THE IMPORTANCE OF COMPETITION POLICY IMPLEMENTATION IN A SMALL ECONOMY: THE CASE OF THE LITHUANIAN FUEL TRADE MARKET

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Abstract. The paper deals with the importance of competition policy implementation in a small market economy. The Lithuanian fuel trade market has been chosen for the analysis. To ensure that the fuel trade market is working efficiently and is fairly priced is one of the key priorities for the government of Lithuania. Competition policy plays an essential part in the country's economy. Therefore, in order to understand the characteristics of small market economy and how competition policy is working in such market conditions, it is neassary to realize the complexity of the analysis. The paper offers a brief theoretical overview of the specifications of competition policy in a small market economy, together with a thorough interpretation, empirical research and discussion of the Lithuanian fuel trade market.

Key words: competition policy, small market economy, fuel trade market, Lithuania

Introduction

Competition in the market is the fundamental condition of the healthy functioning of economy. Much attention has been devoted recently to the issues related to competition policy not only in large but also in small economies. The effective market competition in the country is a vital and essential imperative in order to ensure that consumers and businesses enjoy sustainable, secure and fairly priced services and goods. As the enforcement of the competition law increases its global scale, small jurisdictions as well as large ones are increasingly attempting to review mergers, investigate alleged monopolizations and abuses of dominance, or join in the fight against cartels. But are the experiences of larger jurisdictions in these areas applicable to small economies which may be characterized by vastly different market circumstances? Therefore, the **aim** of this study was to analyse, examine and discuss the fundamental importance of

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competition policy in a small market economy. In fact, the article explains why the competition policy is a vital element in such economies. **The object of the research** was the Lithuanian fuel trade market. Lithuania, as a classical example of a small market economy, has implemented a competition policy which has to foster competition in the market and ensure fairness and efficiency. Much attention has been devoted recently to the study of the fuel trade market in Lithuania; therefore, **the purpose of the study** was to examine whether the competition policy in Lithuania does enough to ensure and promote a sustainable market competition and provide with possible solutions to strengthen it. The relevance of the research has grown exactly at the time when the fuel market in Lithuania encountered product pricing issues, which has led us to raise the hypothesis that the Lithuanian fuel trade market faces the lack of competition.

The methods of research involve analysis of theoretical and statistical resources, comparative data analysis and interpretation based on the multiple regression model, correlation and p-value results.

The structure of the article is as follows: the theoretical part on the characteristics of a small market economy, the fundamentals of competition policy and its implementation in a small market economy is followed by the methodical part which includes the application of various methods chosen for the purpose of the analysis. Finally, the article is concluded by discussion and the possible solutions aimed to tackle and minimize the issues raised in the article.

The key characteristics of small market economies

It is essential to define what the concept of small market economy exactly means. Is it the size of the economy's population or GDP, its level of development, the number of firms its domestic demand can support? The literature reveals quite a few key characteristics of small market economy. According to Gal (2003), "a small economy is an independent sovereign economy that can support only a small number of competitors in most of industries". As a matter of fact, the definition already reveals one of the main consequences of the economy smallness: the highly concentrated nature of most of its industries. Naturally, no two small economies are alike. They may differ in their characteristics and policies. Economies differ as a result of natural conditions in the market (i.e. raw material availability, geographic allocation, etc.), governmental economic policies, etc. (Gal, 2003). In short, the size of the market can be defined by a few main factors: population size, population dispersion, and openness to trade. As the author explains further, small population size means that limits on demand can be imposed and the number of firms that can efficiently serve the market can be reduced.

In fact, many authors differ in their definitions of 'small economy', and the list of the factors mentioned above varies accordingly; however, in most cases the generic concept of 'small economy' is described as small enough to have little or no effect on the world's

economy. This means that countries described as 'small economies' cannot make an impact on the global market prices; in some cases they can be categorized as price takers as opposed to price leaders. In other words, 'small economy' is an economy that 'takes as given the price of imports and the demand schedules for its exports' (Demidova, Rodriguez-Clare, 2009). Since trade deals are based on the most-favoured-nation principle and a concession to one partner has to be extended to every other, small economies have no bargaining clout. For example, "if a small country with a big footwear industry offers to open its entire domestic market to the United States in exchange for a zero tariff on its footwear exports, the United States has little incentive to agree, because it would then have to open its footwear market to everybody else" (*The Economist,* 1998). Therefore, it helps to explain that in the globally interrelated market platform small economies play a less than substantial role in the world economy lead.

Furthermore, the lack of competition and a high concentration level are the most important factors most common in small economies. The high concentration level also shows that there are only a few rivals operating in the market. In fact, concentration (which usually is prevalent due to high entry barriers or limited demand, the latter being caused by the small population size of the country) determines a unique structure of such an economy. As a matter of fact, a high concentration level signifies the lack of competition in the market and has destructive consequences for the economy. Competition is a process of rivalry among firms, each seeking to win customer's business. In fact, competition is particular by essential and beneficial in small economies. According to Professor Paul A. Geroski (2006), "the consequences of competition in the market are that prices will typically be bid down to an efficient level of costs, a diversity of product offering will come on to the market that matches the heterogeneity of consumer needs and tastes, and the rate of innovation will be high".

The fundamentals of competition policy

The competition among market participants is an essential component of the market mechanism. Therefore, policies came to the light, whose major task is to increase competition among market players. To define competition policy, according to M. Motta (2004), is not an easy task. In general, competition policy is defined by a set of rules which are specially designed to ensure economic efficiency and "to protect, promote, and encourage the competitive process" (Gal, 2002). It consists of laws and regulations established by the government of a particular country. As M. Motta (2004) has stated, competition policy is "the set of policies and laws which ensure that competition in the marketplace is not restricted in such a way as to reduce economic welfare". Similarly, J. Stiglitz (1981) argues that "increasing competition will increase welfare". In addition, the Tariff Commission of the Republic of Philippines states that competition policy "broadly refers to all laws, government policies and regulations aimed at establishing competition

and maintaining the same. It includes measures intended to promote, advance and ensure competitive market conditions by the removal of control, as well as to redress anti-competitive results of public and private restrictive practices".

