



CBI
Ministry of Foreign Affairs

CBI Product Factsheet:

Instruments and Electrical Equipment Parts for vehicles in the European Union

Introduction

Over the years, electrical equipment in cars has increased in importance. Connectivity and safety systems are now provided through digital dashboards. Within this decade, electronic content is expected to account for about 50% of the value of a car. There is a constant need for innovation, as new technologies are being adopted at a much faster pace in the automotive industry. Efficient sourcing is needed for existing electrical hardware, due to reasons of cost-efficiency and legislation. This document explains the potential and most relevant trends and requirements for the European market for automotive instruments and electrical equipment parts. The document is intended to help suppliers from developing countries understand the market and seize opportunities.

Product Description

Instruments and electrical equipment parts encompass a wide variety of products, including speed indicators, defrosters, lights, lamps, flashers, turn signal switches and windscreen wipers. These products are used in many types of transportation vehicles (e.g. automobiles, trains and aircraft). We focus only on instruments and electrical equipment parts used within the automotive industry. This section provides a brief description of all products addressed in this survey, along with several definitions.

In this document, we distinguish between speed indicators and other instruments and electrical equipment. The following HS code refers to speed indicators: 'HS 90292031: *Speed indicators for land vehicles*'. Other instruments and electrical equipment parts are classified under 'HS code 85129090: *Parts of Electric Lighting or Signalling Equipment, Windscreen Wipers, Defrosters and Demisters of a Kind Used for Motor Vehicles, n.e.s. (Excl. of Burglar Alarms for Motor Vehicles)*'.

Product details

Speed indicators

Speed indicators are instruments used in vehicles to display the vehicle's speed. Newer electronic systems use pulse generators to count the frequency of rotations over a specified period. This is communicated to a computer, which converts it into kilometres per hour. The speed is indicated either digitally or by manipulating a traditional magnetic gauge. The case of the speed indicator is usually made of nylon, as are the worm drive, magnet shaft, gear train and spindles. The display is covered by polycarbonate, which is resistant to heat and moisture.

Windscreen wipers

Windscreen wipers are used to remove water, snow and ice from the windscreen of a motor vehicle. Wipers are located on the front windscreen, rear window and, in some cases, on the headlights. They consist of an aluminium, steel or plastic blade frame, rubber blades, a motor and plastic bushings.

Defrosters, demisters and defoggers

In motor vehicles, defrosters, demisters and defoggers are used to remove condensation and ice of the front windscreen, as well as on the rear and side windows. There are two types of defrosters, demisters and defoggers:

- Primary defrosters, demisters and defoggers use the heating, ventilation and air-conditioning system (HVAC) in vehicles. Dehumidified heated air is directed to pass through the dashboard vents to hit the front windscreen and side windows.
- Secondary defrosters, demisters and defoggers do not use the heating and ventilation system. These systems use wire grids and electric currents to heat the surface of the glass in mirrors and rear windscreens. Heating foil, conductive paint, electric wires and connectors are used.

Switches and wiring

Turn signal switches are used to control the flashers on the vehicle. A switch consists of a plastic harness, electric wiring and electronics (either a resistor and spring, or circuit with relay).

Headlight frames

A headlight frame encases the headlight in such a way that the headlight assembly can be removed from and replaced in the car without disassembling it. Headlight frames are usually made of automotive-grade plastic, which is highly resistant to extreme temperatures, chemicals and other damaging elements. Reflectors in headlights are intended to provide

maximum reflection of the light emitted from the light bulb. Reflectors are made from aluminium or compounds from fibreglass thermoplastics.

Tip:

- The CBI market intelligence report on [exporting electronics and electrical equipment to the European market](#) provides general information, as well as specific information on exporting other electronic products (e.g. electronic lighting, sensors and semi-conductors).

Geographic scope

Although the European Union (EU) is treated as a single entity in this report, we also provide deeper insight into six focus countries: Germany, the Czech Republic, France, Belgium, United Kingdom, Spain and Italy. These countries were selected because they have exhibited the highest import values. Although Italy is ranked ninth in terms of import value, it is included because it is one of the leading economies in the EU.

Quality requirements

Global trends towards CO₂ reduction and resource efficiency are pressuring original equipment manufacturers (OEMs) to consider lightweight products. Producers of instruments and electrical equipment in Tier 1 should supply OEMs with parts that improve the performance and safety of original components, given that safety is the primary reason for the presence of windscreen wipers, speed indicators, defoggers and demisters. Defrosters, demisters and defoggers should function properly in all weather conditions. Parts delivered to Tier 1 by suppliers from Tier 2 and Tier 3 should be of at least the quality that is specified in their contracts.

Specific quality requirements vary by product. A high-quality speed indicator should be accurate and fit into the design and electronics of the instrument cluster. Electric lighting and signalling equipment should be reliable, innovative and durable.

Other quality requirements are related to comfort and design. Speed indicators are usually round, which makes them easier to read. Head-up displays are currently the state-of the art. In addition to defrosting and demisting the windscreen, defrosting and demisting equipment should provide a comfortable environment for the passenger.

Packaging

In general, packaging is determined by the buyer. In the automotive industry, this is either the OEM or the retailer or wholesaler in the after-market. In most cases, OEM suppliers use returnable packaging, in order to reduce costs and improve efficiency. Returnable packaging is recycled by the OEM or by a designated packaging operator. In the after-market sector, packaging is typically disposable.

