

Export Orientation of Polish Small and Medium – sized Enterprises in Gdansk: an Empirical Analysis

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To

My wife Dieu Linh Nguyen and our son Mike Dinh Minh Nguyen

Abstract

The success of small and medium-sized enterprises (SMEs) in industrialised countries has led to the increasing recognition of their role in exports, and in transition economies, this is driven by private-sector-led economic growth. The objective of this thesis is to determine major factors influencing export propensity of Polish SMEs in an expanded European Union (EU). All investigated enterprises are located in the Gdansk province. This study employs the Logit model to explain why some SMEs are exporters (their export propensity) in Poland. The second contribution of this thesis is to find out why some Polish SMEs are non-exporters and will not even engage in future export activities (export aversion). The results of the study indicate that the essential sources of an enterprise's finance, the perception about major problems with respect to export operations and the actions taken to prepare for the accession of Poland to the EU are very important drivers of export propensity and export aversion. More importantly, the results show that the information about special foreign credit available for Polish SMEs and the number of competing firms in domestic market have a positive influence on their export propensity. A strong relationship has been observed between the extent of use of IT tools in distribution-marketing and export propensity. Our results also illustrate that the propensity to export is dependent on the capital of the firm and on profitability of the firm in the domestic market. However, our findings reveal that legal status of firms, the branch of economic activity of the enterprise, the firms with less attractiveness and modernity of products, the firms with little knowledge of EU members' markets and the firms with low technological levels are the factors influencing export aversion of Polish SMEs. Our results demonstrate that the domestic share of the market of the firm is significant in explaining export propensity and aversion. Our empirical results should contribute to policy makers' designing effective assistance programmes to encourage Polish SMEs in their exporting.

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List of Abbreviations

ADB	Asia Development Bank
CEECs	Central and Eastern European Countries
CEFTA	Central European Free Trade Agreement
CSBRC	Cambridge Small Business Research Centre
DTI	Department of Trade and Industry in the UK
EBRD	European Bank for Reconstruction and Development
EIB	European Investment Bank
EIF	European Investment Fund
EU	European Union
FSB	Federation of Small Businesses
GDP	Gross Domestic Product
GUS	Polish Central Statistical Office
LDCs	Least Developed Countries
MCI	Market Concentration Index
MES	Minimum Efficient Scale
OECD	Organisation for Economic Co-operation and Development
PAED	Polish Agency for Enterprise Development
PAIiZ	The Polish Information and Foreign Investment Agency
RCA	Revealed Comparative Advantage Index
REGON	National Register of Business Entities
RSG	Regional Specialisation Growth
SEE	South Eastern European
VAT	Value Added Tax

Chapter 1: Introduction

1.1. Background

The Small and Medium-sized Enterprises (SMEs) worldwide are recognised as engines of economic growth and have contributed significantly to the successful development of many industrialised countries. Experience of European Union (EU) countries indicates an important role of SMEs in the economic development. These enterprises make up over 90% of the total number of all existing firms and provide 65% of the European Union's general turnover (Observatory for European SMEs, 2002). Moreover, SMEs in the EU can be seen as a way to raise economic growth, to increase goods' competitiveness and make a significant contribution to solving problems connected with unemployment. Since 1989, the Central and Eastern European countries have undertaken a process of economic transformation, whose core is the creation of the private sector as well as the development of entrepreneurship and creation of SMEs.

SMEs in Poland have an important role to play in the country's industrialisation and modernisation process. The process of economic reform in Poland has directly impacted the SMEs and has promoted the comprehensive development and diversification of trade, form of organisation and business areas. The development however, is still limited in many aspects due to market constraints and the SMEs' internal physical limitation such as capital shortage, slowly renewed equipment, outdated technology, poor diversification of product sample and lack of good skills and management experience. SMEs in Poland have not reached their full potential yet. In addition, the lack of specific policies and strategies for the development of SMEs also restricts their development. Poland is currently refocusing attention on the search for strategies and the design of policies and

assistance programmes aimed at the promotion and development of SMEs. Encouraging Polish SMEs to export a proportion of their output to overseas markets is a desirable alternative strategy for promoting the growth and development of SMEs. This is because export orientation helps SMEs to stay in business (i.e. increases their survival chances), helps them to grow faster, increase their productivity and competitiveness (Berry, Rodriguez and Sandee, 2001; Bagchi-Sen, 1999), whilst at the same time benefiting the country by contributing towards the reduction of the national balance of payments deficits (Levy, Berry and Nugent, 1999; Samie and Walters, 1990). Furthermore, Poland has established SME export promotion schemes as a way of promoting the growth and development of SMEs. The design and implementation of sound policies and effective assistance programmes for the development of SMEs, however, can only be achieved if policy-makers have a good understanding of the dynamics of the SME sector. Faced with a limited public budget and competing public demands, a critical area of interest to practitioners and policy makers is how to design successful assistance programmes and streamline the assistance in such a way that it produces maximum benefits to the economy. Likewise, owing to the ever-changing business environment, the needs and challenges facing SMEs have to be continuously assessed so as to improve the targeting of the assistance programmes.

1.2. Objectives

Export orientation helps Polish SMEs to stay in business and contributes towards the reduction of the national balance of payments deficits. Therefore, the Polish government decided actively to participate in the export promotion plans and design effective assistance programmes in order to produce maximum benefits to the economy. Most of the work done on the export behaviour of SMEs has been

based on the data pertaining to developed countries. There is still an information gap about developing countries such as Poland. Moreover, very few researchers have done studies on export performance of Polish SMEs. In view of this argument, the main objective of the study is:

- to investigate the major factors that explain export propensity and export aversion of Polish SMEs, and provide sound policies to assist more Polish SMEs to export.

Other objectives of this study are:

- to examine the debate concerning the definition of SMEs in the European Union and provide implications of SME's definition for researchers on transition economies such as Poland. The problems of definition of SMEs will be an input to develop a questionnaire for our empirical study of SMEs in Poland;
- to conduct a literature review to survey theoretical and empirical literature on the growth and survival of SMEs in the UK. The lessons from the methodologies of growth and survival of SMEs in the UK are useful to frame the possible methodologies of growth and development of Polish SMEs;
- to provide recent information regarding macroeconomic changes in Poland and the condition of the SME sector in Poland. This information helps us to understand the requirements of the development process of Polish SMEs and allows us to build up a questionnaire for the empirical study of export performance of SMEs in Poland;
- to analyse the characteristics of surveyed small enterprises in Gdansk. The analysis obtained from a sample survey allows us to consider the factors determining the development of Gdansk SMEs. This information will be used to clarify the main research problem in a design of export behaviour of Polish SMEs.

1.3. Outline of the thesis

This thesis has eight chapters.

Chapter two provides an overview of the European Commission's definition of small enterprises. In this chapter, we discuss the variety of different operational definitions of a SME which were employed by researchers. Furthermore, we also review the UK Bolton Committee's definition of small firms in order to demonstrate problems of definitions of SMEs. Besides, the definitions of Polish SMEs will also be examined in this chapter. Based on the problems of definitions of SMEs, we tailor our definition of Polish SMEs in which we are interested in our research on export behaviour of SMEs in Poland. The implications for researchers on transition economies such as Poland will be drawn up in this chapter, so that the researchers can visualise the problems of definition of SMEs.

Chapter three has four sections. In section one, we survey theoretical and empirical literature on the growth and survival of the firm in the UK. In addition, we will report various methodologies which are available in estimating the relationships between growth and size of firms. Section two reviews the existing literature on growth, survival, size and age, market structure. It also examines the impacts of firm localization on growth, financial structure and the survival rates of SMEs. Section three reports the available methodologies in order to estimate the relationships between growth and size of SMEs and between survival and size. This discussion includes parametric, non-parametric and semi-parametric methods such as Logit, Probit model. Section four concludes the methodologies of growth and survival of SMEs in the UK that are useful to frame the possible methodologies of development of export behaviour of Polish SMEs.

Chapter four looks at the development of Polish SMEs. This chapter also projects possible scenarios of the development of SMEs under new conditions of Poland's integration with the EU. This chapter covers two sections. Section one summarises some of more recent information regarding macroeconomic changes in Poland. In this section, we broadly outline the recent economic growth, inflation, labour market, privatisation, investments and foreign trade in Poland. Section two discusses the development of the SME sector in Poland. In section two, we focus on the share of SMEs in generating GDP and change in the number of active Polish SMEs. The role of Polish SMEs in foreign trade, the geographic structure of foreign trade, regional differentiation of foreign trade and SME imports and exports in different sectors of Polish economy will also be examined in chapter four.

Chapter five synthesises results of a sample survey. It describes competitive advantages of the small firm sector, employment and labour conditions, financial situation, and factors determining export behaviour of Polish small enterprises in transition economies. In this chapter, we also present some assessment of the knowledge Polish entrepreneurs have about European markets and their expectations after Poland's accession to European Union. This chapter draws on a survey of a sample of small enterprises operating in the province of Gdansk for the year 2003.

In chapter six, we review empirical literature on export performance of SMEs. On the basis of the theories on export performance and the results found in the previous chapters, we identify the factors that motivate SMEs to export. Some major factors to motivate export of SMEs are as follow:

- Profit,
- Tax incentive,
- Growth,

- Diversify sales base,
- Unexpected orders from foreign customers,
- Limited domestic market,
- Competitive domestic market conditions,
- Excess capacity,
- Educational and foreign travel experience.

In this chapter, we draw a schematic model of the research methodology on export propensity of SMEs. This research methodology deals with the questionnaire design, sample and data collection, model specification, data analysis and estimation techniques. The empirical part of this chapter draws on data gathered through a survey questionnaire in the year 2003 to a sample of 125 managers of registered exporting and non-exporting SMEs in Gdansk, involved in manufacturing, service and trading sectors. In this chapter, we identify the appropriate research strategy to answer our main research problem. We employ the Logit model to investigate the main objective of our research. Next, we present the empirical results on export propensity for Polish SMEs and draw conclusions.

In chapter seven, we deal with the export aversion of Polish SMEs. Similar to chapter six, we describe the export barriers and the reasons for not exporting. Some major reasons for not exporting of SMEs are as follow:

- Limited resources to support complexities of exporting,
- Lack of awareness of foreign market,
- Intensity of foreign competition,
- Transport and transaction costs,
- Perceived low profitability,
- Trade barriers,
- Lack of information about overseas markets,
- Lack of financial resources,

- Inadequate managerial skills,
- Lack of managerial commitment (or lack of interest).

We also build a research methodology on export aversion that represents the questionnaire design, data collection, model specification and data analysis. Like the previous chapter, our analysis is conducted on the basis of a Logit model. We use the survey data for the Gdansk region for the year 2003. Consequently, we present the empirical results on export aversion for Polish SMEs and draw conclusions.

Finally, in chapter eight we draw some conclusions. We recommend future policy implications for the growth and exports of Polish SMEs. Furthermore, we consider the limitations of our study and directions for future research.

Chapter 2: A Review of Literature on Definition of European SMEs

2.1. Introduction – The Role and Importance of SMEs in market economies

Small and medium-sized enterprises (SMEs) have contributed significantly to the successful development of many industrialised countries. These enterprises are receiving increased attention that acknowledges their economic function and their role in growth. For instance, SMEs account for more than 95% of businesses in the majority of OECD nations,¹ create a large part of GDP and represent over half of employment in the private sector (OECD, 2000). That small enterprises are important to the economy has been acknowledged in the UK for a long time (Stanworth and Gray, 1991): they account for over 90% of businesses and, by 1998, were estimated to be 3.7 million active enterprises. In the UK, 57% of Gross Domestic Product and 65% of employment are due to small and medium-sized enterprises (SMEs) (Madsing, 1997). They are especially significant in the North West of England and other regions that have experienced the decline of heavy industry and some growth in service industries.

SMEs have played the role of “a kind of experimental laboratory for a market economy” (see Braun, 1996, p.32). Their products and technologies have shown them to be innovative and they have demonstrated adaptability in connection with their capital resources, customers and employees. Where services or products are required close to customers, small firm have competitive advantages. In market economies, SMEs are also significant customers of, and subcontractor to, larger

¹ OECD - Organisation for Economic Co-operation and Development

businesses. Larger companies have carried out most of the organisational research in recent decades. This has been because, for instance, up to the 1970s, it was large, mass-production firms that made the chief contribution to economic development. “Downsizing” has been the fashion since then, augmenting the smaller company’s commercial role (Lebre La Rovere, 1998). It has long been assumed that large-firm organisational theories and models applied also to SMEs. Now, however it is understood more widely that significant differences lie between smaller and larger business (de Berranger and Tucker, 1999). This occurrence has been called by some economists a re-birth or re-emergence of small enterprises (Sengenberger, Loveman, Piore, 1996; Acs, 1996; Agmon and Drobnick, 1994). SMEs have re-emerged for reasons such as flexibility and innovative ability of the SMEs (see: Sengenberger, Loveman, Piore, 1996). Small enterprises undoubtedly retain their importance in free industrial societies (Curran et al., 1986). SMEs in the UK maintain a strong representation in practically every leading sector of the economy, and they still make available much employment in established industries such as building, as well as in newer enterprises in sectors such as services to science and the professions (Binks and Coyne, 1983). Of all companies in the European Community, over 95% are defined as ‘small’: firms with fewer than 100 employees are the rule rather than the exception. Several issues arise from the existence of the numerous small companies in almost every developed economy – especially, that of calculating exactly how many there are in any economy at a single moment. By choice, many small enterprises fail to register with state authorities. These authorities cannot register those firms that last only a short time. Also, many firms are too small for registration to be worth the effort. Calculating the extent of the small-enterprise sector therefore becomes difficult, as does its role in increasing employment and output, and estimating whether that has evolved over time, and comparing data with those of other countries. Thus, statistics about small enterprises include an element of speculation (Storey, 1994). The Bolton Report (1971) emphasises the importance

of examining the growth of new businesses when the contribution of small companies is being estimated.

SMEs' evolution and their effects, in transition economies, result from the planning and execution of privatisation, the availability of funding, and politico-economic stability. In Poland, for instance, the sector expanding most quickly is that of small enterprises – the most significant generator of work - which represents an ever-larger proportion of GNP. Blanchard (1997) states the case that transition is essentially a redirection of resources from the state to free enterprises, along with company reorganisation. Importantly, redirection of resources occurs through the funding of new enterprises. Their growth facilitates further resource transfer. If this transfer is impeded, then transition can be delayed or even undermined. Such delays can happen if small companies have to surmount high hurdles to obtain entry, though the majority of economies in transition have an excess of entry by new enterprises rather than a shortage. Obstacles to expansion of companies are a more significant difficulty in transition economies.

2.2. Discussion on defining SMEs

No unique, globally accepted definition of a small enterprise exists (Storey, 1994). A variety of definitions can in practice be used in various situations. Acs (1996, p.114) claims, 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”. The historical traditions of the various nations, with their differing institutions, determine the particular standards being applied to defining SMEs in each case. Standards for definition chiefly applied include: “craft” or “industrial” enterprises (Germany), independent or subordinate companies (Japan), ownership status (Hungary), legal standing (France), and so on. In the case of Polish SMEs,

the principle for structuring the SME sector in Poland is the annual average of employment level in the enterprise. According to the 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. Polish micro-enterprises were defined as those which employ 5 employees or fewer, until 1999. After that, Polish micro-enterprises were defined as those which employ 9 persons or fewer, were covered by a sample survey performed each year by the Polish Central Statistical Office (GUS). From May 2004, Poland adopted the changes of Business Activity Law which defined SMEs in accordance with Recommendation 2003/361/EC of the European Commission dated 6 May 2003 (see Section 2.2.5).

2.2.1. The UK’s Bolton Committee Report (1971)

One of the most widely quoted sources characterising small companies in the UK is the Bolton Committee’s Report on Small Firm (1971). The committee gave ‘economic’ and ‘statistical’ definitions. The economically small:

- took a small share of their market;
- were managed by part-owners or owners in person, rather than via a structure;
- were independent (not part of a larger firm).

The definition based on statistics was intended to satisfy three major requirements:

- to measure the scale of the small-enterprise sector and what it contributes to such aggregates as GDP, innovation, exports and employment;
- to assess over a period how far the sector has varied in its economic importance;
- to allow contributory comparisons to be made among countries.

Table 2.1 illustrates the definition employed by the Bolton Committee. It demonstrates how separate definitions of a small company are used in particular sectors and that judgemental considerations underlying the small-firm definitions vary according to the sector. According to Table 2.1, employment criterion determines the judgement of manufacturing, construction, mining and quarrying. The sales turnover criterion determines the judgement of the three service industries and the ownership criterion determines the judgement of catering.

Table 2.1: Definitions of a small enterprise by the Bolton Committee (1971)

Sector	Definition
Manufacturing	200 employees or less
Construction	25 employees or less
Mining and quarrying	25 employees or less
Retailing	Turnover of £50,000 or less
Miscellaneous	Turnover of £50,000 or less
Services	Turnover of £50,000 or less
Motor trades	Turnover of £100,000 or less
Wholesale trades	Turnover of £200,000 or less
Road transport	Five vehicles or less
Catering	All excluding multiples and brewery-managed houses

Source: Bolton (1971)

The criterion for road transport is the number of vehicles. Some criticisms have nevertheless been made of both kinds of definition laid down by the report, despite the prestige of the Bolton Committee in connection with the small-enterprise sector (Storey, 1994).

2.2.1.1. Criticisms of the Bolton Committee's 'Economic' Definition of Small Firms

The 'economic' definition of the committee, that a small firm is "managed by its owners or part-owners in a personalised way, and not through the medium of a formal management structure", cannot be squared with the 'statistical' definition of small manufacturing companies as possessing up to 200 employees (Storey, 1994). Middle strata in some smaller firms – foremen or supervisors and the like, who pass on the owner-manager's policy to other employees - are acknowledged by the Bolton Report, but it nevertheless claims that the owners take all the main decision and act as chief executives. Atkinson and Meager (1994), however, show that companies with as few as 10 or 20 workers appoint managers: thus, the owner in those cases is not alone in making management decisions (Storey, 1994). Firms with more than 100 employees start to build managerial teams with devolved powers. Companies of that size are not likely to be manageable in a "personalised way", which indicates that Bolton's 'economic' and 'statistical', definitions cannot be reconciled (Storey, 1994).

Second, Bolton claims that the small enterprise cannot influence its environment – especially, it cannot affect the selling price of a product by altering its output volume: the committee here shows that it recognises the theory of perfect competition (Storey, 1994). In fact, however, many small companies serve 'niche' markets – for example, providing a specialised product/service, perhaps in an isolated district, not subject, therefore, to competitive pressures. They can in consequence keep their prices and profits up higher than the sector average, at least in the short term. In various sectors of the US economy containing more niches small companies produce bigger profits than do large ones, reversing the

general rule of greater profitability for large enterprises (Bradburd and Ross, 1989).

2.2.1.2. Contrasts between small enterprises and large

A different 'economic' definition from Bolton is supplied by Wynarczyk et al. (1993). Following Penrose's (1959) comment that large and small enterprises are as contrasting as butterflies and caterpillar, they try to distinguish the features of small companies, apart from size, that are in contrast to those of larger firms. They state that small enterprises differ from large ones in three important respects: uncertainty, innovation and evolution.

They distinguish three aspects of uncertainty:

- The uncertainty (risk premium, competition, etc.) consequent on price-taking-the opposite of Bolton's description (which underlines the small market share);
- Small enterprises' restricted customer and product base, for example, in cases where small companies subcontract to larger ones, opening themselves to what Lyons and Bailey, (1993) call 'subcontractor vulnerability'. This results from specialised output (for special customers), the specific nature of decisions about investment, and the probable risk of customers withdrawing, as well as from being reliant on major customers. Among subcontractors in general, smaller companies see themselves as more precarious than larger enterprises and make decisions in accordance with that perception.
- Uncertainty resulting from the greater variety of objectives chosen by small-company owners, in contrast to large enterprises. Many small business owners, instead of maximising profits or sales, try just to receive

some minimal level of income (Storey, 1994). 'Performance monitoring' is virtually non-existent because small-firm owners do not need to report to shareholders. The owner of a small company is far closer to the business than a shareholder is to a large enterprise, so the owner's motivation becomes vital for good results. The documentation of large companies shows, in contrast the significance of control - how the owners control the managers to ensure their co-operation, and how senior managers control others reporting to them - a power relationship mainly avoided in smaller companies (Storey 1994), where a few people or just one person owns and controls.

Thus the important difference between large and small enterprises is the greater precariousness of the environment surrounding the small company, as well as the increased consistency of the small one's incentives and decisions.

Second, large enterprises and small vary as innovators. The part usually played by small enterprises in innovation is connected with their 'niche' status: "it is the ability of the small firm to provide something marginally different, in terms of product or service, which distinguishes it from the more standardised product or service provided by the larger firm" (Storey, 1994, p.11-12). Small companies are often considered to have a weaker link with traditional products and procedures, and so are more likely to pioneer novel ideas (Pavitt et al., 1987).

The third dimension of contrast between small enterprises and large is their role in evolution. Smaller enterprises are more likely to evolve than larger ones. Theories of management such as Scott and Bruce (1987) interpret the transition from small firm to large as change by multiple stages, whereas others see the evolution as comprising one step. Scott and Bruce (1987) also point to stages affecting the purpose and mode of management in addition to the enterprise's structure. In other words, the structures of small companies and their organisation are more likely to

be undergoing change, from one stage to the next than is the experience of larger enterprises. Therefore, small companies differ from larger ones, in essence, with regard to uncertainty, innovation and evolution of the enterprises. These three dimension ought to be studied as a 'bottom-up' method of analysing small enterprises instead of assuming that a small company is a 'scaled down' model of a larger company (Wynarczyk et al., 1993).

2.2.1.3. Criticisms of the Bolton Committee's 'Statistical' Definition of Small Firms

The 'statistical' definition of small companies made by the Bolton Committee may be criticised in five ways:

- Employees, turnover, ownership and assets are all used as separate criteria for 'smallness'- that is it puts forward neither a single definition nor even just one criterion.
- The definitions are too complicated to allow comparison over a period or between nations: two separate upper limits for employees and three distinct upper limits of turnover are used for the various sectors.
- Using monetary units as the basis for statistical definitions also makes it very hard to compare like with like over time, because suitable indices need to be devised to take account of changes in prices. Fluctuations in currency values also make it more difficult to compare two or more countries.
- Basing criteria on employees causes difficulties in comparing large and small companies over a period: output per head in constant prices varies according to the size of the enterprise (Dunne and Hughes 1989).
- Bolton implies that the small-enterprise sector is homogeneous. The text of its report states that it is not homogeneity, yet its sole definition of the smaller company implies that the opposite is the case.

2.2.2. The European Commission (EC) – Definitions of Small Firms

In a single market with no internal frontiers, it is important that measures in favour of SMEs are based on a common definition to improve their consistency and effectiveness, and to limit distortions of competition. This is all the more necessary given the wide communication between national and EU measures to help SMEs in areas such as regional development and research funding. In 1996, a recommendation establishing a first common SME definition was adopted by the Commission.² This definition has been widely applied throughout the European Union. On 6 May 2003, the Commission adopted a new recommendation³ in order to take account of economic developments since 1996. It came into force on 1 January 2005 and will apply to all the policies, programmes and measures that the Commission operates for SMEs. For Member States, use of the definition is voluntary, but the Commission is inviting them, together with the European Investment Bank (EIB) and the European Investment Fund (EIF) to apply it as widely as possible. The changes reflect general economic developments since 1996, and a growing awareness of the specific hurdles confronting SMEs. The new definition is more suited to the different categories of SMEs and takes better account of the various types of relationships between enterprises. According to the EC, the new definition will facilitate equity financing for SMEs by granting favourable treatment to regional funds, venture capital companies and business angels. Similar exemptions will be introduced for investment in spin-offs by

² Commission Recommendation 96/280/EC of 3 April 1996 concerning the definition of small and medium-sized enterprises (Text with EEA relevance), Official Journal L 107, p. 4-9, of 30 April 1996.

³ Commission Recommendation 2003/361/EC of 6 May 2003 concerning the definition of micro, small and medium-sized enterprises (Text with EEA relevance), Official Journal L 124, p. 36-41, of 20 May 2003.

universities and research institutes to promote investment in research and innovation.

Table 2.2: Definition of SMEs – the European Commission

EC Definition of SMEs (1996)			
Criterion	Micro	Small	Medium
Max. number of employees	<10	≤50	≤250
Max. annual turnover	-	≤7 million euros	≤40 million euros
Max. annual balance sheet total	-	≤5 million euros	≤27 million euros
Max. % owned by one, or jointly by several, enterprise(s) not satisfying the same criteria (independence criteria)	-	25%	25%
EC Definition of SMEs (2003)			
Max. number of employees	<10	≤ 50	≤250
Max. annual turnover	≤2 million euros	≤10 million euros	≤50 million euros
Max. annual balance sheet total	≤2 million euros	≤10 million euros	≤43 million euros

Source: Drawn up by authors. Adapted from Official EC Journal no. L 107, 1996; L 124, 2003.

With regard to the new definition of SMEs, the EC has redefined micro and small and medium sized enterprises (SMEs) to promote growth and competition in the Community. The staff count remains the same, but the financial ceiling for qualification has risen dramatically. A micro enterprise can still have up to 10 staff, a small one up to 50 staff, while a medium enterprise must have fewer than 250 members of staff (Table 2.2). The financial qualifications relate to both

turnover and balance sheet totals. A micro enterprise, which previously had no financial ceiling to comply with, is now limited to a turnover or balance sheet total of 2 million euros. A small enterprise, which formerly had ceilings of a 7 million euros turnover or a 5 million euros balance sheet total, now has a ceiling of 10 million euros for both turnover and balance sheet. Medium sized enterprises see their ceilings lift from 40 million euros turnover to 50 million euros and from 27 million euros to 43 million euros in their balance sheets.

2.2.3. The UK’s Department of Trade and Industry (DTI) – Definitions of SMEs

The UK’s Department of Trade and Industry (DTI) defines enterprise size by the number of employees each company comprises, a formula that is often employed by researchers in universities and elsewhere. Section 247 of the Companies Act 1985 currently defines small and medium-sized companies as ones that meet 2 or more of the following requirements in their first financial year, or in the case of a subsequent year, in that year and the preceding year (Table 2.3)

Table 2.3: DTI’s Definition of SMEs in the 1985 Act

Criterion	Small	Medium
Max. number of employees	≤50	≤250
Max. annual turnover	≤2.8 million GBP	≤11.2 million GBP
Max. annual balance sheet total	≤1.4 million GBP	≤5.6 million GBP

Source: DTI (2000a)

On 11 July 2003 the Department announced the publication of a consultation document containing proposals to increase the SME accounting threshold to the maximum permitted under EU law (Table 2.4).

Table 2.4: DTI’s Definition of SMEs under EU Law

Criterion	Small	Medium
Max. number of employees	≤50	≤250
Max. annual turnover	≤5.6 million GBP	≤22.8 million GBP
Max. annual balance sheet total	≤2.8 million GBP	≤11.4 million GBP

Source: DTI (2004)

The DTI also uses the following definitions, for statistical purposes:

- micro-enterprise: 0-9 employees
- small enterprise: 0-49 employees (includes micro)
- medium enterprise: 50-249 employees
- large enterprise: over 250 employees.

According to The DTI’s statistical information concerning SMEs, there is no single definition of a small firm because of the wide diversity of businesses. In practice, however, schemes that are nominally aimed at small enterprises follow various working definitions according to their particular objectives (DTI, 2004).

2.2.4. ESRC (UK) Small Business Initiative Definitions of the Small Business ⁴

As demonstrated, there are a number of problems with the official definitions of a small firm. Academic researchers have attempted various ways to resolve these difficulties, as explored below. However, criticism is also levelled at these attempts in turn, with such as Storey (1994) pointing out that the strategy employed by small business researchers when faced with the difficulty of definition has been to tailor or adjust the definition according to their particular topic of research. Working on small enterprises in the service sector, Curran, Blackburn and Woods (1991) conclude from their examination of small firms that using only one size criterion results in a collection of ‘small’ enterprises that is too heterogeneous and in the inclusion of owner-manager who share but few common problems and dissimilar business relations. Curran *et al* (1991) also argue that ‘smallness’ is a multi-dimensional concept which is closely related with legal independence, type of activity, organisational patterns and economic activities. Appendix 3 shows the various operational definitions of a small enterprise that were used by researchers on the ESRC Small Business Initiative. The table demonstrates that researchers must, in practice, tailor their definitions of a small enterprise in accordance with the particular groups of small companies in which they are interested. Influences on the inclusion of companies are the sort of the premises in which they operate their employing certain forms of finance, or their legal status. The table also clearly shows that widely various information-source are consulted in order to identify individual small enterprises.

⁴ The Economic and Social Research Council (ESRC)

2.2.5. Definitions of SMEs in Poland

On the 19th of November 1999, Poland adopted the Economic Activity Law (Journal of Laws no. 101, item 1178), which defined SMEs in accordance with Recommendation 96/280/EC of the European Commission dated 3 April 1996. According to this legislation, the number of employees in a small enterprise should be less than 50. The net revenues on the sale of merchandise, goods and services, and financial operations should not exceed the Polish zloty equivalent of EURO 7 million or the sum of the assets in the balance sheet prepared at the close of the previous financial year should not exceed the Polish zloty equivalent of EURO 5 million. Furthermore, an entrepreneur shall not however be categorised as small in those instances in which entrepreneurs other than small exercise:

- more than 25% of the inputs, interest or shares;
- rights to more than 25% of the profits;
- more than 25% of the votes at an ordinary assembly of shareholders.

The number of employees in medium enterprise ranges from 50 to 249 employees. The net revenues on the sale of merchandise, goods and services and financial operations in the preceding financial year should not exceed the Polish zloty equivalent of EURO 40 million or the sum of the assets in the balance sheet prepared at the close of the previous financial year should not exceed the Polish zloty equivalent of EURO 27 million. Additionally, an entrepreneur shall not however be categorised as a medium-sized entrepreneur in those instances in which entrepreneurs other than medium-sized exercise:

- more than 25% of the inputs, interest or shares;
- rights to more than 25% of the profits;
- more than 25% of the votes at an ordinary assembly of shareholders.

Polish micro-enterprises were defined as those which employ 5 employees or less, until 1999. After that, Polish micro-enterprises were defined as those which

employ 9 persons or less, were covered by a sample survey performed each year by the Polish Central Statistical Office. 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).

The SME sector is of great significance in Poland for the development of enterprises operating according to market economy rules. In view of this fact, the government's intention is to support the sector and to create conditions facilitating its proper functioning. According to the Recommendation 96/280/EC of the European Commission dated 3 April 1996, the definition of Polish SME will be based on the existing EU definition. However, Poland negotiated with the EU the right to apply specific systemic and institutional arrangements towards SMEs. Until 2003, therefore, the Polish government used different definitions of SMEs in order to implement specific schemes and programmes. These definitions depended on current economic trends, specific needs of various groups of SMEs and the type of assistance. Polish Banks, guarantee funds and foreign assistance programmes had established their own eligibility criteria that might be regarded as their definitions of SME. For example, Bank Gospodarstwa Krajowego offered credit guarantees to companies employing up to 250 workers and having an annual income not higher than 20 million euros. Venture Capital Fund CARESBAC⁵ defined its clients as firms employing 15-100 workers with an annual turnover lower than 1.5 million euros. As a result, until 2003, there was no single definition of a Polish SME, and Polish institutions that support SMEs used different definitions of SME for different purposes.

⁵ The CARE Small Business Assistance Corporation (CARESBAC)

With regard to our research, in order to develop a questionnaire for the empirical study on export behaviour of Polish SMEs for the year 2003, we use the definition of Polish SMEs based on Polish Economic Activity Law, which defined SMEs in accordance with Recommendation 96/280/EC of the European Commission. In relation to this legislation, the number of employees in a small enterprise is less than 50 but greater than 10, whose turnover does not exceed 7 million euros; and in medium-sized one ranges from 50 to 249 employees, whose turnover does not exceed 40 million euros. Apart from SMEs, there exist smaller units, called micro-enterprises which employ less than 10 employees.

Under existing EU definition of SMEs, on May 2004, Poland adopted the changes of Economic Activity Law which defined SMEs in accordance with Recommendation 2003/361/EC of the European Commission dated 6 May 2003. Thus, according to the definition contained in the Business Activity Law with subsequent amendments, a small enterprise is an entrepreneur who, during the previous fiscal year:

- employed the average annual number of employees not exceeding 50 persons, and
- achieved a net financial income on the sale of his goods, products and services and on financial operations, not higher than the Polish zloty equivalent of 10 million euros; or whose total value of assets contained in the balance sheet at the end of the previous fiscal year did not exceed the Polish zloty equivalent of 10 million euros.

A medium-sized enterprise is an entrepreneur who is not a small entrepreneur and who during the previous fiscal year:

- employed the average annual number of employees not smaller than 250 persons, and
- achieved a net financial income on the sale of his goods, products and services and on financial operations, not higher than the Polish zloty

equivalent of 50 million euros; or whose total value of assets contained in the balance sheet at the end of the previous fiscal year did not exceed the Polish zloty equivalent of 43 million euros.

In the case of an entrepreneur operating for a period shorter than a year, his expected annual net revenue on the sale of goods, products and services and on financial operations, as well the average annual employment level, is estimated on the basis of data available for the most recent period, documented by the entrepreneur.

2.3. Summary: Implications for Researchers on Transition Economies (Poland)

In the light of our investigation mentioned above, we argue that in spite of the importance that the government has assigned to the small firm sector as a source of economic development, the statistics set out above show that only rough estimates can be made of the total number of small enterprises in the UK. Several varied sources are employed to gather the data, yet there is no single source of estimates of the business population of the UK. Despite there being no uniform satisfactory definition of a SME, they constitute at least 95% of enterprises in the European Community. The definitions used by Bolton (1971) can be seen to be no longer satisfactory and have been effectively superseded by the EC definitions of a SME. The EC definition is valuable in that it uses only one criterion – employment – but can be subdivided into three categories – micro, small and medium sized enterprises. The EC has defined micro and small and medium sized enterprises (SMEs) to promote growth and competition in the Community. A micro enterprise can have up to 10 staff, a small one up to 50 staff, while a medium enterprise must have fewer than 250 staff. The financial qualifications relate to both turnover and balance sheet totals. According to the EC's definition of SMEs, the number of employees in a small enterprise is less than 50, whose turnover or balance sheet does not exceed 10 million euros; and in medium-sized one ranges from 50 to 249 employees, whose turnover does not exceed 50 million euros or their balance sheet does not exceed 43 million euros. The debate concerning definitions continues, but what are the implications for researchers on transition economies such as Poland? Definitions that are broadly acceptable and consistent are needed for international and time series comparisons, yet small enterprise researchers need not be restricted by these parameters. The heterogeneity of the small-firm sector means that it is often necessary to modify these definitions according to the particular sectoral,

geographic or other contexts in which the small firm is being examined. The previous sections demonstrate that, researchers are likely to have to continue using their own definitions of small enterprises that are appropriate to their particular target group. The factors that influence the inclusion of the firms are the nature of the premises in which they operate, or their use of certain types of finance, or their legal status. In order to develop a questionnaire for our empirical study on export behaviour of Polish SMEs, we use the definition of Polish SMEs based on Polish Economic Activity Law, which defined SMEs in accordance with Recommendation 96/280/EC of the European Commission. In relation to this legislation act, the number of employees in a small enterprise is less than 50, whose turnover does not exceed the Polish zloty equivalent of 7 million euros; and in medium-sized one ranges from 50 to 249 employees, whose turnover does not exceed the Polish zloty equivalent of 40 million euros.

Chapter 3: Methodological Survey of Growth and Survival of SMEs in the UK and Western Countries – Lessons for Poland

3.1. Introduction

Small and medium-sized enterprises (SMEs) make a significant contribution to development and growth of the economy. The SMEs also play a special part in generating employment within the European Union (EU). Regional and country-wide economic growth is clearly greatly assisted in transition and developing economies by SMEs. Makers of economic policy in developing nations lay stress on small and medium enterprises because SMEs could be capital intensive and increase employment opportunities; they are also more efficient than large industries. The latter widen income gaps and increase concentration of industry (Kitching, 1982). In contrast, the rates of growth and death of small enterprises are of special concern to policy makers in developed nations because they mirror changes that alter industry's concentration and market power (Frank, 1989). Hart and Prais (1956), in their empirical study demonstrate the uniformity of enterprises' growth-rate averages and of their variance across businesses of all sizes. The supposed Gibrat's Law sets out this relationship. Mansfield (1962), Jovanovic (1982), Dunne and Hughes (1994) and Evans (1987a, 1987b) are some who have attempted, following Hart and Prais' study, to test Gibrat's Law by both theoretical and empirical methods. Discovering correlations between the size of firms and their rate of growth and between that rate and the ages of enterprises constitute the purpose of these investigations. Neither the empirical nor the theoretical studies point to an applicable law: their results vary according to where and when the comparisons were made. Growth rates and the size of enterprises have a positive relationship, according to some models, but a negative one with some other models (Scherer, 1980); yet others imply that the relationship is

nonlinear (Nelson and Winter, 1982). Singh et al. (1975) and Prais (1976) both demonstrate that growth rates and size are related positively. By way of contrast, Dunne and Hughes (1994) and Evans (1987a, 1987b), in empirical research on data after 1979, offer proof that the correlation between growth and size is negative. Financial structure and location are two of various factors investigation of which has been given a higher priority in more recent years. These factors could influence small and medium-sized firms.

The main objective of this chapter is to survey literature, both empirical and theoretical, about the survival and growth of firms in the UK. This literature survey will lead to frame the possible methodologies of growth and development of Polish SMEs, and to contribute to a better understanding of the factors influencing the survival and growth of Polish SMEs. We shall also explain several methodologies that may be used to judge ways in which size and growth of enterprises are related. The chapter is divided into five sections. Section 3.2 reviews the current literature about the factors influencing the survival and growth of SMEs in the UK and Western countries. This section also investigates the effect of the firm's location on growth, financial structure and survival rates of SMEs. Described in Section 3.3 are the methodologies that may be used to judge correlations between growth and size of SMEs and between their survival and their size. Parametric, nonparametric and semi-parametric methods are covered in this exposition. The semi-parametric methods such as Logit, Probit analysis have also been used by researchers to identify the factors influencing the survival, growth and development of Polish SMEs (Ghatak, Manolas, Rontos, and Vavouras, 2002; Blawat, Dominiak and Ossowski, 2001; Ghatak, Mulhern and Stewart, 2003; Ghatak and Siddiki, 2000). Section 3.4 presents some empirical results on growth and development of SMEs in the UK and Poland. Section 3.5 concludes.

3.2. Literature Survey

3.2.1. Theoretical Background

Standard textbooks (such as Scherer and Ross, 1990) and wide surveys such as Trau (1996), Sutton (1997), Geroski (1999) and Hart (2000) survey the gigantic literature on the theory of the growth of businesses. Model of the size of businesses hypothesise that businesses maximizing their profits can reach an optimal size if their conduct is rational. The market structure in which the business works determines the size. That structure could be one of perfect competition or one of imperfect competition (monopoly, oligopoly, or monopolistic competition). Business with a U-shaped average cost curve will grow in perfectly competitive markets until they reach the size equivalent to the lowest point on the curve; they have no incentive to grow bigger than this. The sizes of perfectly competitive businesses will thus be very narrowly dispersed, with any variation attributable to disequilibrium or error of management, and this dispersion will lessen over time as businesses converge towards the equilibrium size. This theory leads to a major conclusion that small enterprises grow more quickly than larger ones until they arrive at 'minimum efficient scale' (MES) of production. If businesses possess market power (that is, there is imperfect competition), their optimal size may vary from this optimal-cost situation. A downward-sloping demand curve for its products is what faces typical businesses. A business's expansion is not limited in fact by this restriction, since it can always bring forward a new product. This diversification of products thus provides another influence on enterprise growth. Technical, pecuniary, external, and dynamic are four sorts of economies of scale identified by economists. The process of growth of businesses, and what causes it,

are influenced by all four. Textbooks on economics make additional distinctions among the following three cases of *technical economies of scale*:

- *Constant returns to scale*. In this case the business has an L-shaped average cost curve showing that it deals with constant average costs. As a result, enterprises varying greatly in size above the minimum efficient scale are to be expected. They all create output at close to the same average cost and so achieve returns proportionate to their increasing scale. Demand is the essential determinant of the limits on the growth of businesses in this environment of constant returns.
- *Increasing returns to scale*. Returns to scale increase where average costs continue to fall beyond the point of minimum efficient scale. At the extreme only one enterprise in the industry would survive. All possible rivals would be undercut by its greater scale. In practice this has been noticed and is frequently much emphasised in explanation of corporate conduct (see Chandler, 1990).
- *Decreasing returns to scale*. A third possible situation has an increase in average costs further than the point of minimum efficient scale. In practice enterprises would not add to all inputs unless they expected to create a commensurate addition to output, so the case is unlikely, in fact, to be encountered.

These models all make the assumption that proportions of influences stay the same for all output, while in reality a fixed factor of production might exist that cannot be increased beyond a certain proportion of output. In reality a number of such fixed inputs have been noticed: entrepreneurship and management, indivisible capital equipment, and others. Small firms are unable to buy the expensive machinery that would enable them to expand and recruit additional workers. Such equipment can be afforded by only big enterprises that can capitalise on larger plants' ability to economise on costs. The advantages that large businesses have should result in their faster growth according to the theory of economies of scale.

In fact, many examples of *pecuniary economies of scale* are to be found. Obtaining advantageous financial terms from lenders is something that large businesses should be better able than small ones to do. They could also be more effective at lobbying politicians to secure advantage. Smaller enterprises' worse chances of obtaining capital and political favours can restrict their expansion.

External economies of scale are not linked with size of business because they refer to a market or industry instead of a single company. When availability of inputs differs among two or more industries, these economies occur. This can include availability of opportunities in technology. Quicker growth can be achieved by companies in industries having greater access to these production inputs. A successful industry, for instance, could initiate a tradition of highly trained labour that can be shared by businesses. Technical schools and training centres are set up. These overcome the constraints on growth imposed by famines of skills. Science and technology is another field yielding examples.

The "learning by doing" process is an apt instance of *dynamic economies of scale*. Jovanovic (1982) has based a life-cycle model on "learning by doing". The model demonstrates Gibrat's Law is true for the mature businesses or for businesses that commenced contemporaneously. As the enterprise grows older, expansion declines when business size is held constant, according to this models' prediction. This model also hypothesises that inefficient management is deleterious to output. In addition, efficiency and maturity of managers in small businesses are discovered to be less than those in the larger diversified companies in consequence of the 'learning by doing effects'. Furthermore, the writer states that the variance in growth rates lessens with enterprise size and age. The larger diversified companies are less unstable than the smaller ones. Actually, the variance of error terms increases with sample size as younger businesses, which are relatively unstable, are included in the sample at the proportionately higher rate than that of

large enterprises, which are comparatively stable. In consequence, the estimated coefficient, β , would be biased owing to the existence of heteroscedasticity in the error terms. Mansfield's (1962) model also demonstrates that the variance of growth rates decreases with business size and age and larger diversified companies have growth rates more stable than small ones.

Lucas (1978) takes as granted a convex adjustment cost function, i.e. diseconomies of scale that correlate with investment and demonstrates that if each business chooses inputs optimally, the current worth of all companies in the industry will not be linked with capital stock distributed across them. It follows that no incentive would exist to change companies' size, irrespective of initial asset distribution (Lucas, 1978, p. 327). On the other hand, on the assumption that scale economies prevail, companies will increase investment and output continuously, and as a result there will not be an equilibrium solution. Additionally, the current value of all businesses in the industry will positively depend on capital stock and companies will be inclined to merge. In this way, in his model of size distribution, Lucas (1978) takes as a given that Gibrat's Law holds, in order to prove that equilibrium exists and is unique. Lucas's model of capital adjustment suggests that the time series of employment, capital and output obeys Gibrat's Law. In contrast, Schere (1980) and Schmallensee (1989) put the case that size and growth correlate negatively, while Nelson and Winter (1982) indicate a nonlinear relationship between enterprise size and growth.

Degrees of success in all business ventures, including small enterprises, are generally judged by growth of revenue, of turnover, or of the size of the workforce (Berkham et al., 1996; Holmes and Zimmer, 1994). Small-enterprise expansion is equated by Acs and Audretsch (1990) with the mean of sales increases. The influences on expansion of enterprises have been assessed by numerous empirical studies. Scott and Bruce (1987) have put forward a five-stage model of SME

expansion: start-up, survival, growth, take-off and maturity. The third and fourth stages are the crucial ones. In the third stage, the firm is generally profitable, is large enough and has adequate product penetration. By stage four, the enterprise may or may not grow into a large one.

The view taken by the owner-manager is the most significant of achieved expansion, according to Brockhaus and Horwitz (1985). Anxiety about losing personal direction of the enterprise or about becoming indebted or resisting handing over executive accountability for the firm to professional managers' causes many business people to opt for non-growth. Meticulous planning is needed for expansion plans that work, requiring resources that most SMEs lack. Barriers to expansion have been: limited use of sources of finance, of information and of technology. Jones (1992) finds that a shortage of skills in technology and management, insufficient flexibility in adaptation by the organisation and inability to obtain or exploit 'new' technology are also handicaps to expansion and obstacles to entry. If SMEs achieved strategic partnerships with other SMEs or even businesses they would improve their position and overcome the shortage of resources that most of them suffer. The building of networks able to provide economies of scale and increased market penetration is a necessity, according to Malecki and Tootle (1996). Vital ingredient for success, especially for manufacturing SMEs, is the nurturing of relationship with buyers that offer mutual benefits. Research into the procedures for financial control carried out by quickly growing small enterprises in the UK was done by Hutchinson and Ray (1986). Their work demonstrated that expansion leads to low liquidity and high gearing. Increased financial control is a crucial requirement, they explain, so that the hidden traps of finance can be evaded and the economic resources of the business can be employed with efficiency and effectiveness. There is a correlation between the requirement for a big investment fund that is linked with restricted access to external capital markets for equity and debt money and the low liquidity of little

enterprises that are expanding rapidly. Gupta (1969) agrees and also reports a link between expansion and high total assets turnover and fixed assets turnover. In addition, corporations that are expanding are liable to have large bank loans and to take advantage of trade credit much more. Profitability is not linked with sales growth, according to Gupta's research, because some enterprises can sustain large profit even with a falling rate of growth, in consequence an oligopolistic market structure or barriers to entry. In conclusion, because growth of very small businesses is calculated at a lower base, they may register very high growth rates.

Using a regression analysis, Acs and Audretsch (1990) applied tests to growth variables for SMEs in the U.S. manufacturing sector. According to their results, there is an inverse relationship between the growth of small enterprises and the intensity of industry capital and advertising, and the proportion of union membership. Conversely, the growth correlates positively with the degree of human capital and the extent of industrial innovation. Long reviews of previous research trying to analyse the causes of SME expansion are supplied by O'Farrell and Hitchens (1988), Gibb and Davies (1990) and Hall (1995).

The coincidence of higher rates of growth and partnerships with other enterprises was also a finding by Almus and Nerlinger (1999). Growth rates may be altered by mergers and acquisitions because these alter the accessibility of resources and this encourages or discourages expansion. The influences for speedy growth in European SMEs reported by several European pieces of empirical research are: strong orientation towards marketing, a stress on quality and innovation, flexible methods in production, a bias towards implementing strategic thinking and planning mechanisms, reinvestment of profits in the business, a complex organisation, advanced educational qualifications, a style that is participative and devolved, managers and entrepreneurs undertaking continual training, and making use of more external services offering advice and information. Some empirical

research by Hart and Prais (1956) breaks down the size-rate-of-growth connection in a tabulated form of summary statistics from one period to another called a 'transition matrix'. This matrix demonstrates the likeness of large, medium and small business regarding the frequency distribution of their growth rates. Their conclusion is that rates of growth of enterprises follow a stochastic process with the same means and standard deviations.

In trying to analyse the conclusions drawn by Hart and Prais (1956), Simon and Bonini (1958) contend that the rates of growth of firms of every size are not linked with their size (Gibrat's Law, so-called, or the law of proportionate effects). In other words, it is as probable that a big business, chosen by chance, will expand as it is for a little business chosen in the same way. The two arguments that follow support that hypothesis to a great extent. The prediction that, in theory, long-run cost curves of business are U-shaped forms the first argument. That is to say: businesses have, in the long-run, the same minimum costs with varying output and undergo constant returns to scale. The foundation of the second argument consists of empirical results that supply a J-shaped cost curve (Brian, 1956) showing that unit costs rise speedily until some enterprises reach a critical size. There is only a small variation of unit costs that exceed the critical amount with size of enterprise. So, over the crucial size of business, average costs remain approximately the same. A highly distorted steady state distribution is the result of including law of proportionate effects in the stochastic process of growth rates of businesses. This distortion could be normalised using log normal or Yule distribution without changing the chief point of the law of proportionate effects (Simon et al., 1958). The growth rates only of businesses that are in the stochastic process at the start of the time interval are considered by the lognormal distribution, while the Yule distribution is provided by the inclusion in the stochastic process of new businesses that have constant growth rates. Here follows an explanation of the transformation of the stochastic process of businesses to explain Gibrat's Law:

$$\log S_t = \alpha + \beta \log S_{t-1} + e_{it} \quad \text{Equation 3.1}$$

where S_t and S_{t-1} are the size of firms at time t and $(t-1)$,⁶ respectively. According to the Gibrat's Law, $\beta = 1$, i.e. present growth rates of businesses are independent of past growth history and opening size. That is, opening size and past growth history do not have any influence on the current size and rate of growth. Put another way: the smaller businesses grow faster than the larger ones if $\beta < 1$, vice versa if $\beta > 1$ (Simon et al., 1958; Dunne et al., 1994). Here follows an explanation of the Yule distribution of the stochastic process of growth of businesses (Simon et al., 1958): Assume that:

- The probability distribution is the same for every size of firms that is greater than a critical value S_m ;
- The new-born smallest businesses have a constant growth rate. Let $f(s)ds$ be the probability density of firms of sizes.

The Yule distribution can be written as:

$$f(s) = KB(s, \rho + 1) \quad \text{Equation 3.2}$$

where, $B(s, \rho + 1)$ is the beta function of $(\rho + 1)$, K is a normalizing constant and ρ is a parameter defined as

$$\rho = \frac{1}{1 - g/G} = \frac{1}{1 - \alpha}$$

where G is the net growth of assets of all businesses in an industry during the sample period and g is the part of net growth attributable to new businesses - businesses that have achieved the minimum size during this period, and $\alpha = g/G$. If the contribution of new businesses to the growth process, which is assumed to be a constant, approaches zero, then ρ is equal to 1. Thus, ρ takes a value of 1 if new-born small businesses have no contribution to the growth process. Besides, a

⁶ t and $(t-1)$ are assumed to be the end and opening /starting periods, respectively, in the sample

slow change in a can modify the steady-state Yule distribution only slightly. Simon et al. (1958) use the best-fitted straight lines making use of the logarithm of the cumulative distributions for the British and American data. They obtain $\rho=1.11$ and $\rho=1.23$ for the British and American data, respectively. The corresponding calculated values for α are 9.9 and 18.7, respectively. These results imply that 18.7% growth in assets of American companies was contributed by new firms and this figure was 9.9 in the British case. These values are compared with American data for 1954-60 with $\alpha=21.2$ which gives $\rho=1.27$ which is quite similar to the value $\alpha=18.7$ and $\rho=1.23$ calculated from the straight line. It can therefore be said that the Yule distribution and log normal regression line give quite similar results. Several empirical and theoretical studies have followed Hart and Prais (1956) and Simon and Bonini (1958). They have attempted to test Gibrat's Law. The findings are in general disparate. Only a small minority of economists argue on behalf of Gibrat's Law. Some also include other influences, e.g. age, to make clear the link between size and growth (Jovanovic, 1982; Mansfield, 1962).

Perren (1999), in surveying the literature of small business, extracts 16 independent factors that may influence growth of small enterprises (see Table 3.1). For the owner, the factors include wanting to be one's own boss and to be successful, taking risks deliberately, being able to innovate, and having transferable personal capital, primary skills and support skills, as well as a transferable network of contacts. Important as well are family and friends who invest gifted employees or partner, and active professional advisers. The role of debtors and creditors, societal and external influences, product sector and market segments, and competitive dynamics are some more independent factors. Also are the state of the economy and the government's management of it.

**Table 3.1: Speculative framework of independent factors and growth drivers
for small firm**

INDEPENDENT FACTORS		Interim growth drivers	DEPENDENT FACTOR
<u>Desire to be one's own boss</u> (e.g. Brockhaus and Horwitz, 1986; Caird, 1990; Chell <i>et al.</i> , 1991)			
<u>Desire to succeed</u> (e.g. McClland, 1961; Chell <i>et al.</i> , 1991)			
<u>Active risk taker</u> (e.g. McClland, 1961; Timmons <i>et al.</i> , 1985; Chell <i>et al.</i> , 1991)			
<u>Innovation</u> , (e.g. Schumpeter, 1934; Rothwell and Zegveld, 1982)			
<u>Transferable personal capital</u> (e.g. Bolton, 1971; Mason and Harrison, 1994)			
<u>Transferable primary skills</u> , (e.g. Stanworth and Gray 1991)		Owner's growth motivation (e.g. Stanworth and Curran, 1986)	
<u>Transferable support skills</u> , (e.g. Hofer and Charan, 1984)			
<u>Transferable network of contacts</u> (e.g. Johansson, 1986; Blackburn <i>et al.</i> , 1990)		Expertise in managing growth (e.g. Penrose, 1959; Williamson, 1967)	
<u>Family and 'investing' friends</u> (e.g. Gill, 1985)	? →		? → <u>Growth of firm</u>
<u>Key employees or partner</u> , (e.g. Bosworth and Jacobs, 1989)		Resource access (e.g. Bolton, 1971; Mason and Harrison, 1994)	
<u>Active professional advisers</u> (e.g. Robertson, 1987)			
<u>Debtors and creditors</u> (e.g. Slatter, 1992)		<u>Demand for products or services</u> (e.g. Hassid, 1977; Birley and Westhead, 1990)	
<u>Societal and outer factors</u> (e.g. Andrews, 1980; Fahey and Narayanan, 1986)			
<u>State of the economy and the government's management of the economy</u> (e.g. Keeble <i>et al.</i> , 1993; Lean and Chaston, 1995)			
<u>Product sector and market segments</u> (e.g. Porter, 1980; Joyce <i>et al.</i> , 1990)			
<u>Competitive dynamics</u> (e.g. Porter, 1980; Cambridge Small Business Research Centre, 1992)			

Source : Adapted from Perren (1999)

Each of these influences may interact with four intervening drivers of growth (Sekaran, 1992) which are the motivation for the owner's growth, expertise in managing growth, access to resources and the demand for services and products. Perren (1999), however, argues that it is possible only to speculate from the existing literature about how important are these influences and about the nature of the interaction between the independent influences and interim drivers of growth.

3.2.2. Barriers to SME Growth

Significant real barriers to both business entry and growth exist in most market economies, except the most flexible and deregulated. The 'barriers to growth' literature adopts a different perspective in discussing the question of growth in small enterprises. This perspective assumes that a proportion of small enterprises wishes to grow but is prevented from doing so by 'barriers'. The success or failure of new business often depends on surmounting a series of possible barriers, such as obtaining financial backing, guidance that is adequate and appropriate, and training (Fielden et al, 2000). In the UK for example, the importance of this issue has been emphasised in a report by the Federation of Small Businesses entitled "Barriers to Survival and Growth in UK Small Firms" (FSB, 2000). Transition economies might be envisaged as likely to face barriers to growth of SMEs even more severe. Of special significance in this context is the set of barriers that hinder the growth of potentially fast-growing-firms ("gazelles") which have the greatest capacity to generate employment and to innovate and introduce new technologies. The barriers are likely to be both internal and external to the business. These barriers to growth inhibit rapid redeployment of labour from old unproductive large state enterprises to the newly emerging small-scale private sector. As a result, growth could be below the economy's potential, and the level of unemployment consequently higher than it need be. In the worst case barriers to

growth can block the transition to a competitive market economy altogether. Not all entrepreneurs, however, seek growth, and growth is not a necessary or even desirable objective for all SMEs. First, the SME owners might have objectives other than the maximisation of profit. Second, if they are maximising profit, they may already have reached the minimum efficient scale of business activity (small retail shops, repair shops and so on). Therefore on its own a lack of growth does not necessarily indicate the presence of important barriers to growth. Implied, therefore, is the requirement for a benchmark model of growth against which the impact of perceived barriers to growth can be identified and measured.

The literature on barriers to growth may be summarised under three headings: management and motivation; the sources; and market opportunities and structure (Barber et al., 1989). The extent to which the basic barriers are 'internal' to the business is one issue to emerge - barriers such as bad morale – as opposed to being 'external' to the enterprise – such as shortages of finance or skilled labour or sentence of government controls (Storey, 1994). We can also distinguish between institutional barriers in transition economies (including the legislative framework, and the degree of corruption and bribery that a company encounters), barriers due to the external market position of a business (the sector in which the enterprise operates, the degree of competition, whether a business is experiencing strategic behaviour by competitors, the extent of network alliances to support growth), financial barriers (including the availability and cost of capital and finance), internal organisational barriers (including the capacity of management and capability, objectives of the business, principal-agent difficulties, skills), and social barriers (to do with the support, or lack of it, from local actors and agencies nearby).

3.2.2.1. Internal Barriers

Those starting up a new firm most often cite the barrier of money management (Fielden et al., 2000; Bevan et al., 1987). This includes lack of understanding of tax, VAT, national insurance and bookkeeping, as well as difficulties over obtaining capital and worry about the absence of a guaranteed income. Inability to secure adequate start-up funds also has a 'knock-on' effect of restricting the development and growth of small firm by reducing funds available for activities such as advertising, publicity and obtaining suitable premises (Fielden et al., 2000). Constraints such as these are seen as in essence 'internal' factors, identified as access to marketing and sales skills, and management skills (CSBRC, 1992). Studies that concentrate on the problems that small business experience and on how the successful owner-managers overcome such problems, lend some support to the arguments of Osborne (1993) who rejects the notion that success depends on entrepreneurial competence. Osborne, instead, recommends a shift from focusing on the personality or characteristics of the enterprise founder to the firm's underlying business concept and capacity to accumulate capital. This especially concerns the managerial ability needed to understand the nature of specific markets. A vital factor limiting the growth of many potentially successful small businesses that has also been recognised is the strong desire of many small business owners to retain personal control and business independence (Gray, 1990). Finding and making initial contact with potential customers was also identified by potential owners of new enterprises as a concern relating to the operation of their enterprise (Fielden et al., 2000).

