, Mr

S. M. Kot entitled *The Distribution of Welfare and its Relation to Poverty and Inequality* handling the definition interdependence between well-being and poverty was presented at this session.

The session entitled *Measurement of Government and Other Non-Profit Institutions* was devoted mainly to defining units with the System of National Accounts, and the method of settling the magnitude of output for non-profit institutions. These problems were treated, i.a., in papers *The Handbook on Non-Profit Institutions in the System of National Accounts: An Introduction and Overview* by H. Tice and Mr L. Salamon and *Measurement of Collective and Semipublic Output in Developing Countries* by M. Mamalakis.

Recapitulating, I would like to emphasise, that multiplicity and extensiveness of the subject matter does not allow to discuss fully all the papers. Majority of the papers were presented at parallel sessions, and participants divided into two groups took part in the sessions they were interested in. Therefore, in this short report, I have concentrated on the subjects that attracted my attention. Maybe from the point of view of other participant this subject matter would be presented differently, therefore I would like to stress, that it is my subjective opinion on the presented papers.

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