

Global Market Outlook 2019

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Agenda

- World Investment Casting Sales 2018
- Sales by Region
- Market Sector Analysis
- Market Sector Review
- Industry Outlook 2019
- Summary

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

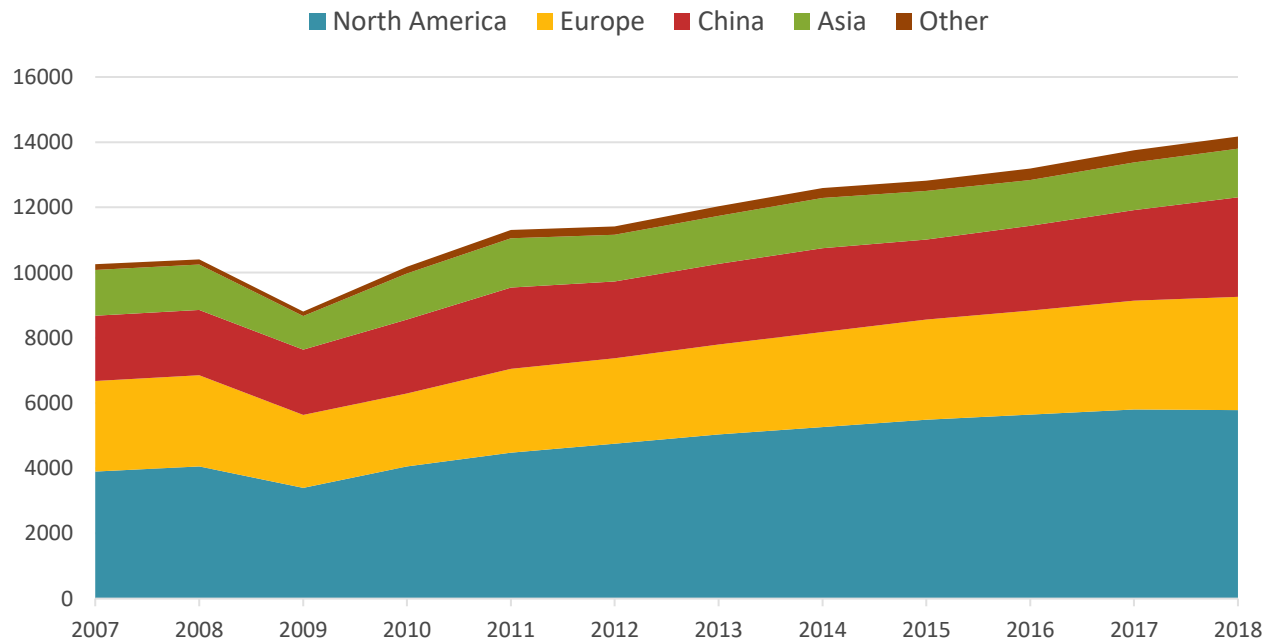
The information given is based on official figures together with best estimates where statistics are not available. No legal responsibility is accepted for information, advice given or opinions expressed.

World Investment Casting Sales 2018

- Sales for the global investment casting industry in 2018 were US\$14.2 Billion
- This represents an increase of 3.1% compared to 2017
- Maintains a steady upward trend of total World investment casting sales
- These sales are currently driven by the continued high demand for High Added Value castings for the buoyant commercial aircraft market
- The global Industrial Gas Turbine market partially declined through the year
- Automotive and Other Markets experienced growth in some regions

