

# Steel Risk 2004 – New York

## A Global Perspective on the Steel Industry and Implications for Buyers and Sellers

17<sup>th</sup> May 2004



Mike Walsh, Senior Consultant,  
Hatch Associates - London

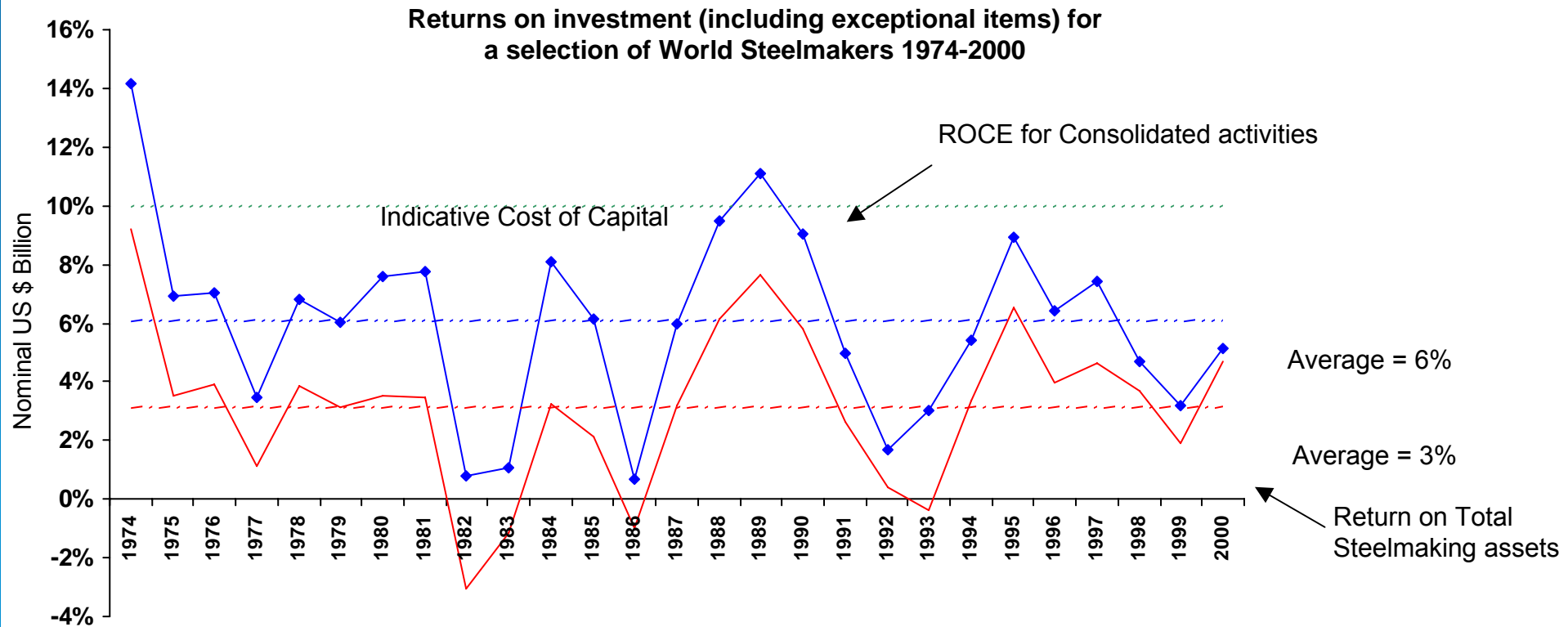
# Hatch Beddows

## Contents

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- **The challenge for the industry**
- The responses to the challenges
- The aluminum case
- The industry response
- What needs to be done

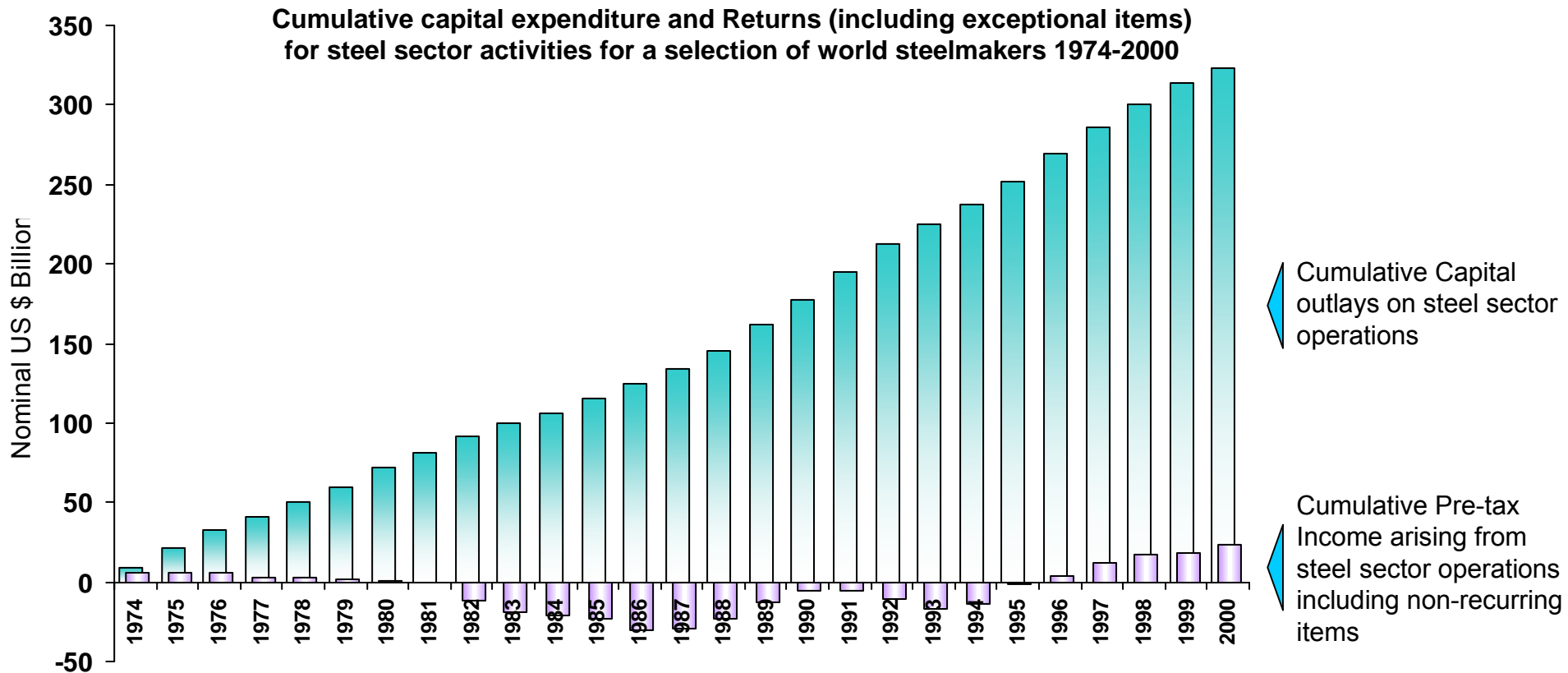
**The average ROCE for the steel industry is 6% while consolidated return on total steel sector assets is 3%**



**Capital markets are reluctant to invest, except in especially attractive proposals**

Source: WSD (2001), Hatch Beddows analysis

**For a cumulative capital outlay of US\$325 billion since 1974, steelmakers have returned a cumulative pre-tax profit of only US\$23 billion**



Source: WSD (2001), Hatch Beddows analysis

## The industry has not helped itself by hiding from reality

### The Myths

#### The steel industry...

- Suffers from persistent overcapacity
- Is very capital intensive
- Is labour intensive
- Is a low, or zero, growth industry
- Needs government protection
- Suffers a punitive price-cost squeeze

### The Realities

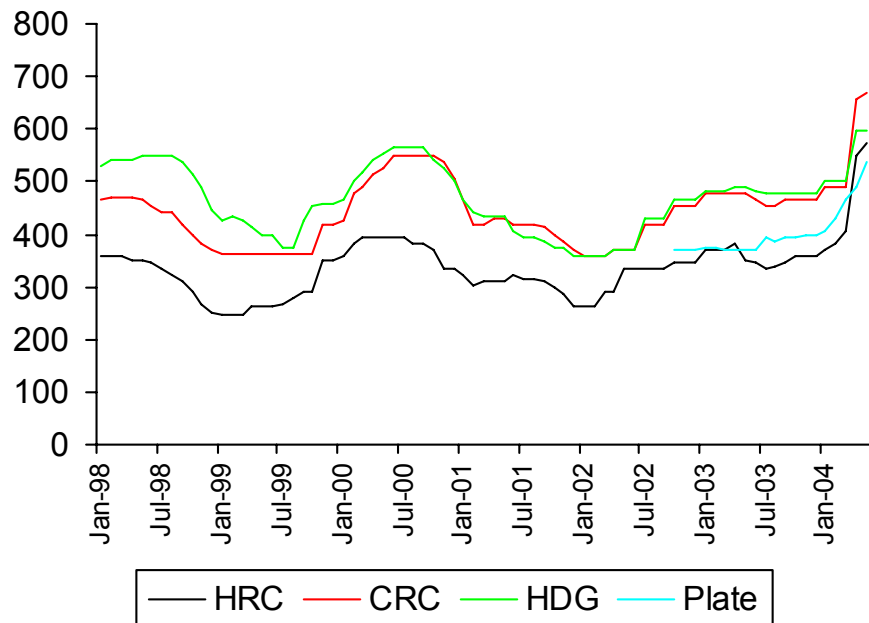
#### “The fault, dear Brutus, lies not in our stars, but in ourselves...”

