

## CBI MARKET SURVEY

## The castings and forgings market in Finland

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**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 Finland. 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***

Finnish production in the engineering industry increased 4.2% per year in the period 2002-2006, to more than €14 billion in 2006. Mechanical engineering accounted for the major share (almost 75%) of total engineering production and also represented by far the largest share in the use of domestically produced iron castings. The medium-sized Finnish engineering industry ranked tenth in the EU, behind Austria and Poland, but ahead of the Czech Republic and Belgium. Of the main castings and forgings consuming engineering categories, "machine tools, woodworking machinery and welding equipment" (+11.3% per year), "machinery for textile, apparel and leather production" (+10.7%), "agricultural machinery" (+7.3%) and "pumps and compressors" (+5.9%) performed the best. The position of Finland in the EU was especially strong in "engines and turbines" (6<sup>th</sup> largest producer with 6% market share), "agricultural machinery" (6<sup>th</sup> with 4% market share) and "electric motors, generators and transformers" (7<sup>th</sup> with 5% market share).

Despite the world, EU, and Finnish economic growth forecasts for 2008 (+3.8%, +1.7% and +3.1% respectively) and 2009 (+3.9%, +1.8% and +2.8%), leading to a good demand for engineering products in the country, it is difficult to predict to what extent the Finnish manufacturers will benefit from this, but on the whole, the Finnish industry is expected to perform well, also because of several large investment projects that are planned for the coming years (e.g. the construction of a nuclear power station, good for € 3.0 billion). Furthermore, demand for machines and equipment will rise, since Finnish producers are forced to rationalise their production in order to remain competitive. This will also stimulate local production. Please also note that, although the EU is far from running the risk of recession, the EU and Finnish economy are and will be clearly affected by the housing and credit crisis in the United States.

***Construction industry***

After a total growth of 10% in the period 2002-2005, the Finnish construction industry amounted to €22.3 billion in 2005. For the period 2006-2008, it is expected that the industry will grow by 3.2% in total to €23 billion in 2008. The small Finnish construction industry

ranked thirteenth in the EU, behind Denmark and Poland, but ahead of Sweden and the Czech Republic.

### Production

The small Finnish foundry industry ranked fifteenth in the EU, behind the Netherlands and Portugal, but ahead of Denmark and Lithuania. Nodular iron castings accounted for 44% of total production, followed by iron castings (30%) and steel castings (12%). In 2006, the small production of metal castings totalled 155,000 tonnes, an increase of 6% per year compared to 2002. Main reason was a good growth in production of nodular iron castings (+12% per year). The investment level in the foundry industry was relatively high in recent years, at 3-3.5% of total sales. Most investments were related to rationalisation and environmentally friendly production. The Finnish forge industry is also small; it ranked eleventh in the EU, behind Sweden, Belgium and Slovenia. In 2006, the production of forgings totalled 20,000 tonnes.

In 2006, the country was home to some more than 20 ferrous foundries and 15 non-ferrous foundries. In the period 2002-2006, the average turnover per employee increased 4.3% per year to almost €116,000 – an amount which was less than in Spain and the Netherlands, but more than in Portugal. Finland is home to several companies that are outperforming in niche markets. Examples of such companies are Alsiva - <http://www.alsiva.fi> and Johnson Metall Oy - <http://www.johnson-metall.fi>, offering a unique combination, reaching from copper alloy casting to the production of finished machining parts, such as bearings. Another example is Sacotec Components - <http://www.sacotec.fi>. With an annual turnover of €6 million, of which 50% is exported, this company is the leading investment casting foundry in Finland.

The largest foundries in Finland are Peiron Oy - <http://www.peiron.com>, comprising 3 foundries, and Metso - <http://www.metso.com>. Metso is a large engineering company with in-house casting production at 2 foundries in Finland and one in Sweden. The largest customer sector for the foundries division of Metso is the heavy truck industry, but the division also supplies castings to companies in the power and transmission, machine building and off-road industries. Another foundry giant is Componenta – <http://www.componenta.com>, a Finnish conglomerate which comprises, among other things, 4 foundries in Finland (see textbox) and a number of machine shops.

