

**PROCUREMENT OF CROATIAN FIRMS ON DOMESTIC
AND INTERNATIONAL MARKETS**

**NABAVA HRVATSKIH PODUZEĆA NA DOMAĆIM
I MEĐUNARODNIM TRŽIŠTIMA**

*Ivan Kovač*¹, *Andrea Galić Nagyszombaty*², and *Boris Sruk*³

JEL Classification: H57, P45

Original Scientific Papers

Primljeno / Received: October 07, 2012

Prihvaćeno / Accepted: February 21, 2013

Abstract

In the recent period, various authors pointed to the need to include procurement process in corporate planning and claimed that good procurement strategy is capable of being a significant source of competitive advantage for the business. In the situations where importance of purchasing and the complexity of the supply markets are high the key performance criteria in procurement strategies are long-term availability and long-term relationship with suppliers.

The purpose of this paper is to analyse the trends in procurement process of Croatian enterprises in comparison to EU trends. Special attention is devoted to procurement sources and different types of raw materials and intermediate goods which the firm acquired on domestic and international markets. Authors additionally analysed impact of procurement process on the domestic industry. If new orders are increasing, producers are expected to increase production in the future and vice versa. The aim of the paper is to analyse trends in the industry at new orders variables in Croatia. Some of the standard statistical methods were applied in order to identify a potential correlation between industrial orders and business cycle indicators.

Authors found significant differences in the procurement process in Croatia and EU and concluded that the main factors explaining differences in procurement sources are lower level of international integration of Croatia and structural changes in Croatian economy. Changes in the structure of procurement of Croatian industrial firms from abroad, indicate the stagnation of Croatian industry. Macroeconomic trends in prerecession period were primarily marked by growing domestic final demand and because of lower level of the overall competitiveness of domestic companies, higher reliance on import of final goods from abroad are recorded.

Key words: *procurement, industry, industrial new orders index, domestic and international markets, Croatia*

¹ Croatian Bureau of Statistics, Zagreb, Croatia, e-mail: kovaci@dzs.hr

² Croatian Bureau of Statistics, Zagreb, Croatia, e-mail: galica@dzs.hr

³ Hrvatska Radio Televizija, e-mail: sruk.boris@gmail.com

Apstrakt

U recentnim radovima mnogi autori ukazuju na potrebu uključivanja procesa nabave u sustav korporativnog planiranja te zaključuju kako odgovarajuća strategija nabave može predstavljati značajan izvor konkurentne prednosti poduzeća. U slučajevima kada je važnost kupovine određenog proizvoda i složenost tržišta ponude visoka, ključni kriteriji u strategiji nabave trebaju bitidugoročna sigurnost opskrbe i partnerski odnos s dobavljačima.

Svrha rada je analiza trendova procesa nabave hrvatskih poduzeća te usporedba s europskim trendovima. Poseban naglasak je posvećen izvorima nabave i različitim tipovima sirovina i međufaznih roba koje poduzeća nabavljaju na domaćim i međunarodnim tržištima. Autori dodatno analiziraju utjecaj procesa nabave na nacionalnu industriju. Ukoliko nove narudžbe rastu, proizvođači planiraju povećanje proizvodnje u budućnosti i suprotno. Cilj rada je analiza trendova industrije i utjecaju novih narudžbi na kretanje industrijske proizvodnje Hrvatskoj. U svrhu identifikacije potencijalne korelacije između industrijskih narudžbi i pokazatelja poslovnog ciklusa korištene su neke od standardnih statističkih metoda.

Autori su ustanovili značajne razlike u procesima i izvorima nabave u Hrvatskoj i EU te su zaključili da su glavni faktori koji objašnjavaju razlike u izvorima nabave niža razina međunarodne integracije Hrvatske te strukturne promjene u hrvatskom gospodarstvu. Promjene u strukturi nabave hrvatskih industrijskih poduzeća iz inozemstva ukazuju na stagnaciju hrvatske industrije. Makroekonomski trendovi u periodu prije recesije su bili primarno obilježeni rastućom domaćom finalnom potražnjom te je uslijed niže konkurentnosti domaćih poduzeća zabilježeno veće oslanjanje na uvoz finalnih roba iz inozemstva.

Ključne riječi: nabava, industrija, indeks industrijskih narudžbi, domaća i međunarodna tržišta, Hrvatska

1. INTRODUCTION

Period between 2000 and 2008 can be defined as successful in economic terms not only for Croatia but also in the European Union and at the global level. Growth of gross domestic product and industry production was stable, inflation was low and standard of living was growing continuously. In economic literature dealing with macroeconomic forecasting only a limited number of economists predicted that period of expansion will end in 2008. Global financial crisis which started in 2008 had a strong negative impact on the European and Croatian economy. Industrial production also recorded negative trends.

