

Metal Bulletin 7th Zinc & ITS Markets Seminar

Sinking, Treading Water or Swimming in the Zinc
Business: Success Strategies for Miners and Smelters

12th May 2003

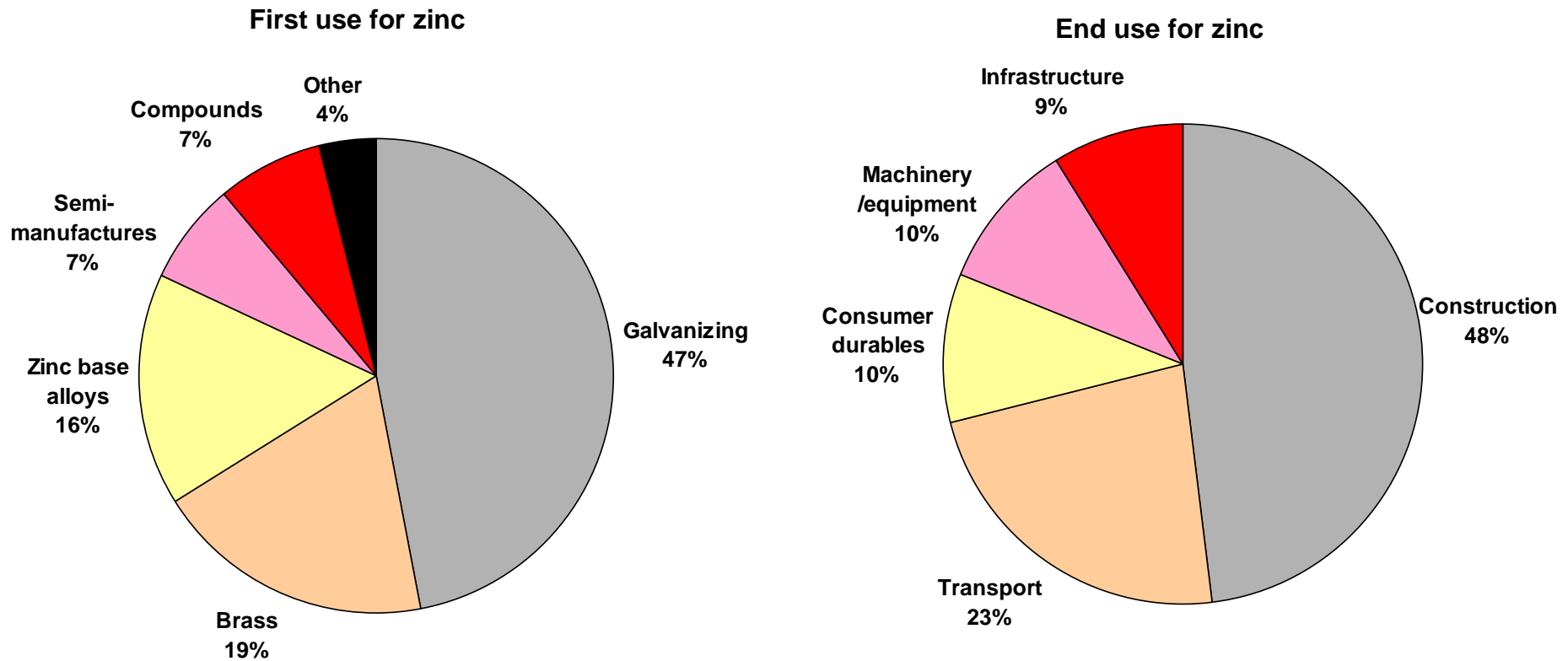


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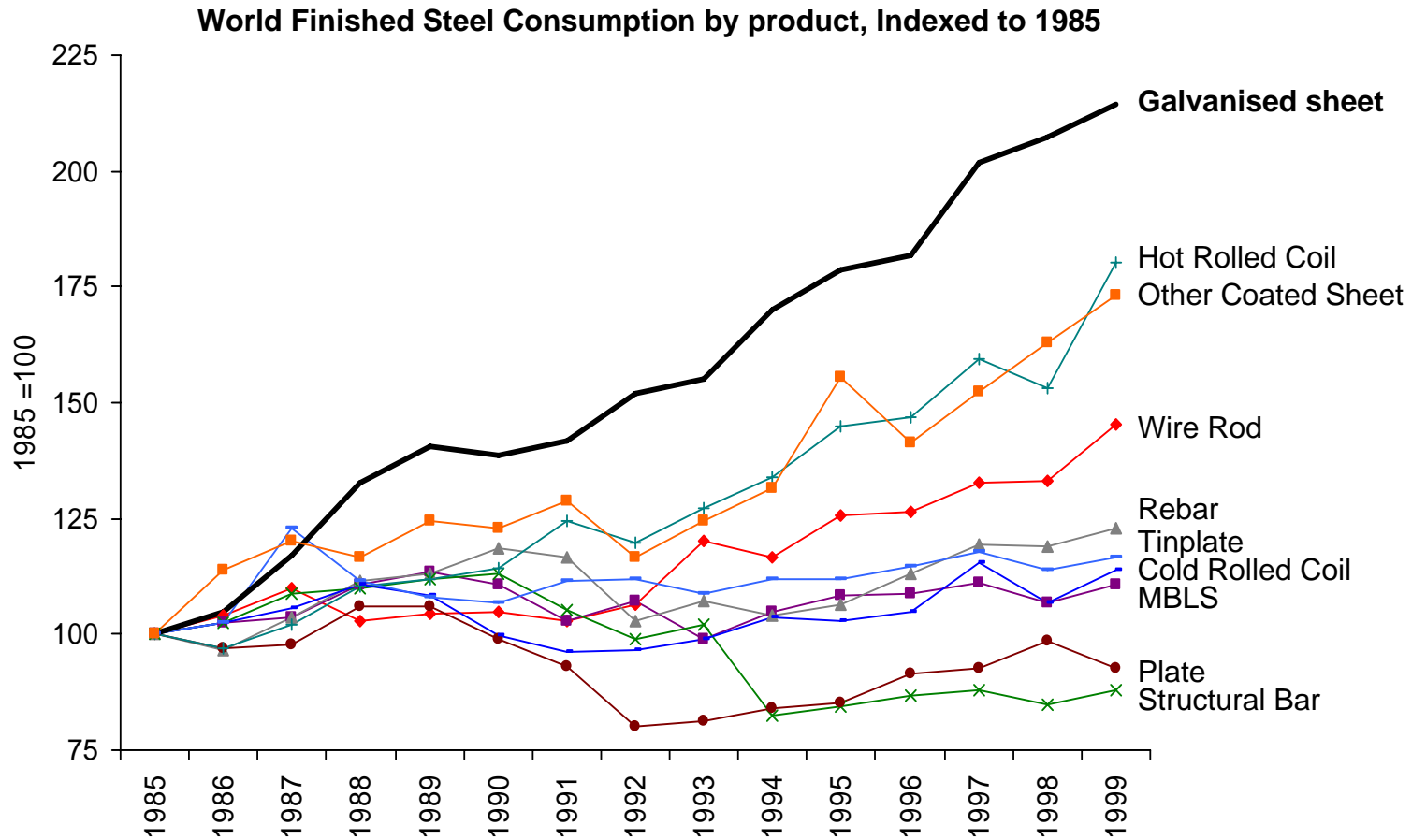
ZINC

