

Aluminium semi-fabricated markets in Asia - extracts

**Madras Consultancy Group
2008**

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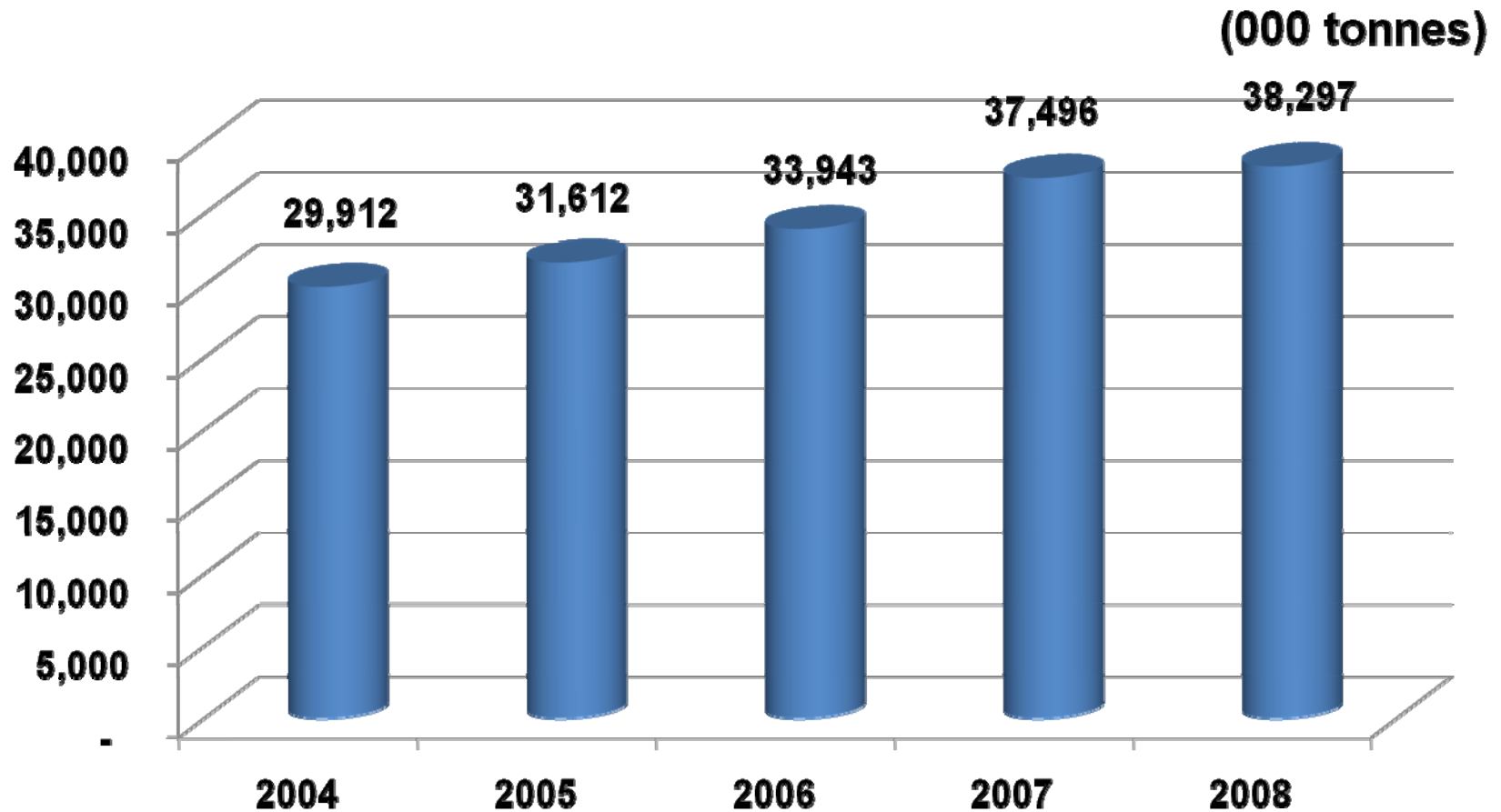
This note, extracted from presentation entitled 'Aluminium Semi-Fabricated markets in Asia' was prepared by Madras Consultancy Group in 2008. The information presented herein is intended to provide the reader a flavour of the aluminium semi-fabricated markets in Asia and has been collated from various published sources & MCG's own library. Prior to undertaking any business or investment decisions, further detailed investigations / studies are recommended. This note remains MCG's intellectual property & no part may be reproduced or circulated on electronic media, in print form or by email without the prior permission of Madras Consultancy Group, 1A, Ananya, No.41/17, I Avenue, Indira Nagar, Adyar, Chennai 600 020, India.

