

# NORTH AMERICAN STEEL MARKET PERSPECTIVES

By  
Christopher Plummer  
Managing Director  
Metal Strategies

International Pig Iron Association  
Sheraton Miami Mart Hotel  
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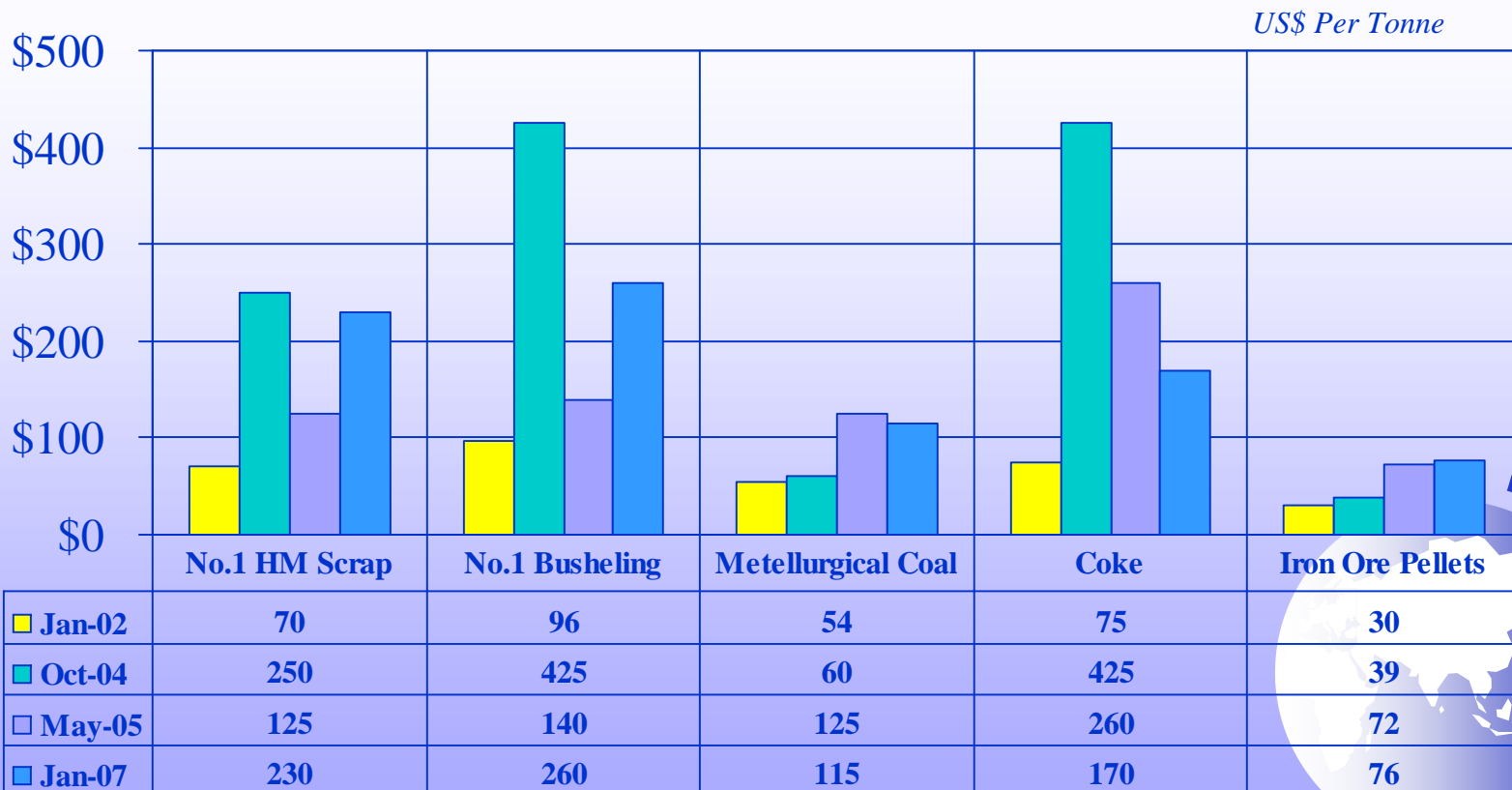


**Metal Strategies Inc.**

515 Locust St. N./ Suite #1 West Chester, PA 19380 USA  
Tel: (610) 719-9800 Fax: (610) 719-9810 info@metstrat.com

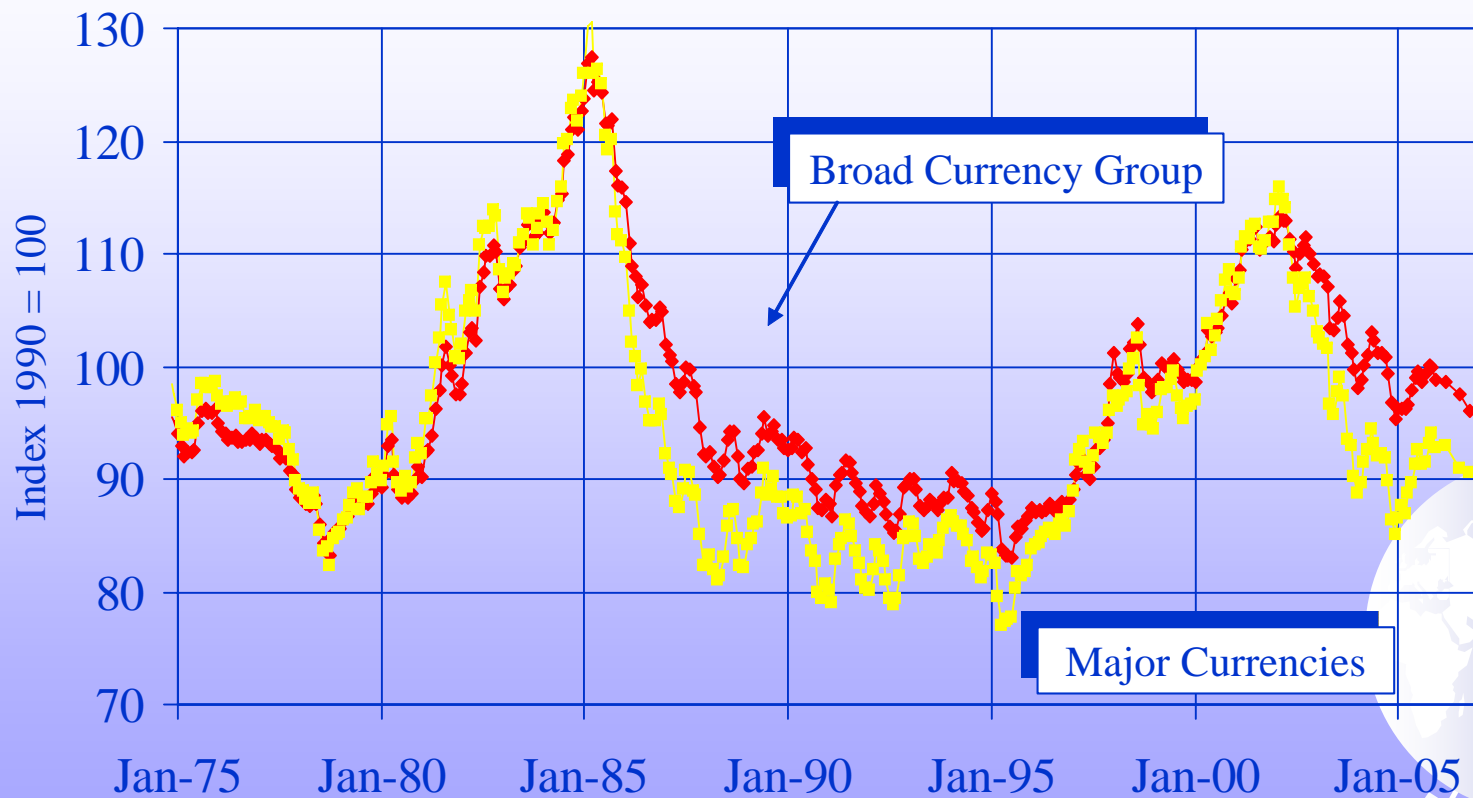
## STEEL ENERGY AND RAW MATERIAL COSTS

In the four years from Q1-2002 to 2006, raw material and energy input costs for world steelmakers have increased dramatically.



## U.S DOLLAR LOOKS SET TO WEAKEN FURTHER

The real trade-weighted US\$ index (major currencies) continues on a general down-trend through January. Despite this further weakening, it is now trading at a relatively neutral to only moderately weak position - about the average of the range since 1975. The latest major-currency level (90.58) is off 22% from the recent high of 115.8 recorded in February 2002.