The main use for zinc is galvanising, tying the industry's fortunes to the steel industry and the construction and automotive sectors



Source: Brook Hunt, Outokumpu Oy, IZA - 2000

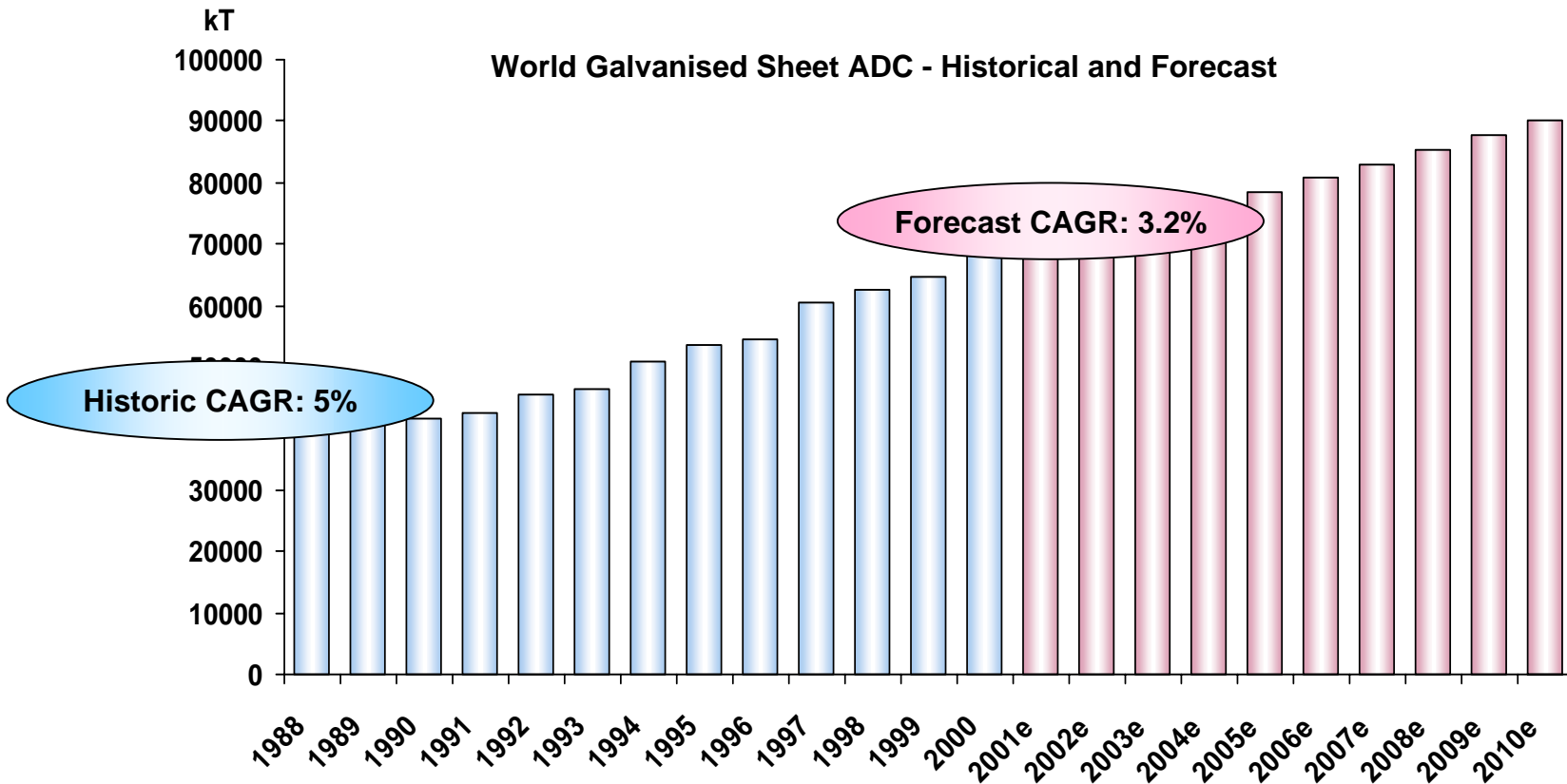
Consumption of galvanised steel products has out grown all other steel product categories since 1985: so demand is growing, but will it continue?



