CBI
Ministry of Foreign Affairs

CBI Product Factsheet: Gearboxes and parts in Eastern Europe

'Practical market insights for your product'

Slovakia, the Czech Republic and Poland are the largest markets for agricultural gearboxes in Eastern Europe, with combined imports of an estimated €1.9 billion a year. Poland, in particular, has increased its gearbox imports from the DCs eightfold within the last five years. The greatest opportunities for exporters lie in directly approaching OEMs/wholesalers with gearboxes or their parts (especially gear wheels, power take-offs, clutches, hydraulics, valves and hoses), or selling gearbox parts in the aftermarket sector to companies specialising in gearbox overhaul.

Product definition

Gearboxes and their parts are grouped under "Gearboxes and parts thereof" (HS codes 87084010, 87084020, 87084050, 87084090, 87084091 and 87084099). This Product Factsheet analyses the market for gearboxes and their parts as used in the agricultural machinery for the Eastern European market, including Poland, the Czech Republic, Hungary, Romania, Bulgaria, Slovakia and Slovenia.

Product specifications

Quality: Compliance with international standards and the European standards on safety is required, as well as conformity to existing EU and national legislation and practices. The ISO/TS 16949 standard is considered to be the highest level of quality. This standard is important for the European automotive industry as it outlines the best practices when designing, developing, manufacturing, installing or servicing automotive products.

The quality, reliability and expected durability of gearboxes used in agricultural machinery in Europe is very high because the machines are used daily for extended periods of time and do not always have extensive maintenance schedules. The quality of materials used in the production of spare parts must be high to ensure their durability and safety and the supplied parts have to be carefully produced and inspected, as defective parts may be returned.

Materials: Gearboxes are typically made of steel or cast iron and may be housed in an iron unit. The quality of materials used in the production of gearboxes needs to be high to assure their durability and safety. Gearboxes are typically comprised of the following parts and component materials:

- Housing; input and output caps and cap

Considerations for action

- For more information on requirements for exporting casting and forgings to the EU, please refer to the CBI Buyer Requirements database for more information on Labels and Standards: Sustainability in Casting and Forging

gaskets; input seals; input shafts; ball bearings; retaining rings; input gears; steel shims; output gaskets; lockwashers; nuts; pinions and spigot bearings.

***Packaging & Labelling**:* Gearboxes are typically packaged in cardboard and/or wooden boxes with foam to protect them from being damaged. The packages are typically be labelled with a description of the contents, including technical parameters of the gearboxes, such as model application, brand name, power, speed ratios, input ratios, and weight.

In general, packaging is dependent on the buyer, either OEM or end-user consumer (aftermarket). For aftermarket applications, the packaging is typically one-way packaging, in which the packaging is discarded after a single use. Returnable packaging is the most often used by OEM suppliers, in order to reduce cost and improve efficiency of the packaging operations. Returnable packaging is not thrown away after use. The empty packaging is circulated by the OEM or a designated packaging operator. If you want to export to the EU, you must ensure that the packaging you use for your products meets all EU requirements. To reduce the harmful impact of packaging on the environment, the EU has specified legislation concerning the management of packaging and packaging waste.

Considerations for action

- For more information on requirements for packaging and packaging waste, please refer to the European Commission.

***Design**:* In Europe, agricultural machinery gearboxes can be divided into manual and automatic transmission types. Typically, gearboxes are specific to the type, make and size of the machine they are destined for, and therefore they will have different dimensions and design. In particular, variable transmission (intelligent systems that act on a number of revolutions) are gaining market share. The demand for comfort is increasing rapidly and as a consequence more and more electronic features are demanded and offered. Developments in transmissions include addition of more forward speeds, synchronised transmission, shifting on the go and continuously variable transmission.

Figure 1: Agricultural gearboxes and parts

Source: Fotolia/Internet

Buyer Requirements

Legislative Requirements: The most important requirement for automotive components is that they comply with the technical standards set by EU legislation in order to guarantee vehicle and environmental safety.

