Steel Risk Management 2004

The Future of Steel

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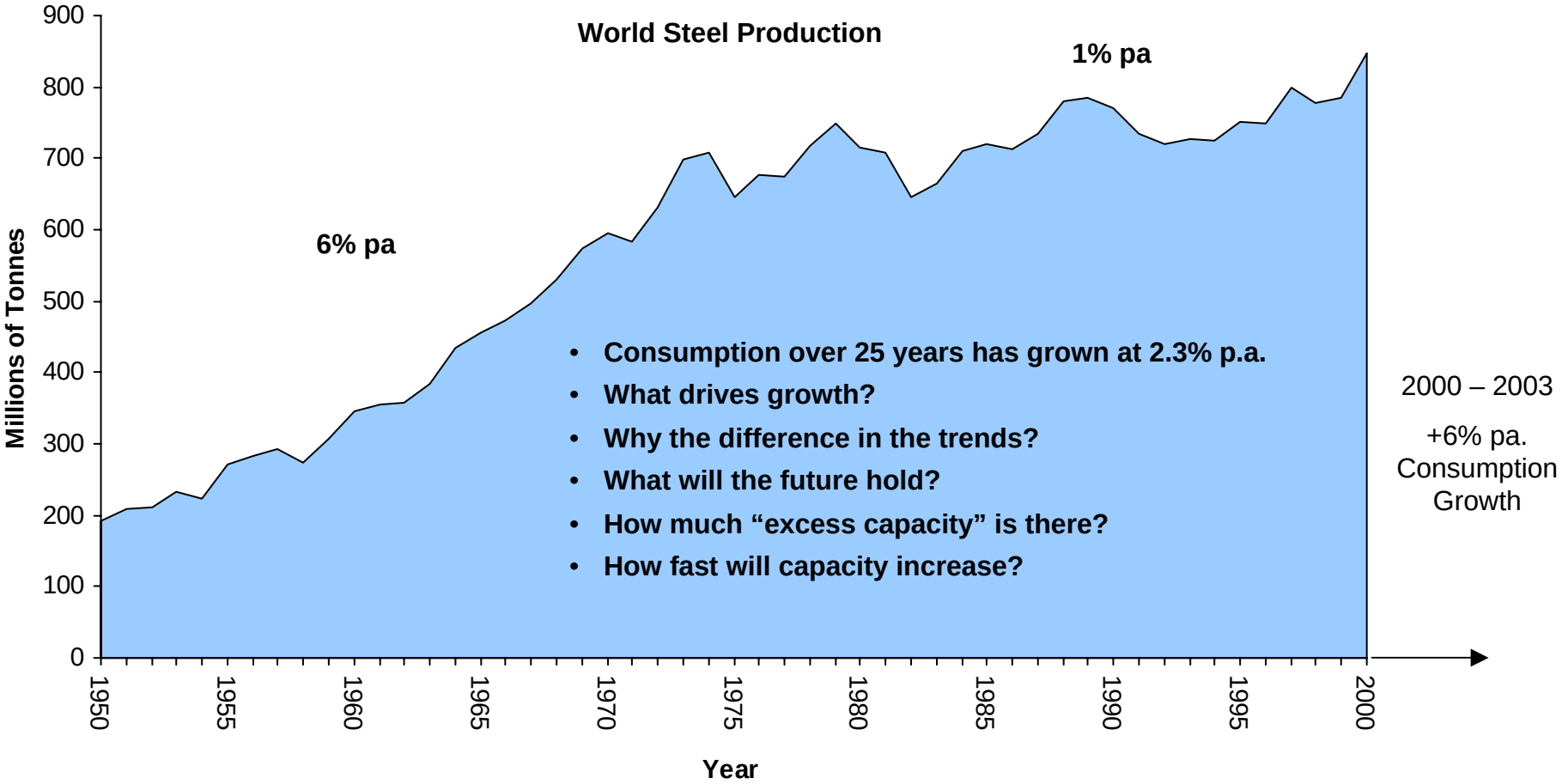
Demand side context



