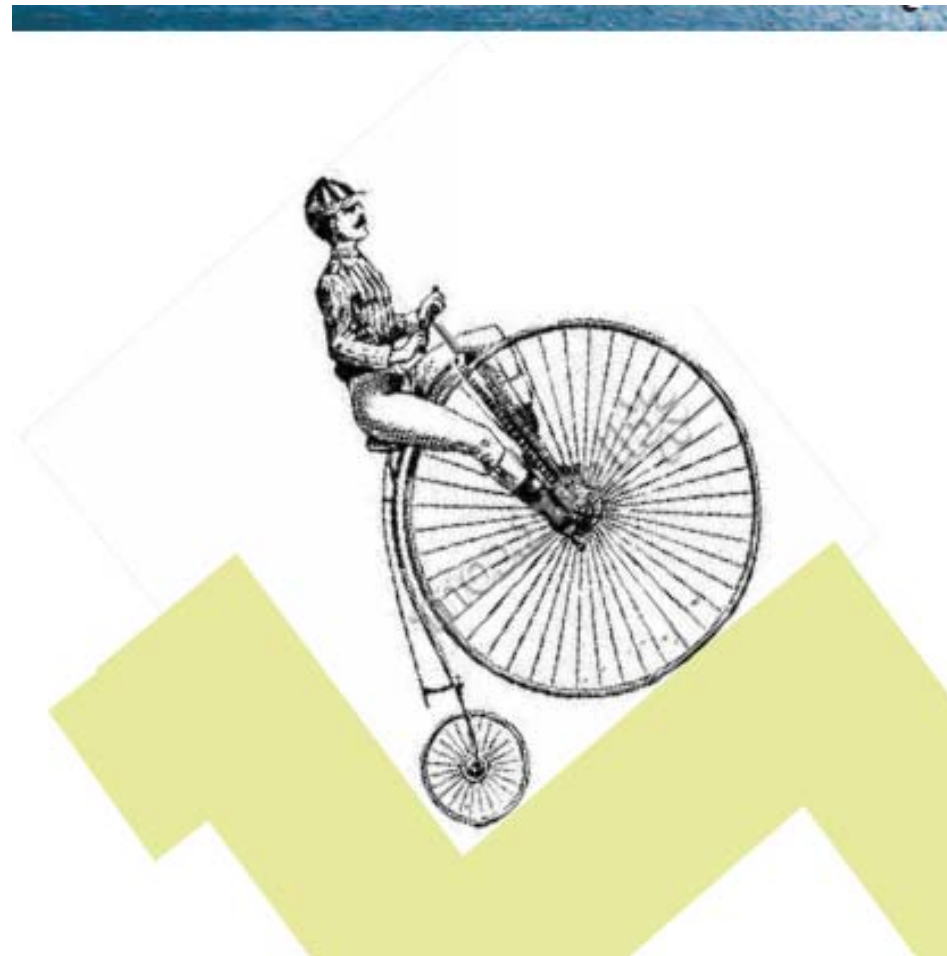


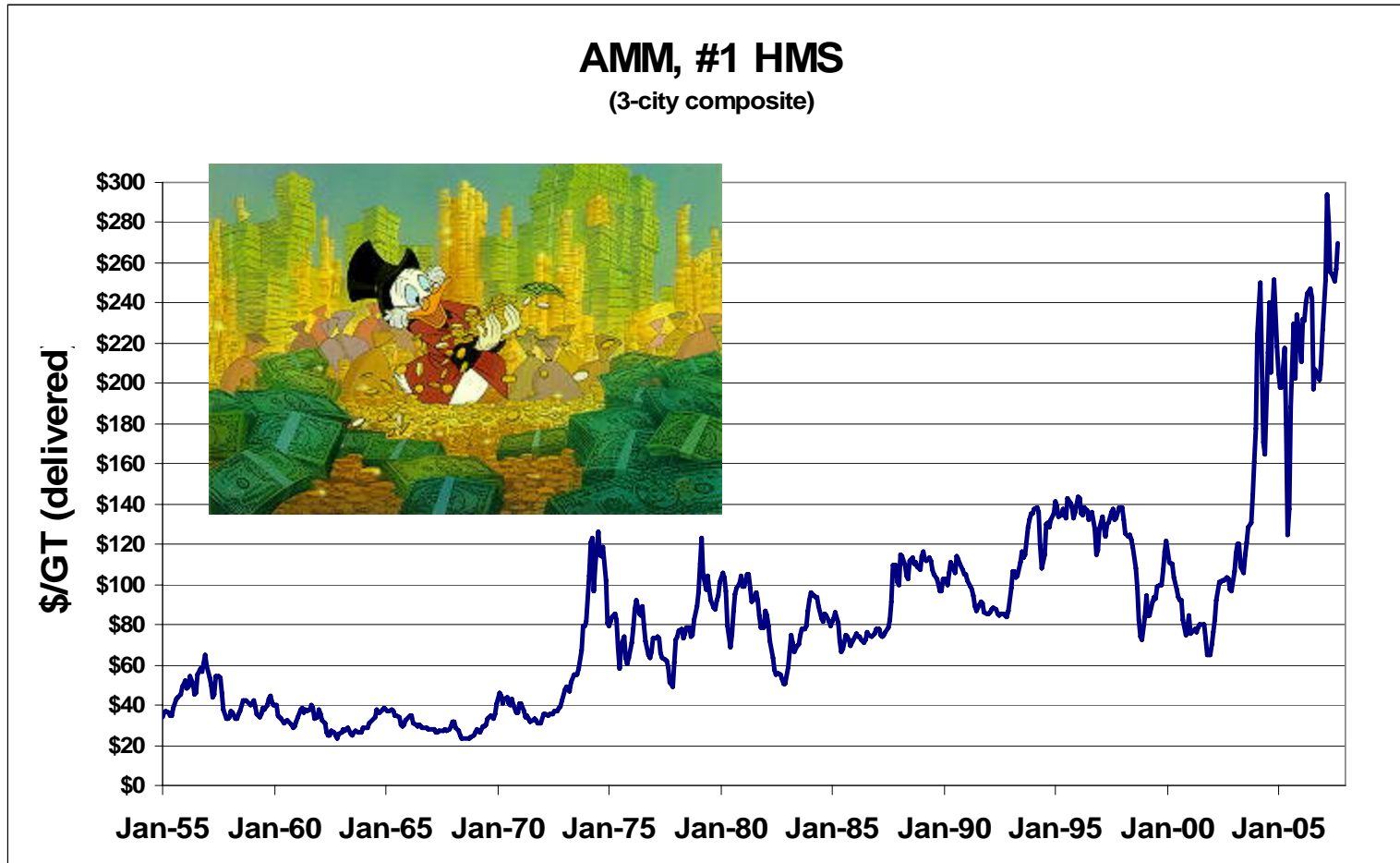
Observations regarding the value of Iron