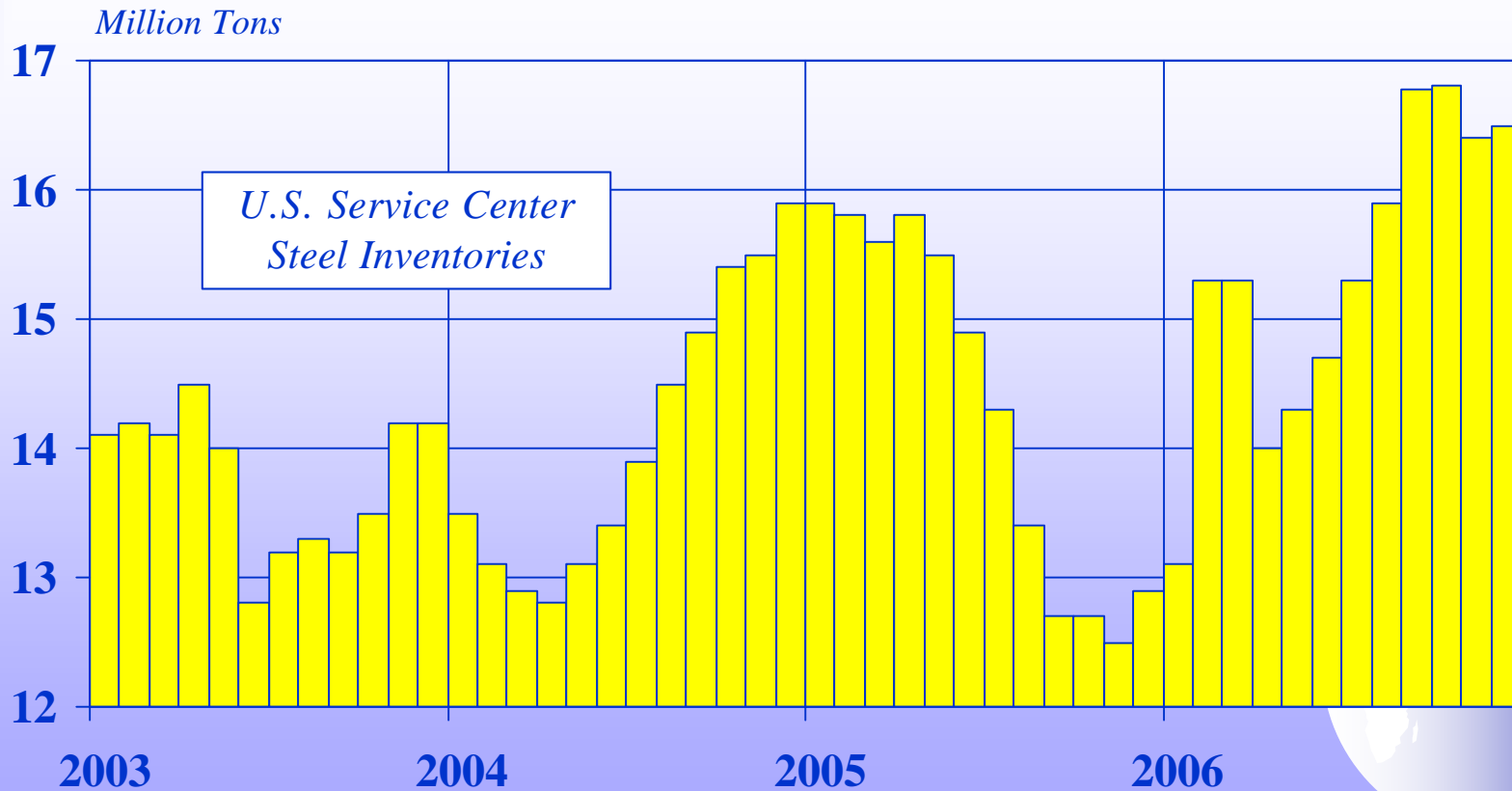
## CHINA EXPORT RISK NOW BEING REALIZED

China exported 43 MMT and imported 18 MMT in 2006. As such, China has become the world's largest exporter, from a neutral position in 2005 and the world's largest net importer in recent prior years. Chinese authorities had hoped to see this trend slowing sharply in H2-2006.



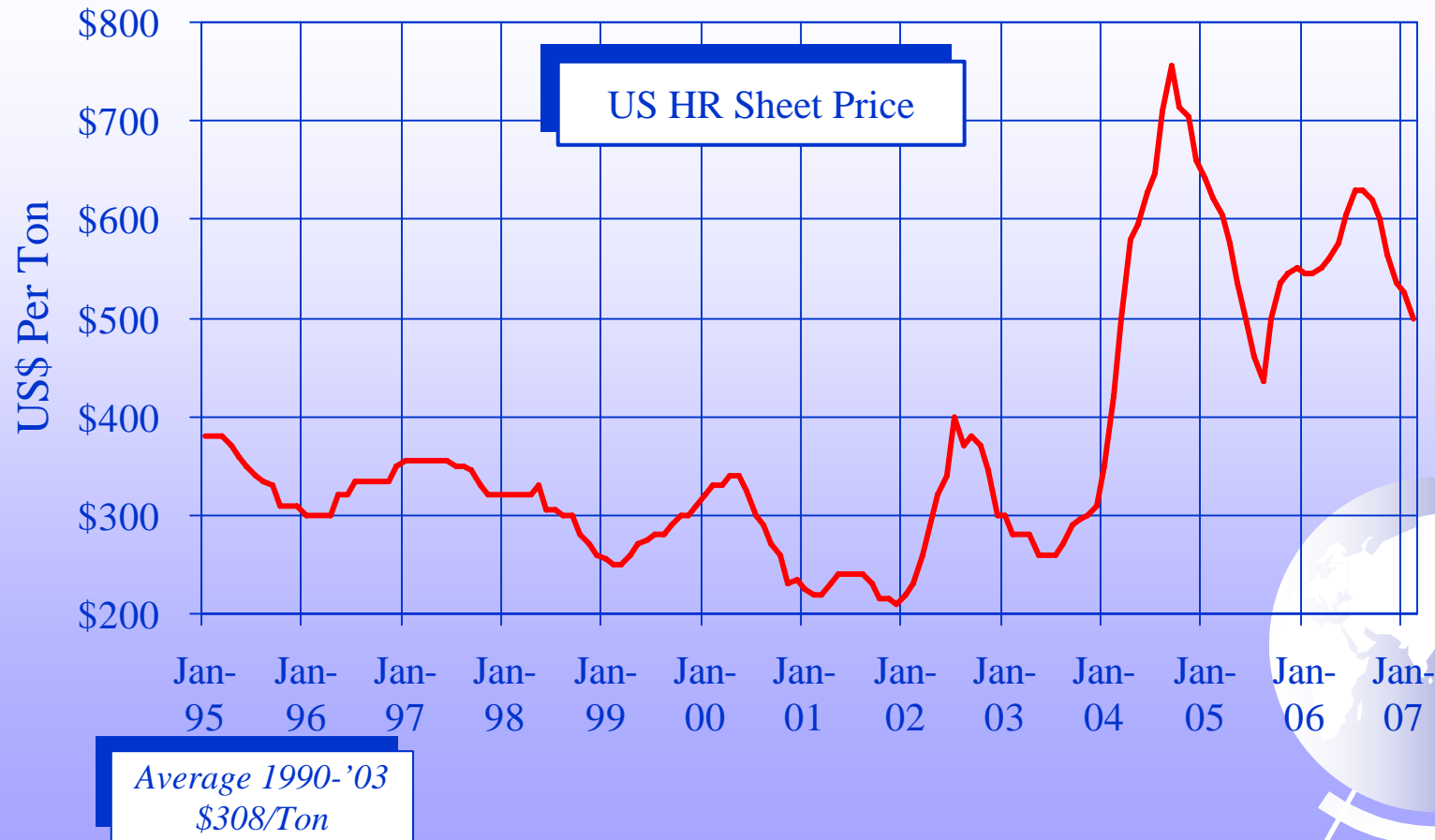
## INVENTORY BUILD-UP HUGE, BUT NOW LEVING OFF

The actual tonnage level of inventories held by U.S. service centers was up to a very high 16.5 MST at the start of January as compared to the recent trough of 12.5 MST in November 2005. This latest level significantly exceeds the recent severe over-supply peak of 15.9 MT in January 2005.



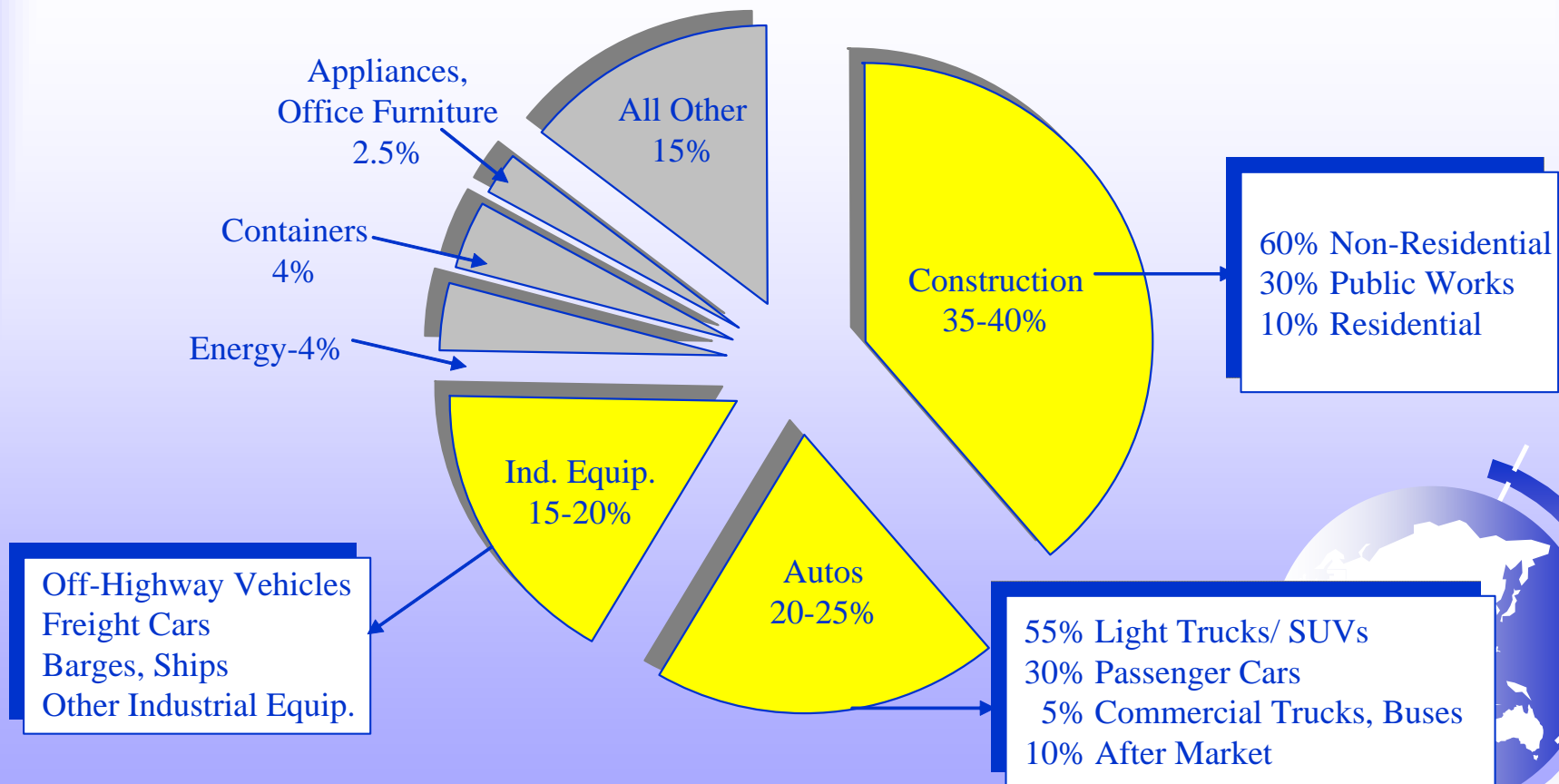
## U.S. HR SHEET PRICES HEADING DOWN

Average monthly U.S. spot hot rolled sheet steel prices have eroded nearly 20% to \$525/ton through mid-January after building to \$630/ton through the end of August from the \$435/ton August 2005 market correction trough and just 17% below the recent record high of \$756/ton in September 2004.



