A FEW WORDS ABOUT THE AUTOMOTIVE INDUSTRY IN ROMANIA AND IN EUROPE

GABRIEL SANDA,
ASSOCIATE PROFESSORS, FACULTY OF ECONOMICS,"CONSTANTIN BRÂNCUŞI" UNIVERSITY
e-mail: diforom@yahoo.ro

Abstract

This paper aims to assess the position of the Romanian automotive sector in intermediate and final production stages along global value chains. The inter-sectorial linkages are split into domestic and foreign use in order to distinguish between national and external demand for intermediate products. In order to emphasise intra and inter-industry linkages of the Romanian automobile industry, the consumption of transport equipment products as intermediate products is then analysed at the sector level (foreign and domestic), highlighting the main countries and sectors using these products as inputs. Although it remains crucially dependent on the timing and accuracy of GVC databases, this analysis brings the competitiveness debate into new territories.

Keywords: global value chains, automotive industry, vertical specialization, Romania

Classification JEL: *L6, L60, L62.*

1. Introduction

With a declining share in exports from 8.47% in 1989 to less than 2% in 2000[1], the automotive sector seemed a lost bet on the ambitious plan of the communist regime to nurture a competitive domestic industry, including not only cars, but also tractors and trucks. A botched investment by Daewoo Corp. in Automobile Craiova car factory in 1994, unprofitable operations at two other stars of the command economy era, SUV-maker Aro Campulung and personal car producer Dacia in Mioveni, were but a vivid reminder of the merciless market forces in open competition. Yet, two successive foreign direct investments, by Renault group in Dacia in 1999 and Ford Motor Co. in Automobile in 2008, changed dramatically the fate of the industry. Today, automotive products account for 11% of GDP and 24% of exports (Druta, 2014) and have become the driving force behind Romania's integration in the global networks of production and trade.

It would come naturally to any research agenda to investigate the potential Romania's automotive industry enjoys now to benefit for "moving up the value chain". This analytical framework has attracted increased interest of recent research and for good reason global businesses are riding an extremely auspicious wave of globalisation with intermediate goods and services incorporated at various stages in the production process representing around 60% of the world trade (World Investment Report, 2013). The automotive industry makes no exception; it is actually considered one of the most fragmented industries and so with the lengthiest value chains due to the fact that its parts and components can be easily manufactured separately and assembled in final products in factories spread worldwide according to the optimal conditions of cost efficiency and location advantages. The industry ranks first by ratio of foreign value added in exports with a share of 30% to 60% (WIR, pp. 127-129).

Without doubt, this sheer statistics suggests an ample scope for searches to find new determinants for upgrading competitive advantages across integrated stages of production. However, the objective of this paper is to remain at an intermediary analytical stage and take on a rather modest task: to give an account of the demand for Romanian automotive products within global value chains (GVC).

The approach attempts to contribute to current analyses that look either at countries' position or industry position at the global level, but rarely enlarge the view with a sectoral outlook at the national level (for example, The European Commission 2009). Accordingly, the paper aims to estimate the contribution of the Romanian automotive sector to the final production in national and foreign sectors, that is, the extent to which exports of transport equipment from Romania are used by the rest of the world, by which countries and in which industry.

2. The place of the automotive industry in Romania

The automotive industry is exceptionally placed among those to take advantage of the opportunities of vertically integrated production. First, the sector is an important growth multiplier due to its strong inter-sectoral linkages with industries such as electronics, mechanical and electrical engineering, information technology, steel, chemicals, plastics, metals and rubber. Worldwide, transport equipment industry ranks second (after the communications equipment industry) in terms of length of the value added chain reflecting the development of significant global supply networks (OECD, 2012). Currently, the component suppliers' contribution to the automotive value chain accounts for about three quarters of the content of a vehicle (The Centre for Automotive Research, 2014).

Second, the sector has a particularly important cross-border influence. At the European level, suppliers, manufacturers, and downstream services create a network of mutual interest involving all member states. Within the EU, there are 250 production lines spread between 16 Member States, but each member state is involved in the production supply chain and in the sales chain. Generally, there are about 50 components suppliers for a car spread all over Europe and about 75% of the added value of a new car is generated by these suppliers (The European Commission, 2009). The distribution of value added in the automotive industry between the EU states (in 2006 figures) places Germany as responsible for a substantial share of the total value added generated by the automotive industry in the EU (47%); France ranks second (14%), while the UK is the third largest contributor, with approximately 9% of the EU total.