The background for competition is set by innovated goods, modern technology, new supply sources and organization types – this is the competition which brings together the minimal cost and quality advantage (Schumpeter, 1998). In most developed economies, the attention given to competition policy in the political agenda has increased substantially over the last two decades. In fact, "once, competition policy was based on diverse rationales, such as protection of small competitors against large ones, now it is widely understood to have a single purpose: the enhancement of consumer welfare" (OECD Policy Roundtable, 2008). A.G. Clougherty (2010) states that "while a number of antitrust jurisdictions exhibit long-standing commitments to antitrust principles, other developed economies (in particular small economies that traditionally relied on trade policy to discipline markets) have recently introduced or substantially enhanced pre-existing competition policies".

It is important to emphasize that competition policy is set to encourage the competition among market players but not to constrain the actions of rivals or to protect weaker and inefficient firms. This, in turn, goes against the supporters who advocate the free market concept. "Competition policy is not concerned with maximizing the number of firms, […] competition policy is concerned with defending market competition in order to increase welfare, not defending competitors" (Motta, 2004). "Government interventions must aim to provide fair competitive opportunities, not to protect competitors from efficient competition" (Kahn, 1998). In addition, as K. E. Train (1991) has stated, "the purpose of regulation is to ensure socially desirable outcomes when competition cannot be relied upon to achieve them; regulation replaces the invisible hand of competition with direct intervention – with a visible hand – so to speak".

The integration of competition policy in a small economy

Competition policy in most small economies takse the core of conversations among policy makers and business people; however, it is still believed that competition policy in small economies gives little weight to discussions of the importance of keeping competition at the centre of economic policy. It has to be noted that competition policy in small economies has different implications as compared to competition policy in large economies; therefore, the need for research has increased in recent years. In fact, some small economies, instead of designing the laws most relevant to the specifics of the small market threats, adopt the statutes constituted in large economies. Competition policy in small economies requires a careful consideration and thorough market analysis in order to ensure that competition policy applied in a small economy consolidates the competitive market position in the country.

Competition policy is subjected to economic conditions. It is about ensuring that markets are, and remain, competitive. The effective competition in the market is essential in order to ensure that consumers and businesses enjoy sustainable, secure and fairly priced products and services, dispersed wealth and opportunity. Competition policy should, however, take into consideration the market characteristics the policy is going to be applied to. Therefore, the salient characteristics of small economies have a fundamental competition policy significance because they require that small economies would apply appropriate policies to minimize at least some of the negative effects of small economy size.

The principal consequence of these considerations for competition policy in small economies is that they must make economic efficiency their principal objective. According to M.S. Gal (2003), "in a small economy it is vital that the goals of competition policy be clearly, consciously, and unambiguously defined, and that economic efficiency be given primacy over other goals". Goals have to draw the outlines how the law should be constructed and implemented. The author also emphasizes that economic efficiency in a small economy is paramount because small economies cannot "afford a competition policy that is prepared to sacrifice economic efficiency for broader policy objectives" (Gal, 2003). P. Freeman (2008) argues that "efficient markets are the best instruments yet found to deliver benefits in an economy, and regulation is usually a poor substitute for them". While speaking to the David Hume Institute, on 3 May 2007 P. Freeman reported that 'allowing markets to work effectively is the best system yet devised to deliver efficient business, innovation and benefits for consumers in terms of price, value for money and choice. And in markets where there are no natural – or even unnatural – monopolies, regulation is normally a poor substitute for competition in this respect. The idea of an economy without a strong competition policy is very unattractive". In theory, the economic efficiency is composed of allocative, productive and dynamic efficiency which are rarely found simultaneously in the market; however, when it is the case, competition policy confronts complex economic trade-offs. Therefore, the idiosyncratic characteristics of small economies require an extensive attention and clarity during the implementation process of the competition policies.

Market power and dominant position in a small economy

"The term *market power* refers to the ability of a firm (or a group of firms) acting jointly, to raise price above the competitive level without losing many sales so rapidly that the price increase is unprofitable and must be rescinded (Landes and Posner, 1981). Besides, the ability to raise prices profitably also depends on the entry barriers (which are exceptionally prevalent in small economies) which prevent rivals, otherwise attracted by high profits, from entering the market. Thus, firms having a relatively large market power and facing no direct competition are usually called *dominant*. However, the problem

usually identified is how to define a suitable market share threshold which allows a firm to be called dominant. Considering the uniqueness of each country's economy and market structure, the dominance thresholds adopted in small economies should be lower than in large ones[1]. Speaking in general terms, small economies make it easier for one firm to gain a significant (dominant) market share due to existence of entry barriers and high concentration levels. Therefore, authorities of small economies must give exceptional attention to determining the proper threshold of market power which is necessary to imply the dominant position.

Mergers in a small economy

The focus in merger cases is usually on identifying any anti-competitive effects and aiming to ensure that competive market structures are maintained in the econony. According to the European Commission, "some mergers may reduce competition in a market, usually by creating or strengthening a dominant player. This is likely to harm consumers through higher prices, reduced choice or less innovation". In fact, "merger control is an important tool for regulating anti-competitive conduct by preventing the creation of market structures which tend to increase the potential for such conduct. The limited efficiency of conduct-related measures in small economies increases the need for optimal merger control" (Gal, 2003). On the other hand, if a merger creates a dominant position but does not harm competition and actually improves productive and dynamic efficiency (it could be the case in a small economy), according to the Law on Competition (Article 14(3)[2] of the Law on Competition), it should be prohibited. Furthermore, as stated by the European Commission, "mergers may be prohibited, for example, if the merging parties are major competitors or if the merger would otherwise significantly weaken effective competition in the market, in particular by creating or strengthening a dominant player". Hence, such regulation of mergers highly depends on the definition of dominant position in a particular country. However, bearing in mind the market power and dominance, and the proposal of lower thresholds of dominance for small economies, this approach would be expected to ban almost all mergers, because most of them would create or strengthen the dominant position. Therefore, small economies should not rely only on the dominance factor when deciding whether to allow a merger or not,

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[1]   W. M. Landes and R. A. Posner (1981) suggested that the market power of a firm can be calculated using a formula: $L_i = \dfrac{S_i}{E_d + E_s(1 - S_i)}$, where L_i the Lerner index indicating the market power of a firm, S_i the market share of a firm, E_d is market demand elasticity, and E_s is fringe supply elasticity. The higher the market demand or/and fringe supply elasticity, the lower market power the firm would have, all else being the same. Therefore, as these elasticities are lower for small economies, the same market share indicates more market power in small economies.