Source: WSD (2000), Hatch Beddows analysis

ZINC

A slowing in the construction and automotive sectors due to economic conditions suggests a healthy growth rate for HDG of 3.2% to 2010, although this is down from the 5% experienced between 1988-2000

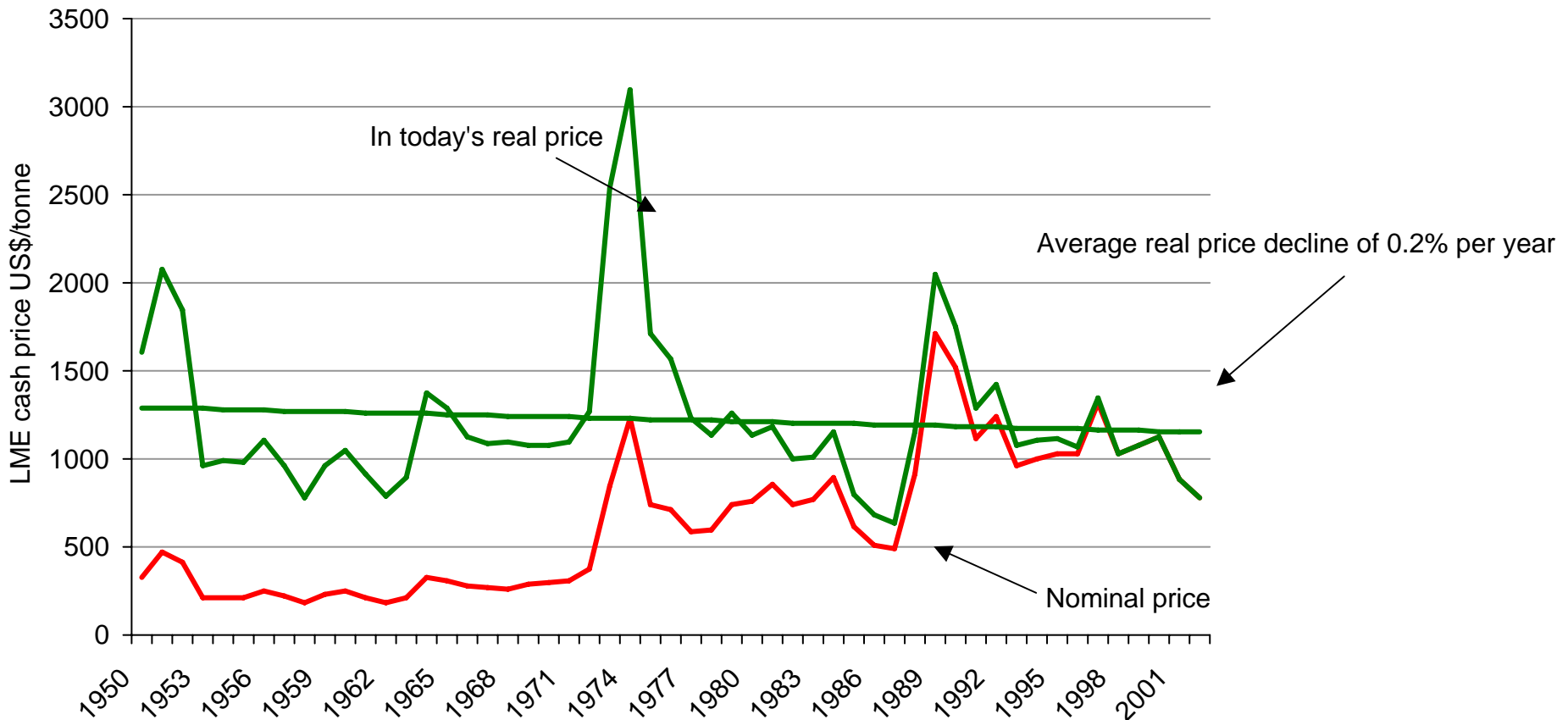


- Threat of substitution in galvanised steel will be off-set by increased application of galvanising
 - Emerging alternatives to straight zinc galvanising contain less zinc but on the other hand increase the range of applications