In order to export to the EU, product packaging must comply with EU standards and legislation. This means that the packaging is restricted to maximum levels of heavy metals ([Directive 94/62/EC](#)).

The packaging of instruments and electrical equipment parts differs according to the product. Parts are typically packed in boxes, metal racks, small containers or trays. For example, speed indicators are packed in cardboard or wooden boxes to protect the products from being damaged. Additional requirements apply to [wood packaging](#). If you use wood packaging materials to export products to Europe, you must consider the health (phytosanitary) requirements set for these materials. In practice, this means that the wood must have undergone heat treatment or been fumigated with methyl bromide ([Regulation \(EU\) No 15/2005](#)).

In addition, packaging should always be labelled. The outer package should include the brand name and type number. This is not only for the purposes of identification during transport, but also to indicate the quantity, weight, the products themselves and the producer's name.

What is the demand for electrical equipment parts for vehicles in the European Union?

Macroeconomic statistics

The GDP growth factor is an important economic indicator and therefore a predictor of both the production of and the demand for electrical equipment parts. With a national GDP value of €2.9 trillion, Germany has the largest economy in the EU. Germany and the Czech Republic are the most industrious economies. Their manufacturing bases (i.e. the part of the GDP added by the manufacturing of goods) amount to 21% and 27%, respectively. The manufacturing bases of the other focus countries range from 11% to 15%.

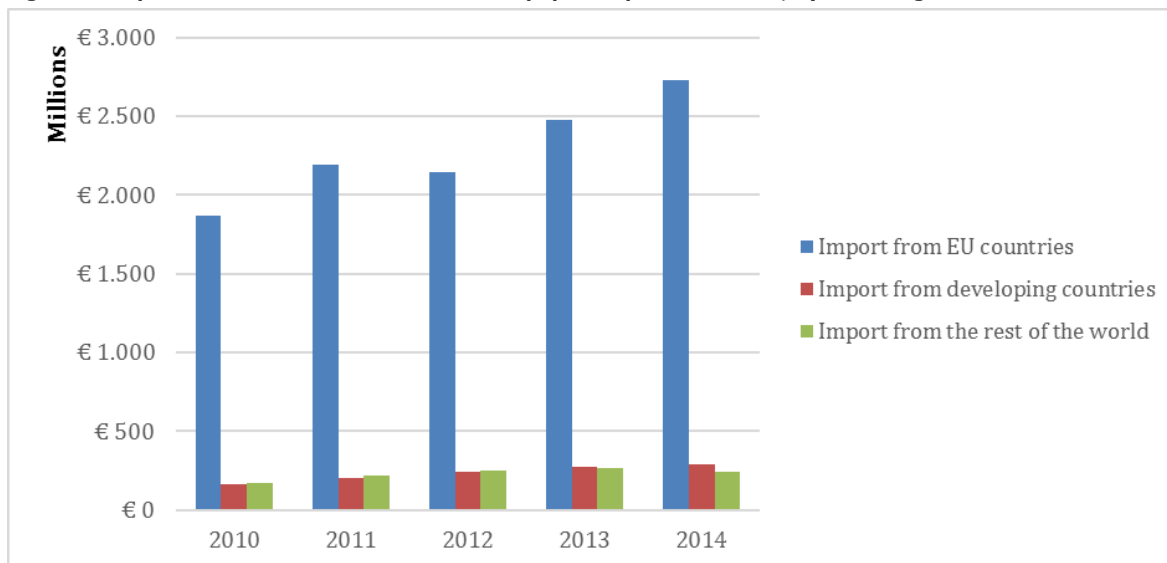
Tip:

- If you are considering exporting to the European market, this would be a good time to start, as the European economic forecast is quite positive.

Imports

In 2014 the total value of instruments and electrical equipment parts imported by the EU was €3.3 billion. The total import of these parts increased at a Compound Annual Growth Rate (CAGR) of 10.5% per year between 2010 and 2014. Imports from developing countries have grown even more, with a CAGR of 16.3% per year. The share of the imports from developing countries is small, but growing – from 7.3% in 2010 to 8.9% in 2014.

Figure 1: Imports of instruments and electrical equipment parts to the EU, by main origin