Type-approval is a certification for various types of motor vehicles and their components, which includes agricultural and forestry tractors. The type-approval or certification is valid in all EU Member States and is required when selling any products in the EU. Many automotive components are not approved until the final assembly. In those cases, certification of individual components is not necessary however these components will have to comply with type-approval requirements.

The End of Life Vehicles (ELV) Directive aims to avoid environmental pollution during the scrapping process through reducing the hazardous materials used in vehicles. Vehicles must be designed to facilitate proper dismantling and recycling (by coding the components) and the use of heavy metals such as lead, mercury, cadmium and hexavalent chromium is prohibited (with the exception of a few applications).

Considerations for action

- Check with your buyer, or with the approval authority of the country you want to export to, what the specific standards are for the parts you are producing.
- Read more about type approval at the EU Export Helpdesk.
- Check if your buyer uses the International Material Data System (IMDS). This is a collective, computer-based data system developed by automotive OEMs to manage environmentally relevant aspects of the different parts used in vehicles. It has been adopted as the global standard for reporting on material content in the automotive industry.

Common buyer requirements: In addition to legislative approval, there are other common buyer requirements. While these are not obligatory in the legal sense, they are implemented by various competitors in the market and are thus necessary in order to compete effectively.

Quality Management: In order to apply for type-approval, production processes need to meet quality management criteria. ISO TS/16949 and ISO 9001 are accepted as a standard requirement and are often demanded by EU buyers and producers.

Corporate social responsibility (CSR) and the extent to which buyers expect a certain level of social and environmental performance is becoming increasingly important. Bigger EU companies have developed their own CSR policies and require their suppliers (and their sub-suppliers) to conform to these. Signing a supplier code of conduct is often a prerequisite. These codes of conduct generally cover compliance with local laws, protection regarding workers' health and safety, respecting basic labour rights and also business ethics. The implementation of an environmental management system is often a requirement for core suppliers.

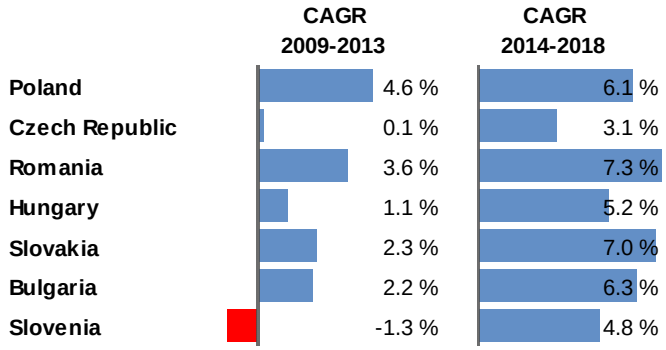
Considerations for action

- Implement ISO 9001 and ISO TS/16949, as it is a standard requirement of EU buyers. Click here for more information on ISO TS/16949 at the ISO website
- Most big car brands publish their CSR policies and supplier code of conduct on their websites. An internet search for these may give valuable insight into assessing your company's performance by comparison.
- Implement an environmental management system, such as ISO 14001, as it is a common requirement.

Macro-economic statistics

In 2013, Eastern Europe saw an average growth of 5.5% after the previous year's 6.8% contraction. Forecasts for 2014 and 2015 growth are estimated at 4.1% and 5.7%, respectively. Poland, one of Eastern Europe's largest markets, as well as Romania and Slovakia are all forecasted to have strong average growth of more than 6% through 2018.

