CASTINGS AND FORGINGS

The EU market for iron and steel valve castings

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Report summary
This CBI market survey discusses the following highlights for the EU market for iron and steel valve castings:

- A stable valve market in the period 2002-2005 was followed by a dynamic 2006, with 12.7% growth in that year. The EU demand is expected to grow further in the 2007-2009 period with an annual increase of 3-4%. It is estimated that the water and sewerage industries and the oil, gas and refining industries together account for 40% of the industrial valve market.
- European valve production showed good results, which is confirmed by the large trade surplus and the good growth of exports; however, according to industry specialists, several companies are expected to relocate to low-wage locations within the next 5 years. This process is only just beginning and will intensify in the next few years.
- EU import value of valves increased by 6% per year since 2002, reaching €2.6 billion in 2006. The share of intra-EU imports increased from 70% in 2002 to 76% in 2006 and the share of imports from developing countries (DCs) also increased (from 5.8% to 8.9%). This was at the cost of the share of EU imports from outside the EU (down from 24% to 15%).
- As in 2002, China was the most important supplier to all highlighted EU countries. Compared to 2002, among the DCs that showed good growth beside China were India, Iran, Turkey, Croatia, South Africa, Thailand and Brazil.
- Direct sales to the end-user is the preferred trade channel for exporting iron and steel valve castings to the EU. With regard to finished valves, importers play a major role, especially for standard valves.
- Standard valves have small margins, 3-5% for the DC exporter and 2-3% for the EU importer. Contrary to that, margins for special valves are far higher.
- In general, DCs have good opportunities in the valve market, provided the quality meets the demands of the EU-customers. Their most important advantage lies in labour costs. From a technical point of view, it is estimated that 70% of all valves can be produced in DCs.

This survey aims to provide developing-country exporters of iron and steel valve castings with product-specific market information related to gaining access to the EU market(s). By focusing on the EU market(s) for one product(group), this document provides additional in-depth information, complementary to the more general information and data provided in the CBI market survey 'The castings and forgings market in the EU', which can be downloaded from http://www.cbi.eu/marketinfo. Detailed information on the selected product(group) is given in appendix A. This survey discusses the EU in general and the following markets in particular: France, Germany, Italy, Spain, the Netherlands and the UK.

1 Market description: industrial demand and production

Industrial demand

After a stable 2002-2005, EU demand for iron and steel valves grew 12.7% in 2006, amounting to €5.4 billion (and an estimated volume of 400,000 tons) in that year. It accounted for 25-35% of the total global demand, as such being the largest market in the world, ahead of the US and Japan. On a product level, globe and check valves form the largest segment, representing 15%-20% of all valves. Germany alone accounted for 20% of EU demand, followed by Italy (17% of EU demand). The Italian demand grew by 7.9% annually in the period 2002-2006, but major part of this growth was booked in the period 2002-2004.

While the French demand (€848 million in 2006) also performed well in the period 2002-2006, the demand in the UK decreased (€624 million), although the year 2006 showed strong growth (+30%) after a weak demand in 2003-2005. The Spanish demand (€332 million) increased 6.1% per year, while the Dutch demand remained relatively small (€153 million). Other countries with a demand between €150-200 million for iron and steel valves were Denmark, Sweden and Finland.

Table 1.1 Apparent EU demand for iron and steel valves, by country, 2002-2006, € million

	2002	2003	2004	2005	2006	Change '02-'06 (CAGR*)
EU27	**4,634**	**4,634**	**4,693**	**4,760**	**5,369**	**3.7%**
Germany	1,022	1,076	1,083	981	1,089	1.6%
Italy	681	815	891	902	924	7.9%
France	709	685	671	712	848	4.6%
UK	696	489	491	480	624	-2.7%
Spain	262	288	292	370	332	6.1%
Netherlands	154	131	121	112	153	-0.1%

Source: Eurostat (2008)
* Compound Annual Growth Rate

The growth trend of 3.7% in the period 2002-2006 is expected to continue in the 2007-2009 period with an annual increase of 3-4%, due to economic growth in the EU and due to the trend that South European and CEE countries move to comply with EU energy and water directives (also refer to trends). Worldwide, the demand is expected to grow slightly faster (4-5% per year) in that period. While the EU15 valve market is a mature market that mostly consists of maintenance and repair operations (MRO), Central and Eastern European (CEE) countries continue to account for the larger growth figures due to large investments in underdeveloped infrastructures of water, waste water and gas and oil. Large multinational suppliers will continue to dominate the markets for valves in process industries, though smaller, specialised niche players should retain some power because of their greater ability to innovate and manufacture low-volume products.

Market segmentation

The water and sewerage industries and the oil, gas and refining industries together are estimated to account for 40% of the world valve (including actuators) market. It may be assumed that the market segmentation in the EU does not differ much from the global picture. However, there may be some variations among the different EU countries. In the period until 2012, countries like France, Italy and Spain will be characterised by large investments in water and waste water treatment, due to EU legislation. In these countries, the market share of the water and sewerage industries will be between 25-35%. Other examples of variation among nations are Spain, which is home to a relatively large marine industry, and the Netherlands, which has a relatively large petrochemical industry and a relatively large pipeline network. Refer to Table 1.2 for more information. Market data of the oil and gas-, water-, and food processing industries, can be found in the CBI Market Survey 'The pipes and process equipment market in the EU'.