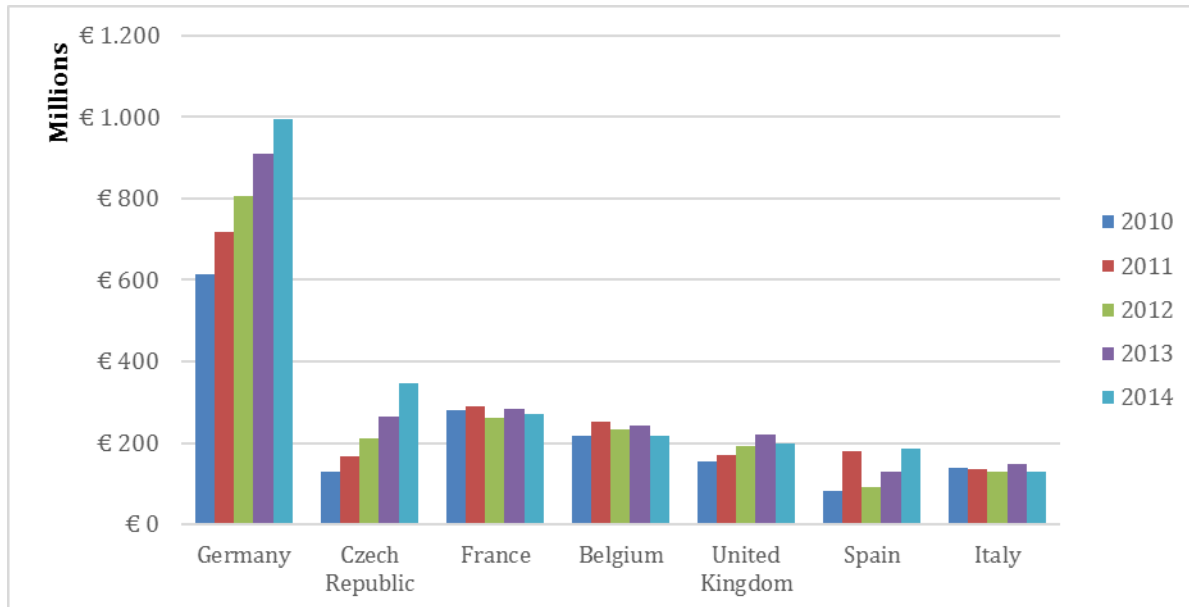


Source: Eurostat, 2016

Imports to focus countries

Within the EU, Germany is by far the most important importer of instruments and electrical equipment parts, with imports valued at €995 million (in 2014) and a CAGR of 12.8% per year between 2010 and 2014. Germany is followed by the Czech Republic, with an import value of €346 million and a CAGR of 27.7%, and France, with an import value of €271 million and a CAGR of -0.8%. The growth of import values in the Czech Republic can be explained by the country's capabilities in manufacturing high-tech equipment, as well as its level of government aid, incentive schemes for investors and historic heritage in automotive manufacturing.

Figure 2: Imports of instruments and electrical equipment parts by EU focus countries



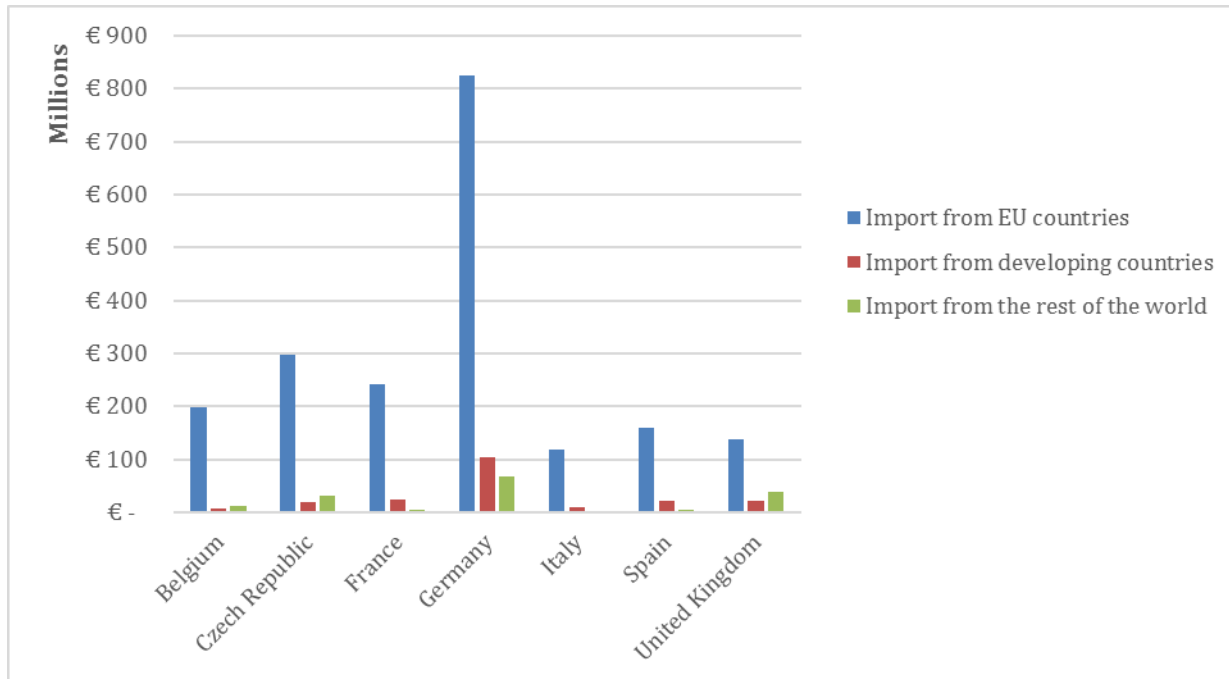
Source: Eurostat, 2016

Of our focus countries, Germany has by far the highest import value for instruments and electrical equipment parts from developing countries (€103 million), followed at a distance by France (€23 million). With a CAGR of 15.9% for imports from developing countries, Germany offers ample opportunities. Spain increased its CARG on imports from developing countries with 30.4% over the last few years, and its market presence has increased from 8.8% to 11.3%.

Although the Czech Republic has a small GDP, it shows promising opportunities for the future. In the 2010–2014 period, the country had a CAGR of 95.6% for imports from developing countries. In 2010, only 0.1% of the instruments and electrical equipment parts imported to the Czech Republic came from developing countries, as compared to 5.5% in 2014. In 2014, the Czech Republic imported more than twice the value of goods from developing countries as it had in 2013. This demonstrates the country’s willingness to source from developing countries.

Belgium is the least interesting of the focus countries for exporters from developing countries, given its negative CAGR for imports from developing countries (-12.0%). Belgium’s share of imports from developing countries decreased from 4.8% (€10.3 million) in 2010 to 2.8% (€6.1 million) in 2014.