In Romania, the sector is represented by two final producers (Renault and Ford) and a range of international first-tier suppliers (e.g. Continental, Michelin, Auto Chassis International - auto bridges; Valeo - wiring and air-conditioning; Johnson Controls - chairs; Cortubi - exhaust system; Euro APS - thermoformed plastic parts; Delphi, Yazaki, Leoni, Lear). Their outputs are not sold only on the domestic market, but also to international costumers, making Romania part of the GVC. At the same time, local companies (e.g. Topoloveni Auto Parts, Componente Auto Pitesti, Ronera Rubber Pitesti etc.) have managed to penetrate the GVC developing their own products and selling them internationally. Moreover, the strong integration of the Romanian automobile industry is revealed by the fact that "there is literally no car producer in Europe that does not use parts produced in Romania, in other words the assembly lines in Europe are supported by deliveries from Romania" (Dobreanu, 2014, p. 86).

Against this background, this paper attempts to produce the first estimates about Romania's automotive industry position in GVC. We limit our discussion to a status check that says less than an investigation into the industry's competitive potential, but may nevertheless contribute to a current assessment of this sector, in particular of the demand for its products which has become increasingly important for both Romania's and the EU's economies.

Romania's exports of 57 billion euros (January-December 2016) are largely based on the local auto industry. With two assembly plants, Dacia and Ford, and hundreds of small factories scattered in Romania, it is no wonder that the automotive industry is largely accountable for Romania's exports abroad. But also imports, because other components come from outside, some from the branches of local businesses, and then assemble into parts of more complex cars.

According to statistical data, disseminated at 11 months 2016 (latest available), the most sold Romanian export product is "Auto Parts". This is the INS nomenclature for an intraga range of small components for cars, which were sold at 5.3 billion euros, the first place in Romania's top 10 export products. In second place, we find the exported 3.57 billion euros car wiring, and third place Dacia and Ford vehicles as a finished product, which cost 2.71 billion euros.

According to current data, the global market of automotive parts will increase from Euro 406 billion in 2010 to Euro 664 billion in 2025. Romania has more than 600 companies involved in the automotive industry, with 203,600 employees. The cost of labour in the local manufacturing industry is Euro 4.9/hour. 158 international suppliers of auto parts own production facilities in our country, with some of them also involved in research and development.

The current relative competitive advantages of the labour and utilities costs will gradually dwindle in the future, so that new investments and capacity developments will be aimed at new products competitive global technologies with high added value. The evolution of the Romanian automotive component industry is obviously influenced by the inter- national auto industry trends.

3. International trends of the automotive industry

Globally, innovation-based manufacturers of auto parts are considered more lucrative than companies specializing on limited number of technologies. This is because component innovation allows the multiple use thereof for assemblies. Moreover, innovation allows the streamlining of manufacturing and adaptation to new market requirements, as well as control over the upstream value adding chains and hence on costs.

On the medium term, the international automotive industry which bears on the local parts manufacturing will prioritize the following:

- Focus on environment and safety;
- Optimum positioning on the future integrated mobility matrix;
- Overhaul of model ranges according to new demand data;
- Strengthening of CDI for competitiveness on global markets;
- Focusing of major investments on new products and technologies;
- Sharing of risks through alliances and brand reinforcement;
- Partnerships for product design and cost minimization over the supply chain, stepping up of outsourcing;
- Auto industry-wide implementation of new concepts such as numerical plant", "Smart automation", "Industry 4.0";
- New business solutions and new sources of profits.

4. Technological developments in the Romanian automotive industry

The Romanian automotive industry is more than assembling cars. Despite increases of investments in auto parts industry, they are still far from reaching full potential. New investments have emerged lately, such as:

- The manufacturing of cutting edge energy-efficient engines at Dacia and Ford Craiova;
- Manufacturing of cutting edge gearboxes for large international manufacturers: Daimler-at Star Transmission Sebe[/Cugir and the Renault Nissan alliance at Dacia;
- Advanced microelectronics and mechatronics (including CD activities): Continental, Bosch, Infineon, Delphi, Dräxlmaier, Kendrion;
- Complex technologies and auto parts of plastics, rubber and composite materials: many new companies in Banat, Transylvania, Arges;

- Expansion of robotics: Dacia starts a program to extend automation from 5% to 20% by 2020;
- Emergence of new local companies specializing in the "digitalization" of the automotive industry: Magic Engineering, Caelynx/Dassault, ADA Computers/Siemens, AS Systems, INAS, etc.