A significant set of internal barriers to growth, in addition to resource shortages and capacity limitations, is related to the whole issue of human resource management and the conditions governing the recruiting and dismissing of

employees. Where there are limitations to the use of fixed-term labour, where long advance notification of layoff is required, where there are high mandatory severance payments that add to the cost of dismissal, and where taxes and social contributions on labour are too great, then entrepreneurs may be reluctant to expand their enterprise if this would entail that they take on new permanent employees. An important internal constraint on growth of SMEs is a reluctance or inability of owner managers to delegate control over business functions to professional managers. In some transition economies of Southeast Europe (SEE), this tendency can be increased by a shortage of skilled managers, as well as by an absence of business skills in marketing and business development. The strength and salience of internal barriers are likely to vary with the business's size. In a firm's early stages of growth, an owner-manager can manage alone many areas such as finance, human resources, marketing, and product development. Once a firm has reached a certain size, or stage in its life cycle, however, there is a need to professionalise the function of management if an enterprise is to continue to grow.

3.2.2.2. External Barriers

The existence of barriers to entry, which vary depending on the degree of competition in the market and the sector of activity, has long been debated by economists. Barriers to growth may also be linked to the market environment in which firms find themselves. Features such as low demand for the product, access to raw materials, exporting problems, rules for public procurement and late payment of bills by business customers and even by the government can all shackle the growth of firms. A survey that Cambridge Small Business Research Centre undertook (CSBRC, 1992) asked 1,933 businesses to rank 11 possible constraints and their ability to meet their business objectives. Their study revealed that the most important factors were 'external' to the business, and specially

related to financial matters. This factor was followed by the level of demand for the product or service, and the kind of competition present in the market place. Owners of failed businesses themselves often point to shortages of working capital as the main cause of business failure (Brough, 1970; Hall and Young, 1991; Hall, 1992).

3.2.2.3. Combined factors

These studies draw attention to the significance of internal and external situations making an impact on the success of the enterprise. For example, in a study of male and female owners of new enterprises between launch and take off into sustainable growth (demarrage phase) Cromie (1991) discovered that young enterprises experienced problems mainly in the external areas of accounting and finance, and the internal areas of marketing and the management of employees Smallbone (1991). Similarly, when investigating the problems facing new and small businesses supported by a local enterprise agency in an outer London borough, found that the most frequently cited problems were internal factors - marketing or selling the service or product - followed by financial control and unsuitable premises.

The pattern emerging overall for rapid-growth small enterprises is that the chief constraints upon growth are linked to both internal and external influences, which largely concern finance, employment and markets (Storey, 1994), as well as poor products and inefficient marketing (Hall, 1992; Cromie, 1991; Smallbone, 1991; Watson et al., 1998).

3.2.2.4. Financial Barriers

Pissarides (1998) in a working paper of the European Bank for Reconstruction and Development (EBRD), argues that “the findings of analysis confirmed the belief that credit constraints constitute one of the main obstacles to growth of SMEs” and indicates that “this encouraged the EBRD to tailor its financial instruments ... to the ability of the local financial system to assume key responsibilities”. These credit constraints operate in various different ways. In most South Eastern European (SEE) countries, an underdeveloped capital market obliges entrepreneurs to rely on self-financing or borrowing from friends and relatives.

Pissarides (1998) emphasizes to the lack of equity capital and lack of access to long-term credits for SMEs, so that small enterprises are obliged to rely on high-cost short-term finance. Financial barriers that affect SMEs include the high cost of credit, relatively high bank charges and fees, high collateral requirements, and a shortage of outside equity and venture capital. Often, domestic banks concentrate on providing loans to insolvent large business. Asymmetries of information between lenders and borrowers make it difficult for banks to estimate the real value of a project, and cause the rationing of credit (Stiglitz and Weiss, 1981). The high risk of extending credit to SMEs with information asymmetry may account for the relatively high interest rates charged to these borrowers, and the demands made on SMEs by banks for high collateral and loan guarantees. Entrepreneurs may nevertheless, be reluctant to apply to formal sources of outside equity capital that dilutes their control of the firm (an issue which is also relevant in developed economies – Hamilton and Fox 1998).

3.2.2.5. Social Barriers

The importance of social capital, trust and network ties between entrepreneurs as influences stimulating the development of the SMEs is emphasised by recent research in the field of economic sociology (Grabher and Stark, 1997). The parties to a transaction will feel exposed to opportunistic behaviour if a degree of trust between business partners is lacking. This will either raise the transaction costs of doing business or even prevent the transaction being carried out altogether. In some SEE economies these problems seem to have been dealt with by narrowing the range of social ties to relatively restricted ethnic or family groups. Open networks in which economic agents can place trust in anonymous trading partners or in casual acquaintances are absent. The anonymous market transaction as a basis for doing business is replaced by reliance on personal connections. Clientelism, paternalism and corruption can flourish in such an atmosphere. Small enterprises may need an institutional support network to overcome some of these (and other previously mentioned) barriers to growth. Local enterprise agencies can ideally provide much needed support to new and growing SMEs in the form of information provision, advice and training services (“real services”). These may be a more effective method of overcoming the barriers to SME development than the provision of financial assistance alone. But there are many difficulties that need to be solved in making such institution-building policies successful. An important issue is the part played by the state in supporting them. Too close a link with the state might lead to suspicion and mistrust by potential SME clients. Yet the support institutions might not be sustainable arrangements if they are transformed into private companies and abandoned to rely on the market alone for their future survival (Bateman 1999). This implies that an approach based on a public-private partnership may be needed to provide a sustainable and responsive institutional support structure (Francicevic and Bartlett, 2000).

3.2.2.6. Institutional Barriers

Firms' economic performance can be profoundly influenced by the institutional framework within which firms interact with customers, government and one another. In both West and East European economies heavy-handed bureaucracy is often considered to be a threat to business growth. Official and unofficial institutions all play a role in this. An unsuitable tax system and various discriminatory legal regulations can be severe burdens for SMEs in many SEE nations. Complicated laws, rules and regulations about enterprises can cause special difficulties to small and growing firms. Over-regulation of the business sector in market economies gives an incentive to entrepreneurs to discover methods of evading regulations, which leads to the growth of the grey economy. It also provides incentives to entrepreneurs to devote resources to influencing the regulatory environment in their own favour, encouraging "unproductive entrepreneurship" (Baumol, 1990). Uncertainty resulting from unofficial institutions of the grey economy, and the uncertain effects of interest group lobbying to influence regulatory frameworks may reduce productive investment and slow growth down. In the worst case, the relative novelty of market institutions and legislation, and the legacy of the culture of connections inherited from the communist past, might foster the growth of corruption and bribery (Schleifer and Vishny, 1993). These may increase further the uncertainties and costs of carrying on business, and reduce the growth of enterprises. Also, strong large business, whether recently privatised or not, the managers of which have useful political connections, may employ, too, a variety of tactics to impede the growth of smaller enterprises, from strategic pricing policies to outright threats verging on criminal behaviour. Institutional factors such as these may increase transaction costs facing SMEs, and hinder the transition to a competitive market economy.

3.2.3. Empirical Studies

The stylised facts that face us at this time in connection with the process of business growth are summarised by Geroski (2000a). Four implications arise from these stylised facts. First, it is unanticipated crises, which happen when businesses have not predicted what will occur or when it is expected, that cause changes in the size of enterprises. It is clear from this that sometimes companies' growth rates are products of random shocks. Moreover, these randomly determined growth rates are not serially correlated. Second and perhaps more significant, unanticipated shocks leave permanent marks on the company's size. It follows that size increase is a path dependent process, because the size of a company at any instant is the total of the complete sequence of shocks that the business has undergone. Third, empirical studies show that the growth rates of separate companies are not correlated, so the growth rates seem to be quixotic. Common sense suggests otherwise: it assumes that companies grow in line with expansion of the industry or economy. What follows is that the growth of businesses depends on historical events and every enterprise experiences its own history. Fourth, rates of growth are unstable. This phenomenon is indicated by evidence that enterprises fail to alter their costs in anticipation of future shocks - not even in part. Because companies cannot predict all shocks, they cannot start to react in advance of the shocks. Thus, growth rates fluctuate considerably. These stylised facts describe business expansion as a random process and so allow only a little to be explained regarding growth. We consider this as questionable. Nothing is left for the policy makers, or for the manager of the enterprise, since the four points dictate that the mechanism of business growth is entirely stochastic. There are some variables, we think, that can be selected as significant for company growth. We may yet discover some variables that have an effect on the growth experience, even when the experience might on the surface appear to be stochastic. We choose, as conditions that could be significant in making sense of the growth patterns of

businesses, the size of the enterprise and its age, the market condition with regard to diversity of company sizes, and the location of the enterprise.

3.2.3.1. Size

No correlation was discovered by early studies between the growth rate of a company and its size. The two characteristics are mutually independent, which suggests that businesses should grow at a rate in proportion to their size. This is Gibrat's Law (Jovanovic, 1982), which is frequently mentioned. The argument has been, however, that Gibrat's Law may be valid only when seen as pertaining to larger business. Gibrat's Law becomes invalid (Evans, 1987a; Evans, 1987b) when small enterprises are included in the case. Notwithstanding, Evans (1987a) demonstrated that business growth lessens with size of enterprise. Hart & Oulton (1996) reinforced these conclusions. Their research, with data about companies 1989-93 as its basis, showed that proportionately more jobs were created by smaller enterprises than by larger businesses. The estimates of the slope of a size variable in a growth model are somewhat small and negative, asserts Geroski (2000a) in conclusions that are comparable to these. This points to 'mean reversion', where small enterprises are liable to sustain a proportionately greater growth than larger businesses. The differences in enterprise size are levelled out, and that causes a limited overall increase in the variance of business sizes. Similar results are reported by Hall (1987) and Dunne & Hughes (1994). Hall concluded that smaller companies grow faster than larger ones by, on average, four percentage points. The conclusion reached by and Dunne & Hughes were less clear. The larger firms grew more quickly in the 1960s, they indicated, but smaller businesses experienced a faster growth rate in the 1980s. A time dependent link between the size and growth of enterprises could be hinted at here.

The capacity to make innovation is linked to business growth, in the view of Nelson & Winter (1982). It would therefore be expected that business growth rates would be correlated serially. By claiming that a technological lead today will very probably continue as a lead tomorrow, they seek to explain this. This is labelled as 'technological path dependency'. Nelson & Winter (1982) suggested that the average growth rates companies would first increase and then flatten out or decrease along with size of business. The rationale for this explanation is that larger firms' market power, as generally perceived, subjects the investment they desire to stress, even though they should grow more quickly because they innovate to a greater degree. They will be handicapped as vigorous investors by experiencing falling prices consequent upon rapid growth. Thus, growth rates of large enterprises will be smaller than the rates of small companies. Several disagreements appear to exist about how the size and growth of business are related. Even if they have a relationship, is it linear, convex, skewed or normally distributed? The lack of agreement in itself provides an incentive to investigate this causality further.

3.2.3.2. Age

Evans (1987a, 1987b), by dividing the enterprises into periods by age, demonstrated that business is a significant influence when accounting for growth of the firm. Business expansion appears to decline with age. Dunne & Hughes (1994) came up with similar findings. Economists have been perplexed for years by the capacity of young companies for rapid growth. The negative relationship has to be related to learning by business, emphasises Jovanovic (1982). To what extent the business will be expanding depends on the characteristics of its life-cycle. There is a mechanism for selection in Jovanovic's model. The projection of the business relate to the level of total costs, since they are all taken to be small

and unable to influence prices. Output decreases as expected total costs increase and vice versa. The variance of the company's expectations on total cost lessens as the business ages. It might be said that, with the passage of time, businesses learn to make more exact predictions about their level of costs. A company with higher anticipated costs has a smaller chance of staying in business. It follows that a large proportion of young businesses vacate the market, and the young enterprises left receive a higher average level of profit when the size of the business is omitted from the calculation. It may be said, then, that the growth rates of businesses are made more stable by the ageing of the enterprises, because they increase their knowledge of their cost structure and efficiency level. Investment plans in mature businesses are therefore likely to become more stable because they receive fewer shocks concerning income. When departures are omitted from the calculation, new enterprises may achieve, on average, a higher growth rate.

3.2.3.3. Geographical Location

It has been contended, in theory that a strong link exists between localization of businesses and growth. The chief contributor to an improved growth rate in a particular geographical locality has generally been stated to be lower production costs. An enterprise's optimal position is in the area that allows the least expensive production factors and the biggest market for the business's final products at the lowest costs for transport. Businesses would concentrate close to metropolitan areas, in this sort of scenario. The areas concerned are regions where the businesses gain the most advantageous channel to the highest demand for their products, not necessarily those with the largest populations (Krugman, 1991b).

An area that already produced similar goods in bulk would provide an enterprise with an advantage by its location there. Proximity to likely consumers and to specialised suppliers defines the advantage. Businesses opt to make products in

areas with easy access to large markets: in this way the concentration reinforces itself. In areas where many businesses decide to provide products, however, access to markets is usually good (Krugman, 1991a; Krugman, 1998). Thus, from this angle, enterprises situated in areas that have numerous producers and good links with large markets will be more likely to achieve high growth than will businesses located somewhere else. However, factor prices and access to markets and production are no longer the main parameters in this theoretical area (Porter 1990).

When analysing business growth and location, two more concepts need to be examined. They are interconnected. First, the institutions and abilities of the local environment affect a business's expansion considerably. Businesses require 'tacit knowledge,' which can not be obtained from the market, and this need provides the impetus for the mechanism. Enterprises are obliged to submit themselves to processes of learning that are interactive if they wish to obtain this sort of knowledge (Maskell, Eskelinen, Hannibalsson, Malmberg and Vatne, 1998). Porter (1990), points out that, because of this, enterprises' localisation decisions are informed by the institutions and capabilities of the areas concerned, not only by the factor of markets and prices.

Second, it is in the middle of a concentration of similar businesses that innovative new companies usually make their mark, frequently achieving the highest growth rates (Maskell et al., 1998). When the new and innovative businesses develop new skills, they will make a contribution to the capabilities of the areas. These kinds of firm will find local capabilities of this sort particularly useful. Concentration creates an enlarged market for qualified and specialised labour, showing that these companies will progress better than businesses of the same type in other areas Krugman (1991b).

Several reasons why we should include some sort of geographical specialisation index are to be noted from above. The revised Balassa index provides one method of measurement. The index indicates in which industry a particular region specialises. Equation 3.3 is used to work out the formal measure. The name of this measure is the Revealed Comparative Advantage index (RCA).

$$RCA = \frac{\frac{Employment_{ri}}{Employment_r}}{\frac{Employment_i}{Employment}} \quad \text{Equation 3.3}$$

The subscripts *i* and *r* refer to the specific industry and the specific region respectively. The numerator of the RCA indicates to which degree the specific industry is a major participant of the specific region. The denominator measures how large the same industry is compared with the entire economy. All in all RCA measures to what extent the specific region is relatively more or less specialised in a specific industry compared with the entire economy (more specialised than the weighted average region in the specified industry). So we emphasise the argument of local capabilities.

We propose that we should concentrate on the change in specialisation in an area and the effect it has on the growth of the enterprises in the area, instead of examining the relationship between regional specialisation and its implications for growth of businesses. It seems to us more likely that businesses receive more from being located in an area that is changing in the direction of greater specialisation in the particular industry concerned rather than in a region that over a long period has built up a specialisation in the same industry. Being located in a dynamic region in which the particular industry is expanding rapidly appears to be more relevant than having situated in an area where the industry has matured and is static or even,

declining. So we will employ, as an explanatory variable, the growth rate of the specialisation index. This will be referred to as Regional Specialisation Growth (RSG).

3.2.3.4. Market Structure

There may be a trade-off between short run allocative gains from increased price competition in a specific market and the long-run welfare gains from a higher rate of innovation often related to a more concentrated market structure (OECD 1996). Market structure must, therefore, be included when analysing enterprise growth. The composition of firms in a specific market may have some effects on the performance of the firms in this market (Hart and Prais 1956).

$$MCI = \frac{1}{N} \sum_{i=1}^n \left(\log \frac{E_i}{E} \right)^2 - \frac{1}{N^2} \left(\sum_{i=1}^n \log \frac{E_i}{E} \right)^2 \quad \text{Equation 3.4}$$

where, *MCI* - Market Concentration Index or as the variance of the logarithms of firm size

E - refers to the number of employees in the industry,

E_i refers to the number of employees in each of the *n* firms in the specific industry.⁷

In equation 3.4, the measure gives an estimation of how the companies vary in size in each industry. If there is one single large and a few small firms the index will become fairly high. If all the firms have the same size the index will be zero. This causes some problems in calling the index a concentration index. It should be highlighted that the index cannot be perceived as a measure of the general level of

⁷ In the original context the index was calculated using sales as the independent variable – not the employment.

competition in the market. Instead it should be perceived as a measure of firm-size diversity.

The measure has an additional disadvantage. If the industry is composed of equal-sized firms the index becomes zero. This would for instance be the case when analysing a monopoly or duopoly. In this case it would be preferable to measure a high index. Fortunately the data analysed in the preceding sections do not withhold any industries of completely equal-sized firms. None of the MCI measures has a zero value. This leads us to formulate our expectations concerning the index. A higher index is expected to stimulate the general technological change in the industry (Geroski, 1994). Thinking back to the writings of Schumpeter it is easy to acknowledge this theory. Schumpeter's MARK II theory suggests large firms may be inclined to bring about a higher level of innovative activity, the reason being that firms in these industries would be more likely to have the funding needed to engage in formal R&D projects. These additional fundings stem from a higher profit margin. The higher technological change will lead to a high growth of the industry. Therefore we expect concentration of the market to have a positive effect on the growth of firms in the specific industry. The large-firm theory of technical change was supported by Acs and Audretsch (1988). Another way to explain a positive correlation between market concentration and enterprise growth is by referring to a coordination problem in a market with a handful of firms with equal market power. This would provide an uncertainty concerning the future state of the industry and therefore the firms would probably be more reserved in their growth ambitions and hence their investments.

3.3. Methodological Survey

3.3.1. A Regression – like Approach – Parametric Models of Duration⁸

This section reviews the present parametric methodology of estimating firms' death and survival rates and the determinants of firms' death and survival rates. In the background of the survival of firms, suppose “spell length”⁹ is represented by a random variable T . Assume that the random variable T has a continuous probability distribution, $f(t)$, where t is the realization of T . This realization of T depends on x - where x is a vector of independent variables, say, size, age and growth of the firm. The cumulative probability function of t , $F(t)$, can be written as follows:

$$F(t) = \int_0^t f(s)ds = \text{Prob}(T \leq t) \quad \text{Equation 3.5}$$

The survival function $S(t)$, i.e. a firm will remain in business at least t , of the firm can then be written as

$$S(t) = 1 - F(t) = \text{Prob}(T \geq t) \quad \text{Equation 3.6}$$

Given the probability that the firm will survive until time t , the probability that the firm will die /fail in the next short interval of time, say Δ , is

$$L(t, \Delta) = \text{Prob}(t \leq T \leq t + \Delta / T \geq t) \quad \text{Equation 3.7}$$

⁸ For details analysis see, e.g. Green, 2000. “Econometric Analysis”, 4th Edition.

⁹ In the context of the survival rate of firms, a “spell length” implies the length or duration in which a firm is able to remain at the industry.

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This probability of failing is termed as the hazard function¹⁰ and can be written in the following way:

$$\begin{aligned}\lambda(t) &= \lim_{\Delta \rightarrow 0} \frac{\text{Prob}(t \leq T \leq t+\Delta / T \geq t)}{\Delta} \\ &= \lim_{\Delta \rightarrow 0} \frac{F(t+\Delta) - F(t)}{\Delta S(t)} \\ &= \frac{f(t)}{S(t)}\end{aligned}$$

where, $\lambda(t)$ is the hazard rate at which firms exit/fail from the industry.

Therefore, we can use $\lambda(t)$ to estimate the hazard/death rate of firms. Suppose ¹¹

$$\lambda = \frac{f}{S} = \frac{dF(t)/dt}{S} = \frac{(-dS/dt)}{S} \quad \text{Equation 3.8}$$

Given equation (3.8), the relationship among the hazard rate, $X(t)$, survival rate, $S(t)$, probability distribution function (PDF), $f(t)$, and Cumulative density function, $F(t)$, can be written as follows:

$$\lambda(t) = \frac{-d \ln S(t)}{dt} \quad \text{Equation 3.9}$$

and

$$f(t) = S(t) \lambda(t) \quad \text{Equation 3.9a}$$

The integrated hazard, A, function can be written as

$$\Delta = \int_0^t \frac{-d \ln S(t)}{dt} \quad \text{Equation 3.10}$$

¹⁰ The hazard rate is defined as the rate at which a firm has failed to remain in business.

¹¹ We can write the following:

$\text{Prob}(T \geq t) + \text{Prob}(T \leq t) = 1 \Rightarrow S(t) + F(t) = 1 \Rightarrow dS(t) + dF(t) = 0 \Rightarrow dF(t) = -dS(t)$. See, e.g. Kiefer, Nicholas M., 1998. *Journal of Economic Literature*, Vol. XXVI, pp. 646-679.

For which

$$S(t) = e^{-\Lambda(t)}$$

So

$$\Lambda(t) = -\ln S(t) \quad \text{Equation 3.11}$$

Therefore, integrated hazard rates are just equal to the minus log of survival rates.

3.3.1.1. Models of the Hazard Rate

Assuming $\lambda(t) = \lambda$ that is, hazard rate is constant and it has no memory. From equation (3.9), hazard rate, $\lambda(t)$, can be estimated.

$$\frac{-d \ln S(t)}{dt} = \lambda \quad \text{Equation 3.12}$$

The solution is

$$\ln S(t) = k - \lambda(t) \Leftrightarrow S(t) = K e^{-\lambda t} \quad \text{Equation 3.13}$$

where, K is constant of integration. If at time 0, the survival rate $S(0) = 1$, then $K=1$, and the solution is

$$S(t) = e^{-\lambda t} \quad \text{Equation 3.14}$$

This is, the exponential distribution for which hazard rate λ is a constant, i.e.

independent of time, and the survival rate is $e^{-\lambda t}$. For exponential distribution, $E(t) = 1/\lambda$. and the maximum likelihood estimation of hazard rate λ is $1/t$.

Let the hazard rate be a linear function of time, t , i.e. $\lambda(t) = \alpha + \beta t$, the integrated hazard rate can be written as: $\Lambda(t) = \alpha t + \beta t^2$, with an observed sample

of durations, t , the coefficients α and β can be estimated using maximum likelihood. If the coefficient β is positive, that is, the hazard rate positively dependent on the length of duration t , then hazard function is said to have positive duration dependence. On the other hand, if the coefficient β is the negative then hazard rate is negatively related with duration. The OLS estimates of α and β is inefficient due to time dependence.

Table 3.2: The Hazard and Survival Rate of Distributions

Distribution	Hazard Function, $\lambda(t)$	Survival Function, $S(t)$
Exponential	λ	$\frac{-\lambda t}{e}$
Weibul	$\lambda p(\lambda t)^{p-1}$	$e^{(-\lambda t)^p}$
Lognormal ¹²	$f(t) = \left(\frac{p}{t}\right) \phi(\ln(\lambda(t)))$	$\Phi(-\ln(\lambda t))$
Log-logistic ¹³	$\lambda(t) = \frac{\lambda p(\lambda t)^{p-1}}{[1 + (\lambda t)^p]}$	$\frac{1}{[1 + (\lambda t)^p]}$

Source: Green W. H. “Econometric Analysis”. Second Edition 1993

Table 3.2 contains the hazard and survival rate of some other distributions. The hazard for Weibul is monotonically increasing or decreasing depending on p where p is the inverse of standard deviation of t , the time when firms fail / die. The hazards

¹² $\ln(t)$ is normally distributed with mean $-\ln(\lambda)$ and standard deviation $1/P$.

¹³ $\ln(t)$ has a logistic distribution with mean $-\ln(\lambda)$ and variance, $\pi^2/(3p^2)$

for lognormal and loglogistic distributions initially increase, then decrease. In spite of the elegance of such methods, very few have tried to use them to analyse the growth and survival of SMEs in Western Europe. However, these methods are applied in estimating survival and hazard rates of strikes of labour forces (Kiefer, 1998). If the probability distribution function (PDF), $f(t)$, is known we can estimate the hazard rate $\lambda(t)$ and p using either the OLS or Maximum Likelihood methods. The latter has some advantages over the former. We will describe, firstly, the OLS version of the estimation procedure and the difficulties associated with this; secondly, the maximum likelihood method and the advantages associated with it.

3.3.1.2. OLS Methods

We have $\lambda(t) = f(t)/S(t) \Rightarrow f(t) = \lambda(t)S(t)$. Suppose, we have exponential distribution, $f(t) = \gamma e^{-\gamma t}$, which gives the hazard function,¹⁴ $\lambda(t) = \gamma$ and the integrated hazard function $\Lambda = \gamma t$. Therefore, the reduced form of hazard function can be written as follows.

$$\ln \lambda = \alpha_0 + \alpha_1(\gamma) - \alpha_2 \ln S(t) \quad \text{Equation 3.15}$$

OLS estimates of coefficients α_1 and α_2 are not efficient if the hazard rate depends on time. Moreover, in the context of our analysis of firm death rate, small firms have a higher death rate than those for large firms with similar performance. That is why growth rates of surviving small firms are higher than that of large firms and consequently OLS estimates are biased.

¹⁴ According to the definition, we have $F(t) = 1 - e^{-\lambda t}$, $S(t) = e^{-\lambda t}$, and, therefore, $X=y$, and $\Lambda = \gamma t$

3.3.1.3. Maximum Likelihood Estimation (MLE)

Most researchers who tried to investigate survival of SMEs found that the use of the MLE particularly appealing owing to the fact that this method does not suffer the problems of sample selection bias, serial correlation, heteroscedasticity (Dunne and Hughes, 1994; Evans, 1987a). The MLE can be explained in the following way:

If we divide the sample into two categories, one group comprises firms that failed to remain in business at the end of our sample period and the other group includes firms that survived until the end of the sample period. Hence, the log-likelihood function of the above mentioned exponential distribution is as follows:

$$\ln(\theta / \theta = \lambda, , p) = \sum_{uo} \ln f(t / \theta) + \sum_{co} \ln S(t / \theta) \quad \text{Equation 3.16}$$

where, $\theta = (\lambda, p)$, and UO stands for firms who failed / died before the end period of sample, and CO stands for the firms who survived until the end period.

The log-likelihood function in terms of PDF, $f(t) = \lambda(t).S(t)$ is as follow:

$$\ln(\theta / \theta = \lambda, , p) = \sum_{uo} \lambda(t / \theta) + \sum_{Ao} \ln S(t / \theta) \quad \text{Equation 3.17}$$

where, UO stands for firms who failed / died before the end period of sample, and AO stands for the all firms.

The maximum likelihood estimates are efficient and unbiased and do not suffer the sample attrition problems as is the case with the OLS estimates.

3.3.1.4. Exogenous Variables

The impact of external factors is ignored in the survival function. We can include external factors with the distributions and examine the impact of those external factors on the hazard function. Consider, for example, the Weibul model. Let

$$\lambda_i = e^{-\beta' x_i} \quad \text{Equation 3.18}$$

where, x_i is a constant and a set of variables that are not assumed to change over the duration. Let

$$\sigma = \frac{1}{p}; \delta = \begin{cases} 1 & \text{If the spell is completed} \\ 0 & \text{If the spell is censored} \end{cases}$$

$$w_i = p \ln(\lambda_i t_i) = \frac{\ln t_i - \beta' X_i}{\sigma}$$

Redefining the variable we find write

$$f(w_i) = \frac{1}{\sigma} \exp(w_i - e^{w_i}); S(w_i) = \exp(-e^{w_i}) \quad \text{Equation 3.19}$$

that The log-likelihood is

$$\ln L = \sum_i [\delta_i \ln f(w_i) + (1 - \delta_i) \ln S(w_i)] \quad \text{Equation 3.20}$$

which reduces to

$$\ln L = \sum_i [\delta_i (w_i - \ln \sigma) - e^{w_i}] \quad \text{Equation 3.21}$$

The derivatives are obtained by using

$$\frac{dw_i}{d\sigma} = -\frac{w_i}{\sigma}; \frac{dw_i}{d\beta} = -\frac{X_i}{\sigma} \quad \text{Equation 3.22}$$

Therefore, hazard function depends on t , p , x . The sign of the estimated coefficients suggests the direction of the effect of exogenous variable on the

hazard function when the hazard is monotonic. Some, however, advocate the use of non-parametric methods to analyse the causes of the growth and survival of SMEs. We discuss some methods in next section.

3.3.2. Non-parametric Methods

3.3.2.1. Advantages of non-parametric methods

In this section, we will describe the available non-parametric methods for density estimation and regression analysis. Detailed analyses can be found in Silverman (1986), for density estimation and Hardle (1991). Before explaining the existing methodology, we will explain the advantages associated with the non-parametric methods. The non-parametric approach of estimating a regression curve has following three main advantages (see Hardle, 1991):

- The nonparametric methods provide more flexibility in explaining the relationship between two variables. In the parametric methods, assumptions/restrictions, e.g. normality and linearity, are imposed *a priori*. On the other hand, in the non-parametric methods, data are allowed to speak for themselves without imposing *a priori* assumptions. In fact, without having *a priori* information about the model, non-parametric methods could provide a guideline for parametric methods by giving basic graphical representation of data.
- Parametric methods are often influenced by outliers that could influence estimated parameters. On the other hand, the non-parametric methods are not influenced by outliers as these methods pre-screen outliers and smooth the data by local averaging. That is, these methods remove the outliers by taking average of the neighbouring / adjacent observations.

- In interpolation of data, a parametric method uses all available observations to get missing or interpolated observations, say, quarterly values from yearly figures. On the other hand, the non-parametric method uses only adjacent values in obtaining missing or interpolated observations.

3.3.2.2. The Kaplan-Meier Product Limit Estimator

Suppose, there are n existing firms in the sample at the starting time t_0 , h_j is the number of firms that fail to survive in business over the duration t_j ; m_j represents the number of surviving firms over the period t_j to t_{j+1} ; m_k is the surviving firms at the end of the sample period. Suppose, observations on duration are sorted in ascending order, so $t_1 < t_2 < \dots < t_k$, where k is the number of duration. k is usually less than n since some firms die/exit together.

$$n_i = \sum_{i \geq j}^k (m_i + h_i) \quad \text{Equation 3.23}$$

Suppose, n_j is the number of surviving firms in the industry until t_j .

The estimated hazard function $\lambda(t)$, that is, the probability that a firm will fail to survive at time t_j , conditional on that the firm survive until t_j , is

$$\lambda(t) = \frac{h_j}{n_j} \quad \text{Equation 3.24}$$

That is, estimated hazard function is the ratio of number of 'failures' (deaths) to number of number 'at risk' at time t_j . The corresponding estimator for survival function $S(t)$, that is, the firm remains in the industry:

$$S(t_i) = \prod_{i=1}^j \frac{(n_i - h_i)}{n_i} = \prod_{i=1}^j (1 - \lambda_i) \quad \text{Equation 3.25}$$

which is a Kaplan-Meier or product limit estimator.¹⁵ For exponential distribution, the hazard is constant and the integrated hazard is linear in duration. The integrated hazard can be estimated in the following way:

$$\Lambda(t) = \sum_{i \leq j} \lambda(t_i) \quad \text{Equation 3.26}$$

The plot of integrated hazard is smoother and therefore easier to interpret than the plots of hazard. Moreover, plots of hazard, integrated hazard and log-integrated hazard against duration can be easier to interpret than plots of the survival function itself (see Kiefer, 1988). A convex (concave) integrated hazard implies positive (negative) duration dependence i.e. the hazard rate increases (decreases) with the length of duration. This estimator is generally related to the actuarial estimator of life table in demographic science. This estimator has also been used in duration model to estimate the survival rate (see Kiefer, 1988). However, as far, as we are concerned, this estimator has not been used in estimating growth-size relationship of firms.

3.3.3. Non-parametric Regression

Several nonparametric regression techniques are available in the literature. We will explain some of them. One of the nonparametric techniques is smoothing the time series by calculating moving averages. In this case, the outliers / noisiness of the data are removed by averaging the data over some arbitrary period. The shape of the regression line depends on the following:

¹⁵ See Kiefer (1988) for details analysis. This estimator is used by Kiefer (1988) for analysis of strike durations. This estimator is also related to the actuarial estimator of life table in demographic science.

- Number of adjacent observations taken in averaging process. For example, there are n observations for each variables, k ($<n$) neighbouring observations can be taken in averaging the data.
- The higher (lower) the value of k is taken in obtaining each average observation, the smoother (uneven) the regression line. That is, if k is too large the estimated average value will be too smooth and important details will be ignored. On the other hand, if k is too small the estimated value will simply be reproduced and may be too uneven / awkward to interpret.

We will explain the some of the smoothing / regression techniques.

3.3.3.1. Kernal Smoothing Technique

The Kernal estimator is one of the most frequently used smoothing technique in non-parametric regression and density analyses. This estimator could be explained in the following way: Suppose, data on x entails some noises which can be removed / reduced by taking the average of k adjacent periods, that is, the average value of x at time t would be

$$\frac{\sum_{i=t-k}^{t+k} x_i}{k+1} \quad \text{Equation 3.27}$$

The choice of k is very crucial. The bigger (smaller) the value of k the smoother (uneven) would the regression line, *vice versa*. The Kernal estimator set a ‘bandwidth’ which quantifies the number of adjacent observations k or what proportion of total observations would be taken in the smoothing process. In fact, the ‘bandwidth’ may be represented as an weighting scheme in the smoothing process.

Suppose, the weight sequence $\{W_{ni}(X)_I = 1^n\}$ represents the shape of the weight function $W_{ni}(X)$ by a density function with a scale parameter that adjust the size and form of weights near x . This shape function could be referred as *kernal* K . This *Kernal* is a continuous, bounded and symmetric real function K which integrates to one,

$$\int K(u)du = 1 \quad \text{Equation 3.28}$$

The weight sequence for kernal smoothers for a single variable x can be defined by

$$W_{ni} = \frac{K_{hn}(x - X_i)}{f_{hn}(x)}; \text{ where } f_{hn}(x) = \sum_{i=1}^n K_{hn} \frac{(x - X_i)}{n};$$

where $K_{hn} = \frac{K(u/h_n)}{h_n}$ is the kernal and h_n is a scale factor. The function $f_h(.)$ is the Rosenblatt-Parzen Kernal density estimator (Rosenblatt, 1956; Parzen, 1962) of density X . Nadaraya (1964) and Watson (1964) suggest the kernal weights $W_{ni}(X)$:

$$m_h(x) = \frac{\sum_{i=1}^n K_h(x - X_i) Y_i / n}{\sum_{i=1}^n K_h(x - X_i) / n} \quad \text{Equation 3.29}$$

which is termed as Nadaraya-Watson estimator, where K is the kernal estimator and h is the 'bandwidth'. The kernal estimator is a weighted average of response variable of a fixed neighbourhood around x . The shape and size of the kernal weights is determined by K and h respectively. A commonly used kernal function of a parabolic shape (see Epanechnikov, 1969 and Batlett, 1963) is as follows:

$$K(u) = 0.75(1 - u^2)I(|u| \leq 1) \quad \text{Equation 3.30}$$

As can be seen from the above equation that $K(u) = 0$ when $u = \mp 1$ and therefore $K(u)$ is not differentiable. Moreover, if weights is zero i.e. $f(x) = 0$, then, kernal function is undefined for any bandwidth. Besides, a very small value of bandwidth, $h \rightarrow 0$, overemphasises the current observation in the averaging process and therefore data are simply reproduced. On the other hand, a large value of bandwidth emphasises distant past and future observations with current observations, and thus data are over smoothed. Multidimensional product kernal function for the multi-variable case can be written as follows:

$$K(u_1, u_2, \dots, u_d) = \prod_{j=1}^d K(u_j) \quad \text{Equation 3.31}$$

The Kernal weights for the multi-variable case can be discussed in next section.

3.3.3.2. k-nearest Neighbour Estimates

The *k-nearest neighbour* (k-NN) estimate smoothes the regression line by taking weighted average of the response variable in a varying neighbourhood. This estimate can be defined in the following way:

$$m_k(x) = \frac{\sum_{i=1}^n W_{ki}(x) Y_i}{n} \quad \text{Equation 3.32}$$

where $\{W_{ki}(X)\}_{i=1}^n$ is a weight sequence which is described below:

Suppose $J_x = \{I: X_i \text{ is one of the } K \text{ nearest observations to } x\}$

With this set of indexes of neighbouring observations the k-NN weight sequence is constructed as follows:

$$W_{ki}(X) = \begin{cases} 1/K & \text{if } i \in J_x \\ 0 & \text{otherwise} \end{cases}$$

If X -variables are chosen from an equidistance grid, then k -NN is equivalent to kernel weights.

3.3.3.3. The Spline Estimator

In regression analyses, it is usual practice to choose the fitted values that minimise the sum squared of residuals. The regression line obtained following this method is not unique and too wiggly for structure oriented interpretation as local variations or outliers in the data are generally ignored. The spline smoothing avoids this problem by taking into consideration local variations as well as good fit. The difference between a regression line and the spline estimator can be explained in the following way.

Let, the sum of residuals of an estimated regression line $g(X)$ of Y_i is

$$\sum_{i=1}^n (Y_i - g(X_i))^2 \qquad \text{Equation 3.33}$$

where, Y_i is the actual values and $g(X)$ is any regression line which minimises sum squared of residuals. In the minimisation scheme, the regression line can take any value that reduces the residuals, the distance between actual and fitted values, and gives the best fitted line. Hence, this minimisation scheme in the regression analysis is only concerned about good fit but not about the local variations.

On the other hand, the spline estimator is concerned about good fit as well as local variations. That is, the spline estimator incorporates local variations in the smoothing technique. There are several ways of defining local variations and they are mainly based on first, second or fourth derivate. The most convenient way of defining local variations by the integrated squared second derivative:

$$\int (g''(x))^2 dx \qquad \text{Equation 3.34}$$

Using this integrated squared second derivative as a measure of local variation, define the weighted sum in the following way:

$$S(g)_\lambda = \sum_{i=1}^n (Y_i - g(X_i))^2 + \lambda \int (g''(x))^2 dx \quad \text{Equation 3.35}$$

where λ is the smoothing parameter which represents the rate of exchange between residual error and roughness of the curve g . Minimising $S(g)_\lambda$, over the interval $[X_{(1)}, X_{(n)}]$ gives a unique solution $m_\lambda(x)$ which is known as cubic *spline*. The cubic spline and its first two derivatives are continuous. At the boundary points $X(1)$ and $X(2)$, the second derivatives of the cubic spline is zero.

3.3.4. Comparisons between Parametric and Non-parametric Methods

The following conclusions can be drawn from the parametric and non-parametric methods:

- Fixed parametric methods are mainly based on a priori assumption (i.e. normality of error terms, linear models etc.) while non-parametric methods are more flexible in exploring relationship between variables.
- Parametric methods are influenced by outliers. On the other hand, the kernel and K -NN estimators smooth the data by local averaging and hence they are not influenced by outliers.
- Fixed parametric methods provide best fitted line without considering local variations and consequently it is difficult to interpret the data. On the other hand, nonparametric methods, e.g. the spline estimator, consider local variation with good fit of regression line.

Therefore, it is argued that nonparametric methods are better than parametric line and the former could be used as guide line of the latter. However, the requirements

of large number of observations make the non-parametric methods inefficient in empirical work..

3.3.5. Semi-parametric Methods

Non-parametric estimators have theoretical advantages of robustness against functional mis-specification, however there are circumstances in which kernel types estimation perform very poorly. Although, kernel regression has good asymptotic properties in such cases (Biernes (1994)), it will nevertheless tend to work very badly in finite samples when the explanatory variables contains dummies which defines a very fine partition of the sample into cells. For example, consider the following model:

$$E(Y_1 / Y_0 Z) = g(Y_0 Z) \quad \text{Equation 3.36}$$

where y_0 is continuous and (for simplicity) assumes z is a vector of 0/1 dummies:

In this case, for a sufficiently small bandwidth, kernel estimation $g(\cdot)$ is equivalent to computing separate non-parametric regressions of y_1 on y_0 in each of the cells of the sample cross-classification defined by the dummies z . When there are a very large number of cells defined by the partition z , within cell sample sizes will be small and thus the separate cell-specific regressions subject to high degrees of sampling error. The second limitation of kernel techniques is that their performance deteriorates very rapidly as we increase the number of explanatory variables. Again, high dimensionality tends to be a feature of Micro-econometrics.

On the other hand, it is generally assumed in the regression analysis that the error terms have either a normal distribution (the Probit model), or logistic distribution (the Logit model) and they are independent of explanatory variables. This arbitrary assumption causes specification problems and consequently maximum likelihood

estimators are inefficient (Horowitz (1993)) while semi-parametric methods do not specify the distribution of error terms.

An intermediate approach is semi-parametric: we specify the statistical problem in such a way that it involves both non-parametric and parametric elements. Cosh *et al* (1996) has used the semi-parametric method in estimating the determinants of growth and survival of SMEs. Thus, the main motivation of semi-parametric methods is similar to nonparametric methods. For example, both methods do not specify the distribution of error terms. However, nonparametric methods, e.g. the kernel, *K-NN* and spline estimators are more general class of estimator while semi-parametric methods described below are mainly extensions of the logit, probit and tobit class of models. To describe semi-parametric estimators, suppose we have the following binary response model

$$y = 1 \text{ if } \beta'x = u \geq 0$$

$$y = 0 \text{ otherwise}$$

where y is the indicator of response, x is a $q \times 1$ vector of explanatory variables, β is a $q \times 1$ vector of parameters. If the distribution of u is known then β can be estimated using maximum likelihood methods. The assumption regarding the distribution of u is only for convenience and causes specification problems and consequently parametric, e.g. maximum likelihood, estimators to be inconsistent and resulting estimators are inefficient.

Semi-parametric methods generally do not make any a priori assumption regarding the distribution of u . There are mainly two classes of semi-parametric binary response models that are used in empirical work. One comprises single index models. The other is called 'arbitrarily heteroscedastic models' (see Horowitz, 1993). The single index form of above binary response estimation models can be explained in the following way:

$$P(y = 1 / x) = F(\beta' x) \quad \text{Equation 3.37}$$

where F is the unknown function (not necessarily a distribution function) which takes a value in the range of $[0, 1]$. The estimators of β is consistent and asymptotically normal. This class of model is developed by Ichimura (1988), Klein and Spady (1989).

The other class of semi-parametric models comprises the binary response models with auxiliary assumption that the median $(u|x)=0$ and the distribution of u satisfies certain 'regularity condition'. In other respects the distribution of u is assumed to be unknown. Manski (1975, p.85) and Horowitz (1992) provide the estimator of β . The estimator of (3) of the single index semi-parametric model could be obtained by maximising the quasi-log-likelihood function (see Horowitz, 1993):

$$\log l_N(b) = N^{-1} \sum_{n=1}^N y_n \log F_N(b' x_n) + (1 - y_n) \log[1 - F_N(b' x_n)] \quad \text{Equation 3.38}$$

where $F_N(\cdot)$ is the nonparametric estimate of $F(\cdot)$, which is calculated from nonparametric kernel estimates of density of b'_x conditional on y . Let, $P_N = N^{-1} \sum y_n$, where P_N is sample proportion of firms who survive. Then for any real v ,

$$F_N(v) = \frac{P_N g_N(v / y = 1)}{P_N g_N(v / y = 1) + (1 - P_N) g_N(v / y = 0)} \quad \text{Equation 3.39}$$

where $g_N(\cdot / y)$ is a kernel estimate of $g(\cdot / y)$, the conditional density of $b'x$. This estimates is given by

$$g_N(v / y = 0) = (N(1 - P_N)h_N)^{-1} \sum_{i=1}^{N_{yN}} K[(v - b'x) / h_N] \quad \text{Equation 3.40}$$

$$g_N(v/y=1) = (NP_N h_N)^{-1} \sum_{i=1}^{N_{yN}} K[(v - b'x)/h_N] \quad \text{Equation 3.41}$$

where K is the kernel function and $\{h_N\}$ is a sequence of bandwidth satisfying $Nh_N^6 \rightarrow \infty$ and $Nh_N^8 \rightarrow 0$ as $N \rightarrow \infty$.

The arbitrary heteroscedasticity models are based on the assumption that the median of error terms for given x is equal to zero, that is, $(u|x) = 0$ (Horowitz, 1992). This class of estimator is based on maximum score estimators. Maximum score the estimators maximize the following function:

$$S_N^* = N^{-1} \sum_{i=1}^N [2.1(y_n + 1) - \mathbb{I}(b'x_n \geq 0)] \quad \text{Equation 3.42}$$

Horowitz (1993) estimated a binary response and of choice between automobile and transit for travel to work using parametric, fixed and random coefficient models, and semi parametric models described above. The aim of his paper is as follows:

- to distinguish empirically the differences between the parametric and semi-parametric model;
- to distinguish empirically between single-index and arbitrary heteroscedastic semi parametric models;
- to test whether semi-parametric models provide better description of the data than do the parametric ones;
- test whether inferences obtained from both methods differ significantly.

Results of this paper show that:

- it is possible to distinguish empirically between parametric and semi-parametric binary response models and between different semi-parametric specifications.

- neither fixed coefficient Probit model nor semi-parametric single index model adequately represents the heteroscedasticity of u . Specification tests reject the fixed coefficients Probit and single-index models, but do not reject semi-parametric model with arbitrary heteroscedasticity. This result implies that distributional assumption is important.

Newey et al. (1990) use the single-index semi-parametric method to analyse data on the labour supply of married women. He shows that the single-index semi-parametric methods give the similar results to Probit model which assumes the errors are normally distributed. However, the former methods provide weaker evidence of selectivity bias. The above semi-parametric models that are used in estimating binary response models are mainly biased on the distributional assumption of error terms. Similar to non parametric methods, the semi parametric models are separated from parametric models on the basis of assumptions regarding error terms. In the single index models, no a priori assumption is imposed on error terms and it uses the kernel smoothing methods in estimating the model. On the other hand, the arbitrary heteroscedasticity models use maximum score estimators in estimating the binary response models. In the context of survival models, the semi-parametric model could be used to avoid specification and consistency problems associated with parametric methods. For example, similar to automobile model described above (Horowitz, 1993) or to the model of labour supply of married women (Newey et al., 1990), we can use semi-parametric model to estimate the determinants of survival rates of firms. In these types of model, we can assume dependent variables will take value of 1 if a firm' survives over the interval of the sample period, and 0 otherwise. We can include independent variables from the theory and estimate the determinants of firm's survival using semi-parametric methods without imposing any a priori assumptions regarding error terms. Hence, we can avoid specification problems due to originate from priori assumptions.

3.4. Empirical Results on Growth and Development of SMEs in the U.K, Western Countries, and in Poland

Table 3.3 shows the empirical result on growth, size and age relationship among firms in the U.K. during 1948-1985. These results clearly deviate from Gibrat's Law as β is not significantly different from one in only two studies out of fifteen. Six studies confirm a positive relation (indicated by $\beta > 1$) between firm size and growth rates while seven studies reveal a negative correlation (indicated by $\beta < 1$). More interestingly, the table reveals that until the seventies, there was a positive relationship between size and growth while the relationship has reversed from the seventies onward. The positive and negative correlations have been criticized for the following reasons.

The positive correlation between size and growth is believed to be due to the presence of serial correlation in the growth process (i.e. growth persistence) (Dunne and Hughes, 1994). That is, growth rates at time t is positively correlated to the growth rate at time $(t-1)$. The OLS method based on positively correlated data of small sample overestimates β which shows that large firms grow faster than smaller ones, i.e. growth and size are positively correlated. In fact, estimated β gives little weights on small firms that grow faster than the larger ones. Therefore, positive correlations of size and growth could be due to spurious regression results.

Table 3.3: The Relationship between Size and Growth in Sample of UK Firms

Study	Period	Size Variable	Sample	$\log S_{i,t} = \alpha + \beta \log S_{i,t-1} + e_{it}$			
				n	β	SE(β)	R ²
Singh & Whittington (1975)	1948-60	Net Assets	All quoted non-financial companies	1955	1.06*	0.01	0.82
Samuels (1965)	1950-60	Net Assets	Stratified sample of all quoted companies	322	1.07*	0.02	0.82
Prais (1976)	1951-58	Employment	Manufacturing enterprises with > 200 employees	4300	1.08*	0.01	0.90
Hart (1965)	1958-60	Net Asset	Quoted manufacturing companies, net asset >£500K	1312	1.02*	0.01	0.90
		Net Asset	Quoted non-financial companies, net asset >£500K	2515	1.03*	0.01	0.94
Aaronovitch & Sawyer (1975)	1958-67	Net asset	Quoted and unquoted non-financial companies, net asset < £5m	233	0.99	0.04	0.77
Kumar (1984)	1960-65	Net Assets	Quoted non-financial companies, net assets >£500K	1747	0.96*	0.01	0.88
Samuels & Chesher (1972)	1960-65	Capital Employment	Stratified sample of all quoted companies	183	0.92*	0.02	0.89
	1965-69	„	„	183	1.03	0.02	0.95
Kumar (1984)	1966-69	Net assets	Quoted non-financial companies, net assets >£500K	1693	1.02*	0.01	0.95
	1966-71	„	„	1021	0.96*	0.02	0.79
	1972-76	„	„	824	0.93*	0.01	0.85
Storey, Keasey, Watson & Wynarczyck (1987)	1971-75	Net Assets	Single plant manufacturing companies (85% with net assets >£100k)	265	0.81*	0.02	0.63
	1975-80	„	„	308	0.90*	0.00	0.67
Dunne & Hughes (1994) ³	1980-85	Net asset	UK quoted and Larger Unquoted Companies	1076	0.95*	0.02	0.81

Notes: * Significantly different from 1 at the 5% level

1. With the exception of Samuels (1965) where β is based on the regression of variance of the distribution of closing log size on the variance of opening log size, and Prais (1976), where β is the estimate of b in the equation $x_t = bx_{t-1} + e_t$ (where x is the logarithm of firm size relative to its mean) all the results are based on OLS estimates of the equation shown at the head of the table for sample of surviving companies over period indicated. Standard errors are not adjusted for heteroscedasticity. Of the studies listed Aaronovitch and Sawyer (1975), Samels and Chesher (1972) and Kumar and Dunne and Hughes (1994) provide adjusted estimates which do not alter the significance of results shown.

2. Storey *et al* (1987) compare mean growth rates across size classes, and adjust these for failures by attributing zero assets to failing firms and recalculating means. They conclude that small size classes still show significantly higher growth rates after adjustment.

3. Dunne and Hughes (1994) estimate their equation in a sample selection framework. Allowing for both sample attrition due to failure and for the effects of age they report $\beta = 0.93$ significantly different from 1 and at the 5% level, and almost unchanged from OLS estimate of 0.95.

On the other hand, the negative relationship is contributed by the presence of sample selection bias (Mansfield, 1962). The main intuition behind the problem of sample selection bias is that a slow growing small firm dies/exits earlier than a slow growing large firm due to the following reasons:

- Financial ability of slow growing large firms is greater than that of slow growing small firms;
- Large firms exert relatively more efforts to survive than small firms as their deaths involve relatively higher costs.

Consequently, growth rates of small firms included in the sample at the end the period is overestimated as only surviving firms are included. Moreover, estimated β is would be biased due to the fact that growth rates of small firms are relatively unstable than their larger counterparts (Jovanovic, 1982; Mansfield, 1962).

Dunne and Hughes (1994) explore the relationships among growth, survival and death rates using a large sample of 2000 quoted and unquoted companies in the UK for 1975-85. Taking into consideration the estimation problems of serial correlation and sample selection bias associated with the OLS method, Dunne et al (1994) use the maximum likelihood method of the logit model which is not affected by sample selection bias and serial correlation. The use of maximum likelihood methods supports the results of the OLS method. Therefore, the overall findings of the OLS method are robust after correcting for serial correlation and sample selection bias. In addition, a "transition matrix" – a tabulated form of summary statistics, reported in Table 3.4 and the Logit model are used in the analysis.

Table 3.4: Growth Survival and Death: UK Firms 1980-1985

Survivors 1980-85: Analysis by 1985 Asset Size Class											Non Survivors: Analysis by Type of Death						
Companies alive by 1980 asset size class		All survivors	<1	1<2	4<8	4<8	8<32	16<32	32>64	>64	All survivors		Taken over	Taken over	Liquid- ated ²	Other ³ deaths	take over as proportion of all death
m	No.	No.	Number of Companies								No.	% ¹	No.	% ¹	% ¹	% ¹	%
<1	120	88	30	26	12	7	8	3	-	2	32	26.7	13	10.8	8.3	7.5	40.6
1<2	157	131	18	44	42	13	8	2	3	-	26	16.6	11	7.0	3.8	5.7	42.3
2<4	264	204	5	16	71	70	25	10	6	1	60	22.7	43	16.3	4.2	3.0	71.7
4<8	373	281	4	2	24	113	103	23	7	5	92	24.7	63	16.9	5.1	2.7	68.5
8<16	403	317	3	1	7	21	113	131	31	10	86	21.3	50	12.4	4.0	5.0	58.1
16<32	319	261	1	2	3	6	26	91	88	44	58	18.2	34	10.7	3.1	4.4	58.6
32<64	199	157	-	-	-	1	2	10	61	82	43	21.6	25	12.6	2.0	7.0	58.1
>64	314	271	-	-	-	-	1	2	11	257	43	13.7	31	9.9	1.3	2.5	72.1
All	2149	1709	61	91	159	231	286	273	207	401	440	20.5	270	12.6	3.7	4.2	61.4

1. % of number of companies alive in 1980 in the respective size class

2. Liquidation includes both voluntary and compulsory liquidation and companies placed in receivership.

3. Other deaths include loss of quotation, company reconstructions and reorganisations and miscellaneous deletions from the EXTAT tape because of lack of adequate accounting information in 1985.

The overall findings of Dunne et al. can be summarised as follows: the analyses of the “transition matrix” reveal a broad inverse relationship between size and the probability of death rates. For example, the smallest firms with assets less than £8m have the lowest survival rate while the largest firms with assets of more than £8m have the largest survival rates. The table also shows that size and growth of firms have an inverted U shaped relationship, i.e. the death probabilities initially raise with size and then decline. In other words, middle size firms have the highest death rates. This section decomposes the causes of death rates into three categories: takeover, liquidation and other causes. The transition matrix shows that takeover is the most common cause of deaths while firm size and deaths due to takeover show a nonlinear relationship. For example, the smallest and the largest firms experienced the lowest death rate due to takeover. On the other hand, the smallest firms have the highest death rate due to liquidation.

Contrary to Gibrat's Law, the analysis of Logit model demonstrates that small firms grow faster than larger firms, indicated by $\beta = 0.95$ and age is negatively correlated to growth rates. The Logit analyses also reveals that death rates for slow growing small firms are higher than the case for slow growing large ones. These results are also robust when maximum the likelihood method is used, for example, maximum likelihood estimates, of size growth relationship, $\beta = 0.93$. If the sample is divided into three net asset size categories of small (<£ 4m), medium (£4m<£8m) and large (>£16m), the Gibrat's Law is rejected for smallest size class (once again this is robust to sample selection bias). For the net asset sizes above £4m the null of $\beta = 1$ is not rejected.

Evans (1987a) explores the relationship between growth and age, and between growth and size of firms using a large sample of 20000 US manufacturing firms.

The author considers the following three factors to test the relationships between growth and size:

- whether the relationship is linear or nonlinear;
- the impact of sample selection bias on the growth and size relation;
- the effects of heteroscedasticity on inferences.

The OLS estimates of the Logit model show that growth rates of young firms decrease with firms' age while firm size is held constant. The findings also show that growth decreases with firm size. These results contradict the Gibrat's Law which assumes that growth rates are independent of firm size. These results are robust when models are estimated using the maximum likelihood method which does not suffer the problems of serial correlation, heteroscedasticity and sample selection bias. Therefore, the analyses of OLS are robust even after corrections are made for serial correlation, heteroscedasticity and sample selection bias. Furthermore, using the Logit model and data for 1000 manufacturing firms in the US, Evans (1987b) examines the relationship between growth, size and age. The results can be summarised as follows: age is the main factor in firms' survival; the probabilities of failures, growth and the variability growth of firms are negatively correlated with firms' age; growth rates of firms decrease at a diminishing rate with firm size even after correcting the sample selection bias.

In the case of Polish SMEs, as far as we concerned, very few researchers used semi-parametric methods such as Logit, Probit model to identify the factors determining the chance of survival, growth and development of Polish SMEs (Ghatak, Manolas, Rontos, and Vavouras, 2002; Blawat, Dominiak and Ossowski, 2001; Ghatak, Mulhern and Stewart, 2003). Blawat et al. (2001) applied a Logit model to determine the major factors that account for the growth and survival of Polish SMEs in Gdansk on the basis of a sample of 186 manufacturing firms. The authors found that the relevant factors determining the chance of survival of Polish SMEs are: the type of industry; size of the enterprise; sex of entrepreneur; demand

barrier to growth perceived by the entrepreneur (the demand barrier represents the group of remaining factors).¹⁶ The factors analysis indicated that all the above determinants are statistically significant and the factor of perception of the demand barrier by the enterprise proved to be the most significant.

Using a sample of 376 Polish SMEs in Gdansk and Lublin, Ghatak, et al. (2002) investigate the characteristics of successful Polish SME in the European context. The authors construct a Logit model that enables them to predict the probability of an enterprise surviving and developing in the EU environment. The Logit analysis provides evidences that the region of establishment, the branch of economic activity, the ownership of other enterprises, the extent of internet use, the level of knowledge of EU countries' 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.

¹⁶ see Blawat, Dominiak and Ossowski, 2001, p. 109

3.5. Conclusions

In this chapter, we have reviewed the methodologies on relationships between growth and survival of SMEs. We have also surveyed some of the empirical work carried out in the UK and USA to test these relationships. The theoretical and empirical studies regarding the relationship between growth and size give mixed results. Gibrat's Law assumes that growth rates of firms across various classes of size follow a stochastic process with the same means and standard deviation. Lucas (1978) in his model of size distributions assumes Gibrat's Law to hold, in order to prove the existence and uniqueness of equilibrium. Nelson and Winter (1982) demonstrate a nonlinear relationship between size and growth. Hence, the following conclusions can be drawn from our discussion of the above models: age is an important factor in the growth process of firms; variances of growth rates decrease with size and age, which positively affect managerial efficiencies and growth rates are similar for matured firms and for firms that started at the same time. Moreover, Keeble (1996) shows that both the growth and death rates are high for SMEs which implies that age is an important factor for the survival of firms.