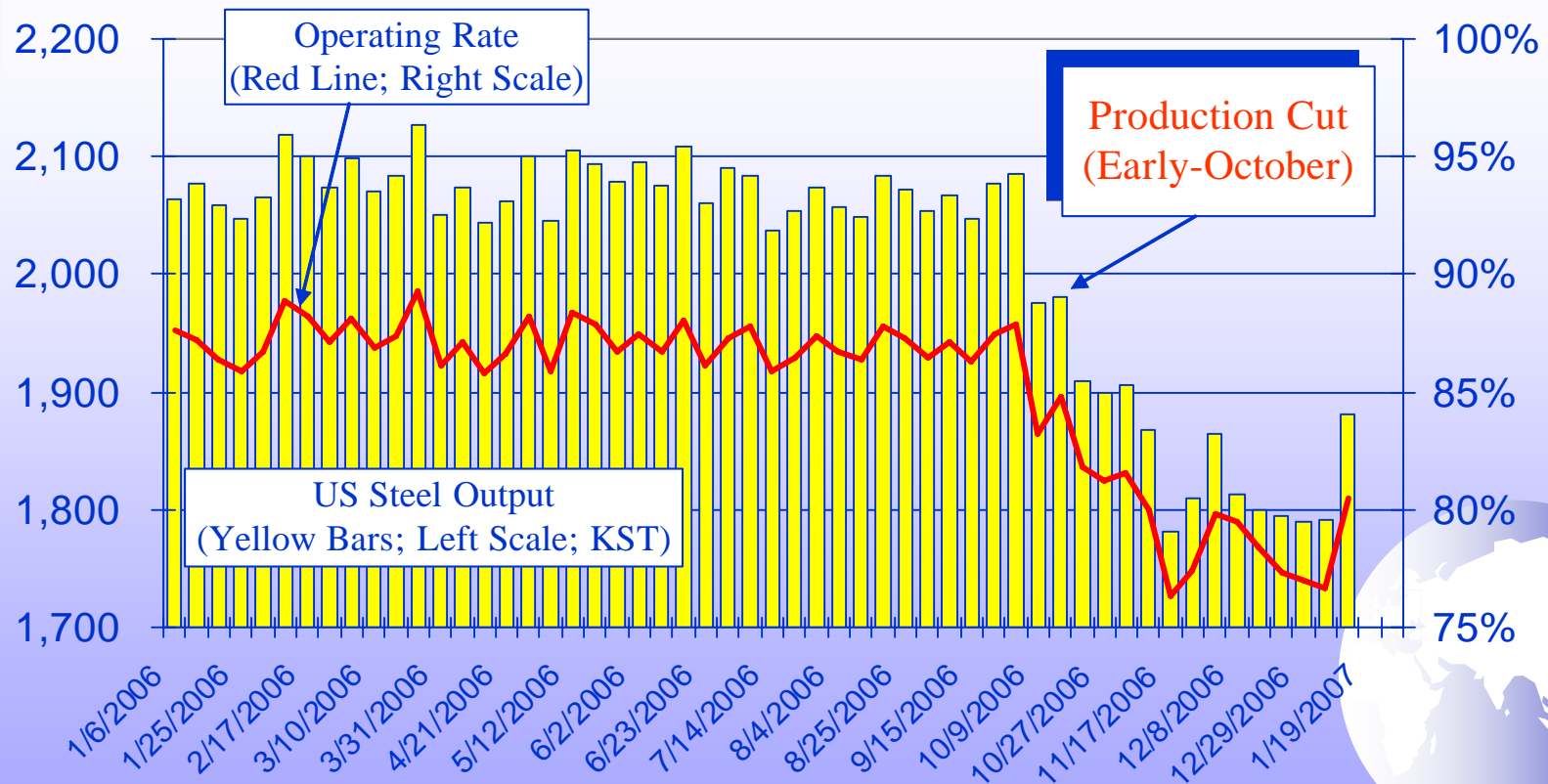
## STEEL END-MARKET OVERVIEW

Three broad sectors – construction, autos, and industrial equipment – account for 75-80% of total U.S. steel consumption by ultimate users.



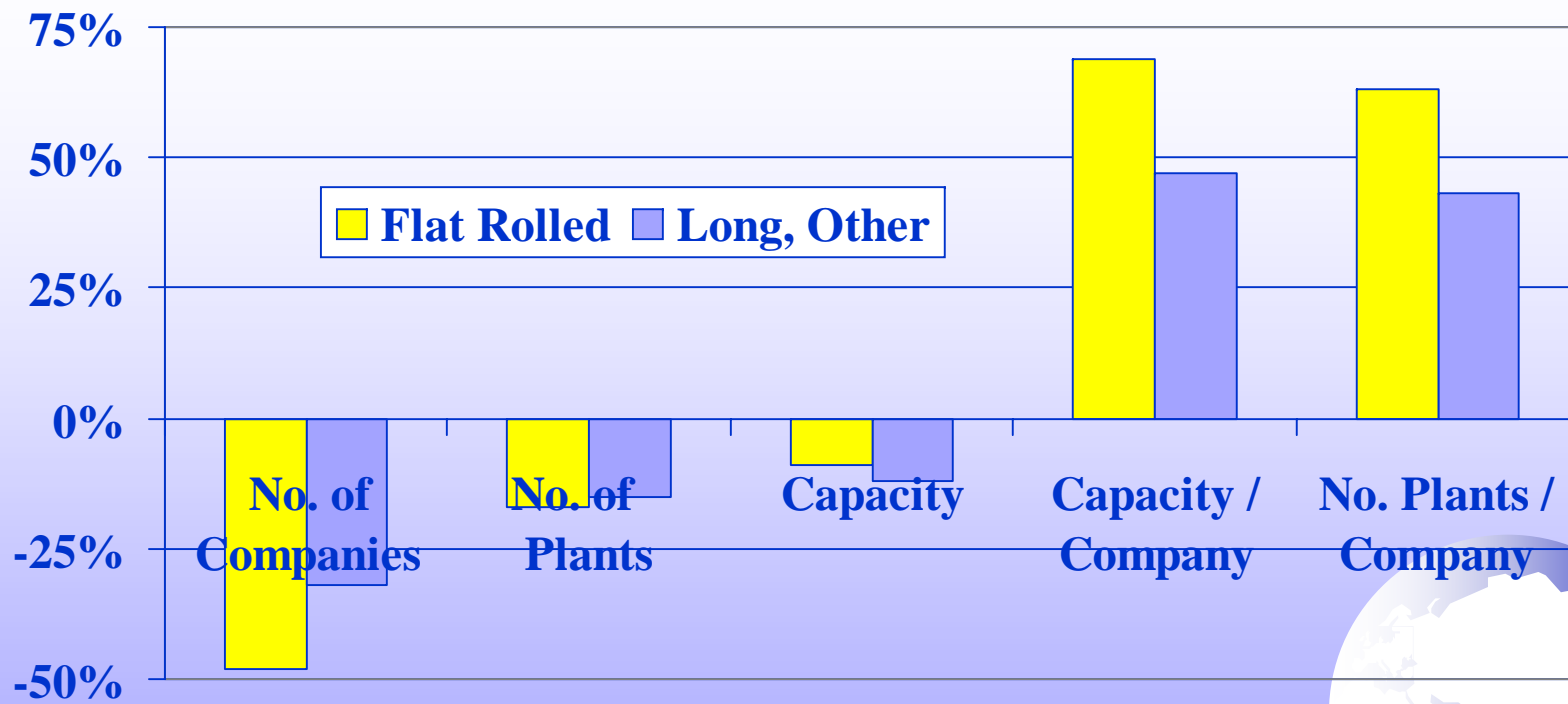
## U.S. WEEKLY STEEL PRODUCTION

Producers began a very sharp production cut beginning in early-October and continuing through mid-January.



