

World Investment Casting Market Review

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14th World Conference on Investment Casting

Le Palais des Congrès de Paris

17-20 April 2016

Agenda

- World Investment Casting Sales 2015
- Sales by Region
- Market Sector Analysis
- Market Sector Review
- 2015 Summary
- 2016 Prospects



Acknowledgements

The data used for this presentation has been provided by the following organisations, whose help and contribution is gratefully appreciated

- ICI - Investment Casting Institute, United States
- EICF - European Investment Casters' Federation
- CMF - Cast Metals Federation, UK
- JFS - Japan Foundry Society
- CFA - China Foundry Association
- Other - Individual contributors

The information given is based on official figures together with best estimates where statistics are not available. No legal responsibility is accepted for information, advice given or opinions expressed

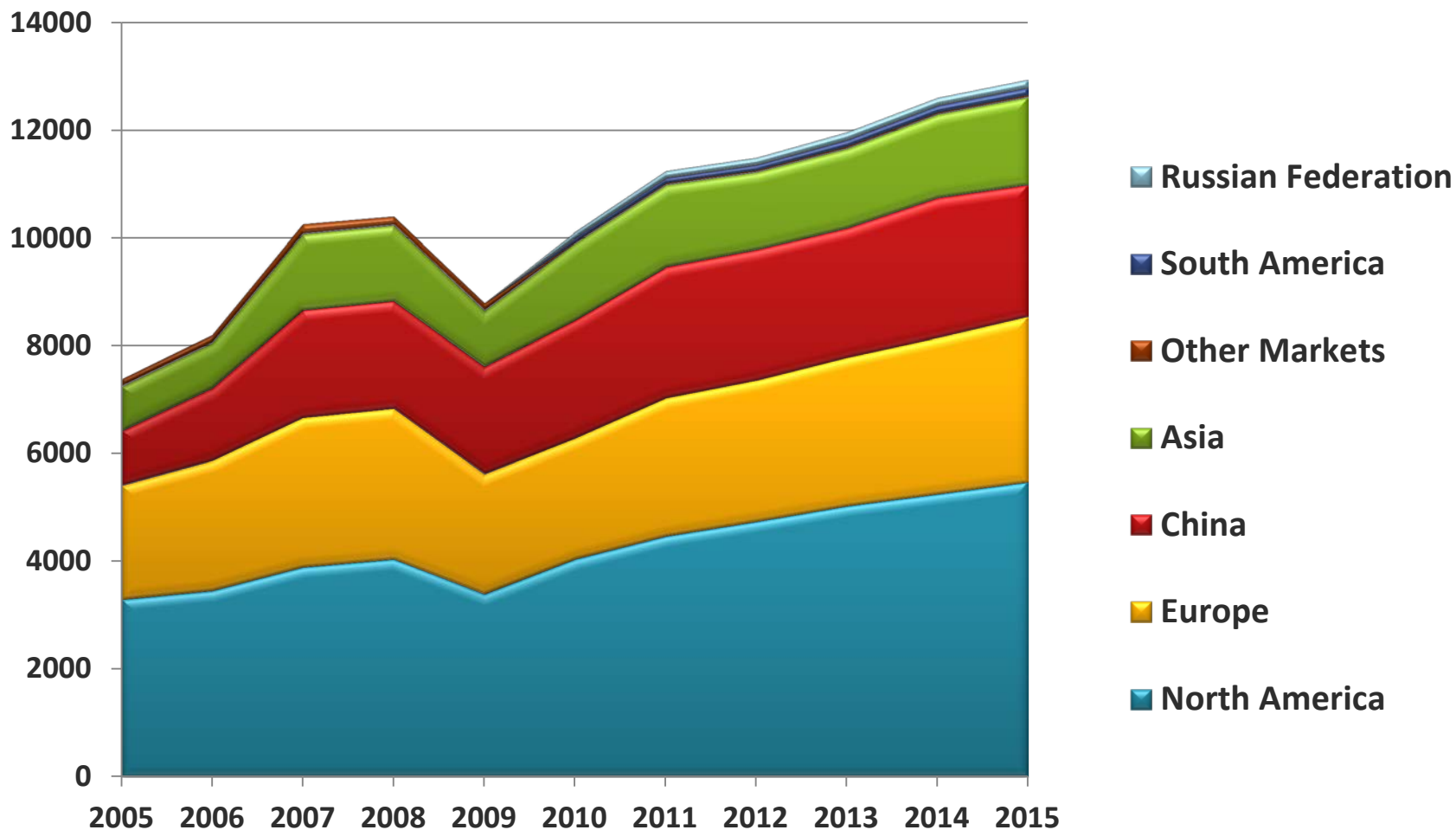


World Investment Casting Sales 2015

- Global investment casting achieved sales of almost US\$13 Billion in 2015
- Representing an increase of 3% over 2014
- Lower growth than originally anticipated due to continuing uncertainties in the global economy
- High demand for castings for commercial aircraft remains a key driver for sales
- Other sectors performance varies by region and company

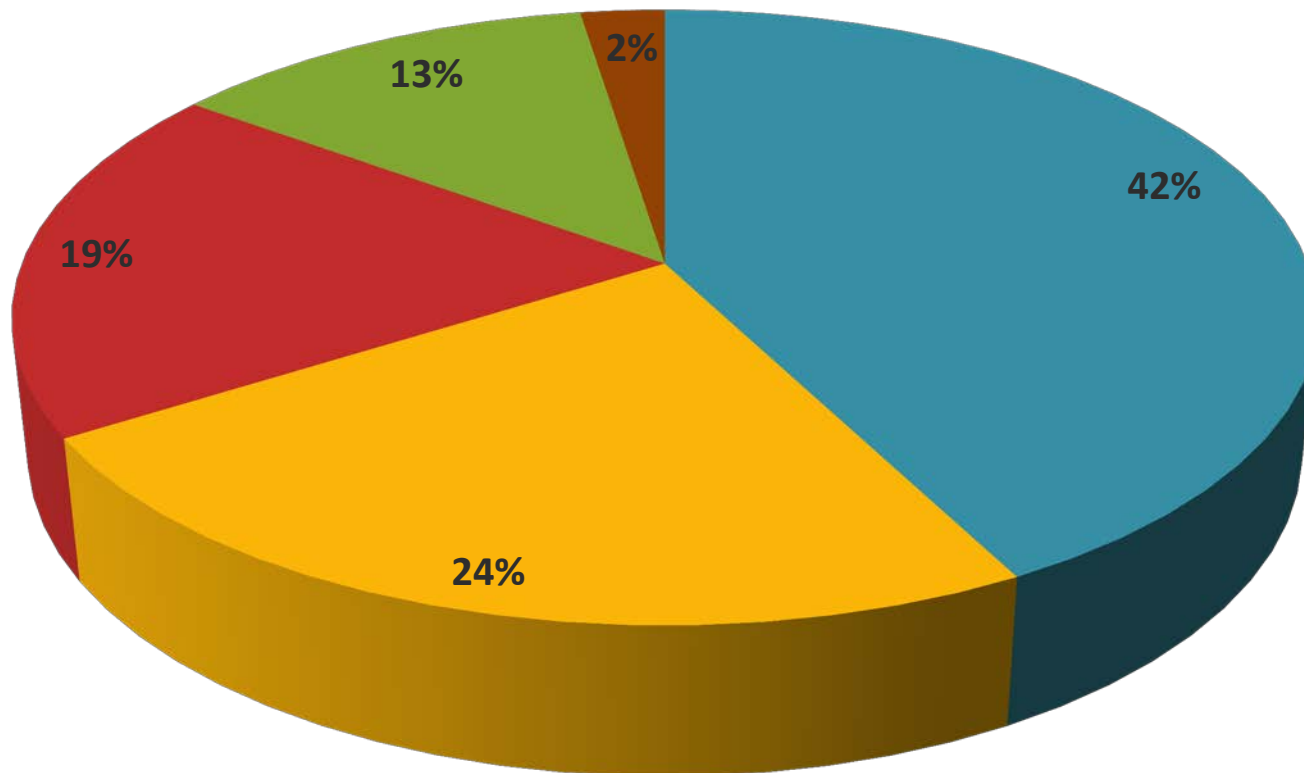


World Investment Casting Sales by Region (US\$M)