**Forced to improve efficiency, quality and delivery reliability.** In recent years, Componenta invested heavily in upgrading the operations of the entire supply chain: casting, machining, pre-assembly, heat treatment, surface treatment and delivery. As a result of the strong price pressure of the heavy truck sector due to intense competition in that sector – especially for high volume products from LCCs – Componenta's foundries were forced to specialise and to improve productivity in high volume production. This resulted in one of Componenta's foundries (Karkkila) now being one of the most modern foundries in Northern Europe. The automated moulding line, the new melting furnace and automatic pouring machine create the potential for efficient production and a diverse product range. Although the Karkkila foundry recorded a heavy operating loss in 2005, since 2006 the delivery reliability, internal and external quality and production efficiency have been improved significantly. Componenta expects that Karkkila will soon reach the level for operating profit of the Componenta group's best foundry units (10%) in 2008. For the whole group, the company's strategy until 2010 – based on the mission "Casting Future Solutions" – is to produce added value with high quality solutions for casting, machining and surface treatment, advanced design and through close partnerships with the customers. The company's strategic goal is to become market leader in advanced cast components in Europe by 2010.

### Trends and characteristics

A major trend that influences the castings and forgings demand and production in Finland is the growing number of innovative applications of aluminium and magnesium castings. Other trends are:

- **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 CO<sub>2</sub> and NO<sub>x</sub> 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.** In recent years, some engineering production has been outsourced to low cost countries (LCCs), especially to the Baltic States. So far, outsourcing often concerns labour-intensive and series production of standard products and parts that can easily be made in LCCs.

### Opportunities and threats

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

- + Growing engineering and 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 LCCs, which may lead to a deceleration of demand growth for castings and forgings of the Finnish engineering industry.

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

Some examples of end-users in Finland are Hiab (<http://www.hiab.com>; lifting and handling equipment) and Valtra (<http://www.valtra.com>; tractors). Other examples of end-users in Finland are the multinational companies ABB (<http://www.abb.com>; engineering products), Kone (<http://www.kone.com>; elevators and escalators), Nikotron (<http://www.nikotron.fi>; machinery), Ponsse ([www.ponsse.com](http://www.ponsse.com); forest machinery) and Wartsila (<http://www.wartsila.com>; engines and other engineering products).

### 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 need extra handling or even need to be stored.

### Useful sources

Some examples of available sources to find clients:

- AgentProf - <http://www.agentprof.com> – database with agents.
- Finnish Intermediaries Federation - <http://www.agenttiliitto.fi> - several Finnish agents, distributors and importers are member of this federation.
- Technology Industries of Finland - <http://www.techind.fi/english/jasenet.php> - list of members.

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. Here it is possible to get an idea of products made by West European end-users.

### 3 Trade: imports and exports

#### Imports

In 2006, Finland was a medium-sized importer of castings and forgings, ranking seventeenth in the EU, behind Romania and Slovakia, but ahead of Greece and Ireland. Between 2002 and 2006, the total import value annually increased by 11% to €3.4 billion (1.7 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:

- Parts of machinery, railway equipment and vehicles: 28% of total. Annual increase in import value of 10%.
- Iron and steel products: 28% of total. Annual increase in import value of 12%.
- Articles of iron, steel or base metal: 18% of total. Annual increase in import value of 12%.
- Plastic and rubber products: 10% of total. Annual increase in import value of 5%.
- Copper and zinc products: 9% of total. Annual increase in import value of 30%.
- Light and ultra light products: 6% of total. Annual increase in import value of 3%.

Between 2002 and 2006, imports from DCs annually increased by 32% in value. Compared to 2002, the total share of DCs in import value increased from 2.2% to 4.3% in 2006. The DCs' shares in imports of some product groups showed better growth compared to other product groups, as can be seen below:

- Light and ultra light products: growing from 1.9% to 8.8% in value.
- Articles of iron, steel or base metal: growing from 3.7% to 8.7% in value.
- Parts of machinery, railway equipment and vehicles: growing from 2.5% to 5.2% in value.
- Plastic and rubber products: growing from 1.2% to 2.4% in value.
- Copper and zinc products: growing from 1.6% to 1.7% in value.
- Iron and steel products: declining from 1.4% to 1.1% in value.