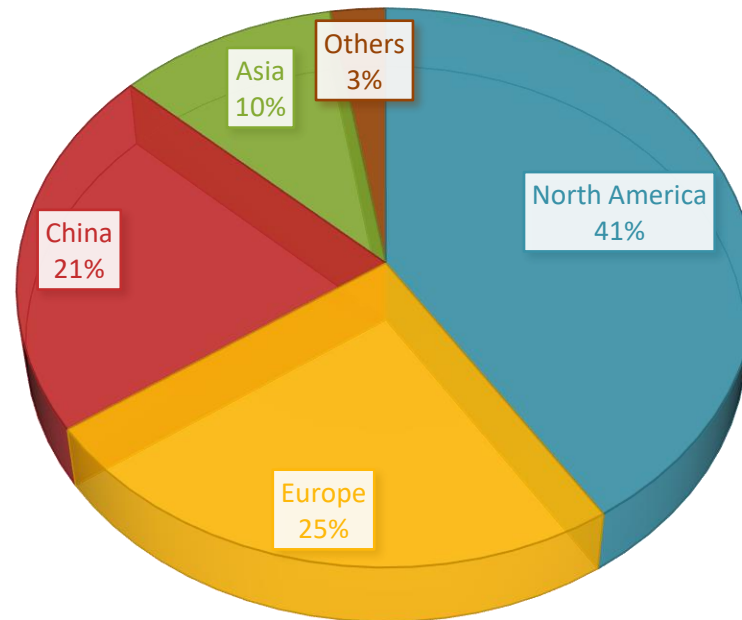
World Investment Casting Sales (US\$M)

- Overall World investment casting sales in 2018 grew by 3.1%
- The graph demonstrates that the North American contribution to World sales was relatively unchanged from 2018 as were the Asian and Other Markets
- The increase in World sales was predominantly due to the European and Chinese market growth



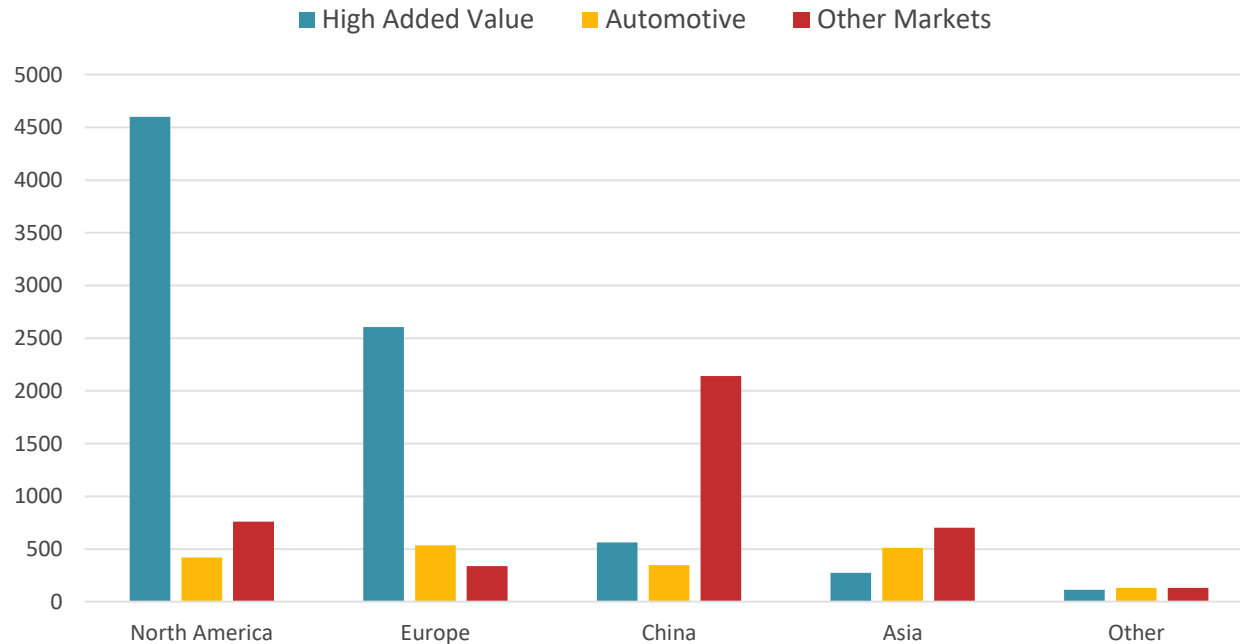
Sales by Region 2018

- For 2018, North America contributes 41% of sales, Europe 25% of sales, China 21% of sales, Asia 10% of sales and Others 3% of sales
- The North American contribution to total sales decreased from 43% in 2017 largely due to the downturn in the IGT market



