

CBI MARKET SURVEY

The castings and forgings market in the Czech Republic**Publication date: May 2008****Introduction**

This CBI market survey provides exporters in developing countries (DCs) with information on some of the main developments in the castings and forgings market in the Czech Republic. The information is complementary to the information provided in the CBI market survey 'The castings and forgings market in the EU', which covers the EU in general. That survey also contains an overview and explanation of the selected products dealt with, some general remarks on the statistics used, as well as information on other available documents for this sector. It can be downloaded from <http://www.cbi.eu/marketinfo>.

1 Market description: industrial demand and production**Industrial demand**

Because no data for the demand for castings and forgings are available, this survey puts a focus on two major end-user industries that offer good opportunities for developing country (DC) exporters: the engineering and the construction industry. Since both industries use many cast and forged parts and products, the production output of both industries is a good indication for the demand for cast and forged parts in these industries.

Engineering industry

Czech production in the engineering industry increased 14.3% per year in the period 2002-2006, to more than €14 billion in 2006. Mechanical engineering represented by far the largest share (about 50%) in the use of domestically produced iron castings. The medium-sized Czech engineering industry ranked eleventh in the EU, behind Poland and Finland, but ahead of Belgium and Denmark. Of the main castings and forgings consuming engineering categories, especially "pumps and compressors" (+25.7% per year), "agricultural machinery" (+25.7%), "valves and taps" (+24.4%), "bearings, gears and other driving elements" (+21.7%) and "engines and turbines" (+19.3%) performed the best. The position of the Czech Republic in the EU was especially strong in "machinery for textile, apparel and leather production" (5th largest producer with 5% market share), "machine tools, woodworking machinery and welding equipment" (7th with 2% market share) and "pumps and compressors" (10th with 2% market share).

Due to the world, EU, and Czech economic growth forecasts for 2008 (+3.8%, +1.7% and +4.7% respectively) and 2009 (+3.9%, +1.8% and +5.4%), leading to a good demand for engineering products in the country, the Czech industry is expected to continue its spectacular growth of recent years. Please also note that, although the EU is far from running the risk of recession, the EU and Czech economy are and will be clearly affected by the housing and credit crisis in the United States.

Construction industry

After a total growth of almost 25% in the period 2002-2005, the Czech construction industry amounted to €14.2 billion in 2005. For the period 2006-2008 it is expected that the industry will grow by 16% in total to €16.4 billion in 2008. The small Czech construction industry ranked fifteenth in the EU, behind Finland and Sweden, but ahead of Hungary and Slovakia.

Production

Foundry industry

From the late 1980s to the early 1990s, Czech foundry production suffered greatly but during the following decade, the country gradually increased its output. Nowadays, the foundries that used to be suppliers of the army have proved to be technologically competent and, as a result, on average they performed the best of all Czech foundries. In 2006, the medium-sized Czech foundry industry ranked seventh in the EU, behind the UK and Poland, but ahead of Sweden and Austria. Iron castings accounted for 53% of total production, followed by steel castings (20%) and light and ultra light castings (16%). In 2006, the medium-sized production of metal castings totalled 561,000 tonnes, an increase of 6.2% per year compared to 2002. Main reason was a good growth in production of light and ultra light castings (+12.7% per year), steel castings (+8.6%) and iron castings (+5.3%).

Kovolit customers all over Europe - Kovolit produces aluminium die castings and non-ferrous metal forgings. Nowadays, among the largest foreign customers are the German firms, with the Swedish ones in a strong second position. The French and the Spanish firms are next, while a not insignificant share goes to the traditional Czech companies. Kovolit's customers are active in production of machinery, electrical engineering and automotive. The company has great plans for the future, with a project for high pressure die casting of magnesium; Kovolit will be the first Czech foundry casting magnesium under pressure.

In the period 2001-2004, the average turnover per employee increased almost 50% to almost €37,000 – an amount which was the ninth largest in the EU, behind Finland, Portugal and Slovenia, but ahead of Poland and Lithuania. In 2005, the country was home to about 180 ferrous metal foundries and about 60 non-ferrous metal foundries. Some examples of the foundries that suffered during the 1980s and 1990s but survived are Kovolit - <http://www.kovolit.cz> (see textbox above) and the largest foundries of the Czech Republic: PBSVB - <http://www.pbsyb.cz>, Šmeral Brno - <http://www.smeral.cz>, Zdas - <http://www.zdas.cz> and ŽDB - <http://www.zdb.cz>. Several Czech foundries have not been modernised yet. In case they are, they will form a major threat to DC exporters. One recent example of a Czech foundry that started a modernisation program is Slevarny Trinec (<http://slevarny.trz.cz>; see textbox), which is part of the steelwork company Trinecke Zelezarny (TZ).