2015 Sales by Region (US\$M)

■ North America ■ Europe ■ China ■ Asia ■ Others

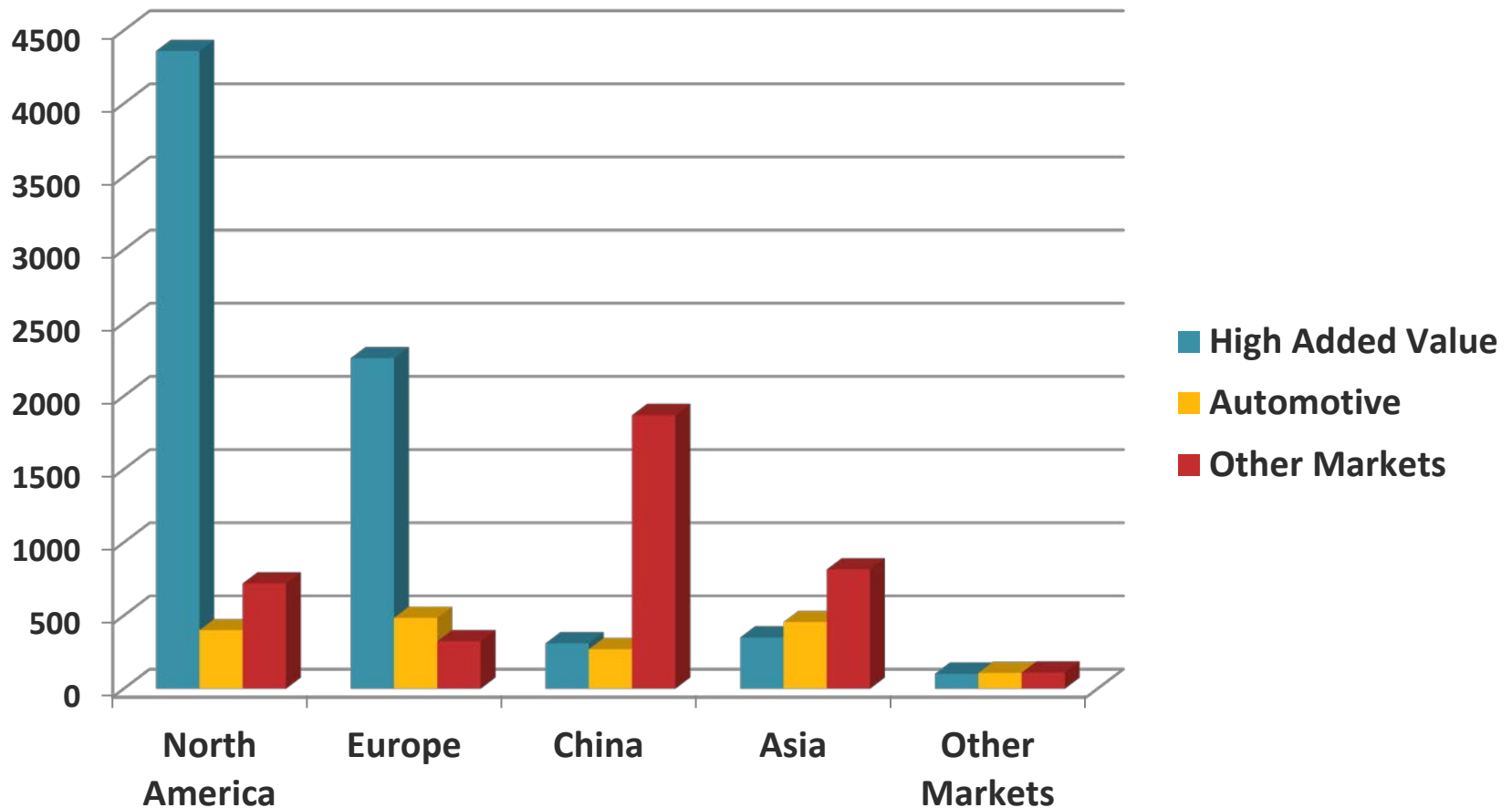


2015 Sales by Region

- Regional market shares remained largely unchanged
- North America retains its position as the single largest manufacturing region with a 42% share
- Overall sales of castings in China fell in 2015 due to reduced demand and rising labour costs
- South East Asian countries have increasing numbers of investment casting enterprises
- Asia in total produces 32% of global investment casting sales