## U.S. STEEL INDUSTRY CONSOLIDATION

(Percent Change, 2000 compared to 2005)



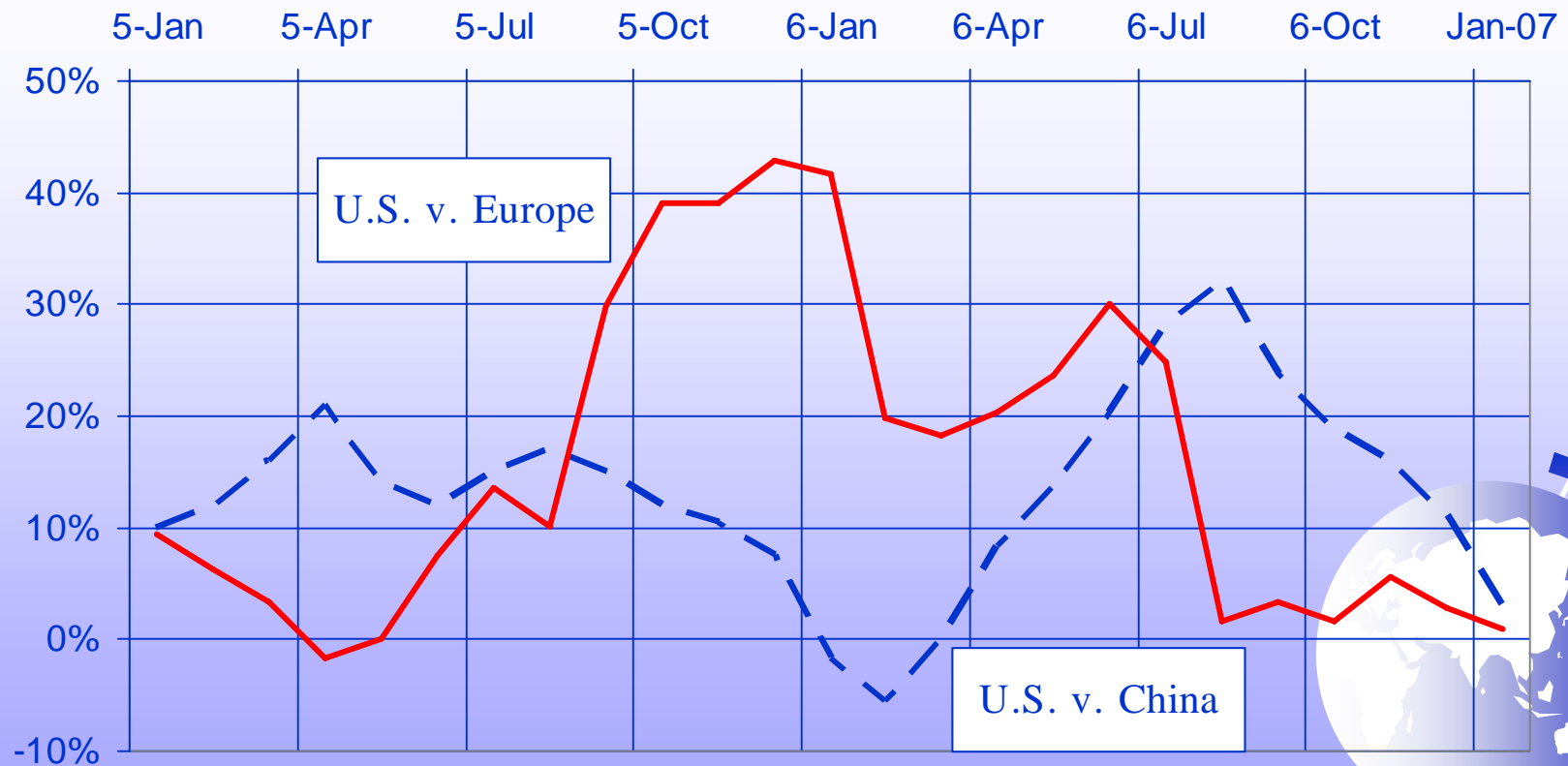
Mittal Steel weighted average share of all markets served = ~33% (major product range-15-40%+)

-FRP acquisition price (\$/ton, going-concern basis)  
 2002= \$110.....2003-'04=\$170.....2005=\$225



## U.S. PRICING PREMIUM COMPLETELY ERODED

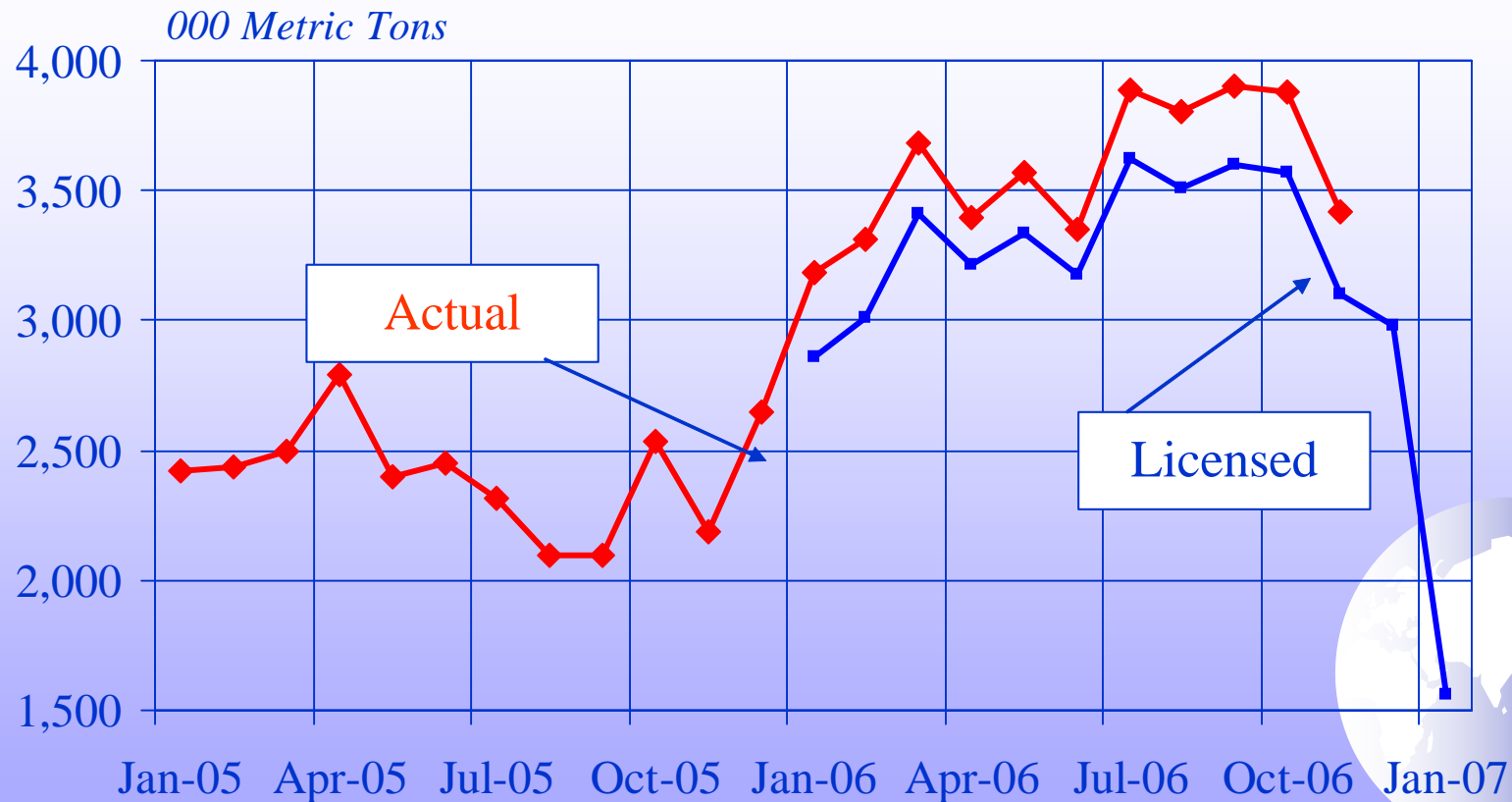
The U.S. spot hot band pricing premium against both European spot export prices and Chinese domestic prices has been almost completely eroded through late January.



## U.S. STEEL IMPORTS MOVING DOWN

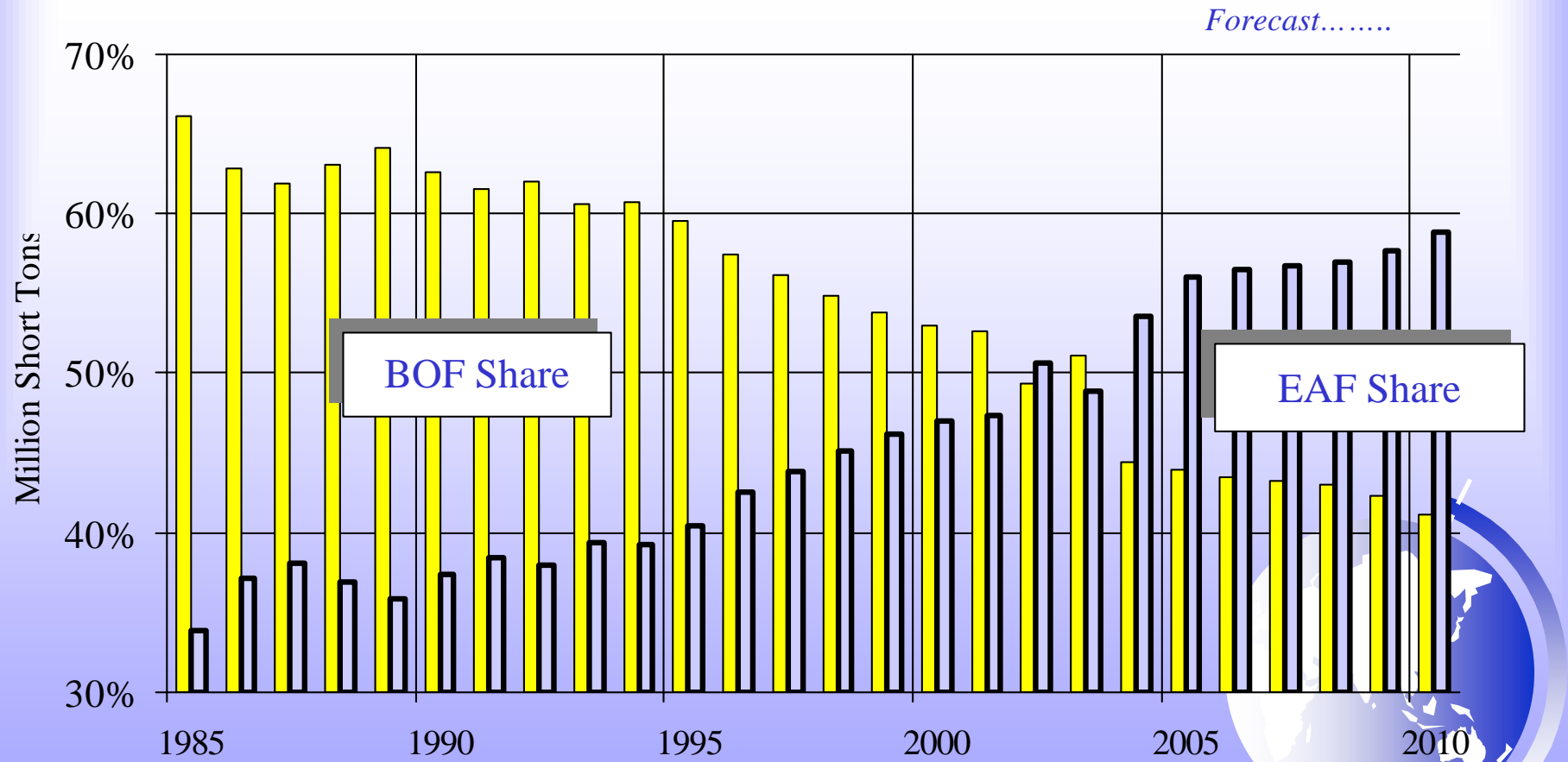
The latest data indicate a significant drop in imports for November which we think will likely continue into 2007, based on license data through January.