- Where is this overcapacity? Compare automotive assembly. Consider industrial economics
- Ratios of Assets to Revenues in steel are <1. In water 10:1, aluminium production 3:1, power generation 4:1
- Labour value-added in North American steel is greater than in electronic components
- GDP  $\Delta$  3.4% pa. Finished steel  $\Delta$  2.3% pa.
- Save us from government interference!
- HRC price declines slower than C.P.I.

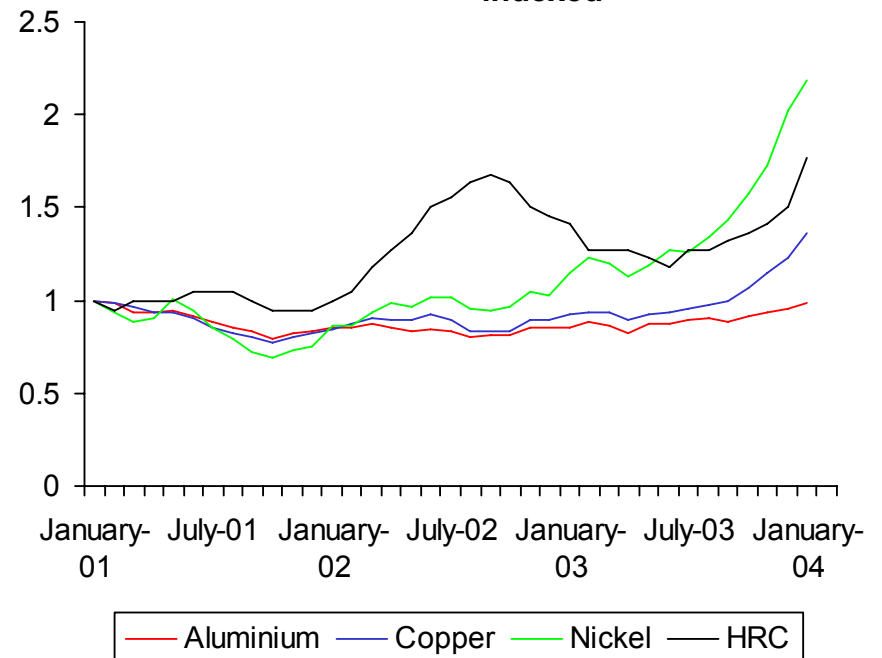
**Fortunately, these myths are eroding over time**

**Steel product prices are as volatile as any base metal market. HRC prices have shown volatilities greater than 25% during the last five years**

**North European Flat Product prices (FOB)/€  
January 1998-May 2004**



**Various base metal cash prices 2002 – 2004 indexed**



Price volatility of HRC over the last 5 years has been greater than most traditional LME base metals

Source: SBB, LME, Hatch Beddows analysis

# The consequences of extreme volatility are at least different this time round – the angst is from the customers side

**COVER STORY**

## The Big Squeeze

Driven by spiraling input costs, steel transaction prices are up at least 50 percent since the last round of auto supply contracts. Mills are pushing to pass along the increases. Detroit is pushing back. Processors are caught in between.

**By Tom Ichniowski**

PITTSBURGH — Steelmakers expect to get substantial steel price increases from automakers if their new material contracts contain an automatic escalator, but they have been tight-lipped about how and when they will pass these heavier costs along to their most customers.

Steel executives were reluctant to discuss the matter, but one source, a steel supplier customer confidentiality—but he had had some steel produced and addressed it when questioned by financial analysts concerned about the extent to which the mills would be able to pass through high raw material costs to final customers.

"We have not done anything more than industrialized nations with our automotive contract continues to this point," Robert Matt, president and chief executive officer of International Steel Group Inc., said. "We have worked hard, through what it will be necessary to us in various ways, to get the raw material pricing environment controlled."

On Feb. 27, an invoice call with analysis that indicated the rise in the raw materials side "in the current business while passing the heavy cost increase along to the spot market." "We are reflecting the shortages in all of our input business and some of us believe to contract business," he said. "We see shortages where we have recognized an increased cost of business and we did not make the proper margin in place. That is mostly on the spot market side."

With transaction price up around 50 percent in some auto supply contracts, were expected to be double quarter of last year, the difference between the spot and contract markets is vast. Many said it trends back to the bottom of some steel

It is difficult to determine how some mills will be able to secure significant contract price increases from steel customers, thereby covering their rising costs more fully and, by extension, hitting a hard of processors and parts makers who rely on them.

Source: steel executives were able to negotiate price increases in contracts with automakers, but not the spot market price surge of the past few months.

U.S. mills and automakers would discuss when the bulk of their steel supply contracts expire and how many of them will be renewed.

"We're wondering when all their little suppliers go bankrupt, what are Ford and GM going to do?" —Steel processor

Asked about the auto industry specifically, Lohrer declined to elaborate. "I think it would be better to negotiate specific requirements on a case-by-case basis," he said Jan. 30, adding that the general statement about the Pittsburgh-based steelmaker's ability to pass on costs to its customers is not applicable to all steel products.

"I would say for all our spot business, which is about half our business, we expect to collect the margin," Lohrer added.

A U.S. steel spokesman could not provide an update, but market sources said automakers continued to resist steel price hikes and charges from mills, service centers, processors and parts makers as long as contracts that provide for lower prices were in place.

But processors are mounting because automated production has reduced steel costs, they say. "We are not sure how much we can pass on to our customers," Lohrer said. "We are absolutely sure that our back-up suppliers are not going to pass on the cost of their raw materials to us. They are not going to pass on the cost of their raw materials to us. They are not going to pass on the cost of their raw materials to us."

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## EU CONSUMERS 'OUTRAGED' AT SHORT DELIVERIES

BY BOB JONES

**LONDON** — Steel consumers in Europe have expressed outrage at the behaviour of steel producers in the current period of shortage and rising prices.

Orgalime, the European federation of metalworking, engineering and electrical industries, which represents 130,000 companies in 33 national federations, issued a statement on April 14 demanding a return to traditional levels of service for its members. "Our companies are being severely hit... because they cannot pass on price rises to their customers or [because they] are penalised for late or incomplete deliveries to their customers," commented the organisation's secretary-general, Adrian Harris, in Brussels.

Orgalime is calling on the European Commission to monitor the situation in the steel market and "defend the principles of free trade in the area of steel products". There are internal discussions going on about requesting the abolition of quotas on imports from Russia, Ukraine and Kazakhstan, although no such

request has yet been submitted.

"The feedback we are getting is that mills and stockists are not respecting their contracts," Harris told MB.

Among the major European consumers understood to have been affected is Bekaert, the continent's largest wire rod consumer. Bekaert is said to have complained that one supplier, believed to be Saarstahl, renegotiated a fixed-price, quarterly supply contract in mid-February. The problems are said to be worse among small and medium-sized companies, which do not have the same buying power as their larger competitors.

"We accept that there are objective factors at play in steel pricing," Harris said, "but our companies are outraged that they cannot rely on traditional volumes of supply from their suppliers."

Harris losing in con:

Bracing for a difficult year for coke supplies, Nippon Steel is trying to diversify its supply sources until a new coke plant in China is commissioned in summer 2005.

Japan's largest steel producer imports about 1.1 million tpy of coke to make the 1.2 million tpy it requires annually, with China supplying about half of the imports.

But with Beijing moving to slow the provision of export licenses, and coke suppliers in Russia, Poland and elsewhere curtailing exports, Nippon Steel is trying to squeeze more tonnage from domestic suppliers and lifting its pulverized coal injection (PCI) ratio until its new coke reactor in China comes on stream.

Among the domestic suppliers Nippon Steel is targeting for more is Nakayama Steel Works, which halted operations in its two small blast furnaces in Funamachi near Osaka in 2002 but kept the coke ovens in operation for outside sales. Nippon Steel currently takes about 100,000 tpy of Nakayama coke.

## MILLS RENEGING ON SUPPLY CONTRACTS, SAY TRADERS

BY VICTORIA GLASSON

**LONDON** — An increasing number of mills selling into the EU are reneging on their contracts, claim traders dealing with North Africa, India and Turkey.

Raw material shortages are not just causing pain in the form of a tight market. The price rises resulting from the tightness seem to be a factor behind what some steel buyers characterize as an unprecedented level of broken contracts.

Mills are not merely seeking to renegotiate selling prices in order to take advantage of the latest market rises, they are even re-offering to third parties — sometimes as the material sits at the ports waiting to be loaded, some EU importers claimed.

Polish mills are reported to be changing the contract price as many as two or three times with the same customer. "It is all very unpleasant," a German distributor told MB.

Buyers in Germany are particularly disgruntled with the now ULM-owned Polish operations Ipat Polska Steel — formerly Polkow Huty Steel — as well as plant producer Huta Castowowa, for which ULM is in exclusive negotiations. An executive at newly renamed Ipat Polska Steel refers to the company's current marketing approach as "short-term delivery confirmation." But a German trader described it as "anti-market" and "not for more money."

Within the EU, producers are blaming raw material shortages for their inability to deliver standard contracts, sources said, although no-one reported having received letters from the mills informing them officially of the situation. "Customers are only getting 60-70 percent of what they ordered," added another trader.

"Steelmakers don't have enough coke [or] enough iron ore," it must be demanded, Arcelor CEO Guy Dollé admitted recently.

The surge in Chinese consumption and production has created a "crisis situation" on the world steel market, and "there is not enough [steel] available to satisfy demand," he added.

Independent stockholder sources on mainland Europe put the shortfall for second quarter deliveries from Arcelor and Thyssenrupp at around 20-30 percent.