We reviewed existing methodologies to estimate the relationship among size, age and growth of firms. These methodologies include parametric, nonparametric and semiparametric methods. These methodologies can also be used to determine the survival of the SMEs. The parametric methods include the survival and hazard function which can be estimated using OLS and maximum-likelihood methods. The former method gives bias and inconsistent results in the presence sample selection bias, serial correlation and heteroscedasticity while the latter is robust with respect to sample selection bias, serial correlation and heteroscedasticity. Some argue that parametric methods suffer specification problems as the former

are based on a priori assumptions; for example error terms are normally distributed. The proponents of nonparametric methods argue that parametric methods are too rigid. They claim that nonparametric methods are flexible, and suggest using non-parametric methods to let the data speak for themselves. There are several types of nonparametric smoothing methods. The kernel, K-nearest and spline smoothing estimators are some of the nonparametric methods. We explained them. As far as we are concerned, semi-parametric methods are based mainly on arguments similar to those supporting non-parametric methods. The authors argue that estimates provided by semi-parametric methods are consistent and give better results in many cases than the parametric methods. Therefore, in the case of Polish SMEs, a few researchers have applied semi-parametric methods such as Logit, Probit models to identify the factors determining the chance of survival, growth and development of Polish SMEs (Ghatak et al., 2001). The lessons from the methodologies of growth and survival of SMEs in the UK and Western countries are useful to frame the possible methodologies of growth and development of Polish SMEs. The possible methodologies help us to construct the model of export behaviour which will be presented in chapter six and seven of the thesis.

Chapter 4: Economic Environment and SMEs in Poland

4.1. Introduction

One of the important issues facing Central and Eastern European Countries (CEECs) in the transformation from centrally planned to market economies is the need to develop SMEs.¹⁷ The potential role of SMEs includes generating employment and thereby possibly absorbing labour surpluses which results from economic restructuring, contributing to the development of a competitive economy with diversified structures, and being a source of innovation. Despite problems affecting the non-agricultural sector (Aslund, 1985) during the period of centrally planned economy, it survived the entire post-war period, but its development was very slow.¹⁸ Its revival started in the eighties, when it was used for reforming the centrally planned economy on a limited scale. Since that time, development of SMEs has been taking place according to a certain model described by means of three aggregates:

- The first aggregate is composed of driving forces defined as the basic elements of the transformation process (and in relation to development of the SME sector during the centrally planned economy of pre-transformation

¹⁷ For more information see: Piasecki B. (1997), *Przedsiębiorczość i mała firma. Teoria i praktyka*, Wyd. UL, Łódź.

¹⁸ For example, in the years 1960-1980 the number of craft firms rose only from 106,300 to 147,300, and the number of their employees from 168,900 to 280,000, with almost the entire increment recorded during the last five years, i.e., between 1975 and 1980. Look Piasecki B. (1997), *Przedsiębiorczość...* However, although economic importance of these firms was relatively low (share of the whole private sector in GDP was a little over 10%), their social function surpassed their economic role considerably. First of all, owing to making the society aware that the socialised sector was not the only form of business activity and that an alternative existed in the form of one's own firm ensuring social, psychic and material satisfaction for the owner.

period), which had the biggest impact on the number, dynamics and structure of this sector in each accepted phase of SME development. These elements include sluggish and cautious reforms within the framework of a socialist system, introduction of the principle of economic freedom, economic liberalisation also called economic liberalisation or deregulation, privatisation, competition, internationalisation of the economy.

- The second one includes indices of headway made in economic transformation in three main fields: fundamental changes in ownership structure; economic liberalisation and institutional transformation.
- The third aggregate contains aggregated statistical data characterising quantitative changes within the SME sector.¹⁹

This chapter provides important information on macroeconomic changes in the period 1991 – 2003 in Poland. Furthermore, we also review the development of Polish SMEs by discussing four main stages:

- First Stage: Development of Polish SMEs (1980 – 1988) – The pre-transformation stage;
- Second Stage: Development of Polish SMEs (1989 – 1991) – The stage of “entrepreneurship explosion”;
- Third Stage: Development of Polish SMEs (1992 – 1994) – The stage of slowed down development or stabilisation;
- Fourth Stage: Development of Polish SMEs in an enlarged European Union (1995 – 2002).

In this chapter, we concentrate more on the fourth stage by reporting and providing information on the condition of Polish SMEs in terms of the share of Polish SMEs in Gross Domestic Product (GDP), the number of registered and

¹⁹ Piasecki B., Rogut A. (2000), *Rozwoj sektora małych i średnich przedsiębiorstw jako podstawa procesów transformacyjnych*, expert appraisal commissioned by the Government Centre of Strategic Studies, July 2000 (typescript).

active SMEs in Poland the role of Polish SMEs in foreign trade such as Polish imports-exports, geographic structure of foreign trade by Polish enterprises, regional differentiation of foreign trade and SME imports and exports in sectors of Polish economy. Furthermore, in this chapter, the economic environment in Poland has been also interpreted in terms of the Gross Domestic Product (GDP), inflation, labour market, privatisation, investment and foreign trade. The information helps us to understand the requirements of the development process of Polish SMEs and allows us to build up a questionnaire for the empirical study of export behaviour of SMEs in Poland.

4.2. Macroeconomic Changes in the period 1991 – 2003

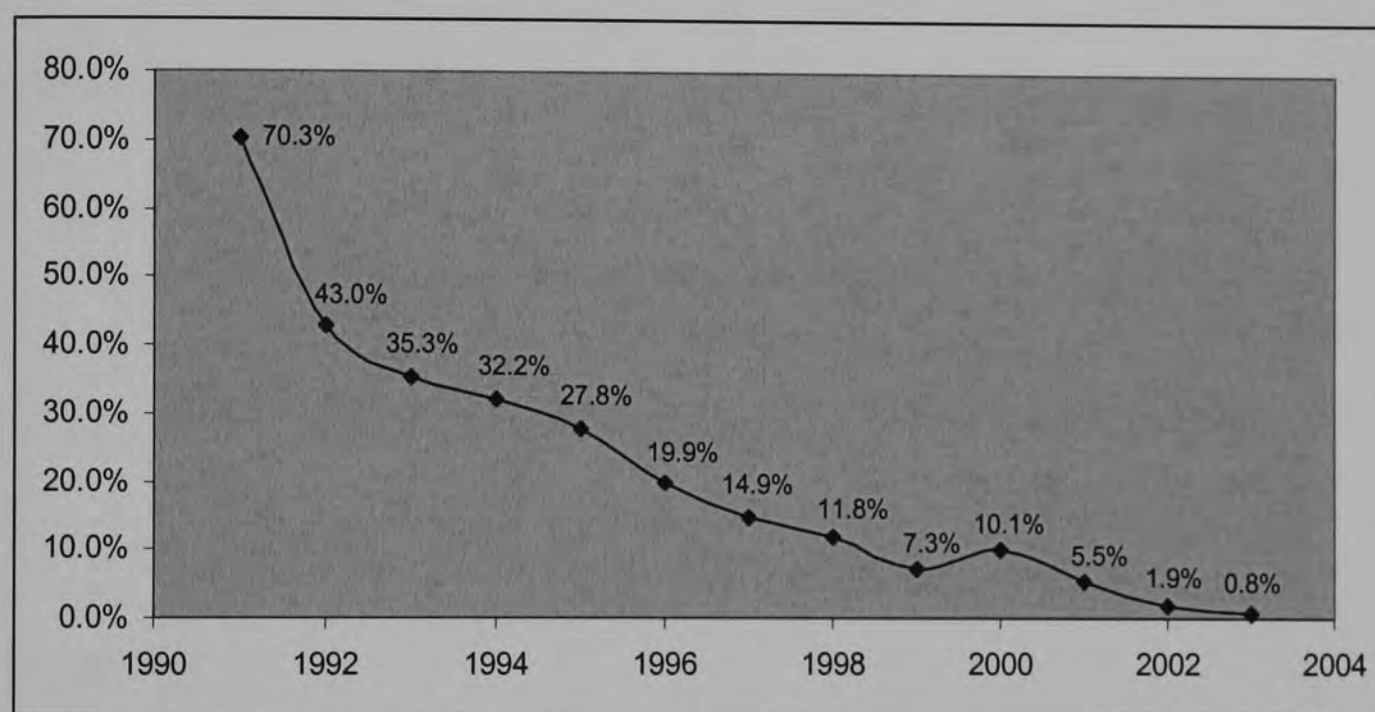
4.2.1. GDP and Inflation

Poland was the first Central and Eastern European nation to achieve the transformation of a planned economy into an open market. This transition started in very difficult circumstances – high inflation, consumer goods in short supply and production that was highly concentrated. Poland's economy began the 1990s as the weakest in Central and Eastern Europe. By the new millennium it had become one of the strongest.

The introduction of radical reforms was a precondition for Poland's survival. The “shock therapy” programme applied in late 1989 by the then Deputy Prime Minister, Leszek Balcerowicz, resulted in the dismantling of all central economy planning mechanisms and the introduction of a market economy. This bold reform programme was quick to produce effects. The freeing of prices allowed them to rise in response to market forces, during a period of corrective inflation, and to

find their own level. As a result, inflation, running at three digits in 1990, fell to double digits in 1991 (70.3%), falling by 1998 to 11.8%. In 1999, it dipped to 7.3%, rising to 10.1% the following year. From 2000 it fell to as little as 0.8% in 2003 (Figure 4.1).

Figure 4.1: Inflation Growth in Poland in the period 1991 – 2003 (%)



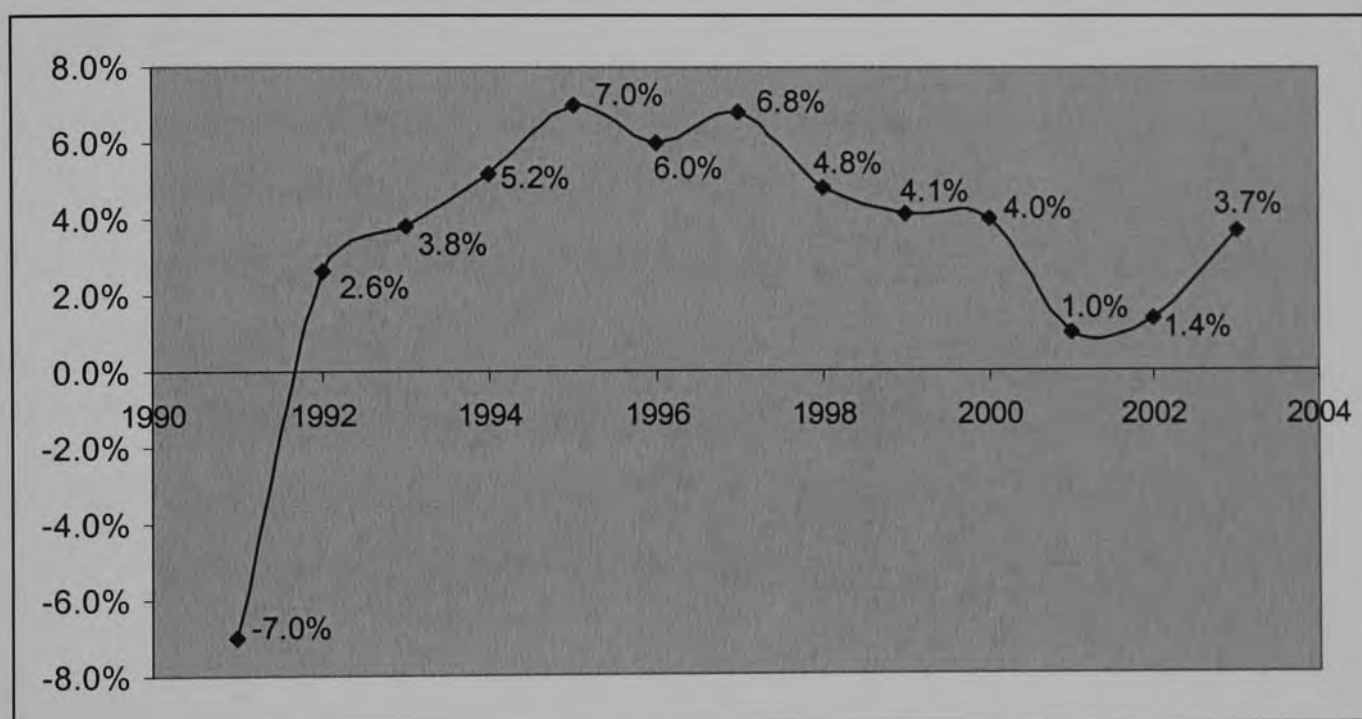
Source: Central Statistical Office, (GUS, 2004)

This considerable drop in inflation resulted mainly from lower growth in food prices than in the preceding year, relatively cheaper imports and plummeting fuel prices, which in turn affected price trends in many groups of consumer products. It should also be noted that one of the factors dampening inflation was lower consumer demand. Another contributing factor to the sharp drop in inflation was the country's restrictive monetary policy.

Although successful, the stabilisation programme also plunged the country into a deep, but relatively short-lived recession, and Poland was the only country in the region to achieve GDP growth in 1992 (2.6%). The recovery gained momentum in

1993 with a GDP growth rate of 3.8%, at that time the highest growth rate in Europe. Over two years to 1995, growth rose to a peak of 7.0% and was at 6.8% in 1997 after dipping to 6.0% to previous year. After a period of slowdown in business activity during 1997-2001, when it dropped to 1.0%, clear signs of an economic upswing were detected for the first time in two years in 2003. The Polish economy grew by 3.7%, versus 1.4% in 2002 and 1% in 2001 (Figure 4.2).

Figure 4.2: GDP growth in Poland in the period 1991–2003 (%)



Source: Drawn up by author based on Polish Central Statistical Office, (GUS, 2004)

Recovery in the manufacturing and market services sectors was responsible for such strong economic performance. Growth acceleration was driven by a significant increase in both domestic and external demand. In 2003, per capita domestic consumption rose by 3.1% and, more importantly, the downward trend in gross capital investment was arrested. As in the previous year, net exports were another factor that contributed to economic growth. On the other hand, the recession in the construction industry continued. Comparing Polish GDP per capita with that of other countries, to reflect the real degree of

development, overall price levels should be considered and thus appropriate adjustments made. Since 1990, important changes in resource allocation have taken place with a dynamic expansion of trade and services, and a steep fall in construction, farm, and industrial output. This has moved Poland's economic structure closer to that of countries at a medium level of development.

4.2.2. State budget and public finance

Poland managed to go through a difficult period of transition without excessive relaxation of its budgetary policy. However, in 2001, the budget deficit at PLN 32.36 billion, doubled in comparison with the previous year and amounted to just less than 4.5% of GDP. The ratio of the deficit to GDP was 4.6%, versus 5.1% a year earlier. Just as in 2001, expenditures (nearly PLN 172.9 billion) were almost one-fifth higher than revenues (PLN 140.5 billion), which compounded the problem of balancing public finances. A breakdown of the state budget in 2001 – 2003 is presented in table Figure 4.1. In 2003 State budget revenues totalled PLN 152.1 billion (97.7% of the figure assumed in the Budget Act), which represented a 6% increase relative to 2002 (143.5 billion).

Expenditures stood at PLN 189.2 billion (97.3% of the projected amount), growth of 3.4% over PLN 182.9 billion in 2002 (Table 4.1). The budget deficit was nearly PLN 37.1 billion, which was 6.1% down year-on-year (PLN 39.4 billion in 2002). In comparison with the situation at December 31, 2002, total tax arrears were PLN 2.3 billion (14.7%) higher (a year earlier, their year-on-year increase was almost 25%). Non-recoverable liabilities were a significant portion of tax arrears. This problem relates primarily to branches of public sector industry that are in need of fundamental restructuring.

Table 4.1: State Budget 2002 and 2003 (PLN billion)

Selected Items	2001	2002	2003
Indirect taxation	82.42	89.6	95.44
- thereof VAT	52.89	57.44	60.36
- thereof excise tax	28.86	31.49	34.39
Corporate income tax	13.22	15.01	14.11
Personal income tax	23.44	24.14	25.67
Dividends and income from profit	0.89	0.64	0.96
Custom duties	4.09	3.81	3.75
REVENUES	140.53	143.52	152.11
Social security contributions	46.07	52.86	54.24
Current expenditure of budgetary entities	29.27	29.80	34.20
Domestic debt service	17.1	20.32	20.33
Foreign debt service	3.79	3.72	3.72
Subsidies for local government	29.43	29.70	31.73
Investment expenditure	6.42	7.81	8.53
EXPENDITURE	172.89	182.92	189.15
DEFICIT	-32.36	-39.40	-37.04

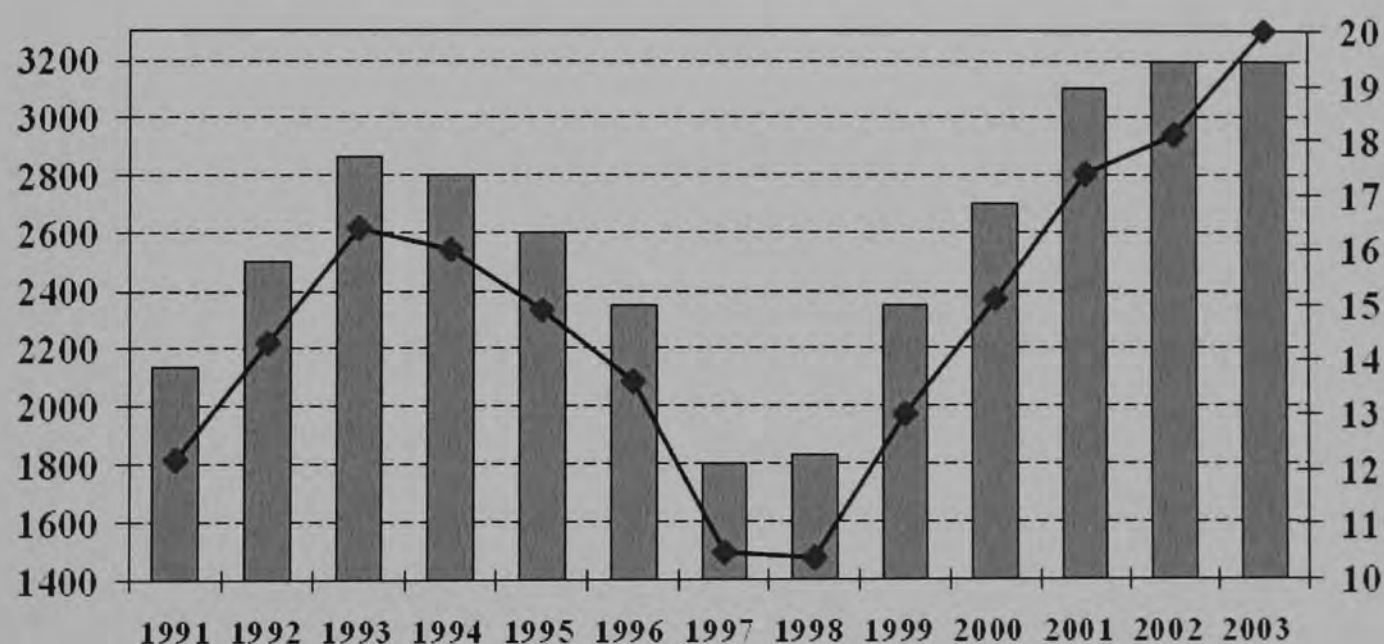
Source: Own calculations based on GUS, 2001-2003

The biggest item on the expenditure side of the budget comprised subsidies to local government units (16.8% of all expenditures), grants to the Social Insurance Fund (14.9%), and the servicing of the public debt (12.8%). The composition of budget expenditures deteriorated further. The share of so-called fixed expenditures continued to increase, considerably restricting the wherewithal of the State to support economic development. The State budget deficit was financed primarily through sales of Treasury papers. The increasing indebtedness of the State budget was due to very low privatisation receipts, which in 2003 reached only 40% of the amount provided for in the Budget Act.

4.2.3. Employment and the Labour Market

Unemployment was unknown in Poland before 1990, but the realities of the free-market economy were soon felt in the labour market. Unemployment appeared in 1990 and soon reached 1.1 million people, or 6.3% of the labour force. It peaked and stabilised at around 2.5 million in 1993-1994 (over 16% of the labour force), and started to decline from then on. By 1997 – 1998 it had fallen to 1.4 million people (10.5% of workers). However, since 1998, it has been growing again, mainly as a result of industrial restructuring and structural changes in companies aimed at increasing productivity and competitiveness.

Figure 4.3: Unemployment (thousands) and Unemployment Rate (%)



Source: Own calculation based on GUS, 1991-2004

Despite the rate of economic growth, no improvement in the labour market was noted in 2003. At year-end 2003, the national economy employed 14.8 million people, which represented a decrease of 1% over the year. Average employment in the corporate sector also declined. Falling employment rates were registered in almost all sections of the economy, with the largest decline in construction

(16.4%), tourism (8.1%), mining (4.2%), trade and repairs (3.5%), and industry (by more than 2%). Employment increased only in real estate and business services – by 2%. At end-2003, there were 3.2 million registered unemployed, almost 413,000 persons fewer than in 2002. The unemployment rate remained at the same level as in 2002 and represented 20% of the total active labour force. A considerable disparity in the unemployment rates of individual provinces continued to be observed. The highest level was registered (as in 2002) in the Warminsko-Mazurskie province (30.6%), while the rate was the lowest in the Mazowieckie and Malopolskie province (15.1% and 16.2%, respectively). High rates of joblessness were also noted in Zachodnio-pomorskie (28.2%) and Lubuskie (27.6%). The gap between the provinces with the lowest and the highest rates narrowed. That differential was 15.5 percentage points, in comparison to 15.9 points a year before.

The number of jobless who lost their right to receive unemployment benefits increased. At end-2003, 2.7 million people were no longer eligible for these benefits, which was 84.9% of all those registered as unemployed (versus 83.3% in the previous year). The main reason for loss of entitlement to this benefit was the length of time they had spent unemployed. At year-end 2003 this was the case for 1.7 million persons, almost two-thirds of whom had been looking for work for more than two years. Since this group of jobless individuals has little, if any, chance of finding employment, the withdrawal of benefits implies for them a dramatic increase in the risk of falling into extreme poverty. This phenomenon, whose scale is increasing every year, constitutes a serious social problem. As in the previous year, young people and those with the least education faced the most difficult situation on the job market. For the last two years, however, there has been a growing trend of joblessness affecting people with higher education. To the year 2000, having a university diploma provided a guarantee of obtaining employment, but the best educated individuals represent at present already 4.4% of

all job seekers and this percentage is slowly but steadily rising (by 0.5 of a percentage point over the previous year). Both the number of job offers and that of people participating in active measures of counteracting unemployment were higher in 2003. In 2003 labour offices received 739,400 job offers, an increase of more than 33% relative to a year before. There were 307 jobless per job offer, while in the previous year that ratio was 387. Considerably more funds were allocated for active instruments of counteracting unemployment. Twice as many individuals took advantage of training programmes and intervention works, and the number of those engaged in public works almost tripled.

4.2.4. Privatisation

In the period between 1 August 1991 and 31 December 2003, 5502 state-owned enterprises had been brought into the privatisation process. As the result of commercialisation, 3958 state-owned enterprises had been established by the end of December 2003. In the same period privatisation procedures based on direct privatisation rules (sale or employee leasing) have been started in 2146 enterprises and as of 31 December 2003 they were completed in 2024 companies.

In the six years 1991-1996, more than 60% of direct privatisations were completed, with the rest following a downward trend to just 34 in 2003. By 1996 over three quarters of the indirect privatisations had been completed, tailing off to only 4 in 2003. Since 1 August 1991, liquidation procedures (due to poor economic performance) have been started in 1820 state-owned enterprises (bankruptcy has been announced in 670 of them) and the processes were completed in 938 companies by the end of 2003 (Table 4.2).

Table 4.2: The privatization process in Poland in the period 1991 - 2003

Date	Direct Privatisation [Completed]	Liquidation [Completed]	Indirect Privatisation [Completed]	Total
1990-1991	182	19	28	229
1992	293	67	23	383
1993	232	100	47	379
1994	238	117	36	391
1995	109	93	86	288
1996	189	167	567	923
1997	174	115	58	347
1998	155	90	41	286
1999	151	52	26	229
2000	146	40	26	212
2001	58	10	32	100
2002	63	29	22	114
2003	34	39	4	77
Total	2024	938	996	3958

Source: Polish Ministry of State Treasury, 2004

By the end of 2003, the State Treasury possessed shares/stakes in 1660 companies. 478 companies were Sole State Treasury Corporations. Out of 1182 companies in which the Treasury was a partial shareholder, in the case of 583 the State Treasury was the owner of a majority package of shares/stakes. Total privatisation revenues in the period 1991 – 2003 amounted to approx. USD 21.5 billion. Privatisation revenues (direct and indirect) are shown in Table 4.3. From USD 170.9 million in 1991, total revenue increased to a peak of USD 6263.1 million in 2000, thereafter yielding much lower receipts: in the year 2003, the total budgetary revenues from privatisation, taking into account only payments that have already been effected, amounted to USD 1065.2 million. In order to ensure proper fulfilment of the annual statutory obligations (which are: compensation, support of the social security system reform, support of defence industry restructuring and modernisation of the Polish Armed Forces, restitution reserve, restructuring

costs, costs of privatisation, science and technology related expenditure) privatisation revenues should remain at the level of 1% of GDP.

Table 4.3: Direct and indirect privatisation revenues in Poland (1991 – 2003)
(in USD million)

Year	Total revenues	Indirect privatisation	Direct privatisation
1991	170.9	140.5	30.4
1992	372.7	238.5	134.2
1993	433.6	274.1	159.4
1994	724.9	578.1	146.8
1995	1100.7	931.5	169.2
1996	1442.2	1067.8	374.4
1997	2043.0	1930.8	112.2
1998	2079.0	1947.0	125.9
1999	3422.4	3320.4	99.7
2000	6263.1	6161.4	101.1
2001	1666.0	1577.4	88.4
2002	702.6	633.7	68.8
2003	1065.2	1004.1	61.1
TOTAL	21486.3	4492.7	1671.5

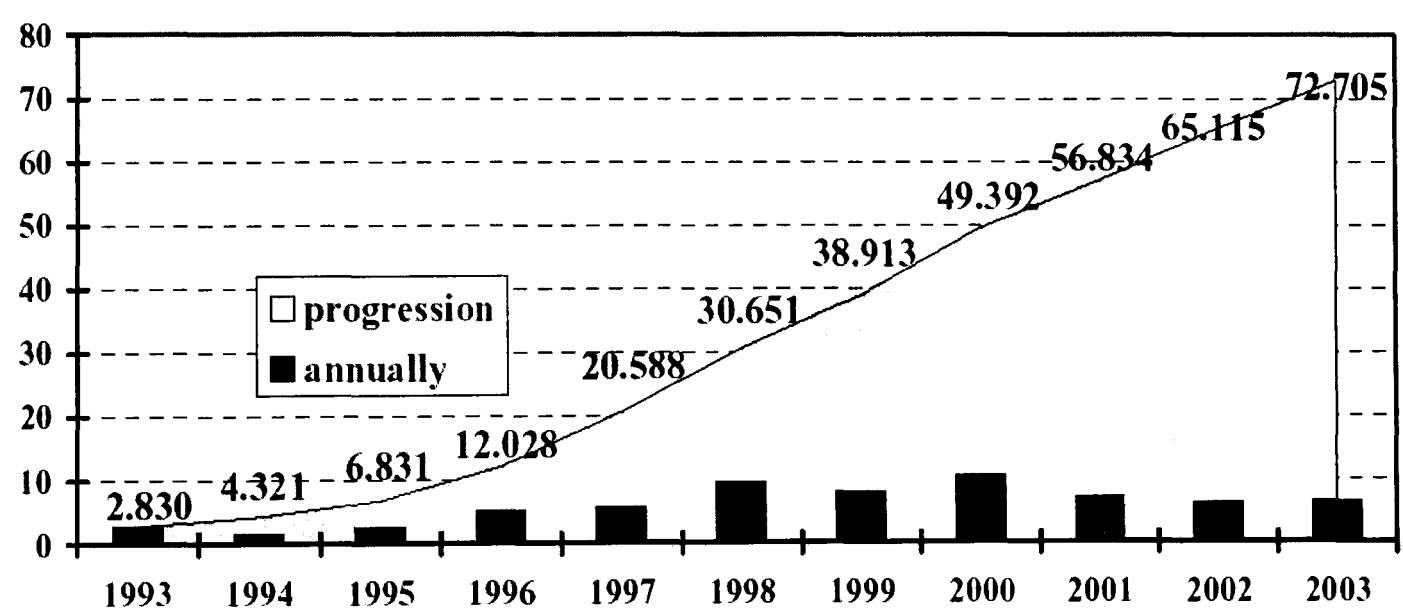
Source: Ministry of the Treasury, 2004

4.2.5. Investment

In 2003, recovery in Poland’s economy was signalled by an increase in investment. Influences that helped to increase investment included reductions in tax rates and interest rates, and the better financial health of firms. Spending on investment in 2003 was a little greater than the previous year’s level. Poland’s investment rate remains among the lowest for the ten nations acceding to the European Union in spite of its present increase. However, a marked change in the structure of investments is evident. 2003 marked an increase of 40% in spending in the segments judged to be drivers of technological progress (production of

machinery and equipment; production of electrical machinery and apparatus; radio, television and communication equipment; medical, precision and optical instruments; motor vehicles, trailers and semi-trailers). These achievements greatly improve the prospects of increasing the competitiveness of Poland's economy. Firms financed their investments primarily with their own resources (about 65%), i.e. with profits and depreciation of fixed assets, while the share of loan finance did not exceed 18%, as also happened in the previous year. In the period 1993-2003, foreign companies invested directly a total exceeding USD 72.7 billion in Poland (Figure 4.4). During the earlier period 1994-1998, the increase per annum rose from nearly USD 1.5 billion to USD 10.1 billion.

Figure 4.4: Foreign Direct Investment (USD million) in Poland (1993 – 2003)



Source: PAliIZ FDI Report, 2004

The amount of FDI in 2001 stood at almost USD 7.4 billion, but in 2003 it had risen to USD 7.6 billion. The downward trend of FDI inflow into Poland was shown in the period 2001-2002. It showed obviously that Poland is losing out to other acceding to the European Union in the battle for foreign investment. The major causes of this mediocre performance are an inadequate infrastructure – mainly roads and motorways, excessive bureaucracy and an unstable legal system.

By contrast, the year 2003 did see a reversal of the trend of decreasing FDI inflow and once more showed that Poland continues to be attractive to foreign investors. As the inflow of foreign direct investments. As the inflow of foreign direct investments to Poland reached USD 6.42 billion, an increase of 5 % in comparison with the previous year, Poland regained its leading position in Central and Eastern Europe for annual inflow of FDI.

4.2.6. Foreign Trade

Poland's internal demand for products and services has grown continuously as the liberalisation of the economy. It has been accompanied by rapid economic growth. The country confronts the challenge of ensuring a larger market share of foreign markets.

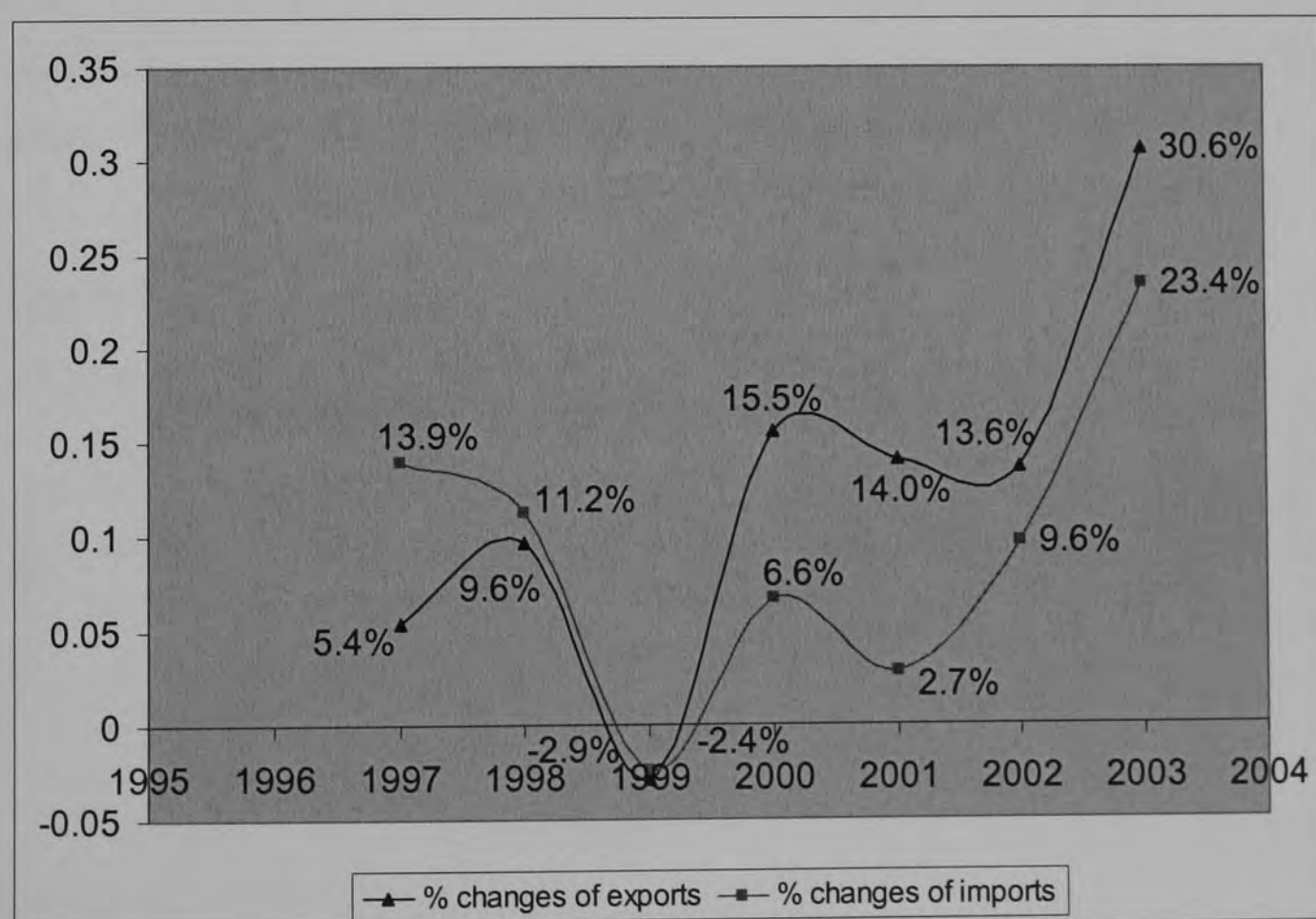
Table 4.4: Foreign Trade in 1996-2003 (in USD million)

	1996	1997	1998	1999	2000	2001	2002	2003
EXPORTS	24,440	25,751	28,229	27,407	31,651	36,092	41,010	53,577
Food and live animals	2,460	3,026	2,839	2,328	2,367	2,669	2,968	4,069
Beverages and tobacco	131	104	96	102	120	140	126	177
Crude materials, inedible, except fuels	825	820	803	839	894	915	1,011	1,383
Mineral fuels, lubricants	1,675	1,719	1,547	1,377	1,610	2,043	2,041	2,312
Oil, fats and waxes	38	43	38	46	23	18	14	18
Chemicals and related products	1,887	2,027	1,898	1,696	2,151	2,278	2,608	3,493
Manuf. goods class. by raw materials	6,316	6,830	7,116	6,986	7,856	8,614	9,753	12,719
Machinery and transport equipment	5,719	5,560	8,019	8,278	10,820	13,056	15,411	20,240
Misc. manufactured articles	5,379	5,611	5,865	5,750	5,805	6,355	7,071	9,157
IMPORTS	37,137	42,308	47,054	45,911	48,940	50,275	55,113	68,004
Food and live animals	3,143	2,894	2,993	2,537	2,558	2,724	2,754	3,148
Beverages and tobacco	249	299	305	368	198	233	313	219
Crude materials, inedible, except fuels	1,737	1,762	1,669	1,419	1,643	1,578	1,636	2,038
Mineral fuels, lubricants	3,389	3,710	2,989	3,281	5,297	5,082	5,040	6,203
Oils, fats and waxes	216	239	284	190	164	174	206	259
Chemicals and related products	5,120	5,839	6,462	6,584	6,881	7,337	8,184	10,029
Manuf. goods class. by raw materials	7,455	8,283	9,801	9,526	9,788	10,333	11,362	14,297
Machinery and transport equipment	12,272	15,228	18,014	17,544	18,114	18,324	20,699	25,860
Misc. manufactured articles	3,435	3,950	4,452	4,380	4,218	4,416	4,868	5,899

Source: Polish Central Statistical Office, 2004

Table 4.4 shows the structure of Poland's exports and imports over a recent eight-year period, pointing to the vigorous activity and changes in the nation's foreign trade. The liberalisations of the economy and fast economic growth have led to an ever growing internal demand for products and services. In order to maintain its trade balance Poland is faced with a challenge to ensure a greater market share for Polish goods and services on foreign markets. The following table illustrates the structure of Polish exports and imports in the last eight years, reflecting the very dynamic developments that have taken place in Poland's foreign trade. Export and imports nearly doubled over the period illustrated, which certainly amounted to a considerable achievement, no doubt, although still somewhat insufficient in comparison to EU member states' per capita exports and imports.

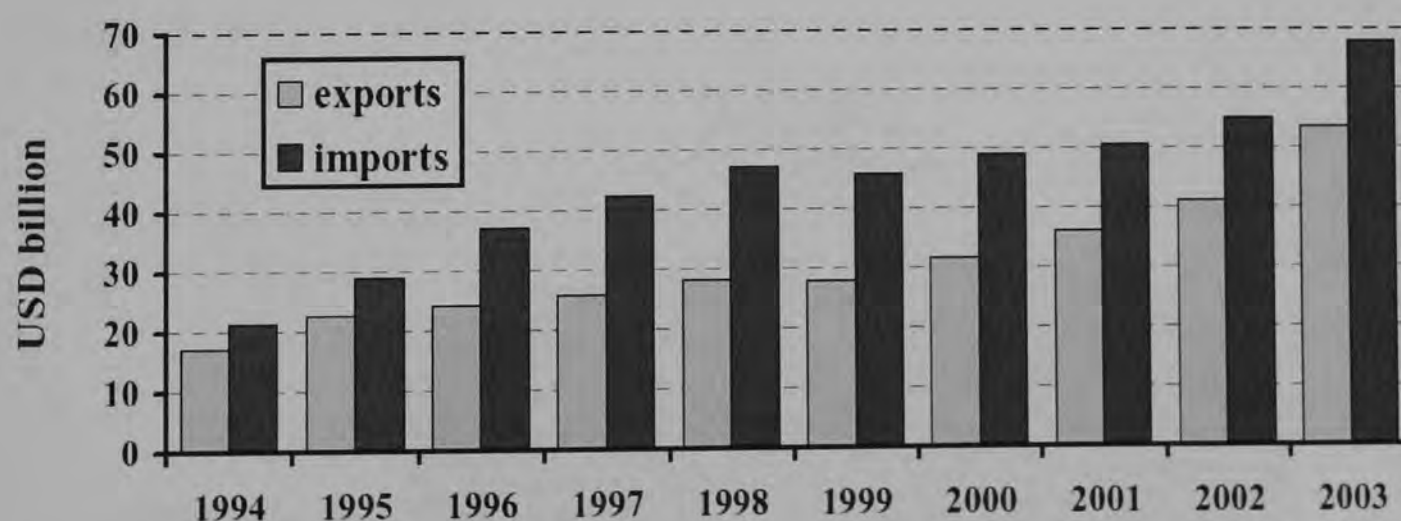
Figure 4.5: Percentage Changes of Polish Imports and Exports (1997-2003)



Source: Own calculations based on Polish Central Statistical Office, 2004

In recent years the speed of economic growth has been increased by the driving force of exports. Figure 4.5 shows percentage changes of Polish imports and exports between 1997 and 2003. In 1998, Polish exports showed an increase of 9.6%. This was followed by a decline of almost 3% in 1999, with a strong recovery of 15.5% to 2000. A 2% dip to 2002 was succeeded by a further surge of 30.6% to 2003. Imports followed a similar pattern, from a 14% increase in the year to 1998 to one of 23.4% by 2003. The growth of exports by 30.6% (in USD terms), to USD 53.6 billion was remarkable. Imports grew more slowly, yet significantly, by 23%, to more than USD 68.0 billion. A great increase in the total of foreign trade operations caused the bigger growth rate of exports, yet the trade deficit also increased, reaching USD 14.4 billion compared with USD 14.1 billion in 2002. It should be noted, however, the extraordinary foreign trade results of 2003, were due, to some extent, to a relative weakness of the USD against the Polish currency in that year. Even so, in terms of PLN, the growth of exports remained noteworthy at 24.9% (with imports increasing by 17.9%). However, the official numbers exclude cross-border trade with neighbouring countries.

Figure 4.6: Polish Exports and Imports (1994-2003)

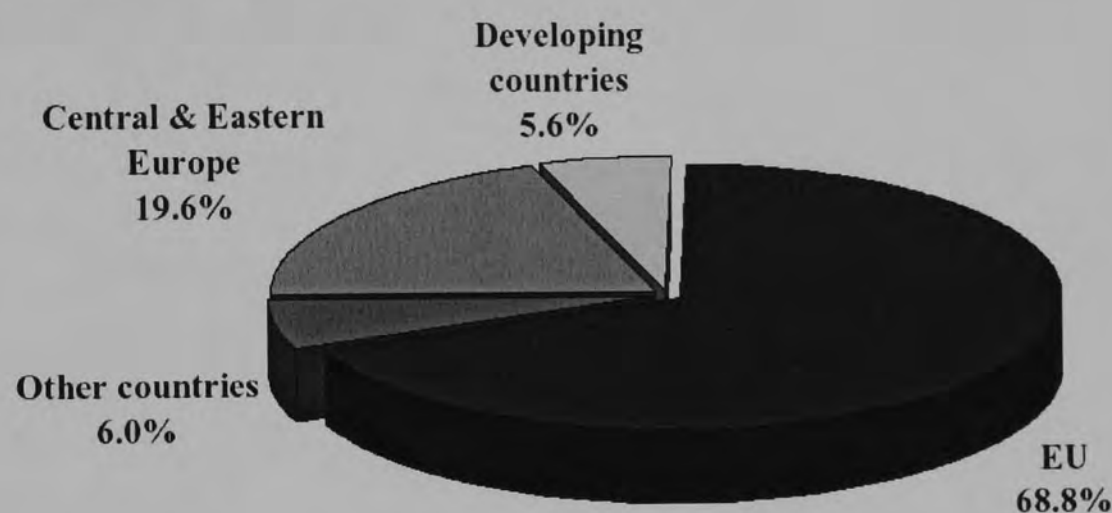


Source: Polish Central Statistical Office, 2004

Economically developed nations play a dominant part in Poland's exports and imports: their share of Polish foreign trade totals 74.8% and 69.3% respectively in

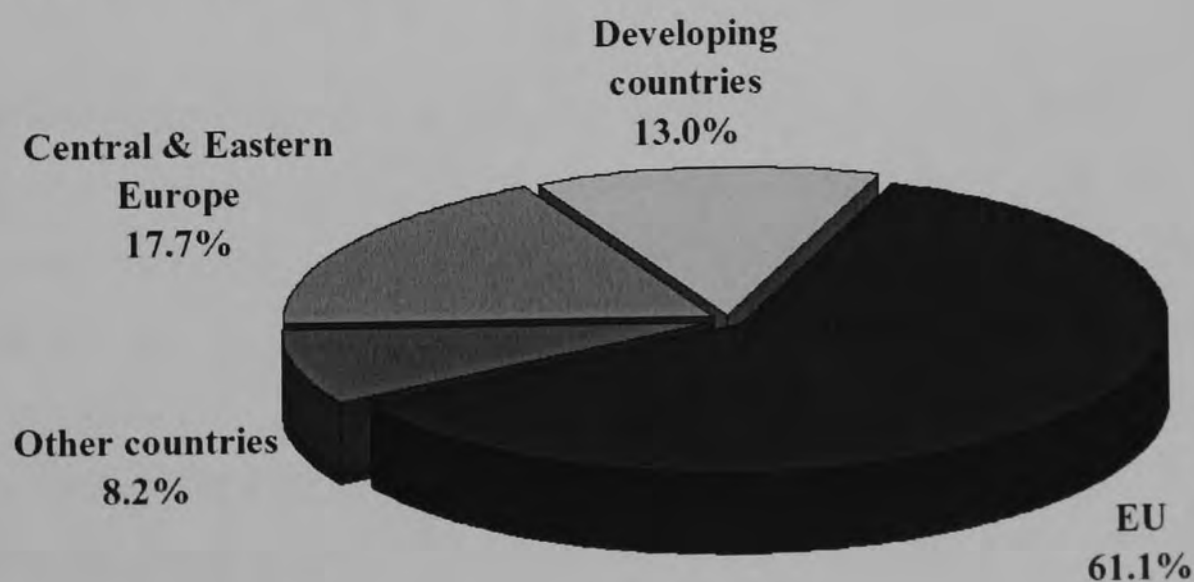
2003. Germany is Poland's chief trading partner, accounting for just less than a quarter of Polish imports and nearly a third of exports. The share taken by the EU as a whole of Poland's exports is 68.8% (Figure 4.7) and of its imports (61.1%) (Figure 4.8). Central and Eastern European nations account for 19.6% of Poland's exports and 17.7% of her imports. Developing countries receive 5.6% of her exports and send 13.0% of her imports. Developing countries receive 5.6% of her exports and send 13.0% of her imports.

Figure 4.7: Polish Exports in 2003



Source: Central Statistical Office, 2004

Figure 4.8: Polish Imports in 2003



Source: Central Statistical Office, 2004

Poland's main trading partner in the East remains Russia, though its share of her foreign trade declined in comparison with 2002 to just 2.8% of exports (Table 4.5) and 7.7% of imports (Table 4.6). In 2003, the share taken by Central and Eastern European nations of Poland's exports and imports increased in spite of the reduced trade with Russia.

Table 4.5: Polish Exports in 2003 - Major Partners

Country	Value (USD million)	Shares %
Germany	17281.0	32.3
France	3266.6	6.1
Italy	3077.1	5.7
Great Britain	2698.7	5.0
Netherlands	2406.7	4.5
Czech Republic	2171.8	4.1
Sweden	1932.9	3.6
Belgium	1729.6	3.2
Ukraine	1561.2	2.9
Russia	1512.3	2.8
Total exports	53,577	x

Source: Central Statistical Office, 2004

Modernisation of Poland's commodity structure occurred as the country's exports increased during the period of transformation. This modernisation led to the increasing significance of highly processed products (particularly from the engineering and automotive sectors) so that these products further increased their share of exports to 47% in 2003 (approximately doubled in comparison to 1992) (GUS, 2004). Conversely, raw materials and semi-finished products (mineral products, metallurgical products) declined considerably in importance to only 16% in 2003 (33% in 1992).

Table 4.6: Polish Imports in 2003 – Major Partners

Country	Value (USD million)	Shares %
Germany	16584.4	24.4
Italy	5789.0	8.5
Russia	5214.7	7.7
France	4803.2	7.1
China	2890.0	4.3
Great Britain	2532.5	3.7
Czech Republic	2332.0	3.4
Netherlands	2302.2	3.4
Belgium	1781.4	2.6
Sweden	1778.3	2.6
Total imports	68,004	x

Source: Central Statistical Office, 2004

The chief cause of this change was restructuring of the economy, made possible by the inflow of foreign direct investments. Engineering products in 2003 are predominant in both exports (39.3%) and imports (40.1%). Metallurgical products take second place in exports (11.3%), then chemical products (10.5%), and agricultural products and foodstuffs (8.4%). With regard to imports, chemical products have an 18.2% share, followed by mineral products (10.0%) and metallurgical products (9.6%). The remarkable increase in Poland’s foreign trade during the past decade was without doubt considerably helped by the nation’s political and economic integration with the rest of the world and particularly with the European Union.

4.3. Development of Polish SMEs between 1980 and 1988

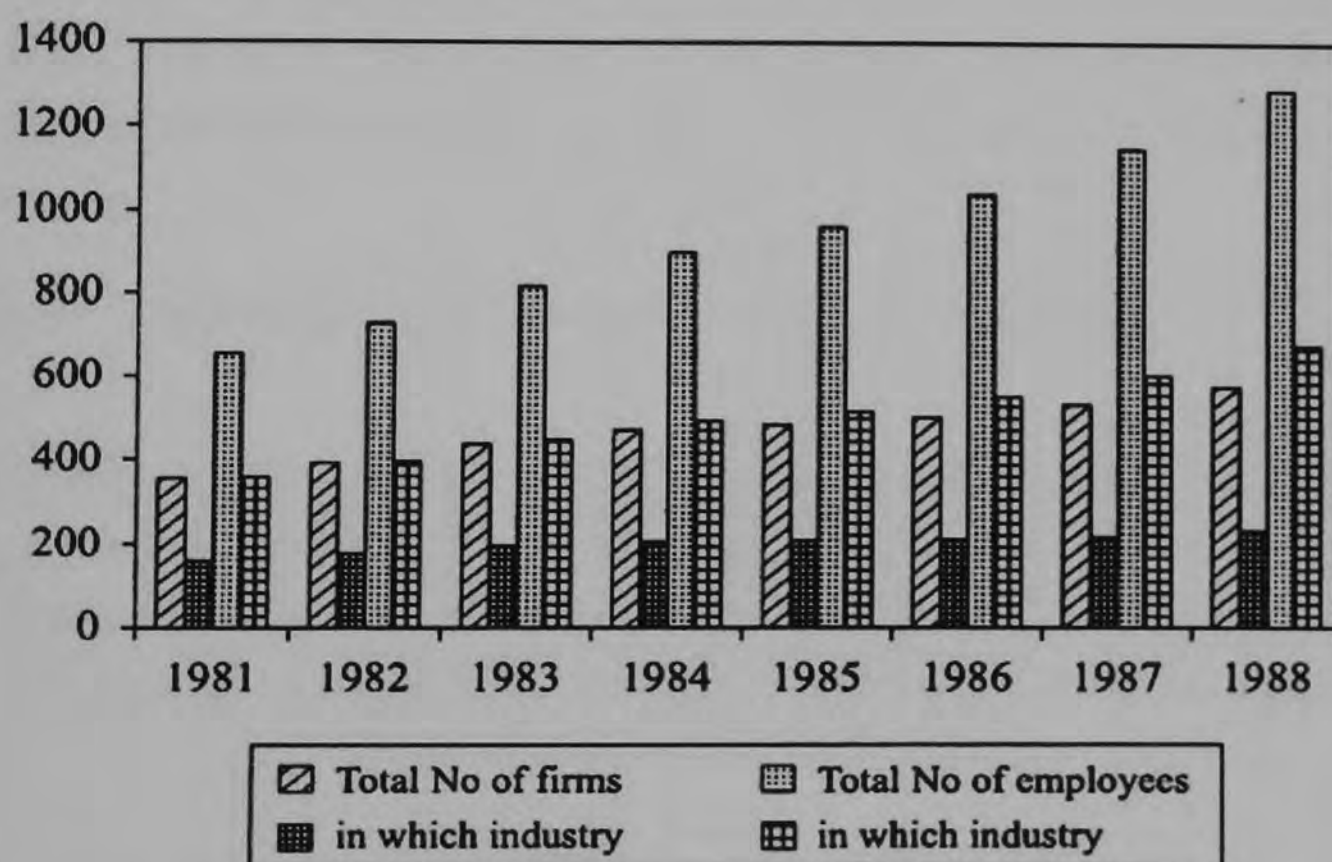
The first attempt aimed at reforming the centrally planned economy system in Poland coincided with an exceptionally favourable situation. It can be said from today's perspective that those attempts were quite modest. Nonetheless, they brought about a major revival in development of the private sector in Poland. The revival was supported by a stream of legislative actions lowering legal-administrative barriers to market entry and opening the way for transfer of material resources from the socialised sector to private firms.²⁰ These actions included:

- a change in legal conditions of running business activity and, in particular, a change in the Public Enterprise Act (June 1981) permitting state-owned enterprises to sell a part of their assets to individual persons;
- adopting of the new Price Act (February 1982) reducing the state intervention in price fixing;
- adopting the Act of Small Scale Foreign Enterprises (July 1982);
- permitting foreign capital investments;

²⁰ Through a possibility of taking over state-owned and co-operative assets by individuals and shifting assets (a part of tasks along with assets necessary for their accomplishment) from state-owned to private enterprises. Moves of this type led to privatisation of assets the moment a given organisational unit was separated from a public enterprise (e.g. a laundry at a hospital or a repair shop in a manufacturing plant), and organising a private firm on its basis providing services for this public enterprise in accordance with a concluded contract. It is also possible to transfer certain functions of a public enterprise (e.g. just washing laundry at a hospital or maintenance of equipment and machines in a manufacturing plant) to an external private firm and liquidate simultaneously this function (together with, at least, a part of materials assets necessary for this purpose). In such a situation privatisation of assets will consist in selling liquidated assets or their lease to the private sector (Balcerowicz L., (1997). *Socjalizm. Kapitalizm. Transformacje. Szkice z przelomu epok*, PWN, Warszawa). Additional possibilities were created by a prospect of leasing small units, mainly shops, service centres, catering establishments, small hotels, etc. belonging to state-owned enterprises.

- legal sanctioning of a possibility of bankruptcy for state-owned enterprises and specifying the ways of using assets of insolvent enterprises (June 1983);
- opening access for private firms to foreign exchange loans for purchases of machines, equipment supplies (September 1983);
- passing new laws permitting the establishment companies with foreign partners (April 1986);
- liberalisation of regulations concerning business activity of private firms in international trade (October 1987).

Figure 4.9: Number of firms and employees in the private sector (except agriculture) in Poland in the years 1981-1988



Source: GUS (1982-1989), Polish Statistical Yearbooks.

These reforms did not alter the very essence of the system, but they led to certain de-concentration of the state-owned industry. They also created conditions for

development of different forms of intersectoral co-operation (between the socialised sector and the private sector). Additionally, they built modest elements of market infrastructure necessary for development of the private sector. What is more important, they promoted development of an entrepreneurship climate. Consequently, the eighties witnessed a rapid growth of the private sector, in which the number of enterprises increased from a little over 357,000 in 1981 to over 572,000 in 1988, and which employed almost 1,288,000 employees at the end of 1988 (Figure 4.9). Due to still existing, restrictions in employment in the private sector, all these firms could be classified among SMEs. With regard to development of Polish SMEs in the year 1981 – 1988, one of characteristics of the socialist development was a steady increase in the number of economically active women. And although it was determined by political, demographic, social and economic factors specific for that period, it changed considerably the traditional model of a woman consolidating her common presence in professional life and paved the way for a natural entry of women into a new role of entrepreneurs.²¹

4.4. Development of Polish SMEs between 1989 and 1991

Although the eighties witnessed a substantial growth (considering it was a period of the centrally planned economy) in employment and in the number of private SMEs, a true boom did not start until 1989, i.e. at the time the Business Activity Act came into force.²² The Act set in motion the first of the driving forces of SME

²¹ Rogut A., (1994). *Polish women in private business*, Polish Chamber of Commerce Institute for Private Enterprise and Democracy, Warszawa.

²² *Ustawa z dnia 28 grudnia 1988 r. o działalności gospodarczej*, DzU, 1988, nr 41, item 324 with later amendments.

development, which was realisation of the principle of economic freedom²³ for the first time in post-war Poland. It allowed SMEs to make effective use of the second driving force, which was the economy of shortages being a part of the heritage left by the centrally planned economy and creating numerous and very vast niches for SMEs.²⁴ The following processes proved to be of fundamental importance:

- relatively low intensity of competition in particular markets, typical and small effectiveness of competition resulting from poor differentiation of products, relatively low costs of business start-ups and low exit barriers from certain markets;
- existence of numerous fields of business activity creating extraordinary opportunities. The opportunities were resulting mainly from possibilities of reaping extraordinary monopolistic profits (due to the fact that many firms located themselves in such niches of the local or domestic market, where they held a monopolist position for a relatively long period of time) and from possibilities of obtaining speculative incomes, the sources of which were either major shortages existing in the economy or existing legal loopholes (including parallel operation of new and old laws, i.e. laws inherited from the centrally planned economy period), and absence of fiscal control;
- the process was a deep transformation recession²⁵, which induced large public companies in Poland to get rid of unprofitable production lines, allowing SMEs to enter niches hitherto inaccessible for them;

²³ Implying freedom in: (i) starting up and running business activity along equal rights provided conditions stipulated by legal regulations are observed; (ii) choosing an organisational-legal form of running this activity.

²⁴ Penrose E. T., (1980). *The Theory of the Growth of the Firm*, Basil Blackwel, Oxford.

²⁵ For more information of deep transformation recession, see: Kolodko G. W., (1999). *Od szoku do terapii. Ekonomia i polityka transformacji*, Poltex, Warszawa.

- far-reaching economic liberalisation²⁶ characteristic of the Polish path of transformation. It created objective conditions for transforming “the spirit of entrepreneurship” dormant in thousands of Poles into an active force getting involved in development of different forms of private business activity;
- the so-called ‘small privatisation’ carried out primarily in trade, transport, services and catering trade.

As a result, in the years 1989-1991 the number of registered private firms (which could be classified in the SME sector in almost 100%) rose from 572,451 to 1,496,797. This growth - due to the above mentioned factors taking place mainly in many fields of business activity such as trade, construction and industry.

4.5. Development of Polish SMEs between 1992 and 1994

An effect of the first transformation stage was - along with a huge quantitative growth of SMEs - the launching of market allocation mechanisms and considerable intensification of competition (domestic and foreign) inside many industries and sectors of the national economy. As a result, competition gradually took over the role of a driving force in SME development narrowing considerably

²⁶ Called also microeconomic liberalisation or deregulation. Pace and scope of economic liberalisation are described by means of the liberalisation index being a weighted average of estimations of the following three factors: (i) liberalisation of trade turnover in the domestic market, i.e., freeing prices and liquidating trade monopolies; (ii) liberalisation of trade turnover in the foreign market, i.e., eliminating export controls and tax burdens connected with them, replacing high import tariffs and quotas by low and medium tariffs, admissibility of conversion operations of foreign exchange gathered on current accounts; (iii) liberalisation of business start-ups, i.e., privatisation and development of the private sector (*From Plan to Market, World Development Report 1996*, The European Bank for Reconstruction and Development/The World Bank Washington D.C., Oxford University Press, UK 1996).

or eliminating niches, which were controlled by newly established SMEs during the initial period of transformation. It was accompanied by a gradual slowdown in the pace of economic changes reflected especially in postponing privatisation processes, in a tendency of restoring management concentration, in intensive development of government agencies, in changeability of ‘rules of the game’, restoration of discretionary central decisions²⁷, and relatively slow pace of building market institutions. Due to the fact that extensive SME development reserves were, simultaneously, exhausted the dynamics of new business start-ups began to decline and the number of enterprises eliminated from the market began to increase. This phenomenon (based on market entries and exits on the number of active enterprises) is illustrated, to some extent by Table 4.7.