Global aluminium and semi fabricated products sector

The global aluminium business is in a state of flux

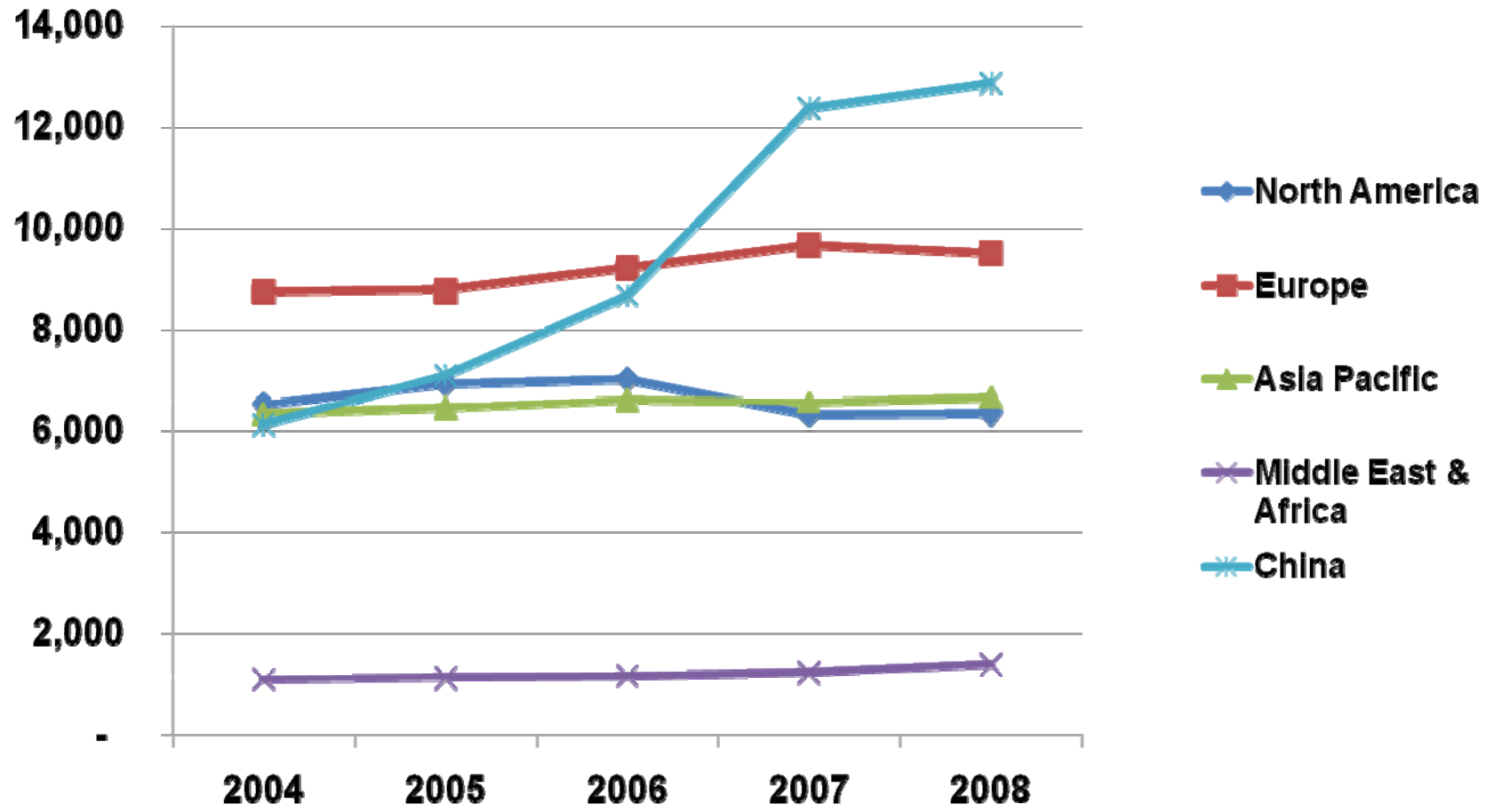
- After several years of robust growth, aluminium consumption in almost all regions of the world is likely to see a decline in 2009
- The impact of the downturn is particularly severe as the aluminium industry is capital intensive; there are reports of new smelter and downstream projects being put on hold
- LME prices have seen a steep fall since late 2008 to near unsustainable levels as far as smelters are concerned
- On the other hand, the competitiveness of downstream products has increased vis-à-vis other materials