Guy Dollé: 'Nobody believes China's economy is collapsing'

## Dollé forecasts tight steel market is here to stay

**LONDON** — Arcelor intends to raise prices for European deliveries

## Corus considers allocations

**LONDON** — The general shortage in raw materials has not impacted Corus's steel deliveries yet, although the group concedes its plans are being hampered by tight availability worldwide.

"Corus is not cutting its deliveries for the time being," group CEO Philippe Vain told MB, in response to claims by some UK stockists that they had not received their full monthly contracts. "What we could do is warn customers that there are some problems on the [new] orders," he added.

The steel producer is considering allocations for lead times up to six weeks. But, the removal of shortfalls on products as large as 40 percent were unfounded, Corus told MB.

"Because we don't have enough [raw materials] according to our plans, Corus is reviewing its low margin business," Vain added, to the implying that low margin steel products could be forfeited in favour for those that generate better returns.

Corus's steelmaking competitors agreed the 40 percent figure had been exaggerated.

A commercial spokesman for Arcelor said: "We are trying to deliver to our European customers as a priority, and have reduced our export sales to China a lot. Shipments to the US are also at a minimum, even if the prices are better than in Europe." Arcelor's European customers are experi-

## US STEEL PRICES STRONG DESPITE SLIP IN SCRAP

BY SCOTT ROBERTSON

**PITTSBURGH** — Continued strong demand for flat rolled steel products coupled with tight supplies will keep base prices high in the USA despite softening scrap prices, according to market sources.

Steel producers instituted raw materials surcharges based on surging scrap prices earlier this year, and with scrap prices beginning to fall back, there is some talk of market settling in flat-rolled products. But buyer sources believe prices for flat-rolled products will stay high because of the strength of demand and overall tightness of supply, they said.

"Demand is still very good and supply is constricted," a service centre source in the south of the country said. "I think it's unrealistic, in my position, to believe I will be paying less for steel in May than I am in April, no matter what scrap does. The pressure on pricing is still very acute."

Prices for carbon hot rolled sheet, including surcharges, are between \$580 and \$590 per short ton for May, according to buyer sources. The base price (without surcharges) is about \$100 per ton less. Cold rolled sheet is running in the region of \$640 per ton and hot-dip galvanized sheet is between \$700 and

## INDEPENDENT TUBE CORP. OF CHICAGO PLANS TO BUILD A \$30.6 MILLION PLANT ON THE SOUTH BANK OF THE TENNESSEE RIVER IN DECATUR, ALABAMA.

Construction of the plant, which will begin in May, is expected to be completed in about two years. The company will manufacture steel tubing, with an initial workforce of about 30 people that will eventually climb to more than 60. The new Independent Tube plant will be adjacent to Nucor Steel-Decatur, a flat-rolled mill formerly known as Trico Steel that was purchased by Nucor in 2002 for \$120 million. Trico had more than 300 employees when the company sought Chapter 11 bankruptcy protection three years ago. The three partners — British Steel, LTV Steel and Sumitomo Metal Industries — had invested more than \$465 million in the complex.

Standard grade carbon steel plate is poised to break the \$700-per-short-ton mark on the US west coast as supply lines from other parts of the country as well as

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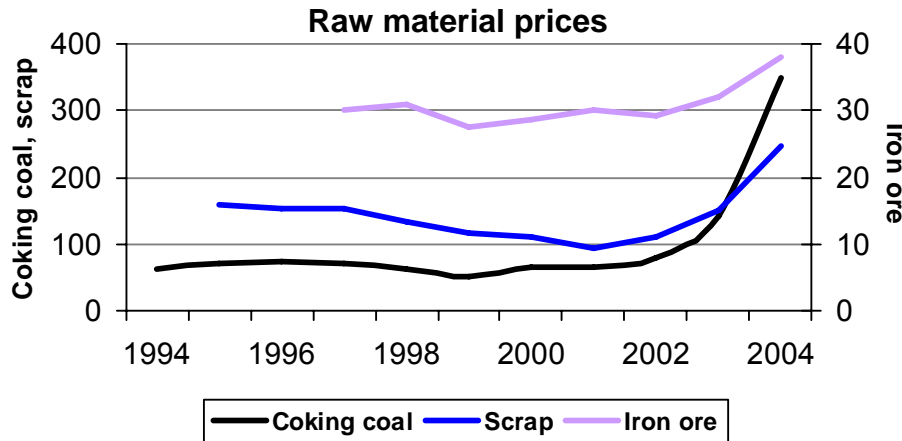
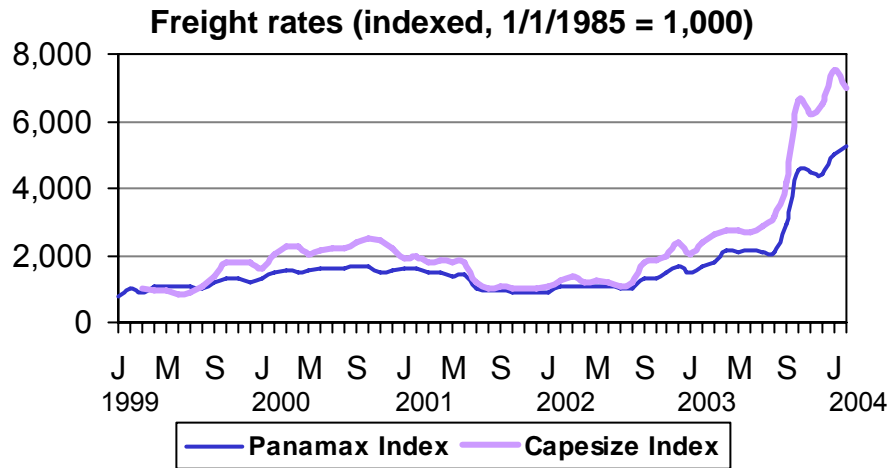
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Source: AMM, Metal Bulletin

# This time it is a raw material issue - coupled to a rapid growth in global steel consumption and rising prices which we have not seen for 20 years



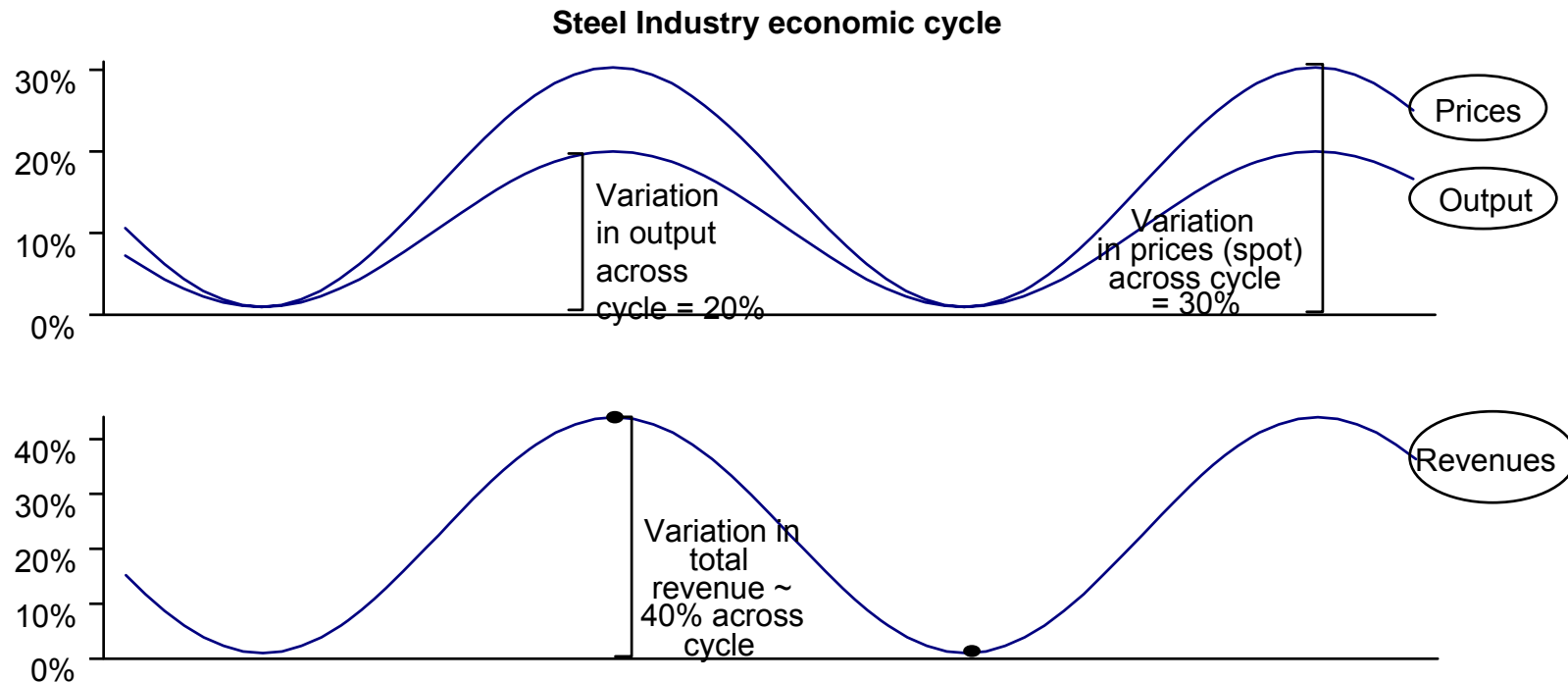
## Rising freight rates and raw material prices:

- Prices for iron ore, coking coal, and scrap have risen to unprecedented levels. Scrap prices have doubled in the past year, and the annual iron ore price settlement was +18.6%
- Seaborne freight rates are rising across the spectrum, impacting raw material costs
- Rates for capesize vessels, used for raw material shipments, have risen 7-fold in the last year, adding up to \$90/tonne
- Rates for panamax vessels, used for steel trade, have risen five-fold in the last 2 years
- In addition, exploding prices for raw materials and steel imply higher costs of working capital for the duration of the transport