Table 4.7: Number of Polish SME start ups - firms owned by individual persons and legal entities from 1989 to 1996 (in thousands)

Items	Year							
	1989	1990	1991	1992	1993	1994	1995	1996
New registrations	285	345	292	239	210	93	64	280
Total number of registered SMEs	857	1,202	1,494	1,733	1,943	2,036	2,100	2,380
Gross entry rate in private sector			52	40	29	21	46	
Exit (liquidation) rate in private sector			30	27	17	17	10	
Net entry rate in private sector			22	13	13	4	36	

Source: Chmiel J., (1997). *Statystyka wejścia przedsiębiorstw do galazi. Problemy pomiaru i wyniki badan*, Raport nr 12, Centrum Analiz Statystyczno-Ekonomicznych CASE, Warszawa, tab. 14, p. 65.

²⁷ Jozefiak C., (1997). Zależność między zmianami systemowymi a polityką gospodarczą, [in:] *Dynamika transformacji polskiej gospodarki*, red. M. Belka, W. Trzeciakowski, Poltext, Warszawa.

This phase is also changes in the SME sector economic structure resulting from a slow down in growth rate of the number of firms in trade, construction and industry (especially in traditional sectors) and accelerated expansion in areas linked with infrastructure, in particular, business infrastructure. According to data, at the end of 1994 the SME sector had 1,110,595 active enterprises as compared with the total number of 2,032,332 registered private enterprises (GUS, 2000).

4.6. Development of Polish SMEs between 1995 and 2002

4.6.1. Polish SME Share in Generating GDP

The contribution of SMEs to the generation of the Gross Domestic Product in 2002 was 48.6%, (a 0.6% increase in comparison with the year 2001), of which the share of small businesses was 40.5% and that of medium-sized companies, 8.1% (see Table 4.8). These figures include the added value produced by people who work and SMEs that operate in the grey economy. In the period 1995 – 1998, the total of SME share in generating GDP grew rapidly, increasing from 30.0% to 48.1%. SMEs generated 48.5% GDP in 1999 of which small firms accounted for 38.5%, and medium-size firms for 10.0%. The SME share in generating GDP went up in 2000 by 0.9%. In the period 1997-1998, the SME share in generating GDP increased by 2.6%. However, even this relatively small increase of the SME share meant that in the period 1999-2000 the SME sector still grew more quickly than other sectors of the economy. In the period 2000-2001, there was a decline in the GDP share produced by SMEs. The corresponding ratio of the GDP share produced by SMEs for 2001 stood at 48.3% (the share of small businesses was 39.3% and that of medium-sized companies, 9.0%). The decline in GDP share

produced by SMEs was most likely due to the reductions in employment in companies.

Table 4.8: Share of Polish Enterprises of Different Size in Generating GDP, 1995 – 2002

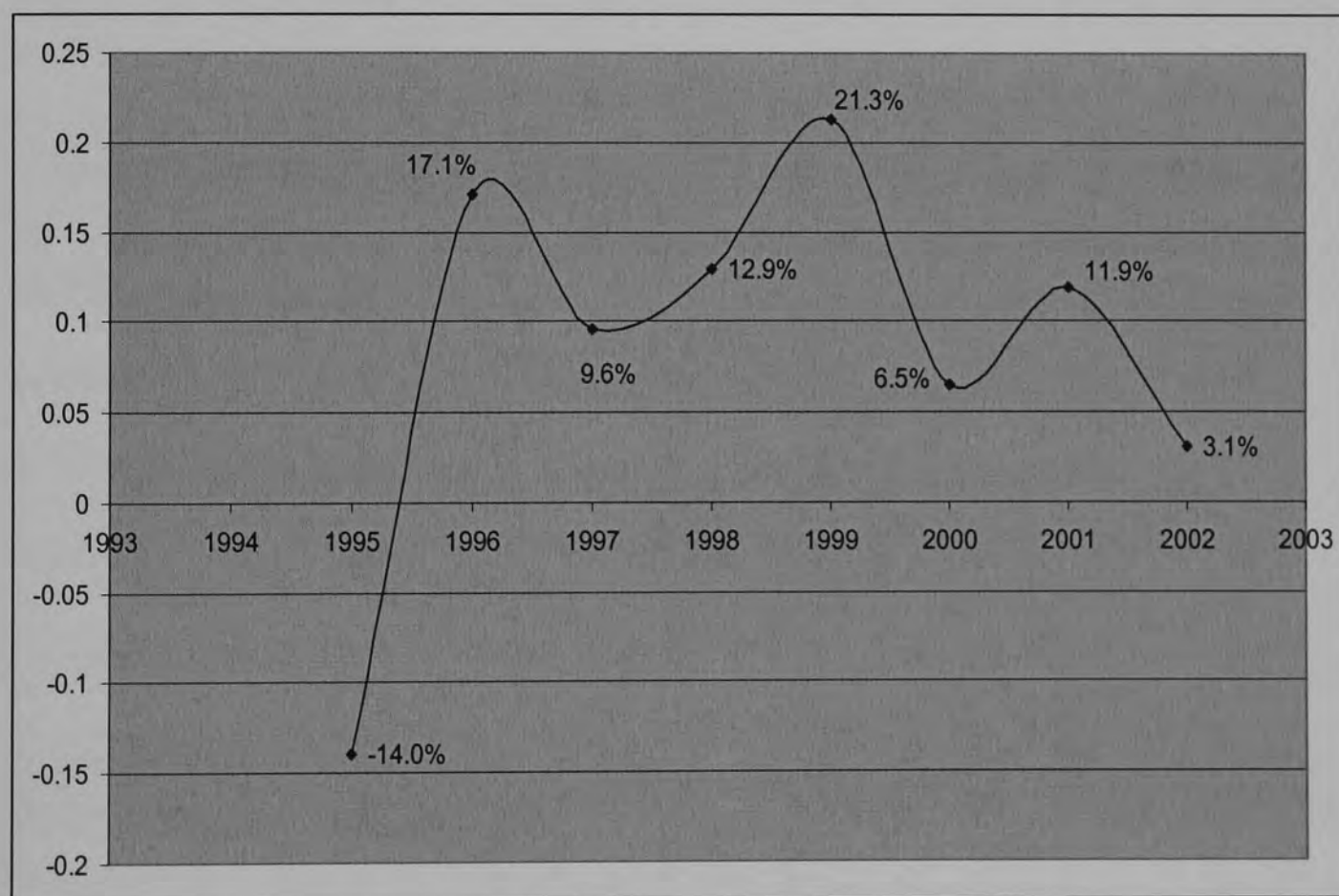
Number of enterprises		Number of working person				
Total enterprises	Total SMEs	0-5	6-50	0-50	51-250	>250
1995						
53.0%	30.0%	-	-	23.0%	7.0%	23.0%
1996						
66.0%	40.0%	-	-	29.0%	11.0%	26.0%
1997						
69.3%	45.3%	24.0%	12.2%	36.2%	9.1%	24.0%
1998						
71.1%	48.1%	24.7%	13.8%	38.5%	9.6%	23.0%
Total enterprises	Total SMEs	0-9	10-49	0-49	50-249	>250
1999						
70.4%	48.5%	25.0%	13.5%	38.5%	10.0%	21.9%
2000						
69.4%	49.4%	26.3%	13.3%	39.6%	9.8%	21.7%
2001						
68.2%	48.3%	31.0%	8.3%	39.3%	9.0%	19.9%
2002						
68.7%	48.6%	32.4%	8.1%	40.5%	8.1%	20.1%

Source: own calculation based on GUS, 1995-2002

4.6.2. Number of Registered Enterprises and Active Enterprises in the Polish National Register of Business Entities (REGON)

The pattern of SME registrations shows a series of peaks and troughs: between 1994 and 1996 lay a dip of -14% that led to a rapid increase of 17% the following year. 1999-2000 showed 6.5% fewer registrations; then 2000-2001, almost 12% more. This was followed by a smaller decline of 3% to 2002 (see Figure 4.10).

Figure 4.10: Percentage changes of Polish SME registrations (1995-2002)



Source: own calculations based on GUS, 1995-2002

The number of SMEs registered with the REGON at end-year 1996 has grown steadily since 1995. The rate of growth in the total number of SME registrations was particularly high in 1996 (17.1%) when the number of newly registered SMEs reached a record level of more than 280000 firms. In the years 1997–1999 the

number of new SME registrations increased to about 460000 (by 18.1%), causing the rate of growth in the total number of registered companies to grow at the end of 1997 and 1999 versus 1996 (by 7.3% and 26.6%, respectively) (Table 4.9). There were over 3.5 million SMEs (representing over 99.5% of SMEs in total) registered with the REGON at the end of 2002 (excluding agriculture and forestry, fishery and fishing, and public administration). This figure comprised 99.1% of small firms and 0.91% of medium enterprises. The number of SMEs registered was 3.1% at end-2002, which was higher than at end-2001.

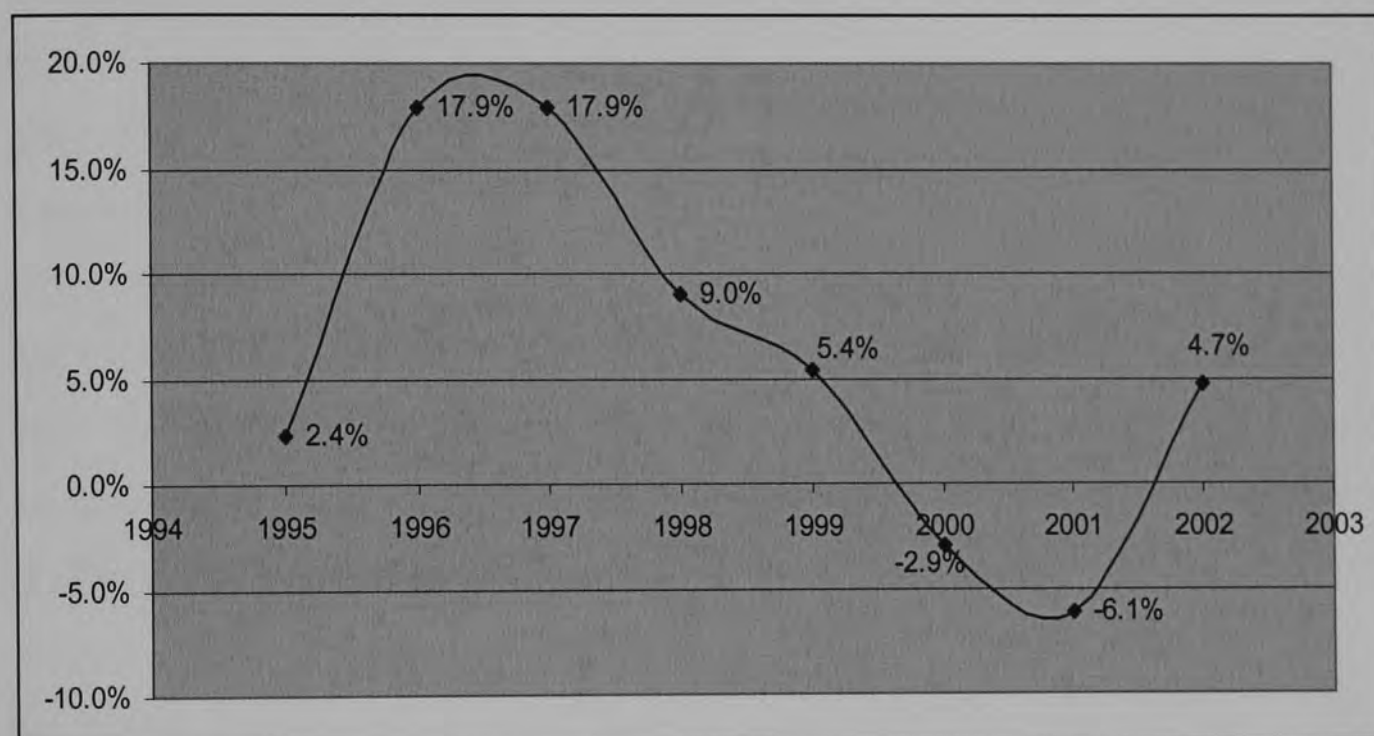
Table 4.9: Enterprises Registered in the Economy According to the Number of Working Persons (1995 – 2002)

Number of enterprises		Number of working person					% changes of SME registrations
Total enterprises	Total SMEs	0-5	6-50	0-50	51-250	>250	
1995							
2 099 577	2 093 148	1 921 151	148 779	2 069 930	23 218	6 429	-14.0%
1996							
2 379 949	2 373 484	2 191 892	157 530	2 349 422	24 062	6 465	17.1%
1997							
2 552 649	2 546 405	2 359 624	162 178	2 521 802	24 603	6 244	9.6%
1998							
2 792 697	2 786 462	2 591 499	169 511	2 761 010	25 452	6 235	12.9%
Total enterprises	Total SMEs	0-9	10-49	0-49	50-249	>250	% changes of SMEs
1999							
3 013 876	3 007 444	2 865 517	113 057	2 978 574	28 870	6 432	21.3%
2000							
3 182 577	3 176 161	3 029 859	117 200	3 147 059	29 102	6 416	6.5%
2001							
3 374 956	3 368 366	3 206 452	131 106	3 337 557	30 809	6 589	11.9%
2002							
3 521 189	3 514 859	3 346 870	137 591	3 484 461	30 398	6 330	3.1%

Source: own calculations based on GUS, 1995-2002

The total number of active SMEs increased from 1995 at varying pace until 1999. In the period 1995-1997, this rate of growth was high, touching 18% (Figure 4.11).

Figure 4.11: Percentage changes of total active SMEs in the economy (1995-2002)

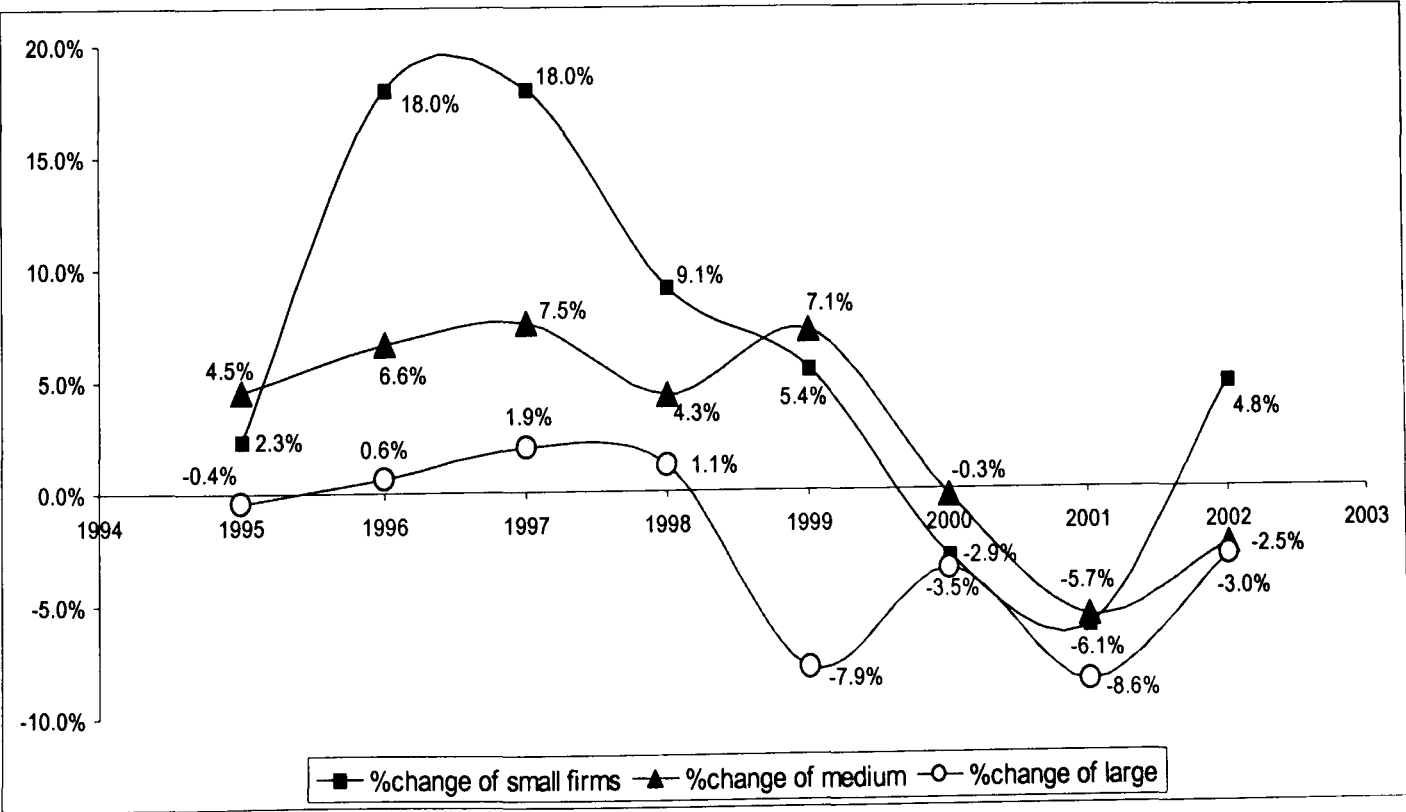


Source: own calculations based on GUS, 1995-2002

It fell steeply in 1998 by a half, to 9% and the following year descended further, to 5.4%. In 2000, for the first time since the period of transformation started, the total of active SMEs and small enterprises decreased. In that year the rate of decline was 2.9% and in 2001 it more than doubled to 6.1%. In 2002, after two years of decline, active SMEs again increased in number – by 4.7%. Medium-sized active firms in 1996 achieved a 6.6% increase in their number. In 1997, the rate of increase reached 7.5% (Figure 4.12), but this was to fall in 1998-1999 to something over 4%. Medium-sized enterprises remained at virtually the same number in 2000. In 2001, the growth rate declined by 5.7%, falling again, by 2.5%, in 2002. The growth in numbers of large firms in 1997 and 1998 was

comparatively weak (2.3% and 1.1% respectively). In 1999, a significant fall occurred, of over 8%. A relatively slight fall in the total of large active firms happened in 2000 (3.5%), followed by a steep descent in 2001 of up to 8.6%. This pattern of a steep fall in one year followed by a shallower decline in the next was seen also in 2002: large active enterprises were reduced in number by 3%, a circumstance similar to 2000 but much less than in 1999 and 2001. In 2002, SMEs in total and small firms did not fall in number in any sector under consideration. According to GUS in 2002, substantial variation in rates of growth in SMEs occurred among sectors – 1.6% for health care, 22.1% for other services. Increase in the number of active firms was slow in trade and repairs (1.7%) and financial intermediation (1.9%). Comparative high rates of growth in company numbers were observed in mining and quarrying (8.8%), electricity, gas and water production and supply (11.6%), transport, stock management and communication (8.6%) and education (9.2%) (GUS, 2002).

Figure 4.12: Change in the number of active enterprises in 1995–2002



Source: own calculations based on GUS, 1995-2002

Moderate increases in totals of active enterprises of between 4% and 5% occurred in three sections: industrial processing, construction, and hotels and restaurants. The growth in the total number of enterprises in 2002 was driven by a 5% increase in the number of the micro-enterprises that employ up to 9 people, whereas the number of small enterprise with 10–49 employees fell by 5.8%, medium-sized by 2.5% and large by 3%.

Table 4.10: Active Enterprises in the Economy According to the Number of Working Persons (1995 – 2002)

Number of enterprises		Number of working person					% changes of active SMEs
Total enterprises	Total SMEs	0-5	6-50	0-50	51-250	>250	
1995							
1 140 141	1 136 808	-	-	1 125 656	11 152	3 333	2.4%
1996							
1 343 623	1 340 269	-	-	1 328 384	11 885	3 354	17.9%
1997							
1 583 606	1 580 187	-	-	1 567 413	12 774	3 419	17.9%
1998							
1 726 073	1 722 616	-	-	1 709 294	13 322	3 457	9.0%
Total enterprises	Total SMEs	0-9	10-49	0-49	50-249	>250	% changes of active SMEs
1999							
1 819 200	1 816 016	-	-	1 801 748	14 268	3 184	5.4%
2000							
1 766 073	1 763 002	1 709 757	39 018	1 748 775	14 227	3 071	-2.9%
2001							
1 657 630	1 654 822	-	-	1 641 403	13 419	2 808	-6.1%
2002							
1 735 424	1 732 701	1 682 473	37 142	1 719 615	13 086	2 723	4.7%

Source: own calculation based on GUS, 1995-2002

The more rapid decrease in small (10-49 people) firm than in medium and large ones is very significant in 2002. It demonstrates the way in which larger companies are able to adjust to current circumstances and shows something of their stability – reductions in employment cause movement of medium companies to the small enterprise class and large firms to the medium group to only a limited extent. Active medium sized companies declined in number only in the construction sector (11.8%) and in real estate, business services and science (4.8%). The prime cause of decline in the latter group was the reduction in number of enterprises comprising the public sector. Great reductions in the large enterprise group of active companies were observed in only mining and quarrying (by 8.9%) and construction (by 20.7%) (GUS, 2002). In sector such as industrial processing, electricity, gas and water, repairs and health care, 1.5% expansion or contractive in medium or large companies was the rule, the exception being health care, in which the total of large companies increased by 12.5% (GUS, 2002). The improvement in the industrial processing sector was certainly linked with an expansion in export, with large and medium sized enterprises responsible to the greatest extent.

4.6.3. Polish SMEs in Foreign Trade

In 2002 the value of exports by SMEs amounted to USD 18.2 billion (Figure 4.11) (versus USD 15.8 billion a year before), which implied a 15.1% rise relative to 2001. In the same year, total Polish exports from all sectors reached USD 41 billion (versus USD 36.1 billion in 2001), an increase of 13.6%. Thus, SMEs in 2002 became more important as exporters from Poland since their exports grew more quickly than did the country's exports in total. In 2000 and 2001, the SME exports annual increase fell short of the overall exports increase: 8.6% and 14% in 2001, 11.6% and 15.5% in 2000. In 2001-2002 the decline of SMEs exporting

share was reversed: their contribution to the export total increased by 0.6% in 2002 over 2001 and achieved 44.5%.

Table 4.11: Polish SME exports and imports structure according to firm size

Description	1995		2001		2002	
	USD million	%	USD million	%	USD million	%
Exports						
Total SME exports	8,815.40	100%	15,847.60	100%	18,242.00	100%
of which:						
0–9 people	2,774.90	31.5%	3,886.40	24.5%	4,228.80	23.2%
10–49 people	2,451.60	27.8%	4,136.00	26.1%	4,571.40	25.1%
50–249 people	3,589.00	40.7%	7,825.30	49.4%	9,441.80	51.8%
Imports						
Total SME imports	16,034.70	100%	29,845.20	100%	33,462.00	100%
of which:						
0–9 people	5,707.20	35.6%	8,957.20	30%	9,765.20	29.2%
10–49 people	5,275.40	32.9%	9,531.90	31.9%	10,546.80	31.5%
50–249 people	5,052.10	31.5%	11,356.00	38%	13,150.00	39.3%

Source: Foreign Trade Research Institute on the basis of GUS data.

It has been noticed over many year that SMEs have put more effort into importing than exporting. SMEs find import activity to be more profitable than exporting because Polish products are comparatively poor in competitions while Poland’s economy is almost entirely open to foreign competition. Between 2001 and 2002 SME imports increased in value by 12.1% (from USD 29.8 billion to US 33.5 billion). Over the same year total Polish imports increased in value by 9.6% - less than the rise in imports by SMEs: their share of total imports increased from 59.4% (2001) to 60.7% (2002). In each of the years 1999-2002 Poland’s negative trade balance was lessened. At 0.6% lower than in 2001, 2002’s trade deficit stood at USD 14.1 billion. Between 1999 and 2001, the deficit had been reducing quickly. For the SME sector, however, the foreign trade deficit rose in 2002 by

8.6% over 2001 (USD 15.2 billion over USD 14 billion). The strong influence on Poland's overall trade deficit that SMEs had in previous year became even more evident in 2002. Firms employing 50-249 workers (medium-sized enterprises) were mainly responsible for the increased share of SMEs in general in foreign trade 2001-2002, as they increased their trading activity. These companies added to their exports by 20.7% - the largest ratio of growth of all the SME size categories according to employee numbers: enterprises with fewer than 10 employees (micro-enterprise) grew by 8.8% and the 10 to 49 employee enterprises (small enterprises) increased by 10.5%.

In 2002, large enterprises (firm with over 250 employees), by contrast, added 12.5% to their exports. The typical performance for SMEs is that the larger the employment – group, the better that group achieves in exports. This pattern was also observable in 2001. The largest class of SME by size contains enterprises strong and flexible enough to be effective at exporting. Since 1995, medium-sized enterprises have grown in dominance over SME exports in total. In 1995 they accounted for only slightly more than 40% of total exports of SMEs, whereas in 1999 for over 47%. At the same time, the role of small firms diminished (from 54.1% in 1998 to 52.8% a year later). This might reflect the progressing concentration and specialisation processes in the Polish economy; on the other hand, it could be indicative of the existence of barriers in exports for the micro-enterprises. In 2002, medium-sized enterprises accounted for 51.8% of the total SME exports. Micro-enterprises lost a considerable part of their share in SME exports – in 2002 that stood at 23.2%. Small enterprises had 25.1% in 2002: this showed just a slight contraction of their 2001 share.

Import by SMEs, however, were spread across the categories of SME fairly evenly. Medium-sized enterprises in 2002 took a 39.3% share, small enterprises 31.5%, and micro-enterprises 29.2%. In contrast to 1995, however, the most

significant trend was the increase in size of share by medium-sized enterprises chiefly at the micro-enterprises' expense. From 1995-1999 the imports of the largest SMEs, i.e., of medium-sized enterprises were growing at the fastest rates. The imports of that group increased in 1999, in comparison with 1995, by 4.6%. However, imports of small enterprises dropped most markedly (by almost 3%) in the micro-enterprises.

Additionally, it should be emphasised that in 1999, in comparison with the previous year, the import activities of the SME sector decreased. This drop, however, did not apply to the smallest firms (0–9 employees), where imports increased by 8.6%. Furthermore, the increase in growth rate of imports from 2001 to 2002 among all SMEs was highest (15.8%) for medium-sized enterprises. About 10.6% was achieved by the small enterprise group and 9.0% by the micro-enterprises. Large enterprises managed an increase of 6.0% in imports.

4.6.3.1. Main Directions of Polish SMEs Foreign Trade

The main destination markets for the goods of the Polish sector of SMEs are developed countries, including the European Union, which accounted for 67.0% of the entire SME exports in 2002 (Table 4.12). In the EU market, SMEs expanded their exports between 2001 and 2002 by 15.3%, a rate of increase much greater than the 3.8% for the preceding year. The German market, which was the major sales market for Polish SMEs within the EU, took up 53.7% of SME exports to the EU in 2002. In 2002, Germany's share in the total Polish SME exports (36%) fell to its lowest point since 1995.

Table 4.12: Regional Differences in SME exports and imports

Description	Exports				Imports			
	2001		2002		2001		2002	
	USD million	%	USD million	%	USD million	%	USD million	%
Total	15,847.60	100	18,242.00	100	29,845.20	100	33,462.00	100
Developed countries	11,371.80	71.9	13,128.60	72	22,100.70	74	24,449.70	73.1
of which EU	10,601.70	66.8	12,227.20	67	19,479.30	65.2	21,774.00	65.1
– Germany	5,849.40	36.9	6,562.20	36	7,365.50	24.6	8,434.70	25.2
Central and East European countries	3,655.90	23	4,321.00	23.7	3,616.70	12.1	4,033.80	12.1
of which CEFTA	1,360.30	8.5	1,576.00	8.6	2,556.10	8.5	2,741.60	8.2
of which ex- USSR	2,295.30	14.4	2,819.40	15.5	1,060.50	3.5	1,374.00	4.1
– Russia	683.4	4.3	856	4.7	502.8	1.6	626.4	1.9
Developing countries	819.8	5.1	792.4	4.3	4,127.80	13.8	4,978.60	14.9

Source: Foreign Trade Research Institute on the basis of GUS data.

The Russian crisis caused a decline in Polish exports in 1999. In response, the markets of Central and Eastern Europe became more significant: 23.7% of Polish SMEs’ exports in 2002, which exceeded 2001’s level, but still fell short of the 24.8% of 1998. Conversely, the share of Polish SME exports going to former Soviet Union countries (15.5%) that stayed lower than the level of 1998 and even below 1995’s. This changed Polish export position was caused largely by trade relations with Russia. In comparison with the rest of the Central and East European region, the markets in the CEFTA countries were developed much more favourably by Polish SMEs. Between 1995 and 2002, participation of these countries in the total exports by Polish SMEs extended progressively to a peak of

8.6% in 2002. In that year, developing nations' share fell to 4.3%, lower than at any time since 1995 (4.5%). Furthermore, the rate of SME exports to that region went down by 3.3% comparative to 2001, which could be implicative of the scale of problems that SMEs come across in competition on these markets.

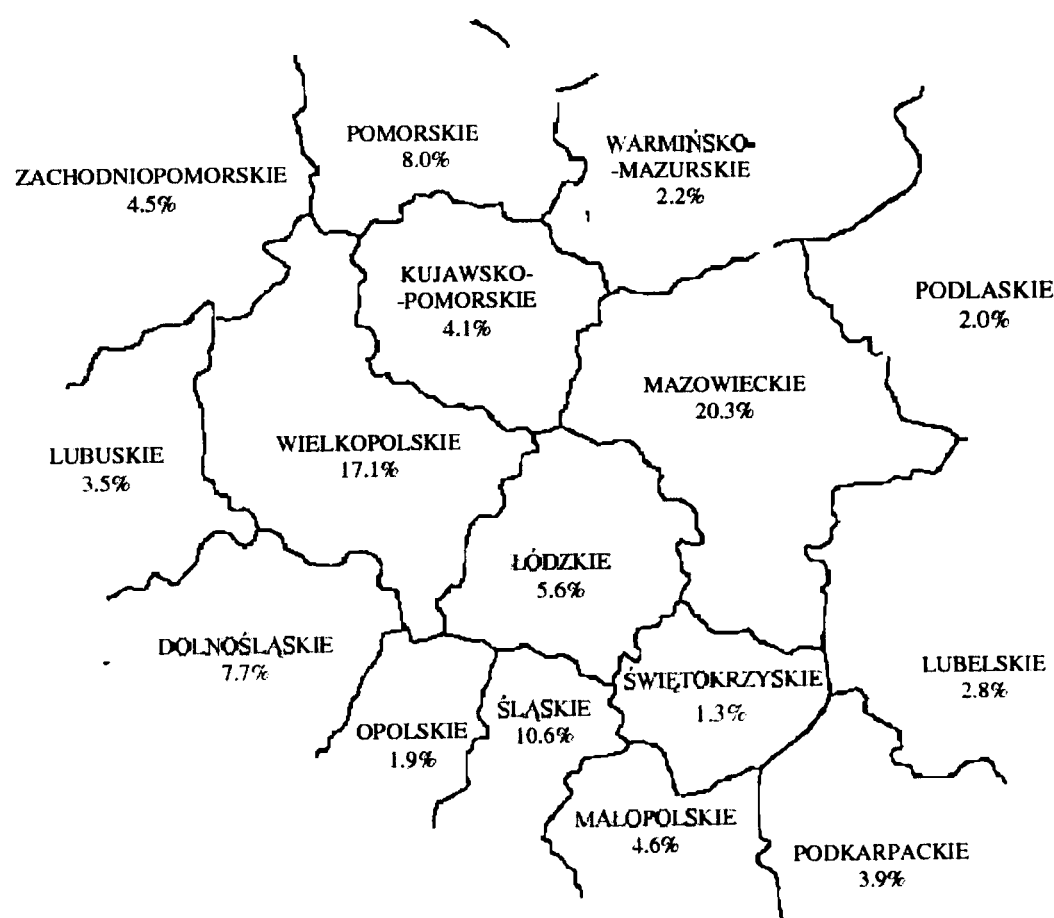
The largest market share in imports of Polish SMEs (73.1%) was the market in the developed countries. The share of the EU in SME imports stayed on level 65.1% in 2002, chiefly in consequence of SME's purchasing in Germany – 25.2% of Polish SME imports originated in Germany while nearly 40% came from other countries in the EU. Polish SMEs' imports from Central and Eastern Europe maintained their share in the total SME imports at level 12.1% in 2001 and 2001, of which CEFTA nations' participation (8.2% in 2002) was lower than in 2001 (8.5%) while the share of former USSR countries increased from 2001 (3.5%) to 2002 (4.1%). With regard to the market in developing nations, they took a 14.9% share of all Polish SME imports in 2002, which was their highest share ratio since 1995. The rate of 20.6% at which Polish SME imports from developing countries increased from 2001 to 2002 was higher than the SME imports coming from developed countries (10.6%) and from Central and East European countries (11.5%). This changed situation was caused by a huge increase in imported goods from Asia, especially from China.

4.6.3.2. Regional differentiation of foreign trade (by provinces)

A very small group of provinces that have links with the greatest areas of urban development plays by far the largest role in foreign trade. Savings in cost - especially, administrative cost-of business activity can be made by centres for logistical operations provided by the leading provinces (especially by their capital cities). Firms with branches in other provinces tend have their headquarters in the

dominant provinces. In consequence, imports delivered to them and exports sent out from other provinces are credited to the province in which the firm's headquarters are situated. This leading role in SME exports has been played by Mazowieckie, Wielkopolskie, Slaskie, Pomorskie, and Dolnoslaskie. These provinces accounted for 63.7% of exports by SMEs in 2002 (Figure 4.13). That percentage exceeded 2001's (62.8%). Wielkopolskie province made the greatest gain, increasing by 1.3%. The only province to experience a reduction was Mazowieckie (by 0.7%). Although Mazowieckie still accounts for the largest proportion of SME exports, it's pre-eminence over the Wielkopolskie province clearly diminished. Moreover, Mazowieckie province was the only province among the group of five leading provinces to reduce its share in SME exports in 2002 in comparison to 1995.

Figure 4.13: Share of individual provinces in SME exports in 2002 (%)



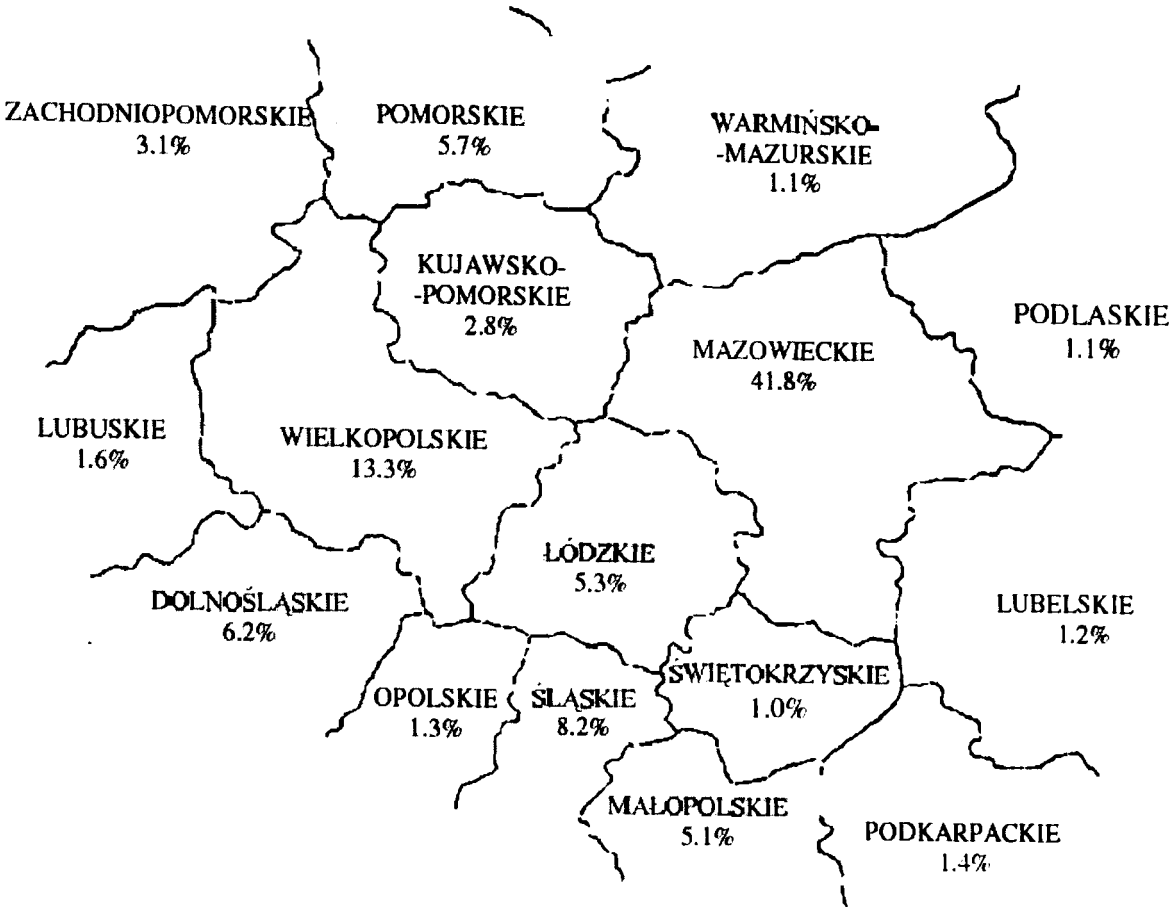
Source: Foreign Trade Research Institute on the basis of GUS data.

The five provinces exporting the smallest proportion of goods from SMEs were Swietokrzyskie, Opolskie, Podlaskie, Warminsko-Mazurskie and Lubelskie. Together they achieved only 10.2% of total SME exports in 2002 (in 2001, 10.6%), further evidence of the marked concentration of these exports in particular localities.

Imports by SMEs are even more strongly concentrated in the same group of five provinces than SME exports. The order of provinces according to value of imports (high to low) in 2002 was: Mazowieckie, Wielkopolskie, Slaskie, Dolnoslaskie, and Pomorskie (Figure 4.14). The supremacy of Mazowieckie province needs to be underlined: its share of total imports is twice as large as ratio of involvement in SME exports that it achieves. The unique position of Warsaw provides the context for this dominance: the city is a centre of logistics for the many firms importing consumer goods that are located there. These provinces accounted for 75.2% of imports by SMEs in 2002 (compared with 74.2% in 2001) – a significantly higher percentage than their share of SME exports.

The group of five provinces that were the least important in terms of SME imports accounted for only 5.7% of such imports in 2002 (compared to 6.0% in 2001). These were Swietokrzyskie, Opolskie, Podlaskie, Warminsko-Mazurskie and Lubelskie. The trends discussed above point to a rising inequality between the leading provinces and those that are the least important in terms of SME exports and imports alike. Moreover, this pattern mainly corresponds to the division into a better developed “Poland A” and an economically weaker “Poland B”.

Figure 4.14: Share of individual provinces in SME imports in 2002 (%)

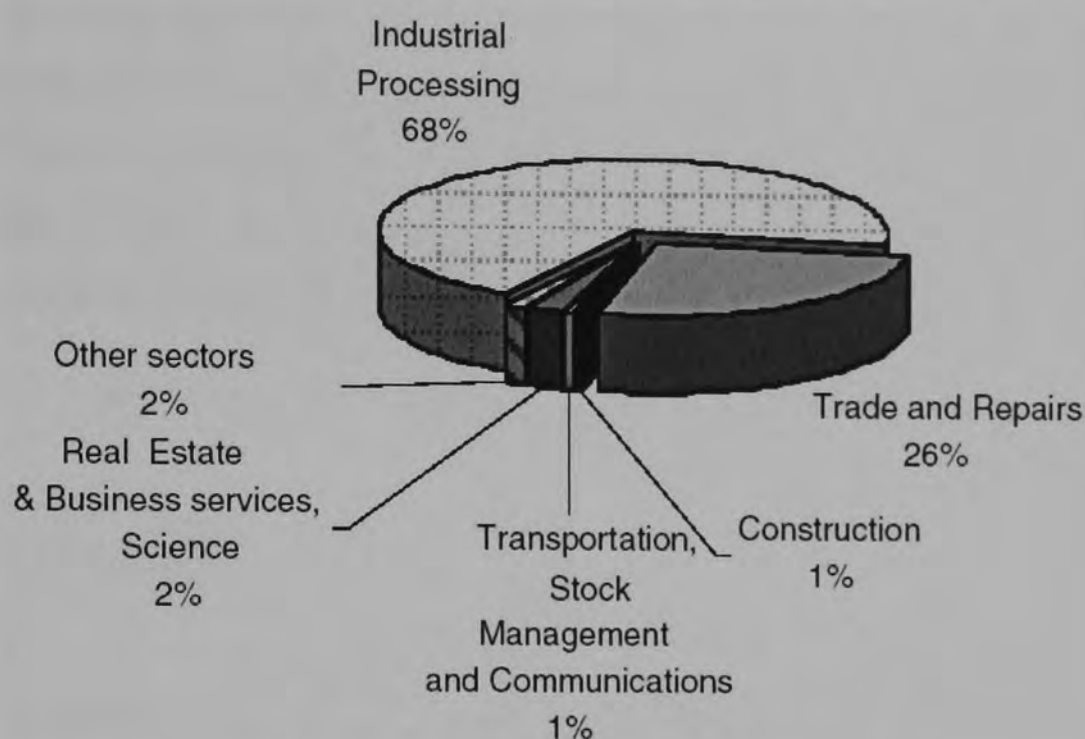


Source: Foreign Trade Research Institute on the basis of GUS data.

4.6.3.3. SME exports and imports in individual sectors of the economy

As in previous years, in 2002 both export and import activities were carried out mostly by firms included in two sectors: industrial processing, and trade and repairs. 95.3% of all SME exports and 92.9% of SME imports were accounted for by SMEs from the two sectors. Since 1995 it was noticed that, apart from the year 2001, there was a continuation of this trend whereby the exports share of the industrial sector increased, accompanied by a parallel reduction in the contribution of exports affected by the trade sector. The result is that instead of being dependent on support by trade intermediaries, exporters and producers increasingly follow direct dealing with foreign trading partners.

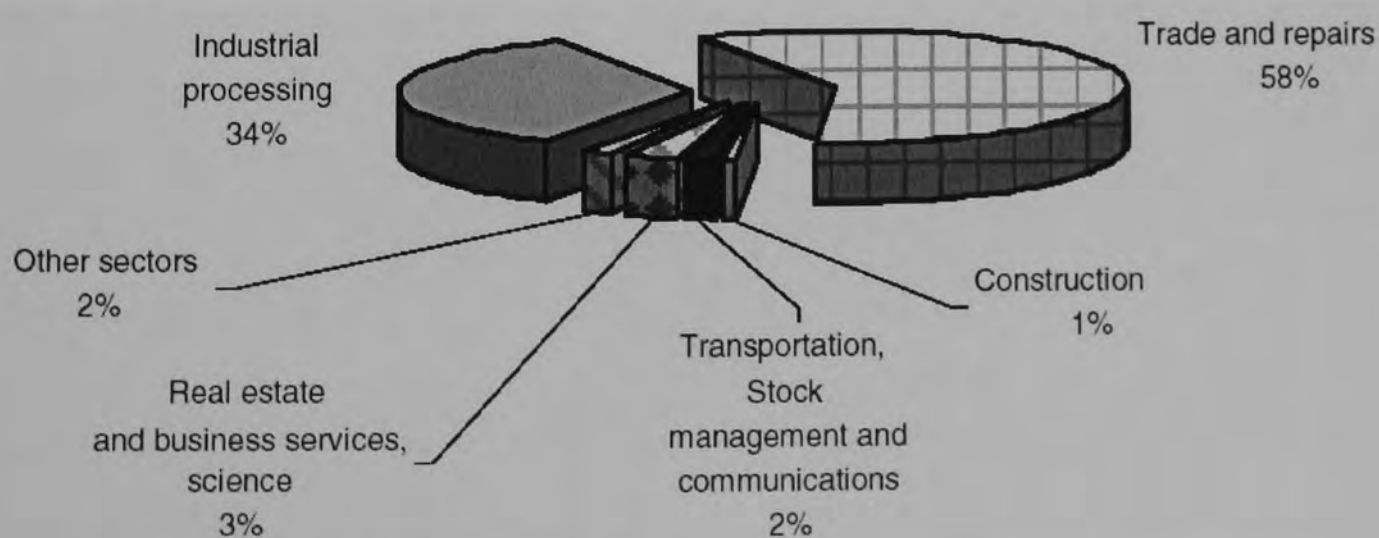
Figure 4.15: Structure of SME exports in 2002 per sector of the economy (%)



Source: Foreign Trade Research Institute based on PAED.

The trade and repairs sector takes 58% of imports of SMEs while industrial processing follows with 33.9% - a reverse of the ranking for SME exports in which industrial processing enterprises dominate. The trade sector added to its share of imports by SMEs in 2002 by 1.2% over the previous year as the industrial sector's share fell by 0.5%.

Figure 4.16: Structure of SME imports in 2002, by sector of the economy (%)



Source: Foreign Trade Research Institute based on PAED.

Among the remaining sectors, only real estate and business services, and transport, stock management and communications firms played a significant role in either SME exports or imports. Both these sectors made smaller impacts in 2002 (0.3% lower) than in 2001 (0.2% lower). The real estate sector took a smaller share of imports (by 0.6%) and the share of the transport sector stayed at the same size as in 2001.

4.7. Conclusion

The development of Polish SMEs has been progressing remarkably fast since the beginning of transformation of the economy. Different stages of Polish SME development explain the Polish patterns during socialism and the transition towards a market economy. The pre-transformation stage occurred during 1980 with the first attempts at reforming the centrally planned economy system in Poland. Those attempts were quite modest. However, they brought about a major revival in development of the private sector in Poland. The revival was supported by a stream of legislative actions eliminating legal-administrative barriers such as licences impeding market entry and opening the way for transfer of material resources from the socialised sector to private firms. During the pre-transformation period, the eighties witnessed a fast growth of the private sector, in which the number of enterprises increased from a little over 357,000 in 1981 to over 572,000 in 1988, and which employed almost 1,288,000 employees at the end of 1988 including an increase in the number of economically active women. Although the eighties witnessed a substantial growth in employment and in the number of private SMEs, a true boom did not start until 1989. At the time the Business Activity Act came into force and the Act set in motion the first of the driving forces of SME development, which was realisation of the principle of Polish

economic freedom. It allowed SMEs to make effective use of the second driving force, which was the economy of shortages being a part of the heritage left by the centrally planned economy and creating numerous and very vast niches for SMEs. As a result, in the years 1989-1991, during the stage of the entrepreneurship explosion, the number of registered private firms rose from 572,451 to 1,496,797. The stage that followed (1992-1994) was the stage of slowed-down development. Because, along with a huge quantitative growth of SMEs, widespread SME development reserves were, simultaneously, exhausted, the dynamics of new business start-ups began to decline and the number of enterprises eliminated from the market began to increase. A characteristic feature of this phase is also some changes in the SME sector economic structure resulting from a slowdown in growth rate of the number of firms in trade, construction and industry.

Finally, the stage of the development of Polish SMEs in an enlarged European Union (1995-2004) would indicate the beginning stage of “restructuring” in Polish SME development, which mainly emphasises qualitative changes in the SME sector. The year 1995 was some kind of interruption in development of Polish SMEs. First of all, it was due to the fact that a marked improvement in the macroeconomic situation was recorded between that year and the financial crisis in Russia (1998). In 1995, GDP growth rose to a peak of 7.0%, in 1996 - to 6.0% (and it was the year in which Poland, as the first post-socialist economy, managed to reconstruct statistical GDP from the period preceding transformation with its simultaneous profound structural and qualitative change), and in 1997 it was at 6.8%. It should be noted that, Polish GDP growth in 2000 remained at about the same level as in the preceding year and reached 4%, one of the highest levels in Europe. The foreign currency crisis in Russia began in August 1998, which is why throughout much of 1998 the Polish economy could still develop in favourable external conditions. The effects of the Russian crisis were only fully felt by the Polish economy in 1999. In the peak year 1997, the value of exports from Poland

to Russia amounted to approximately USD 2,155 million, whereas in 1999 these amounted to only approximately USD 710 million. Therefore, official exports to Russia were three times lower, and unofficial exports, i.e., purchases made directly by Russian citizens during their visits to Poland, probably decreased just as much, or even more so. Products thus exported were manufactured and sold by SMEs, and that is why the Russian crisis affected this group of enterprises the most. In fact, the Russian crisis caused a decline in Polish exports in 1999. In response, the markets of Central and Eastern Europe became more significant: 23.7% of Polish SMEs' exports in 2002, which exceeded 2001's level, but still fell short of the 24.8% of 1998. Furthermore, in the period 2001-2002, Polish SMEs expanded their exports in the EU market by 15.3% in 2002, a rate of increase much greater than the 3.8% for the preceding year. The German market, which was the major sales market for Polish SMEs within the EU, took up 53.7% of SME exports to the EU in 2002. In 2002, Germany's share in the total Polish SME exports (36%) fell to its lowest point since 1995. Medium-sized enterprises have grown in dominance over SME exports in total since 1995. In that year, they accounted for only slightly more than 40% of total exports of SMEs; in 1999 it had been for over 47%. At the same time, the role of small firms diminished (from 54.1% in 1998 to 52.8% a year later). Moreover, in contrast to 1995, in the period 2001-2002 the total value of exports by SMEs amounted to USD 18.2 billion (versus USD 15.8 billion a year before), which implied a 15.1% rise relative to 2001. However, in the same period, Polish SMEs found import activity to be more profitable than exporting because Polish products are comparatively weak competitors, while Poland's economy is almost entirely open to foreign competition. Between 2001 and 2002 SME imports increased in value by 12.1% (from USD 29.8 billion to US 33.5 billion).

The contribution of Polish SMEs to the generation of the GDP was very important in the period 1995-2002. In the period 1995–1998, the total of Polish SME share in generating GDP grew rapidly, increasing from 30.0% to 48.1%.

During the period 1995-2002, it may be noted that, the fundamental reason for these signs of crisis in the SME sector in 2000 was the significant drop in demand for goods and services offered by this sector. There was little chance in the short term of demand returning to even the level of 1997. Demand was unlikely to bounce back before 2004, after Poland's accession to the European Union and implementation of new investments financed by the so-called structural funds. However, development of Polish SMEs in an enlarged EU would not only increase the volume of orders for SMEs, but - first and foremost - increase the level of competition among them. From this perspective, the difficulties being faced by the SME sector since 1999 may have a salutary effect, forcing entrepreneurs to learn to operate in a more competitive environment. Furthermore, there are a number of measures that could be taken to increase the rate of growth and development of Polish SMEs - steps that have proven themselves in other countries and which have been under discussion in Poland for several years. These include moves to eliminate bureaucratic barriers that impede the creation of new enterprises and the functioning of existing ones; a reduction of the cost of labour and tax burdens on enterprises; as well as easier access to financial resources to enable entrepreneurs to grow their businesses. As a result, the information given in this chapter helps us to understand the requirements of the development process of Polish SMEs and allows us to build up a questionnaire for the empirical study of development of Polish SMEs such as the study of export behaviour of SMEs in Poland.

Chapter 5: Polish Small Enterprises in Gdansk – Results of a Sample Survey

5.1. Introduction

Export orientation helps SMEs to stay in business (i.e., by increasing their chances of surviving), increase their productivity and competitiveness and helps them to grow faster. This is the reason why many developing countries are currently encouraging SMEs to export a proportion of their output to overseas markets, which is a desirable alternative strategy for promoting the growth and development of SMEs. Therefore, the goal of this chapter is to synthesise results of a sample survey in the fields: competitive advantages of the small firm sector, employment and labour conditions, financial situation, and factors determining export behaviour of Polish small enterprises. The research presented below was conducted among a sample of small enterprises operating in the province of Gdansk for the year 2003. The survey covered a random sample of small enterprises which employed from 10 to 49 employees. The definition of a “small enterprise”, used for determining the population that the research was based on, is in full accordance with the one accepted by the European Union for research purposes.

5.2. Structural characteristics of the small enterprises

The sample consisted of 121 small enterprises from the region of Gdansk. The surveyed enterprises represent mainly the private sector of the economy (92.9%), only 7.1% belong to the public sector. The basic activities of the enterprises are: manufacturing – 12.4%, service – 39.7%, trading – 47.9%. The majority of

companies turned out to be individual businesses or limited liability companies (Table 5.1). Together these types of legal status cover slightly more than 81% of the sample, with nearly 49% share of individual businesses alone. There is also a significant share of partnership companies, which is estimated for as much as 17%. Like in other countries in transition, for example in Bulgaria (see Mateev, 1998), Polish private firms tend to be very small with the majority of family based businesses and self-employment. These numbers seem to reflect quite a characteristic structure of the SMEs sector in Poland.

Table 5.1: Legal status and organisational forms of small enterprises

Legal status	Number	Percentage
Individual's business	59	48.76%
Ltd companies	41	33.88%
Partnership	21	17.36%
TOTAL	121	100.00%

Source: Author's own calculation

With regard to the source of the capital, around 89% of the enterprises claim to be entirely Polish. Only 1% of enterprises have been established as economic units with 100% of foreign capital. A small proportion of enterprises (10%) have been established and operating with the use of foreign and internal capital combined.

The survey indicates that a majority of small enterprises are not more than 10 years old (see Table 5.2). However, it should be pointed out that the life-time of small enterprises has increased over the last few years (see Balicki A., Ghatak S., Szreder M., 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 environments in transition economies. It may also reflect lessons which the enterprises have learnt about operating in a market economy in the last decade.

Table 5.2: Small enterprises by age

Age of firms	Number	Percentage
Up to 5 years	28	23.14%
6-10 years old	42	36.71%
11-15 years old	38	29.40%
16-20 years old	7	5.79%
21 and more	6	4.96%
TOTAL	121	100.00%

Source: Author’s own calculation

The population of enterprises under this investigation consists of those economic units which employ from 10 to 49 employees. Table 5.3 presents the actual distribution of small enterprises by the number of employees in 2002 and 2003.

Table 5.3: Enterprises according to their size in 2002 – 2003

Number of enterprises	Percentage share of enterprises	
	2002 (Oct.)	2003 (Oct.)
10	50.8%	48.3%
11 – 15	25.0%	24.2%
16 – 25	11.7%	16.7%
26 – 35	6.7%	6.7%
36 – 45	5.8%	4.2%
46 – 49	0.0%	0.0%

Source: Author’s own calculation

5.3. Market and competition of small enterprises

The national market and local market seem to be the most important for the small enterprises from the sample (Table 5.4). There are only 1.7% of companies that do not supply their products at all in the local market, the majority depends completely on the local market – this accounts for 44.5% of all the examined enterprises. Between those extremes there are companies sharing their products among the local market and other markets.

Table 5.4: Distribution of sales for local, national and foreign markets

Markets	Percentage of sales					
	0	Up to 25	26-50	51-75	76-99	100
Local	1.7%	8.4%	10.1%	14.3%	21.0%	44.5%
National	49.6%	26.1%	16.8%	3.4%	4.2%	0.0%
Foreign	73.9%	16.0%	6.7%	0.9%	2.5%	0.0%

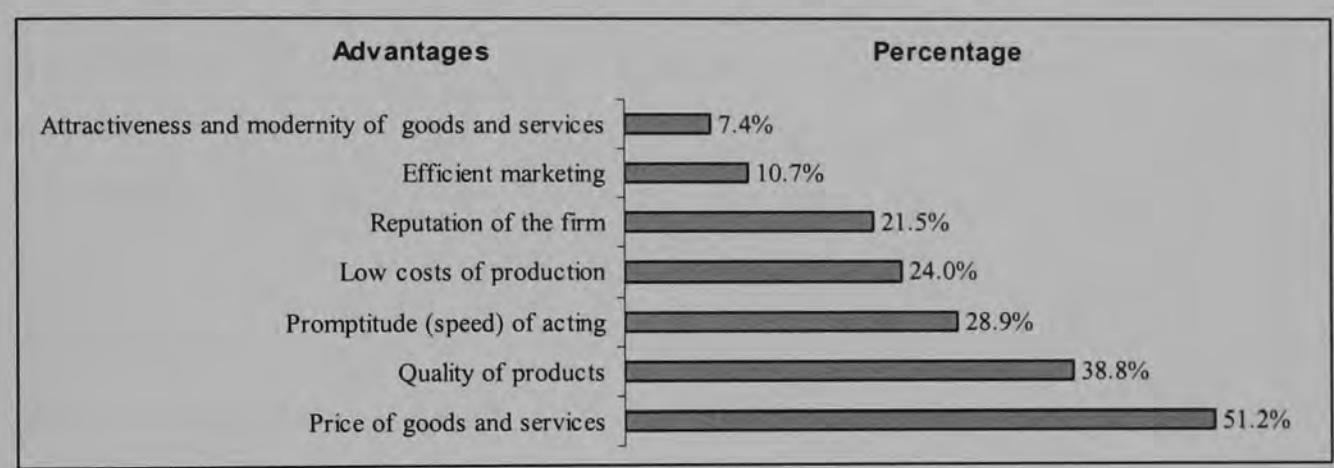
Source: Author's own calculation

Nearly 50% of firms do not sell any products or services in the national market. Respectively, 26.1% and 16.8% of the firms sell their products and provide services up to 25%, up to 50% in the national market. None of the firms in our sample sells 100% of their products in the national market. The share of small enterprises in the population of firms which export their goods and services has not shown any tendency to increase or decrease between 1993 and 1997 (see Balicki A., Ghatak S., Szreder M., 1998). As far as selling the output in the foreign market, around 26% of the firms export and nearly 74% of the firms do not export at all (Table 5.4). There are very few exporters that supply up to 50% of their products in foreign market. Their number accounts for less than 7% of the sample. Most of the non-exporters are simply satisfied with the domestic market and that is the reason for not trying to export. According to our survey for the year 2003,

nearly 60% of exporters have used bank loans for export sales. Furthermore, the results of our survey show that nearly 70% of all small enterprises have made no efforts to export their goods and services.

With regard to competitive advantages of small enterprises, the surveyed firms were asked to indicate up to two their main advantages over competitors. The results of the ranking are given in Figure 5.1.