2015 Sales by Sector (US\$M)

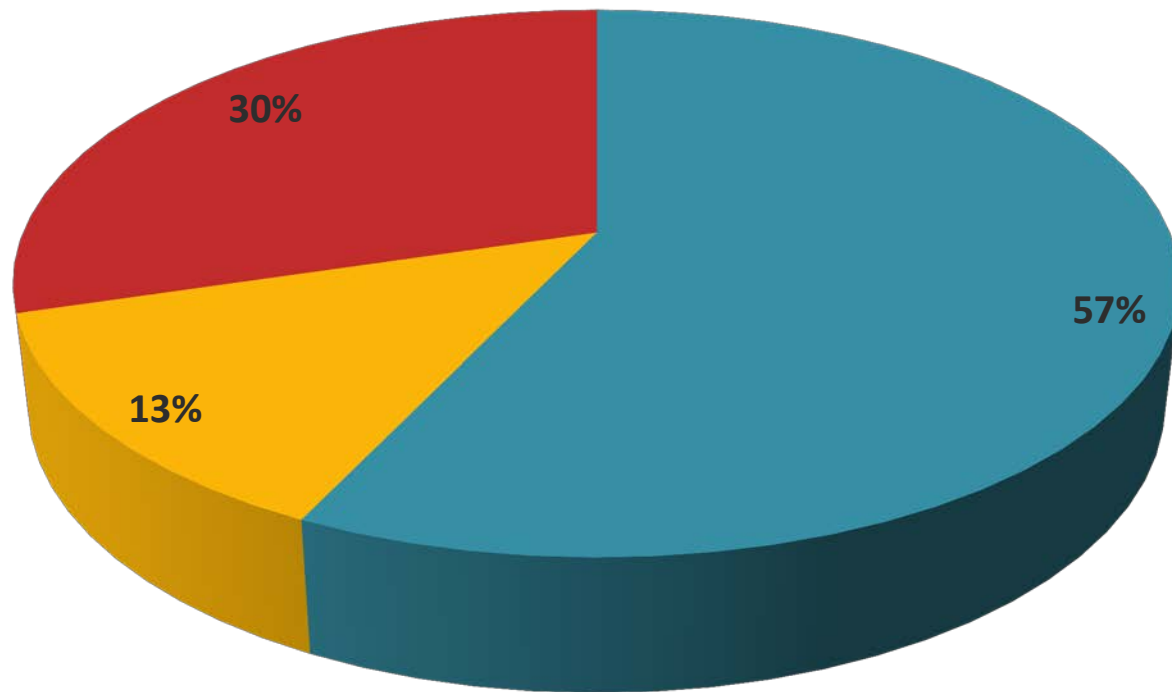


High Added Value casting production leads in North America and Europe in contrast to the other regions