Source: World Steel Dynamics 2002 & 2003

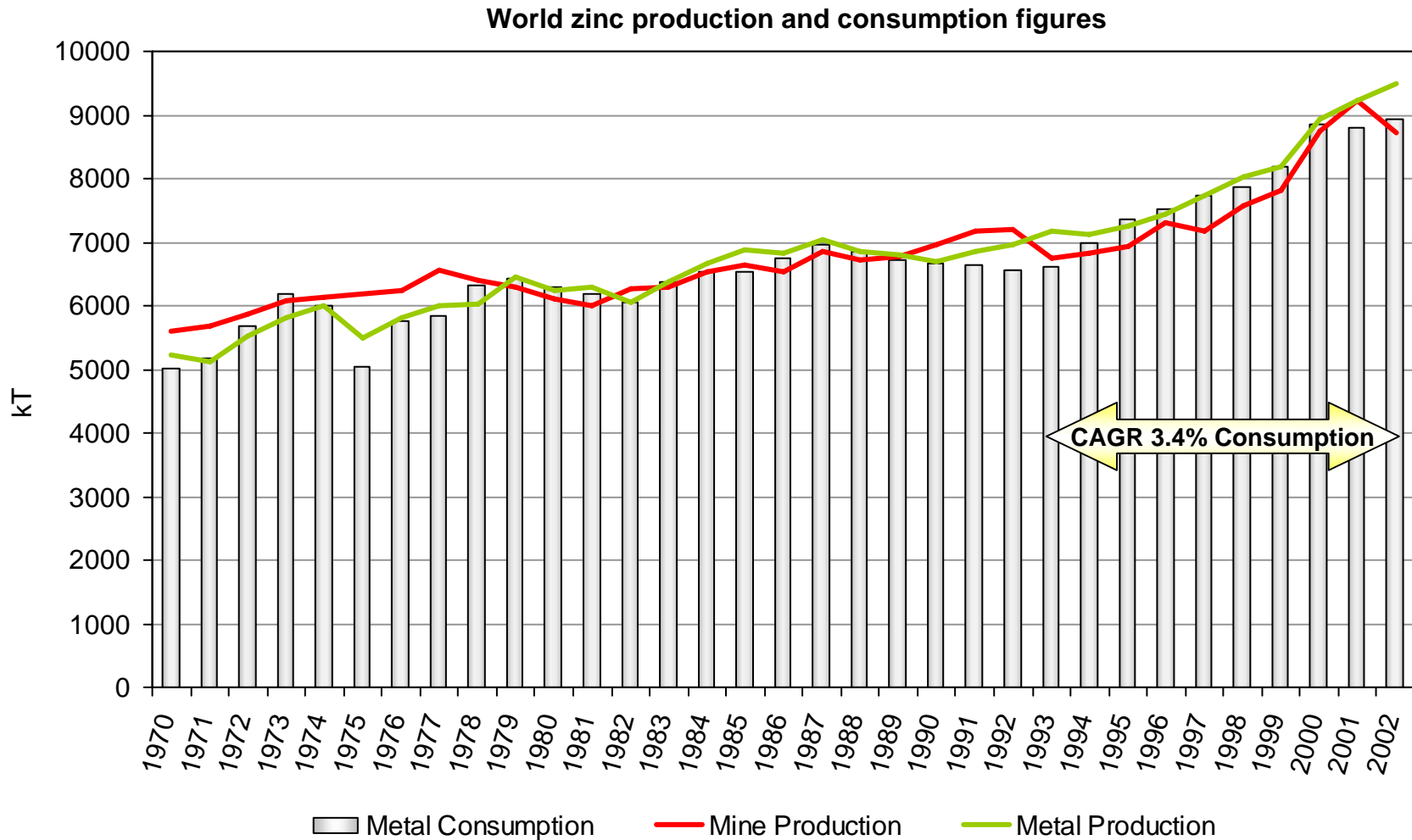
In real terms, the trend in zinc prices has remained almost flat over the last fifty years. This is an excellent performance compared with steel

LME Zinc prices (real and nominal)



ZINC

Mine production decreased in 2002 after four years of increase, but metal production growth continued, impacting concentrate balance and stocks