Table 1.2 World valve market, by segment, 2005, shares

Market Segment	Share	CAGR '05-'10
Water and sewerage industries	22%	2.5%
Oil, gas and refining industries	18%	4.5%
Building services and construction	14%	2.9%
Chemical industry	14%	4.1%
Power generation industry	10%	4.7%

Market Segment	Share	CAGR '05-'10
Food, drink and pharmaceuticals	7%	2.8%
Pulp and paper industry	4%	3.5%
Metal manufacturing industry	4%	3.4%
Mineral mining/processing industry	4%	4.5%
Marine industry	2%	4.1%
Other industries	17%	3.1%

Source: British Valve & Actuator Manufacturers' Association (2006)

Table 1.3 gives the main characteristics, requirements and materials for the major market segments. In the water and sewerage industries, the majority of the valves is relatively standard. In most cases, governments own the network, and the standards are therefore sector-related. This is contrary to the chemical and power generation industry, where each company has its own individual quality demands. In the food, drink and pharmaceutical industry, most valves are made of stainless steel, due to the severe legislation in these industries. This forbids the contents of lead in drinks, for example. Although some parts are identical in the oil, gas and refining industries, companies like Shell generally use their own company-specific standards.

Table 1.3 Characteristics and requirements valves and valve castings, by application

Market segment	Characteristics	Requirements	Materials
Water and sewerage industries	Standard valves	High	Nodular cast iron or alloy nodular cast iron
Chemical and power generation industry	Tailor made, each valve unique	Very high	Major part stainless and/or heat resistant steel
Food, drink and pharmaceuticals	Standard valves (small size)	Very high	Stainless steel
Oil, gas and refining industries	Individual company standards	Very high	Cast nodular iron (oil), steel (gas)
Building services and construction	Standard valves	Medium-high	Nodular cast iron or alloy nodular cast iron

Source: industry experts

Production

As shown by Table 1.4, production value in the EU increased 7.3% in the period 2002-2006 to €8.3 billion in 2006. The production volume is estimated at 450,000-500,000 tons. Growth mainly occurred at the cost of imports from other developed countries (such as the US and Japan), while commodity types – cast iron valves but also steel valves – were increasingly sourced from low cost countries, mainly from Asia (refer to Section 3 for more information) and sometimes from the Czech Republic, Hungary and Poland. In the meantime, EU manufacturers focused on specialties, such as heat resistant valves and technologically advanced automated valves. Germany accounted for almost 30% of total EU production value. Italy took second place with 24%, followed by France (14%), the UK (8%) and Spain (4%). Other EU countries with a relatively large production of iron and steel valves were Denmark (€321 million) and Finland (€258 million).

Table 1.4 Indication of EU production value of iron and steel valves, 2002-2006, € million

	2002	2003	2004	2005	2006	CAGR
EU27	**6,247**	**6,280**	**6,656**	**7,071**	**8,292**	**7.3%**
Germany	1,756	1,797	1,960	2,119	2,427	8.4%
Italy	1,308	1,505	1,682	1,743	2,024	11.5%
France	949	906	868	946	1,128	4.4%
UK	730	539	562	535	683	-1.7%
Spain	288	315	306	342	347	4.7%
Netherlands	236	213	175	160	235	-0.2%

Source: Eurostat (2008)

Roughly, a quarter of all valve manufacturers worldwide are from the EU. Despite a number of mergers and acquisitions in the past, the EU valve industry is still fragmented, with only about 2% of all companies having sales in excess of €10 million. Worldwide, this is the same, as the largest supplier has only 5% of the world market and the top 10 companies account for only 20-30% of the market. However, the requirements for standardisation of large global end-users (aiming at single supplier concepts) could very well drive further consolidation among valve manufacturers.

Central and Eastern Europe

Production of the Central and Eastern European (CEE) countries accounted for only 6.2% of total EU production in 2006. Most valves were produced in the Czech Republic, followed at a distance by Hungary and Poland. Some examples of valve manufacturers are the Czech companies Severočeská armaturka - http://www.sca.cz and MSA - http://www.msa.cz. MSA is an example of a company that managed to survive the challenges of a free market. Refer to the textbox below for more information on this company.

MSA is an export oriented valve manufacturer from the Czech Republic. The export ratio almost doubled since 1994, reaching 93% of total sales in 2006. Within the EU, most exports are to the UK, Germany and Poland. With regard to Poland, the company managed to considerably increase its exports of ball valves for compressor plants of the Yamal-Europe gas pipeline. In 2005, the company supplied valves to the German company Siekmann (http://www.siekmann-econosto.de) for the Al Jubail 2 project in Saudi Arabia, which was provided for by Linde KCA (http://www.linde-kca.com). In 2006, MSA stopped imports of valve castings from Asia, due to a decrease in production of gate, swing check and globe valves for the US market. At the same time, the company started searching for new suppliers of parts for ball valves. The company sources these parts from Italian and Romanian forging producers, and has also selected some Chinese suppliers for the supply of finished balls and seats of small inner diameter. For the forthcoming period, the company's strategy is to focus on specialties. This will also include ball valves of forged steel, both in bolted and all-welded variants. Through the use of new types of materials, the company aims to produce valves for various extreme conditions such as temperatures of up to -200°C or a depth of over 500 metres below sea level.