Figure 5.1: Ranking of competitive advantages of enterprises



Source: Author’s own calculation

More than a half of interviewees indicated the price of products or services to be advantageous over other competitors and that shows that price may be more important from the enterprises’ point of view than quality of products (see Figure 5.1). The quality of products is thought to be an important advantage by over 38% of questioned companies. Fewer enterprises state that the instant acting on the market is their advantage. This opinion is shared by almost 29% of the examined population. About 24% of enterprises try to compete by low costs of production and nearly 22% of the enterprises believe their very important competitive advantage is the reputation of the firms. According to our survey, few firms try to compete through marketing and promotion. Over 89% of the small enterprises that claimed these are not their advantages over competitors. In the opinion of the

examined enterprises, the attractiveness and modernity of products are not very important when competing with others (only 7.4% of the sample is of the opposite opinion). It is worth noticing that in the figure above all the answers delivered by the respondents do not sum up to a hundred percent. That is due to the fact that they were allowed to give up to two answers.

5.4. Research and development of the small enterprises

The surveyed firms were asked to assess their overall technological level; including machinery, equipment, and the technological level of their products. As we see in Table 5.5, the technological level of the examined enterprises is estimated by the respondents mostly as high (53.7%) and very high (25.6%). Also, there is a slightly lower percentage of technological level of firms which is estimated by respondents as medium (19.8%). Opinions about the technological level of products offered by the enterprises are quite similar to those about the level of the enterprise.

Table 5.5: Technological level of enterprises and their products

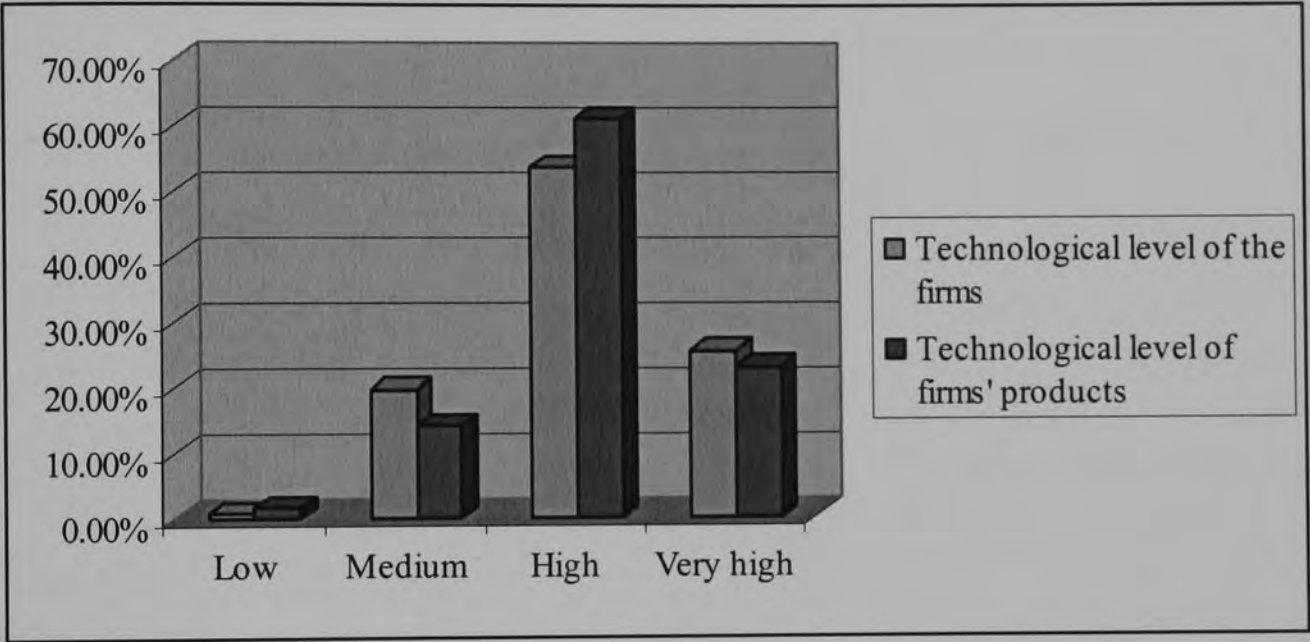
Assessment	Technological level of the firms	Technological level of firms' products
Low	0.83%	1.65%
Medium	19.83%	14.05%
High	53.72%	61.16%
Very High	25.62%	23.14%

Source: own calculation

The share of “high level” in the population (regarding the product) is about 61.2%, which is significantly more than for the enterprise level, while the share of

“medium level” is almost 14.1%, which is on the contrary lower than for the enterprise level. Furthermore, the share of “very high level” of firms’ products in the population is about 23.1% which is slightly less than for enterprise level (Figure 5.2; see also Ghatak S., Mulhern A., Stewart C., 2003).

Figure 5.2: Technological level of enterprises and their products



Source: Author’s own calculation

The majority of enterprises use computers and computer networks in their commercial activities (Table 5.6). Computers (IT tools) are widely used for office purposes. Nearly 63% of the enterprises claim to use them to a significant extent. While approximately 22% of the enterprises declare that IT tools are used but not very much, only 14% 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.

Table 5.6: Using computers and computer networks in commercial activities

Are there any IT tools used:	No	Yes, but not extensively	Yes, extensively	N.A
In office work	14.0%	22.3%	62.8%	0.8%
In accountancy	17.4%	5.8%	76.9%	0.0%
In distribution and marketing	25.6%	19.8%	52.9%	1.7%
In production process	46.3%	18.2%	33.9%	1.7%

Source: Author’s own calculation. Note: N.A – No response

However the most popular application for IT tools is accountancy. Nearly 77% of those questioned claim to use them to a great extent and a further 17.4% of the examined population does not use IT tools for accountancy related purposes at all. Only a tiny minority of less than 6% the firms declared to use them to some extent. IT tools are far less popular with distribution and marketing. There is a great share of those who claim to use them widely and that contributes to nearly 53% of the questioned enterprises. Slightly over a quarter (25.6%) does not use them at all whereas there is a similar number (about 20%) of those, who are of the opposite opinion and claim to use IT tools to some extent.

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. About 46% do not use them at all; approximately 18% use them to a slight extent while 33.9% use them to a great extent. Most of the examined population does use the Internet and they account for 69% (Figure 5.3). It may lead to conclusion that using IT tools and using the Internet are related to the overall level of technology used in the enterprise.

Table 5.6: Using computers and computer networks in commercial activities

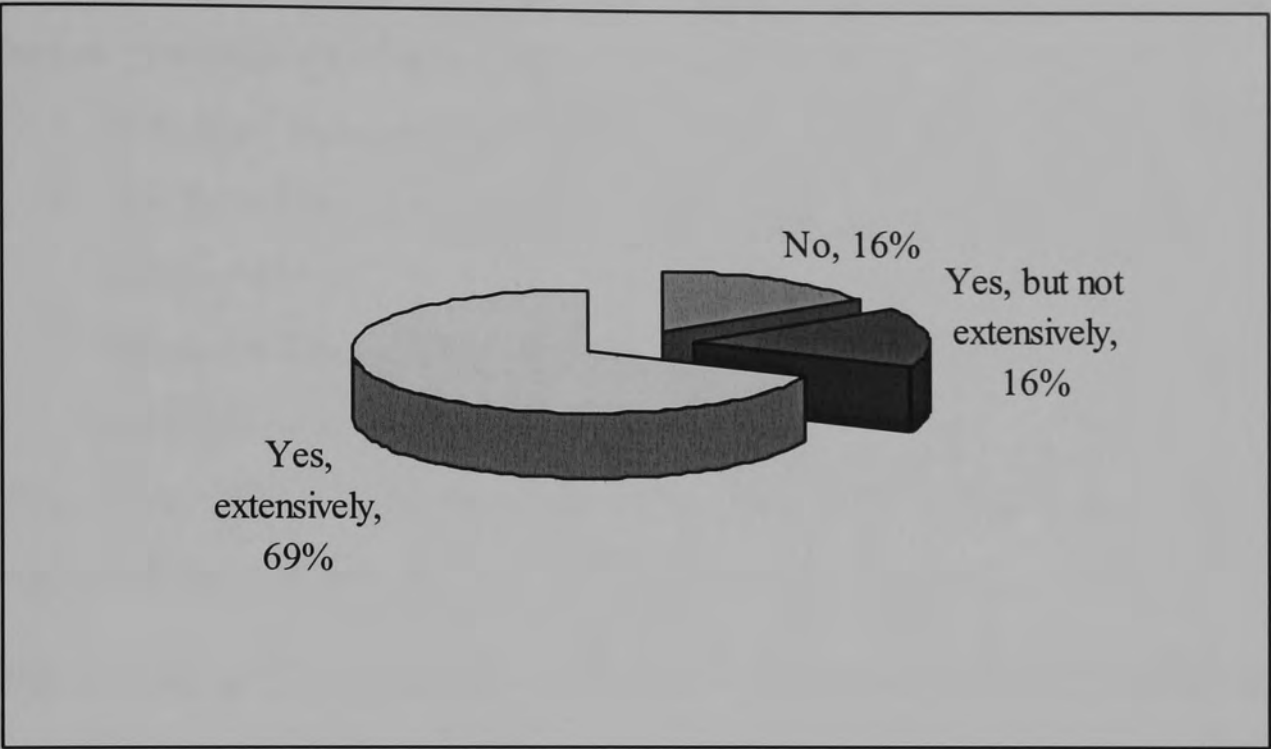
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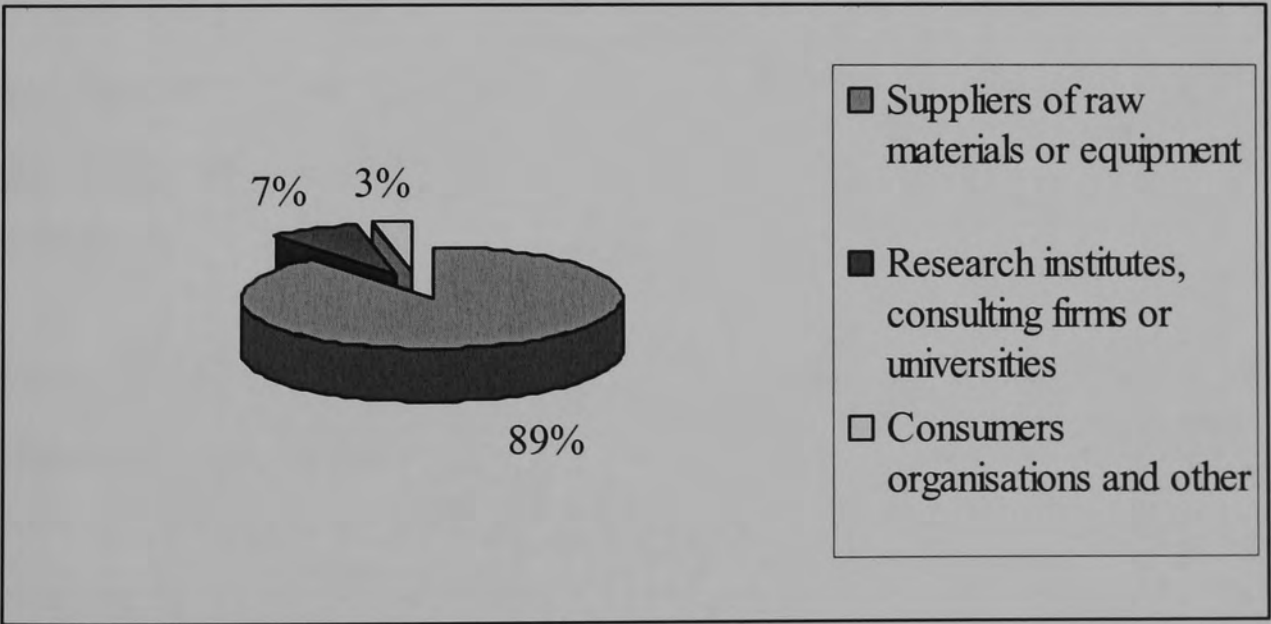
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Figure 5.3: Using Internet by small enterprises



Source: Author’s own calculation

Figure 5.4: Formal co-operation with other enterprises over the last five years



Source: Author’s own calculation

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 (see Figure 5.4):

- 89% have been collaborating with suppliers of raw materials or equipment;
- 7% have been collaborating with research institutes, consulting firms or universities;
- 3% have developed formal co-operation with consumer's organisations and with others.

More than 90% of those enterprises which have started collaborating with other organisations consider the collaboration useful and fruitful.

The attitude of the firm's management towards a 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 5% 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 5.7 shows the percentage of small enterprises which have introduced organisational or technological changes in the period 2002-2003. Slightly less than 70% of companies did not introduce any new or technologically improved goods. Most of the enterprises do not seem to be very innovative. Some new production methods were introduced in 19% of the enterprises, while the rest of them, which account for more than 80% of the population, did not. The organisational structure of the examined enterprises is slightly changed. During the past two years 2002-2003, there are organisational changes were made in more than 43% of

enterprises. Nearly 57% of the examined sample had not decided to make such changes during the mentioned period.

Table 5.7: 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	33.9%
More modern production methods	19.0%
Major organisational changes (e.g. in management procedures, quality control)	43.8%
Restructuring, mergers, take-overs	3.3%

Source: Author’s own calculation

Hardly any of the enterprises (3.3%) introduced any significant organisational and property changes. An overwhelming majority of 96.7% of the population did not do it and this fact corresponds with the earlier question of legal status changes.

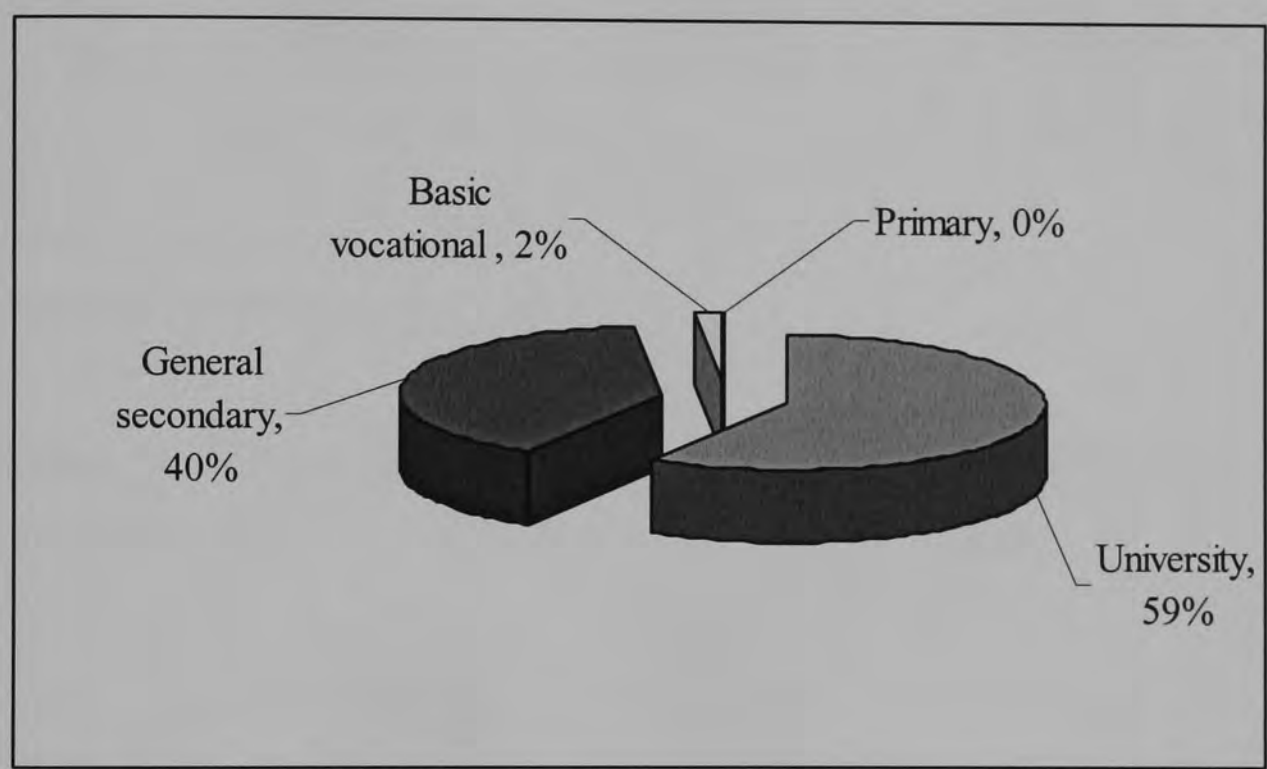
5.5. Age and education of the management team

The education level of employees in population of small enterprises in 2003 is given in Figure 5.5. Investigating the basic competences of the owners/managers and considering the level of their education, we discovered that the university educational level seems to be high. Almost 60% of managers hold university degrees. However, there is a substantial number of small firms for which the management team has secondary education (40%) and only 2% of managers in our survey have basic vocational education.

With regard to the age structure of the management team in small firms (Figure 5.6), there are only 11% of small enterprises in which the age of the management

is mostly below 30, while 54% of enterprises have managers whose ages are some below 30 and some older. There is also a considerable number of small firms for which the age of the management team is mostly older than 30 (36%).

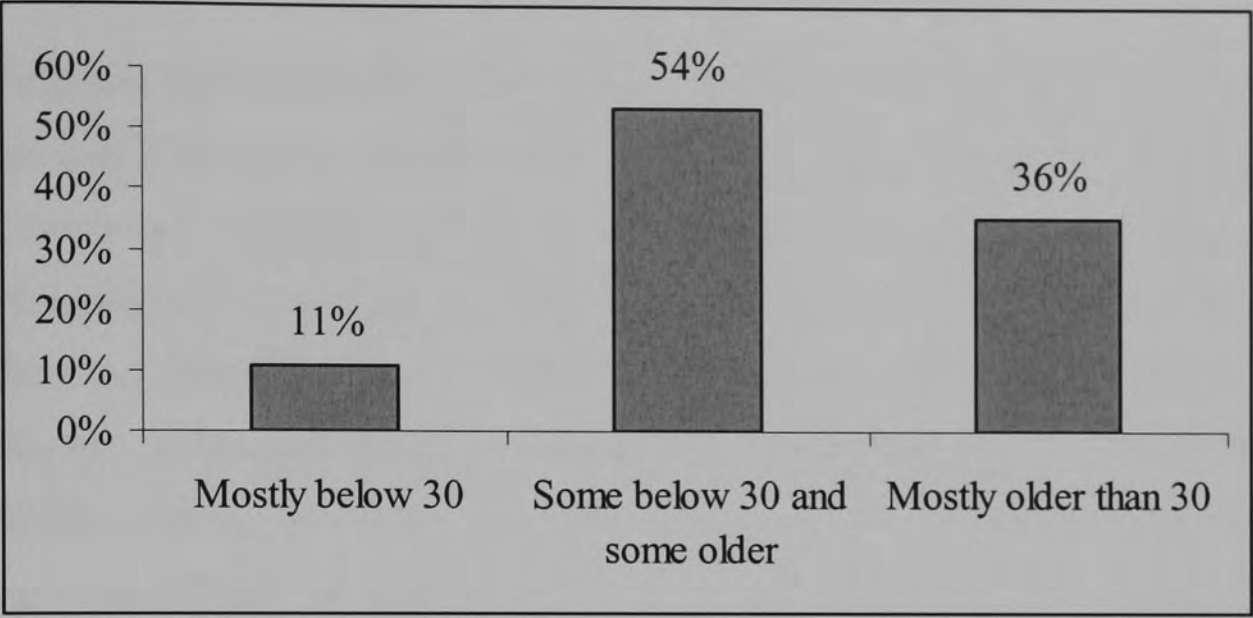
Figure 5.5: Percentage of employees according to their education in October 2003



Source: Author’s own calculation

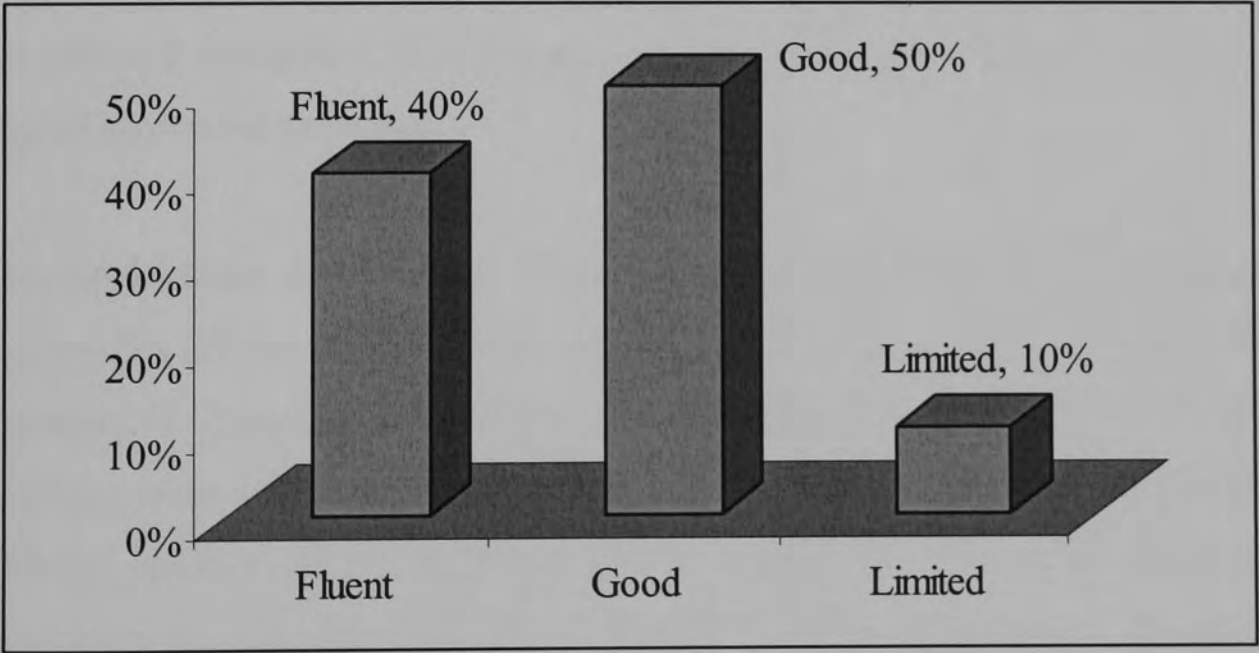
The foreign language skills seem to be very important for small enterprises. In our survey, the managers were asked to estimate their knowledge of foreign languages (Figure 5.7). The distribution is quite different: 40% of the managers indicated that their knowledge of foreign languages is fluent, 50% - good, and only 10% - limited. This seems to indicate the importance of knowledge of foreign languages that allows small firms to do more business with foreign companies.

Figure 5.6: The age structure of the management team



Source: Author’s own calculation

Figure 5.7: The knowledge of foreign languages of management team



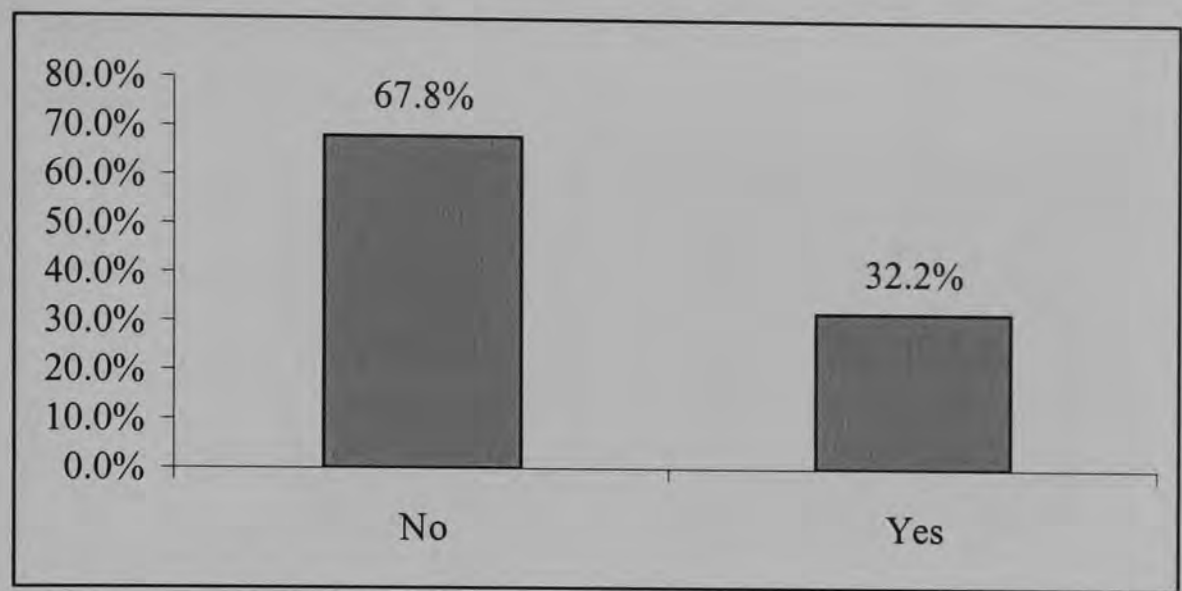
Source: Author’s own calculation

5.6. Financial information

Financial information in our survey has been deliberately confined to only several questions in which the respondents were expected to give the indices. The interviewed enterprises were asked to indicate one or two essential sources of financing their economic activity. The results show that self finance was seen as the most important source of financing SME activities, followed by bank loans. Shares, government subsidies and other sources did not play any role in financing SME activities. Our study, which covered the small Polish enterprises, indicated that the majority of enterprises (65%) do not think that getting a bank loan is difficult. Another 18% have never applied for a credit and quite a large group (17%) does not know whether it is difficult to get such a loan or not. Nearly 19% of interviewees complained of too strict bank requirement and 12% of interviewees claim there is too much documentation needed. Almost none of the questioned enterprises tried to get any external financial support. Only 1% of the population tried to do so.

The importance of obtaining special foreign credits may well be connected with possibility of the development of the firm's strategy, firms' export activities, company's competitive position and investment planning. In our survey, the owners were asked if they know to whom they should turn to obtain special foreign credit available for Polish SMEs. Nearly 68% of respondents do not know to whom they should turn to obtain special foreign credit available for Polish small firms (Figure 5.8).

Figure 5.8: Knowing where to obtain special foreign credit available for Polish SMEs according to number of respondents

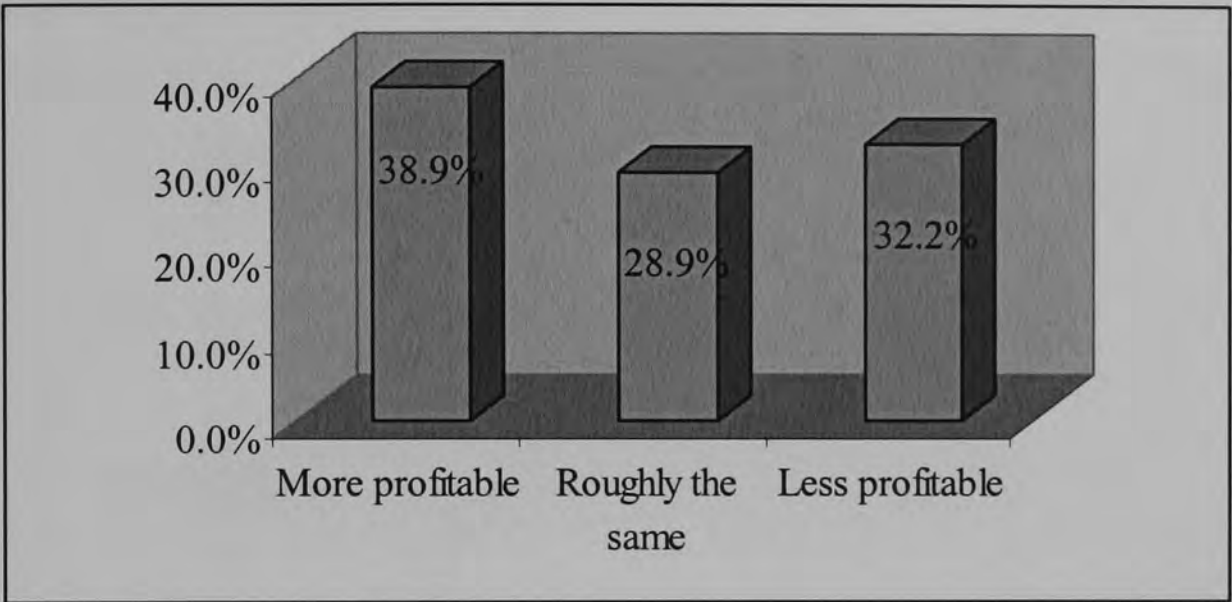


Source: Author’s own calculation

One of other important element of conducting business is the risk inherent to economic activity, and ways of hedging against it. About 90% of respondents state that hedging against risk is an important element of running their firms. One form of hedging against risk which may be particularly suitable for small firms is the institution of mutual insurance. Similarly, the institution of mutual credit may play an important role in generating credit necessary for small firms for growth financing. In our survey, almost 70% of respondents indicate that they are familiar with the idea of mutual credit institutions and 72% of those enterprises think that the mutual credit institutions could be helpful to small firms. With regard to risk of foreign exchange, this issue is an important element for the small firms involved in foreign trade. Analysis of the answer to the questions on foreign exchange seems to indicate that 66% of the firms worry about exchange rate. However, 34% of the population is of the opposite opinion.

The interviewed firms were also asked to indicate whether the firms are more or less profitable in the domestic market. The results are presented in Figure 5.9.

Figure 5.9: Profitability of small enterprises in domestic market



Source: Author’s own calculation

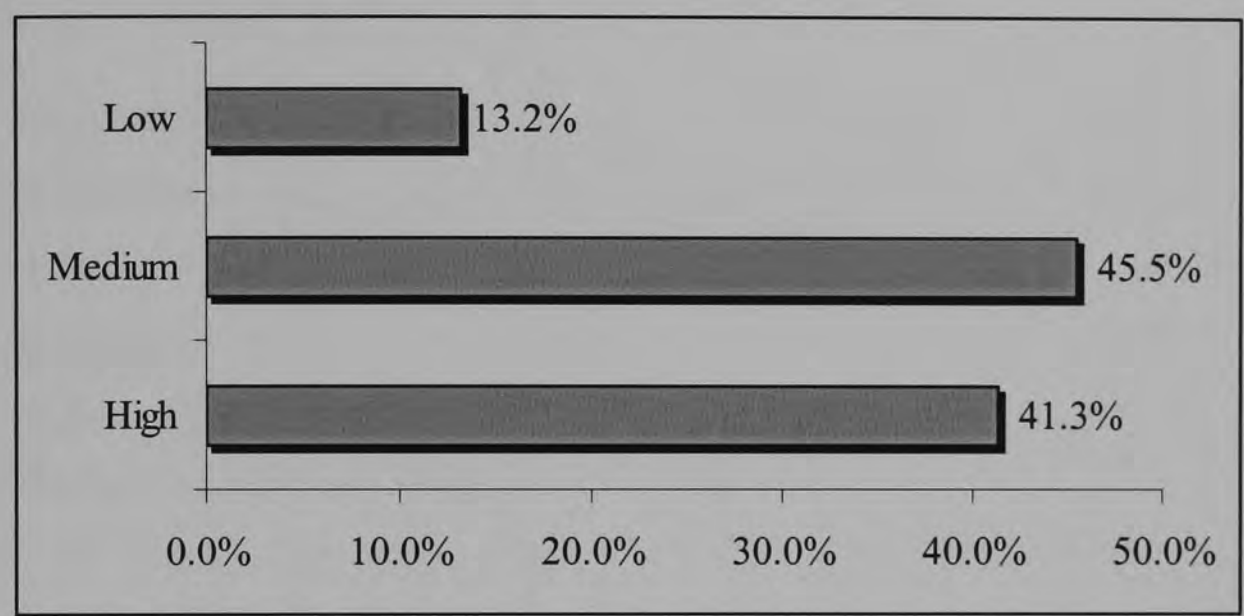
5.7. Knowledge and opinions about European Union

Since 1990, Poland has made much effort to adjust itself to EU standards in the area of political, economic and social activities. In 2005, Poland received full membership in the European Union. In our survey for the year 2003, we asked the surveyed firms a few questions about the possible influence of Poland’s accession on the sector of small enterprises and on the export performance of small Polish firms. First of all, it is worth noting that most commonly managers of small enterprises describe their knowledge about EU markets as medium and high (see Figure 5.10).

There are 45.5% of the population that claim to possess a medium level of knowledge of European Union members’ markets, which is slightly more than the number of those that believe their knowledge is of a high level as they account for

41.3%. Only 13.2% of enterprises claim that they know little about the markets of European Union.

Figure 5.10: State of knowledge about EU markets



Source: Author’s own calculation

The influence of the Polish accession to the EU is thought to be positive for the majority of the interviewed enterprises. However, 33.1% 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 and sell at a high price on the EU markets after the accession (39% of the population); others claim that it is going to improve access to sources of finance (15%) and reduce the costs of raw materials of enterprises (12%). 34% of the interviewees did not answer this question.

Over half of the enterprises did not take any action connected with the Polish accession to the EU – they account for 55.4% of all. The most important actions taken are as follows (in order of frequency): product quality improvement (17%), analysis of the needs of the UE markets (15%) and technology improvement (14%). Only three enterprises out of the entire examined population (0.3%)

improved employees' qualifications and 53.7% of the interviewees did not answer this question.

5.8. Conclusions

The purpose of this paper is to report the results of our field survey: competitive advantages of the small firm sector, employment and labour conditions, financial situation, and factors determining export behaviour of Polish small enterprises in transition economies. The research presented below was conducted among a sample of small enterprises operating in the province of Gdansk for the year 2003. The most significant findings in this study are:

- The majority of the Polish small businesses are typical start-up enterprises under ten years of age, which operate as individual businesses (49%) or limited companies (34%) and partnerships (17%),
- A large proportion of enterprises sell their products almost exclusively in domestic markets, there are 26% of exporters in the sample and nearly 60% of those exporters have used bank loans for export sales,
- Technological level of enterprises and products is assessed as very high or high (see also Ghatak S., Mulhern A., Stewart C., 2003),
- Almost 60% of managers hold university degrees and 40% of the managers indicated that their knowledge of foreign languages is fluent,
- Only 5% of small enterprises possess R&D department,
- The owner-managers prefer their own financial sources (owners' capital and profits) as the bank loans are expensive,
- The impact of the Polish accession to the European Union is thought to be rather positive; however about 33% of interviewers have negative opinions.

Chapter 6: Empirical Study of Export Propensity of Polish SMEs

6.1. Introduction

Export orientation has been shown to enhance the probability of survival of SMEs. It is associated with increases productivity and competitiveness of SMEs (Berry, Rodriguez and Sandee, 2001; Bagchi-Sen, 1999). It also helps them to grow more quickly while at the same time benefiting the nation by helping to reduce the balance of payments deficit (Levy, Berry and Nugent, 1999; Samie and Walters, 1999). For such reasons, many developing nations are at present encouraging SMEs to sell some of their output in overseas markets, which is a desirable alternative method of promoting development and growth of SMEs (Leonidou, Katsikeas and Samiee, 2002).

Several empirical studies of export behaviour of SMEs have shown that both external and internal influences are of importance, especially internal ones (see Bilkey and Tesar, 1997; Kaynak and Kothari, 1984; Yaprak, 1985; Axinn, 1988; Aaby and Slater, 1989; Keng and Jiuang, 1989; Louter et al., 1991; Chetty and Hamilton, 1993; Naidu and Rao, 1993; Calof, 1994; Caughey and Chetty, 1994; Cavusgil and Zou, 1994). In more recent years, these findings have been also backed up by others (Moini, 1998; Philip, 1998; Styles, 1998; Shoham, 1998; Zou, Taylor, and Osland, 1998; Leonidou, Katsikeas and Piercy, 1998; Katsikeas, Leonidou, and Morgan, 2000; Leonidou, Katsikeas and Samiee, 2002 and Lages and Lages, 2004). The internal factors of firm characteristics and decision-maker characteristics have been found to correlate with the enterprise's ability to identify suitable export opportunities and exploit them successfully. Managerial characteristics are known to include the manager's age and education, foreign

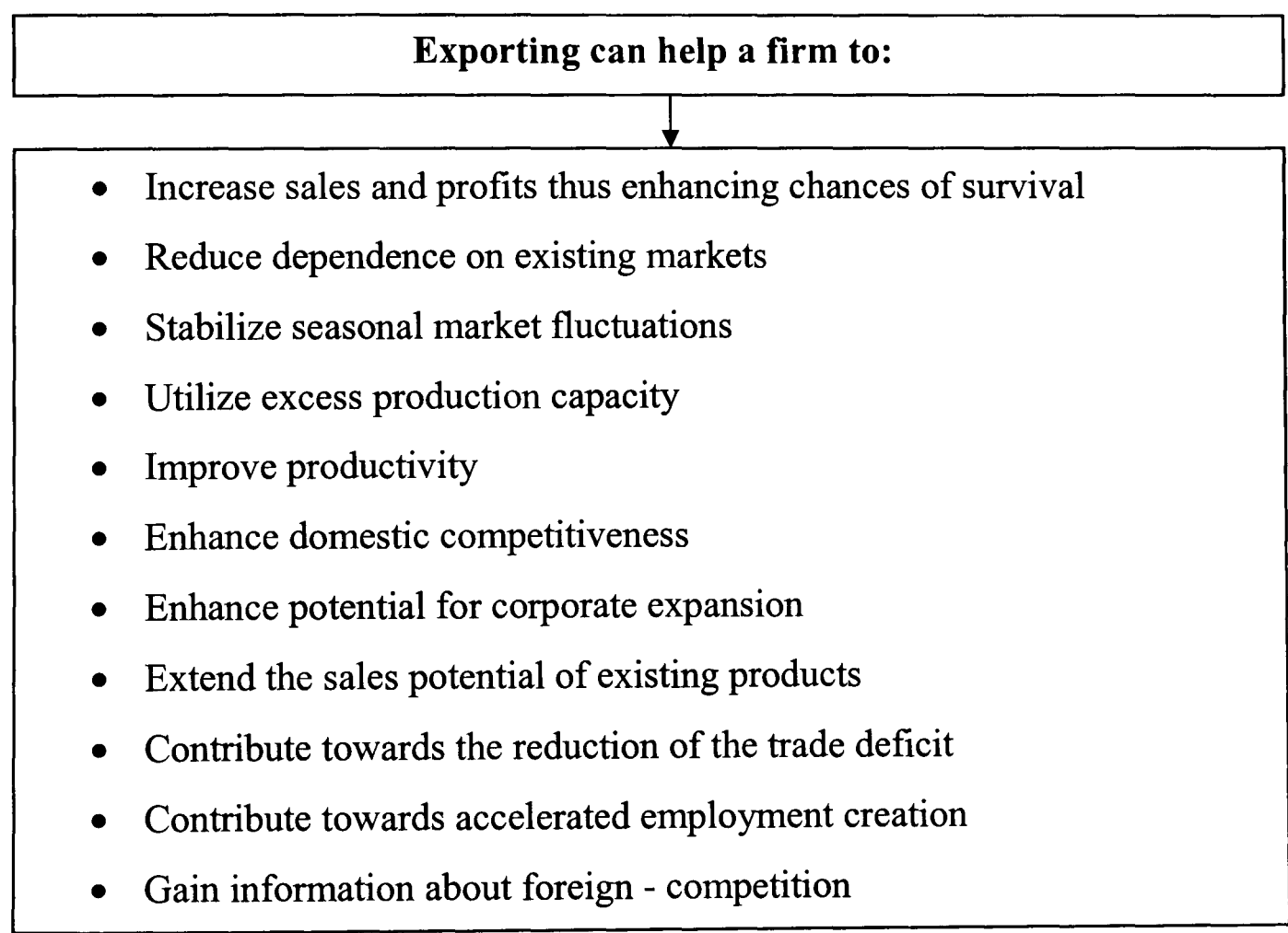
language skills and overseas orientation; while the commonly studied variables to reflect firm characteristics are: firm size, ownership structure of the business and years in business; product competitiveness, foreign market coverage and international experience (Leonidou, Katsikeas and Samiee, 2002). The firm characteristic that is studied most intensively appears to be firm size and its effect on the propensity to export (i.e. the probabilities of being either an exporter or a non-exporter) and/or the intensity of export activities (which is proxied by the share of export sales in total sales). While the evidence is uncertain despite the vastness of the literature (Aaby and Slater, 1989; Philip, 1998), many studies (e.g. Bonaccorsi, 1992; Gemunden, 1991; Miesenbock, 1988) still support a positive but weak relationship between firm size and export propensity. Investigation of the relationship between managerial characteristics and export performance has demonstrated a clear, positive relationship between the manager's educational level and the extent to which the firm is involved in exporting (Axinn, 1988; Keng and Jiuang, 1989; Moini, 1998). On the other hand, the evidence concerning the relationship between the decision-maker's age and export performance is inconclusive: Aaby and Slater (1989) reported a negative relationship while Kaynak and Kuan (1993) found a positive one. It has also been argued that enterprises whose decision-makers speak foreign languages are expected to perform better at exporting than do enterprises with mono-lingual managers (Kaynak and Kuan, 1993; Lautanen, 2000; Moini, 1995).

The recent success of SMEs in international markets has been connected with rising trade deficits and other economic problems, but these have driven many developing countries to refocus on seeking strategies, on design of policies and on assistance programmes to promote, develop and improve the export capabilities of their SMEs. However, sound policies and effective assistance programs can only be developed if policy-makers have a good understanding of the dynamics of

SMEs in general as well as the determinants of SMEs’ the export propensity in particular.

Most of the work done on the export behaviour of SMEs has been based on the data pertaining to developed countries. These studies are helpful for improving our understanding of the subject, but a shortage of information about developing countries remains; and attempts at general conclusions based on findings from only industrialised economies may be both ‘dangerous and misleading’ (Katsikeas and Piercy, 1993).

Figure 6.1: Potential Benefit from Exporting



Source: Compiled from Berry, Rodriguez and Sandee (2001); Samie and Walters (1990); Levy, Berry and Nugent (1999).

Many small developing countries, aware of the potential benefits (Figure 6.1), have increasingly acknowledged and faced up to a recent development that is needed to promote export-oriented SMEs in order to achieve sustainable development of an export-led economy, and hence, deal with the structural imbalance (the 'missing middle') in the economy (Katsikeas and Piercy, 1993). Since then, a number of states have established SME export-promotion schemes as a way of increasing the growth and development of SMEs while at the same time solving or evading the 'missing middle' problem.

Over the last several years, Poland has experienced some improvement in various manufacturing industries. The value of exports by Polish SMEs in 2002 amounted to USD 18.2 billion (compared with USD 15.8 billion in 2001), which implied a 15.1% rise relative to the previous year (GUS, 2003). In the same year, total Polish exports reached USD 41 billion (against USD 36.1 billion in 2001), an increase of 13.6%. So SMEs' exports grew more quickly than did those of the nation as a whole, thus strengthening the role of SMEs in Poland's export performance. This is because annual increases in exports by small and medium-sized enterprises in previous years had been smaller than increases in total exports (8.6% and 14.0% respectively in 2001, and 11.6% and 15.5% in 2000). The contribution of SMEs to total exports reached 44.5% in 2002 increasing by 0.6 percentage points over the previous year.

In the present chapter, I intend to investigate the major factors influencing export propensity of SMEs in Poland, basing on a statistical sample for the year 2003. All the enterprises that have been examined are located in the province of Gdansk. For its set of hypotheses, this study postulates that a Polish SME's propensity to export is determined by the following internal and external factors. The former are: i) age of the business; ii) firm-size in sales; iii) firm-size in number of employees; iv) ownership structure; v) comparative advantages; vi) technical level of products;

vii) the manager's age, educational attainment, foreign language skill, and viii) exporting has on the perceived profitability of exports, risk and cost of the business. Apart from internal factors, the role of external factors such as i) size of the market and competition; ii) tariffs and non-tariff barriers; iii) foreign exchange rate policy, insurance and financial assistance, knowledge and opinions about the European Union will also be considered. Because of our interest in the export propensity of SMEs (i.e. either an SME is an exporter or it is not), the dependent variable will be dichotomous and the applicable analytical model should come from the binary-choice genre of models (Griffiths, W. E., Hill, R. C., Judge, G. G., 1993 and Ghatak S., Manolas G., Rontos K., Vavouras I., 2001). Consequently, the Logit model is employed. The specification and estimation details of the Logit model are relegated to a later section in the chapter.

The rest of this chapter is organised as follows: Section 6.2 reviews the existing strands in the literature on export performance, then turns to the theoretical model of export activities and expands it in the context of the current institutional framework to account for factors. Section 6.3 sets out the research methodology. This section deals with the data sources, questionnaire design, data collection techniques, model specification and estimation techniques of the Logit model. The analytical results of survey are expounded in section 6.4, and finally, the last section 6.5 presents the conclusions and policy recommendations of this study.

6.2. Theoretical Framework

This section deals with a review of the most recent export performance studies. It covers an overview of the existing articles on export performance, followed by an extensive review of empirical studies to explain the performance from the internal and external environment. The goal of the literature synthesis is twofold: (i) to

summarise existing research and (ii) to draw from this research a comprehensive list of factors that may influence on export propensity, i.e. play a noticeable role in determining why some SMEs in Poland are exporters and others are not.

6.2.1. A Review of Empirical Literature on Export Performance of SMEs

Although research on exporting business took off in the 1980s (Miesenbock, 1987; Madsen, 1987; Aaby and Slater, 1989), many researchers had become engaged in this line of investigation as early as the 1960s. At these early stages, most attention was paid to the behaviour of exporting firms without focusing on performance. For example, in the 1970s, Bilkey (1978) carried out a literature review of 43 exporting studies, which included only four studies aimed at explaining export performance. Besides, these four studies identified successful exporters purely on their being active or not in exporting at the time of research. In consequence, any enterprise that was inactive in a foreign market or did not sell in foreign markets was considered an unsuccessful exporter. This somewhat naive interpretation of the export performance concept clearly does not consider the extent of the exporter's foreign activities or the effectiveness of these operations. In the 1980s and, more so, the 1990s, internationalisation increasingly became a topic of interest in the political, business and the scientific spheres. An increasing number of researchers became engaged in explaining firms' export performance. This growing stream of export research over the years has resulted in various attempts at creating theoretical frameworks for export performance, i.e. Miesenbock (1987), Madsen (1987), Aaby and Slater (1989) (including the follow-up studies by Chetty and Hamilton (1993), and by Styles and Amber 1994)), Gemünden (1991), Zou and Stan (1998), Leonidou, Katsikeas and Piercy (1998), and Leonidou, Katsikeas and Samiee (2002). All of these studies have contributed to the existing position of export performance measurement and its determinants.

6.2.1.1. Miesenbock (1987) – Madsen (1987)

Miesenbock (1987) has provided an especially interesting insight on the subject of the exporting behaviour of small firms. He argues that the decision-maker is the most important single determinant in small business internationalisation. Also, his idea “the empirical studies in this review show that exporting is a sequential process, during which the firm increases gradually its export commitment” (Miesenbock, 1987, p.45) supports the Stages Theory of Internationalisation (e.g. Johanson and Vahlne, 1977). Lastly, he concludes that, based on the publications it is still impossible to state which variables influence export performance: “The research needed is sophisticated in investigation contents as well as statistical methods. Simply listing of reasons for exporting, export stimuli, etc. is not likely to cause any progress.” (Miesenbock, 1987, p.46).

Seventeen export performance studies (conducted at the firm level) published between 1964 and 1985 are synthesised by Madsen (1987). He writes: “The basic idea is that the performance of an organization (‘O-performance’) is a result of a continuous interaction with other groups of variables, namely its own organizational structure (‘O-structure’), the structure and performance of its environment (‘E-structure’), and its own strategies (‘strategy’)” to categorize the operationalised variables as indicators of 23 concepts (unobservable or latent variables) that pertain to four general categories contained within the Strategy Structure Performance paradigm (see Table 6.1). This Table indicates the relations between the respective variables and export performances reported in this review. As can be seen, few determinants have been related to as many as three performance concepts, so the result is far from conclusive.

Table 6.1: The Strategy Structure Performance paradigm – Concepts and Associations

E-structure	O-performance (export profitability, export sales, export growth)
Export market attractiveness	P+ (2), S+ (2), S- (1), G+ (1), O (3)
Trade barriers	P- (1), S- (2), G+ (1)
Physical distance to market	P- (1), S+ (1), S- (4)
Psychological/cultural distance	P- (1), S- (1), G+ (1)
Domestic market attractiveness	P- (1), S (1), S- (1)
Type of market	O (4)
O-structure	
General company resources	P- (2), S+ (4), G- (1), O (5)
Knowledge export marketing	E+ (1), S+ (4), S- (1), G- (1), O (3)
Management support	E+ (2), P+ (1), S+ (5), O (2)
Status export organization	E (1), P (2), S (2), O (3)
Technological intensity	E- (1), S+ (2), G+ (1), O (2)
Strategy	
Market research intensity	E+ (1), S+ (2), O (4)
Price competitiveness	E+ (1), P- (2), S+ (2), O (2)
Planning & control intensity	E+ (1), O (2)
Product strength	E+ (1), P+ (1), S+ (6), O (2)
Internalization marketing function	E (1), P (2), S (2), S+ (1), O (4)
Channel support	P+ (3), S+ (1), G+ (1)
Communication intensity	E+ (2), P+ (1), S+ (4)
Adaptation of marketing policy	E+ (1), S+ (3), S- (1), O (1)
Marketing concentration	P- (1), S (1), S+ (1), G- (1), O (2)
E//P/S/G = association reported with export success in general/profitability/sales/growth O = no (or very weak and unstable) association reported +/- = positive/negative association reported; no + or - = direction of found association is not clear In parentheses, the number of times the respective association was reported.	

Source: Adapted from Madsen (1987)

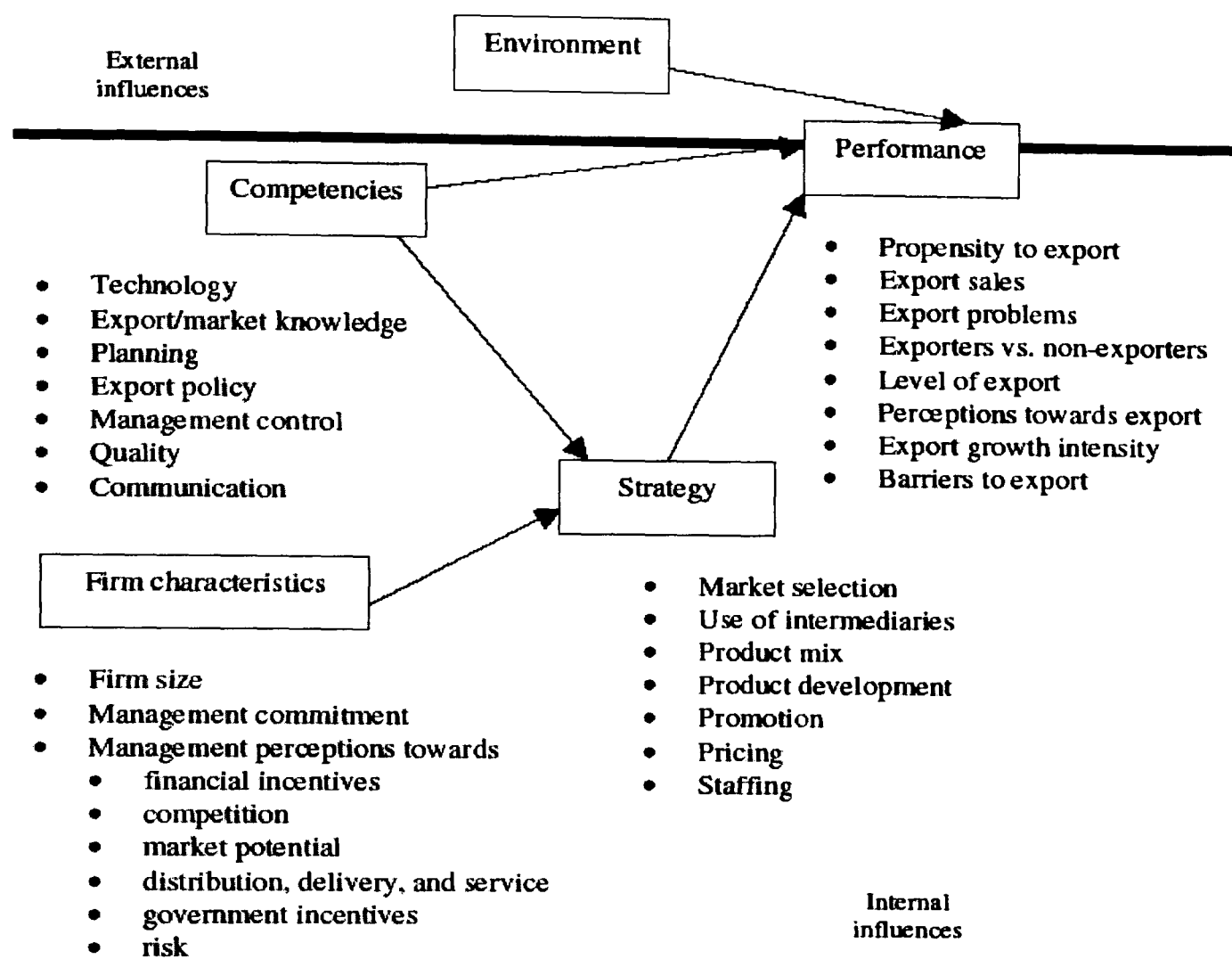
This can be explained in part from the fact that the empirical studies reviewed operate the various concepts in different ways, but the effect of some “depends on the situation”. Madsen (1987) lists several restrictions. These refer to the lack of interaction effects, the question of causality, and the limited number of operational variables and concepts in each study. Most of the studies examine invariable direct effects of the three categories on performance while only some of the studies include indirect results of organisational and environmental structure through strategies and none includes interaction effects among the various categories. Related to the causality, Madsen has considered whether the “commitment to

exporting” causes good export performance or it is another way around. Lastly, the author identifies that none of the studies is exhaustive with respect to the number of variables such as the environment. The author writes: “This neglect of environmental variables might be attributed to the fact that most of the studies are concerned with the investigated firms’ total exports. In other words, the environment is not clearly defined, since it consists of many markets with differing characteristics ...”. Conversely, this neglect does reduce the value of the studies, because environmental variables are likely to influence export performance. Many errors of specification, and biased estimates, can be caused by leaving out determinants of export performance. After all, every one of the 23 concepts has at least one invariable impact with a concept in the export performance category. This means that they simply focus on a few concepts, so the specification error is inherent in all the studies reviewed. Thus, Madsen (1987) acknowledges: “Clearly, only (very) extensive studies (if any) could cope with all these requirements at once. Taking just some of them into consideration, however, would still have the potential of pushing empirical export performance research further ahead” to avoid all the problems mentioned above.

6.2.1.2. Aaby & Slater (1989)

In 1989, Aaby and Slater published their much-cited article on the managerial influences on export performance. Inspired by Bilkey (1978), they reviewed 55 empirical studies of export performance published between 1978 and 1988. This article synthesizes in a framework that distinguishes four independent and variable categories, i.e. “Environment”, “Competencies”, “Firm Characteristics” (i.e. firm characteristics, firm capabilities, and management characteristics), and “Strategy”, versus one dependent variable, i.e. “Performance” (see Figure 6.2).

Figure 6.2: General Model for Assessing Export Performance and Variables



Source: Adapted from Aaby & Slater (1989)

In the review of the empirical studies, Aaby and Slater discuss “Environment” category. However, they only focus on “aspects closely related to managerially controllable variables”. The authors also draw several conclusions about the effect of these managerially controllable variables. Regarding “Firm Characteristics”, their review shows that the company’s size is only important when linked to other aspects that indicate financial strength or economies of scale. More importantly, their review confirms that the variables related to “management commitment”, “management systems and planning”, and “export experience” have positively influence on export performance. Besides, managers should have an international vision, be prepared to take risks and adopt an attitude favourable to exporting.

Also, their review shows that non-exporters harbour many misperceptions concerning the risks and costs of exporting. With regard to “Competencies”, the authors acknowledge: “export success through technology depends on good management and what markets the firm decides to enter.” Exporters who are successful follow specific export policies, they plan, and they gather market knowledge, using management systems. However, conclusions about the additional value of product quality and communication capability are unclear. As for “Strategy”, it is not surprising that exporters who are involved to a greater degree concentrate more on industrial markets and have broader coverage of the world market. As important determinants of export success, only distribution, delivery, and service are essential in the export marketing strategy. For the other elements (product, price, and promotion) the results do not point conclusively towards either adaptation or standardisation. Furthermore, they make some research recommendations. Regarding research design, the authors conclude that most studies are too simplistic and exploratory because of their focus on simple bivariate relationships (see also Madsen 1987). They give two important areas for improvement, i.e. the measurement of export performance and the use of longitudinal designs. The performance measure still focuses too greatly on the exporter/non-exporter dichotomy and objective export sales measures. The reviewers favour inclusion of sustainable profitability, and objectives of the business. In addition, in order to make statements about the causation of export performance, longitudinal research is needed, because most studies are cross-sectional. Their conclusion runs parallel to the goal of this research: “It is time to take what is known, develop new research propositions based on current knowledge and existing theory, and establish a focused research agenda.”

