CBI MARKET SURVEY

THE CASTINGS AND FORGINGS MARKET IN THE UNITED KINGDOM

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Report summary

This CBI market survey discusses, among other things, the following highlights for the castings and forgings market in the UK:

- Major end users of castings and forgings are the engineering and construction industry. Both industries are among the largest in the EU. Prospects for 2007-2008 for the construction industry are good, while the outlook for the engineering industry is uncertain.
- In recent years, a lot of engineering production has been relocated to low cost countries (LCCs). This trend is expected to continue even more in the future, which may lead to a deceleration of demand growth for castings and forgings in the British engineering industry.
- The UK's production of ferrous metal castings increased 12% in the period 2001-2005, while production of forgings remained stable. Both industries ranked in the top five in the EU, far behind Germany and behind Italy and France.
- A major trend that affects the British casting and forging production is the growing number of innovative applications of aluminium and magnesium. Furthermore, the growing care for the environment leads to an increased use of electric variable speed drives, engines, turbines, motors and generators. As a result, prospects for cast and forged parts in such applications are bright.
- The total import value increased 12% in the period 2001-2005, while the volume decreased 7%. Compared to 2001, the total share of developing countries (DCs) grew from 6.9% to 9.5% in 2005. The DCs' share in UK's imports grew the fastest in the product groups articles of iron, steel or base metal and parts of machinery, railway equipment or vehicles. In most product groups, China was the most important DC supplier, while other countries that were well represented in the different product groups were India (number two in most product groups, but leading in copper and zinc products), Turkey (number three in most product groups but leading in light and ultra light products), South Africa (leading in iron and steel products) and Saudi Arabia (leading in parts of machinery, railway equipment or vehicles). Among the DCs that saw the largest increase in exports to the UK were Oman, Azerbaijan, Chile, Egypt, Iran, China, Brazil, Mexico, India and Argentina.

This survey provides exporters of castings and forgings with sector-specific market information related to gaining access to the UK. By focusing on a specific country, this survey provides additional information, complementary to the more general information and data 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 demand data for castings and forgings are available, it has been decided, in consultation with industry experts, to focus on two major end user industries in the EU that offer good opportunities for developing country (DC) exporters: the engineering and the construction industry. Since in both industries many cast and forged parts and products are used, the production output of both industries is a good indication for the demand for cast and forged parts in these industries. Although the automotive industry is a very large segment, DC exporters of castings and forgings are advised not to focus on this sector. Quality requirements

are usually very high, competition mainly focuses on price, and, above all, the order quantities involved are far too large for the average DC exporter.

Engineering industry

British production in the engineering industry declined 11% in the period 2001-2005, totalling €52.5 billion in 2005. While production in the mechanical engineering industry declined only 6% in the period 2001-2005 and even performed well in 2004 and 2005 (8.1% and 4.2% growth respectively), the production in the electrical engineering industry declined 20% in the period 2001-2005, due to an increase in outsourcing to low cost countries (LCCs), as a result of the difference in wage costs as well as the strong sterling. The UK's engineering industry ranked fourth in the EU, far behind Germany, Italy and France, but far ahead of Spain and Sweden. Refer to Table 1.1 for more information on the market size of the several engineering categories, as well as the estimated shares of castings and forgings in these categories.

Table 1.1 British engineering production, by category and including the production value share of castings and forgings, 2001-2005, € million

	Share of castings and forgings*	2001	2005	Change '01-'05
Total engineering		**60,076**	**52,461**	**-11%**
Mechanical engineering		**36,929**	**34,611**	**-6%**
Lifting and handling equipment	10%	5,097	4,971	-2%
Machinery for mining and construction	15-25%	3,744	4,808	28%
Non-domestic cooling and ventilation equipm.	10%	5,546	4,714	-15%
Pumps (70%) and compressors (50%)	50-70%***	4,016	4,079	2%
Engines and turbines, ex. aircraft, vehicle	40%	2,957	2,595	-12%
Agricultural machinery	30%	2,760	2,289	-17%
Valves and taps	60-70%	2,114	1,709	-19%
Machine tools, woodworking mach., welding equipm.	**	3,104	1,654	-47%
Machinery for food, beverage and tobacco processing	25%	1,338	1,546	16%
Bearings, gears and other driving elements	50%	1,835	1,087	-41%
Industrial furnaces and furnace burners	10%	596	422	-29%
Machinery for paper and paperboard production	25%	323	209	-35%
Machinery for metallurgy	20-25%	203	154	-24%
Machinery for textile, apparel and leather production	60-70%	357	149	-58%
Electrical engineering		**23,147**	**17,850**	**-20%**
Electrical distribution and control apparatus	5-10%	5,938	4,300	-28%
Electric domestic appliances	5-25%	3,161	3,100	-2%
Electric motors, generators and transformers	30-40%	4,063	3,000	-26%
Other electrical equipment	5-25%	3,762	3,000	-20%
Lighting equipment and electric lamps	5-25%	1,943	1,700	-13%
Electrical equipment for engines and vehicles	5-25%	1,285	1,000	-22%
Accumulators, primary cells and batteries	5-25%	705	550	-22%