According to the Romanian Automotive Manufacturers of Romania (ACAROM), the evolution of Romanian automotive industry will also be directly influenced by the development lines of the two large automotive manufacturers - Dacia and Ford, by the introduction of new concepts and manufacturing technologies, the ever growing interest for research and development (CDI), and the access of auto manufacturers to funding.

5. The automotive industry in Europe

The automotive industry is crucial for Europe's prosperity. The sector provides jobs for 12 million people and accounts for 4% of the EU's GDP. The EU is among the world's biggest producers of motor vehicles and the sector represents the largest private investor in research and development (R&D). To strengthen the competitiveness of the EU automotive industry and preserve its global technological leadership, the European Commission supports global technological harmonisation and provides funding for R&D.

- **Links to other sectors** – the automotive industry has an important multiplier effect in the economy. It is important for upstream industries such as steel, chemicals, and textiles, as well as downstream industries such as ICT, repair, and mobility services;
- **Employment** - around 12 million people work in the EU automotive sector. Manufacturing accounts for 3 million jobs, sales and maintenance for 4.3 million, and transport for 4.8 million;
- **Economy** - the automotive sector accounts for 4% of European GDP.

80% of the growth in the sector is expected to occur outside the EU. The EU's efforts should focus on concluding and enforcing preferential trade and investment agreements. These will make it easier for European companies to access third markets and continue benefiting from economies of scale.

Automotive manufacturing is one of Europe's most enduring industrial activities, and it accounts for millions of jobs, billions of euros in investment, and represents a large portion of the continent's exports.

Keeping track of the extent of the automotive industry's activities, by providing regular and up-to-date statistics is a key part of ACEA's mission. Accordingly, in this section you will find data on global and European production, monthly registration figures for Europe, figures for employment and much more.

- Europe's cars, vans, trucks and buses are the cleanest, safest and quietest in the world.
- Europe leads the way in clean production, with decreasing quantities of water and energy used to manufacture a vehicle, and much less CO2 and waste produced in the process.
- Cars and buses provide freedom and mobility for all, providing us with direct access to education, health and employment.
- Trucks and vans deliver the goods and services we take for granted in our daily lives, carrying 75% of freight transported over land and delivering 14 billion tonnes of goods per year.
- Many of our essential public services - such as postal, waste and emergency services - are delivered by cars, trucks and vans.
- The turnover generated by the automotive sector represents 6.8% of EU GDP.
- The automobile industry has ripple effects throughout the economy, supporting a vast supply chain and generating an array of business services.
- 12.6 million people - or 5.7% of the EU workforce - are employed in the sector.
- The 3.3 million jobs in automotive manufacturing represent almost 11% of EU manufacturing employment.

- Vehicle manufacturing is a strategic industry in the EU, where 19.2 million cars, vans, trucks and buses are manufactured per year.
- Automobile manufacturers operate some 302 vehicle assembly and production plants in 26 countries across Europe.
- The European auto industry is a global player, delivering quality 'Made in Europe' products around the world, and bringing in a €90 billion trade surplus.
- Motor vehicles account for almost €396 billion in tax contributions in just 15 EU countries.
- The auto industry is the largest private investor in R&D in Europe, with more than €50 billion invested annually. In 2016, about 8,000 patents were granted to the automotive sector by the EPO.

Eu policies in automotive industry

The European Union has still not returned to calm waters after the heavy storm of the global financial and economic crisis. On the contrary: in addition to the smoldering euro crisis, other tough tests of endurance have arisen for the EU in the form of the immense influx of refugees and the British vote to exit the EU. At the same time, the economic conditions in many EU countries remain difficult: despite economic recovery, the effects of the crisis are still pervasive in many regions. The unemployment rate in nearly all EU countries is above the comparable value from 2008, and in Greece and Spain it even exceeds 20 percent. Especially in southern European countries, additional painful consolidation steps are needed – toward flexible labor markets, leaner government agencies and sound social insurance systems.

Initial successes of reforms were already measurable, especially in Portugal and Spain. However, just as in Greece, the governments that stood for reforms were voted out here. In their place, left-populist parties that advocate ending reforms and raising state expenditures gained traction. This means that standstill or even setbacks are threatened for consolidation, especially in countries whose problems are structural in nature. Most EU countries, however, do not have the money for state economic stimulus programs: 16 of 28 EU states had sovereign debts in 2015 in excess of the Maastricht limit of 60 percent of GDP.

Fragile political conditions, paired with inflexible basic conditions, are an enormous stumbling block for private investment. As a result, virtually no progress is evident toward the goal of increasing the industrial proportion of added value in Europe to 20 percent.