While primary aluminium production grew at a CAGR of 6.4% between 2004 and 2008, it grew by a mere 2% in 2008



Source: World Bureau of Metal Statistics

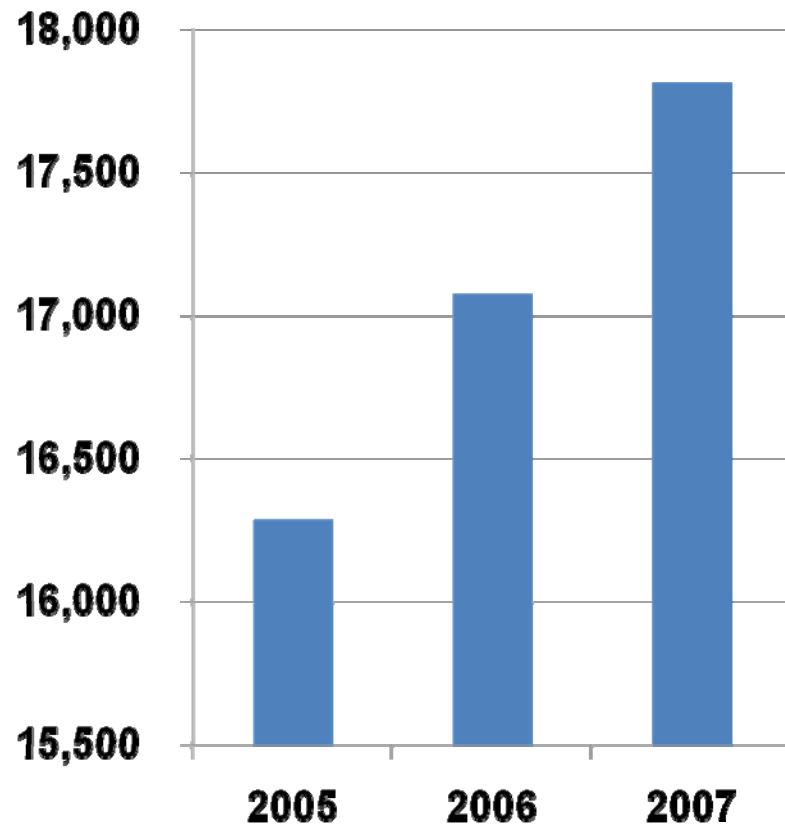
Primary aluminium consumption has been flat in 2008; expected to decline in 2009



