

Blayson

**Review of the
World
Investment
Casting
Markets**

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REVIEW OF THE WORLD INVESTMENT CASTING MARKETS

Ronald B Williams

The Blayson Group Ltd, UK
(A former president of BICTA)

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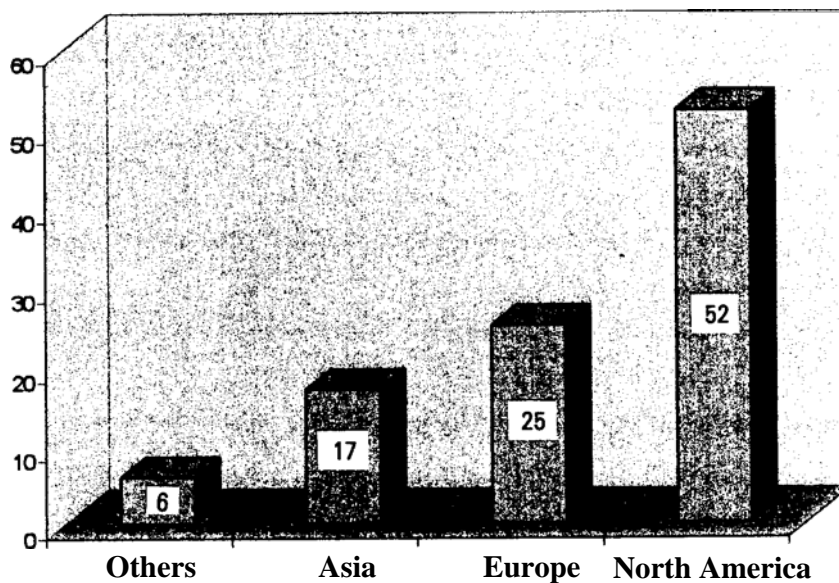
REVIEW OF THE WORLD INVESTMENT CASTING MARKETS

At the beginning of 1999, the approximate World turnover for investment casting was US \$5.1 billion. This figure includes the major markets of North America, Europe and Asia with the exception of some of the Eastern European nations and China. It must be stressed that these figures are based on sales and turnover and not tonnage of castings produced.

The approximate World turnover of US \$5.1 billion is made up as follows:

North America	52%	US \$2600 m
Europe	25%	US \$1270 m
Asia	17%	US \$895 m
Others	6%	US \$330 m

Fig. 1 World Investment Casting Market 1999



In general, the World investment casting industry has experienced an upward movement in growth. Certainly some areas both in geographical and application terms have experienced greater comparative growth.

We can explore this further by taking a closer look at specific areas and gain an overall impression of the way forward for our industry and its markets into the next millennium.

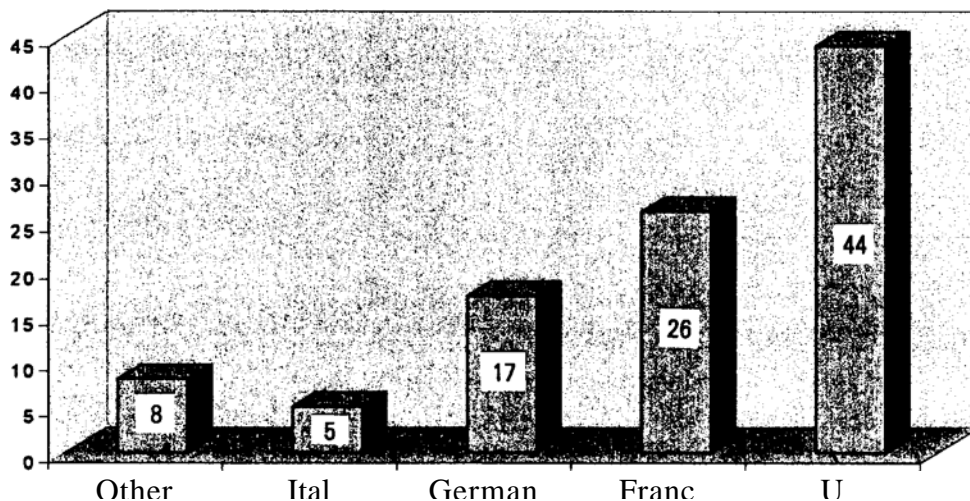
WESTERN EUROPE

Within Western Europe the turnover of the investment casting industry at the beginning of 1999 reached approximately US \$1270 million (See Fig 2). A guide to the percentage breakdown into different areas is as follows:

Table 2 Western European Investment Casting Market 1999

UK	44%	US \$570 m
France	26%	US \$315 m
Germany	17%	US \$205 m
Italy	5%	US \$70 m
Others	8%	US \$110 m

Fig. 2 Western European Investment Casting Market 1999



United Kingdom

In the United Kingdom, turnover of the investment casting industry is put at US \$570 million per annum with about 50 active foundries. This is the largest market in Europe and the main reason for this is the high degree of aerospace work. Another feature of the market is the high number of small to medium-sized foundries.