Increases in European competitiveness should therefore be at the top of the agenda in Brussels. In the face of political trouble spots, however, Europe's unsolved economic problems have moved into the background. Instead the wave of immigrants is becoming a tough trial for the European Community. On one hand, Germany and a few other countries cannot bear the load alone. The ability of the economy and industry to integrate is also limited. On the other hand, numerous states feel that their national security is being threatened and react with restrictive asylum and immigration policies. This due in no little part to increasing Islamist terror attacks. In eastern and southern European countries, Russia's aggression against the Ukraine is also perceived as a new threat. In this situation, right-wing populist parties are gaining support in a majority of EU member states, further reducing the ability of their governments to take action.

The voices in the United Kingdom that are critical of the EU are louder than ever. The decision of the majority of voters in favor of Brexit is critically important. The departure of the United Kingdom from the EU will have serious consequences, including for the German automotive industry. Around one-fifth of all passenger car exports from Germany go to the United Kingdom. In 2015, there were 810,000 vehicles. Measured by export value, the United Kingdom is Germany's second most important trading partner after the USA. It is important now to find ways for the EU and the UK to remain closely linked, both politically and economically.

As a whole, the centrifugal forces acting on the EU have increased significantly. The large number of hot spots has bound up the capacity of European institutions. Tight finances and diverging national viewpoints significantly reduce latitude for action. As a result, sustained

development toward a political union has stalled and economic policy is receiving insufficient attention. Growth and jobs without new debt – this remains the stated theme of the EU Commission. The core project is the European investment plan with the European Fund for Strategic Investments (EFSI), which plans to push a total investment volume of 315 billion euros in upcoming years. Based on initial experience, however, the windfall gains are high. To date it is not evident that any truly new projects have actually been initiated using fund financing.

The EU Commission also expects important growth stimulation from further consolidation of the domestic market – for goods, services, energy, capital and digitalization. Uniform European rules are expected to reduce costs. Of particular importance to the German automotive industry is the creation of a digital domestic market. It is absolutely necessary that modern legal frameworks and standards be developed in order to advance the potential of automated and networked driving in Europe. If Europe tackles this challenge decisively, it can capture the title of innovation leadership.

6. Conclusion

The automotive sector is highly integrated in the global value chain and supplies most major automotive producers with intermediate inputs for final or intermediate use. In terms of countries purchasing Romanian transport equipment products, Germany, France and Russia are top consumers and income generators. A concentration of the consumption (87%) can be observed in the first ten economies that use transport equipment originating in Romania as intermediate products, making the sector liable to external shocks.

At disaggregate level, the sector provides inputs for all sectors, but most of supplies flow unsurprisingly within intra-industry networks both domestically and within the global supply chain (with 26 of the 40 economies and over 60% of the foreign consumption).

Targeting the automotive industry is especially important for its new role in Romania's economy and exports, and increasingly so in the EU productive networks. Within the limits of this research, we opened a fresh albeit tiny part of the Romanian automotive industry's global value chain. To round off the discussion, further analyses should add findings on the industry's foreign content and thus on the actual level of value-added created in the domestic market.

BIBLOGRAPHY

1. Baldwin, R. and Lopez-Gonzalez J. (2013), Supply-chain Trade: A Portrait of Global Patterns and Several Testable Hypotheses, CEPR Discussion Paper Series, No. 9421, April.
2. Baldwin, R. and A.J. Venables. (2013), Spiders and Snakes: Offshoring and Agglomeration in the Global Economy, Journal of International Economics, Vol. 90, Issue. 2, pp. 245 -54.
3. Comisia Europeană (2009), Raportul de competitivitate, retrieved from http://bookshop.europa.eu/en/european-competitiveness-report-2009-pbNBAK 09001/, De Backer, K. and Miroudot, S. (2012), Mapping global value chains, Final WIOD Conference: Causes and Consequences of Globalization, Groningen, The Netherlands, April 24-26, retreived from http://www.wiod.org/conferences/ groningen/Paper_DeBacker_Miroudot.pdf.
4. Dobreanu, C. (2014), The German model, Forbes Magazine, no. 125, 13 June, p. 86.
5. Druta, G. (2014), Argumente in favoarea cooperarilor intre furnizorii de componente auto si sectorul automotive din România, mimeo, Acarom, 22.5.
6. Maurer, A. and Degain, C. (2010), Globalization and trade flows: what you see is not what you get!, WTO Staff Working Paper, No ERSD 12.
7. Negrea, A. P. and Cojanu, V. (2013), Where do we really stand? Romania's export performance in terms of unit values and market share, IECS Sibiu Conference Proceedings, pp. 598-607.