

World Investment Casting Market Review

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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



Introduction

- The IMF reports that world industrial output grew by 3% in 2013
- In comparison the global investment casting industry achieved growth of 6.1%
- This success for investment casting follows the pattern seen since the 2008 recession and indicates the important role that investment casting plays in the world today
- This review of global investment casting markets gives a summary for 2013 and estimates likely results for 2014



Agenda

- World Investment Casting Sales 2013
- Sales by Region
- Market Sector Analysis
- Market Sector Review
- 2013 Summary
- Prospects & Estimates for 2014

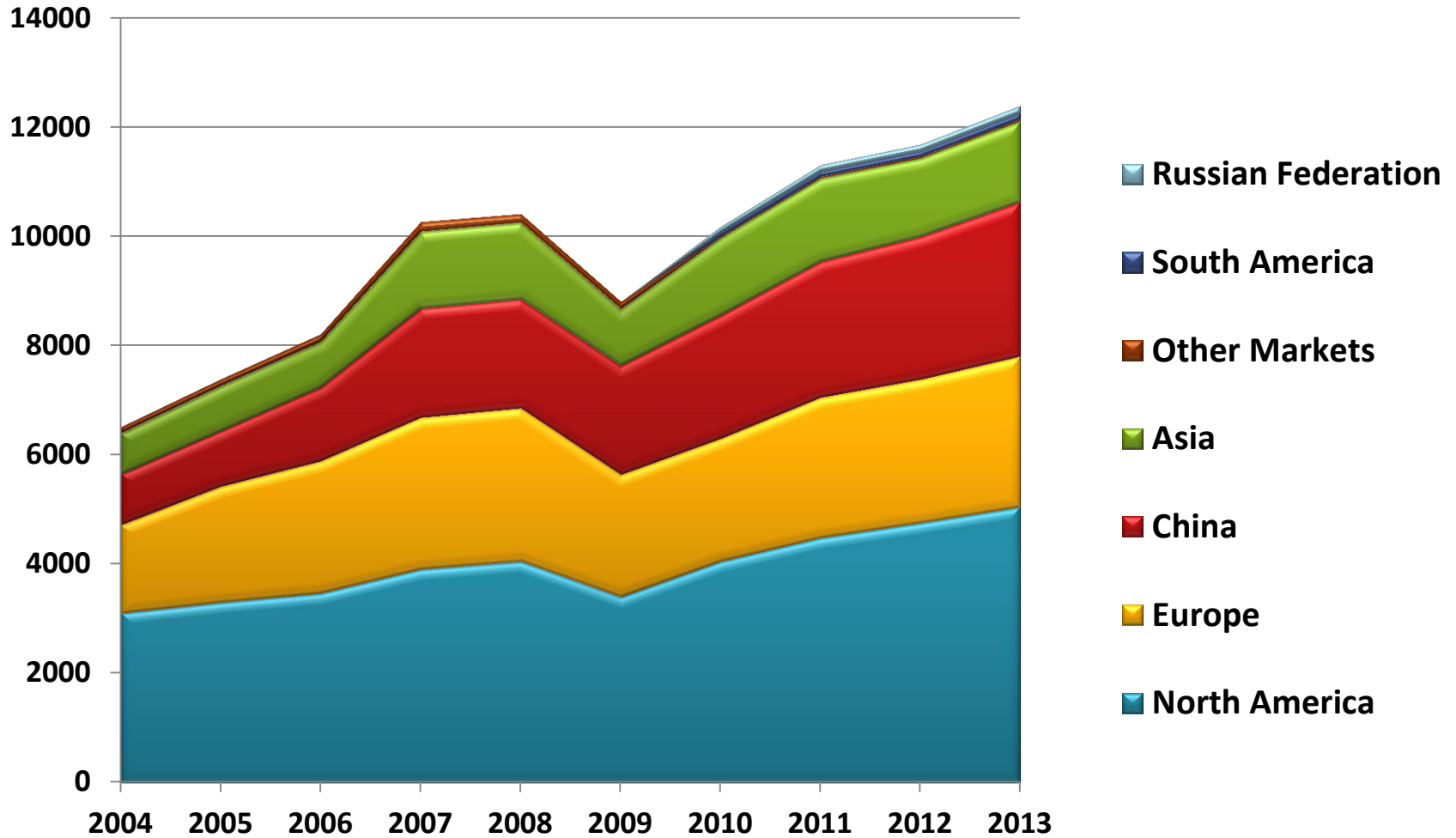


World Investment Casting Sales 2013

- Total global investment casting sales reached a new high at US\$12.39 billion in 2013
- Representing an increase of 6%
- This continues the strong pattern of growth achieved since the recession in 2008
- The excellent performance is mainly based on castings for the buoyant commercial aircraft industry
- Underlines investment casting's unique ability to satisfy the increasingly stringent demands for engine and airframe construction