Source: World Bureau of Metal Statistics

Demand for aluminium FRP was 17.8 million tonnes in 2007

Global FRP Demand



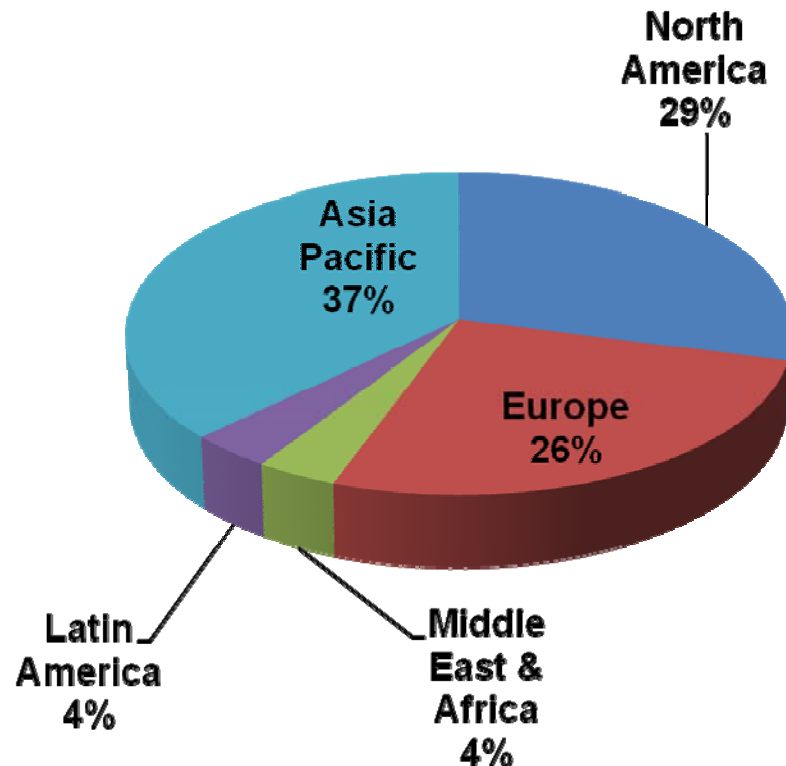
- Global demand for aluminium FRP grew by about 6% per annum between 2005 & 2007
- Growth has largely been spurred on by growth in the Asian markets
- Packaging is the major end use sector for FRP, followed by the transportation sector
- New applications in the IT, electronics and transportation sectors have added significantly to the demand