France

French industry turnover is reported to be around US \$315 million per annum from 21 foundries. This is the second largest market in Europe in terms of value. Again, the presence of a high level of aerospace work is the principal factor behind this.

Germany

The German market is approximately US \$205 million per annum in turnover and has about 18 foundries. Some of the German foundries have moved, or are moving, East.

Italy

The Italian market is the fourth largest and estimated to be US \$70 million with approximately 20 foundries.

Annual turnover of the remaining countries in Western Europe is about US \$110 million with significant players in Austria, Belgium, Denmark, Finland, Greece, Israel, the Netherlands, Portugal, Spain, Sweden and Switzerland.

EASTERN EUROPE

The Eastern European countries have experienced a period of radical social, economic and political change since the break up of the Communist system. The Eastern European countries listed below all have investment casting industries.

Table 3
Individual Markets by Country

Poland
Hungary
Romania/Bulgaria
Czech Republic
Former Yugoslavia
Russia & neighboring States

The overall market considered has a population of some 350 million people, of which one third live in the Russian states.

Poland

There are 15 investment casting foundries in Poland and these produce about 7 million castings per year. The industry has an estimated 450 employees. 50% of the output comes from only three foundries, with the remaining 12 supplying the other 50%.

Hungary

The Hungarian investment casting industry is quite small, with a total estimated output of some 400 tonnes, produced by two investment casting foundries. Investment castings are mainly for commercial parts, including many for automotive applications.

Romania and Bulgaria

There are only 4 investment casting foundries in Romania and these produce parts for the automotive and aerospace industries. Since the fall of the iron curtain, production has declined greatly and there are limited signs of recovery in the investment casting market.

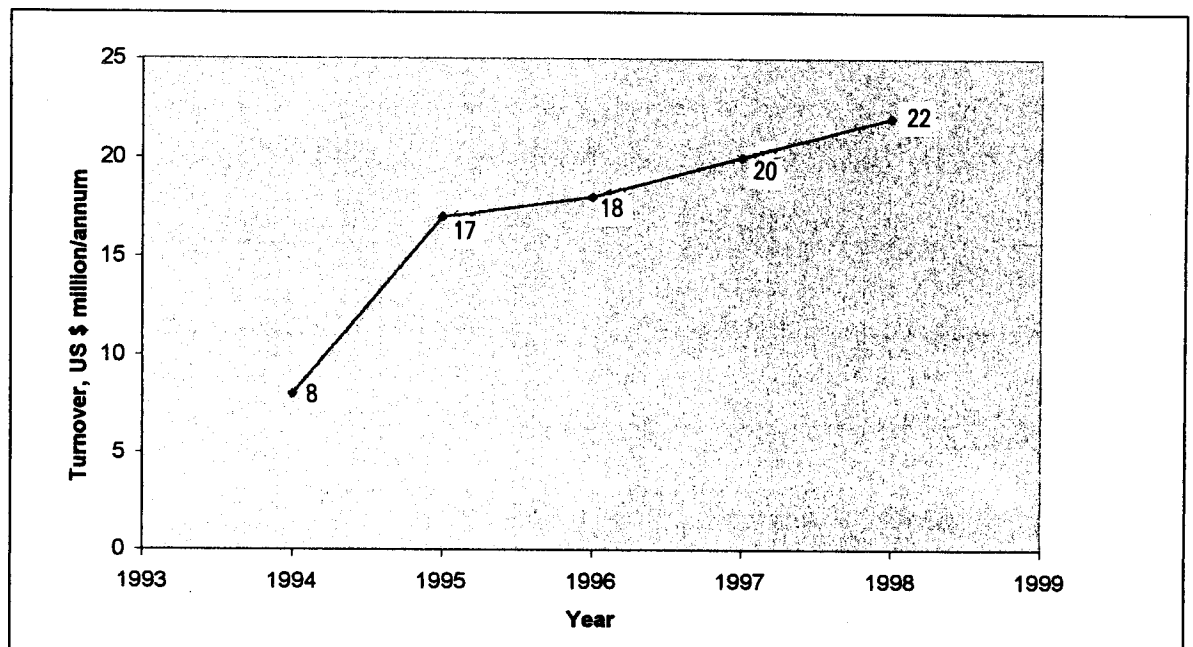
The situation in Bulgaria is worse. The country is politically unstable and suffers from economic problems including high inflation and high levels of unemployment.