[2]   Lietuvos Respublikos Konkurencijos Įstatymo pakeitimo ir papildymo, Valstybės Pagalbos Ūkio Subjektams Kontrolės Įstatymo pripažinimo netekusiu galios ir Civilinio Proceso Kodekso 1 straipsnio pakeitimo Įstatymas // Žin., 2004, Nr. 63-2244.

even though dominance is a factor that should be constantly monitored by particular authorities, since dominance often creates incentives to abuse it.

Collusive agreements and conscious parallelism in small economy

Collusive agreements are one of the biggest threats for a competitive environment, especially in highly concentrated markets, due to inefficiencies they create. A collusive agreement, or cartel, is an "association of producers who agree to coordinate their actions in order to increase profits above the competitive level. To achieve this goal, output must be restricted below the competitive level" (Suslow, Hamilton, 2001). Therefore, collusions are forbidden in competition policies applied by all jurisdictions, and exceptional attention must be paid towards the determining regulation. The complexity of the problem rises when a small and highly concentrated economy is being discussed and the actions of the rivals can be identified. Therefore, reacting to those actions means not losing profits. In other words, operating in concentrated markets makes it easier to observe competitors' conduct and react to it, i.e. market players act in a parallel manner. "Parallelism is reached when each oligopolist only assesses its rival's behavior and reacts with recognition of interdependence. […] In small economies, conscious parallelism is widespread. The number of firms in many industries is so small that even in the absence of formal agreements there is little room for effective domestic competition" (Gal, 2003).

On the other hand, such parallelism and similar conduct might be caused by a cooperative agreement (explicit or tacit) between players. While it is possible and relatively easy to unmask explicit collusion due to presence of documents or other material that can prove existence of an agreement, it is extremely difficult and sometimes even impossible to reveal tacit collusions. This type of collusions, especially in small economies, can easily be hidden by the definition of conscious parallelism. Therefore, authorities need to distinguish between these two factors, and appropriate regulations have to be applied.

Lithuanian fuel trade market analysis

There are two major problems existing in today's Lithuanian fuel trade industry: constantly rising domestic market prices (Fig. 1) and the fuel price level in Lithuania fairly higher in comparison with neighboring countries (i.e. Poland, Latvia and Estonia). Prices for almost all types of fuel in Lithuania have been noticeably rising over the last few years (Fig.1), leaving consumers with many open questions. Finding a logical explanation is not always an easy task; however, in this instance, we set the hypothesis which we face in unfair market competition practices in this particular market.

Three separate but highly interrelated markets can be emphasized in fuel trade industry: *production*, *wholesale* and *retail trade*. Speaking about production industry,
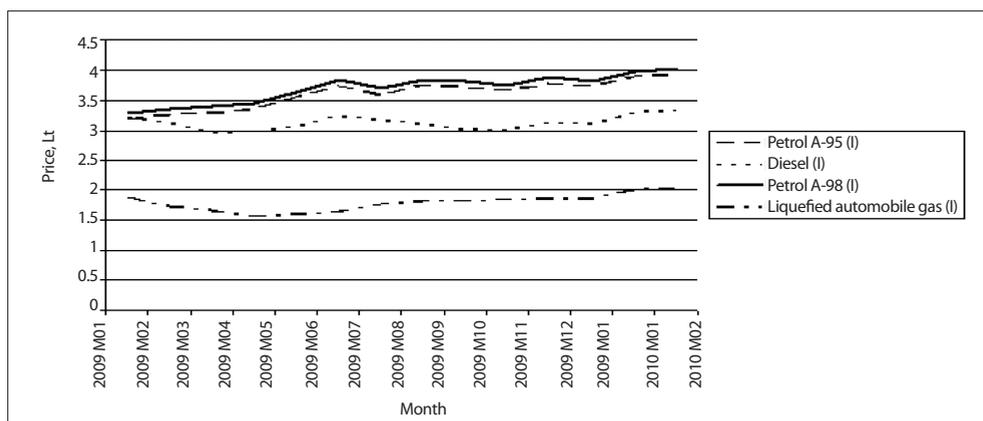
FIG. 1. **Dynamics of fuel retail prices in Lithuania**

Source: Department of Statistics to the Government of the Republic of Lithuania (2010).

there is only one company – "ORLEN Lietuva" operating in this market. This local producer is a pure example of a monopoly possessing nearly 100% of Lithuanian petrol production, which makes "ORLEN Lietuva" the largest wholesaler in the market. Other companies (i.e. "Lukoil Baltija" and "Saurida") engage both in wholesale and retail trade; however, they still buy their products from "ORLEN Lietuva", the only producer available in the country. Alternatively, there is an option to import fuel[3] from abroad, which seems a rational option to choose; however, a number of legal barriers prevailing in the market make the import of fuel unprofitable and prompt to buy the product from the local producer "ORLEN Lietuva".

The fuel retail market in Lithuania is operated by many gas station networks such as Lukoil, Statoil, Baltic Petroleum, Neste, Orlen, Emsi, Saurida, Alexela[4], Kvistija, Ventus (owned by "ORLEN Lietuva"), Alauša, Egas, Regusa, Apoil and other small individual gas stations. The largest network having 118 gas stations all over Lithuania has been built by Lukoil. The second place is occupied by Statoil with 71 gas stations, while Baltic Petroleum, Saurida and Orlen operate 43, 32 and 23 gas stations, respectively. All other companies have much smaller networks, with Apoil possessing only two gas stations (Degalų kainos, 2010).