A lot about the past,
A little about the present,
A glimpse into the crystal ball about the future,
or....

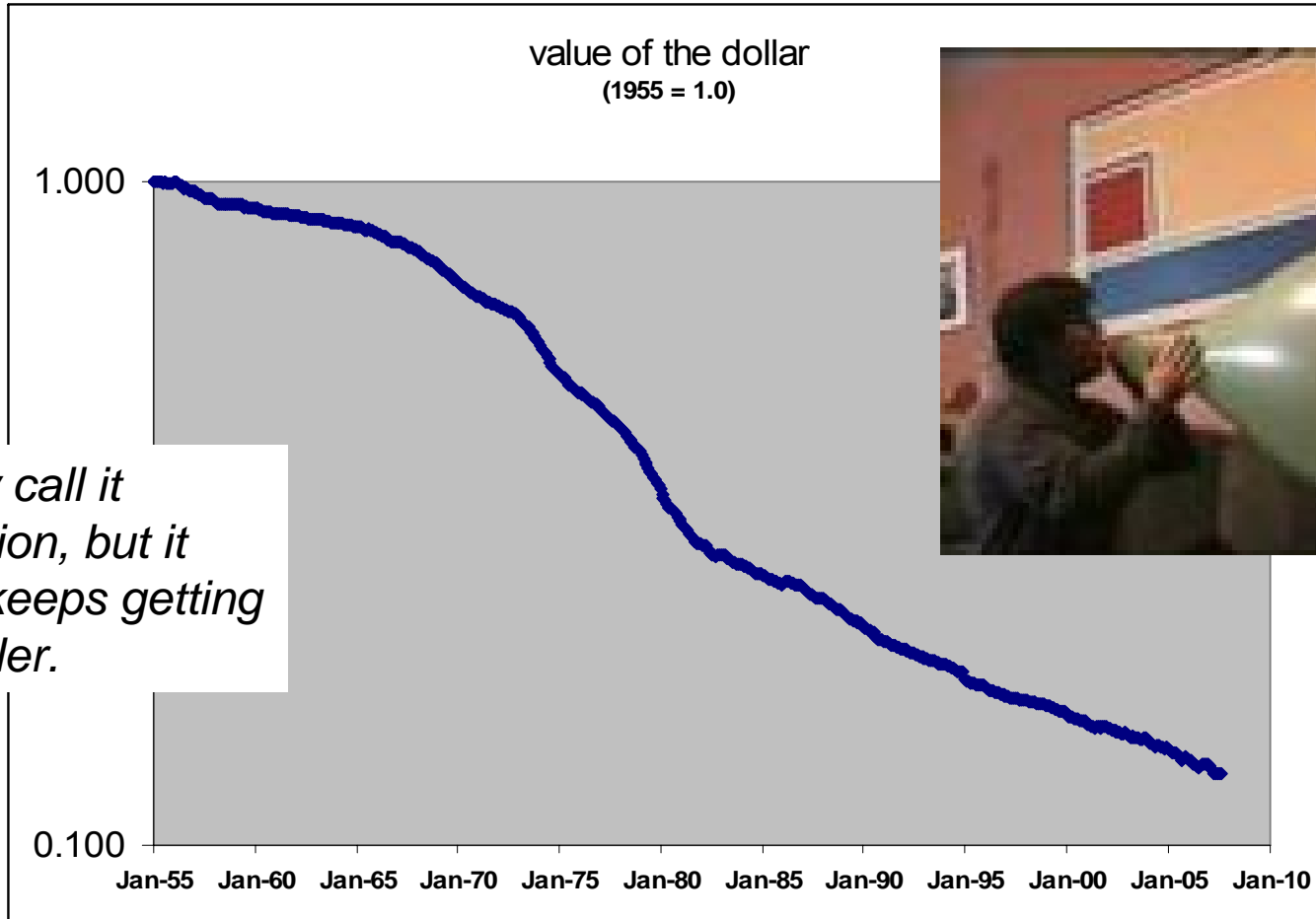
Riding the Supercycle



We should ALL be RICH !!!