**These global supply constraints and rising prices will create opportunities for some and threats for others**

Source: Clarksons, TEX, AMM, Hatch Beddows analysis

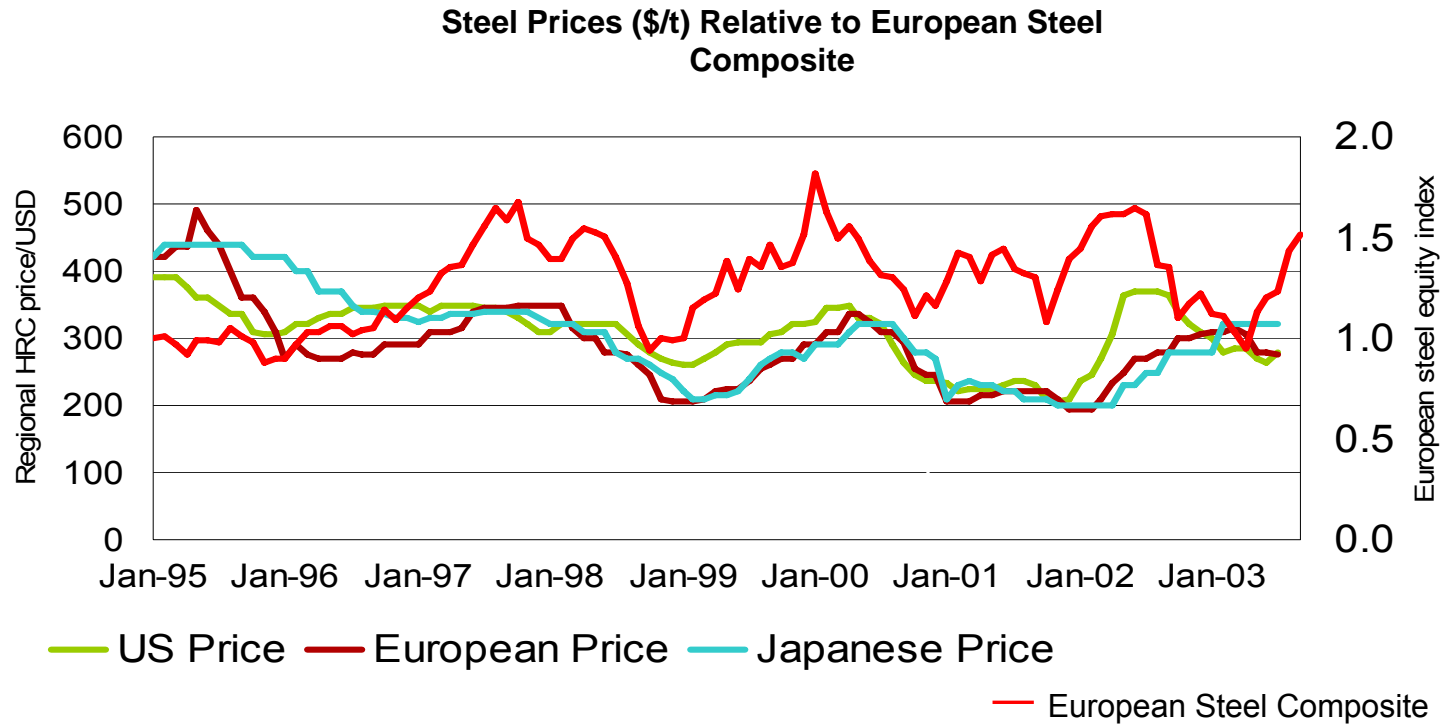
**Steelmaking fixed costs are relatively high. This is exacerbated by a typical five year cycle with a revenue variation of 40%**



- A typical integrated mill has 70% fixed operating costs; in contrast an EAF has 40% fixed operating costs reflecting the lower capital investments
- At the peak of a cycle, an integrated mill must run at approximately 75% utilization to break-even; at the trough of the cycle it must run at 125%. These constraints make for intense rivalry that perpetuates the boom-and-bust of the steel cycle

Source: Hatch Beddows

# Sector performance is driven by economic outlook and steel sector pricing amongst other factors



- Steel equity market performance also correlates with steel cycle:
  - Market anticipates changes in prices

Source: Morgan Stanley

**As a result of these developments, the steel industry is a capital-intensive industry that no longer has sufficient access to capital**

## **Lenders (Banks)**

- Substantial credit losses
- Ongoing bankruptcies
- Bankruptcies of old and new steel companies
- Historical bankers leaving the field

## **Investors**

- Very poor stock performance
- Equity markets closed to new offerings
- Steel offerings from mid-1990s have lost much of value
- “Vulture” capital now circling the industry

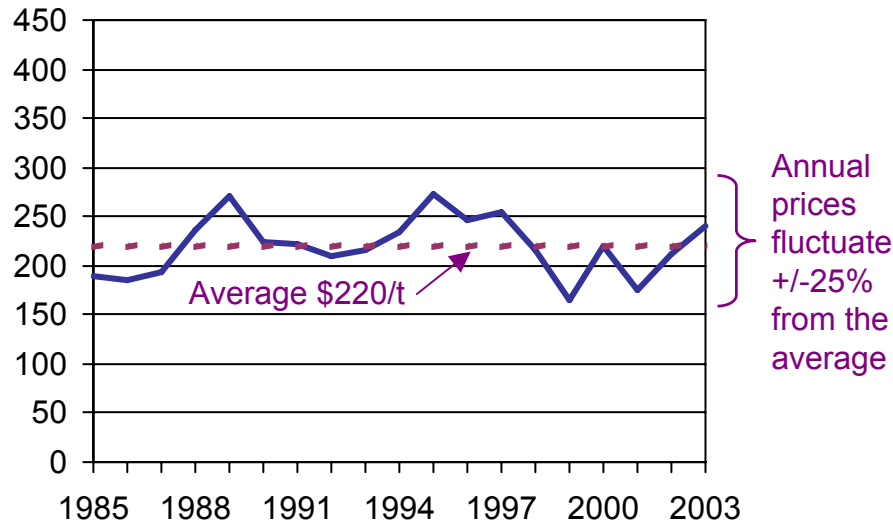
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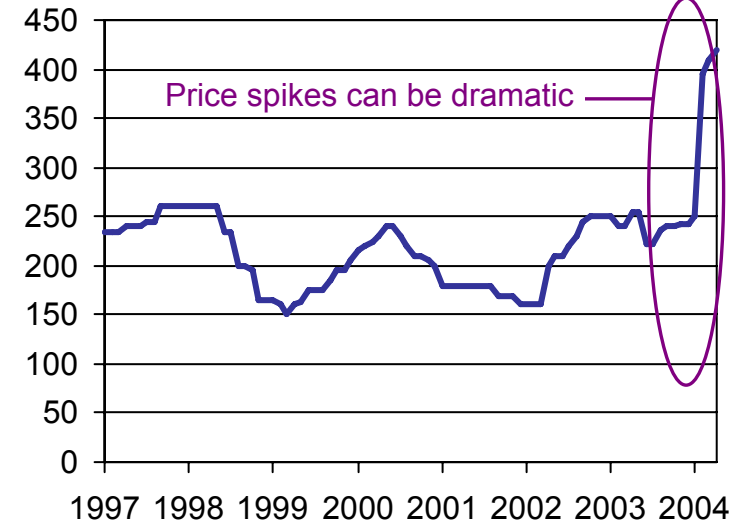
- The challenge for the industry
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- The aluminum case
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- What needs to be done

## Steel pricing is cyclical and therefore highly volatile, although there are a number of ways of mitigating the impact of price cyclicality

Annual Average Slab Prices, fob Brazil (\$/t)



Monthly Average Slab Prices, fob Brazil (\$/t)



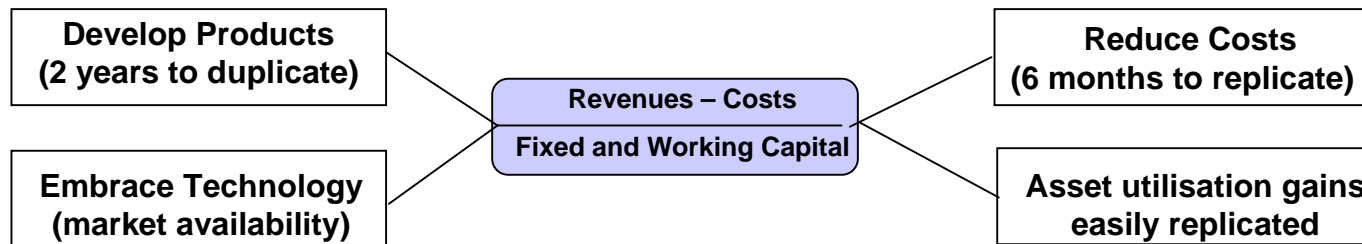
- The steel industry is cyclical, and steel prices are highly volatile as a result
- There are a number of ways of mitigating the negative impact of price cyclicality:
  - Ownership along the value chain: vertical integration, portfolio of assets
  - Cost structure: shift to a low fixed / high variable cost structure
  - Order books: as much as possible on a contractual basis, rather than spot (smoothing effect)

Source: Metal Bulletin, Hatch Beddows analysis

## Corporate responses to the challenge of creating shareholder value include rationalisation and restructuring, but they alone are not sufficient