Figure 2: GDP (current prices) Compound Annual Growth Rate (CAGR) for 2009-2013 and estimate for 2014-2018 for selected Eastern European Countries

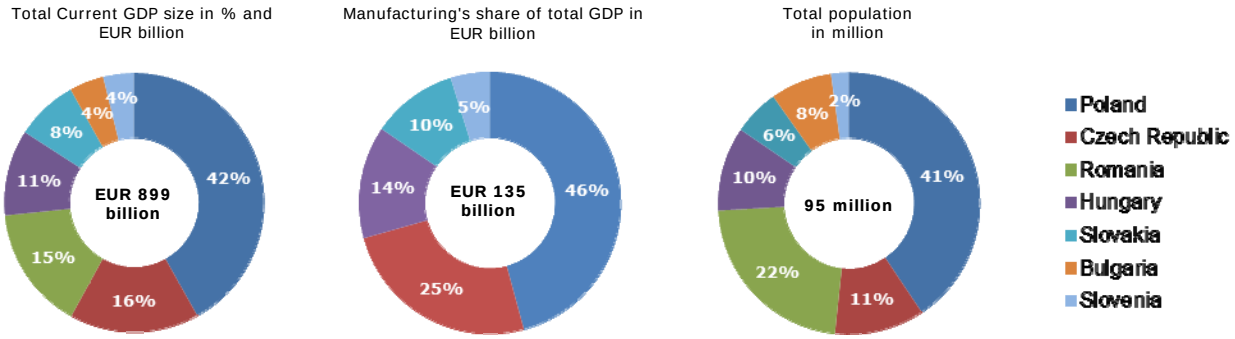


Data source: IMF 2014, World Economic Outlook Database

The value of GDP for the seven Eastern European countries covered by this document was estimated at €899 (or roughly one-tenth of the GDP value for the EU5 countries, i.e. the biggest Western European economies: Germany, France, the UK, Italy and Spain) in 2013. Poland is the largest market in Eastern Europe, with a GDP of approximately €377 billion and value of manufacturing at €62 billion, accounting respectively for more than 40% share of total GDP and manufacturing values for the seven Eastern European countries in question. The Czech Republic is the second largest Eastern European economy with a strong manufacturing base, followed by Romania and Hungary. Bulgaria and Slovenia are relatively small economies, together accounting for less than 10% of the total Eastern European GDP.

In 2013, the EU agricultural machinery market was estimated at €24.8 billion – equivalent to 30% of global turnover. The EU is also the biggest manufacturer of agricultural machinery, with sales of more than €26 billion in 2011.

Figure 3: Key 2013 macroeconomic indicators for Eastern Europe, in € billions (population in millions)



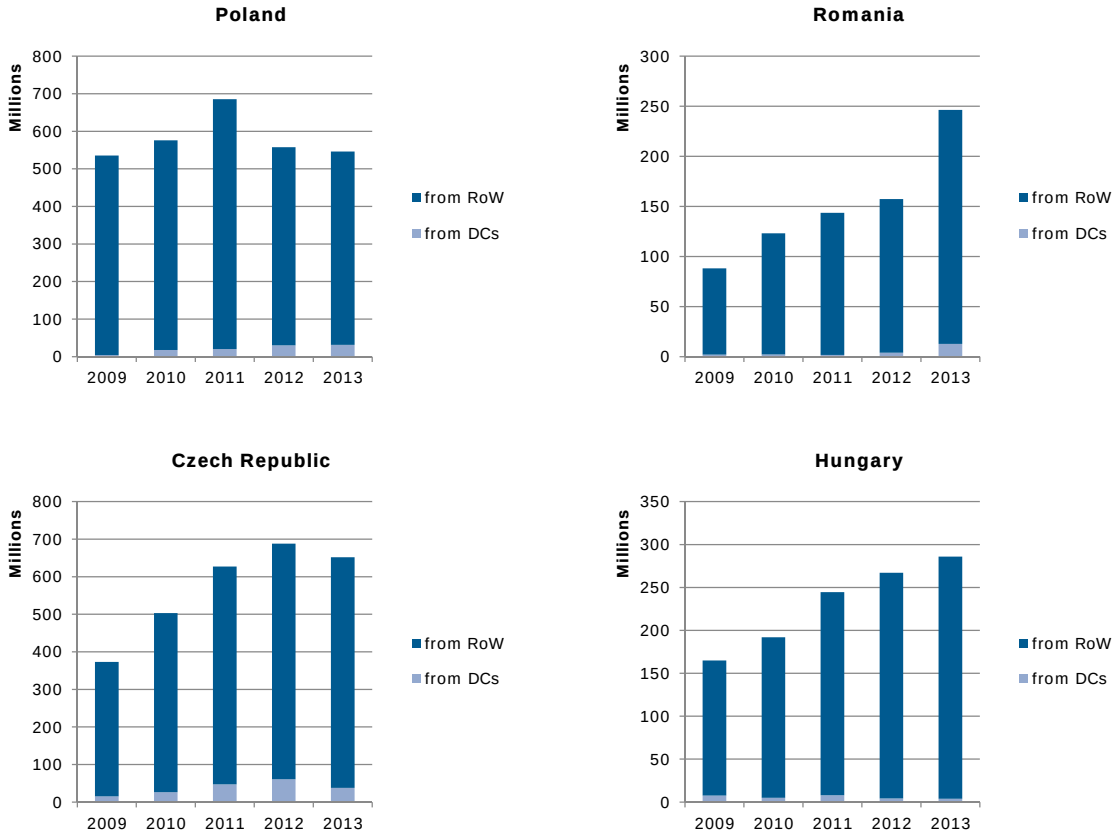
**No data available for Bulgaria and Romania*
Data source: IMF and OECD 2014