Although "ORLEN Lietuva" is located in Lithuania, it does not limit its operations only in this country. In fact, one of its core activities is export to other European countries, mostly to Latvia and Estonia, where the company is considered to be a significant market

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[3]   In January 2010, Lukoil Baltija was the first company which imported 7.5 thousand tonnes of A-95 petrol from the petroleum refining company "Prim" located in Sweden. This, in fact, was the first tanker to transport fuel to Lithuania by sea ("Ūkio žinios", 2010) which was the only significant manifestation of import. Nonetheless, it hadn't decreased fuel prices for final consumers.

[4]   As of 1st of June 2010, Alexela is part of the Neste group. See http://www.alexela.lt/

player. Nonetheless, the statistics show that fuel prices prevailing in the Lithuanian market are fairly higher than those in Latvia, Estonia and Poland. This raises the question of the reasons for such price differences in local and foreign markets. It is the competition environment prevalent in different countries. "ORLEN Lietuva" is a monopolist in the Lithuanian market, whereas in other countries it has to deal with competition and is forced to decrease prices in order to survive in a more competitive market. According to the Competition Council of the Republic of Lithuania (2009), "ORLEN Lietuva" occupies 50% and 40% of market share in Latvia and Estonia, respectively (the rest part of fuel is imported from other countries, mostly from Scandinavian ones), while Poland has six petroleum refining companies which present a significant competition for the Lithuanian producer.

The retail prices are highly dependent on wholesale prices. The price set by "ORLEN Lietuva" (or another wholesaler) constitutes the largest part of the retail price structure. However, the fuel price for final consumers consists of the following parts: *excise duty*, *value added tax (VAT)*, *transportation costs*, *wholesale price* (Ministry of Economy of the Republic of Lithuania, 2008) and a *profit margin*. Meanwhile, wholesale prices are highly dependent on prices of petroleum, which is the main raw material in fuel production. Nonetheless, prices for final consumers are influenced not only by taxes and retailers' margins, but also by the competition environment in the wholesale market (Competition Council of the Republic of Lithuania, 2009).

According to Ministry of Finance of the Republic of Lithuania, *excise duty* for petrol is constant since 2009-01-01 and amounts to 1500 LTL per 1000 litres. It is worth noting that the actual Lithuania's commitment to the European Union is to introduce 1240 LTL per 1000 litres minimum excise tariff since 2011-01-01, whereas before this date it should be at least 1116 LTL per 1000 litres. Therefore, the excise tariff is much higher than it actually could be. However, as the excise duty has been constant since the beginning of 2009, this tax cannot be used as a reason for rising fuel prices inside the Lithuanian market during the period under analysis.

Value added tax (VAT) in Lithuania adopted a tariff of 21% in 2009-09-01, whereas before that date it was 19%. Latvia has the same tariff (21%) since 2009-01-01, while the VAT adopted in Estonia and Poland is 20% and 22%, respectively. Thus, different VAT tariffs cannot be used as an explanation of differences in prices in Lithuania compared to neighbouring countries, because the Lithuanian VAT is exactly the same as in Latvia and even lower than in Poland, implying lower prices, all else being the same.

As a matter of fact, *wholesale prices* have an impact on retail prices. Meanwhile, wholesale fuel prices are highly dependent on the world *petroleum prices*. Being the leading raw material for "ORLEN Lietuva", this is the key indicator influencing the wholesale price of fuel. In other words, rising petroleum prices have a direct influence on prices set by "ORLEN Lietuva". However, although the rising world petroleum prices

could be used as an explanation for rising prices in the Lithuanian market, they are not adequate for explaining price differences in the neighbouring countries.

Methodology and data

The study is based on a combination of several types of data: average weekly petrol prices by type of trade (wholesale and retail trade), daily petrol retail prices by gas station network, daily petrol wholesale prices and daily world petroleum prices in order to make a single dataset. The time period of data is from 2009-03-03 to 2010-03-29. This period has been selected due to sudden price fluctuations during this time, followed by adverse consumer reaction and indignation.

Separate methods are being applied in this study to analyze the Lithuanian fuel trade industry (i.e. A-95 petrol market): **comparative data analysis** (comparison of petrol prices in the Lithuania, Latvia, Estonia and Poland) and **correlation and multiple regression analyses.** Correlation analysis investigates the situation in Lithuanian fuel retail market, determines the level of interrelation and checks the hypothesis of possible collusive agreements among the retailers. In addition, regression analysis will be a useful tool for evaluating the impact particular variables might have on the petrol price movements and the directions and scope of their influence. In one of the regressions concerned with the situation in petrol retail market, panel data (where data are changing in two dimensions: time and gas stations) will be used, so the weighted least squares (WLS) technique will have to be applied. Meanwhile, the ordinary least squares (OLS) method will be applied in the second regression concerned with the petrol wholesale market. The significance of the results was analyzed according to the standard R^2 and p values.

The relationship between petrol prices and explanatory variables, disclosed later, is expected to be linear; therefore, a classical regression model in this case is:

$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + ... + \varepsilon$, where:

- Y is a dependent variable, or, in our case, petrol A-95 retail / wholesale price;
- X_1, X_2, X_n are independent (explanatory) variables;
- β_0 is an intercept (constant) indicating the value of a dependent variable when all independent variables are equal to zero;
- β_n is a coefficient indicating the impact of one unit increase in X_n on the dependent variable Y, keeping constant the other included independent variables (Studenmund, 2006), keeping all other explanatory variables constant;
- ε is a stochastic or random component of the equation.

As already mentioned, the main variables for analysis are *excise duty[5], value added tax (VAT), transportation costs, wholesale price* and *profit margin*.

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[5]   As already mentioned earlier in the study, the excise duty for petrol is constant; therefore, it cannot be used as a justification for price movements.

Transportation costs are quite difficult to estimate; therefore, prices in only one city – Vilnius – are being analyzed. In other words, exploring only one region enables us to minimize the impact of unequal transportation costs and omit this variable. In addition, world petroleum prices are announced in US dollars per barrel; therefore, these numbers are converted into LTL per litre in the analysis. For this purpose, *daily exchange rates*, prevalent on the days from 2009-03-03 to 2010-03-29, are being used.

