

Exporting vehicle axles and axle parts to Europe

Axles and axle parts for motor vehicles are and will likely continue to be a growing market in Europe. Every year Europe imports more axles and axle parts from developing countries, creating an opportunity for the export of good-quality and competitively priced products. There are opportunities both in the Original Equipment Manufacturers (OEM) market and in the aftermarket, where parts such as brake drums, suspension parts, drive shafts, yokes and axle rims are in demand.

Contents of this page

1. [Product description](#)
2. [Which European markets offer opportunities for exporters of axles to the European Union?](#)
3. [What trends offer opportunity on the European market for vehicle axles?](#)
4. [What requirements should axles comply with to be allowed on the European market?](#)
5. [What competition do I face in the European Union?](#)
6. [What do the trade channels and interesting market segments for axles look like in Europe?](#)
7. [What are the end-market prices for axles?](#)

1. Product description

Axles and their parts are grouped under “Drive-axles with differential, non-driving axles and parts thereof” (Harmonised System (HS) codes 87085020, 87085035, 87085055, 87085091 and 87085099). For more information on these HS codes we refer to the [integrated Tariff of the European Union](#) (TARIC).

This Product Factsheet analyses the market for axles and their parts as used in all kinds of vehicles, such as tractors (agricultural), vehicles for the transport of any number of persons, vehicles for the transport of goods and special purpose vehicles. The drive axles are driven by the engine. Dead axles are not part of the drivetrain. These type of axles are often used for load-bearing purposes.

Materials and components

Axles are typically made of forged steel or, for extremely heavy applications, of tempered seamless steel or modular cast iron. Axles are typically comprised of the following parts and component materials:

- Nuts, washers and lockwashers, bearing cups, cones and rollers, oil seals and slingers,
- spindles, filler plugs, knuckles and arms, shims and shim packs,
- pivot pins, capscrews, joint yokes, axle shafts and shaft guides,
- axle housing and housing cover, ring gears and pinions,
- differential gears, bolts, lock straps, steering tie rods, gaskets.

Tip

Make a detailed offer that pays attention to all specifications of the buyer. In most cases, the buyer will provide a document with very detailed specifications: quality, materials, deviations, quantity, delivery date, and more. It is strongly advisable to compose your offer according to these requirements.

Geographic scope

The geographic scope of this study is the European Union area. Based on total import values and import values

from developing countries there is a focus on a selected group of countries: Germany, United Kingdom, Belgium, the Netherlands, the Czech Republic, Spain, France, Slovakia and Italy. These countries are the larger importers of axles and offer good opportunities to exporters from developing countries. The term 'focus countries' refers to these nine selected countries, unless stated otherwise.

2. Which European markets offer opportunities for exporters of axles to the European Union?

On a global level, in the past years the market for axles and parts has grown. The forecast is positive. We expect the axle market to grow, on a global level, but especially in Europe. The EU has an axle consumption of € 9 billion. The demand is both met by production (€ 9.9 billion) and import (€ 7.2 billion). With a total export value of € 8.1 billion, Europe is a net exporter of axles and axle parts.

Macroeconomic statistics

The Gross Domestic Product (GDP) growth factor is an important economic indicator and therefore a predictor of both the production of and the demand for axles in vehicles. With a national GDP value of € 3 trillion, Germany has the largest economy in the EU. The Czech Republic, Germany and Slovakia are the most industrious economies. Their manufacturing bases (the part of the GDP added by the manufacturing of goods) amount to between 21% and 27%. The manufacturing bases of the other focus countries range from 10% to 19%.

The automotive industry within the European Union is still recovering from the global crisis. From 2009, the market has been recovering. The expectations for the next years are positive.

Imports

In 2015, the total value of axles and their parts imported into the EU was € 7.2 billion. 53.2% of imports consists of full axles, while 46.8% is imported as parts. Imports of axles and their parts have increased at a compound annual growth rate (CAGR) of 3.3 % since 2011. This reflects a positive growth over the past five years. The share of the imports from developing countries was 7.6% of total imports in 2015. These imports have a CAGR of 13.5% since 2011. The major reason for this growth is that some major producers of axles, like [ThyssenKrupp](#), have outsourced part of their production to countries with lower wages.