6.2.1.3. Chetty & Hamilton (1993) - Styles & Amber (1994)

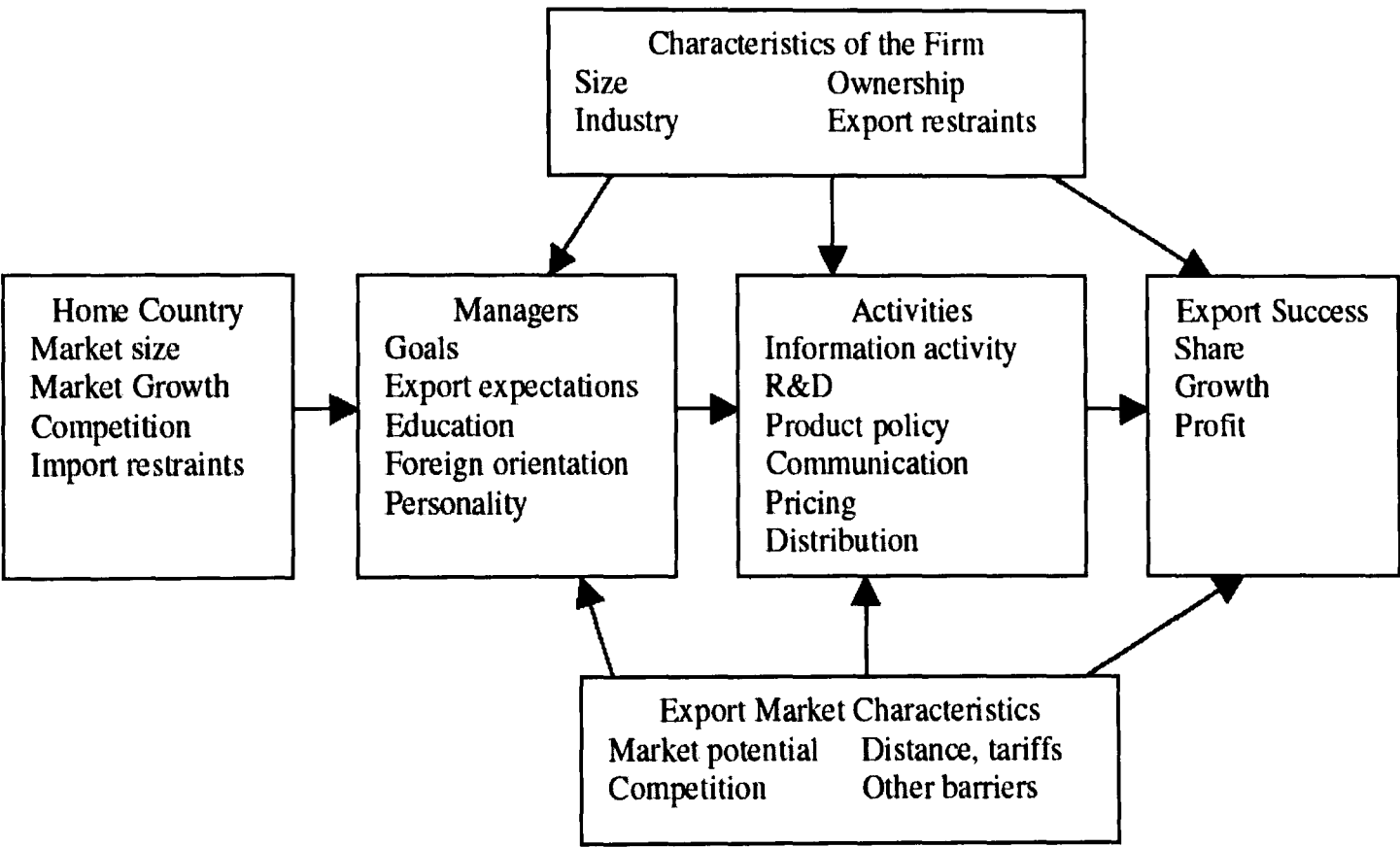
Chetty and Hamilton (1993) follow Aaby and Slater's challenge; assemble 111 studies to test the suggested framework. They demonstrate "considerable support for their conceptual model of export performance by confirming, through meta-analysis, both the validity and relative importance of a number of key variables in each part of the general mode". Even so, they fail to find conclusive evidence for the inclusion of certain variables, such as 'management control system', 'perception of competition', and 'use of intermediaries'. They agree that the size of the firm is certainly a determining cause of success in exporting. Also working within the Aaby and Slater framework (1989), Styles and Amber (1994) put forward a "revised hybrid model for future testing". The innovative or hybrid aspect of this model in comparison with that of Aaby and Slater lies in the inclusion of the 'Relationship', alongside the familiar notions of 'Environment', 'Firm', 'Strategy', and 'Export Performance'. The inclusion of this concept is justified by the relational paradigm, which is an alternative to the traditional paradigm of export success.

6.2.1.4. Gemünden (1991)

As Aaby and Slater were inspired by Bilkey (1978), two years later Madsen (1987) inspired Gemünden (1991) to "... perform a quantitative meta-analysis of these studies in order to identify the key success factors of export performance, and to assess their influence by means of objective statistical procedures". Gemünden's sample comprises 50 studies, published between 1964 and 1987. These studies employed more than 700 indicators that were thought to influence the level of success of over 9,000 exporting companies in 18 nations. Gemünden (1991) also builds a conceptual framework that synthesises all the variable factors

examined in the articles (see Figure 6.3). He divides the studies into the following groups: ‘Export Market Characteristics’, ‘Home Country’, ‘Managers’, ‘Characteristics of the Firm’, ‘Activities’, and ‘Export Success’. It should be noted that Gemünden explicitly distinguishes between characteristics of the manager and of the firm, as opposed to Aaby and Slater (1989), who group these together.

Figure 6.3: Theoretical Framework of Export Performance



Source: Adapted from Gemünden (1991)

However, meta-analysis has been applied only to the direct relationships of the various factors for ‘Export Success’. The most interesting comment is on measuring export performance. After identifying three indicators - export share, export growth and export profit - Gemünden discovers that “There is neither a positive relationship between intensity and growth, nor between intensity and profit.” Thus, if these measures of export success are unrelated, it is pointless to construct only one model to explain all three variables in terms of one ‘export

performance' concept. The author concludes: "This means that export sales intensity is no good proxy for growth or profitability of exporting". Various difficulties arise in relation to the meta-analysis itself, that is, the great diversity of these studies (in unit of analysis, performance aspects, success factors, operationalisations, and statistical procedures), the low quality of the data gathered, the exploratory nature of the data analysis, the absence of theoretical arguments, and an inadequate disclosure of the procedures for measurement and data-analysis. Nevertheless, the review makes clear four leading influences on export success that have been researched frequently, that is 'firm size', 'information activities', 'R&D intensity', and 'export-oriented product adaptations and services'. Gemünden acknowledges: "All four factors show a positive influence on export share of total sales, but only export-oriented information activity also shows a stronger positive influence on growth and profitability of export." The results for all other variables are either very sparse or inconclusive. In a comment on these results, the author writes: "It is surprising that information activity is positively related to all three measures of export success. It appears to be a variable which has been neglected in the export-marketing field as a critical success factor". He recommends that in-depth studies of information search measures, information use measures, and communication measures be carried out.

6.2.1.5. Zou & Stan (1998)

Following the findings of Aaby and Slater (1989) and of Chetty and Hamilton (1993), Zou and Stan's (1998) aim is to take further research, first by considering

the external environment and, second, by updating the review. They find 50 articles published (between 1987 and 1997) to match their criteria.²⁸

Table 6.2: Determinants of Export Performance

	Internal	External
Controllable	Export Marketing Strategy General export strategy (12/1/0) Export planning (19/3/12) Export organization (13/0/13) Market research utilization (6/1/6) Product adaptation (12/2/13) Product strengths (13/2/27) Price adaptation (7/1/6) Price competitiveness (3/0/7) Price determination (0/0/11) Promotion adaptation (3/3/2) Promotion intensity (15/2/11) Distribution channel adaptation (2/1/6) Distribution channel relationships (9/0/17) Distribution channel type (5/4/8) Management Attitudes and Perceptions Export commitment and support (15/0/2) International orientation (10/0/6) Proactive export motivation (1/0/4) Perceived export advantages (11/0/8) Perceived export barriers (1/6/9)	
Uncontrollable	Management Characteristics Manag. international experience (15/1/10) Manag. education / experience (11/3/20) Firm's Characteristics and Competencies Firm's size (9/5/23) Firm's international competence (12/3/7) Firm's age (0/3/3) Firm's technology (7/1/11) Firm's characteristics (4/1/1) Firm's capabilities / competencies (20/3/21)	Industry Characteristics Industry's technological intensity (4/0/1) Industry's level of stability (2/0/1) Foreign Market Characteristics Export market attractiveness (6/3/12) Export market competitiveness (1/0/5) Export market barriers (1/3/8) Domestic Market Characteristics Domestic market (2/2/6)

Source: Adapted from Zou and Stan (1998). Note: In parentheses the number of positive / negative / non-significant direct associations with an export performance measure found.

²⁸ The studies should be empirical, should report data analysis and statistical tests, should use some kind export performance measures as dependent variables, and should be cross-sectional.

Conceptually, they collect export performance measures under 7 categories, that is, the financial scales ‘profit’ and ‘growth’, and the non-financial scales ‘success’, ‘satisfaction’ and ‘goal achievement’, and composite scales. The determinants are divided into internal (“justified by the resource-based theory”) and external (“supported by the industrial organization theory”), and into controllable versus non-controllable determinants.

Table 6.2 illustrates these determinants, including the number of positive, negative and non-significant findings reported on the direct relationship between each determinant and export performance. In respect of many of the variables, the results are either very sparse (for example, for industry characteristics) or inconclusive, as can be seen in Table 6.2. In some instances, positive relations are found, although almost as many non-significant relations are discovered as well. This is because published studies hardly ever report important negative results, concentrating on positive or non-significant results. The positive relations clearly outweigh the non-significant and negative in only a few instances: ‘general export strategy’, ‘export planning’, ‘promotion intensity’, ‘export commitment and support’, ‘international orientation’, ‘perceived export advantages’, ‘management’s international experience’, and ‘firm’s international competence’. We observe that Zou and Stan’s (1998) results mention only the direct effects. Another general conclusion is that the several variables influence the various performance indicators in an inconsistent way. The authors point to several major problems. “First, several conceptual frameworks developed so far are competing explanations for export performance.” For instance, should the environment be a direct determinant, as in industrial organization theory, or an indirect one, or both? Some other problems that arise from the studies reviewed are the far from consistent conceptualisation and measurement of export performance, the lack of agreement on what factors are relevant and on their measurement, on the unit of analysis, on the controlling for size of the company, alongside the need for

multivariate data analysis and for cross-cultural studies. “Building on the significant progress made in the last decade in the export performance literature, research on the determinants of export performance should and could achieve a greater advancement toward mature theory in the next few decades.”

6.2.1.6. Leonidou, Katsikeas & Piercy (1998)

Leonidou, Katsikeas and Piercy (1998) assemble 46 empirical studies (published between 1960 and 1995), that focus on “the effect of managerial factors in facilitating or inhibiting various dimensions of exporting”, although a mere 13 studies concentrate on export performance (measured in financial terms).

Table 6.3: Managerial Variables and their Effect on Export Performance

	General	Specific
Objective	Age group (+/0, 2) Educational attainment (+/0, 5) Professional experience (+, 3)	Ethnic origin (not found) Language proficiency (+, 5) Time spent abroad (+/0, 4) Foreign travel (not found)
Subjective	Risk tolerance (+, 1) Innovativeness (not found) Flexibility (not found) Commitment (+, 2) Quality and dynamism (0, 1)	Risk perception (-, 1) Cost perception (not found) Profit perception (+, 1) Growth perception (not found) Complexity perception (-, 1)

Source: Adapted from Leonidou, Katsikeas & Piercy (1998). Note: In parentheses the overall sign of the relationships reported (+ = positive, 0 = neither positive, nor negative, - = negative), and the number of studies in the review researching this variable.

These managerial characteristics are arranged in accordance with two dimensions: (1) objective versus subjective characteristics and (2) general versus specific characteristics (see Table 6.3). The review indicates that most of these 13 export success studies originate in the 1980s, are based in the US, concentrate on industrial goods, and on SMEs, collect data via mail surveys, and employ only one

to three independent variables. The empirical results illustrate particularly positive results for 'educational level' and 'command of languages', but for the other determinants, the number of studies is too small to draw specific conclusions (see Table 6.3). The authors highlight the fact that most of the studies are ethnocentric in outlook, have insufficient construct operationalisation, and a diffused focus, emphasise objective variables, and are one-off in nature. They recommend that future empirical research should take into account organizational parameters, the external environment, and behavioural aspects.

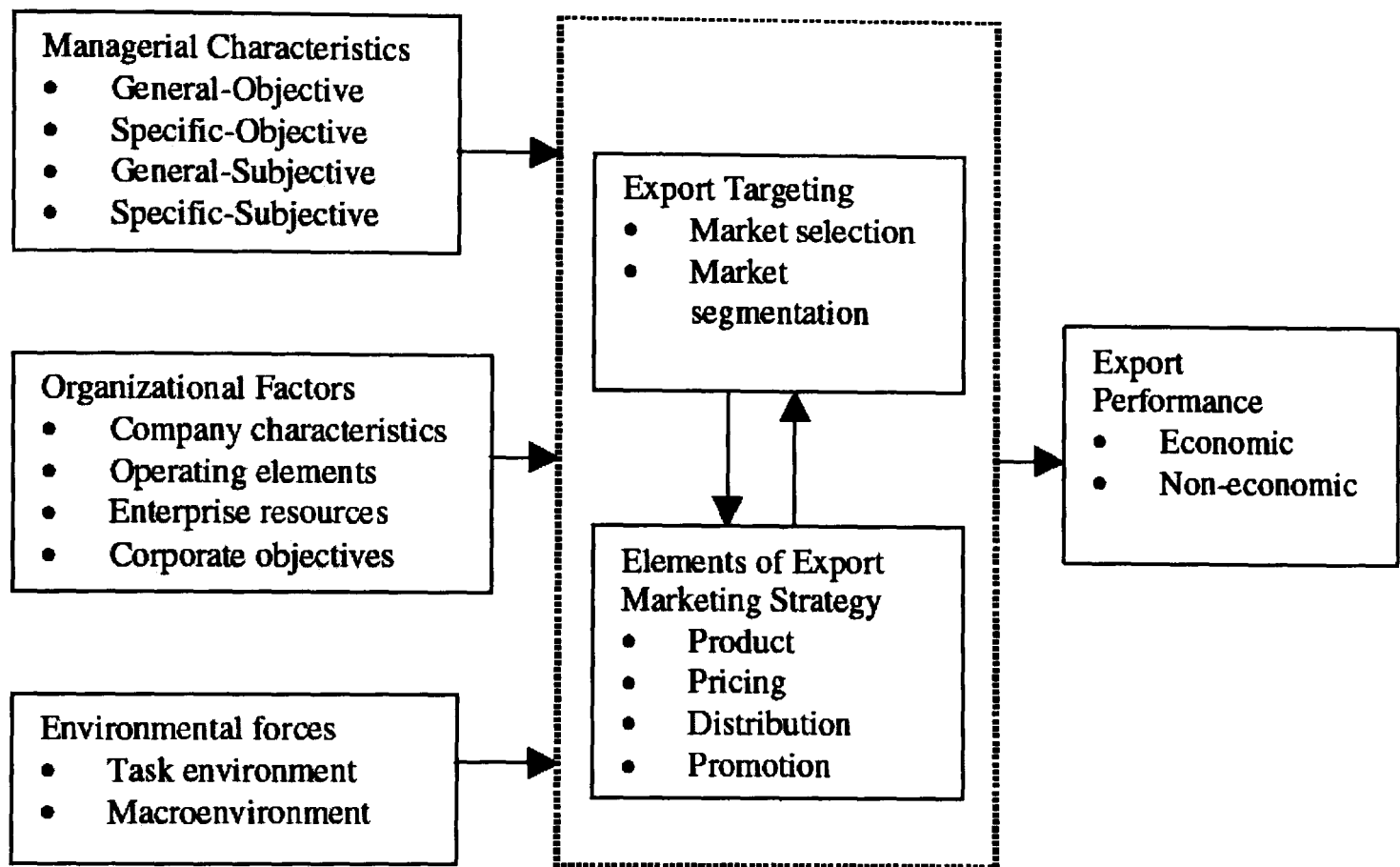
6.2.1.7. Leonidou, Katsikeas & Samiee (2002)

Leonidou, Katsikeas and Samiee (2002) take the previous review further by meta-analysing 36 studies on determinants of export performance published since 1960. Their model "implies a unidirectional causal relationship: managerial, organizational, and environmental factors influence the firm's export targeting and marketing, that in turn affect export performance" (see Figure 6.4). In this review, their analysis is only of the link between export marketing strategy and export performance. The authors ignore the antecedents related to the company, the manager, or the environment. In studying the operationalization of export performance, the authors define twelve separate dimensions, even though over 20% of the studies used a composite.²⁹ In general, the empirical results demonstrate the effectiveness of market segmentation, product quality, pricing

²⁹ The dimensions are: export intensity, export sales growth, export profit level, export sales, export market share, export profit contribution, export satisfaction, perceived success, perceived export growth, perceived profitability, and perceived market share. Only the first six dimensions appeared more than once in the studies (16, 8, 7, 5, 4, and 3 times respectively).

strategy, dealer support and advertising on a variety of performance indicators in export markets.

Figure 6.4: A Synthesis of Export Performance Models



Source: Adapted from Leonidou, Katsikeas & Samiee (2002)

The authors reach the notable conclusion that “Despite the affirmative results observed at the overall export performance level, marketing strategy variables correlated significantly with only certain individual performance measures.” They discovered positive relations were found for export intensity, export sales growth, and export profit level, but “marketing strategy variables were poorly connected with export market share, profit contribution, and sales volume.”

6.2.1.8. Extending the Existing Reviews and conclusions

The reviews discussed in the sub-sections above considerably enhanced the world's knowledge of export performance, the measurement of this concept and the determinants leading to export success. The amount of research into export performance continues to grow after a great increase in the 1980s and 1990s. The most recent empirical study reviewed in Zou and Stan (1998), for example, dates from 1997, as is also the case with Leonidou, Katsikeas and Piercy (1998); they concentrate only on the managerial features and include only 13 export performance studies. Another limitation in Zou and Stan (1998) is the emphasis on direct effects, and the simple listing of relations without attempting to construct a framework that accounts for relationships between the variables. Leonidou, Katsikeas and Samiee's (2002) review is more recent but also short-sighted, since it analyses only the variables of marketing strategy. Besides, the 36 studies reviewed originated in the period 1960–1996, thus omitting the more recent reports. In developing the themes of the reviews discussed above, we make use of three categories in order to distinguish between the various determinants of export performance, that is 'Firm Characteristics', 'Managerial Characteristics' and 'Environment'. Table 6.4 shows the correspondence between this classification, and the categories used by Madsen (1987), Aaby & Slater (1989), Gemünden (1991), and Zou & Stan (1998).³⁰ Instead of the general term 'Strategy' (Madsen 1987, Aaby and Slater 1989) or 'Activities' (Gemünden 1991), we group all activities that follow specifically from the decision to export under the heading 'Export behaviour'.

³⁰ The other conceptual studies mentioned in this section, either build upon the frameworks proposed in these four reviews, or are too specific to be useful in building the complete set of concepts in an integral export performance model.

Table 6.4: Comparison of the Concepts Used in Madsen (1987), Aaby & Slater (1989), Gemünden (1991), Zou & Stan (1998) and This Review

Madsen (1987)	Aaby & Slater (1989)	Gemünden (1991)	Zou & Stan (1998)	This review
Strategy	strategy	activities	export marketing strategy	export behaviour
O-structure	firm charact. competencies	firm charact. managers	firm's character. & competencies management charact. management attitudes & perceptions	firm character. manager character.
E-structure	environment	home country export market characteristics	domestic market charact. foreign market charact. industry charact.	environment

Source: Drawn up by author

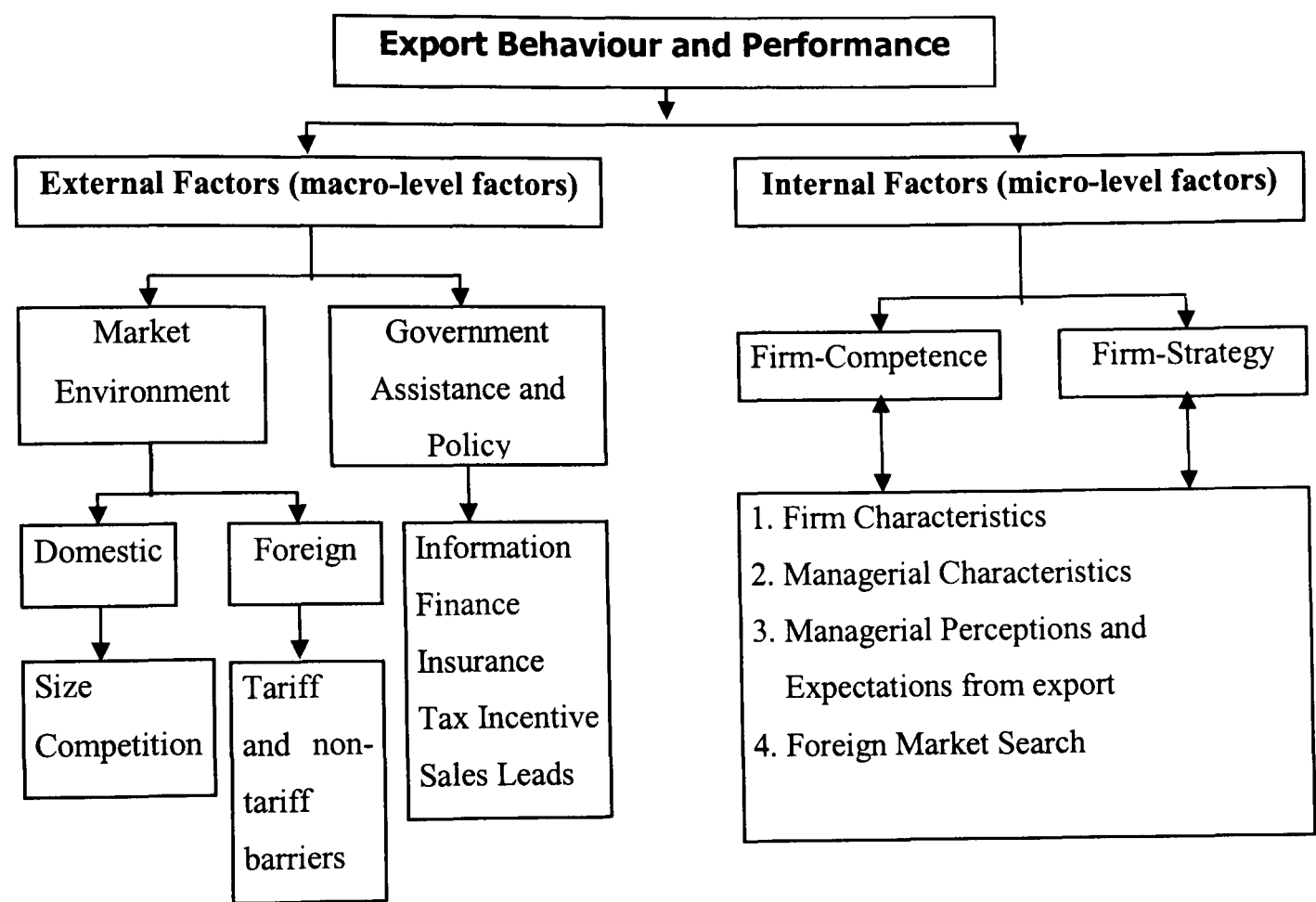
Zou and Stan (1998) call this concept ‘Export Marketing Strategy’, in accordance with the marketing-mix paradigm. We think export behaviour encompasses all of the activities made necessary by the firm’s decision to operate internationally. This can go further than the marketing strategy of the firm. The background to the exporting process consists of all aspects of the internal environment of the exporting firm. These are grouped under ‘Firm Characteristics’, ‘Managerial Characteristics’ and ‘Managerial Perceptions about Exporting and Expectations from Exporting’. It is important, particularly with SMEs, to distinguish between the manager’s contribution to the exporting performance and that of the company as a whole (cf. Gemünden 1991). This approach contrasts with that of Aaby and Slater (1989), who distinguish between ‘firm characteristics’ and ‘competencies’, but do not specifically consider the manager. Madsen (1987) examines all this under ‘O-structure’. Zou and Stan (1998) also do not distinguish between company variables and those of management. In the present review, which

concentrates on SMEs, we choose to examine the owner-manager instead of management. The concept of environment continues to be researched in a very fragmentary fashion, so we made use of 'environment' as an overall heading and the subcategories of Zou and Stan (1998) and Aaby and Slater (1989), if applicable.

6.2.2. Factors Determining SMEs' Export Propensity

Several factors influence SMEs' ability to identify appropriate export opportunities and to eventually participate successfully in exporting. These factors, as illustrated in Figure 6.5, can be categorised into two groups: internal and external factors. The dichotomisation of export behaviour/performance determinants could be alternatively labelled as micro and macro level factors (Abernathy, Clark and Kantrow, 1983). Internal factors (or micro level factors) define the firm's competence, structure, and strategy. They include firm specific and decision maker characteristics such as the size of the firm, age or years of experience, management calibre, etc (see Table 6.5). Because these factors are within the realm of the firm they are considered controllable at the level of the individual firm. External factors (or macro-level factors) define the domestic and international business environments under which the firm operates. From the individual firm's point of view all external factors are not controllable. Nonetheless, some of these factors are controllable at the national level through public policy, for example, export promotion, via investment incentives, taxation, physical and institutional infrastructure, etc. Factors defining the international business environment are neither controllable at the individual nor national level, and they include such factors as international economic conditions, international competition, and trade barriers.

Figure 6.5: Factors Influencing the Export Behaviour and Performance of SMEs



Source: Adapted from Aaby and Slater (1989); Bijmolt and Zwart (1994); Zou and Stan (1998); Leonidou, Katsikeas & Samiee (2002)

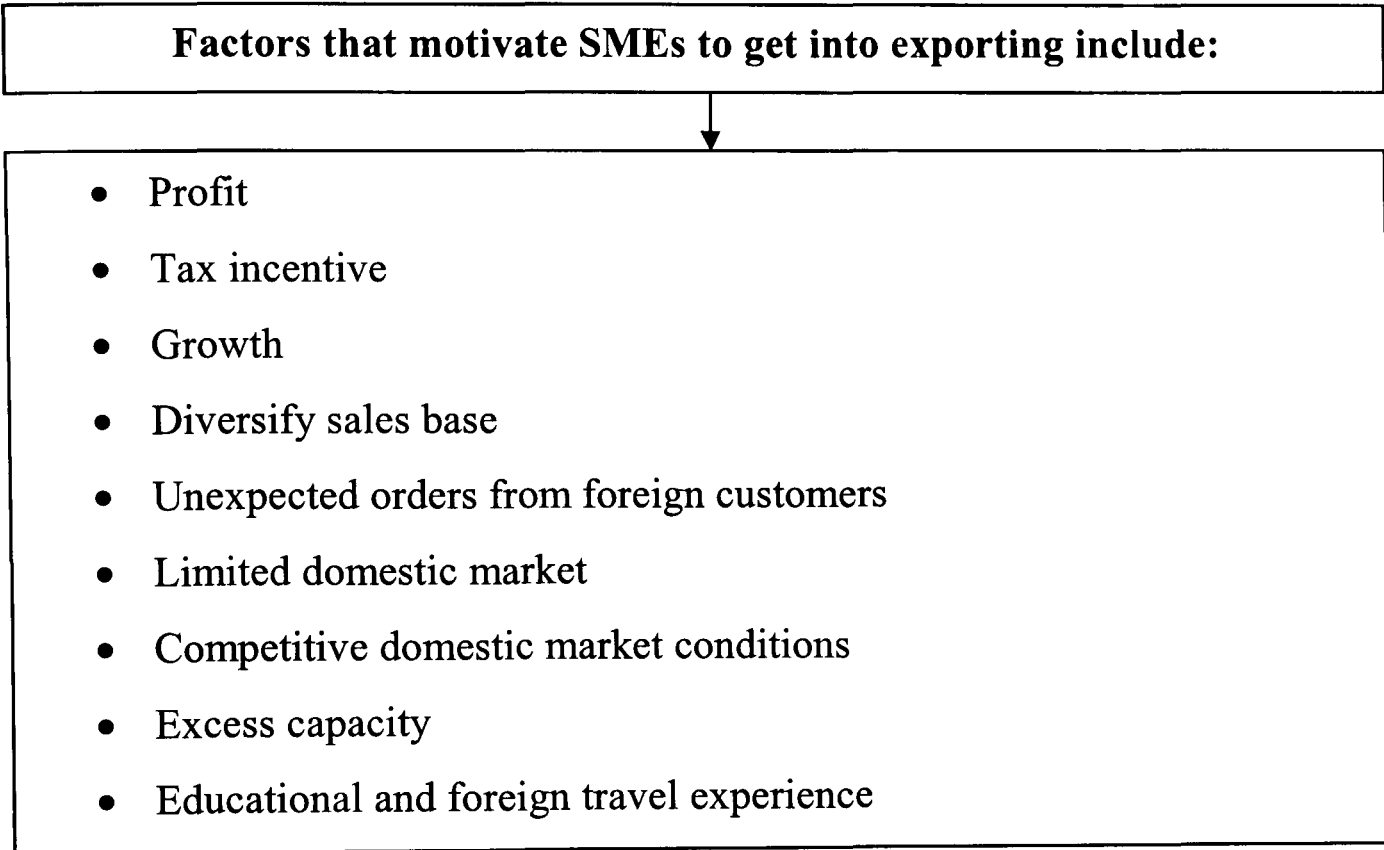
According to Edmunds and Khoury (1986) the decision to export by the SME is based on several considerations. If we assume that the assumption that the fundamental objective of any business firm is profit maximisation, then increased profit is the key underlying principle influencing the decision to (or not to) export. Several studies have found that perceived profitability is one of the major reasons behind the decision to export which can then propel SMEs to make use of existing export assistance programmes (Moini, 1995, 1998; Edmunds and Khoury, 1986; Caughey and Chetty, 1994; Louter, Ouverkerk and Bakker, 1991). Other motives to exporting include diversification of export sales; growth and excess capacity (see Figure 6.6 for a list of motives for exporting).

Table 6.5: Internal and External Determinants of Export Behaviour and Performance

Internal Factors Include the Following Variables	
Firm Characteristics	Managerial Characteristics
<ul style="list-style-type: none"> • Size • Years of experience • Comparative advantages • Management expertise 	<ul style="list-style-type: none"> • Age • Education • Knowledge of foreign languages • International travel/exposure • Managerial Perceptions about Exporting and Expectations from Exporting: <ul style="list-style-type: none"> – Risk – Cost – Profitability
External Factors Include the Following Variables	
Home and Export Market Environment	Government Policy and Assistance
<ul style="list-style-type: none"> • Size of the market • Competition • Tariffs and non-tariff barriers to entry • Physical and psychological distance from the home country 	<ul style="list-style-type: none"> • Information • Sales leads • Foreign exchange rate policy • Finance • Insurance

Source: Compiled from Bilkey (1978, 1977); Aaby and Slater (1989); Moini (1995); Bijmolt and Zwart (1994); Naidu and Prasad (1994); Zou & Stan (1998) and Leonidou, Katsikeas & Samiee (2002)

Figure 6.6: Motives for Exporting



Sources: Caughey and Chetty (1994); Edmunds and Khoury (1986); Bilkey (1978); Brooks and Rosson (1982).

Because of the distinctive organisational culture that typifies many SMEs, i.e., combination of ownership and management, the individual traits of the owner manager are critical for the development of export capability, success, and failure of the business. Olson and Wiedersheim-Paul (1978) suggested that SMEs would make the decision to export in response to internal and external stimuli. Internal stimuli factors are primarily related to the goals of the firm and the expected fulfilment of these goals and they include factors like product and firm characteristics, expansion objectives, and response to excess capacity. External stimuli factors, on the other hand, include factors like foreign market opportunities, unexpected orders from foreign customers, competition, economic integration, and government stimulation measures (like export assistance programmes). The most closely scrutinised of these factors are those relating to the firm (Czinkota and Ursic, 1991). Since exporting requires more managerial and

financial resources (Samiee and Walters, 1991; Erramilli and Rao, 1993), firm-specific and managerial characteristics are regarded as an important predictor of export propensity (Tookey, 1964; Calof, 1994a).

6.2.2.1. Firm-Specific Characteristics

The commonly studied firm-specific variables, in relation to the propensity to export and/or the intensity of export activities, are: firm size, firm-age, and ownership (Moini, 1995, Bonaccorsi, 1992; Louter, Ouverkerk and Bakker, 1991; Calof, 1994; Cavusgul and Zou, 1994; Keng and Jiu, 1989; Aaby and Slater, 1989; Axinn, 1988; Yaprak, 1985; Bilkey and Tesar, 1977). It is normally argued that the possession of certain firm-specific characteristics impacts positively on the firm's ability to identify appropriate export opportunities and participate successfully in exporting.

6.2.2.1.1. Firm-Size

The influence of 'firm size' on export performance has been researched extensively, using various operationalizations. The most popular proxy is 'number of employees', followed by 'sales volume'.³¹ The effects of size measured as total sales are only estimated directly in the studies reviewed. The majority of these results are non-significant. The few significant results do show a positive effect of 'total sales', but merely on export sales, and not on other performance indicators.

³¹ Besides, 'stock of export goods', 'receivables', 'resources', 'number of international countries and manufacturing facilities', and 'revenue' are proxies that come up (Dichtl, Köglmayr & Müller 1990; Naidu & Prasad 1994; Beamish et al. 1999; Baldauf, Cravens & Wagner 2000). As these proxies each come up only once, and give a very impression diffuse, we will not elaborate on them, but focus on the number of employees and sales volume.

In contrast, firm size as the number of employees is often assumed to impact performance directly and indirectly through behaviour. That is, having more employees increases export planning and information collection (Samiee & Walters, 1990; Walters 1993), the competitive market position (Holzmüller & Kasper, 1991; Holzmüller & Stöttinger, 1996), the marketing orientation (Thirkell & Dau, 1998), the entrepreneurial posture (Balabanis & Katsikea, 2003), and changes in the structure in the (export) organization (Samiee & Walters 1990; Balabanis & Katsikea, 2003). Large firms attach less importance to ‘foreign market accessibility’, ‘export competence’, and ‘distribution competitiveness’ (Katsikeas, Deng & Wortzel, 1997). These authors accredit their results to “the resource constraints inherent in smaller firms”, giving lead to the inference that the number of employees affects the way the organization views exporting. Using the resource based view as well, Wolff & Pett (2000) hypothesise that firms with less employees follow narrower based competitive patterns than larger firms do. To their surprise, they have to dispel this hypothesis: “It is not the breadth or quantity of resources but the types of resources available to the firm that determine a firm’s competitive patterns and competitive action”. Concerning the direct effects of the size of the work force, some proof can be found that having more employees implies higher export sales (Dichtl, Köglmayr & Müller 1990; Kaynak & Kuan 1993; Baldauf, Cravens & Wagner 2000), although most studies find a non-significant relationship (Axinn, 1988; Diamantopoulos & Inglis, 1988; Culpan, 1989; Donthu & Kim, 1993; Evangelista, 1994; Naidu & Prasad, 1994; Moini, 1995; Katsikeas, Piercy & Ioannidis, 1996; Stump, Athaide & Axinn, 1998; Wolff & Pett, 2000). The proof for the influence of employee accumulation on export intensity is inconclusive with Wagner (1995) and Nakos, Brouthers & Brouthers (1998) finding a higher, and Kaynak & Kuan (1993) a lower export ratio. Wagner (1995) does mention that the positive impact of firm size decreases with size. This

statement is consistent with the hypothesis that a positive relationship should exist, but only up to a point.³² This is in line with the findings of Bonaccorsi (1992). He concludes that the general consensus is that firm size (as measured by annual sales or number of employees) increases the probability of exporting, but that no general support can be found for the assumption that firm size positively impacts export intensity. “The limited resources argument only takes into account internal resources, while organizations try to stabilize their environment through relationships with external actors”.³³

Similarly, the effect on export effectiveness (profit) is found to be both positive (Nakos, Brouthers & Brouthers 1998) and negative (Kaynak & Kuan, 1993; Baldauf, Cravens & Wagner, 2000). Therefore, notwithstanding the popularity of firm size as an antecedent of export strategy and/or performance, the results on firm size are not conclusive and cannot be generalised, although some evidence exists that a firm with more employees has higher export sales. An important criticism is the question whether firm size causes or is caused by export performance (*e.g.*, Diamantopoulos & Inglis 1988; Wagner, 1995). After all, firm size can be both cause and effect of export performance. Yet, most studies assume a unidirectional path from firm size to export performance. Longitudinal studies are needed to see whether this relationship is recursive.

³² Although not incorporated in this review, the hypothesis tested by Cavusgil & Kirpalani (1993) is interesting to mention here. They assume a curvy-linear effect from size on export performance, *i.e.* small and large firms are expected to be more successful than medium-sized enterprises. They find mixed results, which they attribute to the interaction between size and industry technology, and between size and export strategy.

³³ Styles & Amber (1994), and Johnson & Arunthanes (1995) also adhere to this relational paradigm.

6.2.2.1.2. Firm Age

With reference to the relationship between age of the firm and export propensity, some studies have reported that firm age contributes to both export propensity and export performance (Kirpalani and Macintosh, 1980; Kaynak and Kothari, 1984; Czinkota and Ursic, 1991; Hansen, Gillespie and Gencturk, 1994). These studies argue that younger firms exhibit more interest in foreign markets than older or more established firms (Diamantopoulos & Inglis, 1988; Kaynak & Kuan, 1993; Das, 1994; Nakos, Brouthers & Brouthers, 1998; Baldauf, Cravens & Wagner, 2000). Conversely, some studies have suggested that older firms are more likely to export than younger firms (Welch and Wiedersheim-Paul, 1978, Lee and Yang, 1990). However, Diamantopoulos and Inglis (1988) reported that there is no relationship between firm age and export propensity.

6.2.2.1.3. Firm Ownership

In contrast to the plethora of studies on firm size and firm age, few studies have included the firm ownership variable in the investigation of export propensity. Firm-ownership investigations have either compared locally-owned firms to foreign-owned firms (Keng and Jiuang, 1989) or publicly-owned versus privately-owned firms (Yang, Leon and Alden, 1992). The rationale for including firm ownership is that foreign owned firms might have an exporting advantage over locally-owned firms because they are more likely to have market links in their country of origin or company headquarters. Likewise, public ownership is expected to be an advantage because public corporations are better equipped to deal with the complexities of exporting because they, relatively, have more resources at their disposal. Moreover, it is generally believed that the pressure of publicly held corporations to maximise shareholder wealth will compel these

businesses to explore new markets more readily than their privately held counterparts. Keng and Juan (1989) reported that the locally-owned enterprises had a lower level of export involvement compared to foreign-owned enterprises. Yang, Leon and Alden (1992) reported that, even though the export propensities of publicly-owned and privately-owned enterprises differed, the differences were not statistically significant.

6.2.2.1.4. Technology Level of the Product

The technology level of the product is sometimes proxied by measuring the specific industry in which the company operates, as the type of product differs per sector. The industry (consumer-product exporters are more successful) does affect export performance both directly (Das 1994; Beamish et al. 1999), and indirectly through the factors deemed important for international success (Katsikeas, Deng & Wortzel, 1997), or through product adaptation (Johnson & Arunthanes, 1995).³⁴ Other studies specifically investigate the technical nature of the firm's offer. Overall, the technical complexity of the product seems not to have a significant direct effect on export performance (Stump, Athaide & Axinn, 1998; Francis & Collins-Dodd, 2000), although Wagner (1995) finds the innovation level (which encompasses the technology level as well) to impact export ratio positively for three out of four industries. Regarding indirect relationships, a technologically intensive product induces firms to plan more (Walters 1993) to be more marketing orientated (Holzmüller & Kasper, 1991; Holzmüller & Stöttinger, 1996; Thirkell

³⁴ Some studies incorporate industry specifics as environmental variables. We choose to include these variables with firm characteristics as they pertain to the internal specifics of the organization. That is, industry is often used as proxy for the technological intensity of the product (i.e. a background characteristic), or can be seen as a source of experience, such as industry export intensity (i.e. a competence).

& Dau 1998), and to gain a better competitive market position (Holzmüller & Kasper, 1991; Holzmüller & Stöttinger, 1996).³⁵

6.2.2.1.5. Structure and Culture

Only a few studies incorporate structural and cultural characteristics. Some evidence is found on firm ownership, the administrative efficiency, and the formality present in the organization. Bijmolt & Zwart (1994), and Nakos, Brouthers & Brouthers (1998) both find that a firm benefits if it is part of another firm, especially when this is an international firm. So, foreign owned firms outperform domestically owned firms, maybe due to the enhanced level of international experience available in the company. Conversely, Wagner (1995) finds for two out of four industries that being part of a multi-established company is not beneficial for export ratio. Holzmüller & Kasper (1991) find that “firms with a more efficient administration turn out to be more successful in export business”, and to have a improved foreign orientation (see also Holzmüller & Stöttinger 1996). In the same studies, the degree of formality in the organization (‘Y-orientation in values’) affects the competitive market position negatively, but hardly affects export performance. This coincides with their findings on the internal culture of a firm; a high ‘dynamic cultural orientation’ (*i.e.* more task- and people-oriented than power- and role-oriented) contributes to export performance (‘export ratio’ and ‘change in export ratio’) both directly, and indirectly through the position that the firm holds in international markets. Similarly, Balabanis & Katsikea (2003) establish that firms with a more organic structure have a more entrepreneurial posture, and better export performance.

³⁵ Cavusgil & Zou (1994) also find that the ‘technology orientation of the industry’ affects the degree of product and promotion adaptation of the export venture negatively. Besides, if the industry is more technologically oriented, they find that the foreign distributor receives more support.

6.2.2.1.6. Firm Experience

The second category of the firm variables reviewed concern the competencies or capabilities of the firm. The best-examined competence variable is the firm experience (18 studies), either in general business or in export business (Moini, 1995; Dean, Mengüç & Myers, 2000). Whereas the day-to-day business experience is barely modeled and, when taken into the model, found to be of no significance for exporting performance (Moini, 1995; Dean, Mengüç & Myers, 2000), the exporting experience is examined extensively. Most (i.e. thirteen) studies measure export experience as the number of years a firm exports. Most of the direct relationships hypothesized turn out to be non-significant. As for the significant relationships found: for 'export sales' only one positive result can be found (Francis & Collins-Dodd, 2000), for 'export ratio' two positive results can be found (Baldauf, Cravens & Wagner, 2000; Francis & Collins-Dodd, 2000) and one for 'expected export ratio' (Wood & Robertson, 1997),³⁶ while for 'export profit' the significant results show one negative result (Kaynak & Kuan, 1993). Using composite measures for export performance, Thirkell & Dau (1998), and Leonidou & Kaleka (1998) both find a strong positive effect of 'export market knowledge' on 'overall export performance', whereas Naidu & Prasad (1994) find inexperienced exporters to perform better, albeit that experienced exporters are more regular exporters.³⁷ According to the authors, "Over time, experienced exporters become more realistic about the profit impact of exporting, tempering their profitability expectations." Incorporating indirect effects as well, Bijmolt &

³⁶ In this study, the sign for the objective measure 'export ratio' is non-significant, while on a subjective level the respondents belief in the impact of export experience on export ratio, as proven by the positive influence on *expected* export ratio.

³⁷ In our view, this is not a very strong conclusion, as regularity implies being in business for a somewhat longer time, and experience is measured as years in exporting. Therefore, there is of course correlation between the operationalization of both measures.

Zwart (1994) find that the export policy improves when exporters are more experienced.³⁸ Once more, the evidence of these studies is not conclusive, but slightly tends towards export experience having a positive effect.

The use of years as a proxy is not redundant, as experience can develop from much more than simply years in exporting, e.g., from the learning effect from intense contact with the foreign market(s). Furthermore, the implication “the older, the wiser” does not necessarily hold. One can imagine that people doing something for a couple of years are more rusted and not as alert and innovative as ‘fresh’ people. On the other hand, experience in years gives the company a set of historic actions to learn from and to improve their actions upon, whenever a similar situation comes along. Yet, “years in exporting” correlates strongly with the age of the firm, and “the older an organization, the more formalized its behaviour”, Mintzberg (1989, p. 106). We already established the negative impacts of bureaucracy and firm age on export performance in the previous section. Nakos, Brighthouse & Brighthouse (1998) introduce a somewhat different view by hypothesizing that a U-shaped relationship might exist that linear regression techniques are unable to detect. “It might be that both highly experienced and new, younger firms have higher performance than average experience firms.” Unfortunately, no evidence can be found for this statement. In my view, one dimension of experience can be measured by using years in exporting business, but the measurement improves when complemented with other proxies, capturing all dimensions. Examples are ‘the number of markets’ and ‘the frequency of visiting markets’, as both activities essentially tap into the concept of

³⁸ A more negative note on the indirect effect of export experience comes from the study by Cavusgil & Zou (1994), which is not reviewed due to the criteria set earlier. They conclude that the more experienced firm adapts the promotion campaign more while it should not, and wishes to adapt the product less while it should. Therefore, experience leads to an erroneous assessment of the needs of the foreign market. This is in line with the negative note on firm age and firm experience in Mintzberg (1989).

international experience.³⁹ Talking of export experience is more real when looking further than just the number of years people are in (international) business. Experience also stems from international activities, and the level of these activities.

Some authors explicitly include other proxies for experience. Katsikeas, Piercy & Ioannidis (1996) explicitly use the number of export countries, next to the number of years, as they distinguish between the length (years) and scope (number of countries) of export experience. Another example is Thirkell & Dau (1998) who use a multi-faceted concept named 'export market knowledge', measured by a combination of the number of years in exporting, the number of export countries and the number of market visits. Unfortunately, most studies use just one proxy for export experience. Reasoning even further, we can state that export experience should be replaced with a measure named 'international experience', placing just as much importance on international experience stemming from importing as from exporting. After all, importing also implies dealing with companies abroad, which all leads to experiential knowledge on international business.

6.2.2.1.7. Other Capabilities

In addition to a broad concept as 'export experience', capabilities related to general and specific aspects of management, marketing and exporting activities come forward in the review. These are all tested in direct relationship with export performance, foregoing any indirect impact, with the exception of Julien & Ramangalahy (2003). By using a composite 'export competencies' construct (comprised of the competencies with regard to overall export competence, to

³⁹ Of course, counter-arguments can be brought up, by saying that this last variable belongs to the export activities of the firm, while the years in exporting is more a sunk characteristic of the firm.

marketing, to export ability, and to information), Julien & Ramangalahy (2003) find a strong positive association with the 'competitive strategy' of the exporting SME.

In turn, a good competitive strategy boosts export performance (reputation, export sales growth, export profitability, and export intensity). Besides, the more competent an SME is in exporting, the more important it considers export information.⁴⁰ Concerning the direct effects, the wide-ranging capabilities of general management, personnel management, export production, and planning have no significant influence on respondents' satisfaction with export performance (Evangelista 1994), nor on export ratio (Moini 1995), nor on export performance as a composite (Katsikeas, Piercy & Ioannidis, 1996), while expertise in finance, and marketing positively impacts export performance (Evangelista, 1994; Moini, 1995; Katsikeas, Piercy & Ioannidis, 1996). On the more specific marketing capabilities, Moini (1995) finds that competitive advantages in product quality, technology, service, or newness do not affect export ratio, whereas the availability of a patented product is beneficial. Next, Beamish, Craig & McLellan (1993), and Katsikeas, Piercy & Ioannidis (1996) find the broader concept of 'product superiority' to be non-significant. Yet, exporters tend to be more satisfied when they possess a higher capability in product R&D (Evangelista, 1994). Concerning price, a competitively priced product seems not to be significant (Kaynak & Kuan, 1993; Katsikeas, Piercy & Ioannidis, 1996). The conclusions related to place are minimal and inconsistent, with distribution capability being ignorable in Evangelista (1994), and advantageous in Moini (1995). Similarly, the results for the capabilities of information collection and utilization capabilities are ambiguous

⁴⁰ The direct effect of 'information perception' on 'competitive strategy' is non-significant, but it does increase the actual use of information, and boosts competitive strategy as such.

(Kaynak & Kuan, 1993), although the availability of a business plan is constructive (Bijmolt & Zwart, 1994).

6.2.2.2. Managerial Characteristics

Managerial characteristics are considered important in the firm's export activities because a company's decision to venture into exporting is ultimately taken by the individual decision-maker (Axinn, 1988, Kuratko & Hodgetts, 2001). Managerial characteristics that have been studied include: education; age of the manager; international exposure or experience (e.g., foreign language skills), and perceptions about exporting (Weaver, Berkowitz and Davies, 1998; Lautenen, 2000; Carrier, 1999; Katsikeas, Piercy and Ioannidis, 1996; Moini, 1995; Aaby and Slater, 1989; Axinn, 1988; Reid, 1981).

6.2.2.2.1. Age

Evidence on the relationship between the decision maker's age and export behaviour is mixed. Aaby and Slater (1989) established that a significant relationship exists between the age of the decision-maker and the export propensity of the firm, suggesting that firms with-older managers tend to take fewer risks and are less willing to be innovative and expand internationally. However, Kaynak and Kuan (1993), Moini (1995), found evidence to the contrary, suggesting that firms managed by older managers tended to be more involved in exporting and had better export performances.

6.2.2.2.2. Education

Several studies that have investigated the nature of the relationship between the managerial characteristics and export behaviour have established that a clear positive relationship exists between the educational level of the manager and the degree of export involvement of the firm (Nakos, Brouthers & Brouthers 1998, Keng and Jiuan, 1989; Reid, 1982; Simpson and Kujawa, 1974; Burton and Schlegelmilch, 1987). According to these studies, more educated managers are more likely to be willing and able to deal with foreigners and international transactions than less educated managers, hence they report that the more educated the manager the greater the propensity to export. Holzmüller & Kasper (1991), and Holzmüller & Stöttinger (1996) also report that a higher educated manager performs better by having a higher dynamic cultural orientation. The same picture emerges for the impact of foreign education and perceived export profitability (Koh, 1991): “These findings imply that exporters who are.... knowledgeable about exporting and their export markets tend to adopt marketing strategies that lead to better performance.” Therefore, education might not have a strong direct effect on performance, but the quality of managers’ exporting decisions varies depending on the manager’s schooling level, with a higher educated manager taking decisions that are more successful.

On the contrary, Ogram (1982) reported that there are no significant differences in the education levels of managers in exporting and non-exporting firms and concluded that there is no relationship between education and export propensity. Similarly, Axinn (1988), Kaynak & Kuan (1993) and Evangelista (1994) do not detect any significant impact of education and perceived export propensity.

6.2.2.2.3. International Exposure and Experiences

International exposure and experience help to lessen the psychic distance where psychic distance is defined as the “sum of factors preventing the flows of information from and to the market, for example, differences in languages, education, business practise, culture, industrial development, etc.” (Johanson & Vahlne, 1977). International exposure and experience may be acquired through education, international travelling, and ability to converse in foreign languages. International exposure and experience enables the manager to discuss exporting with foreign reference groups with better ease. It has been argued that firms that have decision makers that have worked, lived, or travelled abroad or speak foreign languages are expected to have better export performances than firms that have monolingual managers (Moini, 1995; Kaynak and Kuan, 1993). Non-exporters have cited the lack of language abilities or cultural understanding as a barrier towards exporting (Johanson and Vahlne, 1977; Dichtl, Koeglmayr and Mueller, 1990). In a comparative study involving five countries (Germany, Japan, South Africa, Finland and South Korea), focusing on the international orientation of business managers Dichtl, Koeglmayr and Mueller (1990) identified language proficiency and unavailability of qualified personnel as major problems facing potential exporters. Carrier (1999) reported that language constituted a significant obstacle for at least a quarter of the respondents in his sample of Quebec small firms; and Kathawala et al. (1989) reported that, in Illinois-USA linguistic and cultural differences created one of the most formidable barriers to successful exporting by small businesses. In a study of New Zealand based SMEs Caughey and Chetty (1994) reported that, compared to non-exporting firms, managers of exporting firms had “more management education,... have travelled abroad more extensively, have lived overseas, and have an extensive network of overseas contacts”. Lautanen (2000) in his study of small manufacturing firms in Finland concluded, “... it does not seem, among other things, that the financial risk related

to exporting, nor the lack of experience, nor the education level of the white collar staff is likely to determine which small firms develop exporting quickly, but rather the language skills of the entrepreneurs”, but cautioned against generalisations of the results, mindful of limitations of his small sample size.

6.2.2.2.4. Managerial Perceptions about Exporting and Attitudes

Managers’ perceptions and attitudes towards exporting are considered important for the export involvement of a firm. It has been argued that the decision maker in the management of a small business is the key variable in the internationalisation process of the firm (Miesenbock, 1988; Nevin and Cavusgil, 1981; Carrier, 1999). Ali and Swiercz, (1991) state that firms headed by managers who perceive global marketing as an opportunity and challenge rather than an undesirable burden are much more likely to respond favourably to foreign market opportunities. Simpson and Kujawa (1974) reported that the perceptions to risk, profit, and cost of pursuing export marketing were important in determining the firm's export orientation. Several authors have identified clear differences between the owner-managers of exporting and non-exporting firms in terms of their perceptions of risks and difficulties associated with the export process (Simpson and Kujawa, 1974; Ogram, 1982; O’Rourke, 1985; Kedia and Chokkar, 1986; Cavusgil and Naor, 1987; Axinn, 1988; Sharkey, Lim and Kim, 1989). Kedia and Chhokar (1986) found that non-exporters perceive the costs and risks of exporting to be significantly higher than do exporters. Exporters, even though they perceived risk in exporting, they expected to be compensated by higher levels of profits. In another study Ogram (1982) found that non-exporters generally perceived exporting costs to be high, while exporters considered such costs as either the same or moderately higher than costs in the domestic market.

North, Smallborne and Vickers (2001) reported that the conservative attitude of owner-managers of small firms acted as a barrier towards the use of external assistance. They noted that some managers, due to their conservative attitude, would not seek external finance because they either believed they stand little chance of getting it, perceived it to be too expensive, or they simply wish to minimise their exposure to debt. Consequently, they advice that attitudinal change, on the part of owner managers is necessary and should be encouraged and targeted by support programmes in order to reduce their perceived exposure to risk. This argument is in line with previous findings in a Swedish study by Wiedersheim-Paul, Olson and Welch (1978) where changes in management's attitudes (together with changes in external factors) were regarded as the major causes of an increase in the willingness to export.

In this context, Carrier (1999) recommends training and development as a potential solution to the problem of attitudinal change. Influencing the managers' Perceptions and attitudes towards exporting seem to hold the key towards increased use and effectiveness of assistance programmes because, as noted by Seringhaus (1986), "if assistance is to act as a stimulus to export involvement, it can only be of benefit if management perceives exporting as a viable business activity."

6.2.2.3. Environment – External Stimuli Factors

No company operates in a vacuum; each must deal with an external environment. Often, this constitutes a complex reality for a manager; even more when a firm is operating outside the domestic market as well. Yet, the literature on export performance has largely ignored the environment as a determinant of export performance. Most studies only focus on the managerially controllable or internal

aspects. Only 11 studies incorporate external aspects in their research design, with an even lower number considering characteristics of both the domestic market and the export market. Furthermore, an exhaustive description of the external setting of the firm is almost impossible, as this means including everything outside the firm which could impact business. The empirical results reflect this complexity. Only a few studies incorporate uncontrollable aspects outside the firm, the variables researched vary greatly amongst the studies. After content analyzing the variables pertaining to the environment in the studies reviewed, the following general external aspects can be distinguished:

- the attractiveness of the home and export market;
- government policy and assistance.

Although this distinction is often used, some studies combine these separate aspects in composites, which often come forward from treating these aspects as ‘barriers’, or ‘stimuli’ (‘motives’) to which a firm reacts (or not). These are often categorized as either internal versus external stimuli, or as reactive versus proactive stimuli (cf. Albaum, Strandkov & Duerr, 2002; Leonidou, 1995; 1998). Internal factors stem from motives internal to the organization, while external factors pertain to stimuli coming from outside the company. Proactive factors are unique competencies or market opportunities to which the company reacts, while reactive motives refer to environmental pressures, which force companies to respond. In this section, we are concerned with the external stimuli or barriers.

6.2.2.3.1. Export and Home Market Attractiveness

Variables that come forward when investigating the attractiveness of the export market relate to the economic, socio-cultural and the political situation in a country. Besides, differences between the export and home market on some of these aspects are under examination.

Including 19 variables on issues such as regulations, potential demand, and the economical and political situation, the Kaynak & Kuan (1993) study is the most extensive article on environmental determinants. They perform a discriminate analysis to identify the external variables differentiating significantly between high and low export performers on export sales (9 discriminating variables), export ratio (no discriminating variables), export profit (1 discriminating variable) and export profit ratio (3 discriminating variables). The results are far from uniform for the various performance measures. To the authors' surprise, an export sales flourish in a market, which is economically less developed, less industrialized, has a less positive attitude towards the foreign product, a stricter import-export (licensing) policy, and more standards. Yet, unemployment rates are lower, and foreign exchange is more convenient. Similarly, in relation with the contribution of exporting to total profit: "the foreign market environment in which the high performers operate is characterized by unstable public policy, very low untapped and unexpected demand, but very convenient foreign exchange." For export profitability, "the suitable foreign target market environment... are more industrialized places, where the quality control standards are more inter-acceptable and price competition pressure and market price fluctuations are lower". Therefore, the impact of the export market varies with the performance measures, with export ratio being unaffected in this study. In addition, different variables bring about higher sales versus higher profit, which also applies to Baldauf, Cravens, & Wagner (2000). They find that the respondents perceive foreign political environment (i.e. inflation rates, exchange rates, and import restrictions) to affect only the export sales in a negative manner, while export ratio and export effectiveness go unchanged. In addition, the socio-cultural environment (customs, culture, and religion) has no influence at all on performance. Yet, Balabanis & Katsikea (2003) find that a dynamic, i.e. unstable environment induces managers to adopt an entrepreneurial posture, thereby boosting export performance.

Another important aspect of the export market attractiveness is the competition in the host country. Beamish, Craig & McLellan (1993) find that the presence of direct competition in foreign markets negatively affects export ratio (although only for Canadian and not for UK firms), whereas competition does not influence export profitability.⁴¹ Thirkell & Dau (1998) do not hypothesize the foreign competition to change the performance directly, but indirectly by increasing the need for a marketing orientation. The results show that with more intense competition abroad, the firm heightens its marketing orientation, which improves (the self-assessed) export performance. Robertson & Chetty (2000) incorporate competition in the hostility of the domestic and foreign environment (i.e. market risk, investment and marketing opportunities, and the level of competition plus hindrances) in their study on New Zealand exporters, and link this to the management orientation. They hypothesize that the more hostile (benign) the environment, the more entrepreneurial (conservative) the strategic orientation should be to perform successfully. The firms are advised that “the entrepreneurial approach is desirable as it is able to perform successfully in all contextual situations”. On the other hand, Balabanis & Katsikea (2003) fail to establish this hypothesized effect of environmental hostility on the entrepreneurial posture of managers, although there is a direct negative effect on economic export performance. Overall, high competition seems to be a threat, but might be overcome by getting to know the market.⁴²

⁴¹ Beamish, Craig, and McLellan (1993) categorize foreign competition as a characteristic of the product. In my view, the presence of competition says inherently more about the target market than the product, and should be treated in this section.

⁴² They focus on the export venture level (instead of the exporting firm level), Cavusgil and Zou (1994) find that the ‘export market competitiveness’ affects the adaptation of the product and promotion, and the support to the foreign distributor positively.