Aim of this paper is to analyse trends in procurement of Croatian firms on domestic and international markets. Special attention is devoted to analyse of procurement sources especially for intermediate products. Share of procurement on the international market is presented for European Union and Croatia and assessment in which extent are trends Croatia similar to procurement pattern in the EU. Globalisation process has impact on all business aspects including procurement strategies, especially in the case of intermediate products. Because of intensive process of vertical integration of international business, international outsourcing in procurement of intermediate inputs is becoming more and more important factor in optimising of production. Croatia as small and open economy, according to theoretical background should record trend pattern similar to new member states in

which imported intermediate products become more significant in recent period. On the other hand, unfinished process of reconstruction of Croatian industry as well as lower level of international competitiveness could explain lower level of imported intermediates in Croatian case.

The paper consists of five sections. After introduction, second section brings a brief literature review and presents theoretical background related to the procurement process in the domestic international market. The most important conclusions from recent empirical studies on procurement management process in the international market are also presented in section two. Section 3 presents empirical data on import of intermediate products in the European Union and in Croatia in order to identify the main trends and factors behind those trends. Next section presents index of industrial new orders on domestic market as most important indicator of procurement process in Croatia. Section 5 concludes.

2. PROCUREMENT PROCESS IN THE DOMESTIC AND INTERNATIONAL MARKETS

In the early 1970s purchasing and procurement process of industrial companies have been viewed as a passive part in the business organization and in more cases treated as an administrative rather than a strategic function. Farmer (1972) was one of the first authors who pointed to the need to include procurement process in corporate planning. After that, some other authors claimed that good procurement strategy is capable of being a source of competitive advantage for the business. Browning et al. (1983) proposed that purchasing can contribute to corporate strategy in four different ways: to monitor supply market, to interpret the meaning of these trends for the company, to better identify the materials and services required and to develop supply options.

The research focus in the eighties period shifted towards integration, and the means by which the procurement can work to become recognized as a more significant contributor to the company's success. In his article Kraljic (1983) classifies supply strategy types into four different categories: (a) Purchasing management, (b) Materials management, (c) Sourcing management and (d) Supply management.

According to Kraljic (1983) when the importance of purchasing (less significant inputs) and the complexity of the supply markets (homogenous product with high number of competitive suppliers) are low, the appropriate approach is purchasing management. In situation where purchasing importance is high and there is low level of complexity on the supply market appropriate strategy is materials management and the key principle is related to the cost and quality management. Sourcing management is the strategy used when the risk of supply market is high (limited number of potential suppliers) but the importance of procurement is low. The most complex case is situation in which both the importance of purchasing and the complexity of the supply markets are high which imply application of supply management. In that case the key performance criteria are long-term avail-

ability and long-term relationship with suppliers. Importance of the close relation with potential supplier is evident in the fourth case and some of risks could be eliminated by signing contracts which define quantities and prices for supply in the future periods.

In the recent period, globalisation process has impact on all business aspects including procurement strategies. According to relevant literature, there are three primary explanations for a reliance on international outsourcing to procure intermediate inputs, rather than domestic production through outsourcing or vertical integration:

- a) lower costs of foreign production;
- b) improvements in foreign institutions or international communications; and
- c) reduced costs of international transactions, which is associated with globalization or greater integration in world markets.

Lower costs of foreign production proved to be the main driver of procurement on international market both in theoretical and empirical surveys. Although in theory international trade incorporates some proportion of additional cost related to transport and some other items related to international transactions, there are some offsetting benefits in favour for international outsourcing. The main source of lower costs for goods bought on international market is lower wages and lower other production costs in other countries which results in more favourable prices for some items. Physical distance between countries is also important factor which influence overall level of mutual trade. Additionally type of goods also plays a certain role in international trade. In the case of goods with lower value added and price, a greater variety of intermediate goods are exported to physically closer countries (Feenstra and Spencer, 2005) while geographical distance is not important factor in trade with high-value products.

Regarding overall institutional framework, the quality of foreign enforcement of contracts is important factors (Antràs, 2005, Grossman and Helpman, 2005). However, factors that reduce the size of any informational disadvantage in investment from the location of a supplier in a different country from the buyer also play a role (better communication technology, networks of suppliers).

The literature identifies a variety of reasons for a reduction in the cost of international transactions and hence greater international outsourcing under (3). These include:

- Reduction in trade barriers such as tariffs which is especially important in explaining trade patterns in European Union
- New ICT technologies and reduced costs of search for international suppliers (Grossman and Helpman, 2005)
- More integrated markets due to the combining of economies (McLaren, 2000)

- Differences in factor endowments across countries and consequently differences in input prices and marginal productivity of each of individual factor (capital and labour endowment).

Division could be made between direct and indirect cross-border procurement. More specifically, cross-border procurement can take following forms:

- Direct cross-border procurement – the case when company operating from domestic market engage a foreign company to deliver specified quantity of intermediate goods;
- Indirect cross-border procurement arises when:
 - foreign company is engaged indirectly through subsidiaries located at domestic market (foreign affiliates),
 - domestic supplier (prime contractor) include foreign subcontractors,
 - foreign suppliers submit offers in consortia with local firms in order to participate in competitive procurement (wholesalers/distributors).
 - domestic firm imports goods in order to supply them to a contracting authority or entity.