Imports of the focus countries

Within the EU, Germany is the largest importer of axles, with imports valued at € 1.6 billion in 2015. Germany is followed by the United Kingdom (€ 960 million). Imports grew most rapidly in Spain, Slovakia and the United Kingdom, with a CAGR of 17.4%, 9.9% and 8.2% between 2011 and 2015, respectively. Germany increased its production, resulting in lower imports of full axles, while imports of axle parts increased.

The focus countries with the highest import values from developing countries for axles are the United Kingdom (€ 166 million, 17.3% of total) and Germany (€ 156 million, 9.6% of total). Spain and Slovakia offer interesting opportunities, with import values from developing countries of € 26 and € 28 million. The following figure provides a more detailed impression of the main origins of imported axles and their parts for each focus country in 2015.

Tip:

Focus your sales effort on Germany, Spain or Slovakia. While the German market is the largest, Spain and Slovakia show the most willingness to source from developing countries.

Tip

The focus countries are the biggest importers of axles in the EU. Try to export your product to one of these countries.

Important suppliers of axles

The import of vehicle axles from developing countries is dominated by parts from China (€ 128 million), Mexico (€ 121 million), Turkey (€ 121 million) and India (€ 101 million). All these countries have relatively low wages, combined with a good infrastructure. Over the last five years (2011-2015), exports from Mexico grew with a CAGR of 50%, compared to a CAGR of 21.5% in China. The main reason for the relatively high growth from Mexico is that employee productivity is higher in Mexico than in China. Second, Mexico has many trade agreements, giving it a good exporting position. Exports of vehicle axles and their parts from Thailand increased from € 2.5 million in 2011 to € 22 million in 2015.

Tip

China, Mexico, Turkey and India export a fair amount to the EU. Seek partnerships in these countries, given their status as major trade hubs for access to the European market.

Exports

In 2015, the total value of vehicle axles exported by countries in the EU was € 8.1 billion. The EU thus has a positive trade balance (exports minus imports) of € 900 million. The CAGR for exports of axles was 2.1% since 2011. The majority of axles and axle parts were exported within the EU (74.2%). Only 13.8% was exported to developing countries. Exports to developing countries have decreased by a CAGR of 2.5% since 2011.

Within the EU, Germany and Italy are by far the largest exporters of axles, with export values of € 3.4 billion and € 927 million, respectively. Exports from the Netherlands grew with a CAGR of 31.1% between 2011 and 2015.

Production

The total production value for axles in the EU was around € 9.9 billion in 2015. Production values have grown with a CAGR of 3.5% between 2011 and 2015. The increase of production has led to a relative increase in imports of parts. The import of axle parts had a CAGR of 5.2%, while the import of complete axles grew by only 1.9% per year between 2011-2015.

With regard to production in individual countries, the United Kingdom grew fastest with a CAGR of 21.1%, followed by Slovakia with a CAGR of 17.8%. In France, production doubled in 2011 compared to 2010. In the following years it fell back to its 2010 level.

Consumption

The apparent consumption (production + imports – exports) in the EU shows how much axles and parts are used. The total consumption of axles and axle parts in the EU grew by a CAGR of 4.7% (2012-2015). Spain and the United Kingdom have the largest value of axles used with a CAGR of 18.1% and 9.2% between 2011 and 2015. The consumption of axles in France and Italy decreased by a CAGR of 11.2% and 16.8%. The main reason for the differences in consumption is the average age of the cars in a country, which is highly influenced by national governmental regulation.

3. What trends offer opportunity on the European market for vehicle axles?

Lightweight is the most important trend

- [EU legislation](#) sets emission standards for the automotive industry. These standards are getting stricter. There are several ways to reduce CO2 emissions, for example by producing lighter vehicles or by improving transmission to reduce fuel consumption. This trend also influences the production of axles. Manufacturers of axles aim for equally strong but lighter axles. The aim for lighter axles is the most important trend affecting the market.
- One way of minimizing the weight of the material is the use of [finite element analyses](#), which is a mathematical method to calculate the required strength of the axles. When the strength of the parts is calculated more accurately, less material is required.
- Another way to reduce the weight of axles is to make use of a different configuration. In the production of trucks, the demand for a 6x2 configuration is on the rise, slowly replacing 6x4 configurations.