Major producers in the EU

In virtually each EU country there are at least some valve producers. In line with the production statistics of the EU, most producers are located in Germany, Italy, France and the UK. The number of valve operations in Spain is much smaller than in these four largest producing countries, while the Netherlands is home to only a few valve manufacturers. Examples of main valve manufacturers in the EU are:

- Ampo (Spain) - http://www.ampo.es
- Arca Regler (Germany) - http://www.arca-valve.com
- AVK (Denmark) – http://www.avk.com is a global manufacturer of valves with several operations in the EU. Most of these are in Denmark, while a few are in the UK and in the Netherlands (PCC Eurovalve - http://www.wweurovalve.nl)
- BEL Valves (the UK) - http://www.belvalves.co.uk
- BFE (Italy) - http://www.bfe.it
- Crane Valves - http://www.cranevalve.com is a global manufacturer with several operations in EU countries, such as Hattersley Newman Hender in the UK - http://www.hattersley.com
- Dresser Flow Solutions Masoneilan - http://www.masoneilan.com or http://www.dresseritalia.it is a global manufacturer with operations in, among others, France, Italy and the UK.
- Duvalco (the Netherlands) - http://www.duvalco.nl
- Flow Serve - http://www.flowserve.com is a global manufacturer with several operations in EU countries, such as France and the UK (Serck Audco Valves).
- Metso Automation (Finland) - http://www.metso.com is a global manufacturer of valves and has operations in several EU countries, such as France and the UK (Jamesbury - http://www.jamesbury.com).

- Persta (Germany) - http://www.persta.com, part of Siepmann-Werke - http://www.siepmann.de
- Raimondi Valvole (Italy) - http://www.raimondi.it
- SNRI (France) - http://www.snri.fr
- Tyco Flow Control - http://www.tycoflowcontrol-eu.com is a global manufacturer with several operations in the EU, such as ASP Armaturen in Germany - http://www.asp-armaturen.de
- VAG (Germany) - http://www.vag-armaturen.com, with a subsidiary in the Czech Republic - http://www.jmahod.cz
- Velan - http://www.velan.com has operations in France, the UK, Italy and Portugal, and a distribution centre in Germany.

Most of the websites of above-mentioned manufacturers offer details on their product range (including specs and other technical details), press releases and other relevant information.

Trends and characteristics

- ***Increasing globalisation leads to specialisation.*** Globalisation has led to pressure on prices and has stimulated or even forced EU manufacturers to specialise and focus on high value added products. Meanwhile, the sourcing and production of commodities is gradually shifting to low cost countries (LCCs) in Asia, which may be underlined by the fact that imports from DCs rose quickly in the period 2002-2006 (refer to Section 3). According to industry specialists, several companies are expected to relocate to low-wage locations within the next 5 years. This process is only just beginning and will continue in the next few years. Specialty products may also become subject to relocation, although this is not expected to happen in the near future. Moreover, production will never fully be relocated to LCCs, as end-users always need to have a 'safety stock' nearby. To compete in the world market, the remaining EU companies are now focussing on their technological skills, selecting niche markets which require complex products with high precision, specific quality requirements, or those that need a quick or just-in-time delivery. Additionally, as competitors become more aggressive, EU manufacturers have already found that they must also put an ever-increasing effort into research and development, sales and marketing.
- ***Environmental protection has become a strategic, political issue.*** In the several end-user industries, the search for energy efficiency and the limitation of CO_2 and NO_x emissions has led and should lead to the increased use of innovative production techniques, resulting in better efficiency and less waste. End-users are therefore increasingly asking for innovative products. It is not so much the initial expenses anymore, but the purchasing decision for a product is increasingly made in the light of lifecycle costs. Besides, industry experts state that it is impossible to replicate or reverse engineer an Original Equipment Manufacturer's (OEM) design and manufacturing procedures and get a reliable valve or part of a valve. They also mention that use of these parts can also affect third-party approvals, compliance to safety directives, insurance coverage, liability of material traceability, warranties, and long-term service support by the OEM. This is, in fact, a threat to DC exporters of valves.
- ***Market in Western Europe is mature, as opposed to CEE market***. The Western European market is a mature market and demand is primarily characterised by replacement demand as a result of maintenance and repair operations (MRO). End-users both replace broken equipment and trade up to newer equipment. Demand characteristics of CEE countries and some Southern European countries are different: most demand is related to investments in underdeveloped infrastructures of water, waste water and gas and oil. Additionally, these countries move to comply with EU energy and water directives. These are the major reasons that CEE countries will continue to account for the larger growth figures. On the other hand, demand in some Western European countries could very well show a decline. Beside RMO, in most Western European countries investments will be also related to building new storage facilities, because sources in and around the EU are becoming exhausted and the EU will need to buy energy carriers such as natural gas and oil from distant countries and store these close to home.

- ***Increasing global demand for energy ensures continuous investments in new and existing infrastructure.*** Note that this growth refers to average global growth; it is expected that in the EU the growth will be smaller. Because these investments will mostly be structural and conjuncture independent, this ensures a continuous strong demand for valves in the related industries. While the number of worldwide pipeline projects was 156 in 2006, covering 33,000 kilometres, this number increased to approximately 300 in 2007, involving a length of about 100,000 kilometres, and for 2008, at least 150 projects are planned, accounting for 100,000 kilometres of pipeline.
- ***Southern European and CEE countries move to comply with EU energy and water directives***. At present, countries such as Spain, Portugal, Greece, Poland, Romania, Bulgaria and Hungary have poor networking with respect to water distribution and wastewater treatment. In order to meet the requirements of the EU Water Framework Directive by 2015, many small wastewater treatment plants will be built in these countries in the coming years as all communities with more than 2,000 inhabitants must be connected to a water sewage installation. Note that also in some Western European countries, such as the UK and Germany, renewal of water cleaning and sewer systems will result in many investments. Also note that the water and wastewater treatment equipment market in CEE countries is - generally speaking - very price sensitive. The choice for treatment processes is often based on price and made to meet the stipulated legislative guidelines rather than on taking advantage of the long-term benefits of advanced treatment systems.
- ***Strong demand prospects for more expensive automated valves*** and actuators will also drive the valve demand in Western Europe. These valves include technologically advanced automated valves with a better efficiency through advanced predictive and preventative maintenance abilities and through improved controls by pneumatic, solenoid, electric, hydraulic or digital mechanisms. These valves can be used in remote or hazardous environments, such as in oil pipelines in the Arctic or within nuclear power plants. Such specialty products provide a growing market segment for valve producers, but they also require costs to be incurred in the form of materials research (e.g. plastics, ceramics), product design and testing, and more sophisticated production methods.
- ***Increasing share of duplex steel in valves.*** Duplex steel has improved strength over austenitic stainless steel and also better resistance to localised corrosion, particularly pitting, crevice corrosion and stress corrosion cracking. Although it is more expensive, it lasts longer and it already accounts for about 15% of the stainless steel valves demand in the EU. Typical end-users for such products include the oil and gas- and chemicals sector.