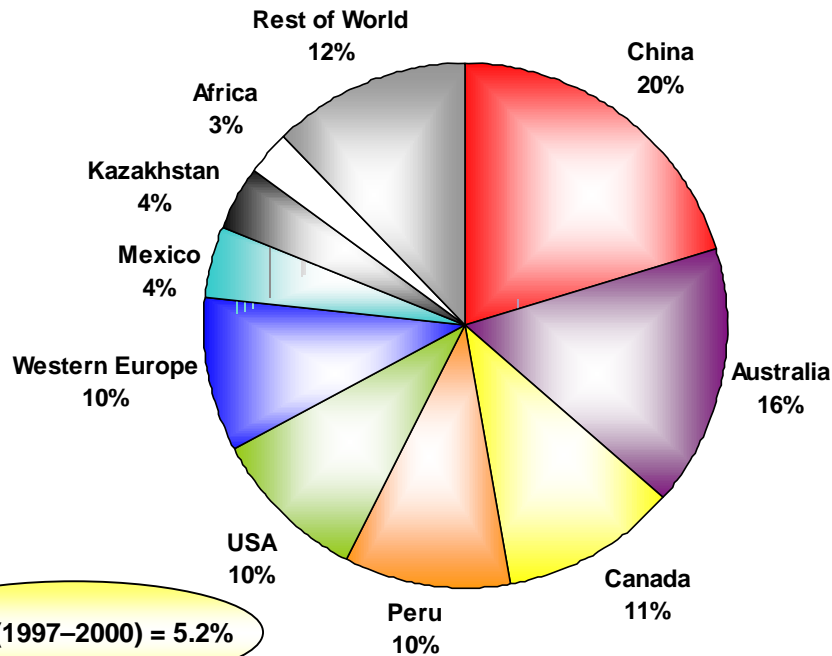


Source: ILZSG

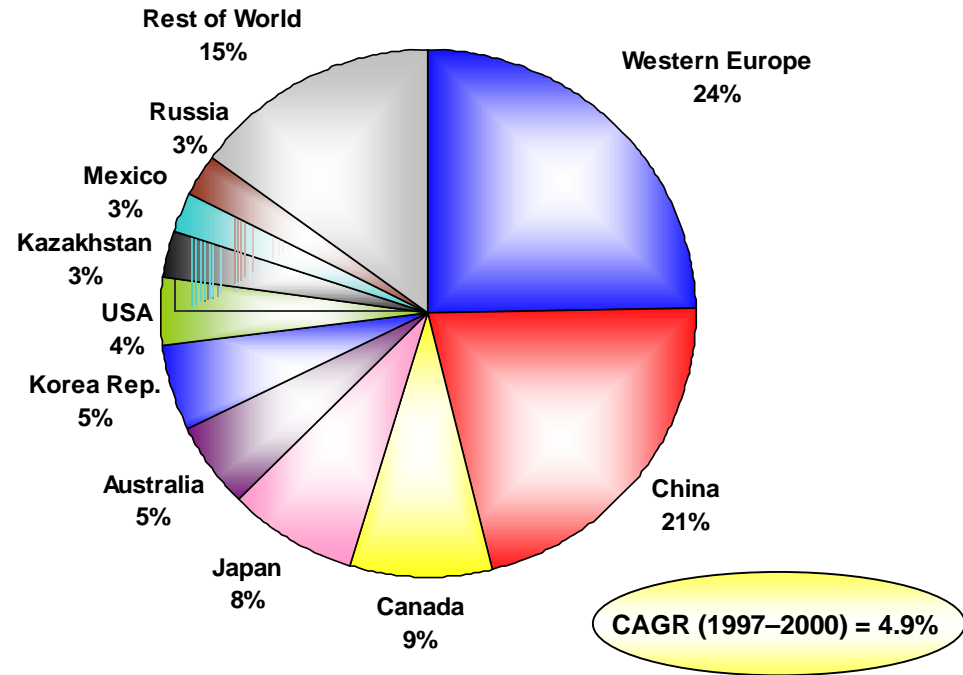
ZINC

China and Australia account for 36% of mine production, W. Europe accounts for 24% of the metal production followed by China with 21%

- The world's 20 largest mines have an average capacity of 175kT a year, and account for 40% of the world production. The largest is TeckCominco's Red Dog mine in Alaska, with 525kt of zinc per annum



**World mine production 2000
8.8mT (Zn in concentrate)**



**World smelter production 2000
9.1mT**

Source: USGS Zinc report & commodity summary 2001, Brook Hunt, ILZSG

ZINC

China is the largest miner, smelter and consumer of zinc; otherwise developed world auto producers dominate consumption.

World's major producing & consuming countries by size in 2001		
Zinc mine production	Smelter production	Consumption
China	China	China
Australia	Canada	USA
Canada	Japan	Japan
Peru	Australia	Germany
USA	Korea Rep.	Korea Rep.
Mexico	Spain	Italy
Kazakhstan	USA	Spain