China accounted for 56% of all imports coming from DCs, followed by Brazil (14%), India (6%), Turkey (4%), Croatia (4%), Malaysia (4%). Beside the fast growing Chinese share of DC exports to Finland (+59% in the period 2002-2006), other DCs that saw a large increase of their share were Croatia and India.

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, Finland was a medium-sized exporter, ranking twelfth in the EU, behind the Czech Republic and Poland, but ahead of Denmark and Slovakia. The total export value of Finland showed an annual increase of 14% in the period 2002-2006, totalling €7 billion in 2006.

Exports consisted of:

- Iron and steel products, accounting for 50% of total exports (€3.5 billion). Annual increase in export value of 20%.
- Parts of machinery, railway equipment and vehicles, accounting for 25% of total exports (€1.8 billion). Annual increase in export value of 11%.
- Articles of iron, steel or base metal, accounting for 9% of total exports (€633 million). Annual increase in export value of 6%.
- Plastic and rubber products, accounting for 8% of total exports (€575 million). Annual increase in export value of 7%.
- Copper and zinc products, accounting for 6% of total exports (€407 million). Annual increase in export value of 16%.
- Light and ultra light products, accounting for 2% of total exports (€151 million). Annual increase in export value of 6%.

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

- + Finland ran trade deficits (imports are higher than exports) for light and ultra light products (€29 million).
- + The total import value of all product groups increased in the period 2002-2006.
- + The DC share of total imports grew by 100% in the period 2002-2006, which was faster than in the EU on average (81%).
- ± The import share of DCs was 4.3% in 2006, below the EU average (8.2%).
- ± The Chinese share of DCs' exports to Finland grew fast in the period 2002-2006 (+59%), but also some other DCs saw a large increase of their share.
- In 2006, Finland was a net-exporter of castings and forgings, running trade surpluses for copper and zinc products (€7 million), articles of iron, steel or base metal (€8 million), parts of machinery, railway equipment and vehicles (€14 million), plastic and rubber products (€89 million), iron and steel products (€1.2 billion).
- China accounted for 56% 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](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 Finnish 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 6.4% in the period 2000-2005. In 2006, there was some price pressure relief, which can be seen from the fact that prices increased by almost 4% compared to 2005.

As in other EU countries, the industry had to deal with increasing raw material and energy prices (+25% in 2006 compared to the previous year) as well as with the fact that Finland is the country with the third highest wage costs in the EU metal industry (€26 per man-hour in 2005); only the wages in Denmark and West Germany were higher. Finnish producers have tried and will try to translate increasing production costs into surcharges as soon as possible, although success depends on the supplier relation and the kind of product. The larger a supplier or the smaller a customer, the larger the negotiation power of a supplier. Moreover, the less the product is a commodity product, the larger is the negotiation power. 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 Finland, you should be aware of the market access requirements of your trading partners and the Finnish 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 Finland 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 Finland are:

- Finnbuild – <http://www.finnexpo.fi/finnbuild> - building trade fair; biennially, September, even years.
  - Finntec – <http://www.finnexpo.fi/finntec> - engineering and metalworking trade fair; biennially, April, even years.
  - Koneagria – <http://www.koneagria.fi> - agricultural machinery fair; annually, October.
  - Mecatec – <http://www.finnexpo.fi> - mechanical engineering and components fair; biennially, September, uneven years.
  - Hannover Messe - <http://www.hannovermesse.de> – the largest engineering trade fair in Europe, held in Hannover, Germany every year. This fair is also home to a large section on castings and forgings. Also visiting trade fairs in neighbouring countries may be a good option. One example of a relevant fair in Sweden is Elmia Subcontractor - <http://www1.elmia.se/subcontractor>. Please refer to Auma (<http://www.auma.de>) and EventsEye (<http://www.eventseye.com>) to find more information on relevant fairs.
  - Association of Finnish Marine Industries - <http://www.marineindustries.fi>
  - Confederation of Finnish Construction Industries - <http://www.rakennusteollisuus.fi>
  - Metallitekniikka (metalworking, aluminium) - <http://www.metallitekniikka.fi> - magazine
- 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.

This survey was compiled for CBI by Facts Figures Future  
in collaboration with Effox Turbine and Gietech.

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