Figure 3: Imports of instruments and electrical equipment parts in focus countries (2014), by main origin



Source: Eurostat, 2016

Tip:

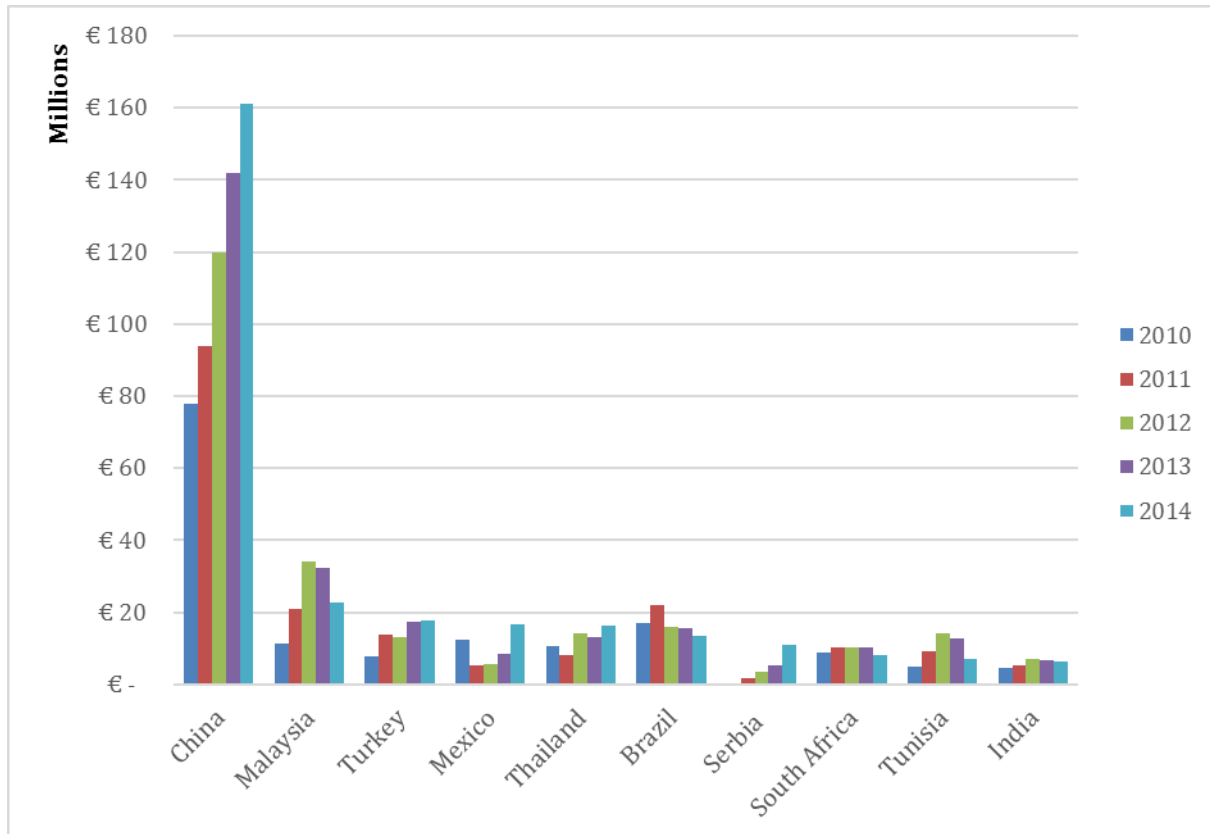
- For further insight into the rapidly growing economy of the Czech Republic, see our study on [semiconductors for automotive and industrial applications in the Czech Republic](#).

Important suppliers of instruments and electrical equipment parts

The import of instruments and electrical equipment parts from developing countries is dominated by parts from China. In 2014, 55.3% of the goods imported from developing countries came from China (€161 million). The second-largest supplier is Malaysia, which accounted for 7.7% (€22.6 million) of all imports from developing countries.

Serbia, China, Malaysia and Turkey are becoming more important for the EU as suppliers of instruments and electrical equipment parts. Imports from Serbia increased at a CARG of 202.9% per year between 2010 and 2014. In 2010, Serbia accounted for only 0.1% of the instruments and electrical equipment parts imported into the EU. In 2014, it accounted for 3.7%. The share of imports from China grew at a CAGR of 20% in the 2010–2014 period. During the same period, imports from Malaysia grew at a CAGR of 18.5%, and imports from Turkey increased at a CAGR of 22.3%.

Figure 4: EU imports of instruments and electrical equipment parts from the main supplying developing countries