Modernisation at Slevarny Trinec - after the €7.2 million modernisation, production at the foundry is expected to increase by 16,800 tonnes per year to about 24,000 tonnes per year by 2010. The foundry will produce small and medium-sized steel castings for the automotive, engineering and electro technical industries. Furthermore, the foundry will also produce gray and nodular cast iron fittings for the rail transportation and agriculture sectors. Major customers of the foundry are TZ's subsidiaries Moravia Steel and DT Prostejov, the Swedish car producer Volvo, machinery manufacturer Kalmar and German crane manufacturer Sennebogen. In 2006, 60% of total production was exported.

Furthermore, several West-European OEMs acquired a foundry in the Czech Republic, such as Saint Gobain (pipe foundry), Siemens (<http://www.siemens.cz>), Mittal Steel (from India) - <http://www.mittalsteelostrava.com> and Alstom Power - <http://www.alstom.cz>, or started a joint venture, such as MAN B&W Diesel (<http://www.pbsturbo.cz>). The well-known engineering conglomerate Skoda also owns a foundry and a forge, under the name Pilsen Steel - <http://www.pilsensteel.cz>.

The majority of foundries are small enterprises producing light alloy grades. Exports account for 70% of total production, with the vast majority being aluminium parts. Most of these are sold as semi finished items. Although complete products mean a higher added value, the Czechs believe that this cannot be changed easily, as it is the result of globalisation where individual nations play minor roles in world trade and production. However, some companies prove the opposite, such as ČKD Kutná Hora - <http://www.ckdkh.cz> (see textbox).

ČKD Kutná Hora plays a role in world trade - ČKD Kutná Hora is a well-known foundry and engineering company; producer of steel and ductile iron castings, of welded components and railway bogie frames. Its customers are in Western Europe, Sweden and also in Canada and the USA. While the company already possesses many quality certifications (ISO 9001, DBAG, ČD, Asme, EN 729-2, DIN6700 and DIN188700), recently the company was successfully audited by a Dutch Certification Organisation for a ISO 9002 certification, in order to start supplying railway bogie frames to a customer in Western Europe. Furthermore, the company completed a new production line in 2005 for the production of Volvo front loader frames.

A major weakness of the Czech industry is the fact that training in the Czech Republic is running at a low level and technical colleges are closing. Once the training problem has been solved, the foundry industry will be in a much stronger position. With regard to the next few years, the industry association expects growth in the foundry industry output, although steel production will be partly replaced by (the growing application of) nodular iron, while aluminium and magnesium die casting will also increase. As in 2006, some major drivers of growth will be the automotive industry, the metallurgical industry, and the production of machine tools.

Forge industry

The Czech forge industry ranked seventh in the EU, behind Spain and Poland. In 2006, the small production of the Czech forges totalled 267,000 tonnes, an increase of 15.5% per year compared to 2002, for the major part due to strong exports. The Czech growth was by far the largest growth of all EU countries that report to the European Forge Association. Some more characteristics of the Czech forge industry are:

- Almost 50% of all forges are drop forgings and only 3 forges produce non-ferrous forgings.
- Most drop forges (23) are small with an annual production volume of 30-5,000 tonnes. The same goes for open die forges, 12 of them produced between 8-5,000 tonnes of forgings.
- Only 8 drop forges produce more than 5,000 tonnes annually with the largest drop forge producing 20,000-25,000 tonnes per year. The largest drop forges are CPF Plzeň - <http://www.cpforge.com>, VIVA Zlín - <http://www.vivazlin.cz>, Mokov Jihlava - <http://www.mokov.com>, Taforge Kopřivnice - <http://www.taforge.cz> and Strojmetal-Alcan - <http://www.strojmetal.cz> (aluminium forgings).
- With regard to open die forges, only 4 forges produced more than 5,000 tonnes per year, with the largest open die forge producing between 30,000-40,000 annually: Škoda Steel - <http://www.skoda-steel.net>, part of the Russian conglomerate OMZ. Other large open die forges are Vítkovice Ostrava - <http://www.vitkovice.cz>, Zdas - <http://www.zdas.cz> and Poldi Hütte - <http://www.poldi.cz>.