Opportunities and threats

Trends and market developments offer opportunities and threats to exporters. A given trend can be a threat to some and an opportunity to others at the same time. The following trends should therefore always be analyzed in relation to your specific circumstances. Refer to Section 7 of the CBI market survey covering the EU market for castings and forgings for further information.

+ In general, DCs have good opportunities in the valves market, provided the quality[1] meets the demands of the EU customers. Their most important advantage lies in labour costs. As DC wages are (much) lower, DCs have a strategic advantage compared to EU manufacturers. From a technical point of view, it is estimated that 70% of all valves can be produced in DCs. The rest can only be produced in the EU, as very high skills and expertise are needed, for example valves for the nuclear industry. Besides, there also needs to be a local 'safety' stock with suppliers being capable of doing 'emergency deliveries'.
+ The EU demand is expected to grow in the 2007-2009 period, with an annual increase of 3-4%. The valve demand in CEE countries and some Southern European countries is expected to increase faster than in Western Europe.

[1] For example, hardness and mechanical properties of products in the EU are verified by certified test equipment and material section quality will be verified by special NDT techniques that require sophisticated test equipment, like x-ray and ultrasonic test equipment.

+ According to industry specialists, several companies are expected to relocate to low-wage locations within the next five years. This process is only just beginning and will increase in the next few years.
– European production showed good results, also confirmed by the large, and growing trade surplus and the good growth of exports (refer to Section 2). The competitive position of the EU valves industry seems to be strong.
– Western European customers no longer search for the cheapest valve possible, but are increasingly considering their investments in the light of life cycle costs. Besides, industry specialists state that it is impossible to replicate or reverse engineer an Original Equipment Manufacturer's (OEM) design and manufacturing procedures and get a reliable part.
– Growing demand for more expensive automated valves which require advanced technological skills, also driven by environmental legislation.

Useful sources

- Association of German Engineering - http://www.vdma.com
- British Valve & Actuator Manufacturers' Association - http://www.bvama.org.uk
- Dutch Association of Engineering, Electronics and Contracting - http://www.fme-cwm.nl
- Dutch Association of Importers and Manufacturers of Industrial Accessories - http://www.vifia.nl
- European Committee for the Valve Industry - http://www.ceir-online.org
- French Association for Pumps, Valves and Compressors – http://www.profluid.org
- Freedonia World Valve Market Report - http://www.freedoniagroup.com/World-Valves.html
- Italian Association of Valve and Fitting Producers - http://www.associazioneavr.it
- Spanish Association of Engineering Goods Manufacturers - http://www.sercobe.es

2 Trade channels for market entry

Trade channels

For a better comprehension of the trade structure of valve parts and (finished) valves, both the trade structures are shortly explained in this subsection.

Iron and steel valve castings

Trade channels for steel valve castings do not differ from trade channels for castings and forgings. Refer to the CBI market survey 'The castings and forgings market in the EU' for more information on these trade channels. In this situation, end-users of steel valve castings are the valve manufacturers. As with castings and forgings in general, 'direct sales' to the end-user is the preferred trade channel for exporting iron and steel valve castings to the EU.

Valves

Trade channels for (finished) valves are different from trade channels for valve parts. These trade channels are best described in the CBI market survey 'The pipes and process equipment market in the EU'. The end-users may be oil refineries or other companies that use machinery and/or plants with valves as a component, such as dairy companies. The most common trade channels are importers, subcontractors and system suppliers, agents and direct sourcing. The importer is less important with regard to complex valves than standard valves, but still remains the most important channel for DC exporters. Importers usually keep stock and standard valves need to be kept in stock as they have to be available fast to end-users in the case of a breakdown of a plant. Agents play a minor role for valves, they are only active as sourcing agents for very special valves.

Valve manufacturer / Subcontractor

Also in the trade channel structure for valves, one of the chains is the EU (valve) manufacturer. These companies are often called 'subcontractor', as the engineering service company – the contractor which performs the RMO activities and turnkey projects for the process equipment owners – subcontracts the supply and manufacturing of process equipment to the 'subcontractor'. Another name for 'subcontractor' is 'system supplier', as they often

supply a process equipment system to the engineering service company. Increasingly, they offer a service package, in which both initial system costs and maintenance and repair costs are included in one contract. For this, they often keep stock. Subcontractors are almost always EU-based. The final assembly usually happens in the EU because of product liability. Products must meet severe requirements, and if a mistake occurs, the supplier can be held liable for the error. In the USA, for example, this sometimes leads to extreme damage claims. In the EU, manufacturers want to prevent this from happening. They want to keep control over the final assembly process and make sure their products are 100% reliable and safe. If full assembly were to be done in DCs, no control would be possible. This is in fact a barrier for DCs.