### Corporate Responses: Rationalisation

**Rationalisation** is a necessary part of annual planning, but gives only temporary advantages:



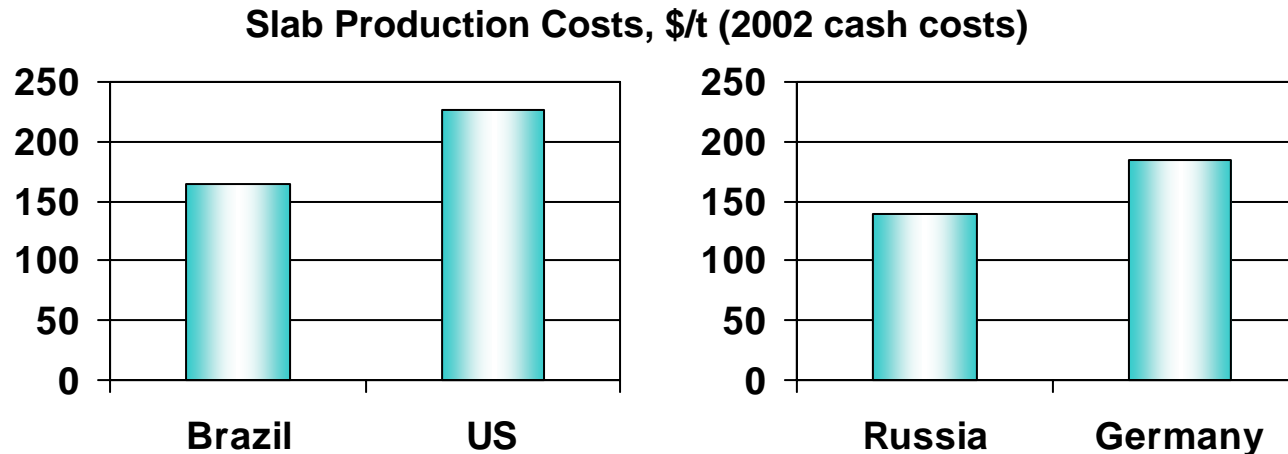
### Corporate Responses: Restructuring

**Restructuring** should be a regular part of 3-year planning. It is a combination of several or all of:

- Capacity reduction
- Process route optimisation
- Changes in ownership, e.g. privatisation
- Changes in corporate structure
- Radical improvements in labour productivity
- New technology
- Outsourcing
- Capital investment in new products
- Quality management structures, processes, and culture

**These need to be continuous and regular ... but are not enough**

## Brazil is becoming an attractive “front end” for US mills. Could Russia become equally attractive as a “front end” to Western European mills?

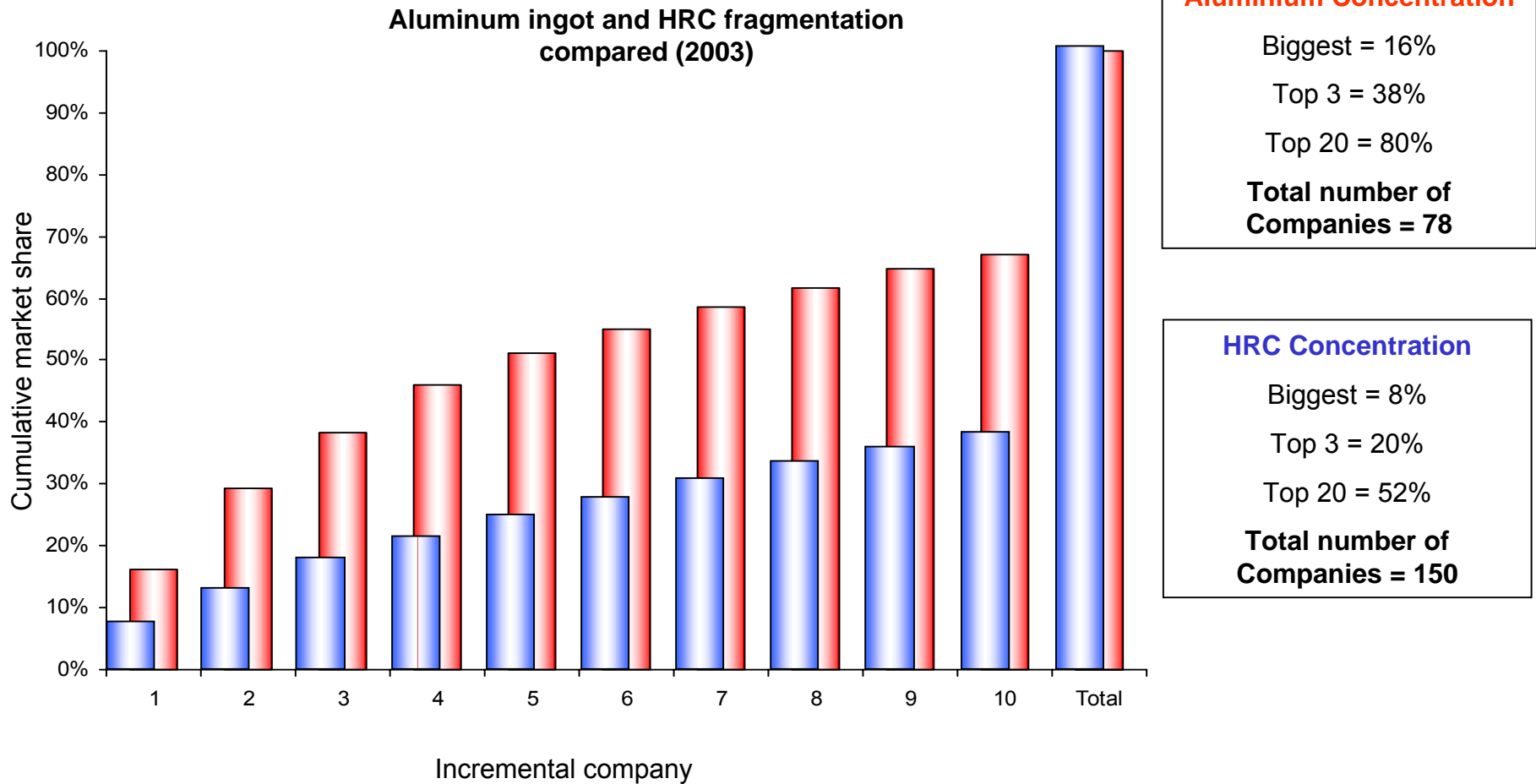


- As the global trend towards new patterns of integration continues, global steelmaking centres will evolve in countries in which inherent natural advantages provide the best conditions for steelmaking
  - These steelmakers would supply unfinished steel (slabs, HRC) to rolling mills around the world
  - The steelmaking centres will likely evolve in regions offering certain competitive advantages for the production of steel, such as low energy costs, access to abundant steelmaking raw materials, and access to global markets via direct deepwater shipping

**Countries most likely to evolve into global steelmaking centres include:**

**Brazil, Ukraine, Russia, Venezuela, India, South Africa, and Western Australia**

# The fragmentation of HRC producers has no doubt contributed to the poor position of steel



Source: Hatch Beddows

## What would make a big enough difference?

- Government Intervention?
- Becoming a Products & Services Industry?
- Capturing Value Upstream?
- Capturing Value Downstream?
- Specialisation?
- Consolidation?

Will it be enough?  
Will it be fast enough?

**Required: A new business model**

**Futures / Forward Contracts provides ONE tool to get to higher returns**

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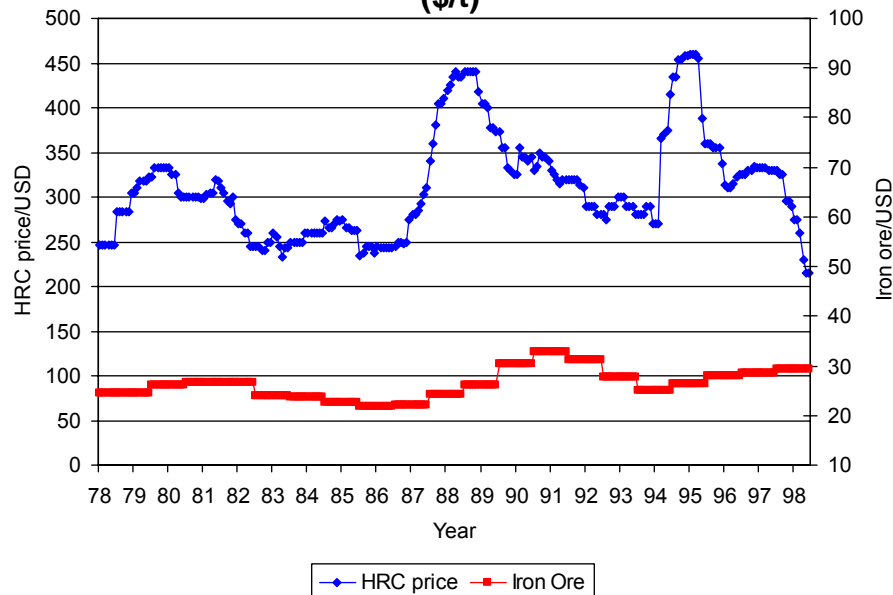
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## **Aluminum represents an alternative business model: de-integration and market transparency are directly supported by the LME exchange facilities**