Profit margin, in turn, is omitted from the analysis due to possible distortions of the results. In theory, the justification beyond distortion is the profit margin which is a residual after excluding all objective factors and explaining the rise in prices – excise duty, VAT, transportation costs, and wholesale prices. In other words, if the profit margin was calculated for each retail price from our dataset and included in the regression as an explanatory variable, R^2, as a result, this regression would be expected to be equal to 1. In fact, the key focus of the study is competition environment analysis; therefore, the profit margin must be fair in order not to constrain consumer welfare and economic efficiency, and not to imply any cooperative agreements. In other words, if all skyrocketing prices could be explained just by high profit margins (as a firm really has a right to set any profit margin it wants), there would be no way of proving the existence of anti-competitive practices, collusions, etc. In fact, high profit margins in the competitive market just cannot exist for a long time, because competition simply would force firms to reduce the prices. Therefore, if there is no other way to reduce prices (i.e. decreased costs of production, innovations, etc.), the profit margin has to be sacrificed.

Empirical data analysis

Petrol A-95 retail price analysis

Daily prices of Lukoil, Statoil, Orlen and Alexela are taken in the period 2009-03-03 to 2010-03-29. As already mentioned, the excise duty remained constant during this period, so it should be omitted from regression analysis, because it has no impact on price fluctuations during the period under analysis. VAT, on the other hand, could contribute to explaining the increased level of prices and is, therefore, included in the regression together with daily wholesale petrol prices set by "ORLEN Lietuva". Petroleum prices are omitted from this regression in order to avoid a multicollinearity effect. Wholesale prices are highly interrelated with the world petroleum prices; therefore, the calculated correlation coefficient between these two variables is 0.94, indicating a rather high correlation level. Therefore, omitting a redundant variable would solve the multicollinearity problem in this case.

Hence, the calculated regression equation is

PRICE = 0.0136 + 2.7896VAT + 0.9259Whole _ PRC + e.

TABLE 1. **Regression analysis output where A-95 petrol retail prices are a dependent variable**

	Coefficient	Std. error	t-ratio	p-value
Const	0.0136	0.0339	0.40	0.6874
VAT	2.7896	0.1920	14.53	5.97e-045 **
Whole_PRC*	0.9259	0.0098	94.47	0.0000 **

* An explanatory variable indicating wholesale A-95 petrol prices (set by "ORLEN Lietuva") in LTL per 1 litre.

** The variable is statistically significant at 1% significance level.

Source: compiled by the author using data from "Degalų kainos" (2010), time period 2009-03-03 to 2010-03-29.

As a result, the output indicates that all estimated coefficients have positive signs which explain the fact that all included explanatory variables contribute to the growth of petrol prices. Analyzing the significance of each variable included in the regression, the p-values presented in the table reveal that all variables are statistically significant at a 1% significance level. The R^2 estimated is 0.9088, whereas the adjusted R^2 is 0.9086, indicating a very high "goodness of fit". The high results indicate that the chosen variables explain more than 90% of a dependent variable's fluctuations.

The wholesale price variable has proven to be significant in determining petrol retail prices. Therefore, the competition environment in the wholesale market is extremely important as it makes a considerable influence on retail prices. Moreover, the VAT variable has proven to be a significant element; therefore, to some extent it can be used as an explanation for rising prices within the Lithuanian market. In fact, an increase in the VAT rate must have pushed petrol prices up. Meanwhile, the excise duty had absolutely no impact on retail prices during the period analyzed here; therefore, this variable cannot be used as a justification for the first problems indicated earlier in the study.

Correlation and interrelation of petrol prices among market retailers

Further in the analysis, the A-95 type of petrol price growth in the Lithuanian market is analyzed by examining whether there are any anti-competitive practices that fuel retailers might be involved in. Recalling the fuel retail market situation in Lithuania, one could say that similar pricing strategies are inevitable, especially having in mind the smallness of the Lithuanian market and high concentration levels. Besides, wholesale fuel prices, excise duties and VAT rates are the same for all players operating in the market. However, there is another component of fuel price – profit margin – which has not been mentioned so far. Profit margin is what the competition could be based on. In other words, if there are no options left for a company to increase its productive efficiency or to reduce production costs (e.g., by introducing innovation, etc.), the profit margin plays a key role in the competitive market scenario. Moreover, there are little

chances that a company competes on the quality or product differentiation basis, because all fuel products have to meet the predetermined standards. Therefore, in order to attract consumers to this market, the profit margin should be decreased, which would in turn differentiate the price levels among various retailers. However, this cannot be observed at the moment, raising concerns regarding the efficiency of the competition environment in the market. On the other hand, competition among retailers could be based on trying to get cheaper products from producers other than the monopolist "ORLEN Lietuva". Importing fuel from foreign producers could reduce costs and eventually decrease the price for the final consumers. In fact, as mentioned above, Lukoil, the largest retailer operating in Lithuania, has already imported an installment of A-95 petrol from Sweden via the "Klaipėdos nafta" terminal. It should have reduced the price level for this particular fuel set by Lukoil, as the main price component – wholesale price – became lover for this player. In theory, Lukoil could have decreased petrol prices, without even reducing the profit margin, and compete on a price basis by reaping the biggest market share. However, this scenario had never happened. Moreover, prices not only have not decreased, but kept growing further in line with other retailers' prices. Hence, these facts are indicative of possible anti-competitive practices among Lithuanian retailers in the fuel trade market. As one can see in Fig. 2 below, it is difficult to distinguish the borders between the four lines that indicate four different retail prices for A-95 type petrol: prices move like a single line.