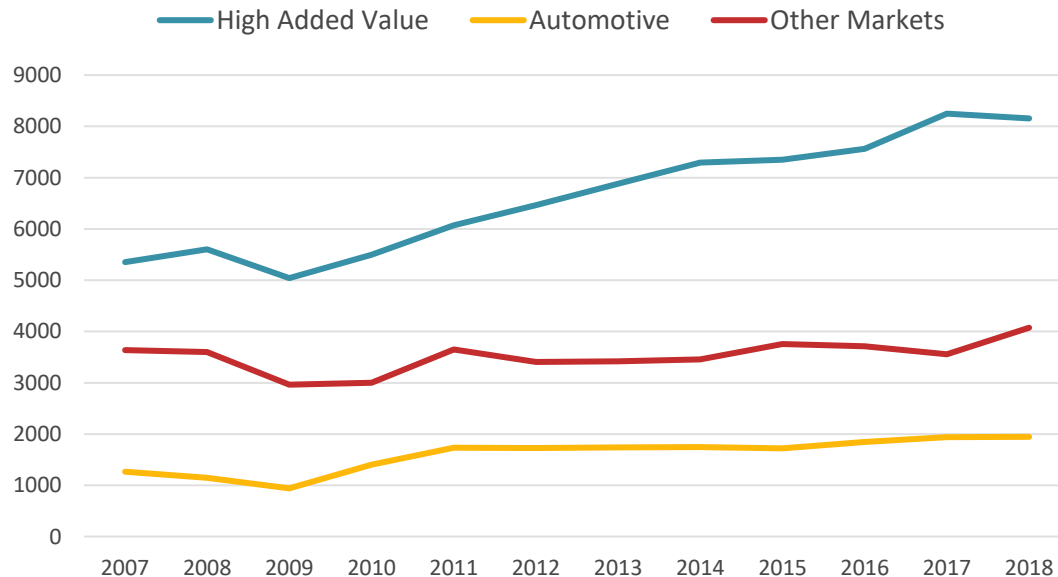
Sectors by Region 2018

- Sales to sectors transcending the regions North America, Europe, China, Asia and Other Markets remain relatively unchanged from the previous year
- High Added Value casting production demonstrates its continued importance in North America and Europe

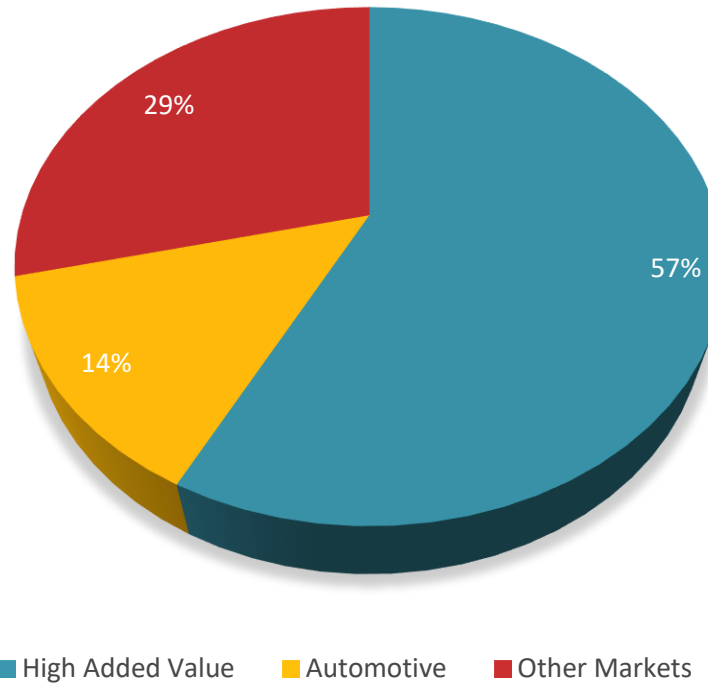


Investment Casting Sector Sales (US\$M)

- The dominance of the High Added Value sector is illustrated
- The small decrease in the High Added Value sector is primarily due to the reduction in IGT investment casting sales, predominantly in the North American market
- The increase in the Other Markets sector sales is largely influenced by increased levels reported from China