Tip
Ideally, DC exporters should strive to establish partnerships with such subcontractors directly. This will cut off the intermediary channel and will result in better margins. However, this is not an easy process and will take some time. It is recommended to start doing business with an importer and then, in the long run, form a group of suppliers and set up your own distribution network.

Some examples of EU valve manufacturers that operate like subcontractors are Tyco Valves (http://www.tycovalves.com), Duvalco (http://www.duvalco.nl; valves), Sidoma Systeme (http://www.sidoma.com), Siekmann-Econosto (http://www.siekmann-econosto.de; valves), Circor (http://www.circor.com; valves and fittings), Alfa Laval (http://www.alfalaval.com; process equipment) and KSB (http://www.ksb.com; pumps and valves).

Tip
The best way for DC suppliers to reach subcontractors in the EU is to work together and to offer them a value added product. This could be a semi-finished component or a set of parts that has undergone a special treatment. In this process, each DC supplier specialises in one piece of the process. By working together, not only a separate part or component can be offered to the client in the EU, but also a more added value product. For example:
1) DC company manufactures product: ball valves for natural gas pipelines
2) Company A (foundry) casts valve body, ball and bonnet
3) Company B (forging shop) forges the shaft and covers
4) Company C machines the casting and forgings
5) Company D applies a nickel layer on the ball surface (surface treatment; this may also be done by a European company)
6) Subcontractor in the EU does the final assembly and fits the component with other ones into a final end product (including necessary bolts and nuts as well as some seals).

Importer
Especially for more or less standard valves, importers and agents play a role. This is the case in, for example, the water- and food processing industry. Some examples of importers are:

- Clyde Materials Handling (UK) - http://www.clydematerials.com
- Econosto (several EU countries) - http://www.econosto.com. See textbox for more information.
- Eriks (several EU countries) - http://www.eriks.com
- Fail (Italy) - http://www.fail.it
- Fromme Armaturen - http://www.fromme-armaturen.de. Also refer to the textbox below.

From practice I
This company is a major valves trader in Germany. Although it states on the website that the valves are produced in Asia, it is virtually 100% China where the valves are produced, with only a few being sourced from India. According to a spokesman of the company, this domination of China as sourcing country also goes for the other German importers. Additionally, it is expected that China will remain the major supplier of valves to Fromme in the years to come. Still, other DCs than China certainly play a role in German imports, which can be seen from Table 3.1, refer to Section 3.

- ICP Valves (Spain) - http://www.imporexp.com
- Michaud et Chailly (France) - http://www.michaud-chailly.fr
- Noxon Stainless (the Netherlands) - http://www.noxon.nl

- Thisa-Tubos y Hierros Industriales (Spain) - http://www.thisa.es
- Transmark (global distributor; head office in the UK) - http://www.transmark-group.com
- Varisco (Italy) - http://www.variscosrl.com

From practice II
In exporting, the Czech valve manufacturer MSA (http://www.msa.cz) uses various distribution channels, from direct sales to end-users through sales to importers to the company's own network of contractual partners and representatives. MSA also runs an office in Swiss Geneva to arrange sales in the Near and Far East and Africa as well as to establish and maintain contacts with European and US suppliers of materials and valve actuators.

Price structure

There is a difference in (parts for) commodity valves and specialties. Commodities have small margins, 3-5% for the DC exporter and 2-3% for the EU importer. Contrary to that, margins for specialty products are far higher, for example 20% for a European producer. In general, the following links in the chain earn more than the producer. Main subcontractors, for example, charge 20-25% to the OEMs. Importers generally work with margins between 2-15%. The mark up of agents varies between 1-8%, depending on, for example, the character of the product and the size of the order.

Selecting a suitable trading partner

The Internet is an excellent source to identify potential buyers in the EU. Some examples follow below.

- Company database with a focus on the Netherlands or on France - http://www.abcdirect.nl or http://www.abc-d.fr
- Database of the German Engineering Association – http://www.vdma.org/hnw2/partner.do?action=Freitextsuche&orga=&suche=valves
- Direct Industry - http://www.directindustry.com/cat/valves-piping-pipe-fittings-W.html. Also catalogues of valve manufacturers.
- Global Spec - http://flow-control.globalspec.com/ProductFinder/Flow_Transfer_Control/Valves
- Offshore-Technology.com - http://www.offshore-technology.com/contractors/valves
- Subsea Oil and Gas Directory - http://www.subsea.org/equipment/manufacturers+and+suppliers/valves/listcat.asp
- 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'. Additionally, websites of trade fairs contain very useful databases with exhibitors, often searchable by name, product and/or country. Examples are:

- Aquatech - http://www.aquatechtrade.com
- Valve World Buyers Guide - http://www.valve-world.net/cyberguide/index.aspx
- Pumps and Valves - http://www2.fairtec.com/pumps/2006/antwerpen/en/?exposanten2006.

Also refer to the websites of trade associations mentioned in Section 1, which often contain a list of members. Additionally, Section 6 contains more relevant trade fairs.

For more names and websites of associations, intermediaries, end-users and manufacturers per country, refer to the CBI surveys covering the castings and forgings, or pipes and process equipment market in individual EU countries. Another option may be to make use of sources in your own country:

- The Economic Affairs departments of the official representative (Embassy or Consulate) of a specific EU country. Find that countries' embassy in your country at http://www.embassyworld.com. Another suggestion may be to contact the consul of your own country in the country of your choice.
- Public and private trade promotion bodies.

From practice III
Econosto is a technical services provider and distributor of, among other things, valves and fittings with total annual sales of €160 million in 2005. The company has a 12,000 m^2 distribution centre in the Netherlands which holds the largest inventories in Europe of its own-label DIN, ANSI and JIS accessories, instrumentation and a range of other products. Thanks to this inventory and a computerised order processing and distribution system, customers are assured of a 24h reliable delivery in the Benelux. Furthermore, there is a well equipped service workshop with expert technical service staff and takeaway service. In addition to the modification and assembly of components, such as valves and actuators, the workshop has various test facilities.