Trends and characteristics

These are the major trends and characteristics that influence demand for, and production of castings and forgings in the Czech Republic:

- **Growing demand for light weight and energy-efficient applications.** Due to the growing care for the environment, in several industries – for example the power generation industry – the search for energy efficiency and the limitation of CO₂ and NO_x emissions has led and should lead to the increased use of energy-efficient and light weight applications such as electric variable speed drives and energy-efficient engines, turbines, motors and generators. As a result, prospects for cast and forged parts in such applications are bright.
- **Relocation of engineering production to the Czech Republic.** In recent years, a lot of engineering production has been shifted from West European countries to the Czech Republic.
- **Rising demand for agricultural machinery.** Due to EU interventions, the demand for agricultural machines is expected to increase in the years to come, which will also lead to an increase of agricultural machinery production in the Czech Republic.

Opportunities and threats

The main opportunities and threats for developing country (DC) exporters are the following:

- + The fast growing economy is expected to drive a healthy demand for engineering products in the years to come, which will also stimulate local engineering production. The economic growth in the country is much stronger than the average economic growth in the EU.
- + Growing construction output will lead to an increasing demand for castings and forgings in the next few years.
- + Light weight products and eco-friendly and energy-efficient technologies offer good opportunities for those DC exporters that are able to supply such products.
- + Shift of engineering production towards the Czech Republic, which may lead to an acceleration of demand growth for castings and forgings of the Czech engineering industry.
- + The strong increase of the Czech wage level (refer to Section 4) – which is expected to continue – in relation to the low average turnover per employee, gives the Czech industry a weak position.
- DC exporters can expect competition from Czech producers, although Czech wage costs are growing fast, which weakens the country's competitive position.

Overall, the demand for castings will grow in the Czech Republic over the next few years as the major end user industries, such as the engineering and construction industry, continue to increase their output. Moreover, the niche for casting products made in CEE countries will continue to grow as Western European foundries focus on more technologically sophisticated products. Refer to Section 7 of the CBI market survey covering the EU market for more information on opportunities and threats.

2 Trade channels for market entry

Trade channels

The most common trade channels for DC exporters are direct sales to end-users, trade via traditional importers, supply agents, traditional agents, or subcontracting by EU foundries or forges. Although there are several options, supplying directly to end-users has some advantages and could be one of the most interesting trade channels, because there is a larger chance of a long-lasting relationship. DC exporters should therefore put efforts into building up supplier relationships with end-users. Refer to the CBI market survey covering the EU market for a detailed explanation of relevant trade channels in this market.

Examples of potential trade partners

End-users are operating in many areas, such as aerospace, freight vehicles, machine tools and rails cars. Some examples of these are CKD (<http://www.ckd.cz>; machinery) and Skoda (<http://www.skoda.cz>). Skoda is one of the largest engineering conglomerates in the EU. For a major part, the production output of this company is the reason that the Czech Republic is highly specialised in heavy machinery. Other examples are Bobcat (<http://www.bobcat.com>; construction machinery), CZ Strakonice (<http://www.strakonice.cz>; transmissions) and CKD (<http://www.ckd.cz>; machinery).

Price structure

It is very difficult to give a general idea of the price structure in this industry, as prices and margins differ to a great extent. They may depend on size of the order, length and type of distribution chain, terms of delivery, added value / finishing and materials concerned. Bearing this in mind, some rough indications of margins in the chain could be given. Agents work with margins between 3-7%, for importers this is 15-35%. The margin depends on the level of care and attention an intermediary has to give to the process. Products that do not need much extra care, like finished and ready-to-use products such as valves, will be sold with a smaller margin than products that needs extra handling or even need to be stored.

Useful sources

Some examples of available sources to find clients:

- Association of Manufacturers and Suppliers of Engineering Technology – <http://www.sst.cz> - choose the English version and click on 'Members'.

- Czech Constructional Steelwork Association – <http://www.caok.cz> - first choose the English language and then click on 'Members'.
- Czech Forging Association – <http://www.skcr.org> - first choose the English language and then click on 'Members' directory'.
- Czech and Moravian Electrical and Electronic Association – <http://www.electroindustry.cz> - choose the English language and then click on 'The members of EIA'.
- Foundry Association of the Czech Republic - <http://www.svazslevaren.cz/ver3> - choose the English language and then click on 'Members', or <http://www.svazslevaren.cz/en/index.htm> - click on 'Catalog'.
- Investment and Business Development – <http://www.czechinvest.org> - choose the English language and then click on 'Partnership opportunities'.