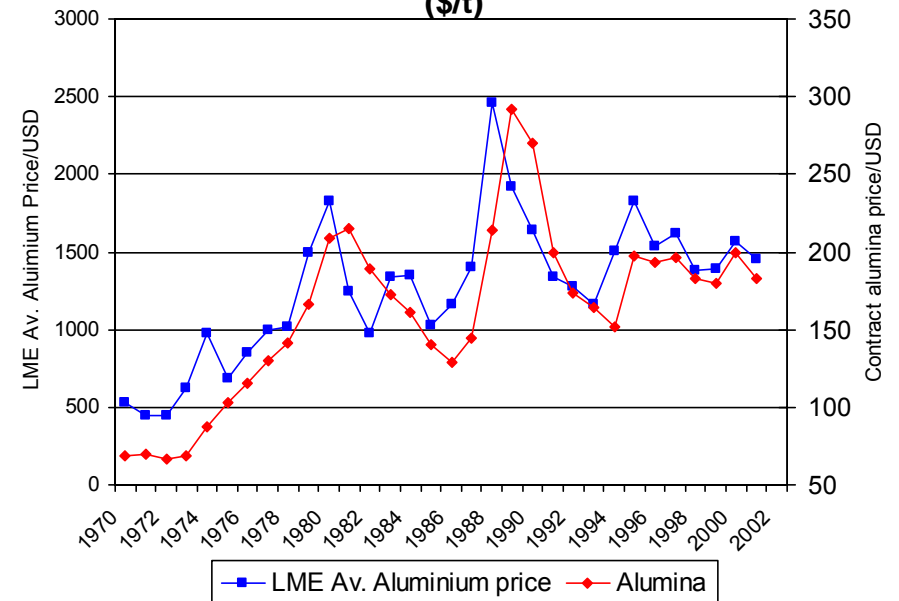
- Aluminum ingot contract was introduced in 1978 on the LME
- “When the contract was introduced, we fought as strongly as we knew how to kill it”, SVP in major producer
- “We now see the contract as the single biggest reason for the health of the industry”, CEO of same producer
- 99%+ of contract transactions represent information transfer--not physical transfer
- Creates indisputable price transparency and forecast: the summation of all participants expectations
- Facilitates the arbitraging of risk
- Downstream activities now cut back production rather than margin
- Upstream activities have a more predictable market environment with variable costs and hence manage capacity growth effectively

**Steelmaking raw material prices are settled on an industry wide basis and prices are not wholly connected to supply and demand whereas aluminum producers can hedge their alumina raw material costs against metal prices**

**HRC and iron price prices (\$/t)**



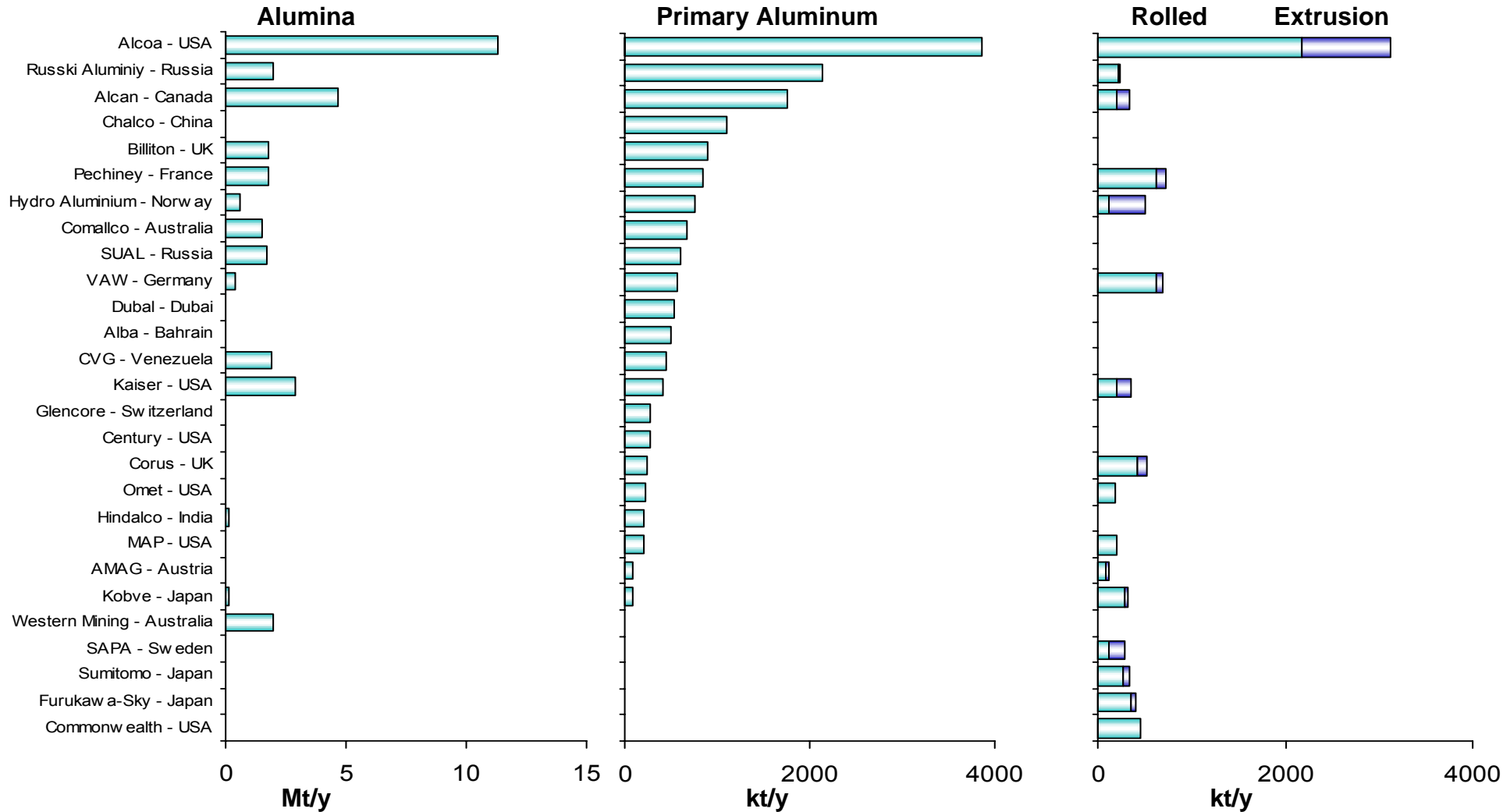
**LME aluminum price and contract alumina price (\$/t)**



- LME provides a mechanism to hedge raw material costs against aluminum prices. Aluminum price risk is shared with the raw material supplier.
- Hedging of significant production costs reduces financing risk associated with aluminum smelters. Lower financing risk results in lower financing costs.

Source: Metal Bulletin ,Tex, Hatch Beddows

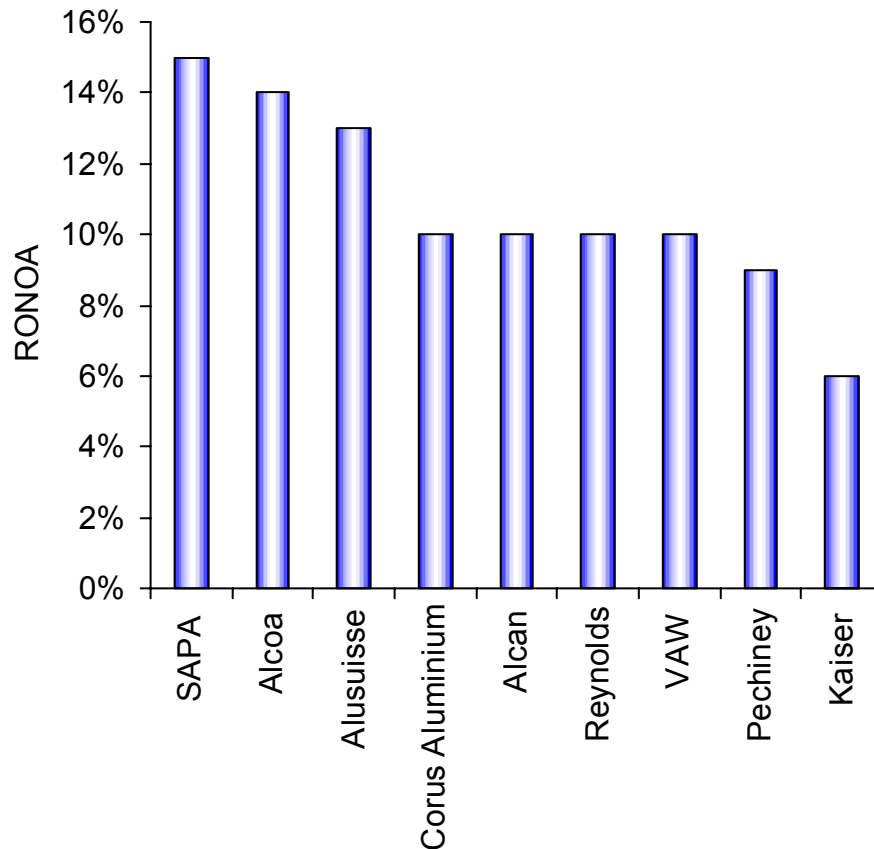
# LME aluminum price discovery has contributed to de-integration that has allowed a more optimal mix of upstream and downstream operations



Source: Hatch Beddows

# The aluminum industry is a lot healthier than steel! Many features of the contract have been attributed to this success

Average RONOA 1996-2001  
for Aluminum Companies



- De-integrated
- Simplified product complexity
- Consolidated at the front end
- High delivery performance
- Respected management