The largest declines are from Russia and Brazil, while China is finally showing a decline as well, albeit modest.



## STEEL FURNACE SHARE - FORECAST

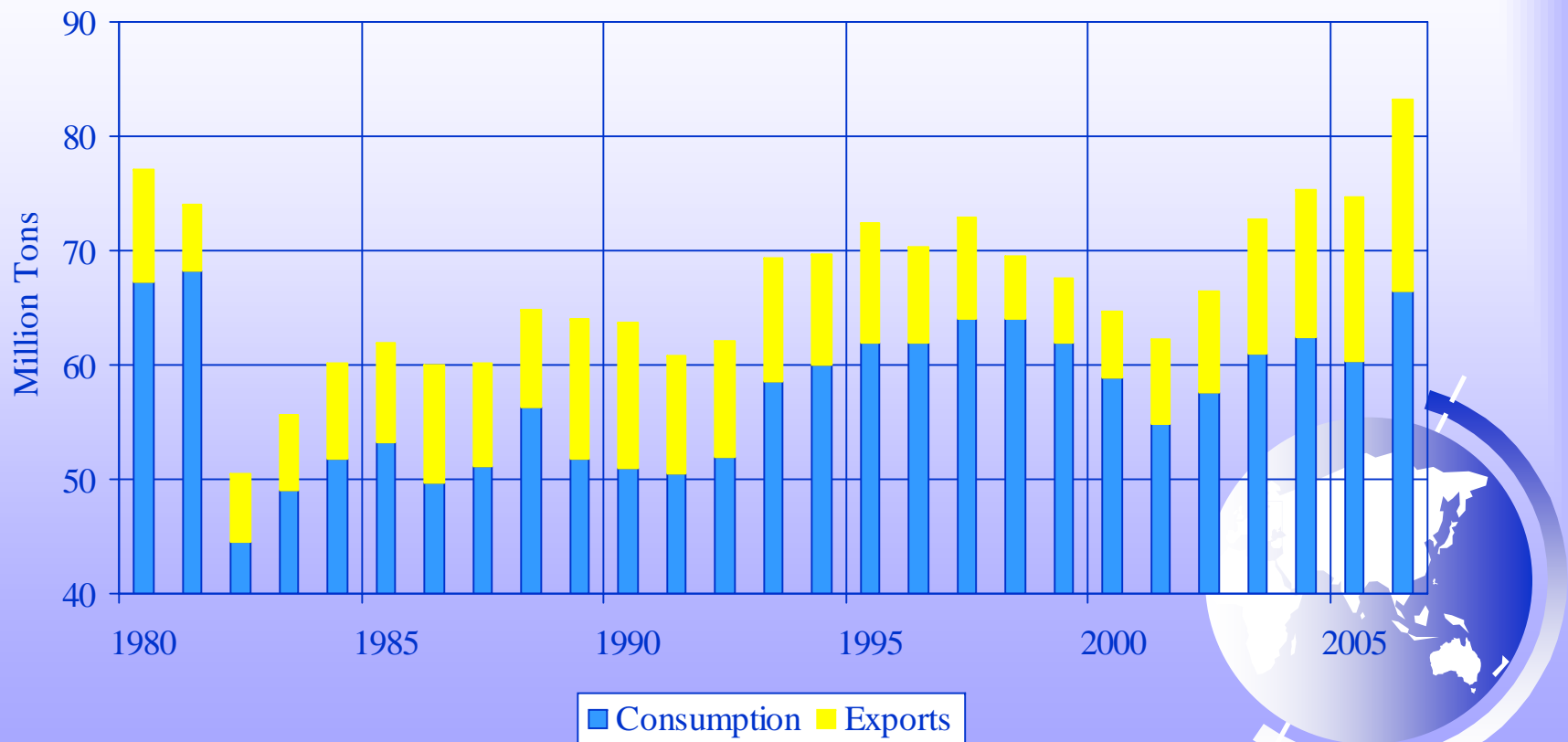
We call for EAF share to continue building toward the 60% level through 2010.  
The initial cross-over point occurred in 2002.



*BOF share includes open hearth share from 1985 through 1991*

## DEMAND ON U.S. SCRAP POOL (CONSUMPTION + EXPORTS)

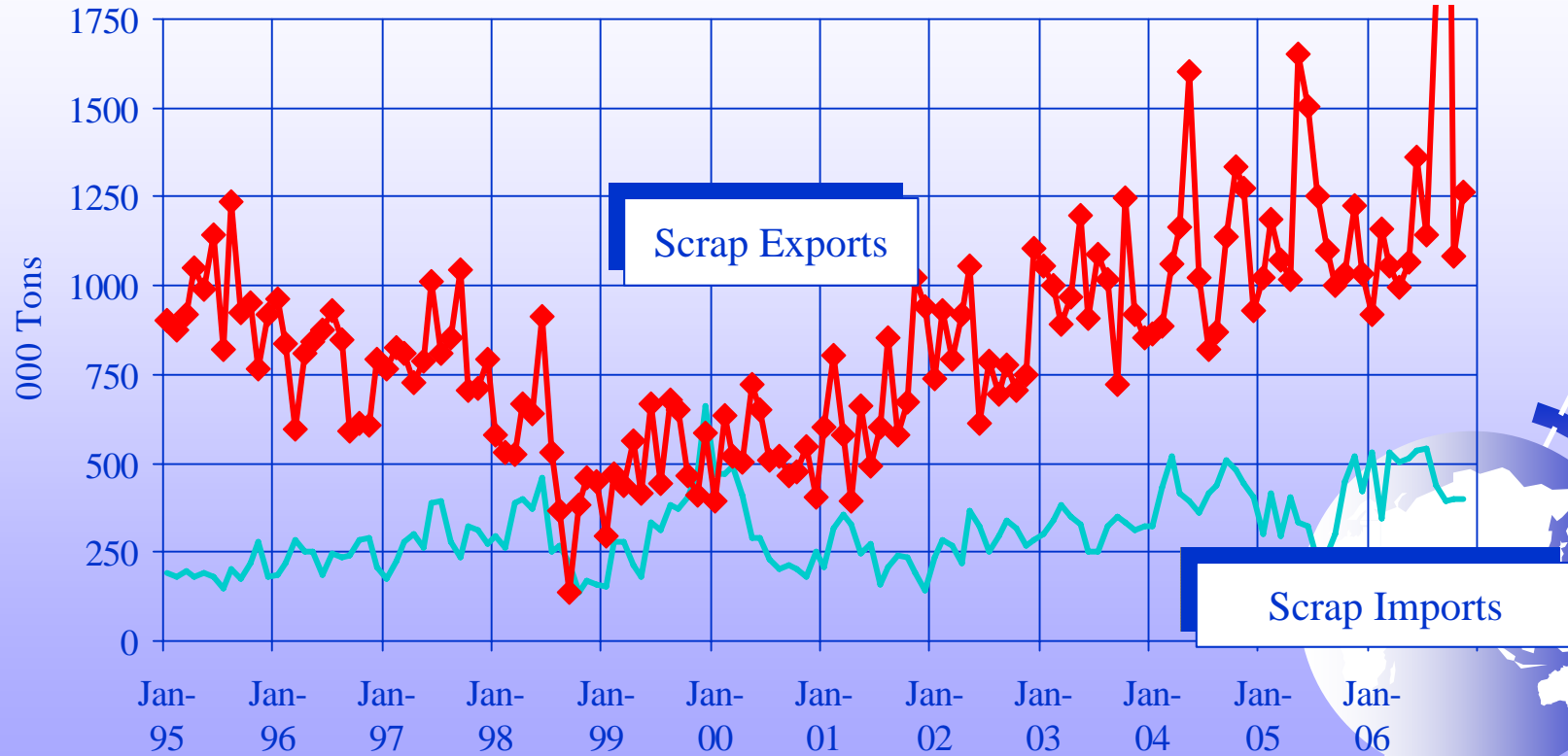
Demand for U.S. scrap (domestic and export) looks to be up nearly 12% or 8.5 MST to 83 MST in 2006, including a 10% (6.0 MST) gain in domestic demand and an 18% (2.5 MST) gain in export-related demand.