Source: IISI, Hatch Beddows analysis

Demand side context : the future – a scenario

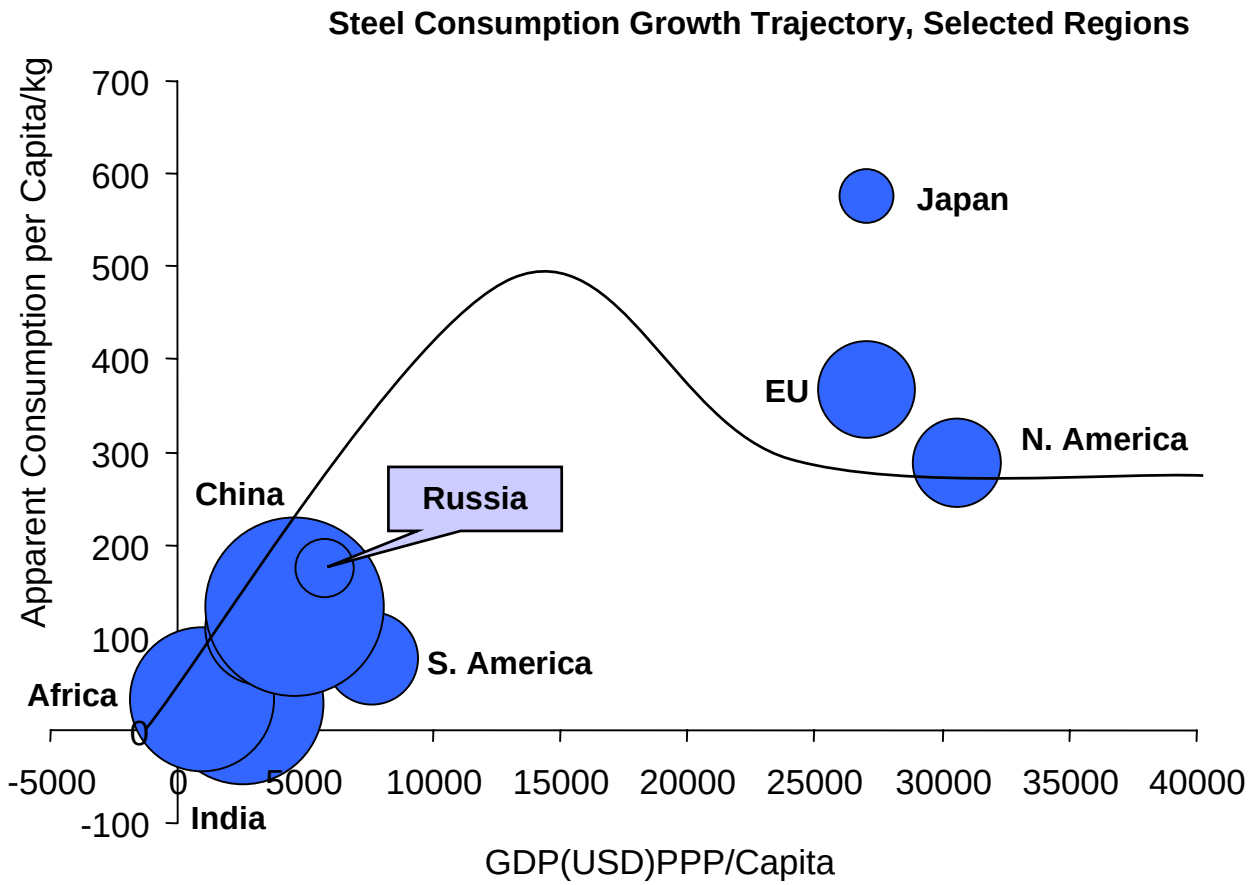
Steel requirement; Millions of tonnes Crude steel

	2002	% pa. Growth	2007	2012	Key Differences
EU-15	142	1.0%	149	157	
Other Europe	37	6.0%	50	67	
Former USSR	31	5.0%	40	51	
Nafta	135	2.0%	149	165	
Lat America	30	6.0%	40	53	
China	218	7.5%	313	449	+231
Japan	74	1.0%	78	82	
Other Asia	134	6.0%	180	241	+107
Aus/NZ	8	1.0%	8	8	
Africa	17	6.0%	23	30	
M East	17	6.0%	23	30	
	843		**1,053**	**1,333**	

- ½ the population lives in high growth areas
- Yield improvements in steel make are mature
- Steel capacity is in decline in the developed world
- Raw material constraints
- Transport constraints

The Result: Better Returns; Improved Access to Capital; The Strong get Stronger

Steel consumption is driven by population and GDP. Half of the world's population lives in high growth areas