As already mentioned, the price for Lukoil A-95 petrol type did not decrease after importing installations at the end of January 2010. On the contrary, the price continued growing along with other players' prices. However, with all other price components constant (i.e. transportation costs, excise duty and VAT rate), a lower wholesale price
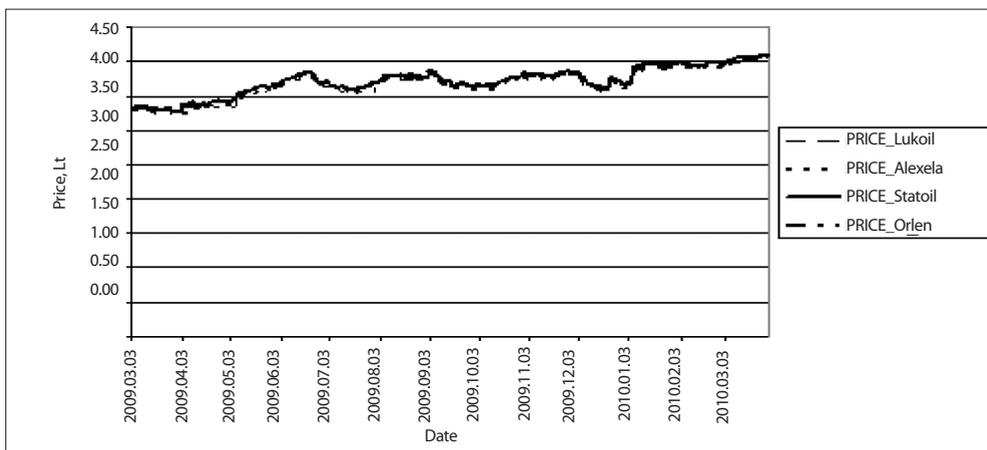

FIG. 2. **Dynamics of A-95 petrol retail prices**

Source: "Degalų kainos" (2010).

should have reduced the retail price. There is no doubt that if Lukoil wanted to compete with its rivals, the facts would have indicated different results; however, in this particular market the inefficient competition environment plays its role.

The same conclusions can be made by examining a correlation between A-95 petrol prices set by Lukoil, Statoil, Orlen and Alexela.

TABLE 2. **Correlation coefficients among different retail firms' pricing** (A-95 type petrol)

PRICE_Lukoil	PRICE_Statoil	PRICE_Orlen	PRICE_Alexela	
1.0000	0.9973	0.9920	0.9964	**PRICE_Lukoil**
	1.0000	0.9910	0.9956	**PRICE_Statoil**
		1.0000	0.9904	**PRICE_Orlen**
			1.0000	**PRICE_Alexela**

Source: compiled by the author using data from "Degalų kainos" (2010).

The table above shows the correlation coefficients for A-95 petrol to be extremely high. It indicates almost a perfectly positive correlation. Thus, prices are highly interrelated; this even further increases our concerns about the existence of competition environment in this market.

To sum it up, the correlation and interrelation analysis of petrol prices among market retailers indicated an extremely high level of pricing interrelation among the retailers. The price correlation coefficients are really high, while prices set by different players and their trends are almost identical. Having in mind that price competition is the only way to compete in this market, it can be stated that the competition environment in the Lithuanian fuel retail market is far from being efficient.

Analysis of wholesale petrol and world petroleum prices

While retail prices are highly dependent on wholesale prices, the latter are expected to be considerably influenced by world petroleum prices, as this is the most important raw material used in industry. However, the hypothesis raised in this section is that world petroleum prices, although having a significant impact on wholesale prices set by "ORLEN Lietuva", still do not explain all movements in its prices. More importantly, it cannot explain why the price level set by "ORLEN Lietuva" in Lithuania is higher than in Latvia, Estonia and Poland. Therefore, much has to be explained by the lack of competition in the Lithuanian wholesale market.

In order to check the hypothesis raised in this article, a regression and comparative data analysis has to be performed first. The output of regression analysis with wholesale prices of A-95 type petrol as a dependent variable and world petroleum prices as an independent variable are shown in Table 3.

The sign of the petroleum coefficient variable, as could be expected, is positive. In

TABLE 3. **Regression analysis output when A-95 petrol wholesale prices are a dependent variable**

	Coefficient	Std. error	t-ratio	p-value
Const	1.9760	0.0257	76.82	1.30e-237 **
Petroleum*	1.3141	0.0240	54.75	3.64e-185 **

* Explanatory variable indicating daily world petroleum prices expressed in LTL per 1 litre.

** Variable is statistically significant at 1% significance level.

Source: compiled by the author using data from "Degalų kainos" (2010), time period 2009-03-03 to 2010-03-29.

fact, the wholesale petrol price is highly related with the world petroleum price whose correlation coefficient was also calculated earlier; consequently, with an increase in the world petroleum price, also the wholesale price should increase. The importance of this particular explanatory variable is also confirmed by the p-value which shows its significance at a 1% significance level.

As a result, movements of the world petroleum price make a direct impact on wholesale petrol prices which significantly influence retail petrol prices. The question is to what extent current price movements are justified by the increase in world petroleum prices. For this purpose, let us take a look at Fig. 3, indicating the dynamics of A-95 petrol wholesale prices and world petroleum prices. At the first sight, the trends seem to be identical. However, if we add the trend lines to these lines, we will see that their slopes differ. The slope of the world petroleum price is lower than that of wholesale A-95 petrol prices. Therefore, world petroleum prices grow slower than petrol prices, indicating that not all wholesale petrol price movements are influenced by fluctuations of world petroleum prices.
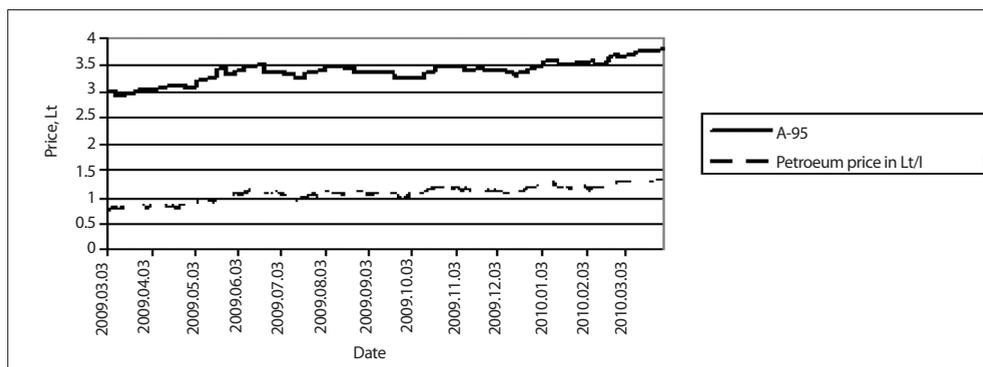

FIG. 3. **Dynamics of world petroleum and wholesale prices** (petrol A-95)

Source: "Degalų kainos" (2010).