Source: Eurostat, 2016

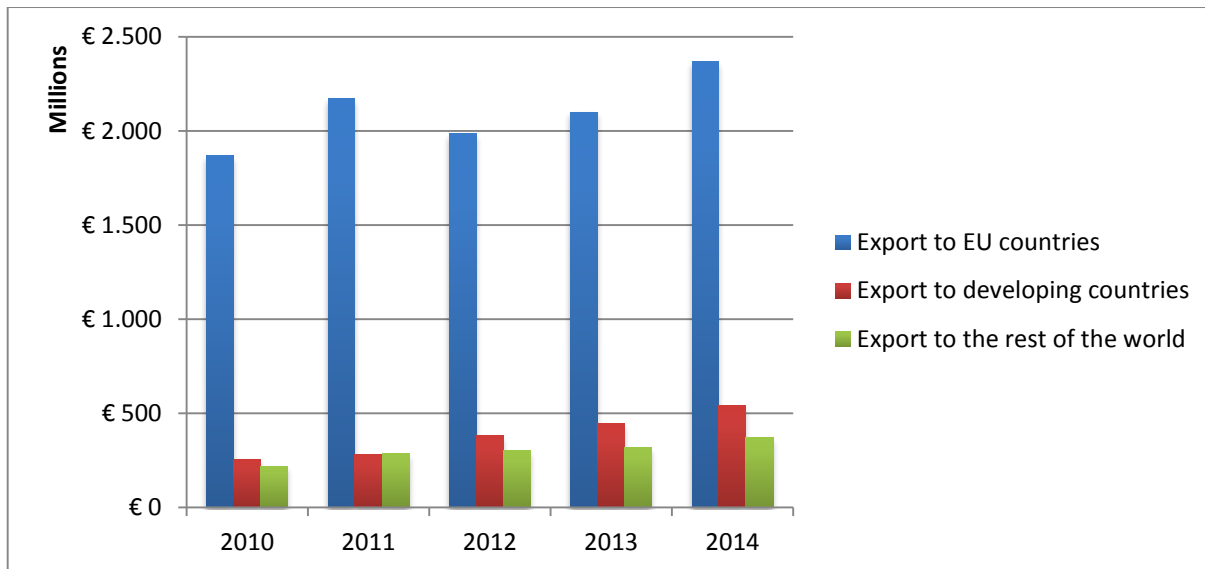
Tip:

- Look for strategic partners in China, as Chinese suppliers can offer an important gateway into Europe. Malaysia and Turkey could also be valuable strategic partners gaining access to Europe.

Exports

In 2014, the total value of instruments and electrical equipment parts exported by the EU was €3.3 billion. Exports of these parts have grown at a CAGR of 8.8% per year since 2010. The majority of these parts are exported within the EU (72.0% market share). Exports to developing countries (16.5% market share) have more than doubled, with an average CAGR of 20.5% per year between 2010 and 2014.

Figure 5: Exports of instruments and electrical equipment parts from the EU, by main origin



Source: Eurostat, 2016

Exports to developing countries

Of all of the instruments and electrical equipment parts exported to developing countries in 2014, most were exported to China (55.6%, €301 million). Mexico (11.6%, €62 million) and Turkey (9.5%, €51 million) were the second and third most important destination countries for these parts. The value of exports to all of these countries has increased. Morocco and Serbia demonstrated the largest growth between 2010 and 2014, with CAGRs of 50.9% and 75.7%, respectively.

Most important exporters

Germany (€1.25 billion) is the largest exporter of instruments and electrical equipment parts in the EU (total exports in 2014). At a great distance behind Germany are the second and third exporters: Belgium (€303 million) and the Czech Republic (€285 million). When considering only exports to developing countries, Germany still exports the most (€331 million), followed by France (€28.4 million), Spain (€26.9 million) and Romania (€ 25.4 million).

Production

European production values are available only for windscreen wipers, defrosters and demisters for motorcycles or motor vehicles. The production of windscreen wipers, defrosters and demisters in the EU was €1.58 million (in 2014). With a CAGR of 3.4% over the 2010–2014 period, production in the EU is growing.

Tips:

- Focus particularly on Central Europe. Given the importance of the German market and the rapid growth of imports of instruments and electrical equipment parts into the Czech Republic, this area shows the most opportunity.
- Read our study on [trade statistics in the automotive industry](#).

Which trends offer opportunities for instruments and electrical equipment parts in the European Union?

The instruments and electrical equipment parts in the automotive industry are undergoing constant development. Mechanical tools (e.g. speed indicators, tachometers and traditional fuel meters) are being replaced by digital alternatives. Windscreen wipers and headlights are becoming more advanced with additional functionalities. If they are able to adapt to the trends within this industry, suppliers from developing countries could realise many opportunities. Given the product-specificity of these trends, we describe them according to the relevant product groups.

Trends involving the cockpit and the speed indicators

Given the growing need for safety and security, digital tachometers/speedometers will become a major target market in the near future. In addition to speed, the rotations of ceiling fans and motors are measured digitally. Speed indicators will display the speed on LED or LCD readouts. Although analogue speed indicators are still in use, digital indicators and head-up displays are becoming more prominent (especially in the premium and luxury segments). In the coming years, there will still be demand for analogue speed indicators for cars in the after-market. This will provide ample opportunities for delivering cockpit parts to OEMs.

Another trend involves the increase of infotainment in the cockpit. Audio systems, phone connectivity, internet and navigational equipment are demanding new strategies. New displays are a combination of analogue indicators and LED or LCD displays.

The latest trend is the head-up display (HUD), which projects the speed and navigation on a display projected on the front windscreen. The information appears directly in the driver's field of vision for additional safety, clarity and comfort.

Trends involving windscreen wipers:

Recent studies have shown that growth is expected in the market for windscreen wipers. Quieter and lighter windscreen systems are becoming more prominent. Future growth will be driven by product performance, developments in aerodynamic design (fuel savings) and the intelligence of wiper systems. One of the key challenges in this growth market involves the increasing price of raw materials.

Important features of wipers include the ease of installation, combined with universal fit. Other important wiper features include a long working life and reduced CO₂ emissions due to lower weight. Wipers with all of these features are likely to generate an increase in demand.