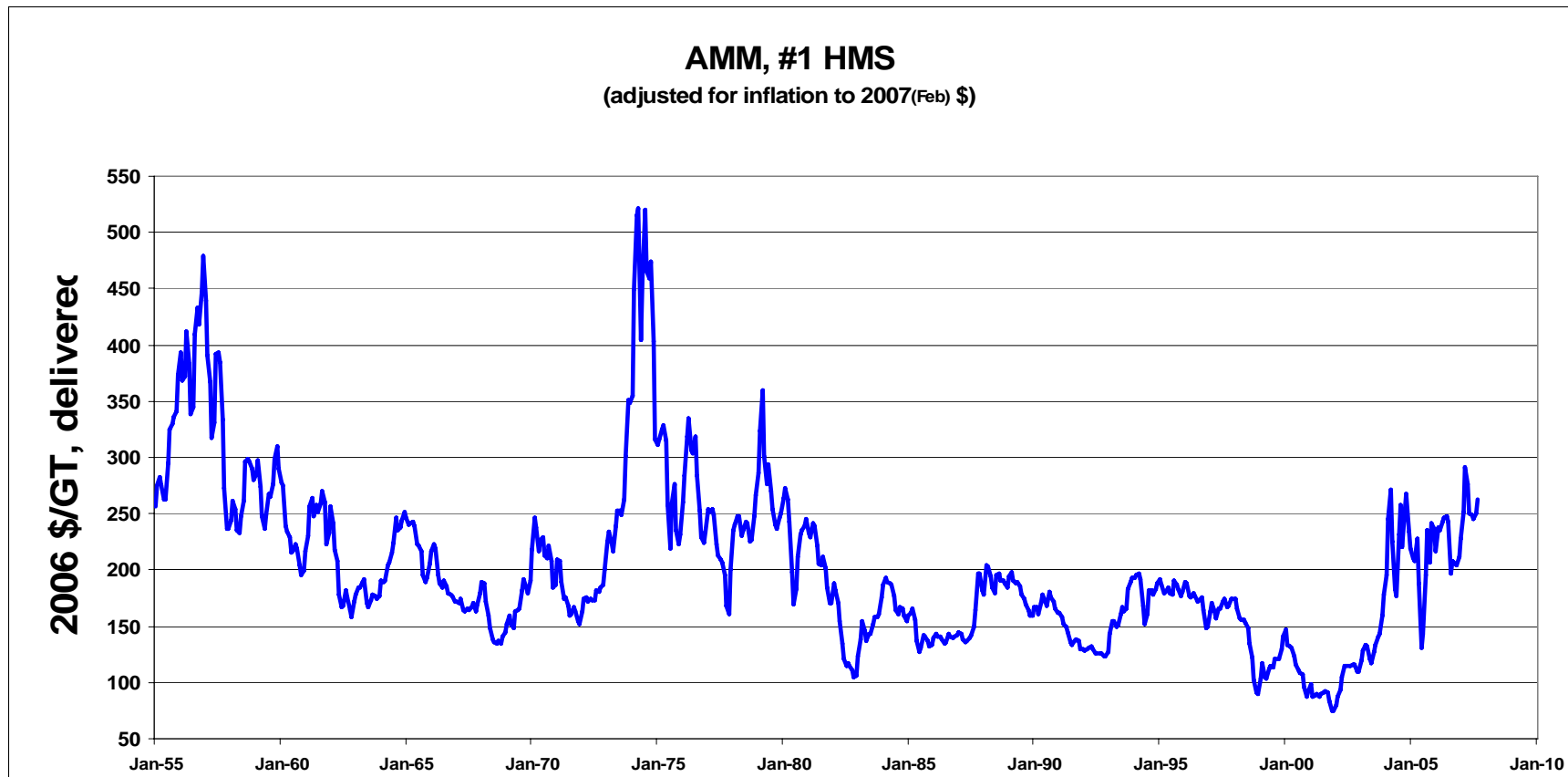
But, there's this thing called inflation.



They call it inflation, but it just keeps getting smaller.