$((BOF*1.15)+(EAF*1.125))*0.9$

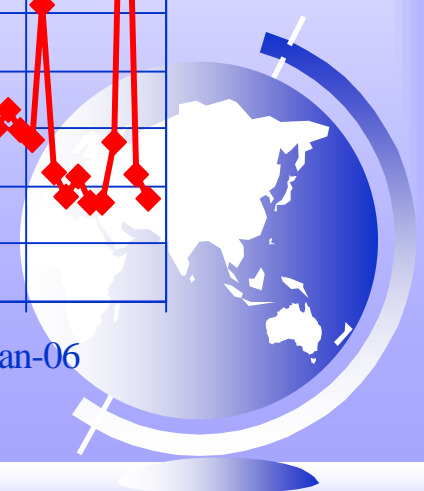
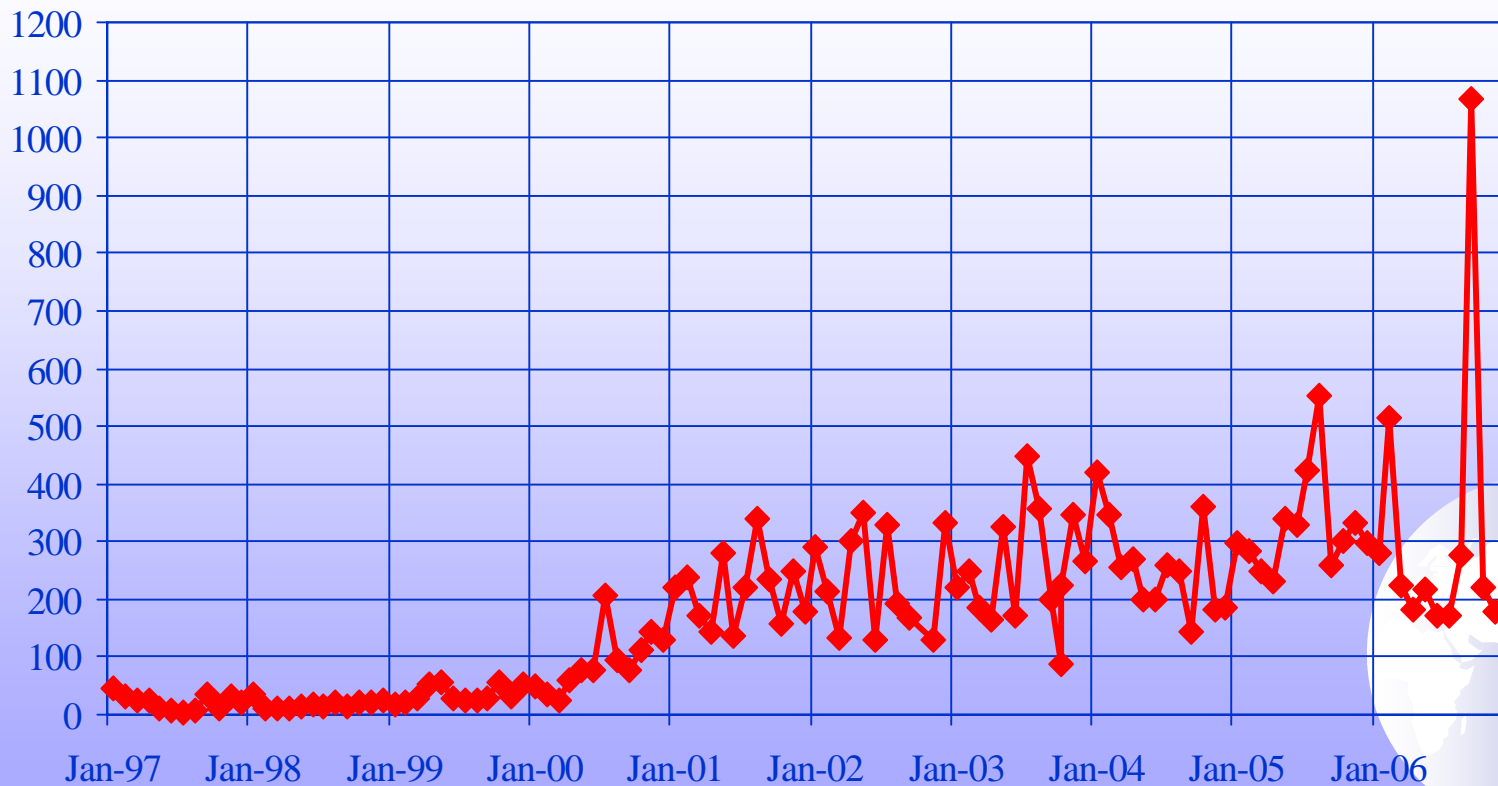
## MONTHLY U.S. STEEL SCRAP TRADE

Through September, scrap exports were up 17.7% thanks to a huge surge in Chinese imports in September (four times the normal rate), while imports were up 52.8%. After tightening in 1999-00, net scrap exports have recovered considerably, including a 19.8% gain in exports in 2005 to 14.3 MT combined with a 17.6% decline in imports to 4.2 MT, with 2005 export declines in China and Korea offset by gains in Canada, Turkey and India.



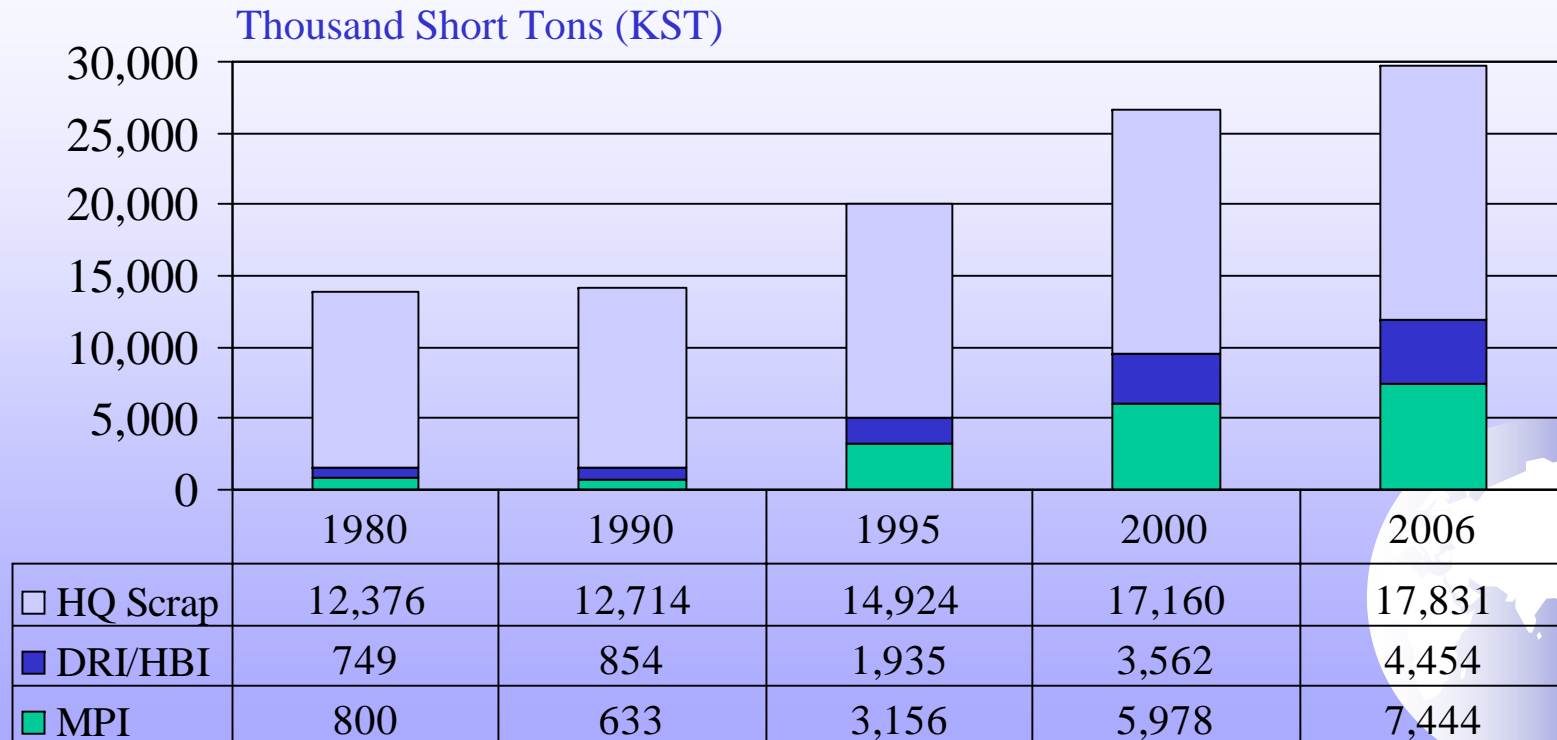
## U.S. SCRAP EXPORTS TO CHINA

U.S. exports of scrap to China were up 45% through September following a huge reported surge for the latest month. Chinese scrap imports had been down significantly up to that point. Earlier, exports increased 11.6% in 2005 and 25% in 2004.