The demand for more advanced wiper systems is increasing. Examples include electronic drive units to control the arc and speed of wiping. In addition, a wide variety of functionalities and options (e.g. automatic rain detectors, wipers with integrated screen-wash fluid and heated wiper blades) are becoming more prominent in the market. The increasing popularity of intelligent wiper systems (with flat blades) offers favourable growth opportunities. These growth opportunities are emerging particularly strongly in the after-market, as windscreen wipers need regular replacement.

Trends involving demisters and defrosters

With respect to defrosters and demisters, some manufacturers are offering windscreen heating. Front windscreens with heating are expensive to manufacture and costly to replace. The heat lines are slightly visible, and many drivers consider this annoying. Front-windscreen heating helps to defrost and defog the windscreen. Most customers are likely to continue to use the heating, ventilation and air-conditioning systems.

Trends involving reflectors and frames for headlights

In the past few years, more LED lights have been incorporated into headlamps, as their quality has improved. In many cases, they are used in combination with xenon and halogen lights, due to their price reliability and style. If LEDs are used as a light source, reflectors of different styles can be used. Manufacturers also try to develop brand awareness with signature rear lights. Reflectors and frames for headlights should be adapted accordingly.

Full LED headlights do not emit enough heat to keep the lamps from freezing in icy weather. As a result, heat must be directed to the headlights in freezing conditions.

Trends influencing the market for all instruments and electrical equipment parts

Environmental issues are becoming increasingly important factors for the automotive industry. The focus points of manufacturers include weight reduction in cars to save fuel. This is leading to the use of lightweight metals, plastics and fibreglass. Compared to alternatives, LED lights have a longer lifespan and are more energy-efficient.

Consumers have various reasons for driving their vehicles for longer periods, ranging from increased vehicle quality to the inability to afford a new vehicle. Instead of replacing their cars every other year, consumers are having more repairs done. Although hardened material is used, frames and reflectors are prone to damage. This provides opportunities for the after-market, especially for suppliers of windscreen wipers.

Quick delivery is extremely important, as customers would like their vehicles to be repaired quickly. The important role that high-quality after-sales services and spare-parts operations play in overall automotive sales is becoming increasingly obvious. After-sales activities constitute a high-margin business, and they have become a unique selling point. Suppliers with unsatisfactory after-sales are likely to lose customers.

Tips:

- Read the [CBI study on trends in the automotive industry](#).
- Stay abreast of new technological trends, as they are likely to change the landscape of the market within a short time.

With which requirements should instruments and electrical equipment parts comply in order to be allowed on the European market?

Requirements can be divided into the following categories: (1) 'musts', which must be met in order to enter the market, and (2) 'additional requirements', which consist of the relatively common requirements that most competitors have already implemented (in other words, requirements that should be met in order to stay abreast of the market).

Musts

[Whole Vehicle Type Approval](#) (WVTA) is a certification for various types of motor vehicles and their components, including agricultural and forestry tractors. The WVTA is valid in all EU member states, and it is required when selling any products within the EU. Many automotive components are not approved until the final assembly, in which case certification of individual components is not necessary. These components must nevertheless comply with type-approval requirements.

The [End of Life Vehicles](#) (ELV) directive aims to avoid environmental pollution during the scrapping process by reducing the use of hazardous materials in vehicle production. Vehicles must be designed to facilitate proper dismantling and recycling (by coding the components).

When exporting chemicals, consult the [REACH regulations](#). In the EU, buyers are responsible for [CE marking](#), which entails additional requirements in the areas of safety, health and environmental protection.

Tips:

- For additional information on requirements for packaging and packaging waste, refer to the [European Commission](#). Additional requirements apply to [wood packaging](#).
- Be aware that the requirements stated by your buyer are likely to become even stricter in the future, in order to comply with the binding emission targets for cars and vans.

Product-specific requirements

In addition to these general requirements, several product-specific requirements may apply.

- In many countries, the legislated error in speedometer readings is ultimately governed by the United Nations Economic Commission for Europe (UNECE). EU member states must also grant type approval to vehicles meeting similar EU standards. The regulations covering speedometers are similar to the UNECE regulations, in that they specify that:
 - The indicated speed must never be less than the actual speed. It should not be possible to speed inadvertently due to incorrect speedometer readings.
 - The indicated speed must not be more than 110% of the true speed plus 4 km/h at specified test speeds. For example, at 80 km/h, the indicated speed must be no more than 92 km/h ([ECR-39](#))
 - For two-wheeled and three-wheeled vehicles, see [Directive 2000/7/EC](#).
- Regulations for windscreen wipers are stated in the Commission Regulation (EU) No [1008/2010](#). The windscreen wiper system should have at least two sweep-frequency settings. Wipers should cover at least 98% of vision area A, and at least 80% of vision area B. The washer system should spray sufficient fluid onto the target area to clear at least 60% of the vision area. Vision area A is the area directly in the driver's line of vision (above the steering wheel), with a width of at least 290 mm ([more about vision areas](#)).

- Regulations for defrosting and demisting systems for windscreens are stated in the Commission Regulation (EU) [No 672/2010](#). Defrosting systems are tested at temperatures of -8 °C and -18 °C. Demisting systems are tested at a temperature of -3 °C. Demisters and defrosters should work efficiently in these conditions.

Tip:

- Be sure that all materials in parts for speedometers are of good quality (over an extended period), thus ensuring that measurement requirements will be met.