According to the survey of expediencies of public procurement on European Union market (EC, 2011), the most common practice of employing foreign companies is indirect procurement through wholesalers or distributors, followed by purchases through foreign affiliates and direct cross-border procurement. The less important forms of procurement on foreign market are through consortia and subcontractors.

The same survey investigated determinants of procurement on international market. One of the most important factors is size of economy measured in terms of population. Countries with a bigger population tend to have a smaller share of direct cross-border procurement than smaller countries. The four countries with the biggest population have an average share of direct cross-border procurement of 10 times lower in comparison to the four smallest countries. This is in line with economic theory. As a general rule, large economies tend to have lower import penetration rates than smaller ones. This also becomes apparent when comparing import penetration rates among countries (Kovač and Palić, 2012).

Regarding size of supplier over 82% of total values of goods supplied directly cross-border goes to large entities, while micro, small and medium sector together comprise 18%. Survey also points to the conclusion that if a country is a member of the euro area, the chances of direct cross-border procurement are higher. This indicates that the common currency facilitates cross-border trade. If a Member State shares a language with another Member State, the chances of direct cross-border procurement are higher. This supports the assumption that language barriers also have a role in procurement process. Group of new Member State recorded lower proportion of direct cross-border procurement in total value of procurements from

abroad. An explanation for this might be that new Member States are not yet as integrated in the Single European Market as the old Member States.

Although in some other surveys overall institutional framework is also found to be significant in explaining international trade pattern, this survey found that Transparency International corruption index has no effect in procurement on international market in European Union. Additionally survey found geographical distance as important factor in procurement strategy.

While procurement on international market directly from producers gives many opportunities for increasing profitability through higher quality of goods and lower prices as main obstacles for further growth of direct import of intermediate goods from long-distant producers the following factors can be identified as important (Bröcker and Rohweder, 1990):

- Lack of experience with doing business in geographically distant areas;
- Extent of competition on domestic market;
- Legal requirements related to market entry barriers in the domestic country especially in the case of intermediate goods from non-EU countries (e.g. special permits or procedures necessary);
- Habits and preferences of domestic population.

3. PROCUREMENT OF INTERMEDIATE PRODUCTS ON THE INTERNATIONAL MARKETS - TRENDS IN THE EUROPEAN UNION AND CROATIA

Regarding procurement of intermediate products on international market, trends across countries differ with respect to their resource endowment, industrial structure and pattern of industrial specialization. Because of that, it is expected that each individual country has different importance of imported intermediate products for domestic production.

3.1 Import of intermediate products in the EU

Chen et al. (2005) concluded that international trade with intermediate goods for a group of OECD countries in general has not recorded upward trend. They pointed to the vertical specialization as main factor with positive impact on the growth of international trade with intermediates. Firms through vertical specialization import intermediates and use it in production of more complex goods which are then exported. Various empirical papers found that smaller emerging economies are more specialized in trade in intermediates as compared to other economies. In the context of European Union it can be confirmed on the example of small new member states where we can find pattern of specialization in certain product groups. International trade in intermediates at the same time helps those countries to integrate into the international market and influence speed and pattern of production specialization.

In recent period important shifts have occurred in international trade. New member states became more important trade partner for EU-15 group of the countries; while some of old members recorded decreasing market shares depending on their industrial structure and product specialization.

The patterns and effects of procurement strategies on international market have been widely covered in international trade literature. Theoretical background is based on traditional trade theory and follows the Heckscher-Ohlin model which states that the difference in relative endowments leads to a comparative advantage of the resource-abundant country and leads to the specialization in international trade. Some studies (Stehrer et al, 2011; Agnese and Ricart, 2009) found that the amount of international outsourcing has increased substantially over the last few decades although there were large country differences with respect to levels and the relative importance of procurement activities on the international market. In principle, larger countries tend to have lower share of import of intermediary. Besides county size, industrial structure is another important factor determining share of imported products for intermediate consumption because some industries in great extent depend on the imported products (for example production of oil derivatives or production of machinery in some countries heavily depends on imported oil or metal).

Globalization and technology has provided the necessary preconditions for the increasing geographic dispersion of supply chains and multinational companies operating in various countries are the key actors in the process.

Empirical survey on the trade pattern in EU points to the conclusion that more than half of international trade is oriented to the intermediate products although there are significant differences in the overall trend in various countries. Generally, the trends in trade with intermediate products is not significantly different compared to other product categories and Steher et al (2011) found a slightly increasing share of import of intermediate products over the period 1999-2008. Steher et al using Structural Decomposition Analyses (SDA) concluded that the increasing share of intermediate trades was mostly caused by change of industrial structure rather than an increase of trade in intermediates within individual industries. Old member states were recorded decreasing share, whereas the NMS-12 and BRIC countries have recorded growth of share of imported intermediates in total import.

Table 1 shows the list of BEC categories which are usually used for classification of import on intermediate or final consumption. At the 1-digit level there are seven categories classified which are broken down in primary goods and processed goods in case of the first three 1-digit product categories, Parts and accessories as a subgroup of capital goods and transport equipment goods; in this latter category also passenger motor cars are included. At the 3-digit level part of these groupings are further classified whether the products are mainly used as intermediate input of domestic producers or for household consumption.