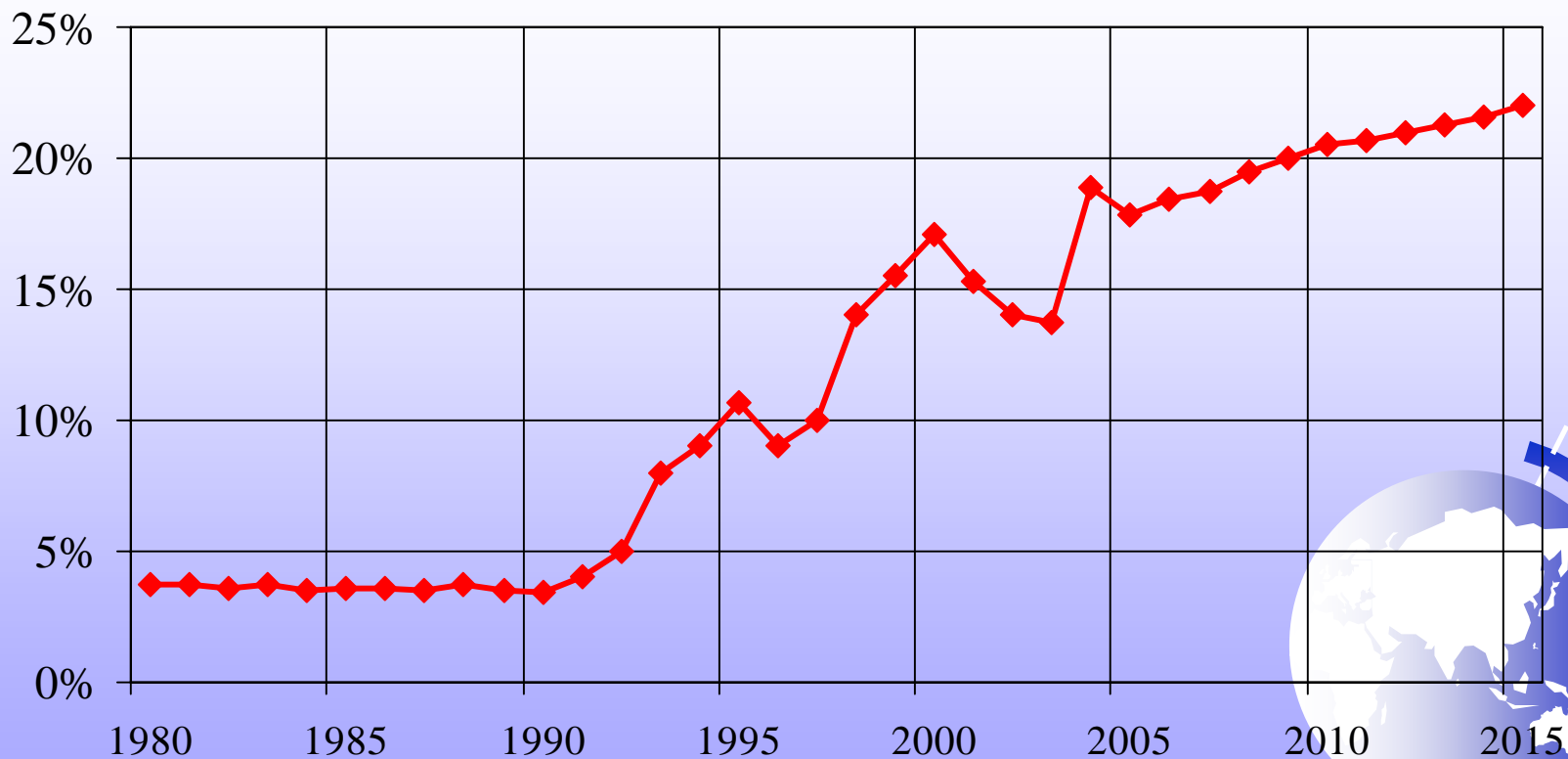
## U.S. HIGH QUALITY METALLICS SUMMARY

U.S. use of high quality metallics has surged over 100%, from a relatively steady level of 12-15 MST from 1980 through 1990, to a projected 30 MST in 2006 primarily as a result of the advent of thin slab casting minimills in 1989/'90.



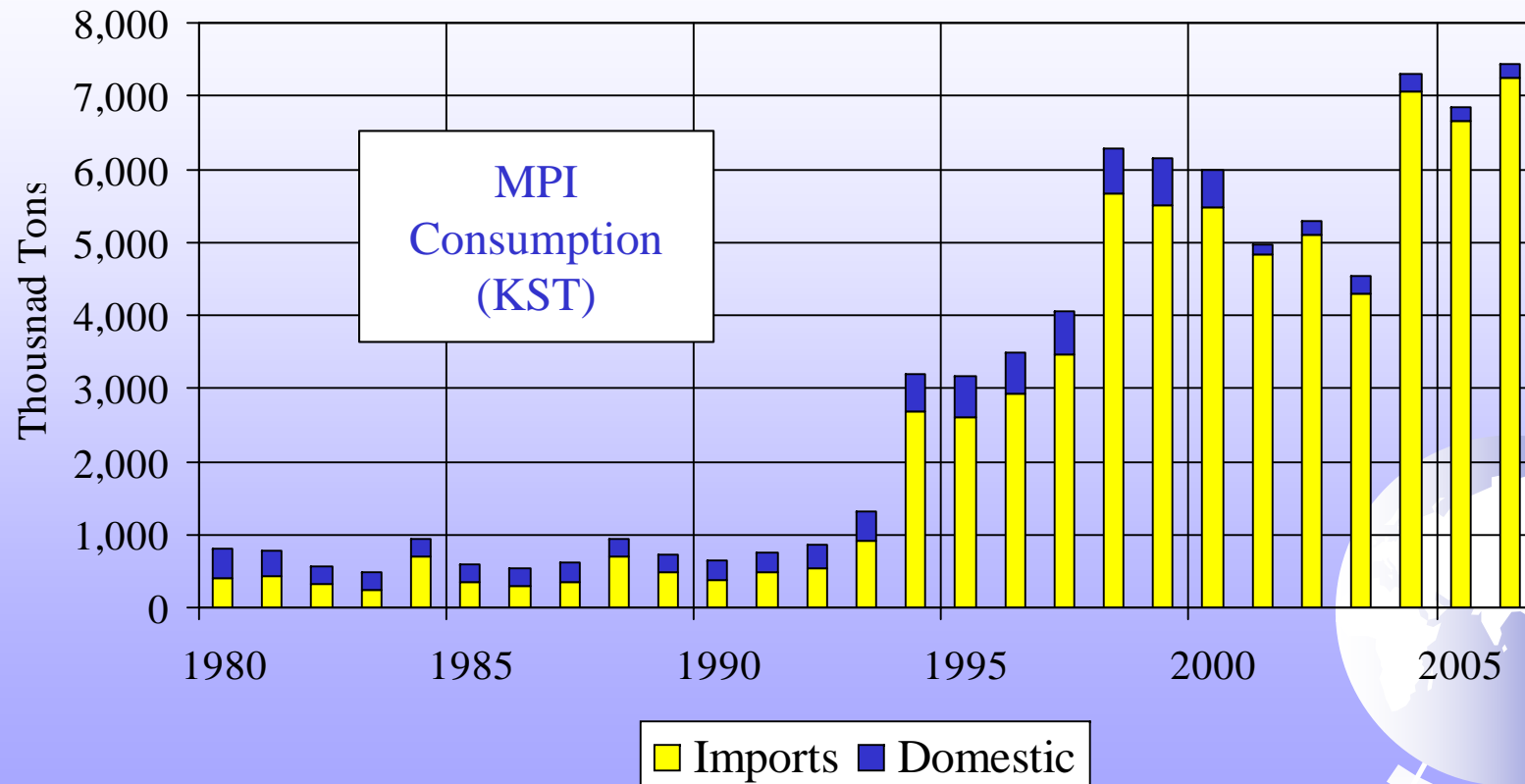
## INTENSITY OF ALTERNATIVE IRON USE

The intensity of use of alternative irons as a percent of EAF production in the U.S. has gone from less than 5% pre-1990 to over 18% in 2006, and a projected 22% by 2015.



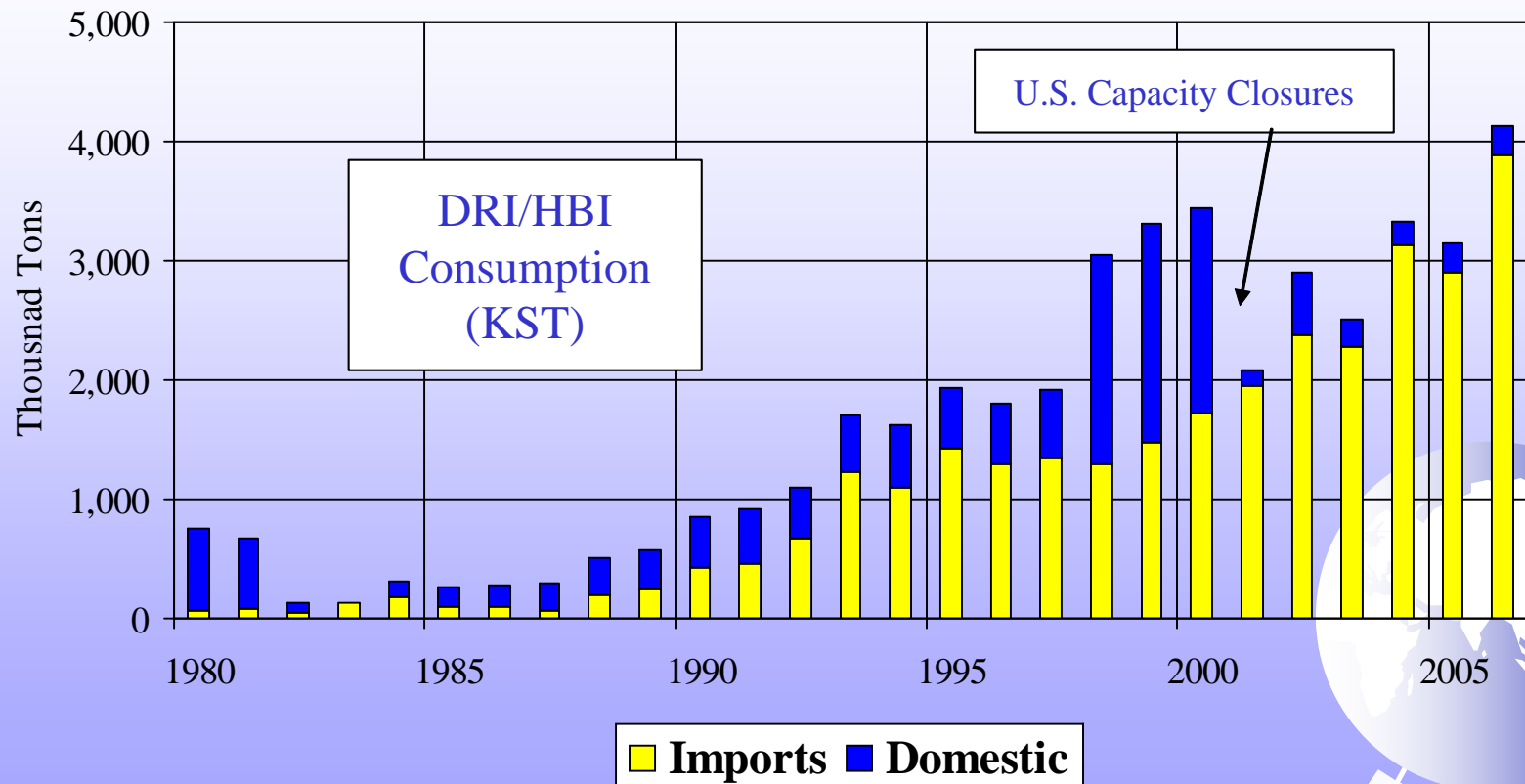
## U.S. MPI CONSUMPTION TRENDS

MPI consumption is expected to grow 8-9% in 2006 to 7.4 MST, following a decline of 6.2% in 2005. In 2006 imports, Brazil will account for 65%, Russia (Tula) 27%, with S. Africa, Ukraine and Trinidad accounting for a combined 8%. Domestic pig casting producers accounted for only about 200 KST or less than 3% of demand.