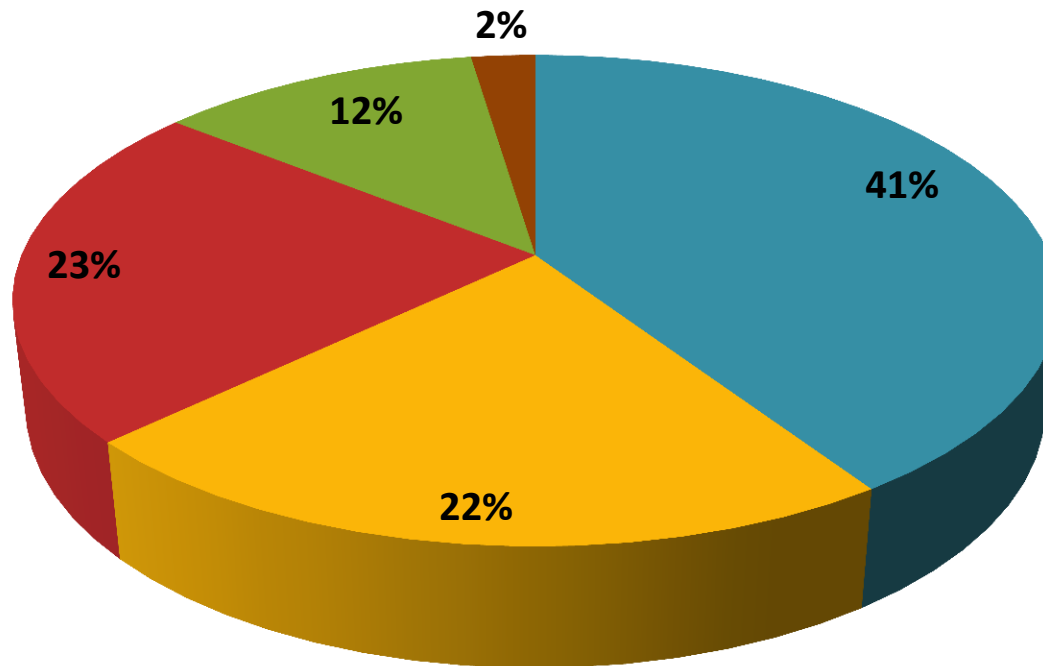


Recent Sales by Region (US\$M)