* Based on estimations of industry experts and the German Foundry Association.
** While machine tools have a large share of castings and forgings (40-50%), woodworking machinery (10-20%) and welding equipment (5%) have a far smaller share of castings and forgings.
*** Pumps consist for about 70% of castings and forgings, while compressors consist for about 50% of castings and forgings.
Source: VDMA (2006)

As becomes clear from Table 1.1, several categories contain a relatively large production value share of castings and forgings. Of the most relevant categories, only "pumps and compressors" grew, although by only 1.6% in the period 2001-2005. All other categories decreased. In no other EU country the decline of the markets for "valves and taps" (-19%), "bearings, gears and other driving elements" (-41%), "machine tools, woodworking machinery and welding equipment" (-47%) and "machinery for textile, apparel and leather production" (-58%) was as large as in the UK. The market position of the UK in the EU in these main castings and forgings consuming engineering categories was as follows:

- Machinery for textile, apparel and leather production: the UK ranked 10th with only 1% EU market share, behind the Netherlands and Austria.
- Pumps and compressors: the UK ranked 4th with 12% market share, behind Germany (34%), France (16%) and Italy (13%), but ahead of Belgium (4%).
- Valves and taps: the UK ranked 4th with 7% market share, behind Germany (43%), Italy (22%) and France (9%), but ahead of Denmark (6%).
- Bearings, gears and other driving elements: the UK ranked 4th with 4% market share, behind Germany (52%), Italy (18%) and France (9%), but ahead of Sweden (3%).
- Machine tools, woodworking mach., welding equipment: the UK ranked 5th with 4% market share, behind Germany (53%), Italy (18%), France (6%) and Spain (5%).
- Engines and turbines: the UK ranked 4th with 13% market share, behind Germany (27%), Italy (18%) and France (15%), but ahead of Finland (7%).
- Electric motors, generators and transformers: the UK is 5th with 7% market share, behind Germany (34%), Spain (11%), Italy (9%) and France (8%).
- Agricultural machinery: the UK is 4th with 8% market share, behind Germany (24%), Italy (23%) and France (14%), but ahead of the Netherlands (5%).

The year 2006 was a good year for the engineering industry as a result of increasing investments in the UK as well as abroad. However, the outlook for the engineering industry remains uncertain. The positive global, EU and UK's economic forecasts for 2007 (+4.4%, +2.3% and +2.4% respectively) and 2008 lead to a substantial and strong demand for engineering products in the country. Yet it is difficult to predict to what extent the British manufacturers will benefit, as outsourcing may also increase.

Construction industry

After a growth of 7% in the period 2002-2005, the UK's construction industry amounted to €190 billion in 2005. In line with the industry's growth in the period 2002-2005, the European Network for Construction Forecasting (Euroconstruct) expects a comparable growth (8%) in the period 2005-2008 to more than €205 billion in 2008. After a small decline in 2005 (-0.8%), growth of construction output is expected to pick up. The year 2008 is forecast to show the largest growth figures (3.6%). Additionally, it is expected that the demand for steelwork follows the same trend, with limited growth in 2006 and 2007 (0.1% and 0.5% respectively) and better growth in 2008 (1.5% to a volume of 1.36 million tons). The UK's construction industry ranked second in the EU, behind Germany, but ahead of Italy and France.

Market segmentation

As far as data are available, the market segmentation of some of the most important processes and materials covered by this survey is discussed in this section.

Castings

As shown by the data in Table 1.2, iron castings largely go to the automotive and the engineering industry. Please note that these data are only for domestically produced castings, as other data are not available. Although the automotive industry still represented 38% of the use of iron castings in 2005, its share decreased 3% compared to 2001.

Table 1.2 UK's ferrous* metal casting production, by segment, 2005, shares

	Pipes and fittings	Construction**	Engineering industry	Automotive industry	Other***
Iron	9%	8%	28%	38%	18%
Nodular iron	44%	-	9%	21%	26%
Malleable iron	14%	-	43%	35%	8%

*data of non-ferrous metals are not available.
**including domestic goods
***This category includes ingot moulds and several industries such as the aeronautics and the electronics industries.
Source: Committee of European Foundries Associations (2006)

Forgings

Unfortunately, no segmentation data for forgings are available. However, according to industry experts it can be assumed that the major end user of forged products is the automotive industry (40-60%), followed by engineering (10-45%). Other industries that may have a small share are railways, aerospace equipment, construction, maritime and the power generation industry.

Steel

In 2005, the construction industry accounted for 24% of total British steel demand (12.4 million tons), ahead of the engineering industry (23%), automotive (18%), metal goods (13%), wire drawing (6%), forging and stamping (5%) and cold forming (4%).

Aluminium

In 2006, total consumption of aluminium was estimated at about 800,000 tons per year. While some 25% of consumption is for beverage cans and foil products, the second largest market is in transport (road, rail, aerospace and marine; 16%). Most steel is used in the form of semi-finished products (82,000 tonnes) while 70,000 tonnes are used in the form of castings. The third largest market is the construction industry (11%) with a large portion for extruded and rolled products.