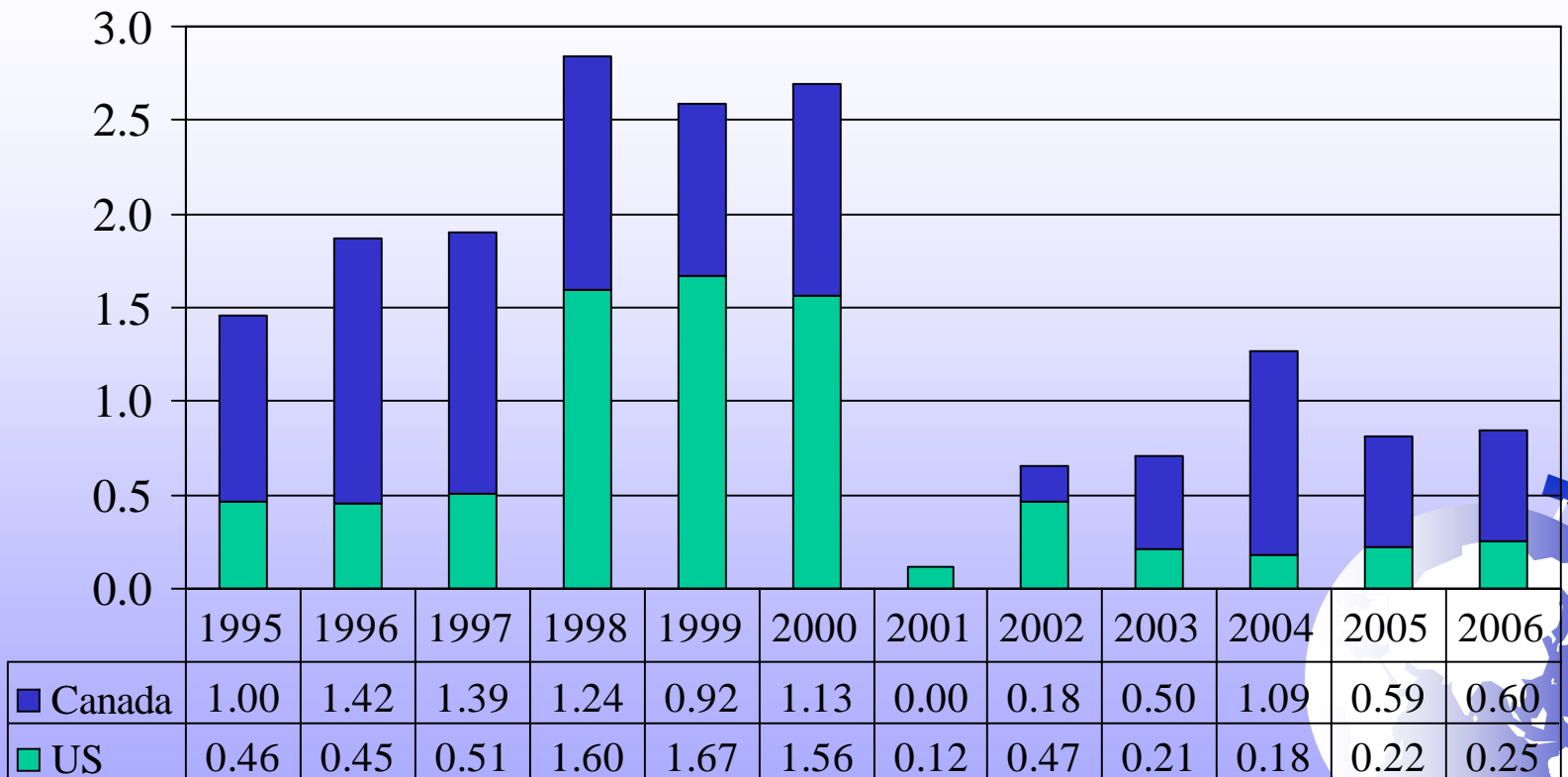


## U.S. DRI-HBI CONSUMPTION TRENDS

DRI/HBI consumption looks set to grow 33% in 2006 to a record 4.5 MST. Of 2006 DRI/HBI imports, 46% were from Venezuela, 29% from Canada (Mittal-Sidbec), 14% from Brazil, 7% from Trinidad, and 4% from all other.



## U.S. AND CANADA DRI PRODUCTION (Million Metric Tonnes)



*Current producers are Mittal-Sidbec in Canada and Mittal-Georgetown in U.S.*

## SUPPLY DEVELOPMENTS

Overview of estimated 1.3 MST of alternative iron produced in U.S. and Canada in 2006

- There are only two remaining producers of DRI in the U.S. and Canada, and both are owned and operated by Mittal which will likely produce about 850 KMT of DRI combined in 2006:
  - Mittal-Sidbec in Quebec with two modules with a combined capacity of 1.2 MMT producing between 600 KMT and 1,000 KMT in recent years. The steel plant at this site makes just under 2.0 MMT of flat rolled (slab and HR sheet) and long steel products (bars and rod)
  - Mittal-Georgetown, with a capacity of 500 KMT, producing 200 KMT to 250 KMT in recent years. The EAF-based steel plant at this site makes up to 850 KMT of wire rod.
- Steel Dynamics produces alternative iron product (hot briquetted iron and liquid pig iron) from its Iron Dynamics operation at the projected estimated rate of about 270 KST in 2006 (capacity is 350 KMT). IDI was first started in 1999 and was idled from July 2001 to late 2003 due to technical and operating difficulties.
- Finally, we estimate that domestic MPI producers have capacity of about 400 KMT and will make about 200 KST of merchant pig iron in 2006. Integrated steel plants with pig casters include: Mittal-Sparrows Pt., Mittal-Inland, AK Steel-Ashland, and U.S. Steel-Gary.



## SUPPLY DEVELOPMENTS

### Nucor alternative iron developments

- Nucor has no domestic capacity to produce alternative iron. It has a stated ambition of self-supplying 25% to 30% or 6 MMT to 8 MMT of its alternative iron requirements.
- To that end, it has three related projects on line or under development outside of the U.S. that will ultimately provide it with 2.5 MMT of alternative iron per year – about a third of the way to its stated targeted self-sufficiency goal:
  - A 400 KMT pig iron plant – Ferro Gusa Carajas (FGC) in Brazil on a joint venture basis with CVRD
  - Nucor holds a 25% (200 KMT) interest in the 800 KMT (expandable to 1.5 MMT) HiSmelt plant in Western Australia with Australian iron ore producer RTZ (Rio Tinto) holding 60%, Mitsubishi 10% and Shougang Group 5%.
  - The purchase and relocation of Nu-Iron (formerly American Iron Reduction) from Convent, Louisiana to Trinidad with 1.8 -2.2 KMT of DRI capacity.



## SUPPLY DEVELOPMENTS

### Nucor Brazilian Pig Iron

- The Brazilian MPI plant - Ferro Gusa Carajas (FGC) - has two, 200 KMT furnaces using eucalyptus trees as the source of energy:
  - The No.1 unit started up in September 2005. It produced 10 KMT in January 2006 and 13 KMT by June 2006.
  - The No.2 furnace came on line in July 2006.
  - An initial shipment of 69 KMT was sent to Nucor via the port of New Orleans in early July
  - Nucor takes 100% of the operation's output.
- CVRD owns 78% and Nucor 22%
- There have been denied rumors that the CVRD partnership will be dissolved and that one partner will sell out. Nucor has denied these rumors through October 2006. The plant experienced a fire in 2005 and some other, now-resolved technical start-up difficulties.



## SUPPLY DEVELOPMENTS

### Nucor HiSmelt

- Nucor owns 25% (200 KMT) of the first commercial-scale, 800 KMT, HiSmelt plant in Kwinana, Western Australia. RTZ owns 60% , Mitsubishi owns 10%, and China's Shougang Group owns the remaining 5%
- An initial shipment of 36 KMT was sent to Nucor's Charlotte, SC plant and arrived in August 2006.
- The process features direct processing of iron ore fines without the need for agglomeration, direct processing of coal without the need to make coke and the possibility of using lower-quality coals,
- Nucor plans to participate in the full expansion of this plant from 800 KMT to 1,500 KMT in the next two years as well as with several replicated plants, possibly in different parts of the world.
- RTZ is now studying the feasibility of another 800 KMT plant in Brazil, expandable to 1,500 KMT.



## SUPPLY DEVELOPMENTS

### Nucor Nu-Iron (American Iron Reduction)

- Nucor acquired the bankrupt and shuttered American Iron Reduction plant in December 2003 and renamed it Nu-Iron.
- The plant, formerly owned jointly by Birmingham Steel and Georgetown Steel (both liquidated in the early-2000's, with assets acquired by Nucor and Mittal, respectively) had been idled since September 1999.
- Nucor dismantled the plant and moved it from Convent, LA to Trinidad in 2005 and 2006 to take advantage of low-cost, abundant natural gas reserves.
- The plant started operations and shipments in the fourth quarter of 2006.
- The plant has the rated capacity for 1.8 MMT of DRI (upgraded from the original 1.4 MMT). Nucor (and Midrex) believe the actual attained capacity could reach somewhere in the 2.0 to 2.4 MMT range.



## **NEW SOURCES OF DEMAND**

There are several green- and brown-field EAF-based steel mill projects coming on line or planned in the next one to five years with a combined 3,650 KST of HQ metallics demand at full capacity.

- SeverCorr – Columbus, MS (Carbon Flat Rolled)
  - Phase I 2007 = 1,400 KST Shipments, 1,600 KST Melt, 1,000 KST HQ Req.
  - Phase II 2009 = 2,400 KST Shipments, 2,700 KST Melt, 1,700 KST HQ Req.
- Nucor – Memphis, TN (SBQ Bar, Tube Rounds) 2007-'08
  - 850 KST Shipment
  - 1,000 KST Melt
  - 250 KST HQ Requirements
- Steel Dynamics: Additional 300 KST Shipments, 350 KST Melt, and 225 KST HQ Requirements (2006-'07)
- Minnesota Steel – Nashwauk, MN (Merchant Slab)
  - Phase I 2009 = 1,400 KST Shipments, 1,600 KST Crude, 1,000 KST HQ Req.
  - Phase II 2012 = 2,400 KST Shipments, 2,700 KST Crude, 1,700 KST HQ Req.