2013 Sales by Region (US\$M)

■ North America ■ Europe ■ China ■ Asia ■ Others

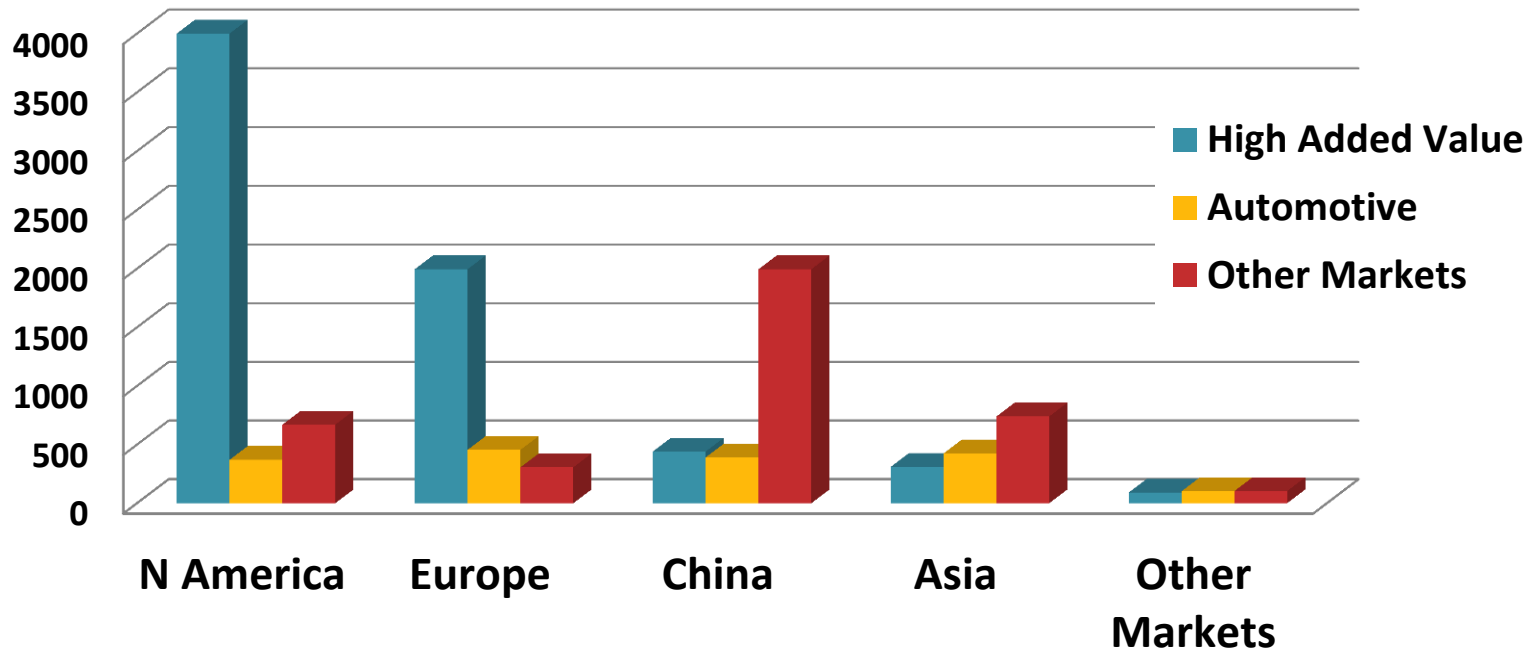


2013 Sales by Region

- North America retains its position as the single largest manufacturing region with a 41% share
 - Sales improved by between 6% to 8% dependent on segment
- China has now climbed into second place at 23%
 - Focus on increasing production of high quality and high added value castings
 - Aided by government measures to stimulate industrial development
- As a result Asia in total now produces 35% of global investment casting sales

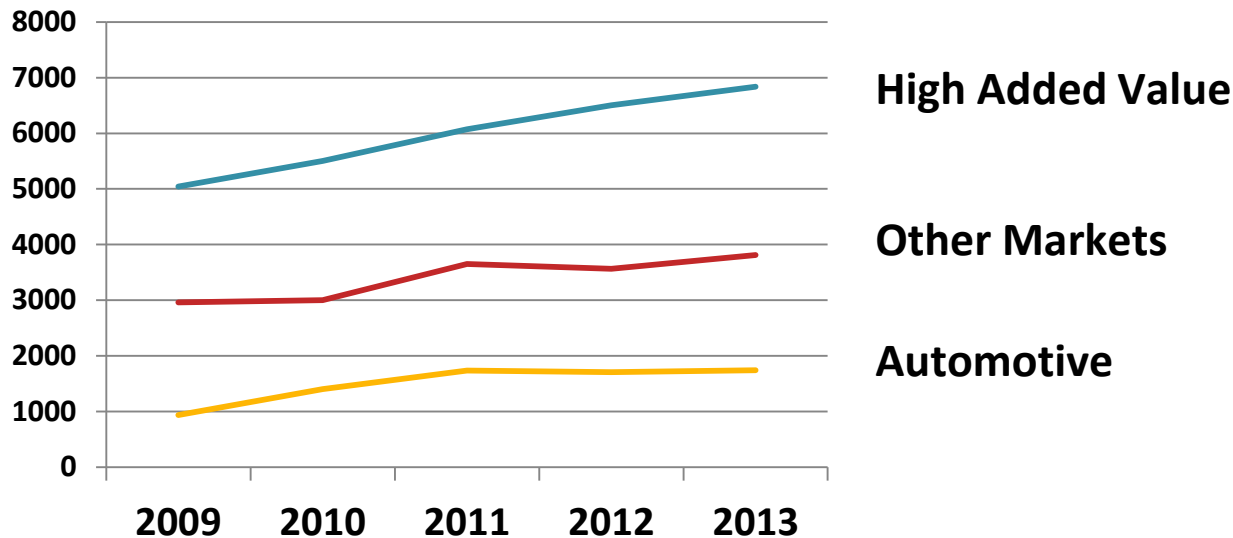


2013 Sales by Sector (US\$M)



- High Added Value casting production leads in North America and Europe and is in contrast to other regions
- Interestingly the increased Automotive casting manufacture in China and Asia means that regionally sales are now very similar in this sector