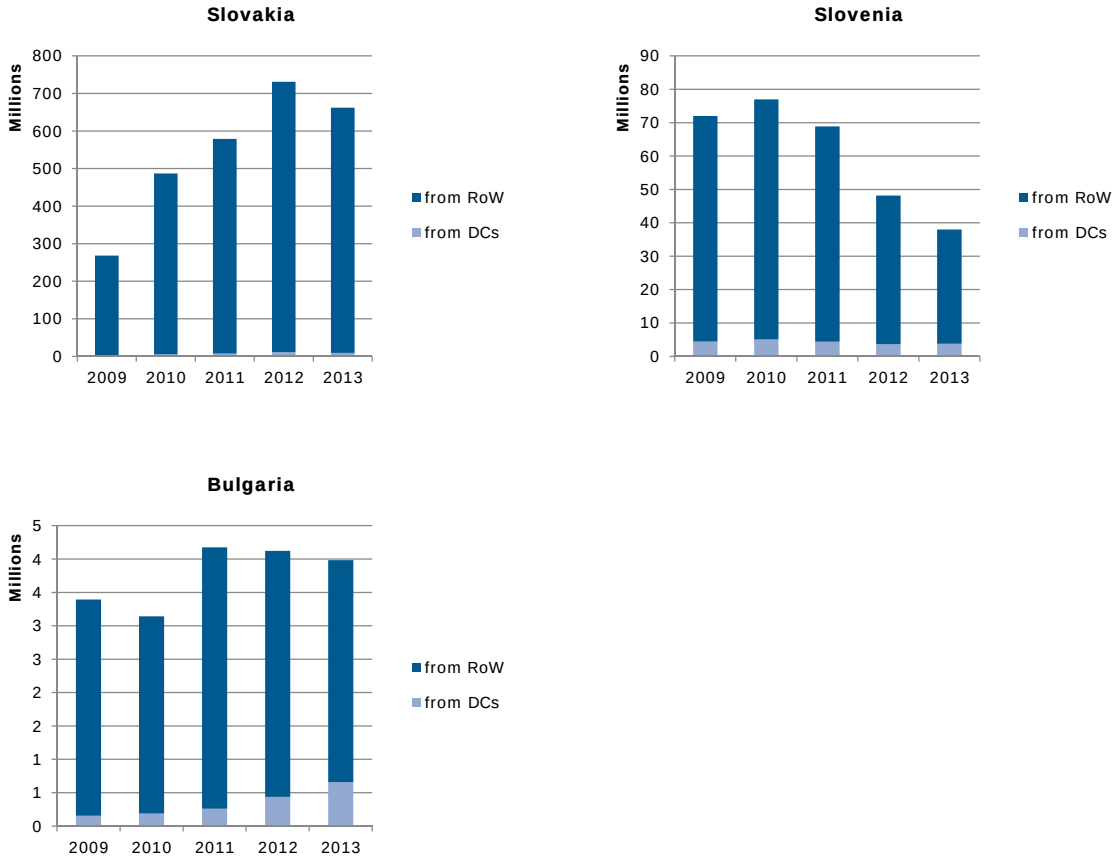
Trade Statistics

Imports and exports:

Eastern Europe is a net importer of gearboxes and their parts with imports in 2013 at approximately €2.4 billion. Combined, Poland, Slovakia and the Czech Republic represent over 76% of the total imports of gearboxes and their parts into Eastern Europe. The imported gearboxes are mainly shipped from Eastern and Western Europe as well as other developed countries such as Korea, Japan and the United States. The value of gearbox imports from the Developing Countries (DCs) to Eastern Europe was estimated at €99 million (4% of total gearbox imports) in 2013 and has grown at a 29% CAGR between 2009 and 2013. The Czech Republic imports by far the most from the DC in terms of value (€37.7 million), followed by Poland (€31 million) and Romania (€12.7 million). The biggest DC exporters of gearboxes to Eastern Europe are China, India, Vietnam, Turkey and Mexico together accounting for roughly €92 million or close to 93% of all gearbox imports from DCs. The gearbox imports from China have more than quadrupled while those from India and Vietnam have doubled between 2009 and 2013. Turkey and Mexico have observed an extremely strong growth with their gearbox exports growing seven- and tenfold, respectively, in