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# EMPIRICAL STUDY OF EXPORT AVERSION OF POLISH SMALL AND MEDIUM SIZED ENTERPRISES

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The purpose of this study 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 categorization of the major export problems: barriers associated with the company, industry, market and macro environment. In addition, a Logit model is applied to examine the major factors determining export aversion of Polish Small and Medium-sized Enterprises (SMEs). The survey data are collected for the Gdansk region in last decade and analyzed using Limdep version 10.0 for Windows. In the 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. The findings of this study reveal that firms' legal status, taxation, and low level of knowledge of the European market are the main factors effecting export aversion of Polish SMEs.

**Keywords:** Small and Medium-sized Enterprises, Export aversion, Logit model

## INTRODUCTION

The Small and Medium-sized Enterprises (SMEs) worldwide are recognized as engines of economic growth and have contributed significantly to the successful development of many industrialized countries. Experience of European Union (EU) countries indicates an important role of SMEs in the economic development. The more than 20 million SMEs in the EU represent 99% of businesses, and are a key driver for economic growth, innovation, employment and social integration. The European Commission aims to promote successful

entrepreneurship and improve the business environment for SMEs, to allow them to realise their full potential in today's global economy (European Commission, 2014).

SMEs in Poland have an important role to play in the country's industrialization and modernisation process (Ubreziová and Wach, 2010). The process of economic reform in Poland has directly impacted the SMEs and has promoted the comprehensive development and diversification of trade, form of organization and business areas. The development however, is still limited in many aspects due to market constraints

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and the SMEs' internal physical limitation such as capital shortage, slowly renewed equipment, out-dated 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 programs aimed at the promotion and development of SMEs.

For that reason, the objective of this study is to understand the export problems and discover the determinants of the probability of a Polish SME being a non-exporter and this firm will not even try to export (export aversion). In this study, a Logit model is applied to examine the major factors determining export aversion of Polish SMEs by using Gdansk province as a case study. The survey data are collected for the Gdansk region in last decade. To the best of our knowledge such an analysis has not been attempted before.

This study is structured as follows. Section 2 covers the literature review on export aversion. This section outlines the internal and external export problems of firms from developing countries. Section 3 proposes the methodology of export aversion. The empirical results on export aversion of Polish SMEs have been discussed in Section 4. Finally, the last section concludes.

## LITERATURE REVIEW ON EXPORT AVERSION

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 *et al.*, 1999). Some of the reasons why SMEs have not been exporting include: strong international competition; managerial constraints; different customer culture; lack of knowledge and information about overseas markets for their products; perceived complexity of exporting; high tariff and non-tariff barriers; lack of awareness of government assistance; and financing difficulties of export sales (Leonidou, 2000; Da Silva, 2001; Ortega, 2003; Ahmed *et al.*, 2004; Altintas *et al.*, 2007; Koksall *et al.*, 2011; Kneller and Pisu, 2011; Mpinganjira, 2011; Jalali, 2012).

### 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); problems arising from ill-organized 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. 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

**Table 1: Internal Export Problems of Manufacturing Firms from Developing Countries****Company Barriers**

**Lack of marketing knowledge:** Deficiency of knowledge about export markets and exporting (South Korea, Latin America, Turkey, Brazil)- Weaver and Pak, 1988; Bodur, 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; 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.

**Financial barriers:** 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; Dicle and Dicle, 1991.

Credit unworthiness (Kenya) – Collier and Gunning, 1999.

**Human resource barriers:**

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) - Colaiacovo, 1982.

**Product Barriers**

**Quality problems:** 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.

**Product adaptation problems:**

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.

chiefly of the organizational 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 Juan, 1989). Table 1 gives a summary of internal export problems.

**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 analyzed as problem of industry, of export market and of macro-environment obstacles (Table 2).

Table 2: External Export Problems of Manufacturing Firms in Developing Countries

**Industry export barriers**

**Industrial structure:** 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, 1991; Neto, 1982.

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.

**Competition:** Fierce competition in export markets (Cyprus, Turkey, Pakistan, Brazil) – Cardoso, 1980; Fluery, 1986; Kaleka and Katsikeas, 1995; Karafakioglu, 1986

**Foreign market problems**

**Customer barriers:** Image of products in foreign market (Brazil) – Cardoso, 1980; Lall, 1991.

Insufficient foreign demand (Brazil, Pakistan) – Cardoso 1980.

Culture and language differences (Peru) – Brooks and Frances, 1991.

Brand familiarity (Taiwan) – Gereffi, 1992.

**Procedural barriers:** 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.

**Macroeconomic environment problems****Direct export barriers:**

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; Altintas *et al.*, 2007

Complex government bureaucracies (India) – Naidu *et al.*, 1997.

Import substitution (Latin America) – Dymsha, 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; Dymsha, 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

To summarize, 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. 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 unfavorable or if major barriers to industry or product are overlooked. The world market may provide many promising opportunities. The challenge is to organize 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-sizes companies (Moini, 1995; Kedia and Chhokar, 1986). 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.

## 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 a Polish SME being a non-exporter and this firm will not even try to export (export aversion). In this study, 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.