Table 1: Classification of imported products by Broad Economic Categories (BEC)

Classification by Broad Economic Categories (BEC)	Basic classes of goods in the System of National Accounts (SNA)
1 Food and beverages	
11 Primary	
111 Mainly for industry	Intermediate
112 Mainly for household consumption	Consumption
12 Processed	
121 Mainly for industry	Intermediates
122 Mainly for household consumption	Consumption
2 Industrial supplies not elsewhere specified	
21 Primary	Intermediate
22 Processed	Intermediate
3 Fuels and lubricants	
31 Primary	Intermediate
32 Processed	
321 Motor spirit	Not classified
322 Other	Intermediate
4 Capital goods (except transport equipment), and parts and accessories thereof	
41 Capital goods (except transport equipment)	Capital
42 Parts and accessories	Intermediate
5 Transport equipment, and parts and accessories thereof	
51 Passenger motor cars	Not classified
52 Other	
521 Industrial	Capital
522 Non-industrial	Consumption
53 Parts and accessories	Intermediate
6 Consumer goods not elsewhere specified	
61 Durable	Consumption
62 Semi-durable	Consumption
63 Non-durable	Consumption
7 Goods not elsewhere specified	Not classified

Source: Miroudot, Lanz and Ragoussis (2009)

Tables 2 and 3 present trend in trade with intermediate products for the European Union. For the EU-27 the share of imported intermediate inputs is 60.4% in 2012 (Table 2) and thus this group presents the most important component of total import. Consumer goods are the second largest category, closely followed by capital goods. The share of imported intermediate inputs on average is higher in new member states (62.7%) and ranges from less than 50% in Cyprus to a maximum of more than two thirds of total import in Bulgaria. In the group of old member states (EU-15) highest share of imported intermediate products has been recorded in Italy and Spain and the lowest share in Denmark, Ireland and Luxembourg.

Importance of imported intermediates for domestic economy can be even better seen in Table 3 which presents data expressed in terms of GDP. While import of intermediate inputs averaged approximately 20% of GDP on the level of EU 27, in new member states imported intermediates averaged more than one third of gross domestic product. Value of imported intermediates in GDP is highest in small open economies which become strongly integrated in international production systems through process of vertical integration. General conclusion is that openness, international competitiveness and country sizes are main factors explaining proportion of import of intermediate products in GDP. As a result of economic globalizati-

on this indicator recorded significant increase in analysed period for majority of countries. In recent period additional factor in explaining growth of the share of intermediate inputs in total import is price increase for some important intermediate products as energy and metals.

Table 2: Share of intermediate products in total imports of goods

	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Austria	54,5	53,0	53,2	56,9	59,0	57,3	57,9	54,6	57,7	59,4	58,4
Belgium	57,4	56,0	56,6	59,0	61,2	60,5	60,8	57,1	61,1	64,5	65,0
Bulgaria	45,9	48,1	48,4	54,7	56,5	63,5	63,3	61,2	65,4	67,6	67,7
Cyprus	41,2	40,5	40,8	41,1	43,1	43,7	46,3	42,2	43,8	47,2	49,7
Czech rep.	62,4	62,4	60,4	64,1	65,5	61,9	62,7	60,6	63,6	63,5	63,8
Germany	54,5	54,3	55,5	57,6	59,4	59,7	61,7	57,1	59,2	61,4	61,1
Denmark	46,0	47,3	46,7	46,6	48,2	47,8	49,5	45,2	46,9	48,9	48,3
Estonia	53,8	52,5	54,2	53,6	49,1	49,6	52,2	52,1	55,6	56,8	55,3
Spain	56,4	55,6	54,9	55,1	57,6	58,3	61,7	57,5	59,7	63,0	64,6
Finland	57,9	56,3	57,3	57,8	60,8	60,0	60,1	57,3	61,5	63,4	61,7
France	51,7	51,1	52,2	54,2	55,9	55,7	57,0	52,5	54,9	56,8	56,8
UK	43,6	45,1	45,9	45,2	43,8	49,6	52,7	51,3	52,0	56,1	56,7
Greece	48,5	45,1	45,1	49,1	50,6	49,4	51,6	44,3	51,7	58,2	63,1
Hungary	62,8	60,6	61,7	62,2	63,9	62,5	63,0	60,9	64,5	65,9	63,7
Ireland	52,1	47,7	47,7	46,4	48,1	42,6	44,9	41,0	43,5	46,9	46,9
Italy	53,4	52,3	57,0	58,7	61,4	61,3	63,0	57,7	62,0	64,0	65,2
Lithuania	54,1	55,0	57,7	60,5	57,8	53,7	60,2	60,5	63,9	64,1	64,3
Luxemb.	43,4	43,3	44,7	42,6	41,6	44,4	45,9	40,2	48,3	52,0	48,6
Latvia	47,7	48,7	49,0	49,4	45,9	45,9	48,7	48,6	50,1	50,9	50,8
Malta	64,5	64,3	60,3	59,3	59,0	57,4	58,0	51,3	54,3	58,1	58,9
Netherl.	53,1	52,3	54,0	55,9	58,7	57,3	57,2	52,2	55,7	59,6	60,0
Poland	58,8	60,1	61,6	63,3	62,6	60,0	59,2	57,3	59,6	61,6	61,4
Portugal	56,1	56,7	56,1	57,0	57,5	56,2	57,5	52,5	54,9	60,8	62,9
Romania	65,3	64,6	63,0	62,0	61,0	57,7	58,7	60,5	63,4	65,2	65,4
Sweden	53,6	53,8	55,0	56,3	56,6	56,8	58,5	52,9	55,7	56,3	55,6
Slovenia	60,3	59,1	59,8	61,7	61,5	58,4	58,1	56,3	60,6	62,5	63,1
Slovakia	65,8	67,7	66,6	64,9	64,0	66,5	65,7	62,7	66,1	64,9	62,9
NMS	60,2	60,3	60,4	61,8	61,8	60,1	60,6	59,0	62,1	63,1	62,7
EU15	52,3	51,9	53,2	54,6	56,1	56,8	58,5	54,2	57,0	59,9	60,1
EU27	52,9	52,7	53,9	55,3	56,7	57,1	58,7	54,8	57,6	60,3	60,4