Production

Castings

Table 1.3 shows an indication of the production of castings in the UK. The data have been collected by the UK's Cast Metals Federation (CMF) and are based on data of member companies. In 2005, the UK's production of metal castings totalled 1.3 million tons. The group of ferrous metals grew 12% in the period 2001-2005, but be aware of the absence of the 2001 volume of steel castings. In the period 2003-2005 the group of non-ferrous metals showed growth as well (+7.5%). Although no data of steel foundries were available, these foundries were reported to flourish in 2005/2006, with strong demand from many segments but in particular pumps and valves for petroleum and offshore applications for oil and gas. Unfortunately, the growth in production value in the period mentioned is not known. The light and ultra light alloy foundries showed good growth in the period 2003-2005, with good demand from a number of segments, although the demand from the automotive sector was under pressure due to severe overseas competition. Other non-ferrous foundries reported a growing demand, although zinc die casters suffered severe competition from foundries in China and Eastern Europe. The investment castings sector continued to pick up, with the gas turbine, aero engine and medical sectors showing strong growth. China continued to be the main competitive threat for this sector with some customers already looking at other countries such as Vietnam and India.

Despite the closures in 2005 of some iron foundries due to a lack of customers, the number of large ferrous metal foundries grew 40% in 4 years' time to 264 in 2005. The remaining iron foundries experienced a strong demand from a number of market sectors in 2005. One of them was the automotive sector with a particularly strong demand for parts for commercial vehicles as well as for turbocharger units. While prospects for the power generation sector continued to improve, the ductile iron pipe market remained relatively repressed.

The country was home to 216 large non-ferrous metal foundries in 2005, a decline of almost 4% compared to 2004, mainly as a result of the bankruptcy of the automotive company MG-Rover in that year. In recent years, the average turnover per employee in the ferrous metal foundries increased, although the exact growth is not known. In 2003, the average turnover per employee (€90,314) was comparable to the Finnish average, but below the German, French and Dutch average. With regard to the non-ferrous metal sector it is only known that the average number of employees per foundry is around 50.

Table 1.3 British production volume of castings by type, 2001-2005, 1,000 tons

	2001	2003	2005	Change '01-'05
Ferrous metal	**906**	**995**	**1,017**	**12%**
Iron	560	537	531	-5%
Nodular iron	330	352	362	10%
Malleable iron	16	15	12	-26%
Steel	-	91	112	-
Non-ferrous metal	**-**	**227**	**244**	**-**
Copper alloy	-	15	15	-
Light and ultra light	-	185	206	-
Zinc	-	25	21	-
Other alloy	-	2	2	-

Source: Committee of European Foundries Associations (2006)

The UK's foundry industry was the fourth largest in the EU, far behind Germany, Italy and France, but ahead of Spain, Austria and Poland.

Forgings

Table 1.4 shows an indication of the volume of forgings production in the UK. In 2005, the members of the National Metal Forming Centre produced 294 million tons of forgings, after a stable period 2002-2005. The UK's forge industry ranked fifth in the EU, far behind Germany and behind Italy, France and Spain, but ahead of Poland and the Czech Republic.

Table 1.4 British production volume of forgings by type, 2002-2005, 1,000 tons

	2002	2003	2004	2005	Change '02-'05
Total	**295**	**272**	**294**	**294**	**0%**
Drop forging, press and upset forging	**191**	**178**	**198**	**198**	**4%**
• Production of forging industry (subcontracting)	191	178	198	198	4%
• In-house production of the automotive industry	-	-	-	-	-
• In-house production of the finished assembly (subcontracting)	-	-	-	-	-
• Forged catalogue items**	-	-	-	-	-
Cold forging	**62**	**58**	**56**	**56**	**-10%**
• Production of cold forging industry	62	58	56	56	-10%
• In-house production of consumer industries	-	-	-	-	
Open die forging	**42**	**36**	**37**	**37**	**-12%**
• Ring rolling	27	25	21	21	-22%
• Other open die forging***	15	11	16	16	7%
Close die forging for non-ferrous metal	**0**	**0**	**3**	**3**	**-**
Number of forge plants	**58**	**55**	**55**	**55**	**-5%**

Source: Euroforge (2006)

* i.e. producers of flanges and fittings, piping, connectors, armatures, tools, machineries, etc…

** excluding forged steel bar, blanks and railway rolling stocks.

*** excluding forged steel bar, blanks and railway rolling stocks.

As shown by Table 1.4, in the period 2002-2005, drop forging, press and upset forging grew 4%, while cold forging and open die forging decreased (-10% and -12% respectively). As total production remained stable in 2002-2005, the decreasing number of factories of the members of the National Metal Forming Centre since 2002 (-5%) implies a growing output per factory (+5%). With a decreasing number of employees per forge (from 172 to 160 in the period mentioned), the average output per employee increased as well(+13%). Only about 25% of the companies recorded an annual turnover of more than €15 million, with only about 10% of the companies recording a turnover of more than €30 million.