Source: Madras Consultancy Group

Regional trends in consumption

Asia Pacific accounts for 37% of the global market for aluminium FRP

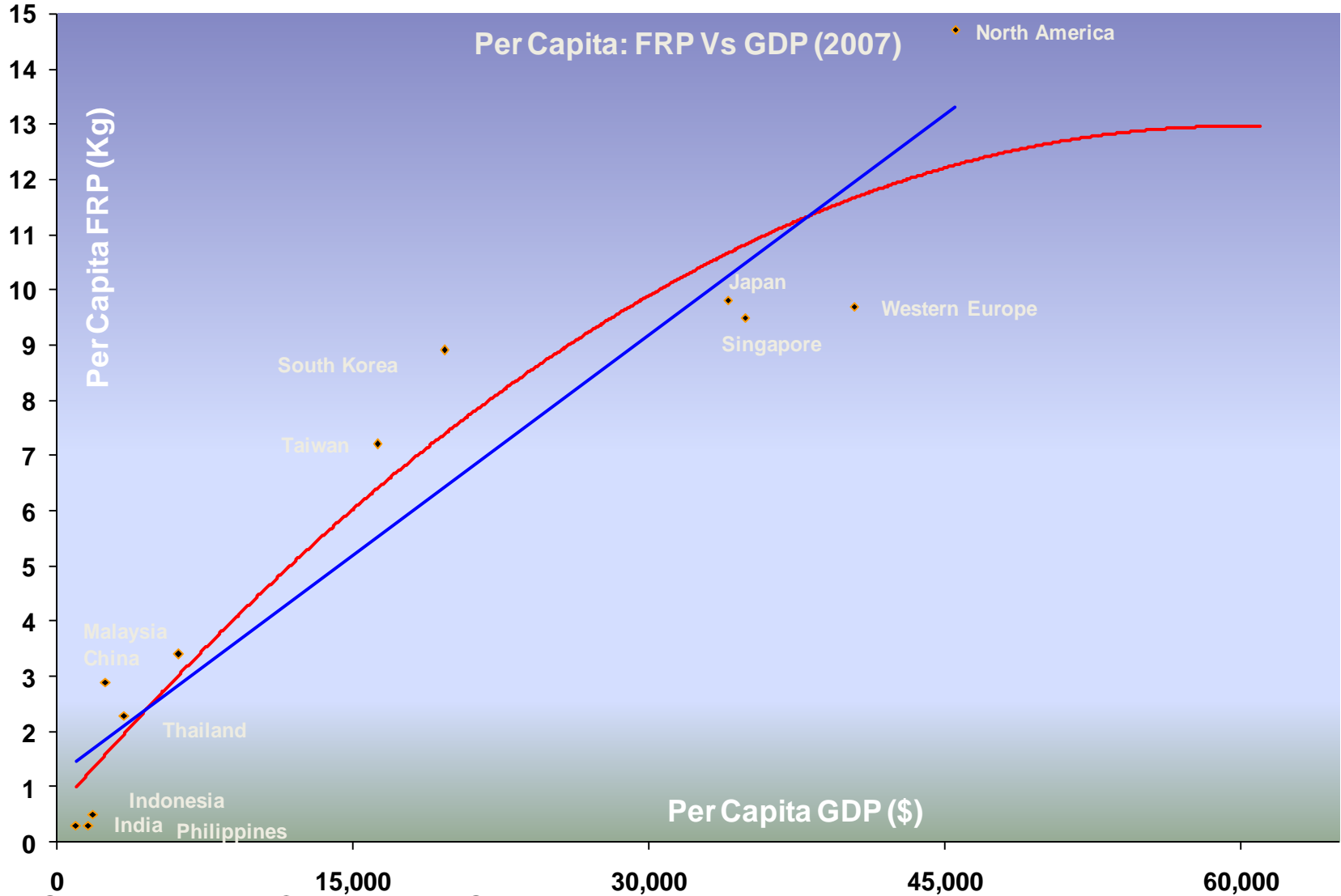
Market size: 17.8 million tonnes (2007)



- Owing to high consumption in China, Asia Pacific is now the largest consumption region
- FRP demand in North America has declined over the last few years
- The demand in Europe has shown moderate growth
- Latin America and the Middle East are emerging markets with good future prospects