Additional requirements

Buyers commonly impose their own requirements in addition to those required by law. While these are not obligatory in the legal sense, they are essential to effective competition, as they have been implemented by various competitors in the market. Additional requirements can be imposed by the public sector (e.g. standardisation bodies) or driven by the industry (e.g. buyer requirements and private standards). The use of private standards is increasing in Europe. These standards are industry-led niche or mainstream initiatives intended to enhance quality, traceability and unity in design and dimensional specifications.

Additional quality requirements

Quality Management: In order to apply for type approval, production processes must meet quality-management criteria. The ISO TS/16949 system focuses on the design, development and production of automotive-related products, while the ISO 9001 quality system is more general in nature. Both are accepted as standard requirements, and EU buyers and manufacturers often insist on them.

Tip:

- Implement [ISO 9001](#) and [ISO TS/16949](#), as they are standard requirements of EU buyers.

Additional social and environmental issues

The EU has set [binding emission targets for new cars and vans](#). These targets specify that every new car or van that is sold is permitted a certain amount of CO₂ and NO_x emissions. Note that pollution levels are currently measured only in the laboratory. Recent scandals with respect to real-world pollution levels versus the levels in laboratory tests led the EU to introduce the Real Driving Emissions (RDE) test in February 2016. This means that cars sold in the EU must pass an RDE test, starting from September 2017. Given that the emission targets will become stricter on a gradual scale, new cars must become more efficient each year. This will lead OEMs to increase the demands that they impose on their suppliers of instruments and electrical equipment parts.

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

Tips:

- Most major car brands publish their CSR policies and supplier code of conduct on their websites. An internet search for these codes of conduct is likely to yield valuable insight with which to assess your company's performance by comparison.
- Implement an environmental management system (e.g. [ISO 14001](#)), as European buyers are increasingly requiring it.
- A general overview of [EU buyer requirements for automotive parts and components](#) is available on the CBI Market Intelligence Platform.
- For additional information on legal requirements applying to your products, we refer to the [EU Export Helpdesk](#).
- For additional information on non-legal requirements that are generally accepted in Europe, we refer to the [International Trade Centre's Standards Map](#).
- Consult with your buyer or with [the approval authority of the country to which you seek to export](#) to learn the specific standards that will apply to the parts you are manufacturing.
- Determine whether 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.

What competition do I face in the European Union?

The market for instruments and electrical equipment parts is diverse. Given the global scale of the market, there are many competitors for most products. Although there are important differences in competition between different products, the market for instruments and electrical equipment parts has many commonalities.

Market entry

In general, the supply chain for instruments and electrical equipment parts is a difficult market to enter. The most important entrance barriers include the need for capital, technological knowledge and a good network of buyers.

In many cases, there is need to invest in large and efficient manufacturing facilities. High costs for constructing the facilities are a significant deterrent to entry. Establishing these facilities poses many challenges to newcomers. New firms need enhanced levels of technological knowledge to compete with existing firms, as these technologies will allow them to offer improved products at lower prices than their competitors can. Lower prices lead to competitive advantage. Furthermore, successful industrial relationships (with downstream firms) are essential. These relationships can help to identify possible trends, and they are indispensable for increasing turnover.

In addition to the three main entry barriers described above, knowledge of legal requirements with respect to waste, materials and hazards can be barriers for entering the European market in particular.

Buyer and supplier power

Within the OEM supply chain, power is shifting from the OEMs to Tier 1 suppliers. Tier 1 level is dominated by 10 major companies, which supply most of the European OEMs. The tier also includes numerous small and medium enterprises.

Power of the largest Tier 1 suppliers

The 10 leading suppliers (e.g. [Continental](#) and [Bosch](#)) are considered very powerful. These 10 suppliers generate 60% of the revenue generated by the top 100 suppliers. This situation weakens the position of OEMs slightly, as they cannot easily replace these suppliers. Because these Tier 1 producers are large, they have many opportunities to make use of the most cutting-edge technological advantages.

Power of smaller Tier 1 suppliers

The smaller Tier 1 suppliers are far less powerful. Competition between these companies is high, and margins are low. This leads to excellent negotiation positions for OEMs. In general, OEMs have high quality demands and require low prices from Tier 1 suppliers. Given the relatively large number of Tier 1 suppliers, their only option is to try to produce for low prices. In turn, Tier 1 suppliers demand quality and low prices from the widely available Tier 2 and 3 suppliers.

Many of the smaller Tier 1 manufacturers lack capital and technologies, and they produce only single products and spare parts. The production of multiple products could generate an advantage over competitors. Scaling up production could help to reduce costs, resulting in OEMs being more interested in buying. Nevertheless, scaling up will work only if you have established a sales network and distribution channels. Having an extensive distribution network will help you to supply products at low costs.

Power of Tier 2 and Tier 3 suppliers

Suppliers in Tiers 2 and 3 can also increase their power by upscaling and by selling a broader range of products. In many cases, similar products can be produced on the same machines, and this can make it less capital-intensive to broaden your product range.

Competition and substitutes

After-market sales are growing, due to the fact that vehicles are being used longer, thereby offering opportunities. Differentiation of customer requirements is threatening the current revenue and profit situation of OEMs. In general, producers offering innovative, high-quality or good-looking products for lower prices have a competitive advantage.

Within the after-market, OEMs must compete with after-market suppliers, who can also be their own suppliers. For example, Bosch delivers to OEMs and to the after-market. Suppliers with a focus on the after-market and new suppliers are posing competition to OEMs. Nevertheless, most new competition in the after-market is emerging from China.