Major players

Some examples of large British foundries are:

- Chamberlin & Hill - www.chamberlin.co.uk
- Doncasters - http://www.doncasters.com
- Eurac Group - http://www.eurac-group.com specialized in the manufacture of brake discs and drums; the company comprises two foundry operations (PDC in the UK and BAK in the Czech Republic) and two machining companies (HPM in the UK and PBS in Germany)
- Newby Foundries - http://www.newbyfoundries.co.uk
- Thomas Dudley - http://www.thomasdudley.co.uk
- William Cook Burton - http://www.william-cook.co.uk
- William Lee - http://www.wmlee.co.uk

Some examples of large British forges are:

- Bloxwich - http://www.bloxwich.co.uk
- Brockhouse - http://www.brockhouse.co.uk
- Chapmans - http://www.chapmans-uk.com
- Firth Rixson – http://www.firthrixson.com (also production of castings)
- Metsec - http://www.metsec.co.uk (part of Voestalpine from Austria)
- Sheffield Forgemasters Rolls – http://www.sheffieldforgemasters.com (also production of castings)
- Ultraframe – http://www.ultraframe.co.uk (construction profiles)

Trends in industrial demand and production

The major trends that influence the casting and forging demand and production in the UK are:

- A growing number of innovative applications of aluminium and magnesium. This trend is expected to continue, as the automotive industry seeks new ways to save weight and gain fuel efficiency and performance. Moreover, other segments will benefit from these experiences.
- For virtually all components it is a trend to offer increased features and functionality combined with cost reduction. For example, in pneumatic cylinders or actuators, costs have been steadily reduced by improvements in materials - such as a shift from steel barrels and die-cast end caps to extruded aluminium - and the introduction of advanced moulded polymer materials for the internal piston and bearings.
- In recent years, the use of steel for multi-story residential buildings increased rapidly. Independent market statistics now suggest that steel frames, just as in the non-domestic multi-storey building construction, have overtaken concrete as the preferred solution for residential buildings of five stories and higher.
- The care for the environment has become a strategic political issue. In the power generation industry, the search for energy efficiency and the limitation of CO_2 and NO_x emissions – which is sometimes called the “Kyoto Effect” – has led and should lead to the increased use of electric variable speed drives. The engines, turbines, motors and generators markets will also show good growth due to the Kyoto effect. As a result, prospects for cast and forged parts in such applications are bright.

The care for the environment as well as increasing material costs also drive companies to reduce waste. A good example is the innovative helical drive gear of the company South Wales Forgemasters (http://www.swforgemasters.co.uk). Traditionally, such components are made by boring solid metal, which is inevitably wasteful. However, SWF has invented and patented a method of pushing out the core during the forging process, allowing the surplus hot metal to fill the mould. The level of waste has been reduced so dramatically that a billet of only 5.2 kilos is needed to produce the 4.9-kilo component.

- Historically, the UK has been a strong production base for engineering, railroad equipment, shipbuilding, aircraft, motor vehicles and parts. However, in the last three decades, British production has steadily dropped. Since the nineties, the industry’s ability to create wealth through manufacturing and exporting high added value, high technology goods, has been

severely diminished by a lack of investment and very low levels of confidence. As this situation has existed over a prolonged period, it has reached a critical stage where declining productivity, compared to major competitors in Europe and the USA, is widening the competitiveness gap, partly stimulated by the strong Pound. The current trade deficits are a clear reflection of the seriousness of the situation. Clearly, the developed economies of the Euro Zone are able to compete more efficiently with the low wage/low cost economies than the UK, probably because of their higher investment and capital stock levels. However there are some exceptions, such as Philidas Fasteners (http://www.philidasfasteners.co.uk), Barton Cold-Form (http://www.bartoncoldform.co.uk), Stokes Forgings (http://www.stokesforgings.com; in 2006 acquired by Mahindra from India) and Tinsley Bridge (http://www.tinsleybridge.co.uk):

Philidas Fasteners recently secured a large order from a Chinese facility of a major EU/US Tier 1 automotive component supplier. Philidas is not always able to compete with Asian suppliers on massive production runs for standard parts, but the company can compete for smaller production runs and customer specific special parts in terms of price, and above all the company is outstanding in customer service. **Barton Cold-Form** invested more than €2.5 million to remain competitive with Asia. The investment included a new warehouse, fully automated CNC secondary operation facilities and the acquisition of a fully CNC controlled multi-die heading machine. **Stokes Forgings** reinvented itself despite brutally tough trading conditions. The company invested significantly, focused on lean thinking, entered several new markets such as Belgium, Slovakia and Spain and brought in more than €4 million of new business in one year. The company even won back business from a forging company in China - at cost. **Tinsley Bridge**, a specialist supplier of springs and suspension components, won more than €10 million of new business in one year. The company transformed its operations, notably via a supplier improvement programme with a major customer, Leyland Trucks. The result was an improvement of quality, cost and delivery along the supply chain.

- The transformation of Central and East European (CEE) countries into market-oriented economies is beneficial to the UK's engineering, foundry and forge industry. A division of labour has arisen which enables UK's firms to utilise a cheap labour supply to improve price competitiveness in international markets. Especially for end products that face quick price erosion, the price pressure on components and systems leads to relocation of production. Industry experts expect the trend to continue even more in the future, which may lead to a deceleration of demand growth for castings and forgings in the UK's engineering industry.
- In the UK, skill shortages has continued to be a concern despite foundry closures and the resulting pool of skilled labour. This is because many former foundry workers decided to seek employment in another industry. As a result, the recruitment of labour from other EU countries has continued, with Poland being the most popular source of labour. While in the short term the UK foundries may be free of labour shortage, it is not a long term solution for the UK industry while the Polish industry may start to face a labour shortage as well.