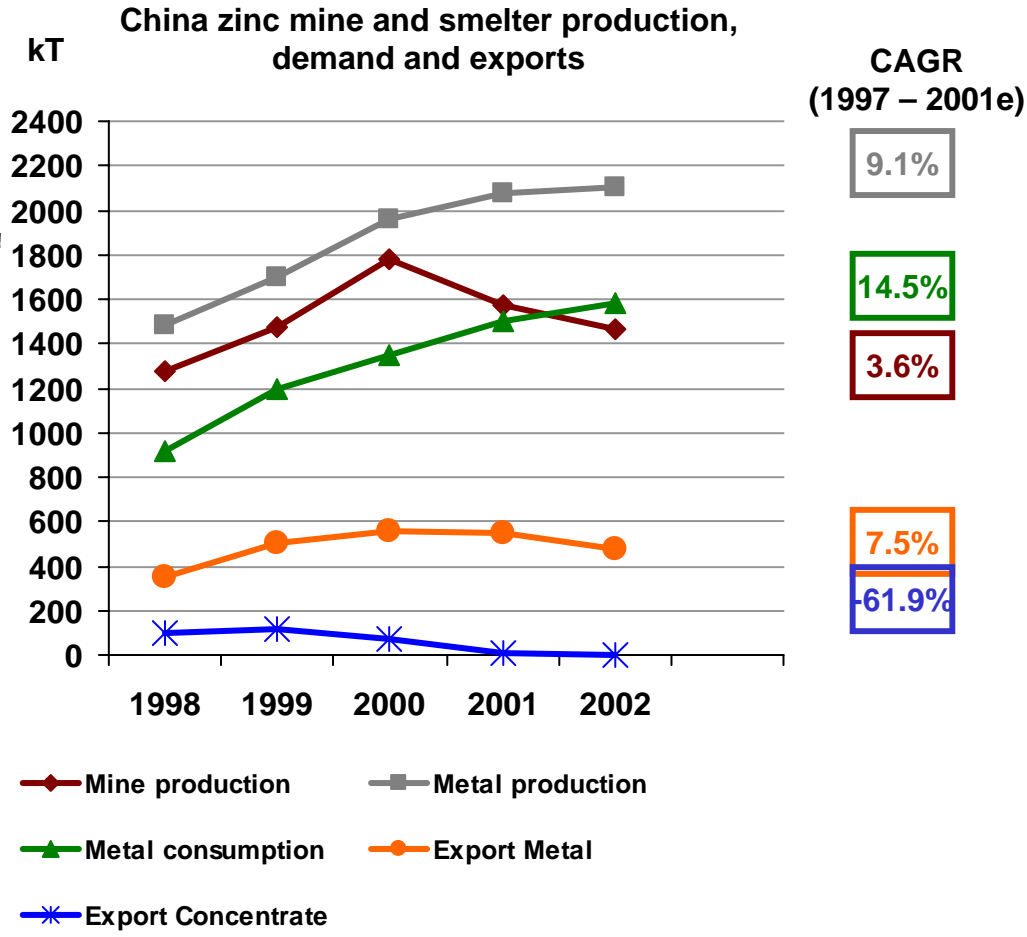
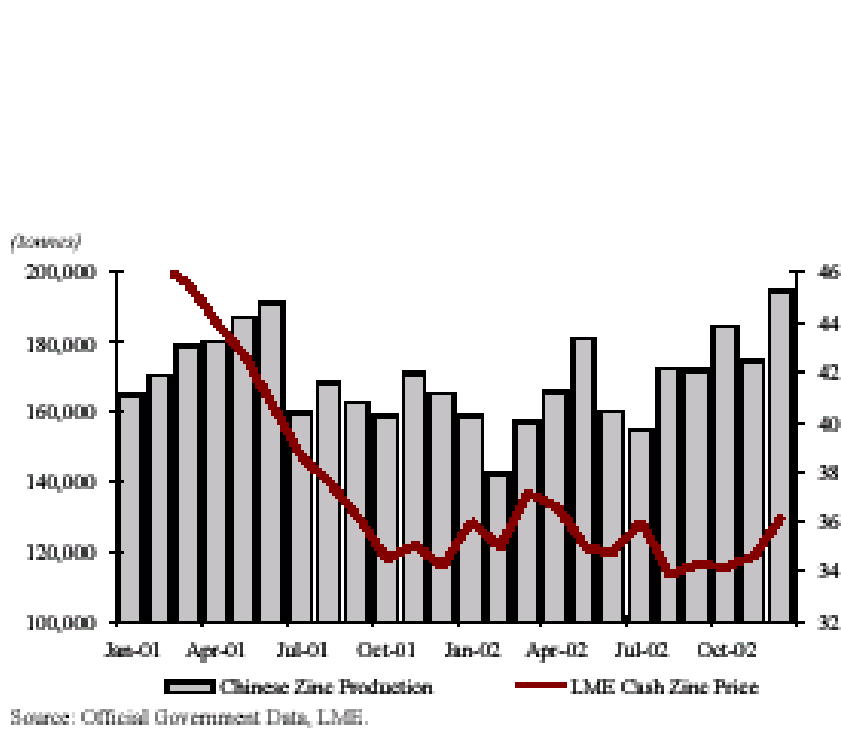
Construction Driven

Automotive Driven

Source: USGS report on Zinc 2001, ILZSG

ZINC: SWIMMING

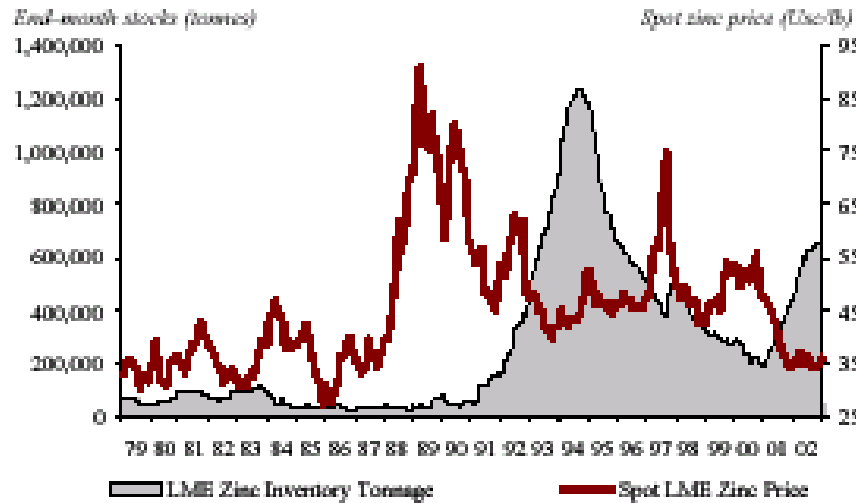
China's smelter production has recently been sensitive to monthly movements in the LME price, but domestic consumption growth is key to long term trend



Source: ILZSG

Will refined metal stocks continue to rise, keeping prices depressed as in the mid-1990s? The pointers are not encouraging...