Source: Eurostat database, authors' calculation.

Table 3: Share of imports of intermediate products in GDP

	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Austria	20,5	20,7	21,9	23,7	24,9	24,9	25,7	20,3	24,2	27,2	26,2
Belgium	44,8	42,1	44,6	49,8	53,8	54,1	55,6	42,4	50,6	58,5	58,7
Bulgaria	22,7	25,1	27,6	29,4	32,9	45,1	44,8	29,6	34,9	41,1	43,5
Cyprus	14,5	12,4	14,3	15,4	16,2	17,3	19,5	14,1	16,3	16,4	15,8
Czech rep.	32,2	33,8	37,0	37,6	41,1	40,4	39,2	32,1	40,4	44,4	45,7
Germany	13,2	13,5	14,5	16,2	18,5	18,9	20,1	16,0	18,9	21,3	21,0
Denmark	13,3	12,7	13,0	13,7	15,0	15,0	15,7	12,1	12,4	14,0	14,4
Estonia	35,1	34,4	37,5	39,4	39,3	35,3	35,0	27,5	36,0	45,1	44,8
Spain	13,5	13,1	13,5	14,1	15,3	15,7	16,2	11,5	14,0	16,0	16,0
Finland	14,6	14,5	15,5	17,3	20,3	19,9	20,2	14,5	17,8	20,3	18,8
France	11,7	11,3	11,9	12,8	13,4	13,6	14,4	11,2	13,1	14,7	14,7
UK	9,9	9,7	9,8	10,1	10,7	11,2	13,0	12,1	13,6	15,5	15,8
Greece	10,3	10,4	10,3	11,1	12,3	12,7	13,9	9,5	11,2	12,2	15,2
Hungary	35,6	34,6	36,5	37,5	44,5	43,9	44,2	37,2	44,4	48,6	48,3
Ireland	22,1	16,1	15,8	15,7	15,8	13,8	14,3	11,4	12,6	14,1	14,0
Italy	10,7	10,2	11,6	12,6	14,5	14,7	15,3	11,3	14,7	16,3	15,7
Lithuania	28,4	28,3	31,5	36,1	37,0	33,3	39,3	29,8	40,9	47,5	49,2
Luxembour.	24,2	24,0	26,2	24,8	26,0	24,2	26,8	20,3	22,9	25,7	23,7
Latvia	20,8	22,7	25,1	26,7	26,4	24,4	23,4	18,5	24,5	29,5	30,2
Malta	38,8	39,5	37,8	35,6	38,9	36,1	35,0	27,6	32,8	40,1	41,8
Netherlands	26,5	25,6	28,3	31,9	36,1	36,0	38,0	28,9	36,9	42,6	45,9
Poland	16,4	18,9	21,8	21,2	23,3	23,3	23,2	19,8	22,6	25,2	24,6
Portugal	16,9	16,5	16,6	18,2	20,1	19,9	21,5	16,0	18,6	21,0	21,4
Romania	25,4	26,0	27,1	25,3	25,4	23,7	24,0	19,9	23,9	27,3	27,1
Sweden	14,2	14,2	15,2	17,0	18,1	18,8	20,1	15,6	17,9	18,5	17,2
Slovenia	28,4	28,0	31,4	35,1	38,1	38,8	39,3	30,1	38,6	44,1	44,3
Slovakia	44,4	45,7	47,1	47,0	51,5	53,7	51,2	39,8	49,3	53,9	53,5
Nms	25,3	27,0	29,6	29,6	32,3	32,1	31,9	26,2	31,5	35,2	35,1
Eu-15	14,0	13,7	14,5	15,7	17,3	17,6	18,9	14,8	17,7	20,1	20,1
Eu-27	14,6	14,4	15,3	16,6	18,3	18,6	19,9	15,7	18,8	21,3	21,3

Source: Eurostat database, authors' calculation.