the same time period. The future outlook is that the imports from DCs will continue to grow due to the constant need on the part of Eastern European producers to source more competitively-priced components and the fact that DC imports are growing more than twice as fast as the region's total gearbox imports.

Figure 4: Imports of gearboxes and parts by country, in € million (the range of the y-axes varies by country due to different import levels)



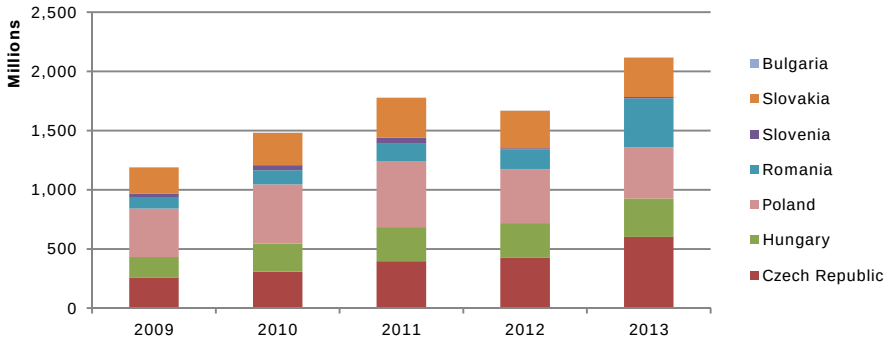


RoW: Rest of the world
Data source: Eurostat 2014

In 2013, Eastern Europe exported approximately €2.12 billion worth of gearboxes and their parts. The Czech Republic is the largest exporter with €602 million, followed by Poland with €433 million and Romania with €412 million. Together these countries account for more than 65% of Eastern Europe's gearbox exports. The gearboxes are mainly exported within the EU countries, with close to 80% of exports sold there as well as to other developed countries such as Russia, Korea and Japan.

Eastern Europe exports approximately €166 million worth of gearboxes and parts to the Developing Countries. The biggest DC importers of gearboxes from Eastern Europe include Turkey (€32 million), India (€28 million) and Brazil (€23 million).