Opportunities and threats

The main opportunities and threats for DC exporters are:

+ Price pressure on components and systems (refer to Section 4) as a result of an increasingly global competition, leading to increased sourcing in LCCs.
+ Although the engineering industry has faced a decline in production, it remains among the largest in the EU.
+ In the electrical engineering segment there are good prospects for cast and forged parts in energy efficient applications.
+ Growing construction market leads to an increasing demand for castings and forgings.
+ Good opportunities for innovative applications of aluminium and magnesium, although this will be at the expense of ferrous metal castings.
– Shift of engineering production towards LCCs, which may lead to a deceleration of demand growth for castings and forgings of the UK's engineering industry.

Useful sources

First of all, important sources are European trade associations such as:

- European Engineering Industries Association - http://www.orgalime.org
- European Foundry Association (CAEF) - http://www.caef-eurofoundry.org
- Federation of National Forging Associations (Euroforge) - http://www.euroforge.org

More can be found in the CBI market survey covering the EU market. Furthermore, per segment some country specific sources are available, such as:

British engineering associations

- British Agricultural & Garden Machinery Association – http://www.bagma.com
- British Association for Amenity, Environmental and Agricultural Industries - http://www.aea.uk.com
- British Electro Technical Manufacturers' Association - http://www.beama.org.uk
- British Fluid Power Association - http://www.bfpa.co.uk
- British Gear and Mechanical Power Transmission Association - http://www.bga.org.uk
- British Pump Manufacturers' Association - http://www.bpma.org.uk
- British Society of Motor Manufacturers and Traders - http://www.smmt.co.uk
- British Textile Machinery Association - http://www.btma.org.uk
- British Valve & Actuator Manufacturers' Association - http://www.bvama.org.uk
- Engineering Capacity (subcontracting) - http://www.engineering-capacity.co.uk
- Engineering Industries Association - http://www.eia.co.uk
- Manufacturing Technologies Association (machine tools) - http://www.mta.org.uk
- Mechanical and Metal Trades Confederation - http://www.metcom.org.uk
- Rotating Electrical Machines Association - http://www.rema.uk.com

British construction and other associations

- British Constructional Steelwork Association - http://www.steelconstruction.org
- Construction Confederation - http://www.constructionconfederation.co.uk
- Shipbuilders and Ship repairers Association - http://www.ssa.org.uk

British castings, forgings and related associations

- Cast Metals Federation (CMF) - http://www.castmetalsfederation.com
- Copper Development Association – http://www.cda.org.uk
- International Institute of Forging Technology - http://www.iiftec.co.uk
- National Aluminium Federation - http://www.alfed.org.uk
- National Galvanizers Association - http://www.hdg.org.uk
- National Metal Forming Centre – http://www.britishmetalforming.com
- Titanium Info Group – http://www.titaniuminfogroup.co.uk
- UK Non-Ferrous Alliance - http://www.nfalliance.org.uk
- UK Steel - http://www.uksteel.org.uk
- Zinc Info Centre - http://www.zincinfocentre.org

2. Trade: imports and exports

Imports

Total imports

In 2005, the UK was the third largest importer of castings and forgings in the EU, far behind Germany and behind France, but ahead of Italy and Spain. Since 2001, the total import value increased 12% (partly caused by the increasing raw material prices; refer to Section 4), amounting to €21.8 billion (10.9 million tons) in 2005. In the same period, the import volume decreased 7%. The most important suppliers were Germany, the USA and France. Beside China, other major DC suppliers to the UK were India, Turkey and South Africa. Compared to 2001, the total share of DCs grew from 6.9% to 9.5% in 2005.

Imports by product group

Table 2.1 shows that most product groups increased in value between 2001 and 2005. Iron and steel products and articles of iron, steel or base metal showed the largest growth (38% and 36% respectively). With regard to the volume of imports, copper and zinc products (-26%) and articles of iron, steel or base metal (-27%) decreased, as did iron and steel products (-5%) and plastic and rubber products (-1%). The import volume of light and ultra light products grew the fastest of all (19%), followed by parts of machinery, railway equipment or vehicles (15%). In most product groups, China was the most important DC supplier, while other countries that were well represented in the different product groups were India (number two in most product groups, but leading in copper and zinc products), Turkey (number three in most product groups but leading in light and ultra light products), South Africa (leading in iron and steel products) and Saudi Arabia (leading in parts of machinery, railway equipment or vehicles). The DCs' share in UK's imports of all product groups increased compared to 2001. The product groups with the largest growth were articles of iron, steel or base metal (growing from 15% to 21% in value and from 9% to 26% in volume), parts of machinery, railway equipment or vehicles (growing from 6.5% to 8.3% in value and from 8% to 15% in volume) and plastic and rubber products (growing from 2.6% to 4.8% in value and from 2% to 6% in volume). Among the DCs that saw the largest increase in exports to the UK were Oman, Azerbaijan, Chile, Egypt, Iran, China, Brazil, Mexico, India and Argentina.