3.2 Import of intermediate products in Croatia

In the continuation of the paper, trends in import of intermediate goods in Croatia are presented. Based on available data sources, paper is investigating whether trends are similar to EU pattern and explaining the difference in the speed and intensity of international integration of Croatian companies. Regarding the theoretical background and empirical data for other EU countries, one should expect that import of intermediates in Croatian case become more significant in recent period. Factors behind those expectations are the following:

- Croatia is small and open economy and similarly to new member states should be more integrated in international (especially EU) market through process of vertical integration of production;
- Openness for foreign direct investment imply higher share of intermediate inputs from abroad because multinational companies is optimizing production process on the global level and usually has more international oriented procurement process;
- Natural resources especially in some raw materials (metal, energy inputs etc.) are limited and further economic growth imply higher reliance on those inputs from abroad;
- Unfinished process of consolidation of Croatian industry and lack of international competitiveness influence lower level of integration of domestic producers and higher level of import dependence;
- Orientation to labour activities in some industries in which domestic producers usually only deliver labour inputs while procurement and overall organization of the business is duty of partner from abroad;
- Some important Croatian companies with well-established domestic procurement channel exit from the market because of lack of competitiveness.

On the other hand, structural changes in Croatian economy (higher share of service sector, especially trade and tourism and lower share of manufacturing industry) should be barriers to further international integration through import and processing of intermediate products. Additionally, macroeconomic trends in pre-recession period were primarily marked by growing domestic final demand and because of lower level of the overall competitiveness of domestic firms one should expect higher reliance on import of finished than intermediate inputs from abroad.

Table 4 presents structure of imports in Croatia for 2002-2011 period. Total import increased by 43.7 percentage point in the analysed period. Both components of import (final and intermediate products) recorded similar pattern: relatively high growth in pre-recession period prior to 2008 and substantial drop during the recession. Continuation of recession and weak domestic demand in Croatia are factors behind slow recovery of imports which is in opposition to trends in EU where international trade recorded more rapid recovery. As table presents, imports of intermediate goods recorded only slightly higher cumulative growth in comparison to imports of final product. According to experience of European economies, especially new member states, a higher growth of imports of intermediate products was expected.

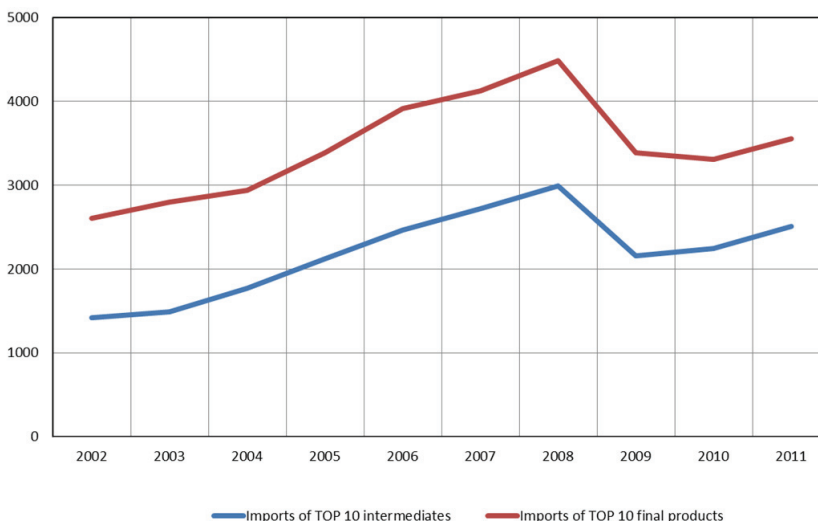
Indicator of import concentration, measured as share of top ten products in imports, is higher for the group of final than intermediate products. Ten products with highest value on the imports of final products on average recorded almost half of total imports of final products. The biggest share in imports of final product recorded group of energy products in the whole analysed period, followed by cars and other transport equipment and medical products. Imports of intermediate

products were much more heterogenous and top ten products comprised about 30% of imports of intermediate products. Group of various energy products has recorded the highest share again, followed by aluminium, paper products and iron and steel products. After energy products which value doubled in analysed period due to increase in prices, highest growth in group of final products was recorded for medicaments and cereal preparations while in the group of intermediate products the highest growth was recorded for energy, aluminium and electrical apparatus.

Imports of intermediate products, measured in percentage of total imports, slightly increased in analysed period and it's under the EU-27 average (see table 2). Imports of energy in period 2002-2011 have recorded increase of share primarily because of growth of energy prices. Imports of other intermediate products (less energy) decreased in the observed period. Factor behind this trend is stagnation of industrial production in Croatia. The same trends can be recognized in data expressed in percentage of GDP. As can be seen from the table 5, imports of intermediate products in terms of GDP are significantly lower in Croatia in comparison to EU countries. It is primarily consequence of lower level of international integration of Croatian economy and structural changes. Service sector, which is more important in Croatia, in general has lower share of intermediate consumption and multiplicative effects on rest of the economy and international trade is limited.