Climbing LME zinc stocks weigh on metal prices



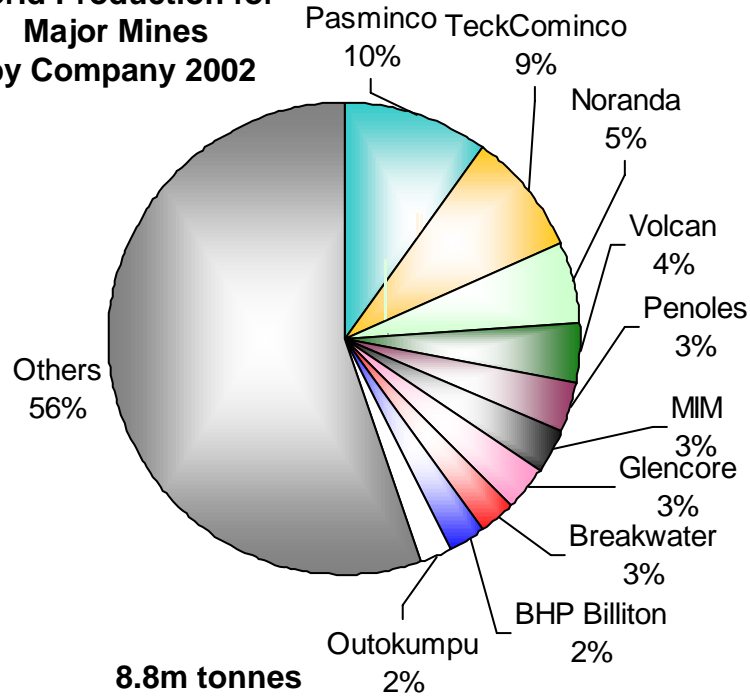
Source: LME, JPMorgan.

- Growth in steel consumption in China is faltering and inventories are rising, which must impact galvanised steel producers soon
- The outlook for the auto and construction industries in the OECD countries is not encouraging
- ...and the Zinc industry doesn't help itself
- “Brick Contracts” discourage smelters from responding quickly to fluctuations in real demand as reflected in LME prices and inventories

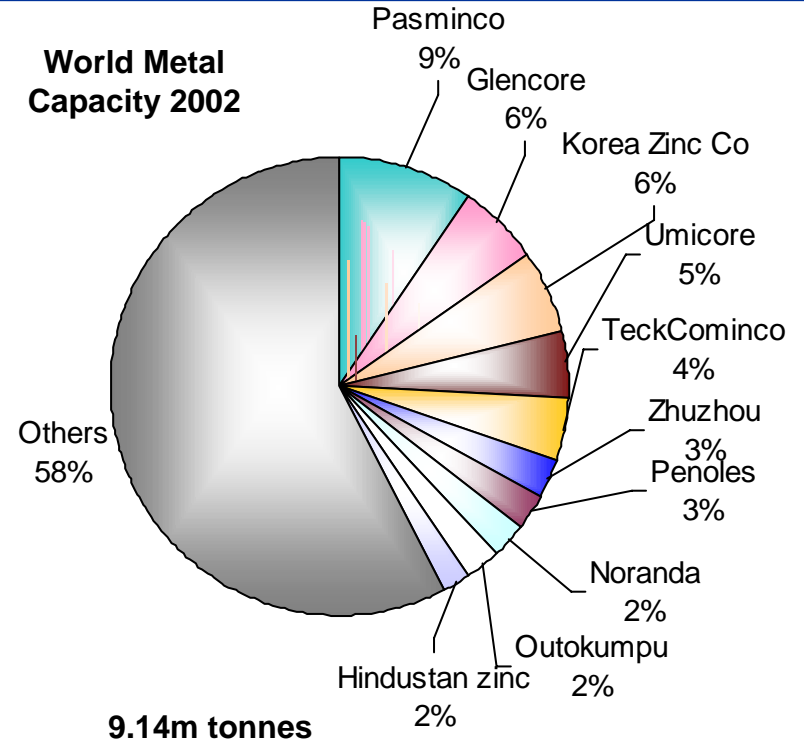
Source: LME, JPMorgan

The zinc industry is very fragmented compared to copper, nickel, alumina and iron ore in both mining and refining - a critical structural weakness