And, after one accounts for the decline in the value of the dollar

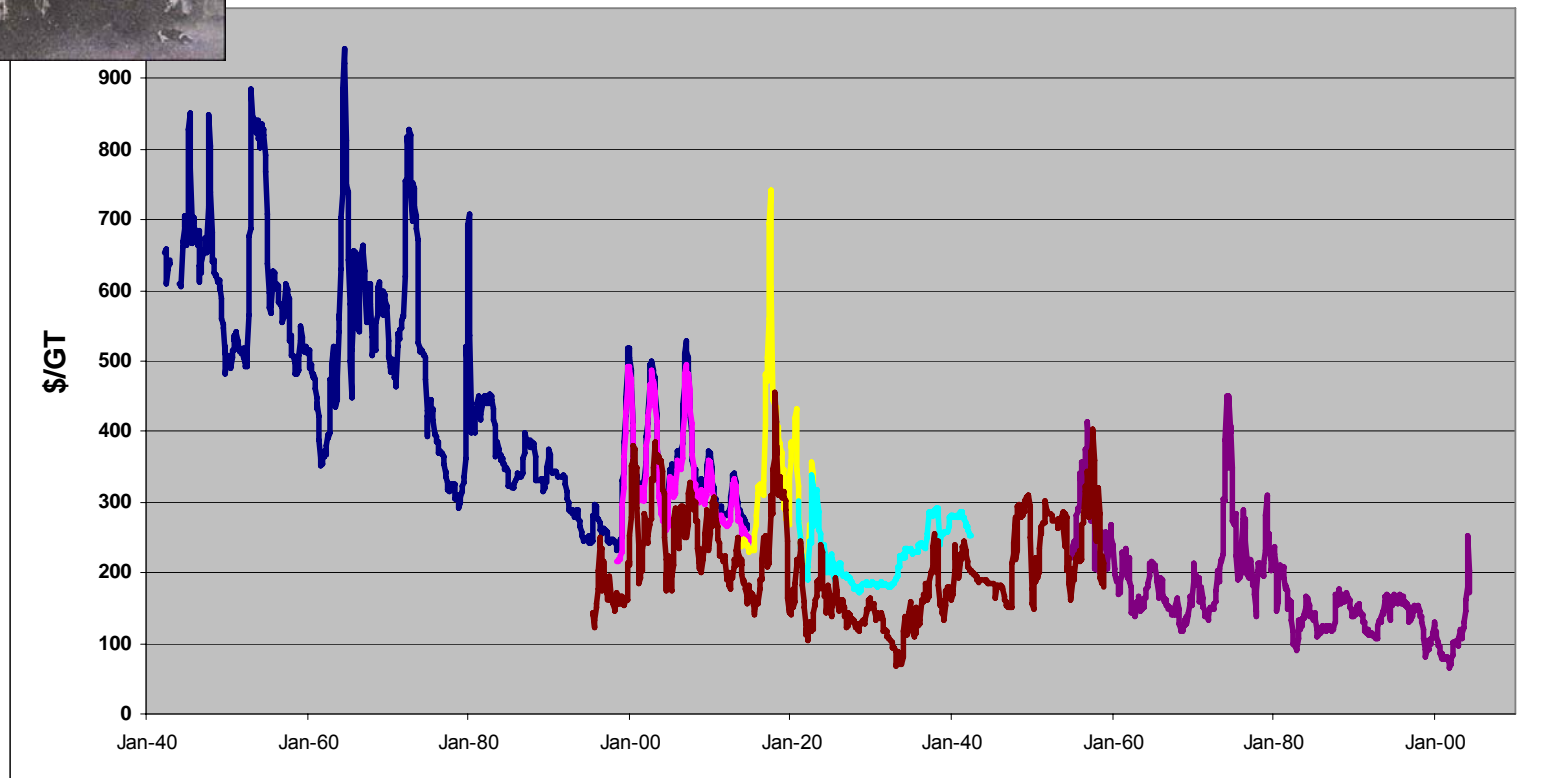


There's really not much change, except for the three big peaks.