Graph 1 presents the explained trends. Similar pattern of trends in imports of final products and intermediates can be identified.

Graph 1: Imports of TOP 10 final products and intermediates in Croatia, 2002-2011. (mil. EUR)



Source: Croatian Bureau of statistics, Eurostat database

4. INDUSTRIAL NEW ORDERS IN CROATIA AS THE MOST IMPORTANT INDICATOR OF PROCUREMENT ON THE DOMESTIC MARKET

In this part of the paper, trends in industrial new orders in Croatia are presented. Additionally an analysis of correlation between industrial new orders and volume of industrial production is empirically tested. According to the theoretical background, variable potential to predict future industrial trend should have following statistical properties: smoothness and consistency in business cycle.

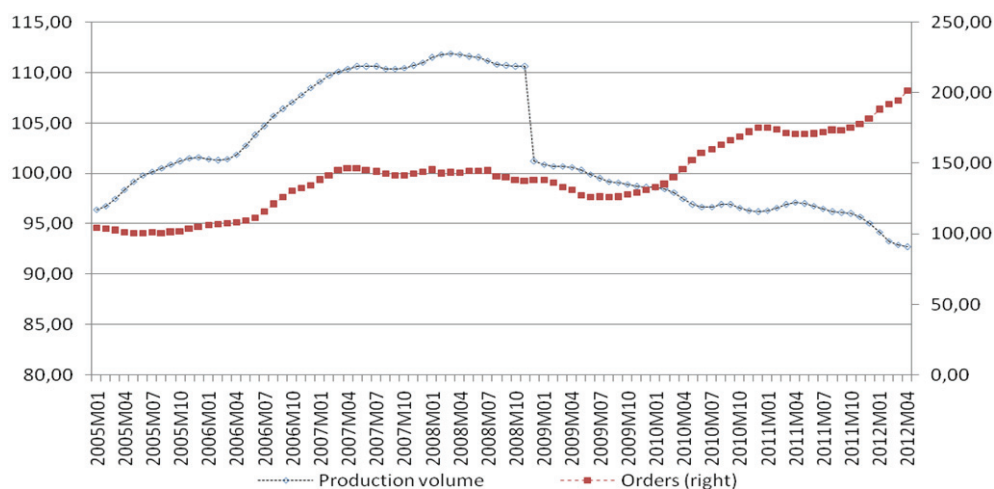
Croatian Bureau of Statistics from 2005 introduced statistical survey on new orders in industry in accordance to Eurostat methodology. The total value of an industrial new orders received is the value as provided in a contract/agreement between a industrial local units/producer and ordered/third party on domestic or non-domestic market that are considered new, that is, received in a reference month for a future production of industrial products and services (for own account or for third party/subcontracting). Data are available in terms of indices expressed on the corresponding period of the previous year and on previous period derived from seasonally adjusted data. New orders data also comprise indices for individual sub-groups. Data are also available for domestic market and orders from abroad.

As can be seen variation in new industrial orders are more volatile in comparison to volume of production in all groups. While index of production in manufacturing industry in analysed period recorded one-digit range for all quarters, new orders in some periods recorded growth/decline for almost 50 percentage points compared to previous quarter. For some sub-groups variation is even more pronounced and one can conclude that new orders series are not smooth enough to be reliable in predicting future movements in industrial production.

Graph 2 presents monthly trend-cycle data on volume of total manufacturing production and total new orders in industry, both expressed in terms of indices (2005=100). Since new orders are valued at current prices, data presented by graph 1 are deflated by index of producer prices in industry. Even graphical analyses without implementation of advanced statistical techniques points to the conclusion that new orders index is not suitable for forecasting future trends of production in manufacturing industry. In the period prior to global crisis both indices were recording similar trend and orders could be treated as coincident not the leading indicator of industrial production. Industrial new orders reached minimum value in the half of 2009 and after that presents more or less continues growth which is totally opposite to trends in volume of manufacturing industry which recorded negative growth rates almost constantly until now. Since 2009 there was only two short episodes (summer 2010 and spring 2011) in which industry recorded growth compared to previous period (in terms of trend cycle).

Authors' findings are more or less in accordance with conclusions of European economists (EC, 2011) who tested various indicators used in production of European Business Cycle Indicators and concluded that survey data on orders' developments are relatively closely correlated with new orders hard statistics, although their results show that the fit is not fully satisfactory. This suggests that the survey series may actually reflect something more than just the new orders dynamics. The industrial new orders variables introduced by Regulation (EC) No 1165/98 were intended to serve as a leading indicator of future production. However, the predictive capacity of these variables has proven to be limited. Therefore the European Statistical System Committee agreed that the data collection of the industrial new orders variables should be stopped in the context of prioritisation in the development and production of statistics in the light of reduced resources and with the objective of reducing the burden on the European Statistical System.

Graph 2: Volume of total manufacturing industry and new orders in Croatia in period 2005 - 2011 (trend cycle data)



Source: Eurostat database.