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

Table 2.1 Imports by the UK and leading suppliers to the UK, 2001 - 2005, share in % of value

Product	2001 € mln	2003 € mln	2005 € mln	Leading suppliers (%)	Share (%)
Total	19,577	19,126	21,844	Intra EU : Germany (19), France (8), Italy (7) Ext EU excl DC: USA (14), Japan (4), Switzerland (1) DC : China (3), India (1), Turkey (1), South Africa (1), Saudi Arabia (1), Brazil (0)	63 28 9
Copper and zinc products	626	462	594	Intra EU : Germany (36), France (13), Italy (8) Ext EU excl DC: USA (3), Russia (2), Switzerland (1) DC : India (3), China (3), Turkey (2), Kasakhstan (1), Mexico (0), Serb.Monten. (0)	81 9 9
Plastic and rubber products	2,439	2,567	2,901	Intra EU : Germany (26), Italy (11), Belgium (11) Ext EU excl DC: USA (8), Japan (3), Switzerland (1) DC : China (2), India (1), Turkey (1), Saudi Arabia (0), Thailand (0), Indonesia (0)	80 16 5
Parts of machinery, railway equipment or vehicles	8,806	7,941	8,352	Intra EU : Germany (16), Italy (7), France (5) Ext EU excl DC: USA (27), Japan (7), Canada (3) DC : Saudi Arabia (2), China (2), Turkey (1), India (1), South Africa (1), Malaysia (0)	45 47 8
Articles of iron, steel or base metal	2,527	2,853	3,432	Intra EU : Germany (19), Italy (8), France (7) Ext EU excl DC: USA (7), Japan (4), Taiwan (3) DC : China (13), India (4), Turkey (1), Thailand (1), Mexico (1), South Africa (0)	59 20 21
Iron and steel products	3,437	3,510	4,746	Intra EU : Germany (17), Sweden (14), Belgium (10) Ext EU excl DC: Russia (5), USA (2), South Korea (1) DC : South Africa (2), India (1), China (1), Turkey (1), Brazil (1), Tunisia (0)	80 12 7
Light and ultra light products	1,742	1,793	1,819	Intra EU : Germany (28), France (13), Italy (6) Ext EU excl DC: USA (10), Norway (5), Switzerland (2) DC : Turkey (1), China (1), Malaysia (1), Croatia (1), India (0), South Africa (0)	74 21 5

Source: Eurostat (2006)

Exports

The total export value of the UK showed an increase (11%) in the period 2001-2005, totalling €21.6 billion (10.1 million tons) in 2005. In the same period, the export volume increased

24%. In total export value, the UK ranked fourth in the EU in 2005, far behind Germany and behind Italy and France but ahead of Belgium and the Netherlands. The largest exported product group was parts of machinery, railway equipment or vehicles (€9.9 billion in 2005), followed by iron and steel products (€5.4 billion). Only exports of copper and zinc products (-18%) and parts of machinery, railway equipment or vehicles declined (-4%), but this was compensated by the large growth in iron and steel products (64%). Probably a small part of exports is re-exports to other EU countries, but the exact value is unknown, as Eurostat does not allow such detailed analysis.

Opportunities and threats

+ The UK was the third largest importer of castings and forgings in the EU in 2005
+ Large import share for DCs, higher than the EU average of 6.7%
+ Total import value increased in recent years
+ Increasing share of DCs in total imports
– Imports from China grew fast and represented a considerable share of DC imports

Useful sources

- EU Expanding Exports Helpdesk - http://export-help.cec.eu.int/ ➔ go to: trade statistics
- Eurostat – official statistical office of the EU - http://epp.eurostat.cec.eu.int ➔ go to 'themes' on the left side of the home page ➔ go to 'external trade' ➔ go to 'data – full view' ➔ go to 'external trade - detailed data'

3. Trade structure

Trade channels

The most common target groups for DC exporters are Original Equipment Manufacturers (OEMs), subcontractors of OEMs, agents, importers and foundries or forges. Although there are several options, supplying directly to OEMs and subcontractors of OEMs 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 supplier relationships with OEMs and subcontractors of OEMs in the EU. By working together, DC exporters have the best chances in succeeding as they are able to offer higher-added value products to EU customers. Please refer to the CBI market survey covering the EU market for castings and forgings for a detailed explanation on the trade channels in this sector. Please refer to Table 3.1 for some examples of companies in the UK that may be interesting to DC exporters.

Table 3.1 Some examples of potential trade partners in the UK

Company	Type; products	Website
Asco Fixings	Import and distribution of castings	http://www.ascofixings.co.uk
Darian Trading	Import and distribution of castings and forgings	http://www.dariantrading.com
Doncasters	Production; mechanical engineering	http://www.doncasters.com
Forged Products	Import and Agency of forgings from Italian forges such as Fromas	http://www.forged-products.co.uk
John Crane	Production; mechanical engineering	http://www.johncrane.co.uk
Joy Mining Machinery	Production; mining machinery	http://www.joy.com
Nacco Materials Handling	Production; handling equipment	http://www.nacco.com; http://www.hyster.co.uk
Stannah Lift Services	Production; lifting and handling equipment	http://www.stannah.com
The 600 Group	Production; mechanical engineering	http://www.600group.com

Source: Facts Figures Future (2007)

Useful sources

Section 1 ('Useful sources') and Section 6 ('Selecting a suitable trading partner') contain some very useful sources to find potential trade partners in the UK.