Therefore, the conclusion here would be that neither retail nor wholesale petrol prices are fully justified by the objective factors that were included in regression analyses. Other factors, such as unfair pricing practices, must be an explanation beyond such dynamics of petrol prices. The monopoly structure of the wholesale market also fosters unfair pricing strategies, which are illustrated in Fig. 3 showing that wholesale petrol prices grow faster than do world petroleum prices. Finally, even though fluctuations of wholesale petrol prices in Lithuania could be considered as justified by changes in world petroleum prices, the latter factor cannot be used for justifying quite significant price inequalities in Lithuania, Latvia, Estonia and Poland.

Comparison of A-95 petrol retail prices in different countries

Let us now take a look at retail price levels of A-95 type petrol, as well as taxes on it, in Lithuania, Poland, Estonia and Latvia for 2010-03-29. This will enable us to investigate the fuel trade market in the context of the problem of different price levels in these countries.

TABLE 4. **Retail prices and taxes A-95 type of petrol on 2010-03-29, EUR/1000 l**

	Without taxes	VAT	Excise duty	With taxes
Lithuania	533.25	21	434.43	1170.89
Poland	517.56	22	426.05	1151.20
Estonia	513.21	20	422.78	1123.18
Latvia	513.04	21	379.94	1080.51

Source: Competition Council of the Republic of Lithuania (2009).

Table 4 shows that retail prices in Lithuania are the highest even at the "without taxes" level. In fact, the excise duty is also at the highest level in Lithuania; therefore, the retail price level for A-95 petrol increases even further in comparison with price levels in all other countries.

Nevertheless, all the above facts bring us to the conclusion that the greatest problem in the Lithuanian market is the high petrol retail price level before taxes. It can be also stated that the Lithuanian wholesale market is fully "occupied" by one producer – the monopolist "ORLEN Lietuva". Facing competition neither from domestic rivals nor from foreign producers (because imports are not attractive for retailers at the moment when the analysis is being done), "ORLEN Lietuva" naturally uses (if not abuses) the dominant position it has in the Lithuanian market and sells its production at higher price levels. On the contrary, having to deal with competitors in other countries' markets, the Lithuanian producer is forced to decrease its excessive profit margin.

To conclude it all, it can be stated that no taxes can be used as a justification for the continually growing petrol prices and recording the highest prices before taxes among

the state neighbours in Lithuania. This inequality is caused purely by the inefficient competition environment in the Lithuanian fuel trade market.

Solutions

In order to enhance competition and to remedy the record-breaking prices in the fuel trade market, we have to deal with the problems of both wholesale and retail markets. The greatest problem with the wholesale market is that it is operated by the monopoly "ORLEN Lietuva" which, facing no competition in Lithuania, is able to raise prices without objective justifications, at the same time supplying its products to other countries at much lower prices due to competition from other producers prevalent there. As a matter of fact, there is a way to create competition for "ORLEN Lietuva" – by stimulating imports from foreign producers. In other words, if importing fuel from foreign producers were made profitable and attractive for retailers, the Lithuanian producer would have no choice but to reduce the wholesale prices of its production. Therefore, this would reduce the main component of fuel retail prices – wholesale price – and create the possibility for lowering retail prices.

Many representatives of the fuel market state that excessively high excise duties are the main reason for such price level in Lithuania. However, although lowering the excise for petrol would really decrease prices, it would not solve the main problem prevalent in this market, which is the monopolistic competition environment. Therefore, prices before taxes would still be the highest in the region. So, in order to create an efficient competition environment in wholesale market, first of all it is recommended to *reduce import tariffs* for fuel from the third countries. This would make it attractive for retailers to import fuel and force the Lithuanian producer "ORLEN Lietuva" to reduce prices of its production through diminishing the profit margin, or through enhancing productive or dynamic efficiencies. Therefore, in any case, wholesale prices as the main component of retail price will be reduced, and the conditions for lower retail prices would be created. Another way to stimulate imports is to *reduce quality requirements* to fuel sold in Lithuania. Lithuanian quality standards are the highest in the region, which is also an obstacle for importing lower quality fuel from the third countries. Finally, the current *fuel reserve storage policy* also constrains imports: firms importing more than 1000 tons of petrol or more than 2500 tons of diesel fuel from abroad have to keep a particular amount of imported fuel as a reserve (Competition Council of the Republic of Lithuania, 2010). Meanwhile, only 10% of reserves are allowed to be stored outside the Lithuanian territory, which makes it costly, especially in the lack of suitable terminals in Lithuania. In fact, as authorities have endorsed the plan to increase this percentage to 30%, most likely it will be a positive move towards the attractiveness of imports and fostering competition in fuel industry in the nearest future.

However, for the retail prices really to start decreasing, an efficient competition environment must exist in the retail market as well. In other words, even if retailers had an opportunity to import cheaper fuel from other countries, prices would not decrease in the absence of competition among retailers, i. e. the situation of importing cheaper fuel but at the same time not reducing prices for consumers would not increase consumer welfare and is thereby undesirable. So, the question arises how to ensure an efficient competition environment in the fuel retail market. One of the possibilities could be *easement of licensing procedures* needed to start business in fuel retail industry. In such a way, the entry barrier created by government regulations would be overcome, and conditions for entering the market more easily would be created.