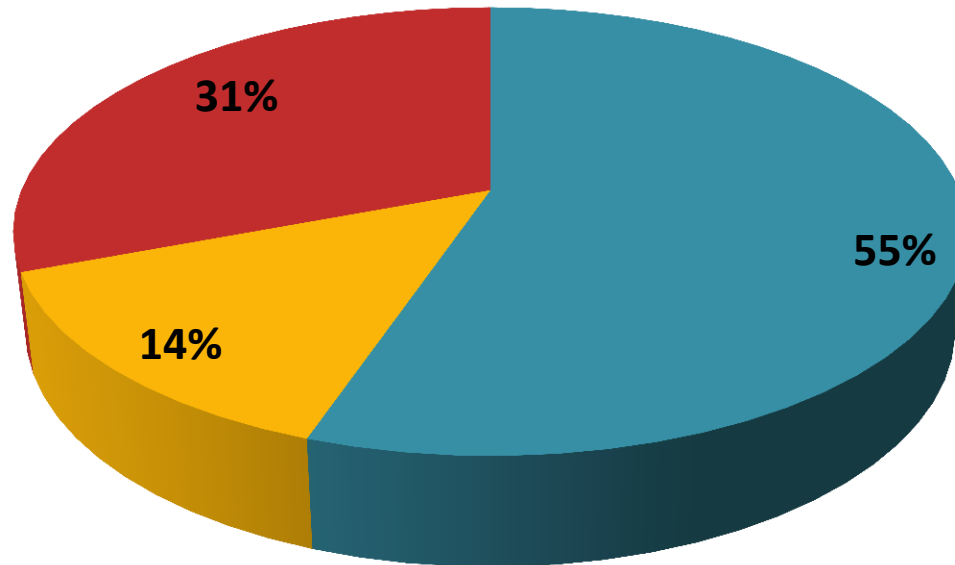
Investment Casting Sector Trends (US\$M)



- Continued growth in commercial aircraft has driven demand for High Added Value castings
- The Other Markets sector is just beginning to show improvement in all regions
- Automotive has overall remained flat since 2010 despite individual market differences

Investment Casting Sectors 2013

■ High Added Value ■ Automotive ■ Other Markets



- High Added Value castings now account for 55% of the world market

Aerospace

- In 2013 booming demand for Airbus and Boeing commercial aircraft resulted in a record 2,887 new orders
- The order backlog of more than 10,000 planes currently means a 9 year wait for delivery
- Airlines requirement for more fuel efficient aircraft is driving demand
- Resulting in new casting applications and creating new opportunities
- Demand for smaller regional jets up 3.9% due to increased air traffic and replacement of inefficient planes
- Sales for business jets are increasing more slowly
- Rolls Royce new advanced blade casting facility will commence production in 2014 with a capacity of 100,000 blades a year



Industrial Gas Turbines

- IGT continues to show a mixed picture with regional variation
- North America is seeing increased demand for medium size turbines
- The European market remains at a low level of activity
- Consolidation of turbine manufacturing in progress
- Installed capacity continues to create demand for spare parts



Defence

- Continuing global economic pressures are resulting in the need for governments to reduce spending
- Defence budget restraints are limiting casting sales to this sector of the market
- Industry analysts suggest that the global defence market will contract over the next two years
- It is likely to be the end of the decade before any significant improvement will become apparent



Automotive

- Globally 75.7 million cars were sold in 2013
- An increase of over 5% from the previous year
- Most regions have seen growth in 2013 returning sales to pre-recession levels
- Europe manufacturing and sales slow with exception of UK and German luxury manufacturers
- Turbocharger wheel market remains a growth area
- Chinese government plan to eliminate 6 million high polluting vehicles before the end of 2014



Other Sectors

Medical

- The world's growing and ageing population means increased sales of prosthetic castings for joint replacement
- The medical castings sector is becoming more competitive as cost reduction programmes are implemented

Commercial

- Overall sales increased by around 2% in 2013
- Regional variation is noticeable also considerable difference between foundries
- One area of growth noted is the oil industry where there is an increased demand for castings



Prospects for 2014

- Aerospace - Airbus and Boeing combined production levels for aircraft expected to reach 960 units in 2014
- IGT - longer term the demand for increased generation capacity should offer an improving future
- Automotive - with economies improving continued growth throughout 2014 is predicted
- Medical - casting applications are increasing for surgical instruments, injury stabilising appliances and diagnostic equipment
- Commercial - oil industry demand for cast parts increasing
- Concerns exist over skilled labour shortage and raw material costs and security of supply



Estimates Going Forward

- The industry estimates growth in 2014
 - High added value 7%
 - Automotive 4%
 - Commercial 3 - 4%
- Activity is expected to improve further into 2015 largely due to recovery in the advanced economies
- IMF projects global growth at 3.7% in 2014
- Rising to 3.9% in 2015
- Investment casting is well placed to capitalise on this projected global growth



Thank You