Source: Madras Consultancy Group

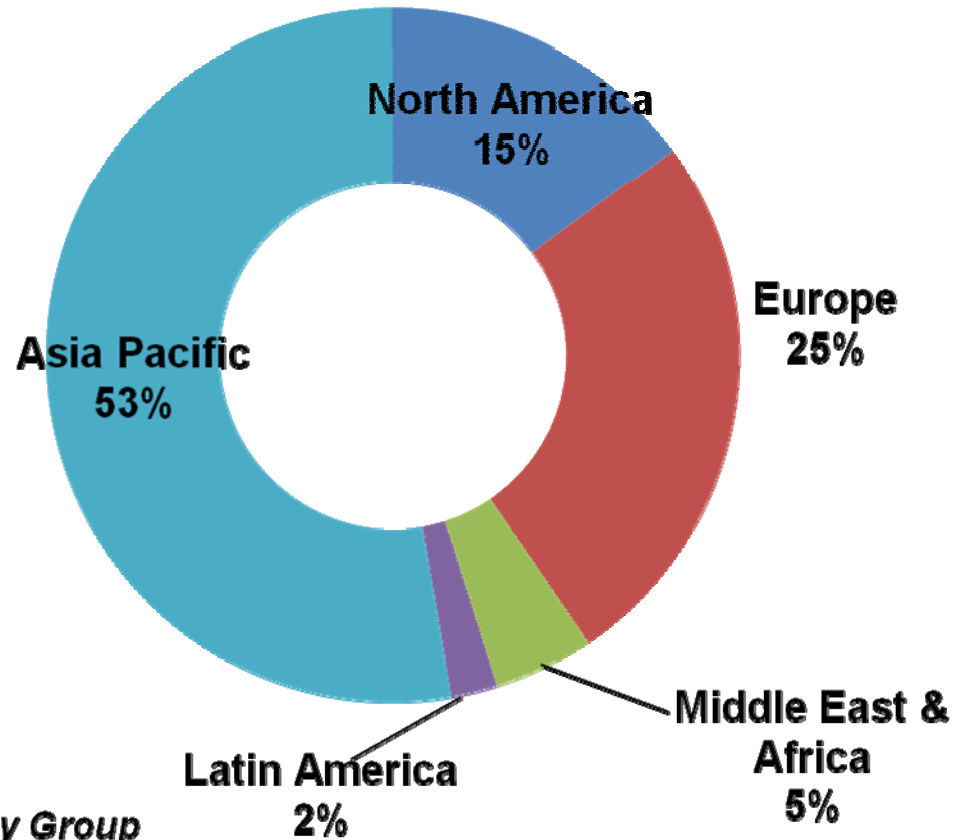
Per capita FRP consumption accelerates as GDP per capita moves beyond \$2500



Source: Madras Consultancy Group

Asia Pacific accounts for more than 50% of the global consumption of extrusions...

Market size: 13.7 million tonnes (2007)



Source: Madras Consultancy Group

Global aluminium extrusions market expanded till 2007 and has slowed down since then