Competition in windscreen wipers

Vertical integration is increasing in Tier 1. For example, the windscreen wiper chain is dominated by major producers, including [Michelin](#), [Bosch](#) and [Valeo](#) (and many others). Given that large manufacturers produce most parts themselves, they fulfil the functions of both Tier 1 and Tier 2 (at least in part). Some parts (e.g. the bearings in the wiper arms) still originate from other manufacturers. These producers stand out in choice of materials for the wiper blades and arms.

Appearance, functionality, price and longevity are important factors for wiper-blade systems. As long as the price is not too high, producers with the most innovative, longest-lasting, best-functioning or best-looking windscreen wipers will have a competitive advantage.

Competition in speed indicators

Producers of speed indicators (instrument clusters) include: [Continental](#), [Visteon](#) and [Renesas](#). Most of these companies operate worldwide. Parts of speedometers (e.g. displays, connectors and cables) are manufactured by many different Tier 2 producers. The instrument clusters of specific companies have their own styles of display. Good-looking, easy-to-read, functional and precise displays are desired, and they can create a competitive advantage.

Tips:

- Implement effective quality control (deliver only high-quality products). The ability to produce products according to the exact specifications that OEMs provide can be an advantage. Delivering consistent quality is desirable.
- Build successful industrial relationships with downstream firms by providing after-sales service and repairs.
- Create an extensive distribution network (sales channels). Supplying products through a wide retail distribution network can decrease costs and increase competitiveness.
- Undertake technical research and development. Advances in technology and the skills of employees in using the newest technologies can help to maintain competitive advantage.
- Supplying to Europe requires a thorough knowledge of government policies and their implications.
- Read the [CBI study on competition in the market for automotive parts](#).
- Read the [CBI Tips for doing business with European buyers](#).

What do the trade channels and interesting market segments for instruments and electrical equipment parts look like in Europe?

A general overview of the European market channels and segments for automotive parts and components is available on the CBI Market Intelligence Platform. The market channels and segments for instruments and electrical equipment parts do not differ significantly from those for the sector in general.

Tip:

- Read the [CBI study on channels and segments](#) in the automotive industry.

What are the end-market prices for instruments and electrical equipment parts?

Many different parts fall within the category of 'instruments and electrical equipment'. Margins vary by country and market segment. For example, the installation of complete blades for windscreen wipers in the after-market is easy (click-and-go), it is cost-effective and the margin is high. Nevertheless, refilling the blades takes longer and requires modification to fit. The costs are low, but the margins are low as well.

In the supply chains of OEMs, the margins are low between Tier 1 and OEM (less than 10%). Prices depend upon the local competitive environment. In general, the total mark-up from manufacturer's price up to the final consumer price including VAT can reach up to 400%, especially when the costs of logistics and services are taken into account.

In addition to the distribution of new parts, the after-market for automotive parts also encompasses a lively distribution of used or overhauled parts and components. Pricing depends upon position within the supply chain. In particular, the after-market is highly discount-driven, with varied mark-ups at each step of distribution, as well as for different instruments and electrical equipment parts.

Due to wide variations in the types and models of all the different parts, it is difficult to provide an exact overview of prices and margins for each product. We consider margins within the automotive industry as a whole.

Margins in the automotive industry (general)

OEM supply chain	Margin
T1 supplier delivering to OEM	7%–9%
Tier 2 supplier delivering to Tier 1	7%–17%
Tier 3 supplier delivering to Tier 2	11%–27%
After-market Original Equipment Supplier (OES)	Margin
Tier 1 delivering to OEM for OES sales through approved service chain	11%–32%
Tier 1 delivering to OEM for OES sales through independent outlets	11%–27%
OEM delivering OES parts through its approved service chain	26%–67%
OEM delivering OES parts through independent outlets	31%–42%

In general, products sold in the after-market by non-OEM suppliers are priced 25%–50% lower than their equivalents sold by the OEMs. The quality and safety of after-market products are not guaranteed by OEMs. Although most after-market products are of lesser quality, some products on the after-market are better than those offered by OEMs.

Differences in the price of branded spare parts are not very large amongst the various countries. Players in several European countries have largely harmonised their prices; any differences in pricing are likely to be related to different logistics and local costs. In the original-equipment segment, the price is set by contracts of four or more years, which usually include price reductions of 3% to 5% each year after the first year. In the after-market, the prices are negotiated every year.

Tips:

- When establishing an export price, you should consider many of the factors involved in pricing for the domestic market:
- Aim to charge the price that the market will bear, and keep in mind the quality-price ratio of your products. This ratio should be in line with competitors' prices.
- Prices of raw materials fluctuate widely. If you are a Tier 2 or Tier 3 producer, use contracts with variable material costs to account for this.
- Pricing requires a combination of knowing your domestic costs and calculating costs that you will incur in delivering and supporting your activities in a foreign market.
- Bear in mind that it is not easy to increase prices once you have agreed to deliver at a certain price. The negotiated price should never be below your cost price (except for the first order; in this context you may accept a loss if larger quantities – and thus lower costs – are expected for the following orders). No European buyer will accept an unreasonable/unexpected price increase after the first order.
- Include currency risk in the contract.
- Because Tier 1 suppliers are trying to decrease the number of partners and because their margins are under pressure, you should increase your production volume. This could be achieved through strategic mergers.



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June 2016