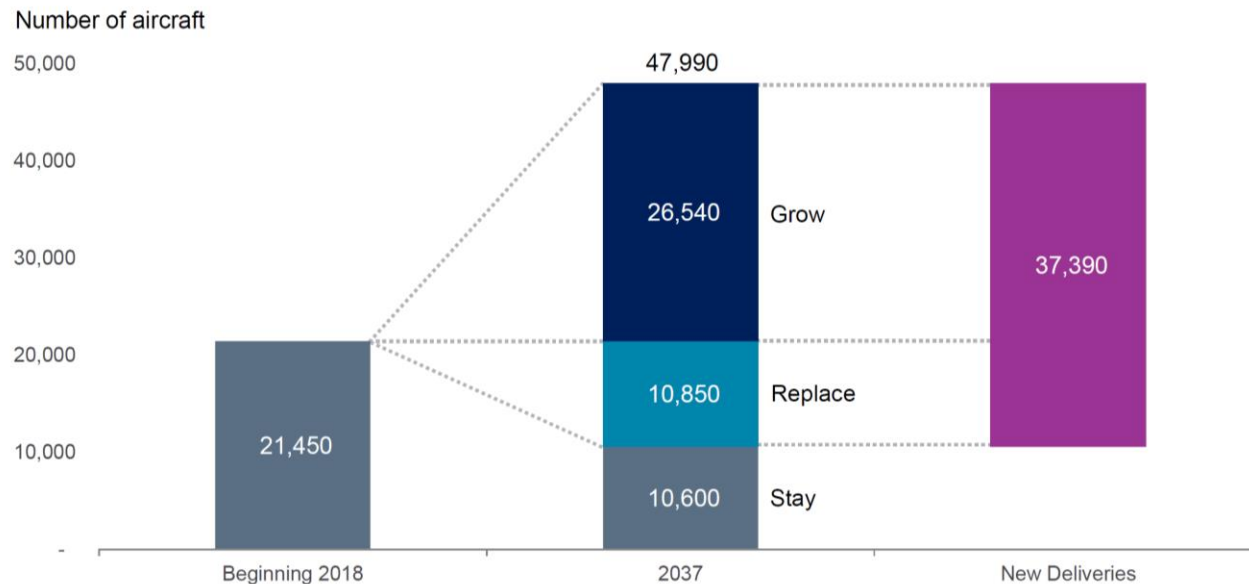
Sector Share of Sales 2018



High Added Value casting sales accounted for around 57% of World investment casting sales in 2018 down from 59% in 2017.

Aerospace Review 2018

- The commercial aircraft industry remained buoyant with a considerable order backlog for Boeing (5870) and Airbus (7390)
- China's import market for aircraft parts and components continued to grow in the same trend as in the previous year
- The world fleet is predicted to double over the next 20 years



Notes: Passenger aircraft (≥ 100 seats) | Jet freight aircraft (>10 tonnes), Rounded figures to the nearest 10
* Assuming same rules as today
Source: Airbus GMF 2018

Industrial Gas Turbines Review 2018

- Sales within the IGT sector reached a high level in 2017 with a 5% increase on 2016.
- The World market for Industrial Gas Turbines casting sales was slow during 2018
- Especially influenced by the North American lower sales levels

Automotive and Other Markets Review 2018

Automotive

- The overall World market for automotive was relatively flat
- The position is somewhat mixed across regions
- Notably the North American market was down
- The market in China showed significant growth
- The World turbocharger wheel market continued to grow through 2018

Other Markets

- The World sales for the Other Markets sector has shown an increase
- This is largely due to the sales data reported from the Chinese market

Industry Outlook 2019

- The overall World investment casting sales were expected to grow through 2019 in line with recent years
- The commercial aerospace industry remains buoyant and this is anticipated to continue in 2019
- The Industrial Gas Turbine market is expected to show growth in 2019, especially reported in the North American data, however sales are not expected to reach previous highs
- Previous forecast for the automotive industry predicted growth in 2019, however the industry has shown a considerable downturn through the year
- Other markets are showing a mixed situation for 2019

Summary

- The industry continued to develop in 2018
- Investment casting sales showed growth of almost 3.1%
- Market conditions are positive for the buoyant aerospace sector in 2019 and optimism remains in other sectors
- Opportunities for growth within the investment casting industry exist, but have been influenced by certain external factors
- The ISIC 2019 provides an opportunity to assess the current position of the market

Thank You

ISIC 2019