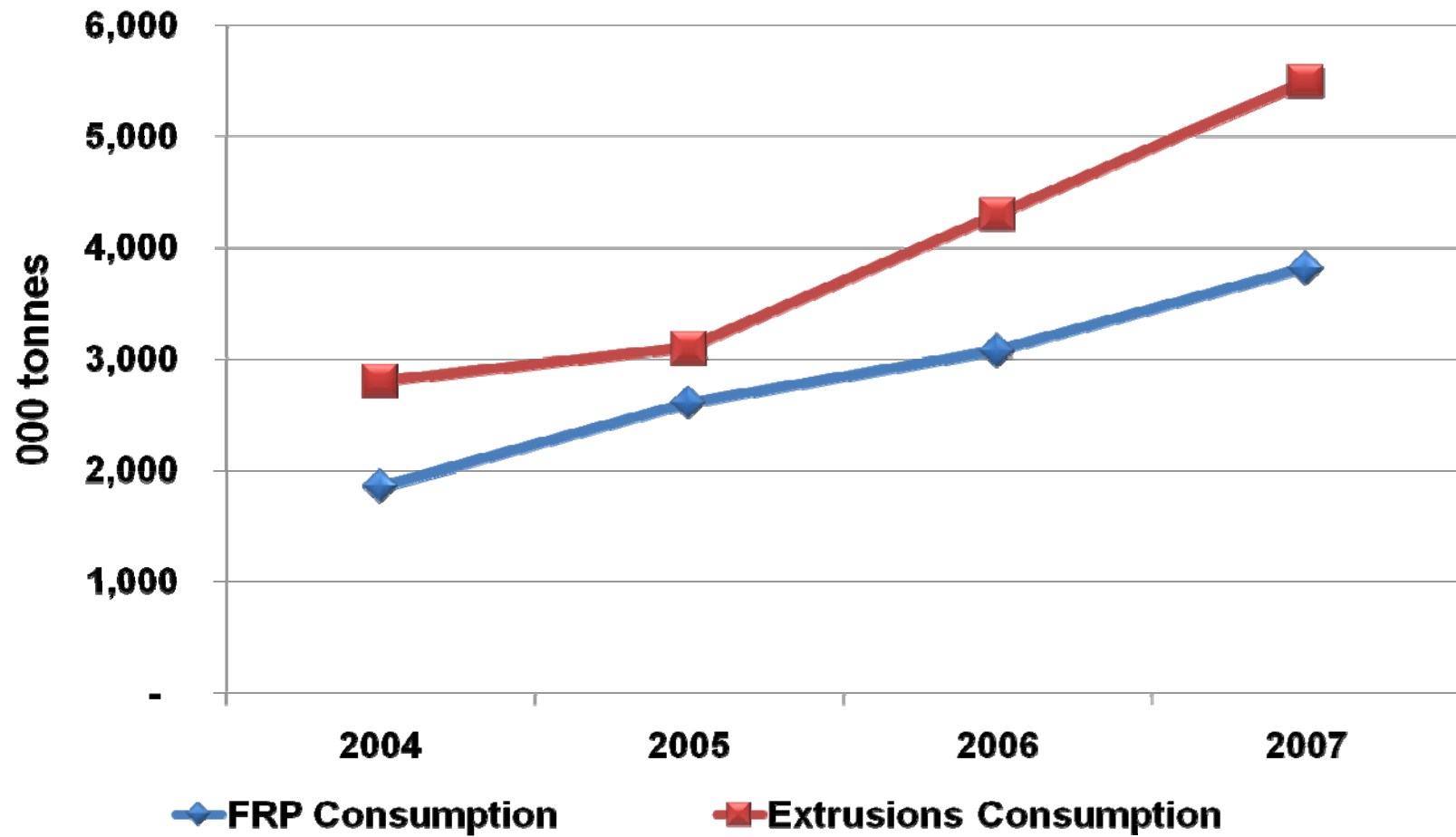
- North American demand for extrusions fell by 6% in 2007; Demand in Europe grew by about 3% during the same period
- Demand in the Middle East and Asia Pacific region have contributed to the bulk of the growth in the market
- The global market for extrusions is expected to decline in 2009 due to fall in construction starts and cutbacks in automobile production
- There are excess extrusion capacities in all regions