Investment Casting Sectors 2015

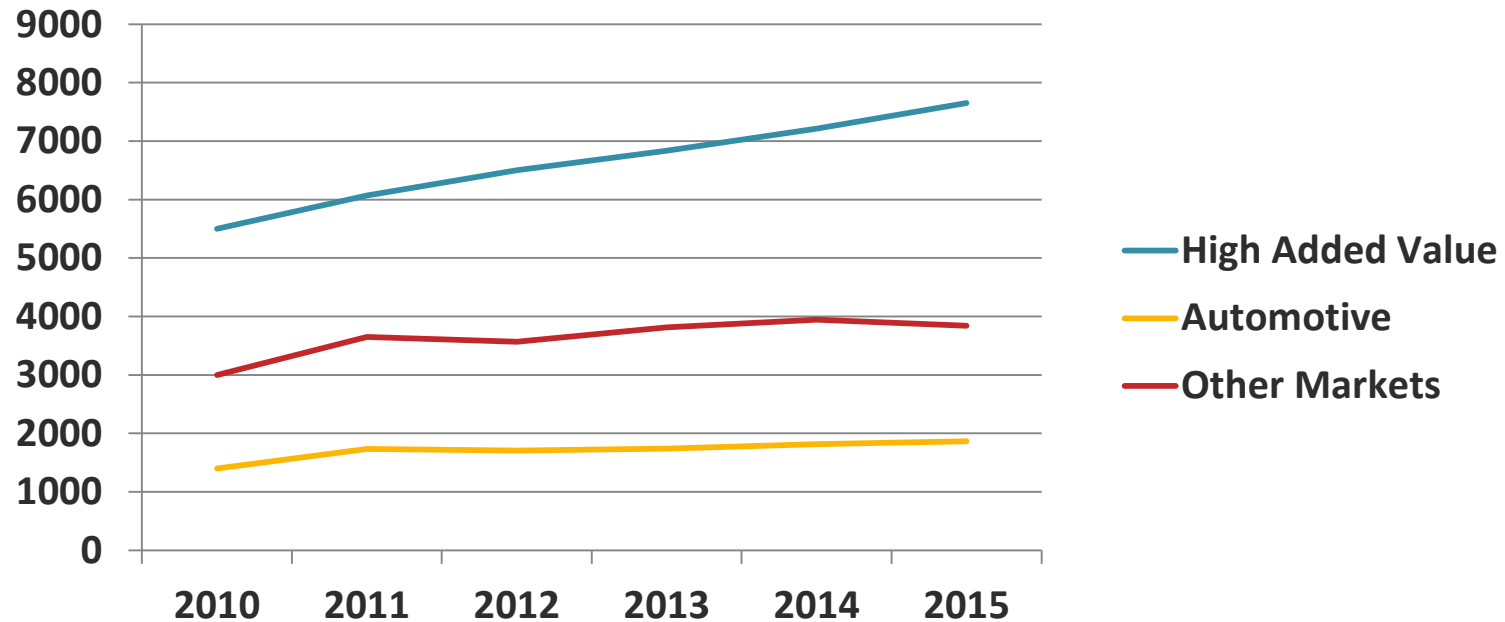
■ High Added Value ■ Automotive ■ Other Markets



High Added Value castings account for 57% of total sales



Investment Casting Sector Trends (US\$M)



- Commercial aircraft sales continue to drive demand for High Added Value castings
- Sales of commercial castings in the Other Markets sector faltered in 2015
- Trend of slow growth continues in Automotive sector



Aerospace

- 2015 casting sales increased by 6%
- This was in line with industry expectations
- The high level of orders is being maintained and the order backlog for commercial aircraft remains at a very high level
- Boeing and Airbus have increased deliveries to record levels
- Defence budgets remain under pressure limiting casting sales
- China's commercial aircraft industry continues to develop and is a major government strategy
- Iran forecast to order up to 500 aircraft in the next 3 years



Industrial Gas Turbines

- Consolidation of turbine manufacturing has taken place
- IGT continues to show a mixed picture with variation between companies and regions
- Generally markets remain flat
- Well established power infrastructures in North America and Europe limiting growth opportunities
- In Asia economic concerns have limited growth



Automotive

- 2015 casting sales increased by 3%
- Vehicle buying decisions increasingly based on quality, value for money and safety
- Turbo wheel market continues to grow as a result of need for improved fuel economy
- Automotive casting sales showed some improvement across various regions
- UK exporting up to 80% of production



Medical

- The medical castings sector is becoming more competitive
- Increased competition whilst cost reduction programmes are being implemented in many economies

Commercial

- Commercial casting sector sales increased by 3% in 2015
- Growth rate generally similar across regions but with variation between individual foundries
- The fall in oil price has adversely affected casting sales to the oil industry



Aerospace

- Air traffic predicted to double within 15 years
- Asia/Pacific regions will lead growth
- Airbus and Boeing high production levels should be maintained

Industrial Gas Turbines

- Mixed picture with some positive signs towards the end of the decade
- Asian market reports indicate possible future potential for growth



Industry Prospects

Automotive

- Focus on energy efficiency and environmental improvement is leading development
- The industry is moving towards lighter materials and hybrid and electric powered vehicles
- Continuing investment and innovation essential by foundry industry to maintain its strong supply position

Medical

- The sector is expected to maintain a low growth trend

Commercial

- Will remain very competitive, low growth levels are likely



Summary

- The investment casting industry has continued to develop in 2015
- Increasingly stringent demands present an ongoing challenge to foundries and suppliers
- Global economies not expecting significant growth
- Business conditions likely to remain unpredictable
- Difficult to forecast likely figures for 2016 this early into the year



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Thank You

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