Moreover, it is extremely important to prevent collusive agreements among retailers. The current situation in the retail market really looks like a tacit collusion (according to the results of comparative data analysis); therefore, conditions must be provided to reveal and remedy such a situation. One of the ways to break the possible collusion is to apply the *maverick firm's support[6] scheme.*

All the above ways should ensure an efficient competitive environment in the Lithuanian fuel trade market. Although the smallness of an economy imposes some specific features naturally limiting the level of competition in most of its markets, competition policy must exploit these barriers, trying to overcome them and prevent creating artificial ones.

Conclusions

Lithuania is a classical example of a small economy. Smallness imposes several specific features that naturally constrain competition in most markets. Thus, the competition policy must be aimed at reducing the influence of these natural handicaps and enhancing competition in the markets where free market forces alone cannot work properly.

Due to their unique nature, small economies cannot adopt exactly the same competition policy as large ones. Firstly, a small economy should adopt a lower threshold for dominance, as the same market share implies more market power in a small economy than in a large one. Secondly, mergers must not be regulated by a standard threshold, especially if it is related with the dominance exclusively. In small economies, mergers might be the only way to achieve scale economies thus improving the productive and maybe even the dynamic efficiency; this is why each case must be analyzed separately, and decision should be made only after weighing all pro- and anti-competitive effects. Finally, small economies must pay an exceptional attention to possible collusive

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[6] Under this scheme, government provides financial support to one of the firms operating in the market under the condition that it will bring its prices down. Hence, the "maverick" does not lose anything (as the reduced price is compensated by the government's support), whereas competition is restored, as other rivals have to adjust their prices accordingly in order not to lose customers.

agreements and, when necessary, apply the necessary remedies, one of which could be the proposal of a maverick firm's support.

The empirical research has revealed the problems that the Lithuanian fuel trade industry faces at the moment. Problems exist both in wholesale and retail markets: the competition environment is far from efficient. The wholesale market is occupied by a monopoly which clearly takes advantage from its position, whereas the retail market also lacks competition, even though there are quite a number of players operating in it. The situation there is more comparable with a cooperative conduct and therefore must be changed: competition must be improved.

To crown it all, it is not enough to rely on free market forces alone when speaking about small economies, as the competition environment there is naturally constrained and therefore must be stimulated somehow. As small economies are unique in their nature, it is important that the authorities responsible for ensuring and promoting fair and efficient competition be very careful and accurate when implementing a particular competition policy. It is especially important not to create any legal barriers restraining competition even more; hence, various tariffs and customs duties must be used very carefully, with a proper evaluation of their possible impact on the competition environment in particular markets. Smallness does not mean that an economy is damned and its markets will never be competitive. An appropriate competition policy, which considers all specific features of the economy, can create conditions for an efficient market competition, protect from severe risk and damage and foster social welfare in the country.

REFERENCES

Clougherty, A. J. (2010). Competition policy trends and economic growth: cross-national empirical evidence. International Journal of the Economics of Business, Vol. 17, No. 1, pp. 111–127.

Competition Council of the Republic of Lithuania (2009). Dėl padėties automobilinių degalų rinkose, http://www.konkuren.lt/index.php?show=news_view&pr_id=625 (as of 8th March 2010).

Degalų kainos, www.degalukainos.lt (as of 5th March 2010).

Demidova, S., Rodríguez-Clare, A. (2009), Trade policy under firm-level heterogeneity in a small economy. Journal of International Economics, Vol. 7, No. 1, pp. 100–112.

Department of Statistics to the Government of the Republic of Lithuania. Statistics database. Retail prices for food products and fuels, http://db1.stat.gov.lt/statbank/default.asp?w=1280 (as of 17th March 2010).

Freeman, P. (2007). A wise man proportions his beliefs to the evidence: scepticism and competition policy. Lecture given by Peter Freeman at a meeting of the David Hume Institute in the Royal Society of Edinburgh on 3 May 2007, http://www.competition-commission.org.uk

Freeman, P. (2008). Is competition everything? Speech given by Peter Freeman at Law Society European Group on 21 July 2008.

Gal, M.S. (2002). Market conditions under the magnifying glass: the effects of market size on optimal competition policy. American Journal of Comparative Law, Vol. 50, No. 2, p. 303-338.

Gal, M.S. (2003). Competition Policy for Small Market Economies. London: Harvard University Press.

Geroski, P. A. (2006). Is competition policy worth it? Essays in Competition Policy. Competition Commission, www.competition-commission.org.uk

Kahn, A. E. (1998). Efficient competition. Electric Perspectives, Vol. 23, issue 3, pp. 17–19.

Landes, W. M., Posner, R. A. (1981). Market power in antitrust cases. Harvard Law Review: The Harvard Law Review Association.

Ministry of Economy of the Republic of Lithuania (2008). Naftos produktų rinka ir kainos. Presentation slides.

Ministry of Finance of the Republic of Lithuania. Excise duties, http://www.finmin.lt/finmin.lt/failai/Mokesciai/Akcizai_kurui_kaita_090901.pdf (as of 8th April 2010).

Motta, M. (2004). Competition Policy: Theory and Practice. Cambridge University Press.

OECD Policy Roundtable (2008). The Interface between Competition and Consumer Policies, www.oecd.org/dataoecd/22/34/40898016.pdf

Schumpeter, A. J. (1998). Kapitalizmas, socializmas ir demokratija. Vilnius.

Stiglitz, J. E. (1981). Potential competition may reduce welfare. The American Economic Review. Vol. 71, No. 2, pp. 184–189.

Studenmund, A. H. (2006). Using Econometrics: a Practical Guide. 5th ed. Addison Wesley: Longman.

Suslow, V. Y., Hamilton, J. H. (2001). Microeconomics. Study Guide. Upper Saddle River, New Jersey: Prentice Hall.

Tariff Commission of the Republic of Philippines, http://www.tariffcommission.gov.ph/competit.html

The Economist. Little Countries, small but perfectly formed, 3 January 1998, www.economist.com/editorial

Train, K. E. (1991). Optimal Regulation. Cambridge: MIT Press.

Ūkio žinios, 2010. Pirmąkart degalai į Lietuvą atplukdyti jūros keliu. http://ukiozinios.lt/pirmakart-degalai-i-lietuva-atplukdyti-juros-keliu (as on 8th April 2010).