**A profitable industry!**

Source: Hatch Beddows

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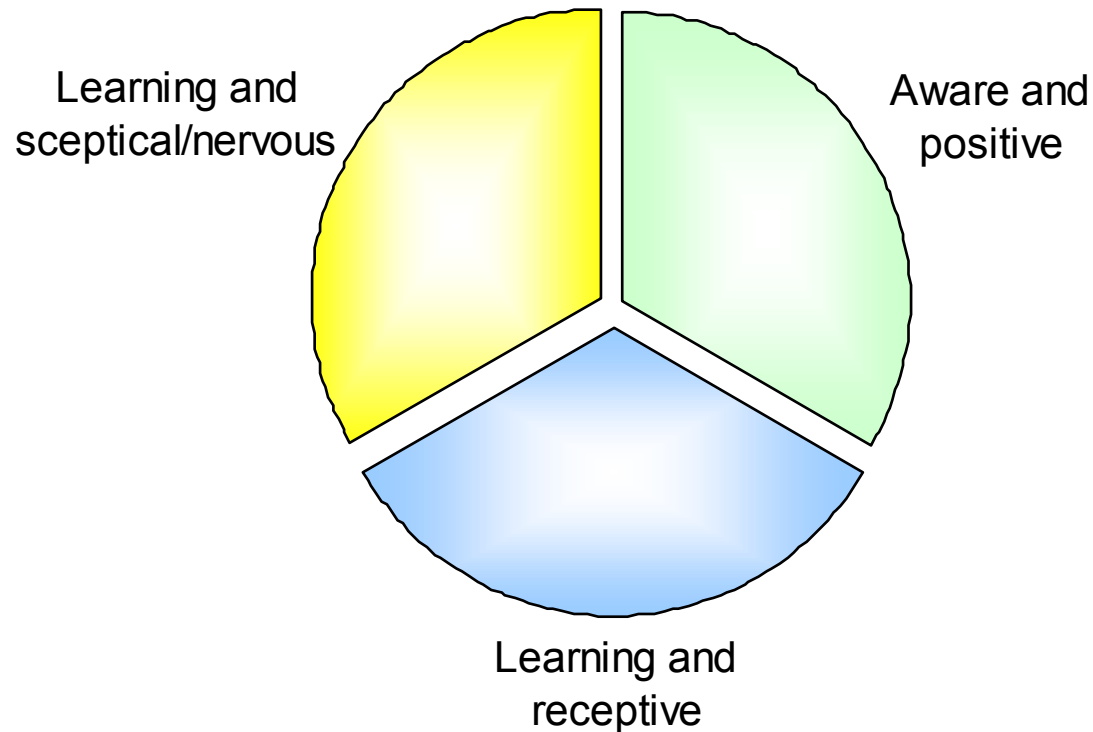
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## What is it? Will it happen? Why?

- What: A steel futures contract is a financial instrument
- Will it happen: Yes, 2005. LME, perhaps others inc. DJSI
  - » 2 x HRC contracts (Europe and N. America) and 1 x billet/rebar (Eurasia)
- Why: It's a market in itself
  - » Potentially 3 times current LME size
  - » It's functional
  - » Like Everest – it can be done

**We have discussed this with many steel companies both when we started this initiative and more recently**



## Six areas of potential benefit have so far been identified

1. Price risk exposure can be managed and controlled
  - for producers
  - for all participants in the value chain
  - the market of last resort for buyers and sellers can match finance to inventories and provide for trade finance opportunities
  
2. Front end capital investment decision taking
  - performance will be much more transparent
  - forecasts will be more “honest”
  - project finance will be objective and the risk hedgable
  
3. Downstream of HRC
  - margin and profit will be the drivers
  - businesses will be able to participate in the emerging value space between materials and OEMs
  - fragmentation will be economically viable and more niche and sector specialization should emerge

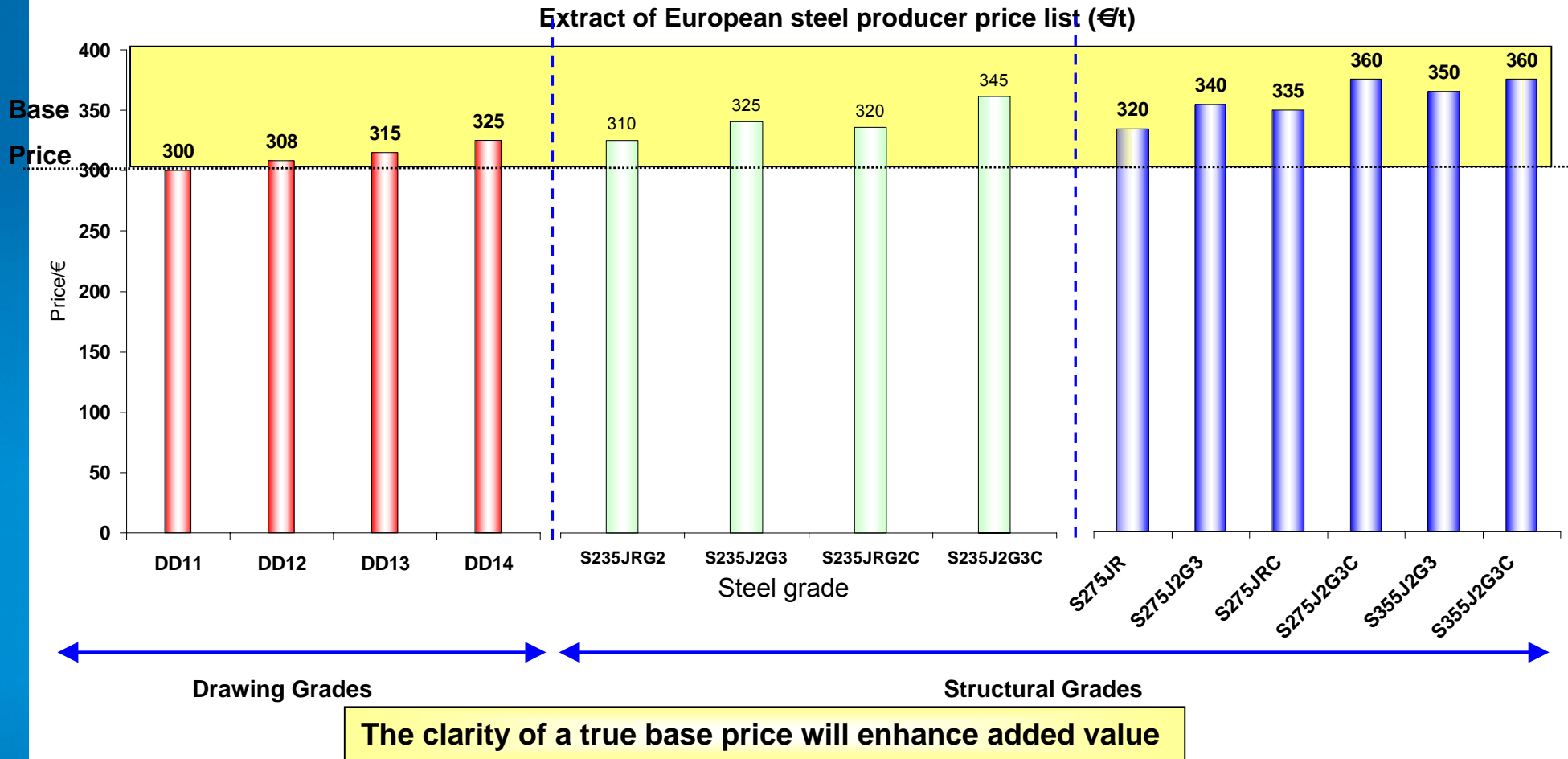
## Six areas of potential benefit have so far been identified (cont.)

4. Raw material relationships
  - energy industry example
  - aluminum industry example
  - front ends as a “utility” business
  - opposition from iron ore industry expected
  
5. Consolidation of the front ends
  - consolidation will be facilitated
  - new companies and players
  - utility orientation
  - ownership of front ends and back ends no longer necessarily link
  
6. Unambiguous and indisputable prices will facilitate discussions internally and externally
  - Enhanced negotiations regarding labour and unions etc.
  - Clarity in governmental trade matters especially regarding anti-dumping

## What concerns do the steel industry have?

- Fear:                   Commoditisation
  - » Loss of control of markets
  - » Lowest price takes all
  
- Hope:                   Defence of value added
  - » Better transparency and information
  - » Risk management of prices

**Will transparency in the base price help to defend or erode the value adding price component? European steel producers publish price lists which use a “market driven” though ultimately opaque base price**



Source: European steel producer, Hatch Beddows analysis

## European steel producers publish price lists which use a “market driven” though ultimately opaque base price, but with relatively fixed premia to cover higher value grades and delivery conditions (cont.)

**Extras for size**

Thickness mm	Width mm	50	75	150	300	600	900	1100	1550	1850
		<75	<150	<300	<600	<900	<1100	<1550	<1850*	<2030
		Narrow Strip				Wide Strip				
<1,00	<1,00	-	-	-	-	-	68,00	68,00	68,00	-
1,00	<1,25	-	-	-	-	-	55,00	55,00	55,00	-
1,25	<1,50	-	-	-	-	-	45,00	45,00	45,00	-
1,50	<1,75	95,00	78,00	68,00	56,00	40,00	35,00	35,00	35,00	-
1,75	<2,00	90,00	73,00	63,00	50,00	35,00	30,00	28,00	28,00	-
2,00	<2,50	85,00	70,00	60,00	48,00	33,00	28,00	20,00	23,00	30,00
2,50	<3,00	80,00	65,00	55,00	45,00	30,00	25,00	18,00	20,00	28,00
3,00	<4,00	75,00	62,00	52,00	43,00	28,00	23,00	15,00	20,00	25,00
4,00	<7,00	-	60,00	50,00	40,00	25,00	20,00	13,00	18,00	23,00
7,00	<10,00	-	68,00	63,00	45,00	30,00	25,00	18,00	20,00	25,00
10,00	<12,00	-	68,00	63,00	50,00	35,00	28,00	20,00	23,00	25,00
12,00	≤15,00	-	68,00	63,00	50,00	35,00	28,00	23,00	25,00	28,00