Now, let's look even further back in time

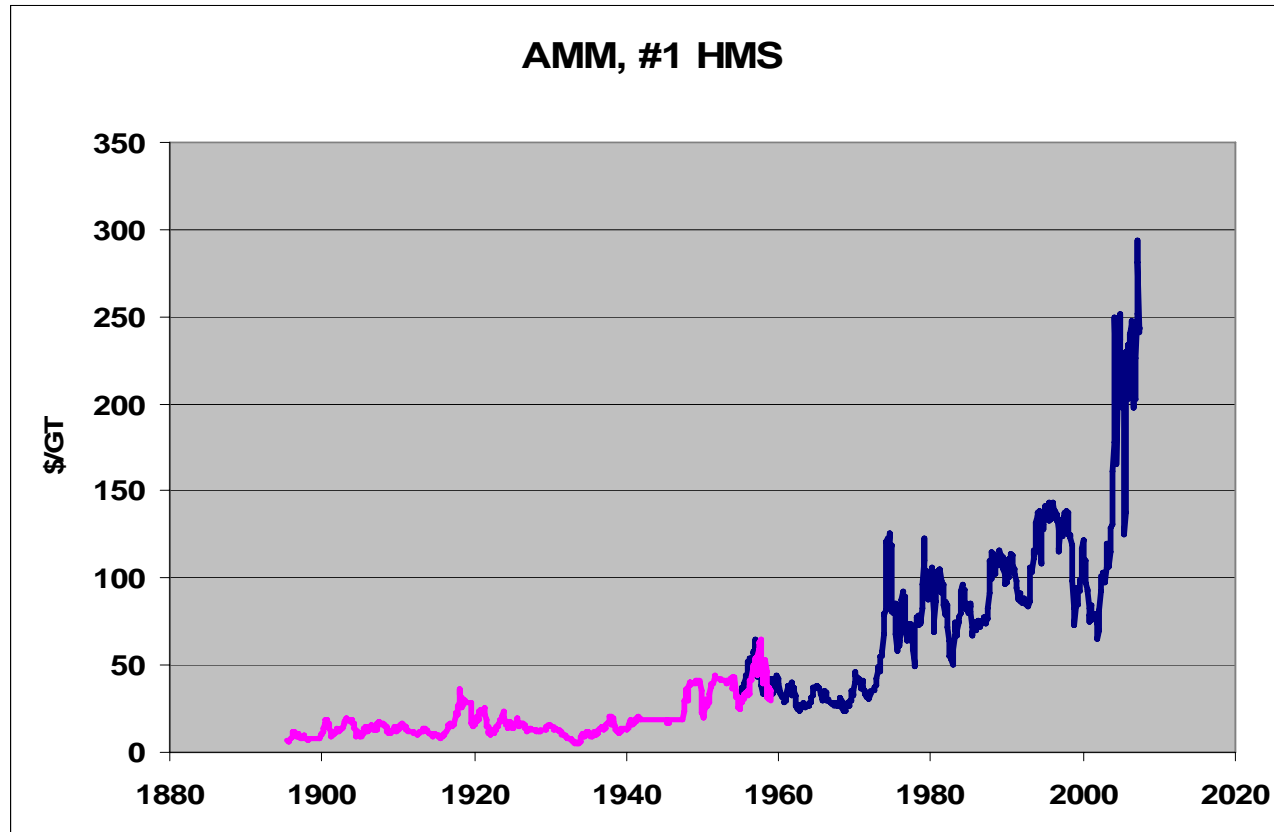


Price of iron in the U.S., 1842 to present
(corrected for inflation)



OK. 1842 may be a little bit too far. Let's start where the graph turns approximately level, about 1895.

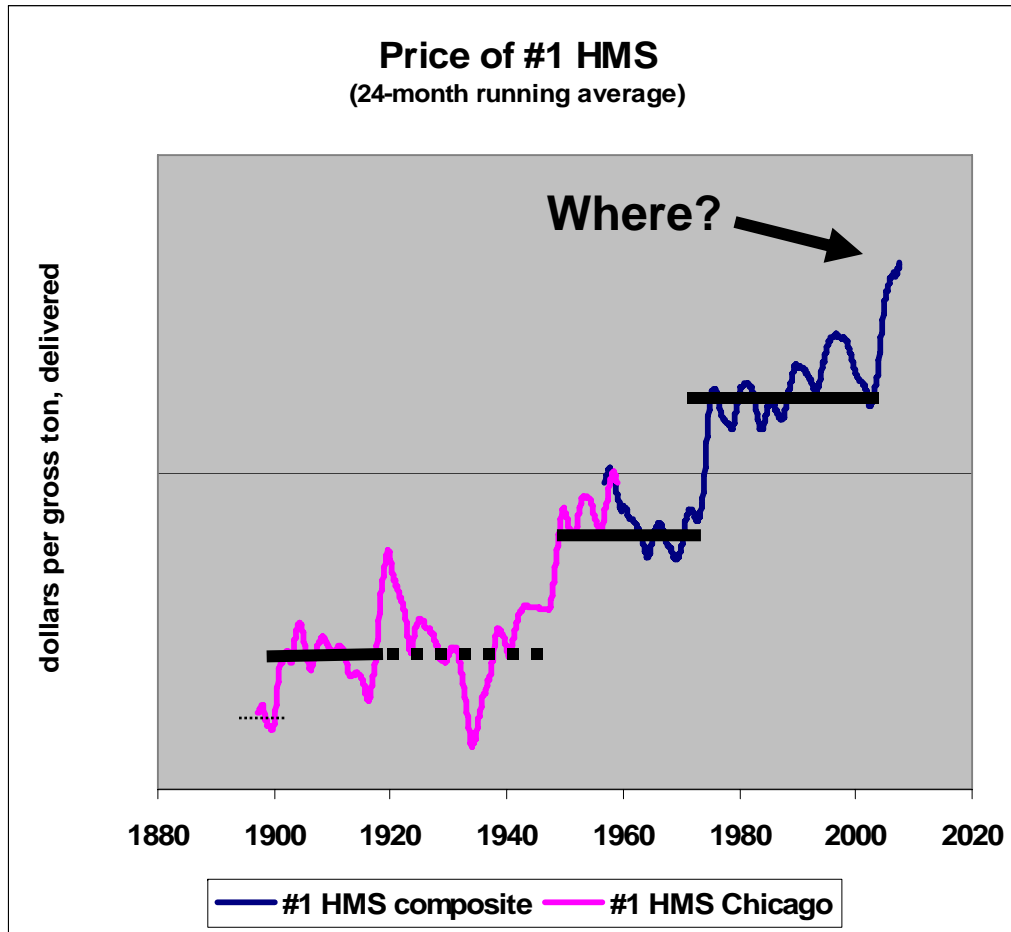
First, let's look at nominal dollars,
NOT corrected for inflation.



There appear to be a series of 'level' plateaus !!!!

Now, let's

- 1 ...smooth the data by doing a running average of 24-months, and
- 2 ... put the graph on a logarithmic axis



- The point is that the price of iron, as well as other metals, and many other commodities, responds to economic “Supercycles”.
- Every few decades, say 20 to 40 years, a surge in economic growth causes demand to outstrip supply. The remarkably high prices that ensue initiate construction of massive new amounts of supply. Then supply is greater than demand, and pricing erodes for the remainder of the cycle. **BUT NOT IN NOMINAL CURRENCY.** Pricing erodes via inflation.

Let's add one more commodity to the graph.