World Production for Major Mines by Company 2002

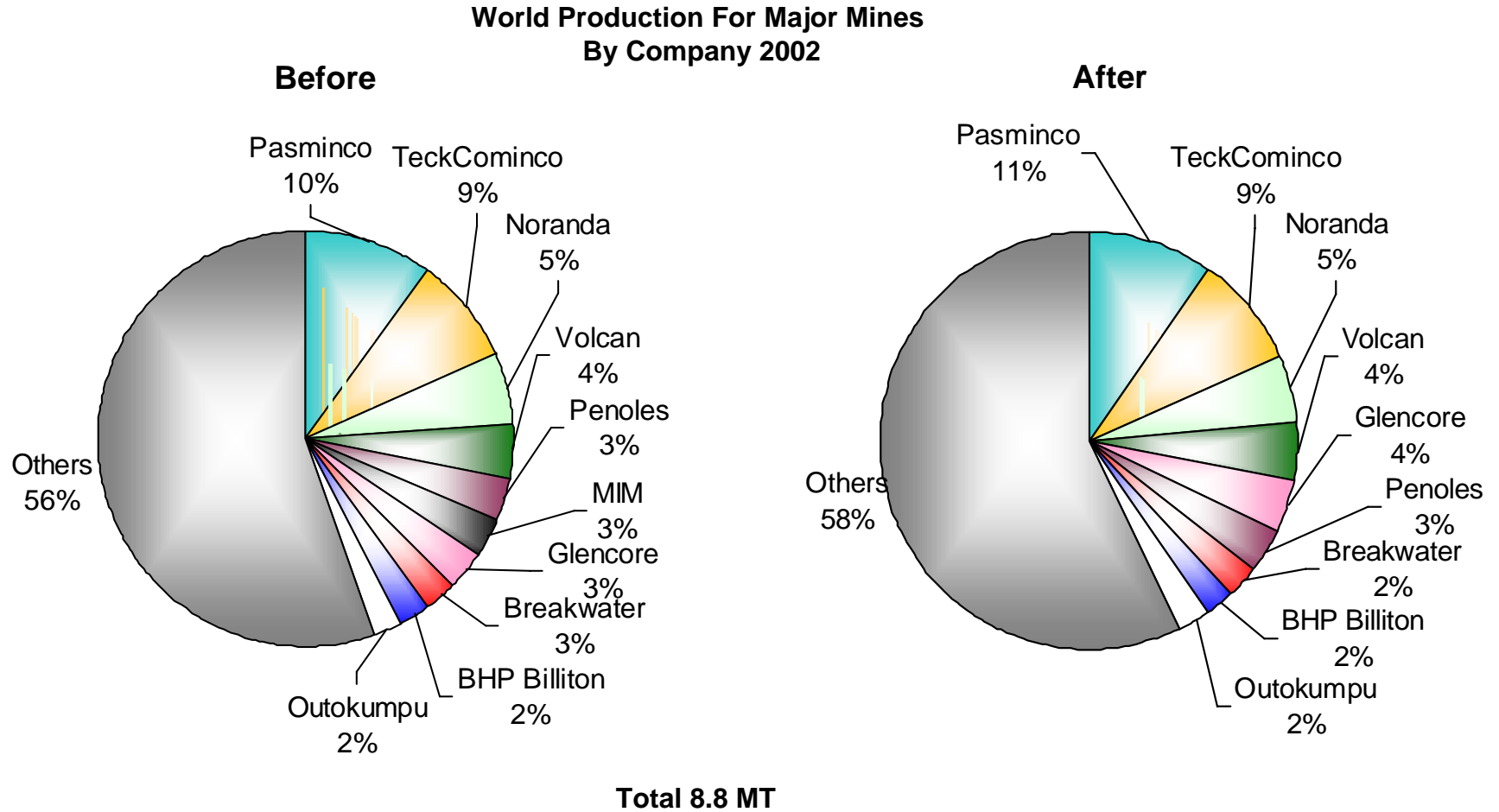


World Metal Capacity 2002



- The five key players Pasmenco, TeckCominco, Glencore, Noranda and Penoles all have different strategies and mix of assets. Pasmenco, the potential leader, remains in administration
- Except for Umicore and a few others, key players are not integrated downstream of slab production
- The structure of the zinc industry needs to change. Companies like Glencore are seeking to consolidate their position

...but even when Xstrata absorbs MIM, Glencore's market share will only grow 1%. Perhaps influence will derive from trading power



Source: ILZSG

ZINC:

Future strategy is fundamental, when industry structure is so unhelpful

Producer	Mine		Metal		Mine/smelting Balance; kt
	Output; kt Zn Contained	Market share %	Output; kt Zn	Market share %	
Pasminco	870	10	860	9	+ 10
TeckCominco	750	9	390	4	+ 360
Noranda	470	5	230	2	+ 240
Volcan	390	4	-	-	+ 390
Penoles	290	3	240	3	+ 50
MIM	270	3	-	-	+ 270
Glencore	260	3	540	6	- 280
Breakwater	220	3	-	-	+ 200
BHP Billiton	210	2	-	-	+ 210
Outokumpu	200	2	230	2	- 30
Korea Zinc Co	(0)	(0)	520	6	- 520
Umicore	-	-	450	5	- 450
Zhuzhou	-	-	250	3	- 250
Hindustan Zinc	160	2	170	2	- 10
Total output & % of top 10	3,930	45%	3880	42%	+200

Source: Hatch

Note: The above includes % controlled by each producer.

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Appropriate strategies may be divergent, depending upon your start point

- **Let the market work!**
 - LME price is the sum of all market participants expectations, producers, smelters, traders, consumers, bankers, investors, speculators who collectively must logically have a much wider vision of the global economy and where it is heading than any group of Zinc industry participants
 - React faster with appropriate behaviours – capacity management - to changes in LME prices and inventories
 - Abandon attempting to reduce the impact of LME price volatility through, for example, smoothing mechanisms incorporated into the Treatment Charge
- **Consolidate!**
 - Until a handful of major industry participants influence concentrate supply, smelting and marketing - the industry and its bankers and investors will continue to pursue “beggar my neighbour” strategies and tactics which undermine industry profitability. Influence does not necessarily require ownership of economic entities or assets
 - Governments and environmental lobbies that influence them have a role to play in environmental and Health & Safety standards, particularly relating to sites no longer economic for the industry and for the workers no longer required. The Zinc industry should lobby hard against any form of direct intervention in markets or consolidation of industry participants or assets
- **Face reality – market, financial, future!**
 - We must start from where we are, not where we wish we could be. Successful strategies for individual industry participants both shape the future of the industry and are shaped by their perceptions of the future

Thank You!

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