One example of a general source is Direct Industry - <http://www.directindustry.com> - you can search by product, company ('exhibitors') or catalogues and technical brochures.

3 Trade: imports and exports

Imports

In 2006, the Czech Republic was a medium-sized importer of castings and forgings, ranking tenth in the EU, behind Poland and Austria, but ahead of Sweden and Denmark. Between 2002 and 2006, the total import value annually increased by 20% to €9.4 billion (6.4 million tonnes) in 2006. The increase in value was partly caused by the increasing prices of raw materials (refer to Section 4). The product group shares were as follows:

- Iron and steel products: 34% of total. Annual increase in import value of 26%.
- Articles of iron, steel or base metal: 20% of total. Annual increase in import value of 14%.
- Parts of machinery, railway equipment and vehicles: 18% of total, increase of 19%.
- Plastic and rubber products: 12% of total. Annual increase in import value of 14%.
- Copper and zinc products: 9% of total. Annual increase in import value of 35%.
- Light and ultra light products: 7% of total. Annual increase in import value of 16%.

Between 2002 and 2006, imports from DCs annually increased by 22% in value. Compared to 2002, the total share of DCs in import value increased from 2% to 2.1% in 2006. The DCs' shares in imports of some product groups showed better growth compared to other product groups, as can be seen below:

- Copper and zinc products: growing from 1% to 2.3% in value.
- Plastic and rubber products: growing from 1.1% to 1.7% in value.
- Articles of iron, steel or base metal: growing from 2.6% to 3.7% in value.
- Parts of machinery, railway equipment and vehicles: growing from 1.5% to 2.1% in value.
- Light and ultra light products: growing from 1.8% to 2.4% in value.
- Iron and steel products: declining from 2.4% to 1% in value.

China accounted for 47% of all imports coming from DCs, followed by Turkey (21%), India (9%), Malaysia (4%), Kazakhstan (3%), Thailand (3%). The Chinese share of DC exports to the Czech Republic did not grow as fast as in the EU on average (39% compared to 57%). The DCs that saw a larger increase of their share to the country were Vietnam, Moldova, Turkey, Thailand, Mexico, Brazil, India and Malaysia.

Of all intra-EU imports a small part may be re-exports, but the exact value of re-exports is unknown because Eurostat does not allow for such detailed analysis.

Exports

In 2006, the Czech Republic was a medium-sized exporter, ranking tenth in the EU, behind Spain and Sweden, but ahead of Poland and Finland. The total export value of the Czech Republic showed an annual increase of 17% in the period 2002-2006, totalling €9.8 billion in 2006. Exports consisted of:

- Articles of iron, steel or base metal, accounting for 32% of total exports (€3.2 billion). Annual increase in export value of 16%.

- Parts of machinery, railway equipment and vehicles, accounting for 32% of total exports (€3.1 billion). Annual increase in export value of 14%.
- Iron and steel products, accounting for 25% of total exports (€2.4 billion). Annual increase in export value of 21%.
- Plastic and rubber products, accounting for 6% of total exports (€599 million). Annual increase in export value of 19%.
- Light and ultra light products, accounting for 4% of total exports (€380 million). Annual increase in export value of 15%.
- Copper and zinc products, accounting for 2% of total exports (€164 million). Annual increase in export value of 34%.

Probably a small part of exports consists of re-exports to other EU countries, mainly to neighbouring countries, but the exact value of re-exports is unknown because Eurostat does not allow such a detailed analysis.

Opportunities and threats

- + The Czech Republic ran trade deficits (imports are higher than exports) for iron and steel products (€545 million), plastic and rubber products (€220 million), copper and zinc products (€119 million), light and ultra light products (€85 million).
- + The total import value of all product groups increased in the period 2002-2006.
- + The Chinese share of DCs' exports to the Czech Republic did not increase as fast as in the EU on average (39% compared to 57%). Several DCs saw a larger increase of their share.
- ± The DC share of total imports grew by 5% in the period 2002-2006, which was slower than in the EU on average (81%).
- In 2006, the Czech Republic was a net-exporter of castings and forgings, running trade surpluses for parts of machinery, railway equipment and vehicles (€413 million), articles of iron, steel or base metal (€1.2 billion)
- The import share of DCs was 2.1% in 2006, far below the EU average (8.2%).
- China accounted for 47% of all imports coming from DCs. This was a higher share than in the EU on average (39%).