Iron ore price compared to scrap price

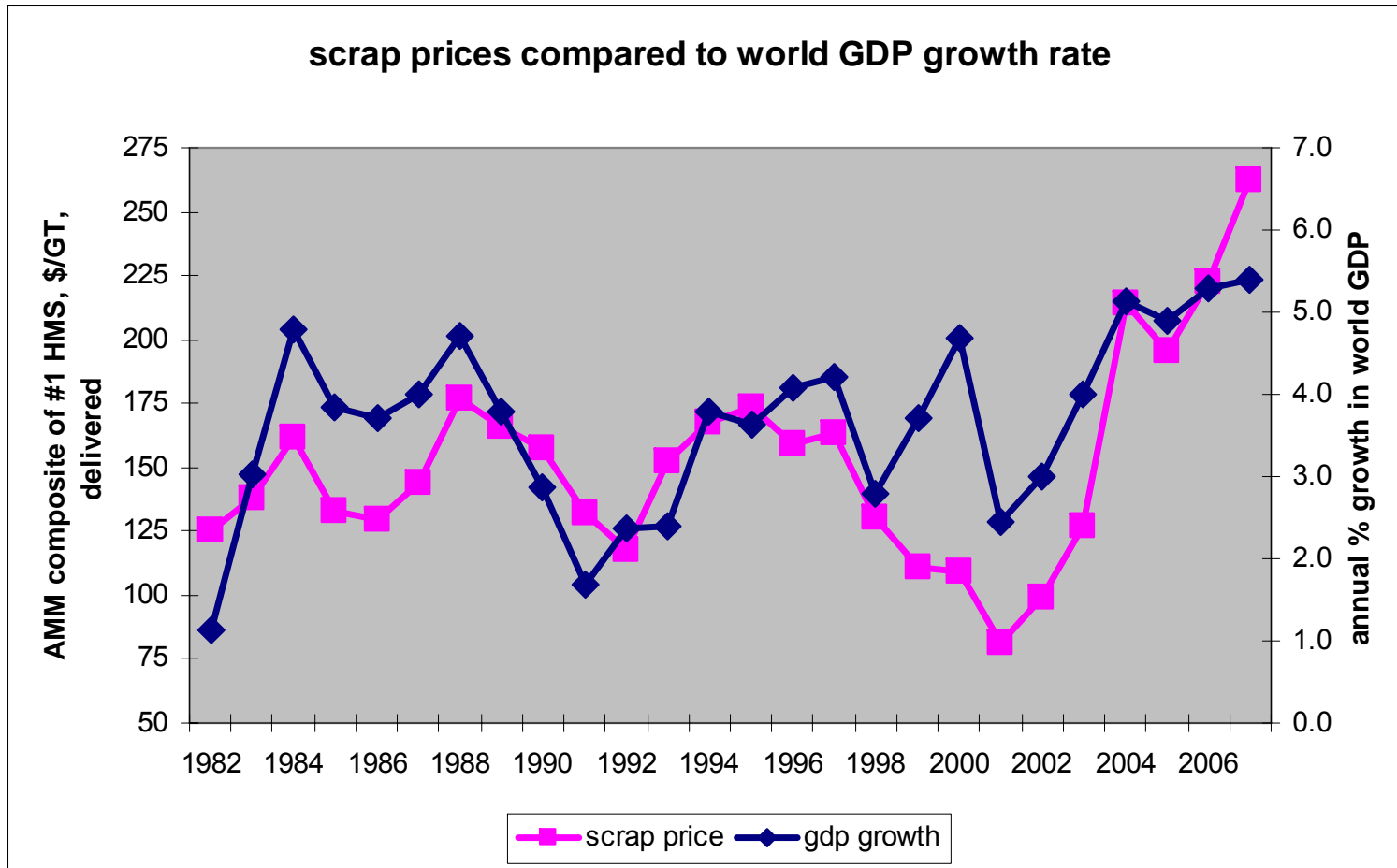


- **Enough of the past.**
- **Where are we now?**

We're in Madrid



Scrap prices tend to correlate with economic growth



So, where is the growth, today?