**Extras for pickling**

Thickness mm	Width mm	50	75	150	600	900
		<75	<150	<600	<900	≤1650
		Narrow Strip			Wide Strip	
<1,00	<1,00	-	-	-	-	65,00
1,00	<1,25	-	-	-	-	57,00
1,25	<1,50	-	-	-	-	50,00
1,50	<1,75	50,00	43,00	43,00	43,00	43,00
1,75	<2,00	45,00	38,00	38,00	38,00	38,00
2,00	<7,00	37,00	30,00	28,00	28,00	28,00
7,00	<10,00	48,00	45,00	40,00	40,00	40,00
10,00	<12,00	-	55,00	50,00	50,00	50,00
	≤12,00	-	65,00	60,00	60,00	60,00

**Other Extras**

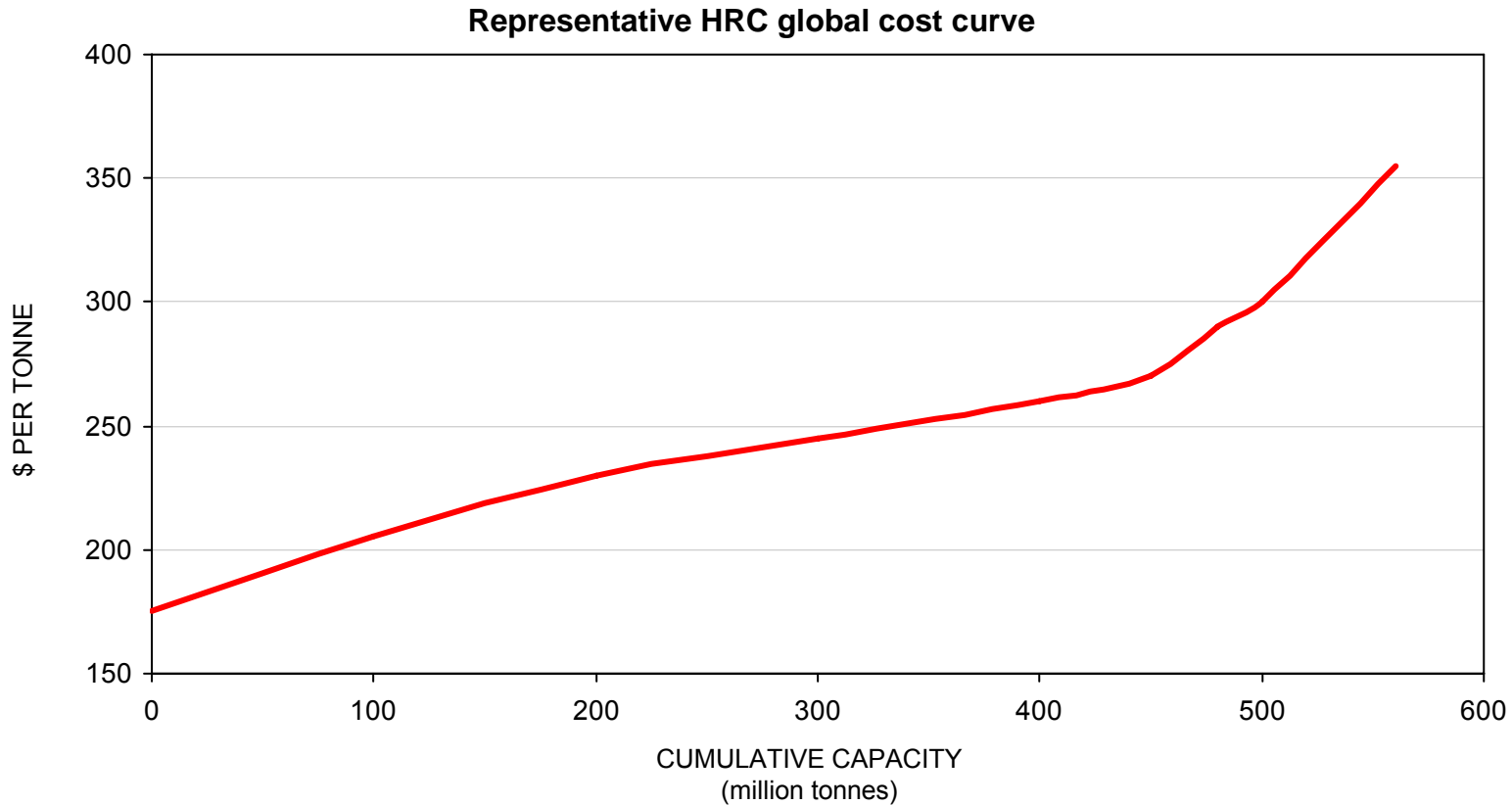
Cu Contens	
0,25 – 0,35%	20,00
0,35 – 0,50%	30,00
Edge Trimming	
Of pickled wide strip	8,00
Of unpickled wide strip	20,00
Packing	
Creped, tarred or oiled paper with steel strapping and edg protection	3,00
Sheet metal wrapping 5,00	Euro/pce 25,00

**Extras for Inspection and Materials Testing Certificates**

At purchaser's choice only one certificate to DIN EN 10 204 will be issued, to be agreed on ordering	
Works Certificate 2.1	0,00
Works Certificate 2.2 Details of heat analysis Details of mechanical properties	0,00 2,00
Inspection Certificates 3.1 A, B, C or Inspection report 3.2 By lot or heat Minimum amount	4,00 20,00 euro
Inspections in supplier's works only	

Source: European steel producer, Hatch Beddows analysis

# Will a transparent “base” price lead to a change in the application of the supply/demand balance principle for pricing or will it facilitate it?



**The more perfect the information the more prices will reflect the cost of marginal tonnes**

Source: WSD, Hatch Beddows

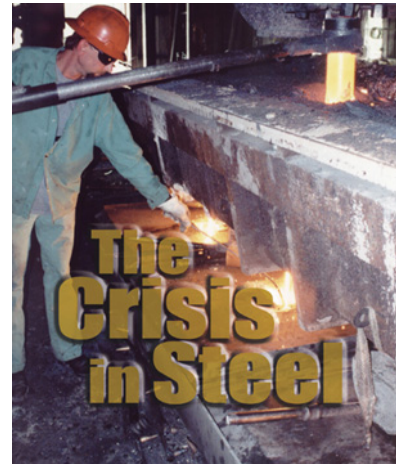
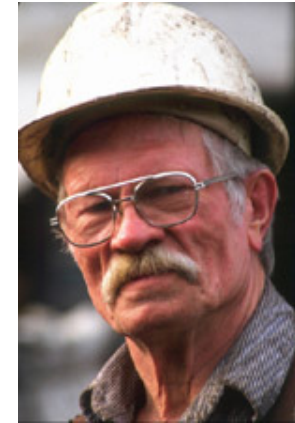
## Contents

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- The challenge for the industry
- The responses to the challenges
- The aluminium case
- The industry response
- **What needs to be done**

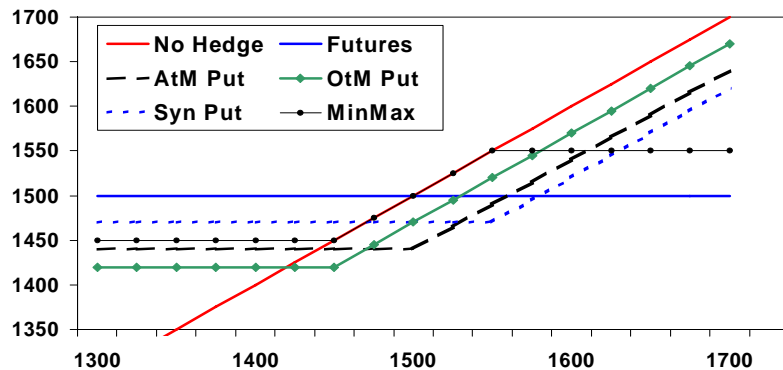
# There is only one remaining structural problem in creating a liquid and successful steel futures market for the benefit of the greater steel market

There must be reconciliation, empathy, common nomenclature and understanding between:-



# There is only one remaining structural problem in creating a liquid and successful steel futures market for the benefit of the greater steel market

There must be reconciliation, empathy, common nomenclature and understanding between and :-



The Model:

$$C = SN(d_1) - Ke^{(-rt)}N(d_2)$$

C = Theoretical call premium

S = Current Stock price

t = time until option expiration

K = option striking price

r = risk-free interest rate

N = Cumulative standard normal distribution

e = exponential term (2.7183)

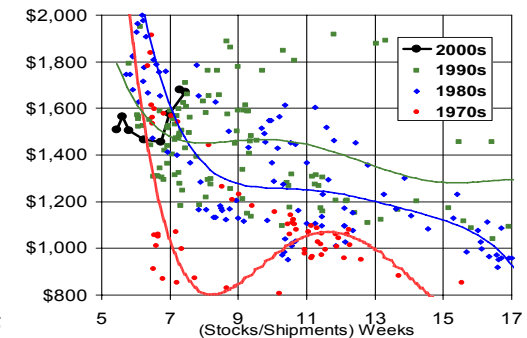
$$d_1 = \frac{\ln(S/K) + (r + \frac{s^2}{2})t}{s\sqrt{t}}$$

$$d_2 = d_1 - s\sqrt{t}$$

s = standard deviation of stock returns

ln = natural logarithm

- Current Ratio
  - 5.4 weeks
  - price s/b 1700
  - equil: 7 to 9 wks
- Forecasts:
  - 2000: 5 wks
  - 2001: <5 wks



**Thank you for your attention!**

# Hatch Beddows

9 Dartmouth Street  
London SW1H 9BL  
United Kingdom

Tel.: +44-(0)20 7906 5100

Fax: +44-(0)20 7233 1908

Website: [www.hatchconsulting.net](http://www.hatchconsulting.net)