Figure 5: Exports of gearboxes and parts, in € million



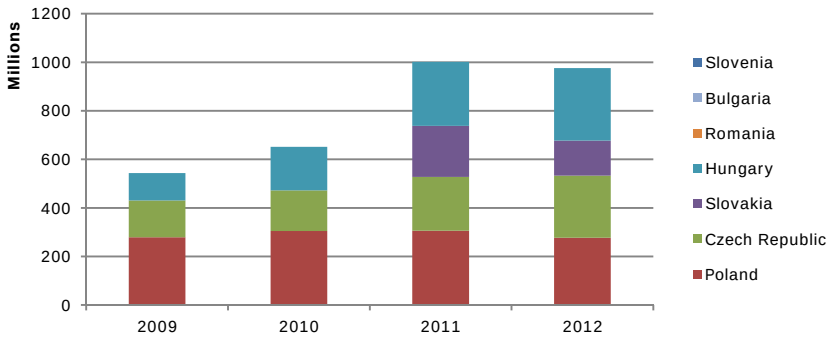
Data source: Eurostat 2014

Production and consumption:

The production and consumption data is partly incomplete for Eastern Europe. There are no numbers for gearbox production in Romania, Bulgaria and Slovenia and only partial numbers for Slovakia.

Based on the available data, Hungary is the biggest producer of gearboxes and their parts with apparent production of €298 million in 2012. The reported production value for Hungary has nearly more than doubled from 2009 when it was at a level of €113 million. Poland follows with reported 2012 production at €277 million. Total reported production for Poland, Czech Republic and Hungary has grown from €544 million in 2009 to €831 million in 2012, mainly thanks to growth in Hungary and the Czech Republic, as the Polish production levels have remained largely unchanged. Production levels for gearboxes will likely continue to grow in Eastern Europe in the future as many automotive OEMs are shifting production to these countries.

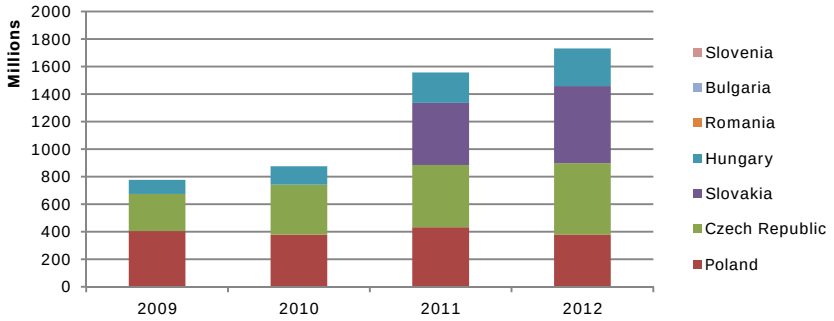
Figure 6: Apparent production of gearboxes and their parts in the EE countries, in € million



Data source: Eurostat (Prodcom) 2014

The unavailability of production data for Romania, Bulgaria and Slovenia has made it impossible to calculate the apparent consumption for these countries. The apparent level of consumption of gearboxes and their parts for Poland, the Czech Republic and Hungary has grown at a CAGR of 15% between 2009 and 2012. Slovakia is the biggest reported consumer of gearboxes with apparent consumption in 2012 at the €560 million level, followed by the Czech Republic with consumption at €518 million level.

Figure 7: Apparent consumption* of gearboxes and their parts in the EE countries, in € million



*Apparent Consumption = Production + Imports – Exports
Data source: Eurostat (Prodcom) 2014

For more information on automotive trade statistics, please refer to CBI Market Trade Statistics

Market trends and opportunities

The greatest opportunities lie in the contracting out of the production of gearbox parts, including gear wheels, power take-offs, clutches, hydraulics, valves and hoses and the manufacture of spare parts and components for the local aftermarket.