4. Prices and margins

Prices and margins

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. A product that does not need much extra care, like finished and ready-to-use products such as valves, will be sold with a smaller margin than a product that needs extra handling or even needs to be stored.

Major trends that affect the costs and revenues of UK's castings and forgings production are price pressure, increasing raw material and energy prices and wage costs:

- Prices and margins are and will continue to be under pressure. In the last few years, the global economic recession, problems within the EU economy and the global competition have placed severe pressure on the prices and therefore on the margins of intermediate goods in the supply chain. Therefore, importers/agents and OEMs as well as their suppliers keep on looking for opportunities to reduce cost prices 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 recent years, rapidly increasing prices of materials like plastics, aluminium, steel and scrap steel, have caused problems in the industry, although UK's producers have tried to translate soaring raw material prices into material-cost surcharges as soon as possible.
- The recent rapid increase in electricity prices in the UK (price increases of up to 75% for new electricity and gas supply contracts) has affected the competitiveness of the industry as far as those price increases were higher than in other regions. Especially commodity production was badly hit by the high energy costs, as its prices are set globally and therefore increases in energy costs that occur solely in the UK can not be passed on to the customers without significant losses in market share. While in 2004 price increases due to rising energy prices were generally accepted, in 2005 several foundries faced difficulties as customers threatened to move their sourcing to LCCs.
- Wage costs still account for a large share of the average production costs in the industry. In 2005, the UK ranked tenth in the EU with regard to wage costs per man-hour in the metal industry (€20.47), less expensive than Austria and France, but more expensive than Ireland, Italy, former East Germany and Spain.

Please refer to the CBI market survey covering the EU market for castings and forgings for a detailed explanation on these major trends.

Useful sources

Sources of prices include, among other things:

- CAEF Eurofoundry - http://www.caef-eurofoundry.org
- Eurofer – http://www.eurofer.org/statistics/scrap.htm
- European Engineering Industries Association (Orgalime) – http://www.orgalime.org
- London Metal Exchange – http://www.lme.co.uk

5. Market access requirements

As a manufacturer in a developing country preparing to access the UK, you should be aware of the market access requirements of your trading partners and the British government. Requirements are demanded through legislation and through labels, codes and management systems. These requirements are based on environmental, consumer health and safety and social concerns.

Legislative requirements

National legislation in EU countries is compulsory for all products traded within the country concerned. Therefore, as an exporter in a developing country you have to comply with the legislative requirements that are applicable to your products. For information on legislation go to 'Search CBI database' at http://www.cbi.eu/marketinfo, select your market sector, and the EU country of your interest in the category search, click on the search button and click on legislative requirements for an overview of all documents on legislation in your country of interest.

Non-legislative requirements

Social, environmental and quality related market requirements are of growing importance in international trade and are often requested by European buyers through labels, codes of conduct and management systems. For information on non-legislative requirements, go to 'Search CBI database' at http://www.cbi.eu/marketinfo, select your market sector and the EU country of your interest in the category search, click on the search button and click on your subject of interest under non-legislative requirements for an overview of all documents on the subject concerned in your country of interest.

Packaging, marking and labelling

Legislative requirements

You can download information on requirements on packaging, marking and labelling in specific EU countries from the CBI website. Go to 'Search CBI database' at http://www.cbi.eu/marketinfo, select your market sector and the EU country of your interest, click on the search button and click on 'market surveys' for an overview of documents on the country of your interest.

Customer requirements

Packaging should always ensure that the products arrive dry and undamaged in Europe, but in practice, shipments have been and are still sent back to the supplier due to bad packaging. The websites below on packaging may be helpful to exporters in order to pack properly and to prevent bad packaging. If an import duty -no matter the country of origin- applies to a component that enters the EU, the exporter should be able to show a certificate of origin. Furthermore, a Bill of Lading (B/L) and a commercial invoice are obligatory. If a 0% duty applies, the so called Eur 1 Form for ACP countries for customs tax exemption is common. Refer to the CBI market survey covering the pipes and process equipment market in the EU for more information.

Tariffs and quota

Developing countries benefit from several trade preferences. The most important one is called 'Generalised System of Preferences' (GSP). Following this system, most import tariffs from DCs of castings and forgings are zero, although it also depends on the degree to which the products cause, or threaten to cause, serious difficulties to producers of similar or directly competing products. Furthermore, there are practically no quotas. To determine import duties and/or quota for your own product(s) and from your specific country, consult the Taric database, as mentioned below. Refer to the CBI market survey covering the castings and forgings market in the EU for more information.

Useful sources

Tariffs and quota

- European Customs in the UK - http://www.hmrc.gov.uk
- Export Helpdesk for Developing Countries - http://export-help.cec.eu.int
- Taric database - http://ec.europa.eu/taxation_customs/dds/en/tarhome.htm: type the 4, 6 or 8 digit HS code (if known) or type the keyword of your product.