Note: Size of bubble represents population

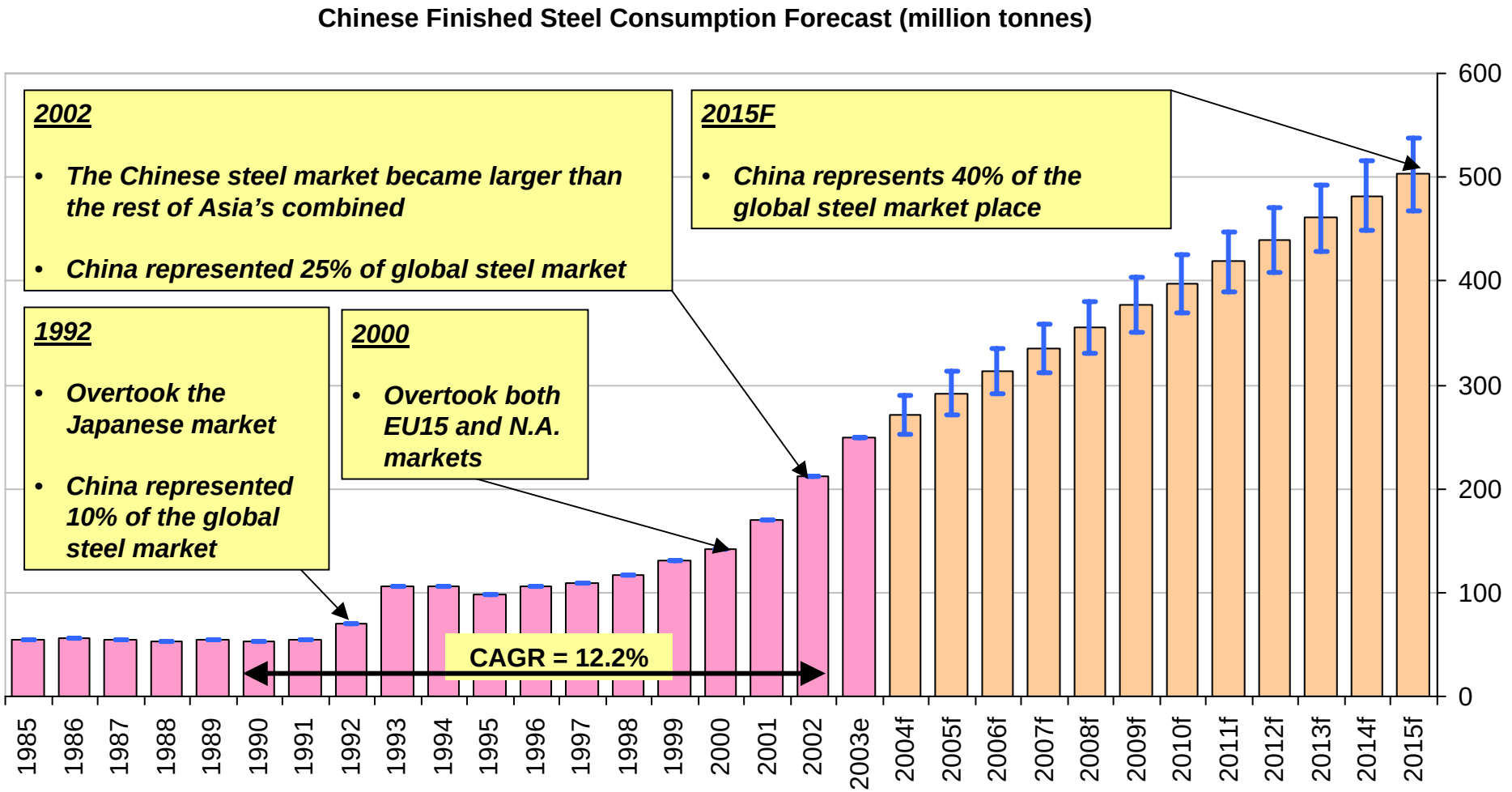
New World Order

By mid-century, the top six economies could well be:

- China
- India
- USA
- Japan
- Brazil
- Russia

This will have a significant impact on growth in steel consumption as these economies grow and develop

China will continue to dominate the global steel market, we expect consumption growth of circa 5-7% long term, compared to 2% for ROW