Tips:

Communicate your efforts in the area of sustainability to the outside world (website and literature).
Develop lightweight products, for they will offer huge opportunities in the coming years.

The axle manufacturing process is changing

- In order to increase efficiency, the different tiers increase their collaboration by adjusting their information technology. By integrating information systems, the process of the total supply system becomes more optimized and efficient. As a side effect, suppliers from different tiers become more tightly connected, which will probably result in longer-lasting relationships.
- Besides the collaboration on information technology, OEMs and Tier 1 suppliers work together to develop more efficient axle rotation systems.
- The production process is changing. Different ways of heating and cooling during the production process are used, leading to stronger components. At the same time, more robots are used in the production process. These require high investments, but eventually lead to a more efficient production process. The increased automation makes it harder for start-ups to enter the market.

Axle manufacturers innovate their products

- The production process of axles and parts is changing rapidly, in very different aspects. Producers experiment with the shape and materials used in the production of the parts. New hub spindle designs, for example, have led to increased bearing capacity, while the use of rubber and plastics has led to lighter and longer-lasting parts. Besides a better quality, Tier 1 suppliers gain better profits when using these new materials.
- Tier 1 manufacturers develop new technologies to increase the axles ratios. A higher axle ratio improves the vehicle's acceleration and towing performance. Besides, axles with higher ratios maintain a continuous

power output while the engine drives with lower rounds per minute. This saves fuel.

Tips:

Read the [CBI study on trends](#) in the automotive industry.

Talk with your buyers about their technological developments to know what will be expected from you in the coming years.

Make sure that you can live up to the quality level that European buyers expect.

Keep your production technologies up to date, since newly developed methods can improve productivity and quality.

Explore the opportunities of integrating your information technology with your buyer, as this will reduce your chances of losing a client.

4. What requirements should axles comply with to be allowed on the European market?

The quality, reliability and durability of axles in Europe is very high because the machines are used for extended periods of time daily and do not always have extensive maintenance schedules. This means that the parts supplied to the market have to be carefully manufactured and inspected.

Compliance with international standards and the European standards on safety is required, as well as conformity with existing European Union (EU) and national legislation and practices. This paragraph describes the requirements for trading in the European Union and some non-regulatory requirements.

Requirements can be imposed by the public sector (such as standardization bodies) or driven by the industry (like 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.

The requirements can be divided into: (1) 'musts', which you must meet 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).

Tips

Read our study on [buyer requirements](#) on the Market Intelligence Platform of the CBI for additional information on legal and non-legal requirements.

For more information on the legal requirements for your product, go to the [EU Export Helpdesk](#).

Musts

Axles are tested by Whole Vehicle Type Approval

[Whole Vehicle Type Approval](#) (WVTA) is a certification for various types of motor vehicles and their components,

which include agricultural and forestry tractors. The WVTA 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 which case certification of individual components is not necessary, although these components will still have to comply with type-approval requirements.

Within WVTA, different aspects of the axles are tested. Information about the exact size and strength of the axles are measured along with the (equal) distribution weight of the vehicle among the axles and the distance to the ground. Each axle needs a description including the type, the manufacturer and the position. Together with the description, a schematic diagram of the axles showing the steering geometry is required.

All components need to be coded

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

Adjust your packaging with your buyer and European regulations

The requirements with regard to the packaging of your products are determined by the buyer. In the automotive industry, this is either the OEM or the retailer or wholesaler in the aftermarket. When you sell to lower Tier suppliers, the demands on packaging may be lower or equally high. In any case you need to confirm this with your buyer.

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 aftermarket sector, packaging is typically disposable.

Axles are typically packaged in cardboard and/or wooden boxes to protect them from being damaged. They are labelled with a description of the technical parameters, such as model type, basic load capacity, gearing size and location of manufacturing. In addition, 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.

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

Tips:

Identify the buyer's requirements and specifications for the product, the materials and packaging.