Shoham (1999) incorporates economic, socio-cultural, and political externals, partly as the differences between the home and export market on some aspects (i.e. competitive structure, physical climate, local laws, marketing infrastructure), next to the image of the exporting country, and the influence of the local government. An indirect effect is assumed, hypothesizing that the distinctiveness of the foreign environment encourages firms to adapt (or standardize) the marketing mix. Eventually, only the similarity of the physical climate (more adaptation of distribution), and the foreign governmental influence (product standardized, and promotion marginally adapted) are significant in this. Similarly, Johnson & Arunthanes (1995) hypothesize that 'government regulation', 'infra structural differences', 'market lag' (i.e. difference in product life cycle), 'competitive intensity', 'cultural differences', and 'end-user differences in preferences and tastes' heightens ideal and actual product adaptation, improving export market share, sales growth, and profit. The data show that when governmental regulations and infrastructure differ more, the actual adaptation level rises. Besides, the governmental regulations and the market lag affect the extent of ideal adaptation upwards. So, differences between the home and export market ask for more (actual or ideal) adaptation, whether these stem from governmental rules or market peculiarities. Wagner (1995) also finds market differences to increase the planning propensity (the more 'distant' the export market is geographically, the higher the planning propensity of the US exporter). Balabanis & Katsikea (2003) include environment diversity as well, but find a non-significant effect on both entrepreneurial posture and export performance.

Concerning the home market, Nakos, Brouthers & Brouthers (1998) find only limited proof for the impact of domestic competition: firms in highly competitive home markets appear to have higher profitability, but no higher export sales than firms in less competitive home markets. Yet, Das (1994) does find that successful exporters (using export intensity) operate in turbulent (highly competitive and

unstable) environments. Naidu & Prasad (1994) deduce that “companies in export-intensive industries learn to become more regular exporters.” They explain this by stating that “When competitor firms are engaged in export activity, this serves as a great incentive for firms to pursue exporting on a regular basis.” Therefore, some copying behaviour takes place in the industry. Besides, the 3-year trend in export sales and profitability are influenced positively as well.

6.2.2.3.2. Government Policy and Assistance

Until now, the impact of the authorities is primarily focused on the restrictive role of governments (regulations, standards, exchange policy, etc.). Frequently, this is in the form of information or assistance provided to exporting companies in special programs or institutions. Some authors ask managers for a list of stimuli or problems that enhanced or hindered their export operations. In this section, only those problems or stimuli related to the external environment are covered. Evangelista (1994) finds that poor performers (measured in manager's satisfaction with export performance) perceive problems with obtaining capital as relatively more limiting than high performers. Katsikeas, Piercy & Ioannidis (1996) investigate both barriers (also named problems), and stimuli for their affect on export performance. Respondents were asked how frequently eight possible problems were experienced during the export operations, and to what extent each item negatively affected the firm's export operations. Of these, two are externally related (i.e. the problem of national policy, and of domestic currency devaluation), but they do not have any influence on the achievement of export goals. Concerning the stimuli, Katsikeas, Piercy & Ioannidis (1996) do obtain significant results for a positive perceived impact of national policy, although domestic market pressures, fortuitous conditions, and exogenous market conditions are not significant. Dean, Mengüç & Myers (2000) find similar results with ‘foreign

restrictions and standards', and 'financial impediments' being non-significant for export sales, export ratio, and export growth, and 'exchange concerns' positively affecting export sales, but not the other two measures. Baldauf, Cravens & Wagner (2000) find that the proactive external motives (i.e. physical closeness to customer abroad, obtaining tax advantages, development of new sales territories, and taking advantage of promising foreign business) appear to be positively related to export effectiveness and export intensity (no significant impact on export sales), while reactive external motives (competitive pressures in domestic market, overproduction in domestic market, disadvantageous legal changes in domestic market, and increased fixed costs) deteriorate export intensity (export effectiveness and export sales go unchanged). Hence, reacting to negative pressures seems not to improve export performance, while opportunities in foreign markets as a stimulus is advantageous.

6.2.3. Remarks on the Literature Reviews

The export involvement of SMEs is conceptualised to be a function of both internal and external factors. These factors operate in a complementary manner to enhance the export involvement of firms. Research evidence suggests that for SMEs to be successful they need to possess certain firm-specific and managerial characteristics, which will help them to respond positively to opportunities in the foreign market. Firm-specific characteristics have an impact on exporting activities and/or export performance, but not all of them have and not to the same extent. The best-researched characteristics are firm size and export experience, but it is hard to make some explicit conclusions. A few cautious inferences are that larger firms perform better (especially measured in export sales), plan more, and that more experienced firms do gain from that knowledge. Besides, firm culture should be people- and task-oriented, the structure not too formal. The firm benefits

from an international mother firm, but the evidence is not too strong. The competencies do not give an equivocal picture either, but overall exporters should try to gain a marketing competence. The results pertaining to the other competencies are not clear, mainly because of the small base of empirical evidence. External factors can enhance or hinder small firms' export involvement. Government assistance programmes, if properly designed and targeted can help to enhance small firms' ability to export. Most of the work that has been done on the export behaviour of SMEs has been based on data pertaining to developed countries. Whilst these studies have been useful in improving our understanding on this subject, there is still an information gap about developing countries. Many developing countries have, in recent years, introduced various forms of assistance and export promotion programmes - conceived around what policy makers think are the needs of SMEs, and modelled along the lines of similar programmes in developed countries. However, given that little is known about the export behaviour of small firms in developing countries. It has been noted that attempting to generalise firm's export behaviour on the basis of findings from an industrialized economy to, for example, a developing country's exporting context, might both be dangerous and misleading (Katsikeas and Piercy, 1993). Generalisations of these findings into developing countries could even be more deceptive because of the different economic, political and social structures. Due to country differences in factors such as social and organisational structures, operations of financial institutions, constraints of SMEs, family and human capital development, and other demographic factors, the export behaviour of SMEs and hence the impact of assistance programmes might differ.

In view of these country differences, Singh, Reynolds and Muhammed (2001) have highlighted the need to test theories and results derived in developed countries before they are applied to developing countries. This study therefore aims at investigating the factors that enhance the export propensity of SMEs in the

case of a developing country, by using Poland as a case study. In this study, through the investigation of the differences in internal and external factors for exporting and non-exporting firms, it is hoped that useful information will be compiled and subsequently used to improve the design and targeting of Polish SMEs' assistance programmes.

6.3. Research Methodology

This section explains the research methodology. We first describe the questionnaire design. Next, we discuss data collection process. To know the factors that determine export propensity of Polish SMEs, we use logistic regression model. The estimation of the Logit model will be presented in this section.

6.3.1. Questionnaire Design

The questionnaire was the main instrument of the study, designing a questionnaire for this research proceeded in several stages

Stage 1 – Decide the categories of questions on the basis of existing studies and research objective

Stage 2 – Formulate (in English) the questions within each category, including a design for prompted response. Brainstorm this draft with colleagues at Kingston and amend as appropriate.

Stage 3 – Translate into Polish. Brainstorm with colleagues in Gdansk and amend as appropriate. Take advice from the policy company and make further amendments.

An extent questionnaire (see Appendix 1 – Export Orientation of Polish SMEs - Representative Research) consisting of 40 questions and contains the following subjects:

- The legal status, activities and sectors of operation of the enterprises;
- Enterprise experience;
- Product/market strategies;
- Research and development
- Risk and profitability of the enterprises;
- The manager/owner;
- Market position, size of the market and competition;
- Barrier to entry to new markets;
- Use of external support systems;
- Environmental changes: national and international;
- Government policies and assistance;
- Attitudes to European Union.

6.3.2. Sample and Data Collection

6.3.2.1. Population

This study is focused on registered SMEs in Gdansk. At the end 2002, Poland had 3495300 registered SMEs and 220300 of these firms are located in Gdansk region, which was in sixth place, in total of 17 regions (GUS, 2002). As a result, in 2002 SMEs of the Gdansk region maintained their superiority in export, with their share in total SMEs exports accounting for 8%, which was in fourth place. Moreover, in terms of geographic area, Gdansk is on the Baltic Sea, which is one of the biggest regions located in northern Poland. Therefore, choice of Gdansk region is very

appropriate in terms of creating an informative sample. In the chosen SMEs, the target interviewees were the owners or managers of the enterprises.

6.3.2.2. Sampling and Survey Delivery

The empirical part of this research draws on data gathered through a survey questionnaire. It was administered by Gdansk EUROTTEST Institute in the year 2003 from a sample of 125 managers of registered exporting and non-exporting SMEs in Gdansk. The sample comprises manufacturing, service and trading sectors. In filling in the questionnaire, personal interviews were deployed and the average duration of interview was 25 minutes.

In Poland, SMEs that employ up to 9 people are classified as 'micro enterprises'; those that employ between 10 and 49 persons are classified as 'small enterprises'; and those that employ between 50 and 249 persons are classified as 'medium enterprises' (GUS, 2003). For operational purposes, and in accordance with most other international studies, SMEs in this study are defined as those enterprises that employ between 10 and 249 employees.

6.3.3. Model Specification

As mentioned earlier, the research objective is to examine the major factors determining export propensity of Polish SMEs by using Gdansk province as a case study. This study employs the Logit model to ascertain that objective. Logistic analysis is a widely used statistical technique for analysing dichotomous (or binary) dependent variables, such as exporter ($Y=1$) and non-exporter ($Y=0$). According to Gujarati (1995, p.541) "the dichotomous dependent variable is a

special case of the polytomous or multiple category dependent variable". He adds that, among the methods used to handle cases where the dependent variable is dichotomous, the four commonly adopted approaches are: the linear probability model (LPM), the Logit model, the Probit model, and the Tobit model. The LPM, even though regarded as the simplest, is said to be unattractive, because it assumes that the conditional probabilities increase linearly with the values of the explanatory variables. Moreover, it has limitations in terms of non-normality of the error term, heteroscedasticity, and the possibility of the estimated probability lying outside the 0-1 bounds (Gujarati 1995, p.576). The problem of estimated conditional probabilities lying outside the logical limits can be overcome through the use of a cumulative distribution function (CDF) and the maximum likelihood estimation techniques. Both the Logit and the Probit models do guarantee that the estimated probabilities will lie between 0 and 1.

From this brief discussion it is clear that, out of the initial four models, the possible choice of an appropriate model narrowed down to two - i.e., the Probit and the Logit models. The Probit and Logit models are quite comparable and give qualitatively similar results. However, because the logistic CDF is not in integral form, that makes the Logit model somewhat easier to work with (Griffiths et al., 1993, p.751). In a note on 'Logit versus Probit', Gujarati (1995, p.568, p.576) concludes that '... the Logit model is generally used in preference to the Probit'. Pindyck and Rubinfeld (1991, p.256) deem the Logit model to be 'somewhat more appealing' than the Probit model. Consequently, we select the Logit model for this part of the investigation. Since in this study, the available data distinguishes whether an SME is an exporter or non-exporter. The dependent variable is a dummy variable taking the value 1 if the SME is an exporter, and the value 0 if the SME is a non-exporter. Therefore the probability that an SME would be an

exporter, given its characteristics, could be computed based on the cumulative logistic function. The model development and specification are presented below:⁴³

Assume $Z_i = \beta_1 + \beta_2 X_{i2} + \dots + \beta_k X_{ik} \qquad i = 1, \dots, N$ Equation 6.1

where Z_i = is assumed to be a continuous index which ranges from $-\infty$ to $+\infty$, and it represents a set of listed explanatory variables (see Appendix 2 – Potential explanatory variables in the Logit model).

Let, $Y = 1$ if the SME is an exporter
 $Y = 0$ if the SME is a non-exporter

Since the Logit model assumes that Z_i is a logistic random variable, the probability that an individual SME would be an exporter given its characteristics can be computed from the (cumulative) logistic distribution function evaluated at Z_i as follows:

$$P_i = F(Z_i) = \frac{1}{1 + e^{-(B_1 + B_2 X_i)}} \qquad \text{Equation 6.2}$$

where, P_i is the probability that the i^{th} SME is an exporter;
 $F(Z_i)$ is the cumulative logistic function evaluated at a specific value.
 In Equation 6.2 as Z_i ranges from $-\infty$ to $+\infty$, P_i ranges between 0 and 1; and when $Z_i = 0$, $P_i = 0.5$.

Equation 6.2 can be rewritten as follows:

$$P_i = \frac{1}{1 + e^{-Z_i}} \qquad \text{Equation 6.3}$$

where , $Z_i = \beta_1 + \beta_2 X_i$

⁴³ Gurajati (1995) was used when developing the model.

Equation 6.3 represents the cumulative logistic distribution function. In Equation 6.3, since P_i gives the probability that the i^{th} SME is an exporter, then $1 - P_i$, would be the probability that the i^{th} SME is a non-exporter, and can be written as follows:

$$1 - P_i = \frac{1}{1 + e^{-Z_i}} \quad \text{Equation 6.4}$$

Simplify Equation 6.4, by multiplying both sides of equation by $(1 + e^{-Z_i})$, dividing the result by P_i , and abstracting 1 from both sides yield the following:

$$\frac{P_i}{1 - P_i} = \frac{1 + e^{Z_i}}{1 + e^{-Z_i}} = e^{Z_i} \quad \text{Equation 6.5}$$

In Equation 6.5, $\frac{P_i}{1 - P_i}$ is the odds ratio in favour of being an exporter – (i.e. the ration of the probability that the i^{th} SME will be an exporter to the probability that will not be an exporter).

Taking the natural logarithm of Equation 6.5 gives the following Logit L_i result

$$\begin{aligned} L_i &= \ln\left(\frac{P_i}{1 - P_i}\right) = Z_i \\ &= \beta_1 + \beta_2 X_i \end{aligned} \quad \text{Equation 6.6}$$

Many authors have discussed the standard methods for estimating Logit models (Nerlove and Press, 1973; Dhrymes, 1978; Dhrymes, 1994b), and others have suggested improvements (Knapp et al., 1982; Harissis, 1986; Skovgaard, 1990; Ghatak, Manolas and Vavouras, 2002). In the Logit model the dependent variable is, therefore, the log of the odds that the i^{th} SME will be an exporter. The regression coefficients are estimated using the maximum likelihood method. A given slope coefficient shows how the log of the odds (that an individual SME will be an exporter) changes as the corresponding explanatory variable changes by one unit, or as an attribute different from that of the base category is considered. The statistical significance of the slope coefficients may be assessed from their

respective standard errors; t -ratios or p -values. A test of the null hypothesis that all the regression coefficients in the model are zero can be done via the likelihood ratio test where the chi-square test statistic has $k-1$ degrees of freedom for overall model fit. Conventional measure of goodness of fit, R^2 , is not particularly meaningful in binary regressand models.⁴⁴ Measures to similar to R^2 , called Pseudo R^2 , are available, and there are a variety of them,⁴⁵ one such measure we used in our model is the McFadden R^2 ranges between 0 and 1. For comparing several model specifications, we present the percentage correct predictions and Pseudo- R^2 statistics to evaluate model performance.

For estimation purposes we can write the following:

$$L_i = \ln\left(\frac{P_i}{1 - P_i}\right) = B_1 + B_2 X_i + u_i \quad \text{Equation 6.7}$$

$$L_i = \ln\left(\frac{1}{0}\right) \text{ if the SME is an exporter} \quad \text{Equation 6.8a}$$

$$L_i = \ln\left(\frac{0}{1}\right) \text{ if the SME is an in a non – exporter} \quad \text{Equation 6.8b}$$

The estimated Logit model is thus

$$\hat{L}_i = \ln\left(\frac{\hat{P}_i}{1 - \hat{P}_i}\right) = \hat{B}_1 + \hat{B}_2 X_i \quad \text{Equation 6.9}$$

When the regression coefficients are exponential, the derived values or the antilogs indicate the effect of each explanatory variable directly on the odds of being an exporter rather than on the log-odds. Subtracting 1 from the antilogs and

⁴⁴ D. Gujarati (2003), *Basic Econometrics*, McGraw Hill, New York, 2003, fourth edition, pp. 605

⁴⁵ J. S. Long (1997), *Regression Models for Categorical and Limited Dependent Variables*, Sage Publications, Newbury Park, California, 1997, pp. 102-113

multiplying the results by 100 would give the percentage changes in the odds corresponding to a one unit change in the explanatory variables (Gujarati, 1995).

6.3.4. Data analysis and Estimation Techniques

The data for this study were analyzed using Limdep version 7.0 for Windows. The data were collected through a survey questionnaire, which was administered in the year 2003 to a sample of 125 managers of registered exporting and non-exporting Polish SMEs (section 6.3.2). The choice of dependent variable was discussed in the literature review section (section 6.2). As mentioned earlier, in our Logit model the dependent variable is a dummy variable taking a value of 1 if the firm is an exporter and 0 if the firm is a non-exporter. It is defined on the basis of firm’s exports-to-sales ratio. The question was presented in the questionnaire as follows:

What approximate percentage of firm’s sale is made for:

Local market	%
National market	%
Foreign market.....	%
Total ...	100 %

The firm was labeled exporter if the proportion of the sales in foreign market was above zero per cent and non-exporters if the proportion of the sales in foreign market was equal to zero per cent. A similar approach has been used, by among others, Burton and Schlegelmilch (1987); Moini (1992); Westhead (1995) and Philip (1998).

In this research project, the questionnaire design is based on the current literature review, particularly the existing theory with regards to several aspects of export behaviour of SMEs (see section 6.2.2). Thus, the exercise at hand began with a

selection, from amongst the available variables, of those that could be defended on theoretical grounds as potentially relevant to the export decision. Model construction is typically informed in previous section (section 6.3.3) by the relevant behavioural theory. The constraints that derive from data availability and the statistical requirement that the model be firstly identifiable – i.e. have empirically meaningful parameters, and secondly amenable to estimation with appropriate precision. The “general to specific” strategy for model construction (Hendry, 2000; Krolzig H. and Hendry D., 2000) argues that the initial exclusion of variables that might in fact be relevant is far more dangerous than the initial inclusion of variables that might later be assessed as irrelevant. The selection of potential explanatory variables therefore favoured initial inclusion, rather than exclusion, of those variables for which the theoretical justification was marginal. The initial selection of 66 potential explanatory independent variables (see Appendix 2 – Potential explanatory variables in the Logit model) is listed in ten groups as follows:

1. Structural characteristics of the Firm;
2. Size, Growth and Age of the Firm;
3. Comparative Advantages of the Firm;
4. Research and Development;
5. Age, Knowledge and Education Level of Managers of the Firm;
6. Risk, Cost and Profit of the Firm;
7. Finance of Firm;
8. Market and Competition;
9. Government Policy and Assistance for export activities;
10. Knowledge and opinions about the European Union.

In principle, a Logit model could be fitted to the full set of potential explanatory variables and exclusion of some of these as irrelevant could be based on diagnostic statistics. For this exercise in practice, model construction was not so

straightforward. Firstly the number of respondents is not large relative to the number of potential explanatory variables. The resulting low number of degrees of freedom limits the precision of estimation. At the very least, the exclusion of variables should proceed in a step-wise fashion, beginning with those showing least statistical significance, so as to limit the risk of mistaken exclusion as a consequence of low precision.

In this particular exercise the low numbers of degrees of freedom was aggravated by instances of non-response. Non-response was, at least for most questions, not a major issue but a model employing a large set of explanatory variables would have to treat as a missing observation any respondent who did not provide a value for one or more of those variables, further reducing the numbers of degrees of freedom.

In addition to non-response, we also had the difficulty that most of the explanatory variables are multinomial, having only a limited number of possible values; some are in fact binary. This made multicollinearity, even perhaps exact multicollinearity, a serious practical problem, in that the sequence of binary or multinomial values for one explanatory variable might be almost or even exactly the same as the sequence of values for some other variable or some combination of other variables.

In summary, the initial model was statistically ill-conditioned providing an insecure basis for inference. Furthermore, the highly non-linear Logit model is fitted by numerical methods rather than by application of an analytically defined solution. The ill-conditioning of the problem limited the reliability of these numerical methods. Consequently the initial reduction of the list of potential explanatory variables was based upon OLS estimation of a linear probability model. Although the shortcomings of the linear probability model argue against

using it to arrive at the final preferred list of significant explanatory variables, the sturdiness of OLS estimation made it a practical method for reducing the dimension of the model to the point at which we could use a Logit formulation.

6.4. The Empirical Results on Export Propensity for Polish SMEs

This section sets out to fit a Logit model to the cross sectional data collected via a survey questionnaire, is an attempt to explain why some SMEs in Poland are exporters and some are not. We are seeking to discover factors that determine export propensity. As we mentioned in section 6.3.4, the “general to specific” approach was based upon OLS estimation of a linear probability model for reducing the dimension of the model to the point at which we could use a logit formulation. The Model (1) is the model for which we could use a logit formulation (Table 6.6). In the Model (1), the total number of cases was 113 (out of the total sample of 125 enterprises) as 12 of questionnaires had missing values for several variables. The results from Model (1) indicate that the overall model is significant at the better than the 0.005 level according to the Likelihood Ratio Test Statistics. The model predicts 97% of the responses correctly and the McFadden's R^2 is 0.83. However, the coefficients on many factors are not statistically significant. These include the firm's sector (VA3), firm's legal status (VA5), size in number of employees (VB1), perception about acting with promptness (VD2), IT tools used in office work (VE5), perception about increasing the number of direct competitors (VJ3), willingness to invest in abroad (VK6), the level of knowledge of European Union members' markets (VL1) and the opinion about the influence of the accession of Poland to the EU upon Polish enterprises performance (VL3). Further refinement took place leading to Model (2), and 115 cases were included in the latter – that is, 10 cases were omitted because of missing data.

Table 6.6: Empirical results from estimation of the Logit model

Variable Code	Model 1		Model 2		Model 3	
	β -Coeff.	p-value	β -Coeff.	p-value	β -Coeff.	p-value
VA1	7.1527	0.1080	ns	ns		
VA3	ns	ns				
VA5	ns	ns				
VB1	ns	ns	ns	ns		
VA6	-0.0427	0.3034	-0.0600	0.0821	-0.0587	0.0633
VD2	ns	ns	ns	ns		
VD5	-4.4564	0.1623	ns	ns		
VE3	ns	ns				
VE5	ns	ns	ns	ns		
VE7	7.3786	0.1192	4.2250	0.0554	1.4258	0.1180
VH5	-7.1007	0.1004	-2.1888	0.0554	-1.2265	0.1471
VJ1	18.7839	0.4590	8.1251	0.0018	6.7184	0.0011
VJ2	0.0988	0.0836	0.0574	0.0154	0.0528	0.0087
VJ3	ns	ns	ns	ns		
VK1	-6.6244	0.1008	-2.7142	0.0594	-2.2950	0.0558
VK6	ns	ns				
VI1	10.5454	0.0549	4.6931	0.0051	3.6455	0.0029
VI3	3.1174	0.3216	3.6391	0.0100	3.0559	0.0036
VL1	ns	ns				
VL3	ns	ns	ns	ns		
VL4	10.0769	0.0796	5.9485	0.0039	4.5361	0.0013
Constant	-16.9824	0.5773	-2.1158	0.6027	-3.5274	0.3140
Cases	113		113		115	
LRTS (Model Chi-Squared)	115.32(0.00); with 21 d.f		99.70(0.00); with 16 d.f		93.69(0.00); with 9 d.f	
McFadden R ²	0.83		0.72		0.67	
% of Correct Prediction	97%		96%		94%	

Source: Drawn up by author. Notes: ns – the variable was included in the model but was found to be not statistically significant. d.f – degree of freedom. LRTS (Model Chi-Squared) – Likelihood Ratio Test Statistics. The figures in brackets are the associated p values.

The stability of successive models is clear, with the same set of explanatory variables being found to be statistically significant in Model (2) and (3). Although, McFadden's R^2 is getting smaller from 0.83 to 0.67 due to few variables included in the models, the percentage of correct prediction based on the sample show that it is very small drop from 97% in Model (1) to 94% in Model (3). Therefore, we choose the Model (3) which has all significant variables as a final model. The variables that were considered to be most likely to have an influence on export propensity of Polish SMEs were:

- the capital of the enterprise (VA6);
- the significant extent of IT tools in distribution and marketing used by the enterprise (VE7);
- the profitability of the enterprise in the domestic market (VH5);
- the major markets of the enterprise (VJ1);
- number of competing firms in domestic market (VJ2);
- the perception about major problems in connection with export operations (VK1);
- the essential sources of the enterprise's finance (VI1);
- knowing where to obtain special foreign credit available for Polish SMEs (VI3);
- action has been taken to prepare for the accession of Poland to the EU (VL4).

Table 6.7 shows detailed empirical results of the regression analyses included in Model (3). The expected probability of the propensity to export of the firms may be calculated using Equation 6.3 and the value of the β coefficients is presented in Table 6.7

Table 6.7: Detailed empirical results from estimation of the logit model

Code	Variable	Category	Coeff.	Std.Err.	t-ratio	P-value
VA6	Capital of the enterprise	Percentage of Polish capital	-0.0587	0.0316	-1.857	0.0633 **
VE7	The significant extent of IT tools in distribution and marketing used by the enterprise	Yes	1.4258	0.9120	1.563	0.1180
VH5	Profitability of enterprise in domestic market	Yes=1 No=0	-1.2265	0.8459	-1.450	0.1471
VJ1	Where are the major markets of the firm's	National market	6.7184	2.0656	3.253	0.0011 *
VJ2	Competing firms in domestic market	Number of enterprises	0.0528	0.0201	2.624	0.0087 *
VK1	Perception about major problems in connection with export operations	Taxation	-2.2950	1.2002	-1.912	0.0558 **
VI1	Essential sources of enterprise's finance	Bank loan	3.6455	1.2227	2.982	0.0029 *
VI3	Knowing where to obtain special foreign credit available for Polish SMEs	Yes	3.0559	1.0489	2.913	0.0036 *
VL4	Action has been taken to prepare for the accession of Poland to the EU	Yes	4.5361	1.4113	3.214	0.0013 *
	Constant		-3.5274	3.5035	-1.007	0.3140

Source: Drawn up by author. * = significant at the 5% level, ** = significant at the 10% level

Note: The sample consists of the 115 enterprises used in the estimation of the Model (3)

The probabilities lie between zero and one, with a value of unity indicating a certainty of positive effect on firms' export propensity, and a value of zero indicating a certainty of negative effect. A positive (negative) coefficient for a particular category shows the higher (lower) probability of exporting for firms in that category.

The capital structure variable (VA6) records the percentage of domestic capital. This factor is estimated to have a non-zero influence with a low risk of type 1 error ($p=0.063$). The negative sign implies that enterprises having a high percentage of domestic capital are relatively less likely to be exporters. The weakening of the Polish currency during 2002 and 2003 ⁴⁶ may thus provide a two-fold stimulus to exports – directly through the reduced foreign price of Polish goods and indirectly through encouraging additional foreign investment in Polish SMEs. A relatively weak zloty appears to be a necessary condition for increased exports by domestic firms, which need to compete on price in order to boost their foreign sales. As these firms and their products are, as a rule, still completely unknown on foreign markets, they have to compete for buyers by cutting the prices of the products they offer. However, in addition to a weaker zloty that allows Polish companies to compete on price, if domestic enterprises want to expand their exports, they must acquire the skills necessary in operating on international markets and secure the funds required for investment, introduction of innovations, and promotion of their products. Unfortunately, Polish enterprises lack these skills and resources to export. Furthermore, joint capital and foreign companies have no difficulty in securing funds for their development and overcome the problem of lacking resources necessary to export, such as finance, physical or human capital. These enterprises did not have to confront such formidable obstacles hindering their

⁴⁶ *Inflation Report*, Monetary Policy Council, National Bank of Poland, Warsaw, May 2004

development as were faced by domestic companies and have higher probability of being an exporter.

We can safely assume that in the years to come IT technology will increasingly penetrate Polish society. The use of IT technologies in business activities is a particular instance. In our preferred model the self-assessment of the extent to which an enterprise uses IT tools in distribution and marketing (VE7) only narrowly missed statistical significance by standard criteria ($p = 0.118$) and was estimated to have the expected positive influence on export propensity, so is retained in the model. Extensive use of IT technology offers new opportunities for enterprises to improve the efficiency of business operations in foreign markets, and to reduce costs associated with (for example) customer relationship management. A willingness to engage with IT support for business is therefore likely to facilitate export ambitions. In passing, we note that other variables associated with research and development failed to gain empirical support.

The profitability of an enterprise in its domestic market might be thought to be important, the argument being that a firm needs to secure its domestic markets as a strong foundation from which to build export success. In fact this variable (VH5) has the lowest significance ($p = 0.1471$) of those retained in our preferred model and takes a negative sign, which is counter-intuitive according to the preceding argument. We offer the rationale that the ownership and management structures of SMEs are more conducive to “satisficing” behaviour than is the case for large corporations, particularly those that are publicly owned. Where the SME owners, on occasion an owner-manager, adopt a satisficing objective then satisfactory profitability in the domestic market may in fact reduce the inclination to develop export markets.

Variable VJ1 records whether a firm sells nationally within Poland or only within a local market. The influence of this variable is estimated to be very significantly non-zero ($p=0.0011$) and with a positive coefficient. It would seem that although profitability within the domestic market is not a significant factor, the geographical extent of engagement with the domestic market is an important driver of the propensity to export.

We find also that the presence of competition in the domestic market (VJ2) is a significantly positive factor in determining export propensity. We might rationalise this by suggesting that the existence of competition within the domestic market promotes both the search for market opportunities abroad and also an organisational effectiveness that enables a firm to take advantage of these.

Our questionnaire asked managers to state whether or not they were concerned about various aspects of the export environment. We find that the extent to which managers are concerned about the taxation regime (VK1) is a significant negative factor in the determination of export propensity ($p = 0.0558$).

The next significant factor in our logit regression is the use of bank loans (VI1). Those enterprises that make significant use of bank loans have a higher probability of being an exporter ($\beta = 3.6455$, $p = 0.0029$) than those that depend on self funding. We rationalise this by positing that serving international markets increases the credit requirements of an SME; firms that are not willing to take on bank debt may restrict themselves to the domestic market. Increasing globalization has created intense competition within export markets and sellers must seek any competitive advantage that might help them to increase their sales. Flexible payment terms in export have become a fundamental part of any sales package. Favourable payment terms make a product more competitive. In order to offer

such terms, where payment is delayed, a enterprise may need more credit to cover the cost of productions such as payments for employees and material supplies or to finance one-off costs associated with export contracts, for example engineering modifications to meet customers' product specifications.

Unsurprisingly, the variable that assesses knowledge of how to obtain special foreign credit (VI3) was very significant ($\beta = 3.0559$, $p = 0.0036$). The importance of obtaining special foreign credits may well be connected with possibility of the development of the firm's strategy, company's competitive position and investment planning. Under programmes supported by European Union Funds such as Export Enterprise Development Programme and Investment Grant Fund, the Polish SMEs may obtain funding of their competitive position on selected export markets. Therefore, the enterprises with high knowledge to obtain foreign credits drive the propensity to export more by the Polish SMEs.

Finally, the enterprises which have taken action to prepare for the accession of Poland to the EU will have higher export propensity ($\beta = 4.5361$, $p = 0.0013$). If the enterprises have taken action to prepare for the accession of Poland to the EU, this may ensure that the enterprises will be able to act effectively against any changes in the home market and keep the enterprises updated with the latest information from the European markets. The well prepared enterprises for the accession of Poland to the EU have more chance to explore the new market and look for the benefits from the EU accession which could bring export opportunities for enterprises to expand their market.

6.5. Conclusion and Policy Recommendations

The research sets out to fit the logit model to the cross sectional data collected via a survey questionnaire (for the year 2003) to ascertain the explicability of why some Polish SMEs in Gdansk are exporters and some are not (i.e. export propensity). This research reported the results of the views of the owners/managers of 125 Polish SMEs in Gdansk about the export propensity of their enterprises. Reliability and validity analyses have proved that the research instrument was a fairly reliable and valid measure. Nine out of the sixty seven variables are statistically significant (Table 6.7) and the information was collected on the variables as gleaned from the empirical literature on export behaviour of SMEs. Six of the significant variables have a positive influence and three have a negative influence on export propensity of Polish SMEs (Table 6.7). The results of the study indicate the factors which positive affect the export propensity are:

- access to bank loan;
- use of information technology in marketing;
- availability of foreign credits;
- number of competing firms in domestic market;
- domestic share of the market;
- action taken for accession to the EU.

Factors which have lower probability of being export are:

- have high percentage of domestic capital;
- taxation;
- profitability in domestic market.

These results highlight the need for a number of important policy initiatives:

- ❖ The information technology sector should be developed, and the use of information technology for marketing should be exploited further by the Polish SMEs in order to increase sales in foreign markets.

- ❖ The access of Polish enterprises to the banking and credit system should be promoted. Banks should reduce the requirements and documentation for a loan application. The criteria should be based more on the prospects of an enterprise and less on its assets.
- ❖ The information about the needs and other characteristics of the foreign credits available for Polish SMEs should be collected and disseminated by the state and official organizations.
- ❖ Competitiveness of enterprises is one of the important factors influencing the export propensity of Polish SMEs. The Polish SMEs require support in their development activities, strengthening and improving their competitive position in domestic market and adjustment to the EU requirements in the area of norms and standards. Legal regulations should be simplified and assistance should be available for the development of more dynamic SMEs.
- ❖ Support provided by public authorities is the key element of the development of a system of guarantees and warranties such as credit guarantee funds, which facilitate SMEs' access to external sources of financing and expand the capital of the Polish enterprises. Therefore, the credit guarantee institutions should be developed by the government.
- ❖ Government policy should aim at simplifying the form of taxation, increasing tax allowances and reducing tax for new businesses so that small enterprises could take advantage of simplified form of taxation, featuring lower rates and have more opportunities to involve in exporting activities.

A strategy based on the above initiatives would provide the necessary incentives for Poland's small enterprises not only to survive but to help them to grow faster and to prosper in the environment of increased competition in the Single European Market.

Chapter 7: Empirical Study of Export Aversion of Polish SMEs

7.1. Introduction

The purpose of this chapter is to provide an outline of the current state of conceptual knowledge on export aversion for small enterprises in Poland. It has been concluded with a categorisation of the major export problems: barriers associated with the company, industry, market and macro environment. Furthermore, an analysis of the factors causing export aversion will allow us to understand the constraints on the growth of exports by Polish SMEs. Like the previous chapter, our analysis is conducted on the basis of a Logit model. We use the survey data for the Gdansk region for the year 2003. To the best of our knowledge such an analysis has not been attempted before.

The chapter is structured as follows. Section 7.2 covers the literature review on export aversion. This section outlines the internal and external export problems of firms from developing countries. The next section 7.3 summarises the methodology of export aversion. The empirical results on export aversion of Polish SMEs have been discussed in section 7.4. Finally, the last section concludes.

7.2. Literature Review on Export Aversion

In the literature, export aversion and export problems have been characterised as export obstacles/inhibitors, barriers or impediments. They all refer to attitudinal, structural and operational and other constraints that hinder the firms' ability to initiate, develop, or sustain international operations (Leonidou, 1995). Despite the

publicised benefits of exporting (both perceived and realised) and the various efforts by both public and private institutions aimed at encouraging SMEs to export, very few SMEs in developing countries are exporting (Levy, Berry and Nugent, 1999). Some of the reasons why SMEs have not been exporting include: managerial constraints; lack of knowledge about overseas markets for their products; perceived complexity of exporting; lack of awareness of government assistance; and financing difficulties of export sales (see Figure 7.1 for more reasons).

Figure 7.1: Reasons for not Exporting



Sources: Edmunds and Khoury (1986); Darling and Postnikoff (1985); Dichtl, Koeglmayr, Mueller (1990); Brooks and Rosson (1982); Kaynak and Kothari (1984); Kedia and Chokkar (1986); Kathawala et al (1989); Nelson (1984); Chenier and Prince (1990); Caughey and Chetty (1994); Howard and Herremans (1988); Czinkota and Johnston (1983).

Edmunds and Khoury (1986) argue that the strategic disadvantages in terms of realisation of exports and other potentials differ significantly between small and large firms. For example, problems of information, bookkeeping, finance, and experience tend to be unique to small firms. According to North, Smallbone and Vickers (2001) a firm's limited human resources can influence its propensity and ability to be aware of and respond to opportunities and threats presented by the external environment. Therefore, a small firm's ability to capitalise on export opportunities is to a large extent constrained by the limited resources at its disposal. A non-resource related internal barrier to exporting relates to the attitudes of managers in small firms towards exporting.

7.2.1. Problems of Internal Export

Problems of internal export are intrinsic to the firm and are usually related to insufficient organisational resources for export. Examples are: problems pertaining to meet importer quality standards and in achieving the appropriate design and image for the export market (Czinkota and Rocks, 1983; Kaynak and Kothari, 1984; Rabino, 1980); problems arising from ill-organised export departments and the firm's lack of competent personnel to administer exporting activities (Yang et al., 1992); insufficient finance for exports; a shortage of data concerning markets overseas (identifying suitable overseas distributors and communicating with overseas customers). These are fairly fragmented but they consist of internal problems that affect export performance. In this section the internal export problems in the literature are separated into problems related to firm and product characteristics. Previous research uncovered firm problems that consisted chiefly of the organisational capacity of the firm to carry out the marketing function (Katsikeas and Morgan, 1994). Researchers have examined especially problems linked with the design and implementing the functions such as knowledge and

information, financial and human resource obstacles (Czinkota and Rocks, 1983; Kaynak and Kothari, 1984; Rabino, 1980). Product problems are related to the level of quality and with the technical specifications demanded by the market segment aimed at: design, style and quality of the product, its packaging and labelling, and the modifying of the product or its adaptation (Keng and Jiu, 1989). Table 7.1 gives a summary of internal export problems.

Table 7.1: Internal export problems of manufacturing firms from developing countries

Company Barriers
<p style="text-align: center;">Lack of marketing knowledge:</p> <ul style="list-style-type: none"> • Deficiency of knowledge about export markets and exporting (South Korea, Latin America, Turkey, Brazil) – Weaver and Pak, 1988; Bodur, 1986; Karafakiolu, 1986; Colaiacovo 1982, Dymsza, 1983, Fluery, 1986. • Deficiency of experience in exporting (Brazil) – Cardoso, 1980. • Poor market information (Brazil, Venezuela, South Korea, South Africa, Venezuela, Chile, Costa Rica, Turkey) – Figueiredo and Almeida, 1988; Brooks and Frances, 1991; Kaleka and Katsikeas 1995; Weaver and Pak 1988; Burgess and Oldenboom 1997; Bodur 1986; Karafakioglu, 1986. • Ability to identify customers/buyers in foreign markets and difficulty in communicating with clients overseas (Brazil, Cyprus) – Christensen and Da Rocha, 1994; Kaleka and Katsikeas, 1995, Cardoso, 1980.
<p style="text-align: center;">Financial barriers:</p> <ul style="list-style-type: none"> • Deficiency of financial resources to conduct market research in overseas markets (Brazil) – Cardoso, 1980. • Deficiency of financial resources to finance exports (South Korea, Venezuela,, Turkey) – Weaver and Pak, 1988; Frances, 1987; Dicle and Dicle, 1992. • Credit unworthiness (Kenya) – Collier and Gunning, 1999.

<p style="text-align: center;">Human resource barriers:</p> <ul style="list-style-type: none"> • Deficiency of management emphasis/commitment to develop export activities (Cyprus, New Zealand, South America, Brazil) – Kaleka and Katsikeas, 1995; Gray, 1997; Agarwal, 1986; Christensen and Da Rocha, 1994. • Deficiency of personnel trained and experienced in export marketing (Cyprus) – Kaleka and Katsikeas, 1995; • Deficiency of managerial capacity (Latin America) – Colaiacono, 1982.
<p>Product Barriers</p>
<p style="text-align: center;">Quality problems:</p> <ul style="list-style-type: none"> • Poor product quality (Brazil, Peru, Venezuela and Chile, Turkey) – Figueiredo and Almeida, 1988; Cardoso, 1980; Agarwal, 1986; Bodur, 1986; Karafakioglu, 1986. • Short product life cycle/fashion sensitivity (Brazil) – Cardoso, 1980.
<p style="text-align: center;">Product adaptation problems:</p> <ul style="list-style-type: none"> • Inadequate quality control techniques (Brazil) – Figueiredo and Almeida, 1988; Cardoso, 1980. • Inadequate quality of raw materials (Brazil) – Figueiredo and Almeida, 1988. • Packaging and labelling requirements (Venezuela, Peru, Chile, Costa Rica) – Brooks and Frances, 1991; Agarwal, 1986. • Strict product design and specification (Venezuela, Peru, Chile) – Brooks and Frances, 1991. • Narrow product lines (Hondurans, Guatemala, Pakistan) – Dominguez and Sequeira, 1993, Hasan, 1998. • Lack of experience to adapt products (Brazil) – Christensen et al., 1987.

Source: Adapted from literature on export problems of manufacturing firms in developing countries

7.2.1.1. Company Barriers

Firm competencies and constraints are major factors affecting what marketing strategy they select and their capacity to carry out that strategy (Aaker, 1988; Porter, 1980). A company achieves a competitive advantage by building on its

assets and skills. The literature reviewed demonstrated that firm barriers can be classified under the following headings: marketing knowledge and information, financial resources and human resources (Katsikeas and Morgan, 1994). An exporter having assets and skills such as these can locate opportunities in the export market, draw up a suitable plan for marketing exports and put it into successful practice.

7.2.1.1.1. Informational Constraints

An important obstacle faced by SMEs in LDCs that export has been identified as the lack of knowledge about how to find potential markets and opportunities outside the country (Colaiacovo, 1982; Luis, 1982; Dymsza, 1983; Bodur, 1986; Karafakioglu, 1986; Cardoso, 1980; Weaver and Pak, 1988). Marketing knowledge is dependent on the relevance and depth of marketing information available to the firm. Enterprises that use relevant, precise and up to date information are in a better position to react to export problems. A vital problem facing manufacturing companies in developing nations has been identified as a shortage of information about exporting and more specifically marketing information (Weaver and Pak, 1988; Figueiredo and Almeida, 1988; Brooks and Frances, 1991; Kaleka and Katsikeas, 1995; Burgess and Oldenboom, 1997; Bodur, 1986; Karafakioglu, 1986). Exporting cannot take place until hard information about potential foreign markets has been obtained. In design intensive industries, irrespective of location of the producer, the need for close and continuous information flows between design setters and manufacturers has been paramount (Lall, 1991). Large companies often have sections dedicated to collecting information and promoting their goods outside the country, but small and medium-sized enterprises in developing countries often lack such internal resources and are thus at a disadvantage. In addition, when the average SME in a

developing country receives the usual flood of statistical data and huge amounts of general information habitually given them in answer to their questions, they are unable to absorb or make effective use of them. A large number of the firms cannot sort out the great quantity of information to select the details relevant to their own, short-term operations.

Distribution has also been a major problem area in exporting (Cardoso, 1980; Gereffi, 1992; Christensen and Da Rocha, 1994). Many SMEs in developing nations fail to create marketing networks, because they are short of data concerning marketing channels. Gereffi (1992) showed that Taiwan's lack of internationally recognised company brand names, and of suitable marketing and retail networks were obstacles to the exporting of indigenous manufacturers' products. It was considered very difficult to obtain a distributor who was reliable and who would represent the firm properly (Cardoso, 1980).

Various other obstacles to exporting have been observed by researchers, such as the pricing of the product in the international market (Fluery, 1986; Brooks and Frances, 1991; Kaleka and Katsikeas, 1995; Weaver and Pak, 1988; Smallbone D., Venessar U., Budreikate D. and Rumpis L., 1996; Burges and Oldenboom, 1997; Marczewski, 1997). Christensen et al. (1987) argued that successful exporters use international competitive prices as a benchmark and do not request premiums for exchange and unusual risks. This instance indicates that pricing a product is problematic for a manufacturer from a developing nation who has not enough information concerning the export market. Other factors that limit exporting include inadequate programmes of advertising and promotion (Fluery, 1986; Brooks and Frances, 1991; Kaleka and Katsikeas, 1995; Weaver and Pak, 1988; Burges and Oldenboom, 1997).

7.2.1.1.2. Financial Problems

A sound financial position is one of the keys to secure price advantage in the target market. Many SMEs in developing countries run into problems for a lack of timely and adequate working capital. This problem increases costs and also puts at risk the entire process of production (Cardoso, 1980; Weaver and Pak, 1988; Kaleka and Katsikeas, 1995; Dicle and Dicle, 1992). The insufficient financial facilities as the major export barrier have been identified by Frances (1980), in his research into 75 Venezuelan exporting manufacturers. Lack of credit-worthiness and transaction costs are two important causes of decreased access to credit. Collier and Gunning (1999) claimed that in Kenya the majority of trade credits were extended and postponing payments was the usual way of coping with unexpected liquidity shocks. To assess a customer's credit-worthiness manufacturing companies had to collect information about the customer, since credit-rating agencies had not been created. The high costs involved in export credit were a problem faced by Turkish manufacturing firms (Bodur, 1986).

7.2.1.1.3. Human Resource Barriers

The success of the firms' export activities sometimes depends on the attitudes and characteristics of the managers. Problems about knowledge of export can be attributed largely to the lack of trained and experienced human resources. For example, Agarwal (1986) has shown that the quality of manufactured products in Venezuela, Argentina and Chile has remained persistently low because of employees lacking skills. A firm that includes the needs of international operations in the management of its personnel, especially of its professional and managerial employees, is more likely to succeed in its attempts at exporting (Gomez-Mejia, 1988). The impact of human resource strategies on export performance of small

and medium sized manufacturing firms in developing countries is well-documented (Christensen and Da Rocha, 1994). SMEs' operations in the international market are limited not only by insufficient financial resources to develop the workforce, but also by negative views of managers about exporting. In several articles, a lack of management commitment to develop export activities is also reported (Kaleka and Katsikeas, 1995; Christensen and Da Rocha, 1994; Agarwal 1986). In conclusion, trained human resources, positive management attitudes and commitment towards exports are important factors that enhance export performance (Naidu et al., 1997). A firm is not likely to become a successful exporter unless management has an international vision and consistent export goals.

7.2.1.2. The Product Barriers

The product barriers that influence the export strategy of the firm can be divided into 2 groups: quality and of technical adaptability.

7.2.1.2.1. Quality Problems

One of the most important requirements for entering and staying in foreign markets is the export of product of high quality (Christensen and Da Rocha, 1994). This covers packaging; meeting importers' quality standards and settling on the image and design appropriate to export markets. Quality standards in developing countries are different. However, many problems of poor quality result from insufficient knowledge concerning market requirement, features of the product and production technologies. A product that sells well in a developing country might not sell at all in a developed one (Lall, 1991). Daniels and Robles (1985) reported

that product quality was an essential consideration for Peruvian exporters. Studies by Figueriredo and Almeida (1988), and Cardoso (1980) highlighted low quality of products and weak sensitivity to fashion as problems for Brazilian exporters. Agarwal (1986) indicated that manufacturers in countries such as Venezuela, Argentina, and Chile were facing product quality problems. Christensen et al. (1987) pointed out that Brazilian firms that eventually ceased to export did not lay stress on research or product service and quality. They were low-value-added product marketers and they suffered from direct competition from any marginal-cost rival that burst on the scene.

7.2.1.2.2. Product Technical/Adaptation Problems

Some researchers (Lall, 1991; Katsikeas and Morgan, 1994) showed that the local product standards, customer standards and buying habits could be inappropriate for making sales overseas and might need to be modified. The majority of studies show that companies that are successful in adapting their products to foreign markets. Christensen et al. (1987) demonstrated that although companies in Brazil did export products that had been standardised, they could have improved their performance if they had adapted those products to the expectations of the target market. This failure to improve was put down to lack of experience and insufficient technical capacity to adapt the products. Exporters lacking experience may find it easier to export standardised products and depend on the importers' skills in branding, design and promotion (Wortzel and Wortzel, 1988). Most of the technical/adaptation problems mentioned in the literature have been due to a lack of knowledge of market requirements or a lack of resources to satisfy the requirements: inadequate techniques for controlling quality (Figueiredo and Almeida, 1988; Cardoso, 1980), raw material of low quality, (Figueiredo and Almeida, 1988), inadequate packaging and labelling, an insufficiently strict

product design and specification (Brooks and Frances, 1991). Extensive examination of product-line management has not been carried out, but Christensen et al. (1987) argued that firms with multiple product lines are more successful at exporting.

7.2.2. Problems of External Export

Many researchers have recognised that the origin of a considerable number of exporting problems is rooted in the external environment. These problems arise in a wide variety: the special preferences of consumers overseas, unfamiliarity with business protocols and procedures, the tariff barriers and regulatory import controls imposed by foreign governments, strong competition, fluctuations in exchange rates and restricted hard currency for international trade. These problems will be examined in the following section. They are analysed as problem of industry, of export market and of macro-environment obstacles (Table 7.2).

Table 7.2: External export problems of manufacturing firms in developing countries

Industry export barriers
<div>Industrial structure:</div> <ul style="list-style-type: none"> • Firm Size (Brazil, India, Turkey) – Figueiredo and Almeida, 1988; Little, 1987; Bodur and Cavusgil, 1985. • High Industry concentration (Brazil) – Cardoso, 1980. • Lack of new technology (Turkey, Brazil) – Dicle and Dicle, 1992; Neto, 1983. • Choosing the right technology (Peru) – Daniels and Robels, 1985. • Prepared to face large Multinational Companies (India) – Naidu et al., 1997. • Unreliability in supply of raw materials (Zimbabwe) – Collier and Gunning, 1999.

<p style="text-align: center;">Competition:</p> <ul style="list-style-type: none"> • Fierce competition in export markets (Cyprus, Turkey, Pakistan, Brazil) – Cardos 1980; Fluery 1986; Kaleka and Katsikeas 1995; Karafakioglu 1986; Hasan, 1993.
<p>Foreign market problems</p>
<p style="text-align: center;">Customer barriers:</p> <ul style="list-style-type: none"> • Image of products in foreign market (Brazil) – Cardoso, 1980; Lall, 1991. • Insufficient foreign demand (Brazil, Pakistan) – Cardoso 1980; Mohy-ud-Din and Javed, 1997. • Culture and language differences (Peru) – Brooks and Frances, 1991. • Brand familiarity (Taiwan) – Gereffi, 1992.
<p style="text-align: center;">Procedural barriers:</p> <ul style="list-style-type: none"> • Methods of payment/ delays and bad debts (Peru) – Brooks and Frances, 1991. • Complexity of paperwork involved, procedural complexity (Cyprus, Turkey, Venezuela, Peru, Costa Rica) – Kaleka and Katsikeas, 1995, Bodur, 1986, Brooks and Frances, 1991. • Delay in duty drawbacks (Pakistan) – Haidari, 1999.
<p>Macroeconomic environment problems</p>
<p style="text-align: center;">Direct export barriers:</p> <ul style="list-style-type: none"> • Protectionist obstacles (Brazil) – Cardoso, 1980; Figueiredo and Almeida, 1988. • Transport service and infrastructure (Peru, Venezuela, Chile, Costa Rica) – Brooks and Frances, 1991. • Special Customs requirements (Peru) – Brooks and Frances, 1991. • Lack of export promotion and assistance programs sponsored by the government (Cyprus, Brazil) – Kaleka and Katsikeas, 1995; Figueiredo and Almeid, 1988. • Complex government bureaucracies (India) – Naidu et al., 1997. • Import substitution (Latin America) – Dymsza, 1983. • Lack of import Licenses (China) – Simyar and Argheyd, 1985.

Indirect export barriers:

- Exchange and interest rate uncertainties (Brazil, Colombia, Latin America, Hondurans, Costa Rica) – Cardoso, 1980; Figueiredo and Almeida, 1988, Luis, 1982; Morawitz, 1981, Juarez, 1993; Ortiz-Bounafina, 1984; Dymsza, 1983).
- International agreements (Brazil) – Cardoso, 1980; Figueiredo and Almeida, 1988;
- Cost of transportation (Costa Rica, Cyprus) – Brooks and Frances, 1991; Kaleka and katsikeas, 1995.

Source: Adapted from literature on export problems of manufacturing firms in developing countries

7.2.2.1. Industry Barriers

The intensity of exporting activities and the nature of export strategies vary considerably across industries. Porter (1980) observed that, this is mainly because of essential differences among industries. Kerin et al. (1990) considered that a vital defining element of a firm's strategy in domestic market was the structure of industry. The differences between firm sizes, market systems and foreign competitors in the same market, need all to be taken into account before an effective export strategy can be developed. Furthermore, Jain (1989) emphasised the intensiveness of the technology used and the intensity of price competition in the industry as significant influences on the export strategy plan.

7.2.2.1.1. Industrial structure

The firm's size is a key determinant of the export aversion. Larger companies export more than smaller ones because of their size advantage, and this will usually have a positive impact on the export activity. Naidu et al. (1997) claims that Indian enterprises expressed their concern that multinational companies were better equipped for the export market. According to Figueiredo and Almeida

(1988) and Cardoso (1980), the firm size and the high level of concentration in the industry were significant obstacles to exporting by small enterprises. Rauch (1991) stressed that firms that have been graduating from the small informal status showed up on the radar screens of regulators and tax collectors and suffered the consequences. In line with Rauch's argument, Little (1987) showed that small manufacturing firms in India had not only to manage much more difficult licensing procedures but also to cope with higher costs of labour and very much higher excise duties.

International literature reports frequently debate the impact of technology on export performance. Christensen et al. (1987) have stated that if exporters marketed their goods in developed countries, technology could be an important source of competitive advantage over local producers. However, in less developed countries, advantages such as low cost could be more significant. In studying the Brazilian footwear industry, Neto (1982) pointed out that footwear manufactures performed better at exporting if they were more inclined towards changing their production methods, developing new products and investing in production capacity. Dicle and Dicle (1991) have referred to lack of new technology as a barrier to exporting suffered by Turkish manufacturing companies. They go on to state that insufficient consideration has been given to either the development of new production technology or to the upgrading of new technology for exporting. Also shown in the literature review is that the lack of advanced technology has been an obstacle to SMEs in developing nations. However, mere possession of a specialised technology does not create a competitive advantage. It depends on how the firm takes advantage of it. Another factor of importance for exporting SMEs in developing countries is the supply of raw materials. Collier and Gunning (1999) wrote that firms also have to cope with unreliability in other domestic firms that supply them. In Zimbabwe, to avoid uncertainty in fulfilling long-term contracts

with overseas purchasers, companies carry large stocks of supplies for an average of three months, thus incurring high transaction costs.

7.2.2.1.2. Competition Problems

In principle, competition should not be considered as an obstacle if no information asymmetries exist among competitors in the market. However, in practice, information about export opportunities is costly and not easily available. In addition, the category of competition perceived by a firm affects its interest in exporting. According to Burgess and Oldenboom (1997), international markets for South African companies were demanding new and unexpected competencies to compete effectively. They demonstrate that being unable to match the prices of overseas competition was an obstacle to the majority of exporters. In the literature reviewed, competition in both overseas and domestic markets was regularly observed as a high barrier to exporting. Price competition (Cardoso, 1980; Fluery, 1986), forceful competitors in the overseas market (Cardoso, 1980), uncompetitive prices and strong competition in export markets (Kaleka and Katsikeas, 1995) were all reported as export barriers. The fact that small companies were hindered in their collection of suitable information by their limited financial and human resources rendered them particularly at risk (Burgess and Oldenboom, 1999). Mohy-ud-Din and Javed (1997) referred to tough competition, from other yarn-producing countries as a major cause of the declining export of yarn from Pakistan.

7.2.2.2. The Foreign Market Problems

The literature review indicated that the influences on export performance were linked with customer requirements in the foreign market, the country of origin, cultural similarity and brand familiarity. Export market obstacles also listed were similarity of legal and regulatory frameworks of the exporting and importing states and familiarity with export market procedures. These influences are reclassified as procedural and customer obstacles.

7.2.2.2.1. Procedural Barriers

Many studies have named a shortage of information about export procedures as an obstacle to exports (Haidari, 1999). A company hoping to enter the export market or wishing to increase its exports needs to learn how to deal with administrative procedures. Foreign documentation and paper work may seem very difficult to manage, particularly to managers with little experience (Dymsza, 1983). The result is that a problem to exporting can be caused by the simple apprehension of inability to process the paperwork, because it appears too laborious or time-consuming. The documents are not properly completed, causing delay in payments and thus creating cash flow problems for the exporter. Haidari (1999) demonstrated that the cash-flow of many small tanners in Pakistan was harmed by delays in the refund of duty and sales taxes. The small tanners had limited working capital, so any delay imposed a serious handicap on their export operations. Brooks and Frances (1991) argued that when the government is closely involved, official procedures may lead to “red-tape”, which is not easy to manage for those just starting to export. A second major problem for small and medium-sized Korean manufacturing firms was held to be that of acclimatising to foreign

cultures, including business customs and attitudes in foreign markets (Weaver and Pak, 1988).

7.2.2.2.2. Customer Barriers

Customer obstacles arise from how the customer perceives the characteristics of the product. Exporters from developing countries, as well as dealing with specific quality problems, have to cope with the poor reputation of their country, which is a significant issue. Ford et al. (1987) showed how the growth of Indian consumer durable exports had been hamstrung by the poor reputation of their country of origin. Mohy-ud-Din and Javed (1997) showed that problems of image had led to Pakistani yarn manufactures losing market share in virtually all their major markets, just as export demand for low-quality textiles was falling.

The reviewed literature also reported the following barriers to exports linked to customers, affecting manufacturing companies in developing states: poor image of products in the foreign market (Cardoso, 1980), inadequate foreign demand (Cardoso, 1980), differences of culture and language (Brooks and Frances 1991), country-of-origin effect (Lall, 1991).

7.2.2.3. Macroeconomic Environment Problems

Macro environment obstacles are factors beyond the firm's control, such as the lack of proper trade organisations, unfavourable exchange rates, lack of a national policy to encourage exports and international agreements. They are mainly related to the domestic and foreign external environment to the firm but difficult to classify under industry and export-market barriers because of their dual behaviour. The difficulties mentioned in the reviewed literature are classified as direct and indirect export barriers. Direct barriers are derived from the government's macro economic policies in general.

7.2.2.3.1. Direct Export Barriers

Government authorities and agencies can put up direct obstacles. Government regulations may cover tariff and non-tariff barriers. In the literature review domestic government regulation of exports (Figueredo and Almeida, 1988), insufficient diplomatic support, protectionist barriers, import substitution (Cardoso, 1980); Figueredo and Almeida, 1980; Frances, 1985; Dymsha, 1983) was listed as export problems. Apart from this, lack of export promotion and assistance programmes provided by the government (Kaleka and Katsikeas, 1995; Figueredo and Almeida, 1988) and the situation, in some cases, of governments assigning themselves the highest priority in foreign exchange allocation (Ortiz-Buonafina, 1984), were shown as problems over exporting that were hampering SMEs in developing countries. Colaiacovo (1982) reported that problems of infrastructure imposed significant constraints on exporting in Latin America. Inadequate plans for promoting exports, formulated by governments, frequently impede exporters. This includes failure to collect or distribute information on

available export opportunities and ineffective promotion of the countries exports overseas (Naidu et al., 1997). According to Morawitz (1981), a survey in Taiwan had concluded that government export promotion agencies were considered the least useful of seven sources of market information. He also reported a study in Colombia in which none of the exporters he interviewed acknowledged help from the country's export promotion office. The inadequacy of government export promotion services represents a severe difficulty for firms in developing countries, since many firms that could export are short of the essential export market knowledge and marketing skills. However, close government involvement in the export promotion programmes that are accessible renders even them ineffective. Naidu et al. (1997) have reported that even though India has established complex bureaucracies to promote exports their results are dismal. His conclusion is that high levels of government interference have actually inhibited international entrepreneurship. Generally, frequent changes to policies regarding exports and government agencies giving ineffective assistance are major export problems to SMEs in developing countries.