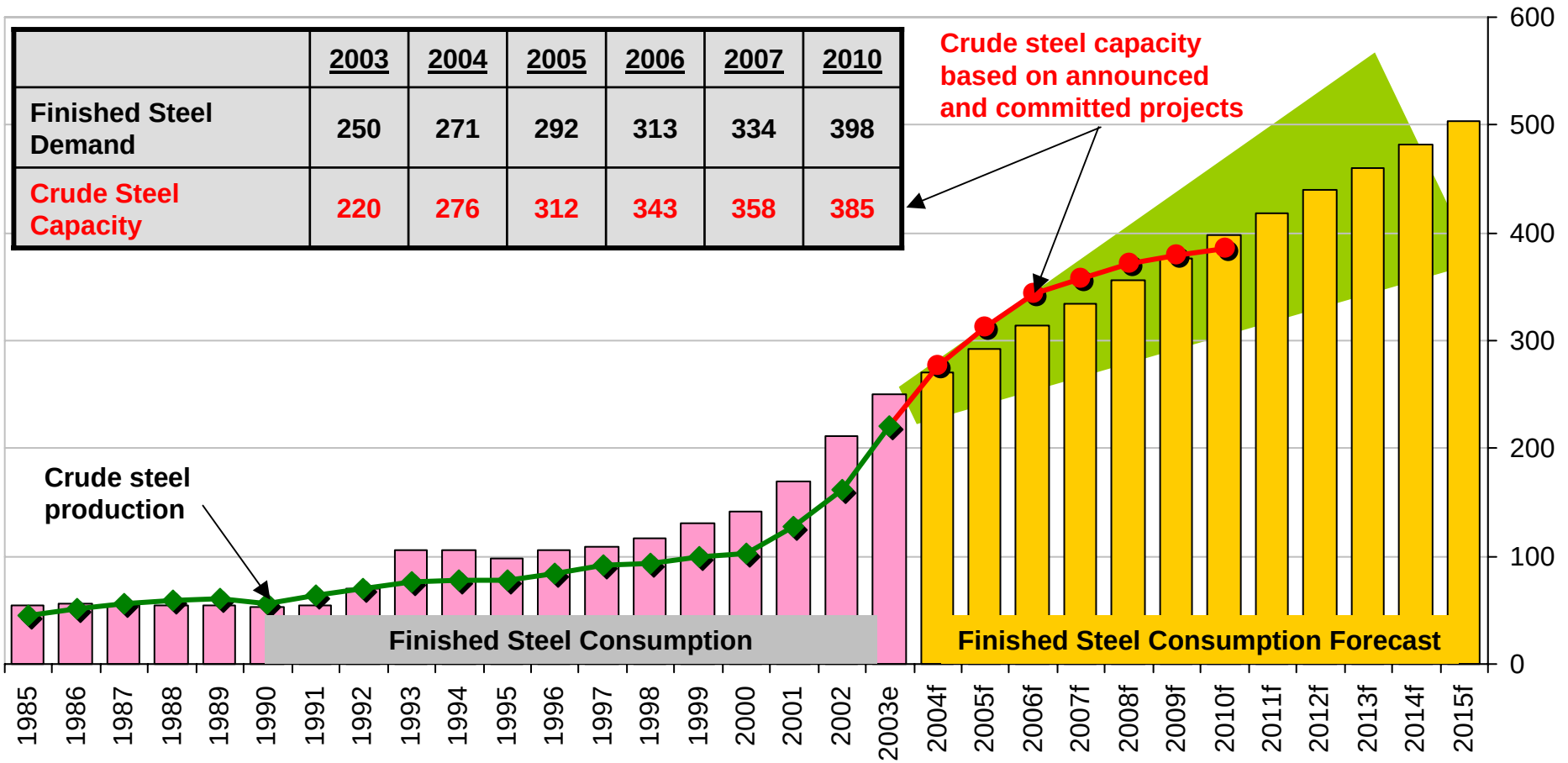


Source: IISI, Hatch Beddows Analysis/Forecast

Opinion is split on whether China will become an net exporter of steel

Chinese Crude Steel Production vs. Capacity (million tonnes)

	2003	2004	2005	2006	2007	2010
Finished Steel Demand	250	271	292	313	334	398
Crude Steel Capacity	220	276	312	343	358	385



Source: IISI, Hatch Beddows Analysis/Forecast, WSD

Can all the steel required in the future be made?

Virgin Iron: World Requirements

MT	2000	2015
Crude steel production	822	1390
Required virgin iron volume	450	800
Required ore @ 65% Fe content	690	1230
Ore actually used / required	960	1700
Sea borne ore trade	445	795
Dry bulk vessels required	405	720

Assuming EAF % in steel make remains at ~ 36%

Global Scrap Requirements

Scenario One: Hold HBI production at current levels Scenario Two: Hold scrap recovery levels constant	Scenario One			Scenario Two		
	1985	**2000**	**2015**	**1985**	**2000**	**2015**
Total metallics requirements (scrap and substitutes)	352	432	740	352	432	740
Total scrap available (home, prompt, obsolete scrap)	336	379	673	336	379	521
Total scrap substitutes (HBI, merchant pig iron)	17	53	66	**17**	**53**	**219**
Implied recovery rate (obsolete scrap)	**30%**	**32%**	**55%**	30%	32%	32%

China has created a turning point for the steel industry and many things will have to change

- We will need new sources of iron ore
- Steelmaking will progressively move to sources of raw material
- Scrap prices will rise and steelmaking via the EAF route will reduce its share
- There will be substantial growth in DRI/HBI production
- New technologies utilising low grade iron ore will become economical
- The industry will enjoy higher returns
- There will be more turbulence: Driven primarily by supply side dynamics

Where is the next shock coming from?