Econosto's Valve Sourcing Team
The task of Econostos' Valve Sourcing Team, which includes representatives of the valve specialists at Econostos' operating companies, is to follow the world market of valve providers very closely so as to be able to offer customers the best price and quality. For its own brands, the company sets the strictest criteria. The engineering department not only ensures that this quality is guaranteed within the organisation, but in many cases also collaborates with the manufacturer to create a better product. The quality of these products is guaranteed, and accordingly differs from products made in low-wage countries.

Sourcing from DCs
So far, Econosto has only set up a sourcing office in China, as China is one of the major suppliers to the company. The sourcing office deals with communication, logistics and quality assurance and control. Among the main decision criteria with regard to sourcing from DCs are quality (production according to specification), delivery time, and reliability. Of course, price is also an issue, but the most important is the total landed cost price. Besides, a disadvantage for some DCs may be the absence of local stainless steel production. While CEE countries have not turned into large suppliers to Econosto and are not expected to do so in the future, India may very well become a supplier of valves to Econosto in the future, according to a member of Econosto's Valve Sourcing Team.

3 Trade: imports and exports

Imports
The total EU import value increased by 6% per year since 2002, to €2.6 billion in 2006. On average, imports of the new EU member states accounted for the largest growth figures. The share of intra-EU imports increased from 70% in 2002 to 76% in 2006 and the share of DC-imports increased as well (from 5.8% to 8.9%). This was at the cost of the share of extra-EU imports (from 24% to 15%). The Netherlands, Italy, the UK and Spain saw good growth in imports (+10%, +7%, +7% and +5% per year respectively), while imports of Germany grew modestly (+2% per year). French imports declined (-3% per year). Unfortunately, data for re-exports can not be given by means of Eurostat. Virtually all of the countries under review are net-exporters, with Germany being the leader by a long distance with a trade surplus of €894 million in 2006, followed by Italy (€408 million). Only Spain had a small trade deficit (€26 million). In terms of volume, EU imports grew by 10.7% per year to 236,056 tons in 2006 and most of the countries under review ran trade surpluses with Italy leading (+42,000 tons), ahead of Germany (+37,000 tons). The UK and the Netherlands were the only countries with trade deficits (-15,000 tons and -5,000 tons respectively).

The DC share in import value grew fast since 2002, from 5.8% in that year to 8.9% in 2006. In terms of volume, this share increased even faster, from 15.8% in 2002 to 27.3% in 2006. China was the most important supplier to all highlighted EU countries - as in 2002. Compared to 2002, among DCs that showed the largest growth were China (+35% per year to €152.3 million), India (+19% to €22.8 million), Iran (+16% to €0.9 million), Turkey (+15% to €17.2 million) and Croatia (+8% to €5.3 million). Other main DC suppliers to the EU that saw growth were South Africa (+7% to €0.8 million), Thailand (+7% to €3.4 million) and Brazil (+6% to €9.1 million). Mexican exports to the EU saw a continuous decrease in the period 2002-2005, but regained growth in 2006. On average, imports from Mexico decreased 11% annually to €9.4 million.

Table 3.1 Imports and leading suppliers of valves to the EU, 2002-2006, share in % of value

Product	2002 € mln	2004 € mln	2006 € mln	Leading suppliers in 2006 (share in %)	Share (%)
EU27	1,423	1,712	1,957	Intra EU : Germany (25), Italy (9), France (7), Netherlands (5), UK (4)	76
	491	435	381	Extra EU ex. DC : USA (8), Japan (2), Switzerland (2), South Korea (1), Taiwan (1)	15
	118	146	228	DC : China (6), India (1), Turkey (1), Mexico (<0.5), Brazil (<0.5), Croatia (<0.5), Thailand (<0.5), Iran (<0.5)	9
Germany	234	293	318	Intra EU : Czech Rep. (13), Italy (12), France (9), Netherlands (5), Denmark (5)	68
	173	149	120	Extra EU ex. DC : USA (15), Switzerland (4), Japan (3), Canada (1), South Korea (1)	25
	21	28	33	DC : China (3), India (1), Brazil (1), Turkey (1), Mexico (<0.5), Croatia (<0.5), Thailand (<0.5)	7
UK	143	122	148	Intra EU : Germany (13), Italy (9), Ireland (8), France (7), Netherlands (5)	51
	55	69	95	Extra EU ex. DC : USA (19), Japan (6), Taiwan (2), Norway (1), Canada (1)	33
	21	30	47	DC : China (10), India (3), Mexico (1), Turkey (1), Azerbaijan (<0.5), Brazil (<0.5), South Africa (<0.5), Malaysia (<0.5)	16
France	205	223	217	Intra EU : Germany (23), Italy (12), Spain (8), Netherlands (6), Finland (5)	80
	84	55	29	Extra EU ex. DC : USA (6), Switzerland (2), Japan (1), Taiwan (1), Singapore (1)	11
	14	16	25	DC : China (5), India (2), Brazil (1), Mexico (<0.5), Turkey (<0.5), Croatia (<0.5), Thailand (<0.5), Algeria	9
Italy	136	142	156	Intra EU : Germany (24), Netherlands (14), France (11), UK (4), Denmark (4)	69
	22	18	28	Extra EU ex. DC : USA (3), Switzerland (2), Japan (2), South Korea (2), Norway (1)	13
	16	21	41	DC : China (15), Turkey (1), India (1), Mexico (<0.5), Iran (<0.5), Croatia (<0.5), Georgia (<0.5), Kasakhstan (<0.5)	18
The Netherlands	100	130	156	Intra EU : Germany (47), France (7), UK (7), Italy (5), Belgium (5)	84
	20	23	19	Extra EU ex. DC : USA (3), Japan (2), South Korea (1), Switzerland (1), Australia (1)	10
	6	7	11	DC : China (3), Turkey (1), India (1), Croatia (<0.5), Malaysia (<0.5), South Africa (<0.5), Macedonia (<0.5)	6
Spain	96	121	115	Intra EU : Germany (22), Italy (20), France (15), Denmark (9), Netherlands (4)	81
	13	13	6	Extra EU ex. DC : USA (2), Japan (1), Taiwan (1), South Korea (<0.5), Israel (<0.5)	5
	8	9	20	DC : China (13), India (<0.5), Turkey (<0.5), Chile (<0.5), Brazil (<0.5), Croatia (<0.5), Mexico (<0.5), Argentina (<0.5)	14