In the continuation of the paper we graphically present correlation between sub-components of total industry volume and corresponding index of new orders. As can be seen for all groups one can conclude that in prerecession period orders and volume of production have coincident trend while in principle indicators of new orders were above index of production volume and in some cases indicated false sign of potential industrial recovery.

5. CONCLUSION

In the theoretical and empirical literature a variety of reasons for a greater international outsourcing are identified. Among other factors the most significant are reduction in trade, new ICT technologies and reduced costs of search for international suppliers, more integrated markets and differences in factor endowments across countries. Those factors were dominant in higher reliance on international market and declining share of domestic inputs in procurement of Croatian firms in the prerecession period. The surveys which investigated determinants of procurement on international markets concluded that the most important factors of procurement on international markets are size of economy, openness, economic structure and level of international integration.

Procurement strategy of the firm is very important in explaining trends of industrial new orders. In the situations in which both the importance of purchasing process for the company and the complexity of the supply markets are high a proper supply management should be used. In that case, besides high quality and reasonable prices of intermediate inputs, the key performance criteria are long-term availability and long-term relationship with suppliers. Importance of the close relation with potential supplier is evident in that case and some of risks could be eliminated by signing long-term contracts which define quantities and prices for supply in the future periods. Higher level of supply management used in procurement strategies of the firms implies higher level of new orders.

For the EU-27 the share of imported intermediate inputs average approximately 60% of total imports presenting the most important component international trade. The share of imported intermediate inputs on average is higher in new member states which are in accordance to economic theory which states that small and open economies should be more integrated in vertical production processes on the international level. Importance of imported intermediates for domestic economy can be even better explained when expressed in terms of GDP. While imports of intermediate inputs averaged approximately 20% of GDP on the level of EU-27, in new member states imported intermediates averaged more than one third of gross domestic product.

Although some of before mentioned factors positively influenced on the level of imported intermediate goods in Croatia, those trends are less pronounced than in group of new member states. In prerecession period share of imported intermediate goods were recording continuous growth, but trend reversed in 2009 when recession started. Cumulatively, in period 2002-2011 share of intermediate products in total imports has recorded only limited growth. Regarding procurement on domestic market it is evident that index of new orders recorded decrease only in the 2009 when recession negatively impacted overall economic development. After that period, index of industrial new orders on domestic market were growing while industrial activities decreased.

The main factors explaining differences of trends in procurement sources in Croatia in comparison to trends in EU are lower level of international integration and structural changes in Croatian economy. Changes in the structure of procurement of Croatian industrial firms from abroad, indicate the stagnation of Croatian industry. Macroeconomic trends in prerecession period were primarily marked by growing domestic final demand and because of lower level of the overall competitiveness of domestic companies, higher reliance on import of final goods from abroad are recorded.

BIBLIOGRAPHY

Agnese, P. and J.E. Ricart (2009). Offshoring: Facts and numbers at the country level, CBS Working Paper, WP-792.

Bröcker, J. and Rohweder H.C. (1990). Barriers to international trade: Methods of measurement and empirical evidence, *The Annals of Regional Science*, 24(4), 289-305

Browning, J.M, Zahriskie, N.B. and A.B. Huellmantel (1983). Strategic purchasing planning, *Journal of Purchasing and Materials Management*, 19-24.

Chen, H., Kondratowicz M. and K.-M. Yi (2005). Vertical specialization and three facts about U.S. international trade, *The North American Journal of Economics and Finance*, Vol. 15, 35-99.

European Commission (2011). Public procurement in Europe - Cost and effectiveness, A study on procurement regulation. Prepared for the EC, March 2011.

Farmer S.H. (1972). The impact of supply markets on corporate planning. *Long Range Planning*, 10- 16.

Grossman, G.M. and Helpman E. (2005). Outsourcing in a Global Economy, *Review of Economic Studies*, No. 72 (1), 135-160.

Hadeler, B.J. and Evans, J.R. (1994). Supply strategy: Capturing the value, *Industrial Management*, 3-4.

Kovač, I. and Palić, M. (2012). The analysis of the international trade and specialisation of the Croatian counties, *International Journal of Business and Globalisation*, Vol. 9, No. 4, Inderscience Publishers, 383-411.

Kraljic, P. (1983). Purchasing must become supply management. *Harvard Business Review*, Sept. 1983.

McLaren, J. (2000). Globalization and Vertical Structure, *American Economic Review*, No. 90, 1239-1254.

Miroudot S., Rainer L. and Alexandros Ragoussis (2009). Trade in Intermediate Goods and Services, OECD Trade Policy Papers 93, OECD Publishing.

Stehrer R., Ali-Yrkkö J., Hanzl-Weiss D., Foster N., Rouvinen P., Seppälä T. Stöllinger R. and Ylä-Anttila P. (2011). Trade in Intermediate Products and EU Manufacturing Supply Chains, WIIW Research report No. 369, February 2011.

Spencer, B.J. (2005). International Outsourcing and Incomplete Contracts, *Canadian Journal of Economics*, 2005, No. 38(4), 1107-1135.

Data sources

Eurostat database: <http://ec.europa.eu/eurostat>, CBS: www.dzs.hr