The analysis of Logit model is based on the method of estimation. 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, that we can write as:

$$Z_i = \beta_1 + \beta_2 X_{i2} + \dots + \beta_k X_{ik} \quad i = 1, \dots, N \quad \dots(1)$$

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:

$$P_i = F(Z_i) = \frac{1}{1 + e^{-(\beta_1 + \beta_2 X_i)}} \quad \dots(2)$$

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 (2) can be rewritten as follows:

$$P_i = \frac{1}{1 + e^{-Z_i}} \quad \dots(3)$$

where  $Z_i = \beta_1 + \beta_2 X_i$

Equation (3) represents the cumulative logistic distribution function. In equation (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:

$$1 - P_i = \frac{1}{1 + e^{-Z_i}} \quad \dots(4)$$

Simplify Equation (4), by multiplying both sides of equation by  $(1+Z_i)$ , dividing the result by  $P_i$  and abstracting 1 from both sides yield the following:

$$\frac{P_i}{1 - P_i} = \frac{1 + e^{Z_i}}{1 + e^{-Z_i}} = e^{Z_i} \quad \dots(5)$$

In equation (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 (5) gives the following logit  $L_i$  result

$$L_i = \ln\left(\frac{P_i}{1 - P_i}\right) = Z_i = \beta_1 + \beta_2 X_i \quad \dots(6)$$

Many authors have discussed the standard methods for estimating logit models (Nerlove and Press, 1973; Dhrymes, 1978; Dhrymes, 1994), and others have suggested improvements (Harissis, 1986; Skovgaard, 1990; Ghatak *et al.*, 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 regress and models (Gujarati, 2003). Measures to similar to  $R^2$ , called *Pseudo  $R^2$* , are available, and there are a variety of them (Long, 1997), 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:

$$L_i = \ln\left(\frac{P_i}{1 - P_i}\right) = B_1 + B_2 X_i + u_i \quad \dots(7)$$

$$L_i = \ln\left(\frac{0}{1}\right) \text{ if the SME shows export aversion} \quad \dots(8a)$$

$$L_i = \ln\left(\frac{0}{1}\right) \text{ if the SME is not} \quad \dots(8b)$$

The estimated logit model is thus

$$\hat{L}_i = \ln\left(\frac{\hat{P}_i}{1 - \hat{P}_i}\right) = \hat{B}_1 + \hat{B}_2 X_i \quad \dots(9)$$

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).

The data for this study were analyzed using Limdep version 10.0 for Windows. We collect the survey data for the Gdansk region. In the 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 percent (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 (total is 100 %) is made for local market (%), national market (%), foreign market (%).

Q.2 - Were you making efforts to export or to increase the export? No/Yes

In this study, we apply the "general to specific" strategy for model construction. The "general to specific" strategy for model construction (Hendry, 2000; Krolzig and Hendry, 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 has 66 potential explanatory independent variables. 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.

## 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. In this study, 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 9 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 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).

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),

Table 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	-14.64	0.10	-9.57	0.01	-3.63	0.01
VA3	ns	ns				
VA5	10.50	0.07	8.30	0.03	2.71	<0.01
VB1	ns	ns	ns	ns		
VD3	-11.04	0.07	-7.45	0.03	-3.39	0.03
VD5	ns	ns	ns	ns		
VE1	ns	ns	ns	ns		
VE2	ns	ns	ns	ns		
VE3	-10.02	0.13	-9.86	0.03	-2.67	<0.01
VE8	ns	ns				
VH5	ns	ns				
VJ1	-20.80	0.12	-12.81	0.02	-5.14	<0.01
VK1	ns	ns	5.54	0.04	3.05	0.02
VI1	-10.00	0.10	-8.27	0.03	-3.00	0.02
VL2	ns	ns	6.88	0.01	2.47	0.01
VL4	-11.76	0.14	-5.73	0.04	-1.92	0.03
Constant	17.08	0.96	3.43	0.22	3.09	<0.01
Cases	116	116	118			
LRTS (Model Chi-Squared)	135.02(0.00); 16 d.f		128.99(0.00); 13 d.f		109.16(0.00); 9 d.f	
McFadden R <sup>2</sup>	0.88		0.84		0.71	
% of Correct Prediction	96%		96%		93%	
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.						
Source: Drawn up by author						

- 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

**Table 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	-3.63	1.42	-2.55	0.01
VA5	Legal Status	Individuals' business	2.71	1.02	2.67	<0.01
VD3	Perception about the advantages of firm over competitors	Attractiveness and modernity of products or services	-3.39	1.54	-2.20	0.03
VE3	The technological level of the enterprise	High	-2.67	0.91	-2.93	<0.01
VJ1	Where are the major markets of the firm's	National market	-5.14	1.56	-3.31	<0.01
VK1	Perception about major problems in connection with export operations	Taxation	3.05	1.29	2.38	0.02
VI1	Essential sources of enterprise's finance	Bank loan	-3.00	1.24	-2.43	0.02
VL2	Level of knowledge of European Union members' markets	Low	2.47	0.99	2.50	0.01
VL4	Action has been taken to prepare for the accession of Poland to the EU	Yes	-1.92	0.89	-2.15	0.03
	Constant	3.09	1.13	2.74	<0.01	

*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 logit model on export aversion in the Model (3) were presented in details in Table 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 effects 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 5.

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 cannot 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 an 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 export, 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 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 cannot 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;

**Table 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)

- 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.

## CONCLUSION

The study 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 used Logit model to the cross sectional data collected via a survey questionnaire 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: (1) firms' legal status is individual; (2) taxation; (3) 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: (1) action taken for accession to the EU; (2) firms major sources of finance as bank loans; (3) firms with high technological level; (3) firms' products and services are attractive and modern; (4) domestic share of the market; (5) branch of economic activity: manufacturing firms.

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