There are 4 investment casting companies in Bulgaria, but two appear to be inactive and the other two are struggling.

Czech Republic

The Czech Republic has a long history of foundry involvement and is the leading investment caster (outside Russia) in Eastern Europe: Fig. 3 shows the increase in turnover of investment castings since 1994.

Fig. 3 Czech Republic Investment Castings Output



There are 14 investment casting foundries in the Czech Republic. The capacity of the industry is estimated to be 3600 tonnes per annum. Turnover, which reached about US \$20 million in 1997, has been forecast to grow to US \$22 million in 1999.

Former Yugoslavia

War conditions in the former Yugoslavia have precluded contact with the outside business world and trade has not been possible because of the embargo placed on the warring factions.

There are five investment casting foundries in Serbia/Montenegro.

There is little investment casting production in Slovenia and one foundry in Croatia.

Russia

Russia is an important producer of investment castings with large markets in aerospace, automotive and industrial part applications. It is very difficult to obtain relevant statistics for the country, but it does seem that, since the days of the former regime, about 65% of the foundry capacity, and 25% of the machine tool capacity remain.

In considering the development of the countries of Eastern Europe, it is considered that the six factors listed in table 2 are particularly important. Moreover, these countries will have to address environmental issues, if they are to compete with Western economies.

Table 4 Requirements of Eastern European Markets	
	<ul style="list-style-type: none">• New Equipment• New Technical Know-how• Improved Marketing• Improved Logistics• Improved Infra-structure

Overall, however, it is believed that Eastern Europe will offer an interesting and challenging future for investment casters.

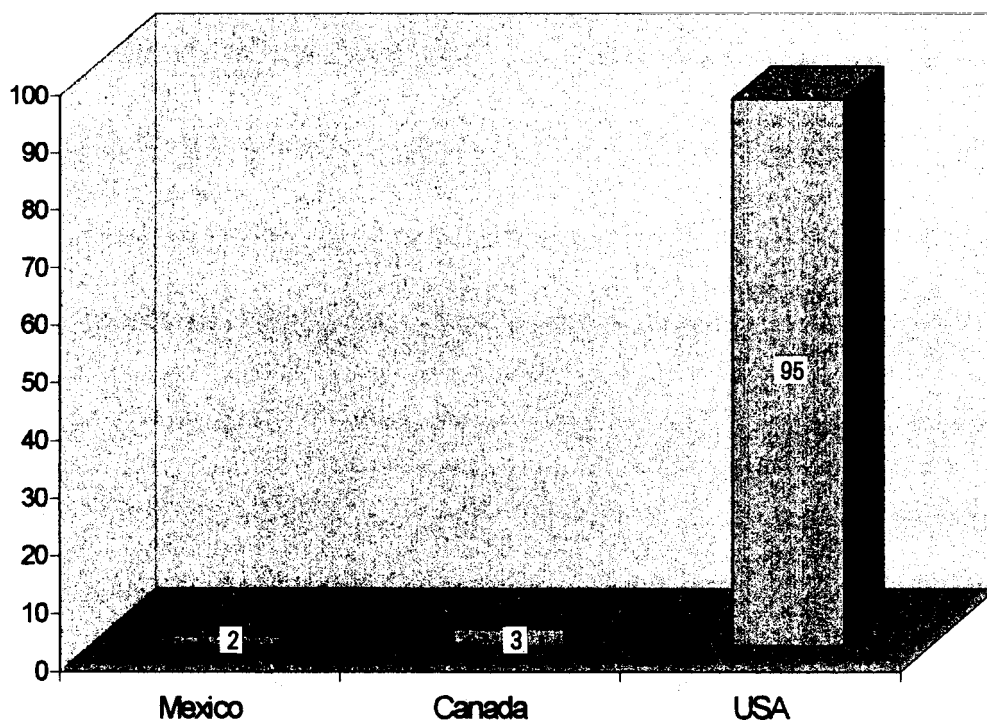
NORTH AMERICA

At the beginning of 1999 the approximate turnover of the North American investment casting industry was US \$2600 million (Fig 4). It has the largest share of the market at roughly 52% of World total. Here, the market is dominated by the United States, which as shown in the following breakdown contributes approximately 95% of total North American turnover.

Table 5 North American Investment Casting Market 1999

USA	95	US \$2495 m
Canada	3%	US \$90 m
Mexico	2%	US \$60 m

Fig. 4 North American Investment Casting Market 1999



In the United States, there are 350 estimated investment casting foundries ranging in size from the very small to the very large. In fact, approximately 5% of the foundries account for roughly 60% of the market. Many of the foundries are privately owned, with a definite trend for them to be purchased by larger corporations.