The easiest way to market this would be to arrange a meeting with the local agricultural parts wholesalers or the OEMs and/or component/systems suppliers and approach them with a subcontracting offer. The Eastern European OEMs are not as large as their Western European counterparts and they may be easier to access for DC exporters. Initial contact can be made through trade fairs or via e-mail or phone.

The aftermarket in Eastern Europe is especially well-developed due to the large share of aged agricultural machinery and the tendency to utilise old machinery for a longer period. Exporters targeting the aftermarket sector may find it advantageous to enter the sector through the independent distributor channel, as distributors tend to carry a larger variety of parts in their inventory rather than focusing on a few selected suppliers. Another way of selling agricultural parts would be through retailers such as tractor and implement dealers, agricultural engineers, rural stores, workshops, etc. Approaching smaller dealers would be much more time-consuming and capital-intensive than approaching the wholesalers and generally a more difficult path for a new exporter. This option should only be explored once the exporter is relatively well established in a local market.

Slovakia, the Czech Republic and Poland are the three biggest Eastern European markets for gearboxes and parts imports, with 2013 imports at €662 million, €652 million and €546 million respectively. While Poland's imports have remained largely unchanged since 2009, Slovakia's imports have increased by a factor of 2.5 and the Czech Republic by a factor of 1.7 during the same period. On the other hand, Poland's DC imports gave increased yearly at a breakneck pace, and between 2009 and 2013 its DC gearbox imports grew almost eightfold to €31 million (or 6% of all imports), indicating that the country is actively looking into sourcing these components from developing countries. During the same timeframe, Czech Republic and Slovakian DC gearbox imports grew by factors of 2.5 and 3. This indicates that the Czech Republic is also geared towards sourcing more of its parts and components from developing countries.

For more information on automotive market trends, please refer to CBI Market Trends

Price

Apart from the distribution of new parts, the aftermarket for agricultural parts also encompasses a lively distribution of used or overhauled parts and components. Pricing depends on the supply chain positioning. The aftermarket, in particular, is very discount-driven and has varied mark-ups at each distribution step, and for different parts and components. Due to large variation in types and models of parts, it is difficult to provide a general overview of agricultural gearbox prices, but it is possible to provide some insight into margins imposed by different players in the supply chain. Based on the margin ranges, DC suppliers selling to the tier 3 supplier in the OEM supply chain could price their products at between 64% and 81% of the OEM delivery price. In order to better ascertain prices of specific products and models, search the internet to determine the appropriate range, or talk directly to wholesalers and/or retailers. The differences in price of branded spare parts will not be great among the various countries. Those players who are present in several European countries have largely harmonised their prices; any differences in pricing may occur because of different logistics and local costs.

OEM supply chain	**Margin**
Tier 1 supplier delivering to OEM	6-8%
Tier 2 supplier delivering to tier 1	6-15%
Tier 3 supplier delivering to tier 2	10-25%
Aftermarket OES supply chain	**Margin**
Tier 1 delivering to OEM for OES sales through approved service chain	10-30%
Tier 1 delivering to OEM for OES sales through independent outlets	10-25%
OEM delivering OES parts through its approved service chain	25-65%
OEM delivering OES parts through independent outlets	30-40%

Main sources

- European Commission's macroeconomic publications
- IMF – good source for macroeconomic information
- OECD – good source for macroeconomic and industry-specific information
- European Commission's Directives and Regulations pertaining to wheeled agricultural or forestry tractors
- CEMA – Agricultural Machinery in Europe
- Trade fairs are a good place to network, to meet buyers and to promote your company. The most prominent agricultural machinery trade fairs in Eastern Europe are: the Polish Agricultural Trade Fair: Polagra-Premiery and the Czech Agricultural Trade Fair: TECHAGRO, Slovakian Agrosalon Nitra

This survey was compiled for CBI by Global Intelligence Alliance