7.2.2.3.2. Indirect Export Barriers

Indirect export obstacles have their origin in the state's macroeconomic policy and in international trade agreements. Morawitz (1981) examined problems of the clothing industry in Colombia at both macroeconomic and firm level and discovered that foreign exchange-rate policy was an important determinant of international competitiveness. Luis (1982) emphasised that export financing programmes and the availability of foreign currency were affected by exchange-rate policy. Juarez (1993) also showed that appreciation of the real exchange rate caused in part the loss of competitiveness in Colombian manufactured products. Brooks and Frances (1991) reported that exporters in Venezuela and Peru were

obliged to change their foreign currency earnings at the official exchange rate, which was roughly half the free market rate. At the same time, in order to import inputs and spare parts, they could buy foreign currency only at the free market rate. The other influence is linked with international trade agreements. Trade agreements may open markets to firms in participating countries, but they can also discriminate against third party traders. For example, one result of the treaty of Rome was the gradual loss by North American firms of some European markets to European community members (Brooks and Frances, 1991). Simyar and Argheyd (1985) report that import licence requirements and other barriers to entry hampered exporting to China. Also, Dicle and Dicle (1992) noted that strict and time-consuming procedures limited imports of manufactured goods into Turkey. In the literature, exchange-rate uncertainties and international agreements (Cardoso, 1980; Figueredo and Almeida, 1988) were considered as export barriers. Several writers drew attention to the importance of exchange rates as a tool for promoting exports. Moreover, transportation costs (Brooks and Frances, 1991); and transport service and infrastructure (Brooks and Frances, 1991; Colaiacovo, 1982), were regarded as export problems. Even in relatively well-developed exporting countries shortcomings of the infrastructure remain common. If goods cannot be transported and delivered to import markets safely, punctually and reliably, then even a well-designed and soundly manufactured product will not gain export markets (Lall, 1991).

7.2.3. Remarks on the Literature Reviews

SMEs in developing countries such as Poland are faced with many export barriers when they try to enter markets in developed states. The export problems of small and medium-sized firms are multi-dimensional. The discussion demonstrates that the problems are closely interrelated and that they can be divided into five

categories: company, product, industry, export market and macro environment. The classification promotes a thorough understanding of the export problems that affect the strategy of a business and is useful for the formulation of suitable national export assistance programmes. SMEs in developing countries may require help before they can become competitive in the international market. It is crucial that their export problems be identified so that they might be given effective and timely assistance. It is important that government, its promotional institutions, the business community and the private sector at large should co-operate closely in order to undertake effective export assistance and understand these export problems. In countries that have experienced such co-operation, higher growth rates for SMEs' exports have been achieved (Seringhaus and Rosson, 1990; Seringhaus and Botschen, 1991). The conclusion of this literature survey is that sound export strategies (by firms) and policies (by government) need to take all the factors into account. An active export promotion policy, for example, is useless if other government policies are unfavourable or if major barriers to industry or product are overlooked. The world market may provide many promising opportunities. The challenge is to organise exports while removing the major export barriers. The articles reviewed make the particular point that most of the export problems identified in developing nations also exist in the developed world especially for small and medium-sized companies (Moini 1995; Kedia and Chhokar, 1986; Morgan and Katsikeas, 1997; Ghauri and Herbern, 1994; Shoham and Gerald, 1995). For that reason, understanding the export problems identified in developing countries allows us to find out why some Polish SMEs are non-exporters and will not even try to export (export aversion). This study therefore aims to investigate the factors that have an impact on export aversion by SMEs in Poland.

7.3. Research Methodology – Model Specification and Estimation Techniques

This section discusses the research methodology on export aversion. Our study objective in this section is to discover the determinants of the probability of an Polish SME being a non-exporter and this firm will not even try to export (export aversion). Like the previous chapter, our analysis conducted on the basis of a Logit model to examine the major factors determining export aversion of Polish SMEs by using Gdansk province as a case study. We use the same survey data in previous chapter for the Gdansk region for the year 2003.

The analysis of Logit model is based on the method of estimation that has been discussed in the previous chapter in section 6.3.3 and 6.3.4. To motivate the Logit model, assume there is a theoretical continuous index Z_i (the export aversion by the i^{th} SME) which ranges from negative infinity ($-\infty$) to positive infinity ($+\infty$) and it represents a set of listed explanatory variables in appendix 2, that we can write as:

$$\text{Assume } Z_i = \beta_1 + \beta_2 X_{i2} + \dots + \beta_k X_{ik} \quad i = 1, \dots, N \quad \text{Equation 7.1}$$

Observations of Z_i are not available. Assume further that the available data distinguishes whether an SME has export aversion or not, the dependent variable is a dummy variable taking the value 1 if the SME has export aversion, and the value 0 if the SME has not.

Let, $Y = 1$ if the SME has export aversion,
 $Y = 0$ if the SME is not.

Since the Logit model assumes that Z_i is a logistic random variable, the probability that an individual SME would be an SME has aversion to export,

given its characteristics can be computed from the (cumulative) logistic distribution function evaluated at Z_i as follows:

$$P_i = F(Z_i) = \frac{1}{1 + e^{-(B_1 + B_2 X_i)}} \quad \text{Equation 7.2}$$

where, P_i is the probability that the i^{th} SME has export aversion;
 $F(Z_i)$ is the cumulative logistic function evaluated at a specific value;

This formulation ensures that as Z_i goes from $-\infty$ to $+\infty$, P_i ranges between 0 and 1; and when $Z_i = 0$, $P_i = 0.5$.

Equation (7.2) can be rewritten as follows:

$$P_i = \frac{1}{1 + e^{-Z_i}} \quad \text{Equation 7.3}$$

where $Z_i = \beta_1 + \beta_2 X_i$

Equation (7.3) represents the cumulative logistic distribution function. In equation (7.3) since P_i gives the probability that the i^{th} SME has the attitude of aversion to export, then $1 - P_i$, would be the probability that the i^{th} SME is not shown attitude, and can be written as follows:

$$1 - P_i = \frac{1}{1 + e^{-Z_i}} \quad \text{Equation 7.4}$$

Simplify equation (7.4), by multiplying both sides of equation by $(1 + e^{-Z_i})$, dividing the result by P_i , and abstracting 1 from both sides yield the following:

$$\frac{P_i}{1 - P_i} = \frac{1 + e^{Z_i}}{1 + e^{-Z_i}} = e^{Z_i} \quad \text{Equation 7.5}$$

In equation (7.5), $\frac{P_i}{1-P_i}$ is the odds ratio in favour of being an SME has export aversion – (i.e. the ration of the probability that the i^{th} SME will have export aversion to the probability that an SME will have not).

Taking the natural logarithm of equation (7.5) gives the following logit L_i result

$$L_i = \ln\left(\frac{P_i}{1-P_i}\right) = Z_i$$

$$= \beta_1 + \beta_2 X_i \quad \text{Equation 7.6}$$

Many authors have discussed the standard methods for estimating logit models (Nerlove and Press, 1973; Dhrymes, 1978; Dhrymes, 1994b), and others have suggested improvements (Knapp et al., 1982; Harissis, 1986; Skovgaard, 1990; Ghatak, Manolas and Vavouras, 2002). In the logit model the dependent variable is, therefore, the log of the odds that the i^{th} SME will have the attitude of aversion to export. The regression coefficients are estimated using the maximum likelihood method. A given slope coefficient shows how the log of the odds (that an individual SME will have export aversion) changes as the corresponding explanatory variable changes by one unit, or as an attribute different from that of the base category is considered. The statistical significance of the slope coefficients may be assessed from their respective standard errors; t -ratios or p -values. A test of the null hypothesis that all the regression coefficients in the model are zero can be done via the likelihood ratio test where the chi-square test statistic has $k-1$ degrees of freedom for overall model fit. Conventional measure of goodness of fit, R^2 , is not particularly meaningful in binary regressand models.⁴⁷ Measures to similar to R^2 , called *Pseudo R^2* , are available, and there are a variety

⁴⁷ D. Gujarati, *Basic Econometrics*, McGraw Hill, New York, 2003, fourth edition, pp. 605

of them,⁴⁸ one such measure we used in our model is the McFadden R^2 ranges between 0 and 1. For comparing several model specifications, we present the percentage correct predictions and *Pseudo- R^2* statistics to evaluate model performance.

For estimation purposes we can write the following:

$$L_i = \ln\left(\frac{P_i}{1 - P_i}\right) = B_i + B_i X_i + u_i \quad \text{Equation 7.7}$$

$$L_i = \ln\left(\frac{1}{0}\right) \text{ if the SME shows export aversion} \quad \text{Equation 7.8a}$$

$$L_i = \ln\left(\frac{0}{1}\right) \text{ if the SME is not} \quad \text{Equation 7.8b}$$

The estimated logit model is thus

$$\hat{L}_i = \ln\left(\frac{\hat{P}_i}{1 - \hat{P}_i}\right) = \hat{B}_1 + \hat{B}_2 X_i \quad \text{Equation 7.9}$$

When the regression coefficients are exponential, the derived values or the antilogs indicate the effect of each explanatory variable directly on the odds of being an SME has export aversion rather than on the log-odds. Subtracting 1 from the antilogs and multiplying the results by 100 would give the percentage changes in the odds corresponding to a one unit change in the explanatory variables (Gujarati, 1995, p.559).

⁴⁸ see J. Scott Long, *Regression Models for Categorical and Limited Dependent Variables*, Sage Publications, Newbury Park, California, 1997, pp. 102-113

Like the previous chapter, the data for this study were analyzed using Limdep version 7.0 for Windows. We use the same survey data in previous chapter for the Gdansk region for the year 2003. As mentioned earlier, in our logit model the dependent variable is a dummy variable valuing 1 if the firm has export aversion and 0 if the firm has not. Export aversion is measured by the two available measures in our survey data, i.e. exports-to-sales ratio and attitude to export. Thus, the model is estimated with exports-to-sales ratio and attitude to export as the dependent variable. In other word, the firm shows export aversion if the proportion of the sales in foreign market was zero per cent (Q.1) and this firm also were not making efforts to export (Q.2). The questions were presented in the questionnaire as follows:

Q.1 - What approximate percentage of firm’s sale is made for?

Local market	%
National market	%
Foreign market.....	%
Total ...	100 %

Q.2 - Were you making efforts to export or to increase the export?

- No
- Yes

Like the previous chapter, we apply the “general to specific” strategy for model construction that has been discussed in section 6.3.4. We also use the same method to select potential explanatory variables and the same techniques to estimate Logit model that have been explained in the previous chapter in section 6.3.4. The list of potential explanatory independent variables was presented in appendix 2.

7.4. The Empirical Results on Export Aversion

This section sets out to fit a Logit model to the cross sectional data collected via a survey questionnaire, is an attempt to explain why Polish SMEs has export aversion. We are seeking to discover factors that determine export aversion. As we mentioned in the previous sections 7.3, the “general to specific” approach was based upon OLS estimation of a linear probability model for reducing the dimension of the model to the point at which we could use a Logit formulation.

The Model (1) is the model for which we could use a Logit formulation. As the results of Model (1) show, 116 cases were included in the model the initial version predicts 96% of the responses correctly. According to the Likelihood Ratio Test Statistics in Model (1), the overall model is significant at the better than the 0.005 level with 16 variables were included in the model. The results of the Model (1) also show that, the number of significant variables was 7 and nine variables were included in the model was found to be not statistically significant at standard levels. Therefore, three variables of lowest significance in Model (1) such as firm sector (VA3), the IT tools used in distribution and marketing (VE8) and the profitability of enterprise in the domestic market (VH5) were eliminated sequentially leading to the model that contained the 9 significant variables in Model (2). Further refinement took place for Model (2), and total number of cases increased from 116 in Model (2) to 118 in Model (3) – that is, 7 cases was omitted because of missing data (Table 7.3).

The percentage of correct prediction based on the sample show that the stability of successive model (3) is clear and it is very small drop from 96% in Model (1) to 93% in Model (3).

Table 7.3: Empirical results on export aversion from estimation of the Logit model

Variable Code	Model 1		Model 2		Model 3	
	coef.	p-value	coef.	p-value	coef.	p-value
VA1	-14.6357	0.1010	-9.5712	0.0145	-3.6307	0.0108
VA3	ns	ns				
VA5	10.5016	0.0723	8.2943	0.0281	2.7111	0.0076
VB1	ns	ns	ns	ns		
VD3	-11.0369	0.0719	-7.4529	0.0286	-3.3865	0.0275
VD5	ns	ns	ns	ns		
VE1	ns	ns	ns	ns		
VE2	ns	ns	ns	ns		
VE3	-10.0201	0.1300	-9.8649	0.0348	-2.6740	0.0034
VE8	ns	ns				
VH5	ns	ns				
VJ1	-20.8016	0.1180	-12.8109	0.0171	-5.1440	0.0009
VK1	ns	ns	5.5440	0.0414	3.0534	0.0175
VI1	-10.0005	0.0968	-8.2661	0.0276	-3.0032	0.0153
VL2	ns	ns	6.8841	0.0123	2.4660	0.0127
VL4	-11.7558	0.1380	-5.7342	0.0375	-1.9243	0.0316
Constant	17.0820	0.9562	3.4320	0.2173	3.0924	0.0062
Cases	116		116		118	
LRTS (Model Chi-Squared)	135.02(0.00); with 16 d.f		128.99(0.00); with 13 d.f		109.16(0.00); with 9 d.f	
McFadden R ²	0.88		0.84		0.71	
% of Correct Prediction	96%		96%		93%	

Source: Drawn up by author. Notes: ns – the variable was included in the model but was found to be not statistically significant. LRTS (Model Chi-Squared) – Likelihood Ratio Test Statistics. The figures in brackets are the associated p values.

Table 7.4: Detailed empirical results from estimation of the logit model on export aversion of Gdansk enterprises

Code	Variable	Category	Coeff.	Std.Err.	t-ratio	P-value
VA1	Branch of economic activity of enterprise	Manufacturing	-3.6307	1.4245	-2.5487	0.0108
VA5	Legal Status	Individuals' business	2.7111	1.0152	2.6705	0.0076
VD3	Perception about the advantages of firm over competitors	Attractiveness and modernity of products or services	-3.3865	1.5361	-2.2047	0.0275
VE3	The technological level of the enterprise	High	-2.6740	0.9138	-2.9262	0.0034
VJ1	Where are the major markets of the firm's	National market	-5.1440	1.5551	-3.3079	0.0009
VK1	Perception about major problems in connection with export operations	Taxation	3.0534	1.2854	2.3754	0.0175
VII	Essential sources of enterprise's finance	Bank loan	-3.0032	1.2378	-2.4263	0.0153
VL2	Level of knowledge of European Union members' markets	Low	2.4660	0.9893	2.4928	0.0127
VL4	Action has been taken to prepare for the accession of Poland to the EU	Yes	-1.9243	0.8953	-2.1493	0.0316
	Constant		3.0924	1.1294	2.7380	0.0062

Source: Drawn up by author. Notes: ns – the variable was included in the model but was found to be not statistically significant. LRTS (Model Chi-Squared) – Likelihood Ratio Test Statistics. The figures in brackets are the associated p values.

The set of variables selected in the final Model (3) that have a statistically significant influence ($p < 5\%$) on export aversion of Gdansk SMEs are as follows:

- The branch of economic activity of enterprises (VA1),
- Firm's legal status (VA5),
- The perception about the advantages of firm over competitors (VD3),
- The technological level of the enterprise (VE3),
- The major markets of the firm's (VJ1),
- The perception about major problems in connection with export operations (VK1),
- The sources of enterprise's finance (VI1),
- The level of knowledge of European Union members' markets (VL2),
- The action has been taken to prepare for the accession of Poland to the EU (VL4).

The final empirical results from estimation of the logit model on export aversion in the Model (3) were presented in details in Table 7.4.

We begin by discussing the result for the variable of the branch of activity of the enterprise which is manufacturing (VA1). This factor was significant at the 5% level ($p = 0.0108$) and affects on export aversion of Gdansk SMEs. The negative coefficient ($\beta = -3.6307$) taken by VA1 indicates that the probability of being a firm on export aversion decreases with the enterprises in manufacturing sector. An alternative interpretation is that, all entrepreneurs in this branch of economic activity are pessimistic, with the results suggesting a higher probability of export aversion will have a negative impact. In contrast, the prospects in the service and trading sectors are more optimistic. The empirical evidence, therefore, confirms the assertion that the major reason why many firms do not export abroad and will not even try to export are due to the fact that they focus on servicing customers in local markets – see Table 7.5.

Table 7.5: Major market of the sample of Polish SMEs by branch of economic activity

Branch of economic activity	Major market of the firms		
	Local market	National Market	Number of enterprises
Manufacturing	5	11	16
Trading	31	12	43
Service	51	8	59
Total	87	31	118

Source: Own calculation. Note: The sample consists of the 118 enterprises used in the estimation of the Model (3)

It is expected that the firm’s legal status is individuals’ business (VA5) appears in the final model (3) was also found to be a very significant factor ($\beta = 2.7111$, $p=0.0076$) and has positive influence on export aversion. The positive coefficient for VA5 means that enterprises which perceived that exporting is too risky for small industries were very concerned with financial, business, legal and political risks. This suggests that individuals’ businesses in Poland did not engage in exporting and will not attempt to export because of a perceived higher risk to sales in foreign markets. The owners/managers may believe that they are too small-scale and exporting is not feasible for them. In addition, they may think that they can not afford to export because of the financial problems as they do not have the necessary money to expand production, hire people or market themselves abroad if they get new export businesses.

The significant coefficient of the comparative advantages of firms over competitors (VD3) shows that the owners/managers of enterprises in Gdansk consider that decreasing attractiveness and modernity of products or services leads

to a increase in export aversion ($\beta = -3.3865$, $p = 0.0275$). In other words, if the firm's products and services are not attractive and modern, these firms are less inclined to engage in exporting activities and will not even make efforts to export. It seems that the majority of non-exporting SMEs may believe that their competitors have advantage in term of attractiveness of products which encourage more SMEs to export. In fact all the managers in the sample who perceive that in order to attract their products or to further improve the attractiveness of products; they need to introduce new patterns, new products in a timely manner and develop reasonably priced products with high added value. In general, perception about the product innovation positively affects the probability of export⁴⁹, since it can be supposed that new products increase competitiveness and open new markets. Thus, upgrading of product innovation and next maintaining them at an appropriately high level should be treated as a significant factor that influenced the SMEs. Upgrading of product innovation can lead to difficulties connected with access to finance, identifying market requirements, management and sales of new products, lack of cooperation with other firms in the field of conducting joint research and development activity, access to distribution and marketing networks that are major constraints in product innovation plans. Moreover, perception about the risk connected with the product innovation is also counted in making decision of taking part in export activities. Therefore, when the managers of the enterprises believe that their products or services are less attractive and modern than their competitors' products, they tend to be export averse.

It was also interesting to note that the variable of the technological level of the enterprise (VE3) was very significant ($p = 0.0034$). The negative coefficient ($\beta = -2.6740$) indicates that the SMEs in high-technology sectors thus have more

⁴⁹ Nassimbeni (2001); Basile (2001); Wakelin (1998); Roper & Love (2002) in Germany and United Kingdom.

opportunity to export than those in medium or low-technology sectors. Accordingly, they carry out more commercial, competitive and technological monitoring, in a relatively well organised way. It is not surprising that the process of acquiring high technological capabilities in sample Polish enterprises is the outcome of conscious investment in creating skills and information. This suggests that in order to increasing their sales, particularly in foreign markets, those SMEs with higher technological levels perceived higher risks to invest in new technologies and the higher technological levels are likely to give the firms a competitive advantage in exporting. However, firms with medium or low technological levels may consider costs of technological innovations as too high or too risky. Therefore, enterprises with a lower technological level show higher probability of export aversion.

There is a negative relationship between the size of national markets of the firm's (VJ1) and the export aversion ($\beta = -5.1440$, $p = 0.0009$). This relationship shows that the probability of being a firm on export aversion decreases with the enterprises that their markets is national. In other word, enterprises have big national market tend to export more than those enterprises that their market is locality (where it is manufactured). We may hypothesise that the managers of the enterprises that their market is locality are not at all convinced of the importance of exporting to foreign market. The reason may be that the size of their market is too small. It does not motivate them to export, because of exporting would be too risky. Therefore, decreasing the market size of the enterprises has not created incentive for export and it is associated with lower probability of exports of those enterprises. Thus, the size of the market drives the export aversion by the Polish SMEs.

With regard to the perception about major problems in connection with export operations, the taxation (VK1) has positive influence on export aversion

($\beta = 3.0534$, $p = 0.0175$). We can extend this interpretation to hypothesize that Poland's integration into the European Union leads to the higher tax burdens imposed on goods/services such as increasing in the VAT rates which may affect directly in increasing in the competitive prices of these products. Therefore, the managers of the enterprises may not be interested in exporting activities because of the perception of higher prices of their products. Another possibility is the tax avoidance which is part of the policy for survival for some Polish SMEs. The enterprises, who may know how to avoid the taxation for local sales, but can not avoid the tax on export sales; will not attempt to engage in future export activities.

The variables capturing the major sources of enterprises' finance (VI1) is statistically significant ($p = 0.0153$) and affects negatively on export aversion of Polish SMEs ($\beta = -3.0032$). These figures seem to suggest that enterprises with major sources of finance as bank loans have a lower probability of being a firm on export aversion than those which depend on the self funding. In fact, the sample Polish SMEs are very dependent on their own capital structure. The SMEs have difficulties in accessing bank loans due to the strict requirements of banks regarding the credibility of the creditor, and often solve their financing problems by using informal funding sources such as family. For those enterprises, self-financing is the most used source of investment financing in order to expand their market. To cope with their investment financing problems, the enterprises need access to long term finance and to venture capital. Moreover, exporting is more risky venture because it involves working with foreigners and access to long term finance such as taking the bank loans is associated with taking the risks. Therefore, those enterprises which depend on self-funding tend to be not engaged in exporting and will not attempt to move to the foreign markets.

The level of knowledge that enterprises (VL2) have about the European Union Member States' markets is associated strongly with the impact on export aversion

of the enterprises ($\beta = 2.4660$, $p = 0.0127$). Those enterprises with a low level of knowledge of the European market have the high probability of being a firm on export aversion than those enterprises with a high level of knowledge of the European market. The owners/managers of the sample Polish enterprises have limited knowledge of the European market; this may be associated with the lack of information about:

- the export opportunities, based on information collected by Polish business and trade agencies abroad;
- co-funding the participation of the enterprises in fair and exhibitions abroad;
- disseminating knowledge about regulations observed in the European market among entrepreneurs;
- co-funding the participation of Polish enterprises in the Union's programmes aimed at establishing trans-border trade co-operation;
- the conditions and procedures of export credit insurance by the Export Credit Insurance Cooperation in order to facilitate SMEs access to such protection.

Finally, the variable related to the action that have been taken by the enterprises to prepare for the accession of Poland to the EU (VL4) has been found to be statistically significant ($p=0.0316$). The negative sign ($\beta = -1.9243$) implies that those enterprises that have not taken any action to prepare for the accession of Poland to the EU tend not to engage in exporting at all. The managers of individuals' businesses may believe that larger companies are in a better position to benefit than smaller companies. Moreover, larger companies will also be affected in different ways by the accession of Poland to the EU. However, the manager of the small companies is convinced that the general impact of enlargement of the EU on their companies will be very small. Therefore, they have

not taken any action to prepare for the accession of Poland to the EU and will also not engage in future export activities.

7.5. Summary

The study has contributed to the analysis and comprehension of the export aversion of Polish SMEs, a field where more empirical research is needed. It is of vital importance to determine the characteristics of export aversion of Polish enterprises. In this research study, we use Logit model to the cross sectional data collected via a survey questionnaire (for the year 2003) to ascertain the explicability of why some Polish SMEs in Gdansk shows export aversion. This research reported the results of the views of the owners/managers of 125 Polish SMEs in Gdansk about the export aversion of their enterprises.

The results of the study point out the following factors which exert strong affects on export aversion:

- firms' legal status is individual;
- taxation;
- low level of knowledge of the European market.

Thus, many Polish individual enterprises show export aversion. The following reasons are also cited: exporting is not feasible for them (e.g. they are too small); firms that worry about taxation. General agreement was found on the key ingredient of export aversion: low level of knowledge of the European market. In other words, firms with low level of knowledge of the European market will not engage in future export activities.

The following factors account for lower probability of export aversion:

- action taken for accession to the EU;

- firms major sources of finance as bank loans;
- firms with high technological level;
- firms' products and services are attractive and modern;
- domestic share of the market;
- branch of economic activity: manufacturing firms.

Chapter 8: Conclusions, Policy Implications and Directions for Future Research

In this final chapter of the thesis, we summarise the results of our research. After that, we discuss the policy implications. Finally, we identify the limitations of this research and some topics for future research.

The ever-increasing globalization of the business world, along with the importance of small- and medium-sized enterprises, drives many researchers to seek for ways how to improve the international performance of these firms. The objective of this thesis is to examine the determinants of export propensity and aversion of Polish SMEs. Our study is confined to the province of Gdansk as a case study. The research sets out to fit the Logit model to the cross sectional data collected via a survey questionnaire for the year 2003. The estimation of the theoretical and empirical model enables us to make inferences on the significance and direction of the effects of the major explanatory variables. The detection of these influential factors helps SMEs managers to become aware of possibilities to improve their export performance. Furthermore, the detection of these influential factors also helps Polish policy makers to design effective assistance programmes and streamline the assistance in such a way that it produces maximum benefits to the economy.

Chapter 2 provides the literature review on definitions of SMEs. We start with an overview of definition of SMEs based on the UK's Bolton Committee Report (1971), the European Commission (EC), Department of Trade and Industry (DTI) (UK) and the definition of Polish SMEs. The definitions employed by Bolton (1971) can be seen to be no longer satisfactory and have been effectively superseded by the EC definitions of a small and medium enterprise. We also

criticise and provide the advantages, disadvantages of the Bolton definition on SMEs. Furthermore, this chapter shows the variety of different operational definitions of a small firm which were employed by researchers on the ESRC Small Business Initiative. This demonstrates that, in practice, researchers have to tailor their definitions of a small firm according to the particular groups of small firms which are the focus of their interest. The factors that influence the inclusion of the firms are the nature of the premises in which they operate, or their use of certain types of finance, or their legal status. On the basis of the literature review on definition of SMEs, we tailor our definition of Polish SMEs in which we are interested. With regard to our research, in order to develop a questionnaire for our empirical study on export behaviour of Polish SMEs, we use the definition of Polish SMEs based on Polish Economic Activity Law, which defined SMEs in accordance with Recommendation 96/280/EC of the European Commission. In relation to this legislation act, the number of employees in a small enterprise ranges from 10 to 50 employees, whose turnover does not exceed the Polish zloty equivalent of 7 million euros; and in medium-sized one ranges from 50 to 249 employees, whose turnover does not exceed the Polish zloty equivalent of 40 million euros. Apart from SMEs, there exist smaller units, called micro-enterprises which employ less than 10 employees. In this chapter, we also draw the implications for researchers on transition economies such as Poland, so that the researchers can visualise the problems of definition of SMEs.

In chapter 3, we synthesize the theoretical and empirical studies on growth of SMEs in the UK which lead to an examination of the measurement of growth and development of Polish SMEs. In this chapter, we reviewed theories on relationships between growth and size, age, market structure, geographical location. We also discussed the barriers to SMEs growth and surveyed some of the empirical work carried out in the UK and USA to test these relationships. Besides, we reviewed the methodologies to estimate the relationship between sizes, age,

and growth of the firms. These methodologies include parametric, non-parametric and semi-parametric methods. They can be used to determine the survival of the firms. These methodologies also can be used to identify the factors influencing the growth and export orientation of SMEs. The parametric methods include the survival which can be estimated using OLS and maximum likelihood methods. The former method gives bias and inconsistent results in the presence of sample selection bias, serial correlation and heteroscedasticity while the latter is robust with respect to sample selection bias, serial correlation and heteroscedasticity. Some argue that parametric methods suffer from specification problems as the former is based on *a priori* assumptions, for example error terms are normally distributed. The proponents of non-parametric methods claim that these methods are flexible, and suggest using non-parametric methods to let the data speak for themselves. In the context of survival models, the semi-parametric model could be used to avoid specification and consistency problems associated with parametric methods. In these types of model, we can assume dependent variables will take value of 1 if a firm survives over the interval of the sample period, and 0 otherwise. We can include independent variables from the theory and estimate the determinants of a firm's survival rates using semi-parametric methods without imposing any *a priori* assumptions regarding error terms. In the case of Polish SMEs, as far as we know, very few researchers used semi-parametric methods such as Logit/Probit model to identify the factors in determining the chance of survival, growth and development of Polish SMEs (Ghatak, Manolas, Rontos, and Vavouras, 2002; Blawat, Dominiak and Ossowski, 2001; Ghatak, Mulhern and Stewart, 2003). In summary, the lessons from the methodologies of growth and survival of SMEs in the UK and Western countries are useful to frame the possible methodologies of growth and development of Polish SMEs. The possible methodologies help us to construct the model of export behaviour which was presented in chapter six and seven of the thesis.

In Chapter 4, we provide information on the development of the SME sector in Poland. In this chapter, the recent economic environment in Poland has been interpreted in terms of the gross domestic product, inflation, labour market, investment, privatisation and foreign trade. This chapter also reports the condition of SMEs in Poland. Polish enterprises have considerable expectations on the opportunities afforded by their presence on the common European market. Yet in order to become competitive within the European Union, Polish enterprises still need to effect major internal changes. This is particularly true of the SME sector. In this chapter, we have set out the various steps in the development of Polish SMEs. The pre-transformation stage occurred during 1980 with the first attempts at reforming the centrally planned economy in Poland. Those attempts were quite modest. However, they brought about a major revival in development of the private sector in Poland. The revival was supported by a stream of legislative actions eliminating legal-administrative barriers such as licences impeding market entry and opening the way for transfer of material resources from the socialised sector to private firms. The next stage of the entrepreneurship explosion (1989-1991) was characterised by an increase in the number of registered Polish private firms, from 572,451 to 1,496,797. The stage that followed (1992-1994) was the stage of slowed-down development. Finally, the stage of the development of Polish SMEs in an enlarged European Union (1995-2004) indicates the stage of “restructuring” in Polish SME development, which mainly emphasises qualitative changes in the SME sector. In analysing the situation of Polish enterprises in an enlarged EU, during the period 1995-2002, it may be concluded the total of Polish SME share in generating GDP grew rapidly, increasing from 30.0% in 1995 to 48.6% in 2002 (a 62% increase), of which the share of small enterprises was 40.5% and that of medium-sized enterprises, 8.1%. It is essential to analyse the change in the number of registered enterprises and active enterprises in order to explain the development of Polish SMEs. The pattern of SME registrations shows a series of peaks and troughs. With Polish active SMEs, during the period 1995-

2002, the total number of active SMEs increased from 1995 at varying pace until 1999. In the period 1995-1997, this rate of growth was high, touching 18%. It fell steeply in 1998 by a half, to 9% and the following year descended further, to 5.4%. In 2000, for the first time since the period of transformation started, the total of active SMEs and small enterprises decreased. In that year the rate of decline was 2.9% and in 2002, after two years of decline, active SMEs again increased in number – by 4.7%. In this chapter, we concentrate more on the Polish imports and exports as well as exports and imports by regions of Polish SMEs. This chapter brings the results from the Polish SMEs and related empirical research works on the development of Polish SMEs. The results also point out some ways for further investigation on export behaviour of Polish SMEs. These results also are the key issues which help us to draw some policy implications for the Polish government.

Chapter 5 brings an overview of recent development of Gdansk's small enterprises as a case study. In this chapter, we analyse the survey data for the Gdansk region for the year 2003 and discover the characteristics of Gdansk small enterprises. The structural characteristic of the small firms is one of the key issues addressed in this chapter and it is examined within the context of legal status, activities of enterprises, sources of the capital, number of employees and age of enterprises. The majority of the Polish small businesses are typical start up enterprises by the age under ten years, which operate as individual businesses (49%) or limited companies (34%) and partnerships (17%). In this chapter, we also observe the market and competition of small firms, financial information of the firms, age and education of the management team. As far as we concerned, the owner-managers prefer their own financial sources (owner's capital and profits) as the bank loans are expensive and 65% of the enterprises do not think that getting a bank loan is difficult. The large proportion of enterprises sells their products almost exclusively in domestic markets, there are 26% of exporters in the sample and nearly 60% of those exporters have used bank loans for export sales. With regard to education of

management team, almost 60% of managers hold university degrees and 40% of the managers indicated that their knowledge of foreign languages is fluent. Research and development of the small firms are also important issues. These issues are analysed within context of technological level of the firms and their products, using IT and computing networks, formal co-operation with research institutions, organisational and technological changes. In this chapter, technological level of Gdansk small enterprises and products is assessed as very high or high. Only 5% of small enterprises possess R&D department. Furthermore, the key issues such as knowledge and opinions of small firms about the EU have also been discussed in this chapter.

In Chapter 6, we start with empirical literature on export performance. The theoretical framework in this chapter proved to be a good starting point for answering the central question of this dissertation, which pertains to find the major factors that explain the level of export performance of an SME either directly or indirectly. For this, conceptual studies on export performance are examined, followed by a review of empirical studies that research export performance and the determinants of export orientation. The conceptual studies enabled us to classify determinants into several categories. These categories pertain to the environment, the firm, the manager, and the export activities. As the focus of this thesis is on SMEs, the manager is an important category. Therefore, I distinguish between objective and subjective managerial characteristics. The nature of these characteristics is inherently different from the characteristics of the management team, used by most studies. Besides, the literature review of the empirical studies leads to an examination of the measurement of export propensity. The most commonly used measure is identified (i.e., exports-to-sales ratio). Therefore, we build up the research methodology of export propensity. On the basis of theories on export performance and the results in the previous chapters, we design the questionnaire. As long as data collection is concerned for this research, population,

sampling and survey delivery are briefly explained herein. In this chapter, we empirically test an operationalized export propensity model with the survey data for the year 2003, using the structural equations of a Logit modeling technique. The details of the Logit model and data analysis are presented in this chapter. Without including any dynamic relationships, this chapter focuses on the relationships between the various determinants and export propensity. In this, export propensity is measured by the available measure in the survey data for the Gdansk region for the year 2003, i.e. exports-to-sales ratio. Thus, the model is estimated with exports-to-sales ratio as the dependent variable. In this empirical application, the structural model seems to be a good fit to the data. This research reports the results of the views of the owners/managers of 125 Polish SMEs in Gdansk about the export propensity of their enterprises. Reliability and validity analyses have proved that the research instrument was a fairly reliable and valid measure. We find that, nine out of the sixty seven variables are statistically significant and the information was collected on the variables as gleaned from the empirical literature on export behaviour of SMEs. Six of the significant variables have a positive influence and three have a negative influence on export propensity of Polish SMEs. The results of the study indicate the factors which positively affect the export propensity are:

- access to bank loan;
- use of information technology in marketing;
- availability of foreign credits;
- number of competing firms in domestic market;
- domestic share of the market;
- action taken for accession to the EU.

The following factors account for lower probability of export propensity are:

- use of high percentage of domestic capital;
- high taxation;

- profitability in domestic market.

The purpose of the Chapter 7 is to provide an outline of the current state of conceptual knowledge on export aversion for enterprises from developing countries such as Poland. It has been discussed with a categorization of the major export problems: barriers associated with the company, industry, market and macro environment. In this chapter, we analyse the factors that affect export aversion of Polish SMEs. Like the previous chapter, our analysis is conducted on the basis of a Logit model. We use the survey data for the Gdansk region for the year 2003. In this chapter, export aversion is measured by the two available measures in our survey data for the Gdansk region for the year 2003, i.e. exports-to-sales ratio and attitude to export. Thus, the model is estimated with exports-to-sales ratio and attitude to export as the dependent variable. In this empirical application, the structural model seems like a good fit to the data. We find that export aversion is positively affected by factors like:

- firms' legal status;
- taxation;
- low level of knowledge of the European market.

The result also points out the factors which have lower probability of export aversion are:

- manufacturing firms;
- firms' products and services are attractive and modern;
- firms with high technological level;
- domestic share of the market;
- firms with major sources of finance as bank loans;
- action taken for accession to the EU.

Our results highlight the need for a number of important policy initiatives:

- The information technology sector should be developed, and the use of information technology for marketing should be exploited further by the Polish SMEs in order to increase sales in foreign markets.
- Polish government should support technology transfer and development of SMEs (providing support for the development of an institutional structure to assist technology transfer; promoting technical innovations; financing R&D and technology transfer; adopting legal solutions encouraging the use of knowledge and patents of Polish R&D institutions and universities; creating access to available R&D financing system; establishing business incubators, technological parks, and so on).
- The access of Polish enterprises to the banking and credit system should be promoted. Banks should reduce the requirements and documentation for a loan application. The criteria should be based more on the prospects of an enterprise and less on its assets.
- The information about the needs and other characteristics of the foreign credits available for Polish SMEs should be collected and disseminated by the state and official organizations.
- Competitiveness of enterprises is one of the important factors influencing the export propensity of Polish SMEs. The Polish SMEs require support in their development activities, strengthening and improving their competitive position in domestic market and adjustment to the EU requirements in the area of norms and standards. Legal regulations should be simplified and assistance should be available for the development of more dynamic SMEs.
- Support provided by public authorities is the key element of the development of a system of guarantees and warranties such as credit guarantee funds, which facilitate SMEs' access to external sources of

financing and expand the capital of the Polish enterprises. Therefore, the credit guarantee institutions should be developed by the government.

- Government policy should aim at creating an appropriate tax system. They should simplify the form of taxation, increasing tax allowances and reducing tax for new businesses so that small enterprises could take advantage of simplified form of taxation, featuring lower rates and have more opportunities to involve in exporting activities.
- The information about the EU should be disseminated by the state and official organizations (facilitating access to information about legal regulations in the EU, supporting and co-financing participation in the Union's programmes in the field of trade and information co-operation, adopting solutions advantageous for business units introducing standards of the International Standardisation Organisation, developing the Polish Exports Promotion Programme funded by the EU).

A strategy based on the above initiatives would provide the necessary incentives for Poland's SMEs not only to survive but to help them to grow faster and to prosper in the environment of increased competition in the Single European Market.

Our study contains a few limitations. In this study, we used a cross-sectional sample. Thus, our study suffers from the limitations associated with this type of research. It is common in scholarly literatures to draw causal inferences from cross-sectional analyses. However, what cross-sectional analyses actually measure is a level of association between the independent and dependent variables at a point of time. Therefore, in future efforts, an analysis of time-series rather than cross-sectional data would be very useful to understand better the factors that influence the growth of exports by Polish SMEs over time. Second, we did not control for specific type of industry. It is possible that the growth of exports by Polish SMEs may be more important in some industries than in others. Collecting

industry-specific samples may provide us with a clearer picture of whether export growth of Polish SMEs is important for all companies or its importance is determined by the industry and/or the competitive environment in which a firm is operating. Third, we did not look at the role of investment of SMEs, which could be effected to export growth of Polish SMEs. An examination of the role of investment of SMEs in promoting export by Polish SMEs is also a very important research topic. Finally, a further field of research may be the investigation of export growth of Polish SMEs in different regions. This topic is an important agenda of our future research.

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Appendix 1:

Export Orientation of Polish SMEs - *Representative Research*

I. Structural characteristics of the Firms

1. Name and address of the enterprise (or an enterprise stamp):

Branch Code:

2. Basic activity of the enterprise (the major one out of all sorts of activity):

3. Sector: 1 ☐ public 2 ☐ private

4. Legal status and organisational form of the enterprise:

- 1) ☐ state-owned enterprise
- 2) ☐ communal enterprise
- 3) ☐ trade law partnership: 1 ☐ joint stock 2 ☐ Ltd. 3 ☐ other
- 4) ☐ individuals' partnership
- 5) ☐ partnership
- 6) ☐ individual's business
- 7) ☐ foreign small manufacturer
- 8) ☐ co-operative
- 9) ☐ other (which?)

5. The capital of the enterprise is % Polish capital.

II. Size, Growth and Age of the Firm

6. Give the number of employees calculated accordingly to full-time posts

Now One year ago

7. Approximately what is the total sales revenue of your enterprise?

Nowzł One year agozł

8. When did you start this business month/ Year

9. What, in your opinion, is the average duration of staying in small business of a Polish SME?

- 1. 1 year
- 2. 2-4 years
- 3. 5-10 years
- 4. more than 10 years

III. Comparative Advantages of the Firm

10. What are the advantages of your enterprise over your competitors? (choose no more than 2 answers)

- 1) ☐ the price of our products or services
- 2) ☐ acting with promptness
- 3) ☐ attractiveness and modernity of products or services
- 4) ☐ quality of products or services
- 5) ☐ relatively low costs of production or services
- 6) ☐ good reputation of the enterprise
- 7) ☐ effective marketing and promotion
- 8) ☐ openness for customers' needs
- 9) ☐ other (specify)

IV. Research and Development

11. How do you assess the technological level of your products / services

1. ☐ very low 2. ☐ low 3. ☐ medium 4. ☐ high 5. ☐ very high

12. How do you assess the technological level of your enterprise (machinery and equipment, technology used, etc.)

1. ☐ very low 2. ☐ low 3. ☐ medium 4. ☐ high 5. ☐ very high

13. Are any IT tools (computers, computer networks) used in the enterprise?

- | | no | yes, but to a slight extent | yes, to a significant extent |
|----------------------------------|----------------------------|-----------------------------|------------------------------|
| A. in office work | 1 <input type="checkbox"/> | 2 <input type="checkbox"/> | 3 <input type="checkbox"/> |
| B. in accountancy | 1 <input type="checkbox"/> | 2 <input type="checkbox"/> | 3 <input type="checkbox"/> |
| C. in distribution and marketing | 1 <input type="checkbox"/> | 2 <input type="checkbox"/> | 3 <input type="checkbox"/> |
| D. in production process | 1 <input type="checkbox"/> | 2 <input type="checkbox"/> | 3 <input type="checkbox"/> |

14. Does the enterprise use the Internet?

- | no | yes, but to a slight extent | yes, to a significant extent |
|----------------------------|-----------------------------|------------------------------|
| 1 <input type="checkbox"/> | 2 <input type="checkbox"/> | 3 <input type="checkbox"/> |

15. Within the last 5 years. Has your enterprise begun any formal co-operation to improve your competitive position in a market economy, with:

1. ☐ raw materials and components providers or goods producers
2. ☐ research institutions, universities, consulting companies
3. ☐ consumers' organisations
4. ☐ other organisations (which?)

16. Is there any R&D department or position in the enterprise?

1. ☐ No
2. ☐ Yes Number of employees in R&D department

17. Indicate, whether the enterprise introduced in 2002 any:

1. ☐ new or technologically improved goods (services) produced
2. ☐ more modern production methods
3. ☐ significant organizational changes (for instance in management of the enterprise)
4. ☐ significant restructuring (a merger with, acquisition of and etc..)

V. Age, Knowledge and Education Level of Managers of the Firm

18. Which of following is best describes the age structure of the management team?

1. mostly below 30
2. some below 30 and some older
3. mostly older than 30

19. Which of following is best describes the education structure of the management team?

1. Post-graduate education
2. College or university completed
3. Post-high-school formal training completed
4. Secondary school (general or technical high school) completed
5. Vocational school completed
6. Primary school completed
7. Other (specify)

20. Which of following is best describes the knowledge of foreign languages of management team?

1. Fluent
2. Very good
3. Good
4. Limited
5. ☐ None

VI. Risk, Cost and Profit of the Firm

21. In 2002 were you making efforts to export or to increase the export?

1. ☐ No, since:
- 1) ☐ there is no need – domestic market is absorptive enough
 - 2) ☐ No need to take business trips to foreign countries because it is difficult to find a customer abroad
 - 3) ☐ prices offered by potential foreign customers are too low (export would be unprofitable)
 - 4) ☐ there are too high quality requirements of foreign customers and too much cost connected with foreign markets
 - 5) ☐ the lack of means and possibilities of promoting the products abroad
 - 6) ☐ while exporting there is too much risk connected with foreign partner's credibility
 - 7) ☐ while exporting there is too much risk connected with exchange rate fluctuation
 - 8) ☐ the lack of exports specialists in the enterprise
 - 9) ☐ the exchange rate is too high
 - 10) ☐ others (which?)
2. ☐ Yes, as:
- 1) ☐ domestic demand is insufficient
 - 2) ☐ exporting is more profitable than selling on the domestic market
 - 3) ☐ the enterprise wants to gain experience in operating on foreign markets before Poland becomes EU member
 - 4) ☐ others (which?)

22. Do you consider hedging against economic risks as an important element of running your firm?

1. No
2. Yes

23. Is the enterprise more or less profitable in domestic market?

1. Roughly the same
2. More profitable
3. Less profitable
4. Other (specify)

VII. Finance of Firms

24. What are essential sources of your finance? (Maximum of 2 answers)

- 1) ☐ self revenue
- 2) ☐ bank loans
- 3) ☐ subsidies from government or others
- 4) ☐ issues of equity instruments (e.g. Shares)
- 5) ☐ issues of debt instruments (e.g. Debentures)
- 6) ☐ other (which?)

25. Is it difficult for the enterprise to access to finance?

1. ☐ No
2. ☐ Yes, because of: (Maximum of 2)
 - ☐ too strict requirements of banks regarding the credibility of the creditor
 - ☐ too much documentation to be prepared in order to apply for a loan
 - ☐ other (which?)
3. ☐ We do not know (we have not tried to get any loan so far)

26. Do you know to whom you should turn to obtain special foreign credit available for Polish SMEs

1. no
2. yes

27. Has the enterprise tried to get and has it got any external financial support (subsidies, grants, and tax exemptions)?

1. ☐ No

2. ☐ Yes, If so, whose support was that?

	<i>The enterprise tried to get support</i>	<i>The enterprise gained support</i>
European Union program/branch	1 <input type="checkbox"/>	2 <input type="checkbox"/>
Official government department	1 <input type="checkbox"/>	2 <input type="checkbox"/>
Self-government institution	1 <input type="checkbox"/>	2 <input type="checkbox"/>
Business supporting institution, (also enterprises' associations and etc.)	1 <input type="checkbox"/>	2 <input type="checkbox"/>
Private investor	1 <input type="checkbox"/>	2 <input type="checkbox"/>
Others	1 <input type="checkbox"/>	2 <input type="checkbox"/>

VIII. Market and competition

28. What are major markets for the firm's produce?

1. Locality (where it is manufactured)
2. In nearby towns
3. On the national market
4. In countries of European Union
5. In countries of East and Central Europe
6. Other (specify).....

29. What approximate percentage of your output is made for:

local market of the voivodship	%
other voivodships markets in Poland	%(fill in appropriate numbers, so that they sum to 100)
export	%
<i>Total</i>	100	%

30. How many competing firms are there in domestic market?

1. ☐ None 2. ☐ 1-10 3. ☐ 10-50 4. ☐ 50-100 5. ☐ More than 100

31. Perception about number of direct competitors in your market increased in 2003?

1. No
2. Yes
3. Other

IX. Government Policy and Assistance for export activities

32. Perception about the problem in connection with export operations

(choose no more than two answers)?

1. ☐ Taxation 2. ☐ Legal regulations 3. ☐ Tariffs
4. ☐ Bank operations 5. ☐ Excessive paper work and red tape 6. ☐ None
7. ☐ Other (specify):

33. What is exceptionally inconvenient / threatening for your firms?

1. Exchange rate swings/instability
2. "Inadequate" level of exchange rate
3. both of the above with equal strength
4. None of the above
5. I do not know

34. If the zloty were convertible for capital account transactions, would your firm invest in any form abroad (in foreign securities, depositing on foreign bank account, buying foreign real estate, etc.)?

1. Yes, for sure yes
2. Yes, rather yes
3. I do not have opinion
4. No, rather not
5. No, for sure not

35. Are you familiar with the idea of mutual credits institutions?

1. No
2. Yes

36. Would you join mutual credits institutions could be helpful to SMEs, if it were made possible by the existing law?

1. Yes, certainly
2. Yes, probably
3. I do not have opinion
4. No, probably not
5. No, certainly not

X. Knowledge and opinions about European Union

37. Are you in the European Network

1. ☐ No

2. ☐ Yes

38. How do you describe your level of knowledge of European Union members' markets?

1. ☐ High

2. ☐ Medium

3. ☐ Low

39. How influence of the accession of Poland to the European Union upon enterprise performance?

☐ negative,

☐ positive, because:

- 1) ☐ improve access to the EU markets
- 2) ☐ improve access to other markets
- 3) ☐ improve opportunity to sell in high price markets
- 4) ☐ reduction row materials or other costs of enterprise
- 5) ☐ improve access to sources of finance
- 6) ☐ improve infrastructure
- 7) ☐ opportunity to employ skills the workers from EU countries
- 8) ☐ other (which?)

40. Have you taken any action to prepare for the accession of Poland to the European Union?

1. ☐ No

2. ☐ Yes, action taken in:

- 1) ☐ improving the quality of products (services)
- 2) ☐ reducing the production costs
- 3) ☐ analysis of the EU markets needs
- 4) ☐ technology improvement in the enterprise
- 5) ☐ improving employees' qualifications
- 6) ☐ other (which?)

Questionnaire specification:

Full name of the interviewer:

Contact Person of the Firm:

Time of completion H H : M M

Approximate duration of the interview (minutes): M M

Date D D – M M – YYYY

Signature

Appendix 2: Potential explanatory variables in the logit model

Code	Variable	Categories
Structural characteristics of the Firms		
VA1 VA2	Branch of economic activity of enterprise	Manufacturing (Yes=1; No=0 – Trading, Service) Trading (Yes=1; No=0 – Service)
VA3	Sector	Private (Yes=1; No=0 – Public)
VA4 VA5	Legal status	Limited company (Yes=1; No=0) Individuals' business (Yes=1; No=0 – Partnership)
VA6	Capital of the enterprise	Percentage of Polish capital
Size, Growth and Age of the Firm		
VB1	Size in employees	Number of employees
VB2	Growth in employees	Yes=1; No=0
VB3	Size in total sales	gross sales in millions zloty
VB4	Growth in total sales	Yes=1; No=0
VC1	Age of business	Number of years in business
VC2	Opinion about the average duration of staying in business of Polish SMEs	1 year 2-4 years 5-10 years >10 years
Comparative Advantages of the Firm		
VD1 VD2 VD3 VD4 VD5 VD6	Perception about the advantages of firm over competitors	The price of enterprise's products or services (Yes=1; No=0) Acting with promptness (Yes=1; No=0) Attractiveness and modernity of products or services (Yes=1; No=0) Quality of products or services (Yes=1; No=0) Low costs of production or services (Yes=1; No=0) Good reputation of the enterprise (Yes=1; No=0 – effective marketing and promotion)
Research and Development		
VE1 VE2	The technological level of the products or services	High (Yes=1; No=0) Medium (Yes=1; No=0 – Low)
VE3 VE4	The technological level of the enterprise	High (Yes=1; No=0) Medium (Yes=1; No=0 – Low)
VE5 VE6	IT tools used in office work	Significant extent (Yes=1; No=0) Slight extent (Yes=1; No=0 – no used)
VE7 VE8	IT tools used in distribution and marketing	Significant extent (Yes=1; No=0) Slight extent (Yes=1; No=0 – no used)

VE9 VE10	IT used in production process	Significant extent (Yes=1; No=0) Slight extent (Yes=1; No=0 – no used)
VE11 VE12	Extent of Internet used	Significant extent (Yes=1; No=0) Slight extent (Yes=1; No=0 – no used)
VE13	Innovation introduced in 2002-2003	Yes=1; No=0
VE14	Formal co-operation with raw materials and components providers or goods producers	Yes=1; No=0 – cooperation with research institution or consulting companies
VE15	Existence of R&D department in the firm	Yes=1; No=0
Age, Knowledge and Education Level of Managers of the Firm		
VG1	Age of the management team	mostly older than 30 (Yes=1; No=0 – mostly below 30)
VG2 VG3 VG4	Education of the management team	Post-graduate education (Yes=1; No=0) College or university completed (Yes=1; No=0) High school completed (Yes=1; No=0 – Secondary school)
VG5 VG6 VG7	Knowledge of foreign languages of management team	Fluent (Yes=1; No=0) Very good (Yes=1; No=0) Good (Yes=1; No=0 – Limited)
VG8	Perception of exporting on taking international business trips to find foreign customers	Yes=1; No=0
Risk, Cost and Profit of the Firm		
VH1	Perception of exporting on risk connected with foreign partners	Yes=1; No=0
VH2	Perception of exporting on risk connected with exchange rate fluctuation	Yes=1; No=0
VH3	Considering protection against economic risks as an important element of running your firm	Yes=1; No=0
VH4	Perception of exporting on costs connected with foreign markets	Yes=1; No=0
VH5	Profitability of enterprise in the domestic market	Profitable (Yes=1; No =0 – Non profitable)
Finance of Firms		
VI1	Essential sources of enterprise's finance	Bank loans (Yes=1; No=0 – Self revenue)
VI2	Access to finance for enterprise	Difficult (Yes=1; No=0)
VI3	Knowing where to obtain special foreign credit available for Polish SMEs	Yes=1; No=0
VI4	The enterprise tried to get external financial support (subsidies, grants and tax exemption)	Yes=1; No=0
VI5	Willingness to join credit institution could be helpful to SMEs	Yes=1; No=0
Market and Competition		
VJ1	Where are the major markets of the firm's	National market (Yes=1; No=0 – Local market)
VJ2	Competing firms in domestic markets	0 – firm

TEXT BOUND INTO

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		0-10 firms 10-50 firms >50 firms
VJ3	Perception about number of direct competitors in your market increased in 2003	Yes=1; No=0
Government Policy and Assistance for export activities		
VK1 VK2 VK3 VK4	Perception about major problems in connection with export operations	Taxation (Yes=1; No=0) Legal regulations (Yes=1; No=0) Tariffs (Yes=1; No=0) Excessive paper work and red tape (Yes=1; No=0 - Other)
VK5	Knowledge of the idea of the mutual insurance	Yes=1; No=0
VK6	Willingness to invest in any form abroad (in foreign securities, depositing on foreign bank account, buying foreign real estate)	Yes=1; No=0
VK7	Perception of joining mutual credit institutions could be helpful to SMEs	Yes=1; No=0
VK8	Worry about exchange rate	Yes=1; No=0
Knowledge and opinions about the European Union		
VL1 VL2	Level of knowledge of European Union members' markets	High (Yes=1; No=0) Medium (Yes=1; No=0)
VL3	Opinion about the influence of the accession of Poland to the EU upon Polish enterprises performance	Positive (Yes=1; No=0 – negative)
VL4	Action has been taken to prepare for the accession of Poland to the EU	Yes=1; No=0

Appendix 3:

ESRC Initiative – Definitions and Sample Size

Researcher	Institution Location	Definitions	Sectors	Sample No. of Firms	Data Source	Data Collection	Response rate	Geography
1. Curran et al.	Kingston University	'Grounded'	Services	350*	Yellow Pages, Trade and local directories	Face to – face telephone, Postal	56.1	Nottingham, Guildford, north-east Suffolk, Doncaster, Islington
2. Hughes et al.	Cambridge University	1-500 employees	Manufacturing and business services	2,028	Dun and Bradstreet	Postal	32.9	England, Scotland, Wales
3. Atkinson	Sussex University	Establishments with <200 employees	All sectors	3,309	Business connections	Postal and face to – face	29.8	North Cornwall, Shrewsbury, Brighton, Manchester, Newport, Slough
4. Townroe	Sheffield Hallam University	Small start ups	All sectors	559	Rural Development Commission	Postal	23.3	Northumberland, Derbyshire, Norfolk, Devon
5. North et al.	Middlesex University	Independent and < 100 employees	Eight manufacturing sectors	306	Prior contact, Rural Development Commission, Local directories	face to – face	-	London, Derbyshire, Hertfordshire, Essex, Cumbria, North Lancashire, North Yorkshire
6. Owen	Sheffield Hallam University	<300 employees	Manufacturing and mobile services	467	Local authority and chamber of commerce	Postal	25.5	Sheffield, Hainaut (France/ Belgium)
7. Rees	Bristol University	Self-employed	All sectors	N/ A	General Household Survey	Government	N/ A	UK
8. Bartlett	Bristol University	Co - ops and 'matched' private firms	All sectors	200	Business associations	face to – face	N/ A	Emilia Romagna (Italy), Catalonia (Spain)
9. Jones et al.	Liverpool John Moores University	White, Asian, Afro - Caribbean owned firms	Retailing, wholesaling, manufacturing	403	Rateable valuations list	face to – face	N/ A	Wards in the North, Midlands, and south - east England

10. Freedman Goodwin	Institute of Advanced Legal Studies	Incorporated and unincorporated small firms <£1m.turnover	All sectors	429	Yellow Pages, companies register/ Jordans	Face to – face telephone, Postal	29%	Bath, Sutton, Darlington, Derby
11 McGregor	Glasgow University	Community enterprises and firms in managed workspace <100 employees	All sectors	346	-	Face to – face	-	Belfast, Glasgow, Bristol, Manchester, London, Newcastle UK
12. Davies et al.	University of East Anglia	<100 employees	Subcontractors	102	Benchmark	Postal	8%**	UK
13. Nenadic	Edinburgh University	Family-owned Businesses 1861 – 1891	All sectors	781	Post Office Directory	-	-	Edinburgh
14. Nayak	Birmingham University	<10 employees	All sectors, engineering, electrical	200	Redditch Enterprise Agency	Face to – face	-	West Midlands
15. May	Manchester Metropolitan University	<100 employees	All sectors	294	Local Authority	Telephone	73%	Oldham, Stockport
16. Mason/ Harrison	Southampton / Ulster University	Users of Informal venture capital	All sectors	297 3 surveys	VCR guide, brokers' contacts	Postal	12%**	Rural areas, Northern Ireland, Leicestershire, Hertfordshire, South Hampshire

Source: Storey (1994: xvi- xvii)

Note: *274 of these firms were interviewed in 1992 and 204 re- interviewed in 1993.

**Response rates do not take account of ineligible firms.