The market for aluminium semis in Asia

The Chinese aluminium industry

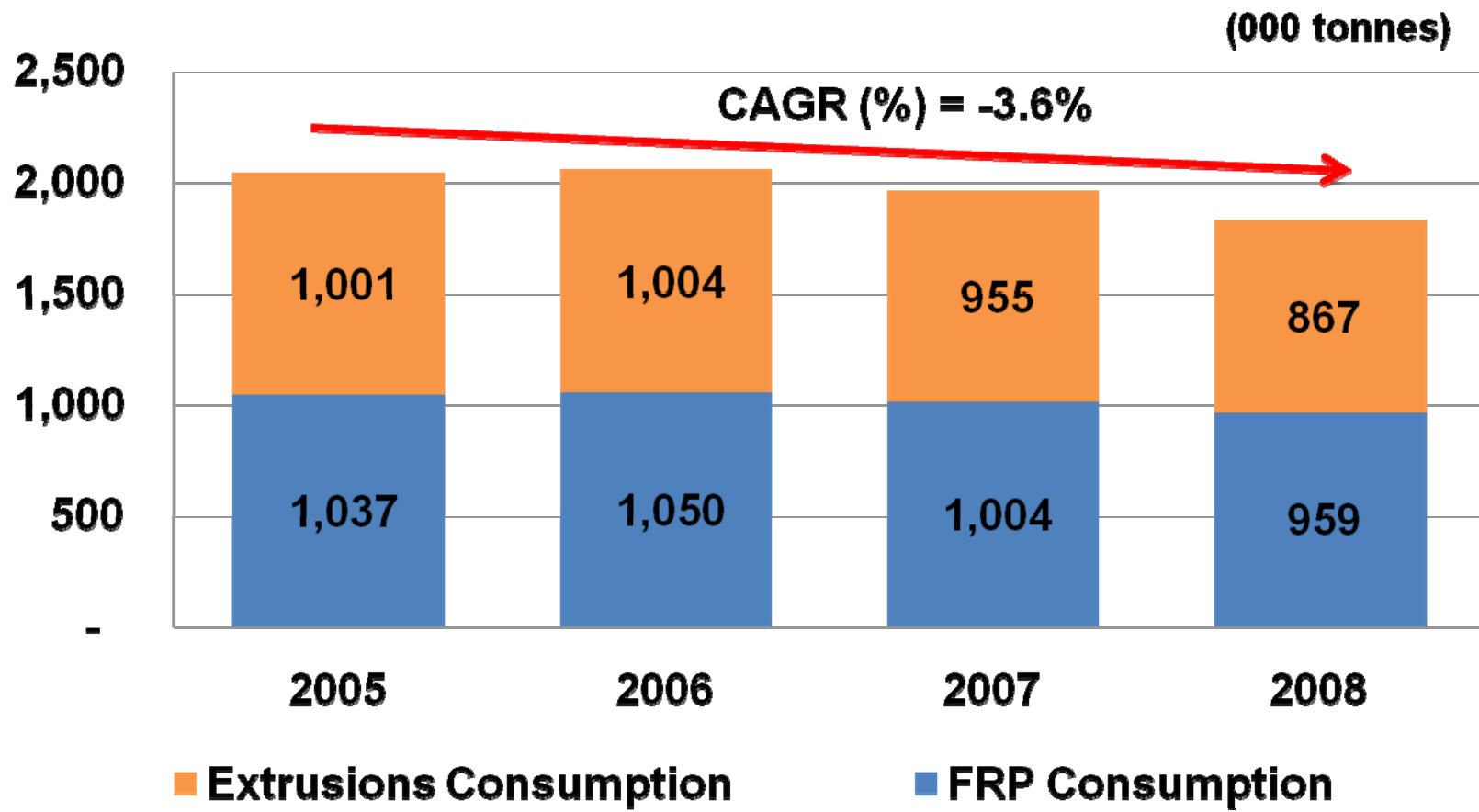
- Over the last 5 years, China has become the principal market for FRP & extrusions in the world
- China is now a net exporter of extrusions, sheets and foil; it has also now become a net importer of primary aluminium
- Capacity for aluminium extrusions and aluminium FRP stood at 7 million tonnes and 4.5 million tonnes respectively at the end of 2007; large capacity additions for FRP have been announced; implementation lags could take place
- The Chinese government may bring back rebates on export of semi fabricated products to improve profitability; however, anti-dumping regulations in some regions could prove to be a hurdle

Consumption of aluminium extrusions & FRP were high in China between 2004 & 2007



Source: Madras Consultancy Group

Demand for aluminium semis products has fallen in Japan



Source: Japan Aluminium Association

Declining demand in the Japanese market

- Consumption of extrusions and FRP has declined in the last 2 years
- Weak domestic demand has led to increase in exports of semi fabricated products in 2008; export of extrusions and FRP increased by 5.4%
- Decline in demand has been high in the transportation sector, building & construction sector and industrial machinery
- Shipment of aluminium FRP is projected to fall by 11% in 2009 (Japan Aluminium Association)

Consumption levels in India is still way below global standards

- Demand for aluminium extrusions and FRP was 210,000 and 310,000 tonnes respectively in 2007
- Demand for semis that has been growing at 10-12% in recent years, is expected to slow down to 6% in 2009 but forecast to pick up 2010 onwards
- Some of the fast growing segments in India are :
 - Automotive applications – brazing sheet, auto-fin
 - Road and rail transport – bus body, rail coach, wagons
 - Architectural – composite panels, curtain walling
 - Industrial – HVAC, litho plate