- VAT tariff information - http://ec.europa.eu/taxation_customs/taxation/vat/traders/vat_number/index_en.htm

Packaging

- International Safe Transit Association - http://www.ista.org
- Material Handling Equipment - http://www.ie.ncsu.edu/kay/mhetax/UnitEq: examples of packaging and pictures.
- PACKit module of the International Trade Centre - http://www.intracen.org/ep/packaging/packit.htm

6. Business practices

Selecting a suitable trading partner

There are many ways to find potential trading partners in the UK. In this section, the focus will be on the internet, sources in your own country and the target country. In general, remember the following cultural tips when you visit UK's trade partners:

- Privacy is very important to the English. Therefore asking personal questions or intensely staring at another person should be avoided.
- Gifts are generally not part of doing business in the UK.

Internet

Some examples of available sources to find clients, besides the ones mentioned in Section 1:

- Buyer's guide of the Engineering Industries Association - http://www.eia.co.uk
- Direct Industry - http://www.directindustry.com
- Europages – http://www.europages.com
- Kellysearch - http://www.kellysearch.com
- Kompass – http://www.kompass.com (mostly fee based, but the free part is useful too)
- Member list of the British Electro technical & Allied Manufacturers' Association (BEAMA) - http://www.beama.org.uk
- Thomas Global Register Europe - http://www.trem.biz

For more details on how to search some of these databases, please refer to the CBI Export Manual 'Digging for Gold'.

Your own (DC) country

- Diplomatic and consular representatives
- Public and private trade promotion bodies
- The UK's Embassy in your country. Find it at http://www.embassyworld.com.

The UK

- Chamber of Commerce in the UK - http://www.britishchambers.org.uk
- Trade associations for individual product groups mentioned in 'Useful sources' in Section 1.

Usually, agents are member of one of the three UK agents associations:

- British agents register - http://www.agentsregister.com
- Manufacturers' Agents' Association of Great Britain and Ireland - http://www.themaa.co.uk
- National Sales Agent Register - http://www.sales-agents.com

Also refer to CBI's Export Planner (http://www.cbi.eu), an export manual that provides information on the different steps to be taken during the export process to the EU market.

Reaching an agreement with your trade partner

Drawing up an offer

In the industry, custom made offers are most common, as every product and application differs. Tailor made offers are provided to clients that have asked the exporter for a quotation. A common price calculation is the 'pricing based on real costs'. The exporter adds all his costs for labour, raw materials and other expenses. Some other suggestions to convert an offer into an order: always treat the client as special, for instance by making a telephone call to ask

whether the offer (and the brochures or samples, if applicable) has arrived and ask whether additional information is needed. This allows an extra contact moment with the client. Also respond fast to enquiries, since companies in the UK expect such a response within 3 days. Some more points of interest you could consider when setting an export price can be found in the CBI market survey covering the castings and forgings market in the EU.

Method of payment

Most transactions are executed with a Letter of Credit. One of the advantages of this method is that subsidies, if any, are only granted with L/Cs.

Terms of delivery

The most common delivery conditions in the industry are the FOB and CIF condition (Cost Insurance & Freight). CFR (Cost & Freight) occasionally occurs as well. In other occasions, it is possible that clients arrange their own transport. Then, Ex Works could be the delivery condition. However, supplier and client are free to negotiate and agree whether quotations and subsequent trade are based on CFR or FOB prices.

Sales promotion

For DC exporters, trade press and trade fairs are among the most important promotional tools; they are briefly discussed below. For more information, also refer to CBI's Export Planner and Your Image Builder – http://www.cbi.eu, as well as the CBI market survey covering the castings and forgings market in the EU.

Trade press

The magazines with global coverage may present country-specific information. Examples are:

- Foundry Trade Journal - http://www.foundrytradejournal.com (originally from the UK)
- Furnaces International - http://www.furnacesinternational.com
- Incast - http://www.investmentcasting.org/incast.asp
- Metalforming - http://www.metalformingmagazine.com
- MetalMag (metal in construction) - http://www.metalmag.com

Furthermore, some relevant UK's magazines are:

- Plastic & Rubber Weekly (PRW) - http://www.prw.com
- Machinery (online engineering news) - http://www.machinery.co.uk
- MEPS (Steel industry) - http://www.meps.co.uk
- MSC (Modern Steel Construction) - http://www.aisc.org/msctemplate.cfm
- MwP (Metalworking) - http://www.metalworkingproduction.co.uk

Trade fairs

Visiting and participating in a trade fair abroad can be an efficient tool to communicate with prospective customers. It provides more facilities for bringing across the message than any other trade promotional tool. It can also be an important source of information on market development, production techniques and interesting varieties. Relevant trade fairs are:
FFC- Foundry, Furnaces & Castings - http://www.ffc-expo.com (biennially, June, Harrogate) and Subcon (Subcontract manufacturing) - http://www.subconshow.co.uk (annually, May, Birmingham). Find more trade fairs at http://www.eventseye.com and http://www.auma.de.

This survey was compiled for CBI by Facts Figures Future in collaboration with Kommanet.