For additional information on requirements for packaging and packaging waste, refer to the [European Commission](#). Additional requirements apply to [wood packaging](#).

Quality management systems

In order to apply for type approval, production processes need to meet quality management criteria. 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. [ISO 9001](#) is a more general quality system. Both are accepted as standard requirements and EU buyers and manufacturers often insist on them. Mind that ISO/TS 16949 will be replaced in early 2017.

Tips:

Implement [ISO 9001](#) or [ISO TS/16949](#), as it is a standard requirement of EU buyers.

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 manufacturing.

Additional requirements

Additional requirements can be divided into environmental requirements and social requirements.

Environmental requirements

The EU has set [binding emission targets for new cars and vans](#). This means that every newly sold car or van is permitted a certain amount of CO2 emissions. The maximum amount of CO2 emissions for passenger cars is 130 grams of CO2/km starting from 2015 and will be reduced to the target level of 95 grams of CO2/km in 2021. This will result in increasing demand for lightweight materials and thrifty parts from suppliers. This regulation affects suppliers of axles and parts as well.

Tip:

To get ahead of the market, make sure your products are lightweight.

Social requirements

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 also often a requirement for core suppliers.

Tips

Most major car brands publish their CSR policies and supplier codes of conduct on their websites. An internet search for these codes of conduct is likely to yield valuable insights with which to assess your company's performance by comparison.

Implement an environmental management system (such as [ISO 14001](#)), as European buyers require it more and more frequently.

For more information on non-legal requirements generally accepted in Europe, we refer to the [International Trade Centre's Standard Map](#).

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.

5. What competition do I face in the European Union?

Competition in the axle industry is global. While there are several European Tier 1 suppliers (the [Schaeffler Group](#), for example), the European market is supplied by American manufacturers (such as [Automotive Axles Limited](#)) as well. Besides, Chinese suppliers (like the [Guangdong FUWA Engineering Group](#)) are gaining market share. These foreign suppliers export to Europe, but they also have factories in Europe. With a growing global and European market, many suppliers have been focussing on growth as well as on research and development. In the previous years, most larger Tier 1 suppliers have experienced positive profit margins of around 5% per year.

Tips:

Additional sector-level information is provided in the [CBI study on competition](#) within the automotive industry.

Read the [CBI Tips for doing business with European Buyers](#) in the automotive industry.

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 a competitive advantage. These skills can help in producing cost-effective and high-quality products.

6. What do the trade channels and interesting market segments for axles look like in Europe?

You can find a general overview of the European market channels and segments for automotive parts and components on the Market Intelligence Platform of CBI. The market channels and segments for vehicle axles do not differ significantly from those for the sector in general.

Tip

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

7. What are the end-market prices for axles?

Sales margins of Tier 1 suppliers fluctuate between 5% and 30%. The exact margins depend on the efficiency of the supplier, whether the products are sold to OEMs or the aftermarket (margins are higher in the aftermarket),

but also on the core business of the suppliers. Suppliers which are more vertically integrated have higher sales margins, but also higher production costs, while suppliers who focus more on assembly have lower sales margins but also lower production costs. In general, we expect the price of the smaller components to drop, and the price of the axle itself to remain stable.

Because the axle market has grown in the past years, and is expected to grow further in the coming years, manufacturers have increased their production capacity, leading to lower production costs. Furthermore, new production technologies have led to a more efficient production process. Third, the use of alternative materials such as rubber and plastics have led to reduced material costs of the smaller components, while the material costs of the axle itself is expected to rise. The axle is made of SAE grade 41xx steel or SAE grade 10xx steel. While the price of steel has dropped significantly in the past years, the forecast for the coming years is that it will rise slightly.

Prices of specific parts differ per product. You can 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 harmonized their prices; any differences in pricing may occur because of different logistics and local costs.

Tips:

In order to better ascertain prices of specific products and models, you should talk directly to wholesalers and local experts. The only way to gain information about products or materials within specific markets is with inside information.

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.

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.

Use contracts with variable material costs. It is important to set the reference index for the fluctuations in agreement with the buyer. Use, for example, the steel index of the London Metal Exchange.

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.