Source: Eurostat (2007)

Exports

The EU export value of valves was higher than the import value in the period under review. This makes the EU a net-exporter. The value of exports increased considerably: 7.5% per year since 2002, to €4.2 billion in 2006. Germany was the largest exporter by far, and accounted for almost one third of total EU export value. The export value of Germany grew 9.4% per year since 2002, which was the second best of the countries under review, behind Italy that saw an annual growth of 10.7%. The British and Spanish export value also showed respectable growth (6.6% and 3.7% respectively), while the Dutch export value grew by only 1.3%. French export value even declined (-0.5% per year). In terms of volume, EU exports grew by 23% per year to 528,000 tons in 2006 and Germany was leading (69,000 tons), ahead of Italy (67,000 tons), while Spain closed the row (17,000 tons). Unfortunately, data for re-exports can not be given by means of Eurostat.

Opportunities and threats

The main opportunities and threats for DC exporters are the following:

+ Total import value increased in recent years.
+ The (value) share of DCs in total imports increased from 5.8% in 2002 to 8.9% in 2006. In terms of volume, this share increased even faster.
± Compared to 2002, DCs that showed the largest growth, after China, were India, Iran, Turkey, Croatia, South Africa, Thailand and Brazil.
± Imports from China represented a considerable share of DC imports (6%).
– The EU is a large net exporter of valves. In the period under review, the trade surplus increased from €1.1 billion to €1.6 billion.

Please note that an opportunity for one exporter may be a threat for another exporter, depending on individual situations. Therefore, please analyse if the developments and trends discussed in the previous sections provide opportunities or threats. Refer to Section 7 of the EU survey for an example of such an analysis.

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 ➔ 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'.
- Understanding Eurostat: Quick guide to EasyComext - http://epp.eurostat.ec.europa.eu/newxtweb/assets/User_guide_Easy_Comext_20080117.pdf

4 Price developments

After a period of heavy price pressure in the period 2000-2004, there has been some price pressure relief in recent years. Starting in 2004, prices rose considerably as a result of rising raw material prices. In general, valve manufacturers in the EU were able to pass on the higher prices to the customers, so that there was only limited pressure on margins. However, the global competitive pressure remained very strong with regard to standard valves. Importers, agents, subcontractors and system suppliers will therefore continue their search for opportunities to reduce sourcing costs for standard valves and parts thereof. Please refer to the CBI market surveys covering the EU market for castings and forgings and for pipes and process equipment for more information on trends related to price developments.

Useful sources

- Example of prices: Econosto - http://www.econosto.nl. Go to 'download' and then to 'download prijslijst'. Do not forget to register first.
- Example of prices: FG Inox - http://www.fginox.com

5 Market access requirements

As a manufacturer in a DC preparing to access the EU, you should be aware of the market access requirements of your trading partners. 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. You need to comply with EU legislation, such as the pressure equipment directive (EU PED 97/23 EG, see modul H for proof of conformity), and you have to be aware of the additional non-legislative requirements that your trading partners in the EU might request.

For information on legislative and non-legislative requirements, go to 'Search CBI database' at http://www.cbi.eu/marketinfo, select castings and forgings and the EU in the category search, click on the search button and click on market access requirements.

Packaging and imprinting

Valves are individually packed in crates or boxes, mostly of wood. In addition, the packaging depends on the characteristics of the valve, its level of treatment (100% treated valves need high protection packaging in order to prevent breaking), and its size. Plastics or coating are also used for extra packaging purposes. Moreover, it could be very well the case that the customer has his own (additional) packaging requirements and preferences. The standard of the valve should be imprinted on the rim, as well as the size, batch number and materials. Very special valves have a unique number, because they are tested individually.

Useful sources

Additional information on packaging can be found at the website of ITC 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

General 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) can be found in the CBI market survey covering the EU market for castings and forgings and in CBI's export manuals 'Export Planner' and 'Your image builder'. Furthermore, cultural awareness is a critical skill in securing success as an exporter. Information on cultural differences in the EU can be found in Section 3 of CBI's export manual 'Exporting to the EU'. These manuals can be downloaded from http://www.cbi.eu/marketinfo - go to 'search CBI publications'.

Sales promotion

For DC exporters, trade press and trade fairs are among the most important promotional tools; they are briefly discussed below. Additionally, some other important and interesting tools are discussed.

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. Refer to Table 6.1 for relevant trade fairs for valves in the EU.