Useful sources

- EU Expanding Exports Helpdesk - <http://exporthelp.europa.eu> → go to: trade statistics
- Eurostat - official statistical office of the EU - <http://epp.eurostat.ec.europa.eu>
- Understanding Eurostat: Quick guide to EasyComext - http://epp.eurostat.ec.europa.eu/newxtweb/assets/User_guide_Easy_Comext_20080117.pdf

4 Price developments

One of the major trends that affect the costs and revenues of the Czech castings and forgings production is price pressure, which results in importers/agents and OEMs as well as their suppliers continuing their search for opportunities to reduce cost prices of parts by 10-30%. This may be underlined by the fact that prices in the engineering industry increased only 5.4% in the period 2000-2005. In 2006, there was some price pressure relief, which can be seen from the fact that prices increased by more than 4% compared to 2005.

As in other EU countries, the industry had to deal with increasing raw material and energy prices, as well as increasing wage costs (70% in the period 2000-2005, amounting to €5.03 per man-hour in 2005, which is lower than the wages in Western Europe, but higher than the wages in Hungary, Slovakia and Poland). Industry specialists expect that wages will rise further in the next few years, which will lead to an increasing price level of Czech castings and forgings. Please refer to the CBI market survey covering the EU market for castings and forgings for more information on trends related to price developments.

Useful sources

- CAEF Eurofoundry - <http://www.caef-eurofoundry.org>

- European Engineering Industries Association (Orgalime) – <http://www.orgalime.org>
- Eurostat – official statistical office of the EU – <http://epp.eurostat.ec.europa.eu> - by comparing import value and volume, it is possible to get an idea of import prices.
- London Metal Exchange – <http://www.lme.co.uk>

5 Market access requirements

As a manufacturer in a developing country preparing to access the Czech Republic, you should be aware of the market access requirements of your trading partners and the Czech government. For information on legislative and non-legislative requirements, go to 'Search CBI database' at <http://www.cbi.eu/marketinfo>, select castings and forgings sector and the Czech Republic in the category search, click on the search button and click on market access requirements.

Detailed information on packaging can be found on the ITC website on export packaging: <http://www.intracen.org/ep/packaging/packit.htm>. Information on tariffs and quota can be found at <http://exporthelp.europa.eu>.

6 Doing business

Information on doing business, such as approaching potential business partners, building up a relationship, drawing up an offer, handling the contract (methods of payment, and terms of delivery) and cultural differences can be found in CBI's export manuals 'Export Planner', 'Your image builder' and 'Exporting to the EU'. These can be downloaded from <http://www.cbi.eu/marketinfo> - go to search publications. Beside a number of sources already mentioned in previous sections, other useful sources that contain market information and information on doing business in the Czech Republic are trade fairs, associations and magazines:

Trade fairs

Relevant trade fairs in the Czech Republic are:

- Fond-ex - <http://www.bvv.cz/fondex> - held biannually, May, even years, in Brno
- For Industry - <http://www.forsurface.cz/2007/en/chavy.asp> - held biannually, April, uneven years, in Prague
- MSV - <http://www.bvv.cz/msv-gb> - engineering fair, held annually in Brno.

Trade magazines

Some relevant trade magazines in the Czech Republic are:

- Slévárenství - <http://www.svazslevaren.cz/en/index.htm> - click on 'Published periodicals'.
- Konstrukce - <http://www.konstrukce.cz/prezentace.php?lang=2> - civil engineering.

In general, German trade magazines contain very good information, also for this country. One example is 'Giesserei', a foundry magazine (<http://www.giesserei-verlag.de>). To find more relevant trade magazines consult the CBI market survey covering the castings and forgings market in Germany.

Other useful sources

- Association of Building Entrepreneurs of the Czech Republic - <http://www.sps.cz>
- Czech Pump Manufacturers Association - <http://www.cpma-svc.org>
- Kwint Essential: for practical tips on business culture and etiquette in the Czech Republic - <http://www.kwintessential.co.uk>. Click on 'Country Profiles' at Resources and click on 'Czech Republic'.

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