Again as with the UK, a large proportion of US turnover is contributed to by the size of the aerospace industry within the United States. Up to 1999 the aerospace group has shown significant growth in the value of castings.

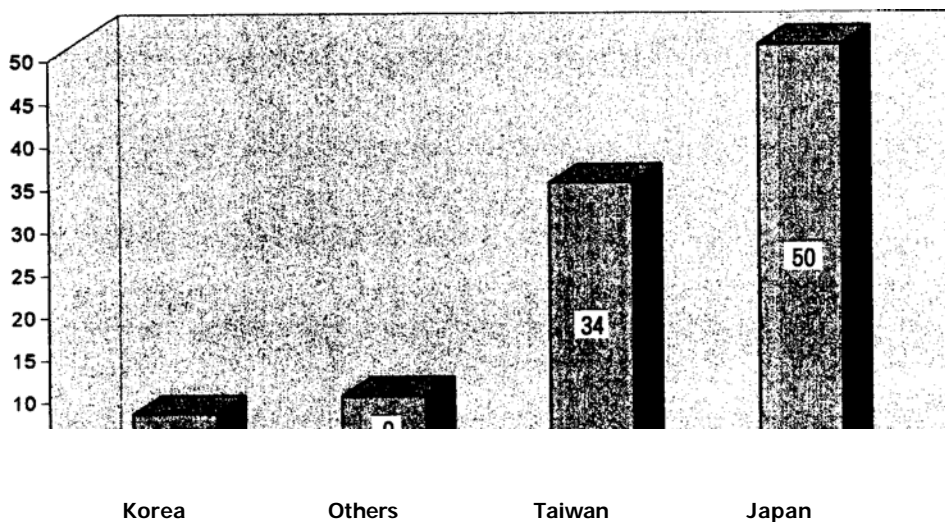
ASIA

At the beginning of 1999 the estimated turnover of the Asian investment casting industry was US \$895 million (Fig 5). The approximate percentage breakdown into different areas is as follows:

Table 6 Asian Investment Casting Market 1999

Japan	50%	US \$450 m
Taiwan	34%	US \$300 m
Korea	7%	US \$60 m
Others	9%	US \$85 m

Fig. 5 Asian Investment Casting Market 1999



Korea

Others

Taiwan

Japan

The overall Asian turnover figure does not include data from China. The largest contributor to this market is Japan.

Japan

The Japanese market developed differently from those in most Western countries. Aerospace accounts for approximately 15% of Japan's current turnover. The Japanese market has evolved much more into commercial, general engineering and automotive applications.

Table 7 shows sales turnover for the period 1992-1998.

	Sales Turnover
1992	\$ 430 m
1993	\$ 400 m
1994	\$ 386 m
1995	\$ 450 m
1996	\$ 455 m
1997	\$ 479 m
1998	\$ 446 m

Taiwan

Taiwan accounts for approximately 34% of the total estimated Asian market at US \$300 million/annum.

It is different from those in most Western cultures. It has a particular structure of its own with 5 main foundries each employing 350-400 and all producing mainly golf club heads, many in titanium. The rest of the market may be up to 100 smaller foundries. Some small and some medium sized foundries have moved from Taiwan to China or, in a few cases, to other Asian countries. Whilst some labour intensive

processes have been transferred to China; the higher technology production has been retained in Taiwan.

South East Asia

In terms of investment castings, the estimated number of foundries are:

Thailand 7 foundries	Indonesia 2 foundries
Singapore 1 foundry	Other countries Not known

South East Asia (Thailand through Malaysia, Singapore, Indonesia, Australia and New Zealand) has a market of approximately US \$35 million per year with up to 25 investment casting foundries.

It is predicted that, in the future, there will be further growth in the investment casting industry in this region.

China

Previously estimated figures for the Chinese market put it at US \$150 to US \$260 million per year. However, this estimate may be low given the influx of state-of-the-art foundries financed from Taiwan and the number of known aerospace foundries, several joint ventures and a great number of smaller investment casting foundries. What can be said is that this industry is likely to grow considerably.

India, Pakistan and Malaysian Markets

During the last four to five years, the investment casting markets of India, Pakistan and Malaysia have expanded.

Pakistan is reported as having 4 investment casting foundries and a market of US \$6 million. The market in India is estimated at US \$30 million per year with up to 40 foundries. However, over the last twelve months there has been a leveling of the growth in India and Pakistan.



CONCLUSION

The World investment casting industry is quite diverse, but in general terms there has been upward movement in growth. By distinguishing between the different areas for investment casting during the review, I hope this has allowed you to gain an overall impression of the way forward for our industry and its markets into the next millennium. It will certainly offer an interesting and challenging future for investment casters.