Table 6.1 Relevant trade fairs for valves in the EU

Trade fair	Products/services	Website	Date and Location
Achema	Process industry	http://www.achema.de	Triennially, May, Frankfurt, Germany. Next event: 2009.
Aquatech	Process, drinking and waste water	http://www.aquatechtrade.com/amsterdam	Biennially, even years, October, Amsterdam, the Netherlands
Hannover Messe	Process Equipment	http://www.hannovermesse.de	Annually, April, Hannover, Germany
Industrial Maintenance	Maintenance	http://www.industrialmaintenance.nl	Biennially, uneven years, April, Rotterdam, the Netherlands
Industrial Processing	Process Equipment	http://www.industrialprocessing.nl	Biennially, even years, October, Utrecht, the Netherlands
Midest	Industrial subcontracting	http://www.midest.com	Annually, November, Paris, France
Offshore Mediterranena	Offshore Equipment	http://www.omc.it	Annually, March, Ravenna, Italy
Pumps & Valves	Pumps & Valves	http://www.pumps-valves.com	Biennially, even years, October, Antwerp, Belgium
Sepem Industries Est / Nord	Process and Maintenance	http://www.sepem-industries.com	Annually, June, Colmar/Douai, France

Trade fair	Products/services	Website	Date and Location
Sub-contratación	Subcontracting	http://www.bilbaoexhibitioncentre.com	Annually, September, Bilbao, Spain
Valve World	Conference and exhibition	http://www.valve-world.net/expo2008	Biennially, even years, Maastricht, the Netherlands

Source: Eventseye (2008)

Trade press

- Industrial Valves (international edition of Industriearmaturen - the German journal for industrial valves) - http://www.industriearmaturen.de
- KWD Global pipe - http://www.kwd-globalpipe.com
- Maintenance World - http://www.maintenanceworld.com
- Oil Gas Magazine - http://www.oilgaspublisher.de
- Online news 'The Engineer' - http://www.theengineer.co.uk
- Pipe Line & Gas Industry - http://www.pipe-line.com or http://www.gulfpub.com
- Stainless Steel World - http://www.stainless-steel-world.net
- Valve World - http://www.valve-world.net
- ZWF - http://www.hanser.de/zeitschriften

Other trade promotion tools

- **Professional website**. A short scan on the presentation of valve manufacturers and their suppliers shows that their presentation is (very) proficient. Most of them have a professional website. The CBI Export Manual 'How to promote your website to the EU' gives DC exporters some excellent suggestions for marketing their website (http://www.cbi.eu/marketinfo).
- **Purchase partner application form**. An interesting e-business application is a so called purchase partner application form on a EU buyer website, which gives opportunities to come into contact with potential clients and gives information about buyers' requirements. A good example with regard to valves can be found on http://www.ksb.com. Click on 'corporate' and then on 'procurement'.
- **E-market places**. E-marketplaces are very well suited for first contact and continuous contacts if a good relationship already exists. Some examples are:
    - Sourcing parts E-market place - http://www.sourcingparts.com
    - Subcontract solutions E-market place - http://www.subcontractsolutions.com
    - Forge Finder - http://www.forgefinder.com
    - Market place for water and waste water equipment - http://www.water-waste-environment-marketplace.com

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

Disclaimer CBI market information tools : http://www.cbi.eu/disclaimer

APPENDIX A GENERAL PRODUCT DESCRIPTION

This product survey covers parts of steel and iron valves, which are typically obtained by casting. As valve parts are not incorporated separately in the Eurostat product classification, for the purpose of this survey (finished) iron and steel valves have been selected. This selection is shown in Table A.1. They will be treated as one product group in this product survey. When 'valves' are referred to in this survey, it involves the selection of the products in the table below, unless stated otherwise.

Table A.1 Product classification, based on CN and Prodcom nomenclature

CN	Prodcom	Description
84811019	29131135	Pressure-reducing valves of cast iron or steel, not with filters or lubricators
84813091	29131172	Check valves of cast iron or steel
84814010	29131176	Safety or relief valves of cast iron or steel
848180..51/59/61/ 63/71/73/81/85/87	291313-13/15/33/ 35/53/55/73/75/77	Process control valves, gate valves of cast iron or steel, globe valves of cast iron or steel, butterfly valves and diaphragm valves

Source: Eurostat (2007)

Valves are industrial products and are applied in almost all industries in which liquids are used, for example in the water and waste water industry, which is the largest application, and in the process (chemicals)-, food processing (drinks)- and the oil and gas industry.

Eurostat has been chosen as the main source for trade, production and apparent consumption data. Although it is the most reliable statistical source available, and covers all EU-members, please take into account some considerations when interpreting data from this source. First, data from Eurostat are in fact as reliable as the companies that report them. The terminology used by official bodies will differ to a great extent from that used in daily practice. As a consequence, there is a risk of reporting data under the wrong terminology. Moreover, some companies may report products under the most favourable import tariff that applies. For example, valve castings may be reported under 'process control valves'. But they could also be reported under 'part of process installation'. Therefore, exporters are advised to always use their experience and market knowledge in order to make estimations regarding market sizes for their specific products. Nevertheless, data in this survey could be used to get an indication of the market.

APPENDIX B REFERENCES

- Association of German Engineering - http://www.vdma.com
- Auma Trade Fairs database - http://www.auma.de
- British Valve & Actuator Manufacturers' Association - http://www.bvama.org.uk
- Eurostat statistical data from the Prodcom database - http://fd.comext.eurostat.cec.eu.int/xtweb/ - it is possible to register for free in order to make large data collections.
- Events Eye Trade Fairs database - http://www.eventseye.com
- Flow Serve - http://www.flowserve.com
- Tyco Flow Control - http://www.tycoflowcontrol-eu.com
- Valve World - http://www.valve-world.net