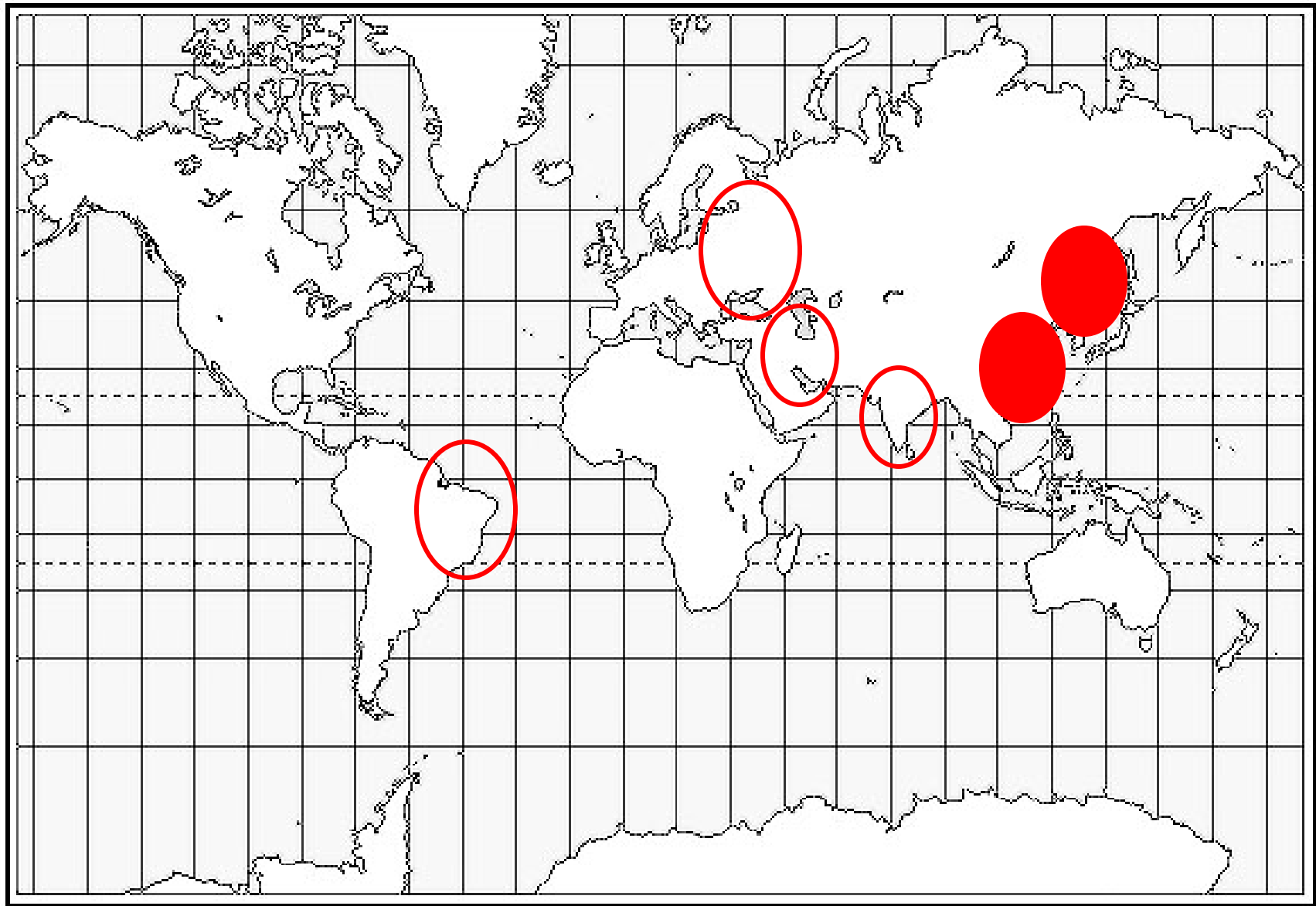
Everyone, in unison please

“BRICCCCC

..... CCCC”



BRICCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCC
and the Gulf too



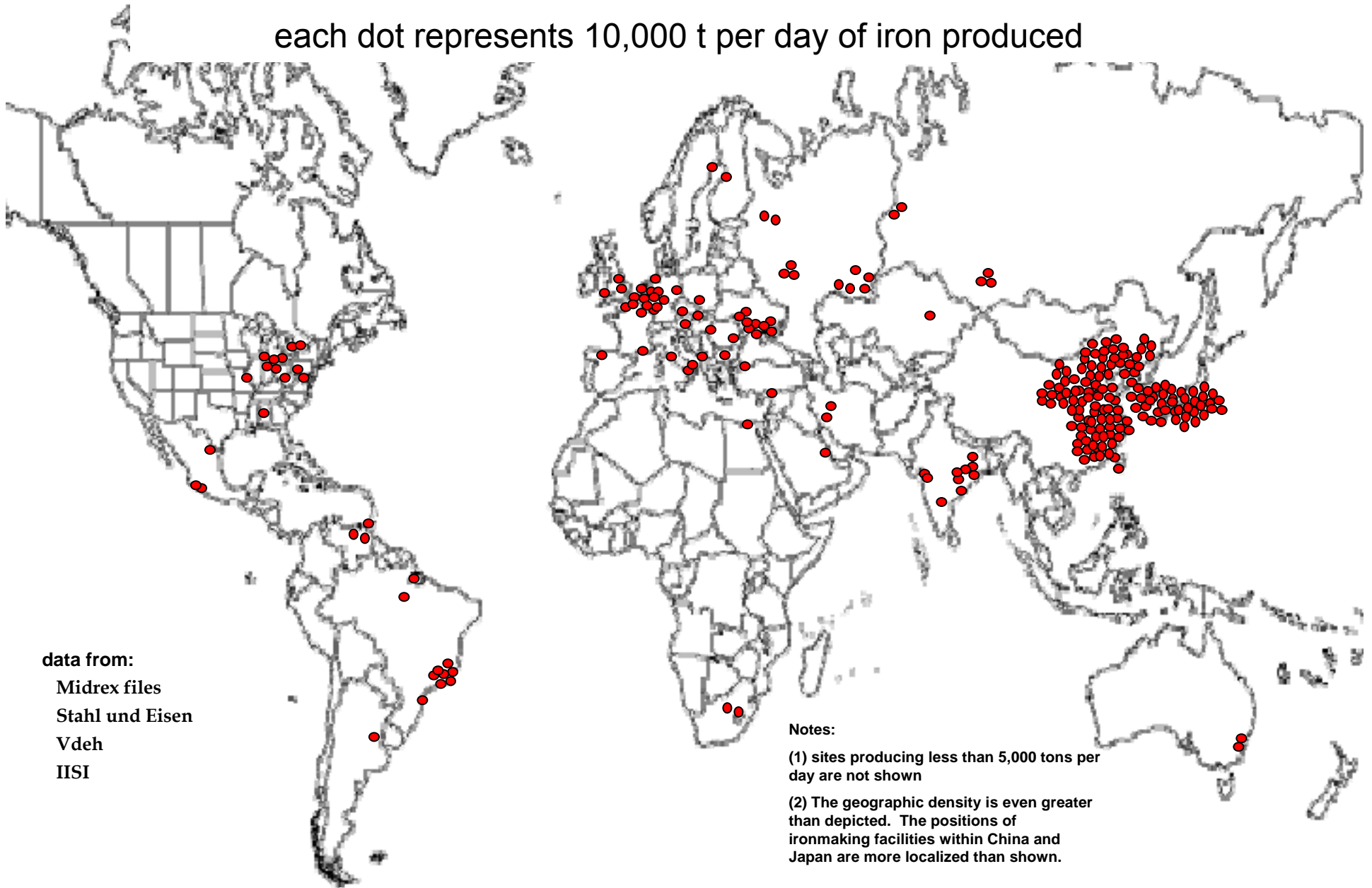
BRIC

– China

- What's wrong with the next slide?

Where the ironmaking is located.

each dot represents 10,000 t per day of iron produced



data from:
Midrex files
Stahl und Eisen
Vdeh
IISI

Notes:
(1) sites producing less than 5,000 tons per day are not shown
(2) The geographic density is even greater than depicted. The positions of ironmaking facilities within China and Japan are more localized than shown.

BRIC

- Russia

– The following two slides are ‘borrowed’.

**I STOLE THIS SLIDE WHILE
I WAS IN RUSSIA LAST NOVEMBER**
Steel output to grow in Russia

Launch of new production facilities in Russia in 2006-2010 (existing companies)

Company	Equipment	Capacity increase	Putting into operation
MMK	No.2 EAF instead of tandem furnace	0.75mtpy	2007
Uralsteel	Electric steelmaking complex	1mtpy	2008
OEMK	Electric furnace, ladle furnace	0.5mtpy	2009
Chelyabinsk Tube Rolling Plant	Electric steelmaking complex, flat products	1mtpy	2009
NTMK	Converter plant reconstruction	0.8mtpy	2007-2009
Gurjevsk Metallurgical Works	Electric furnace	0.5mtpy	2010
Yartsevo Continuous Cast Mill	Electric steelmaking complex, long products	0.22mtpy	2007
OMK (Vyksa SW)	EAF, ladle furnace, vacuum degasser, continuous caster producing thin slabs	0.62mtpy	2008
OMK (Chusovskoi SW)	Electric steelmaking complex	1.2mtpy	2010
TMK (Seversky Pipe Plant)	Electric furnace	0.35mtpy	2007
TMK (Tagmet)	Electric furnace	0.5mtpy	2008
Amurmetal	Electric steelmaking complex, slabs	1mtpy	2007

Source: Metal Expert

CONTINUATION OF STOLEN SLIDE

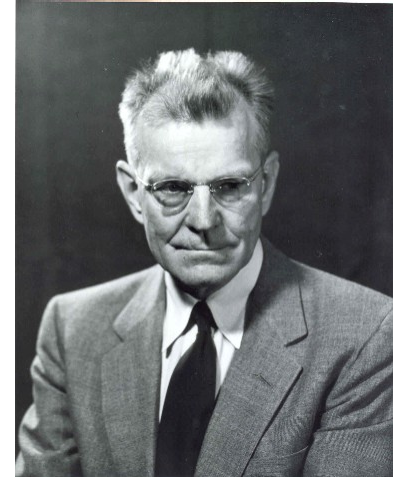
Steel output to grow in Russia

Launch of new production facilities in Russia in 2006-2010 (new plants)			
Company	Equipment	Capacity increase	Putting into operation
Maxi-Group	NSMMZ, No.2 electric steelmaking shop	1mtpy	2006
Maxi-Group	mini-mill, long products, Kaluga region	1mtpy	2008
Maxi-Group	mini-mill, steel, long products, Leningrad region	2.5mtpy	2008
Maxi-Group	mini-mill, steel, long products, Berezovsky, Sverdlov region	1,5mtpy	2007
Maxi-Group	mini-mill, steel, long products, Voronezh region	2mtpy	2009
Maxi-Group	mini-mill, steel, flat products, Toliatti	1.4mtpy	2008
Maxi-Group	mini-mill, steel, flat products, Novosibirsk	1.5mtpy	2008
Maxi-Group	mini-mill, steel, long products, Alapaevsk	2.5mtpy	2010
Moscow area authorities	mini-mill, steel, long products, Kashira region	1mtpy	2008
Ural Mining and Metallurgical Company (UMMC)	mini-mill, steel, long products, Agidel (Bashkiria)	0.6mtpy	2008
Novorosmetal	mini-mill, steel, long products, Novorossiysk	1,5mtpy	2006-2008
Sibirsky Electric Steel Works and Vtorchermet	mini-plant, long products	0.6mtpy	2008
Beloretskaya Stal (Bashkiria)	mini-mill, long products, square and round billets	0.75mtpy	2008
<i>Source: Metal Expert</i>			

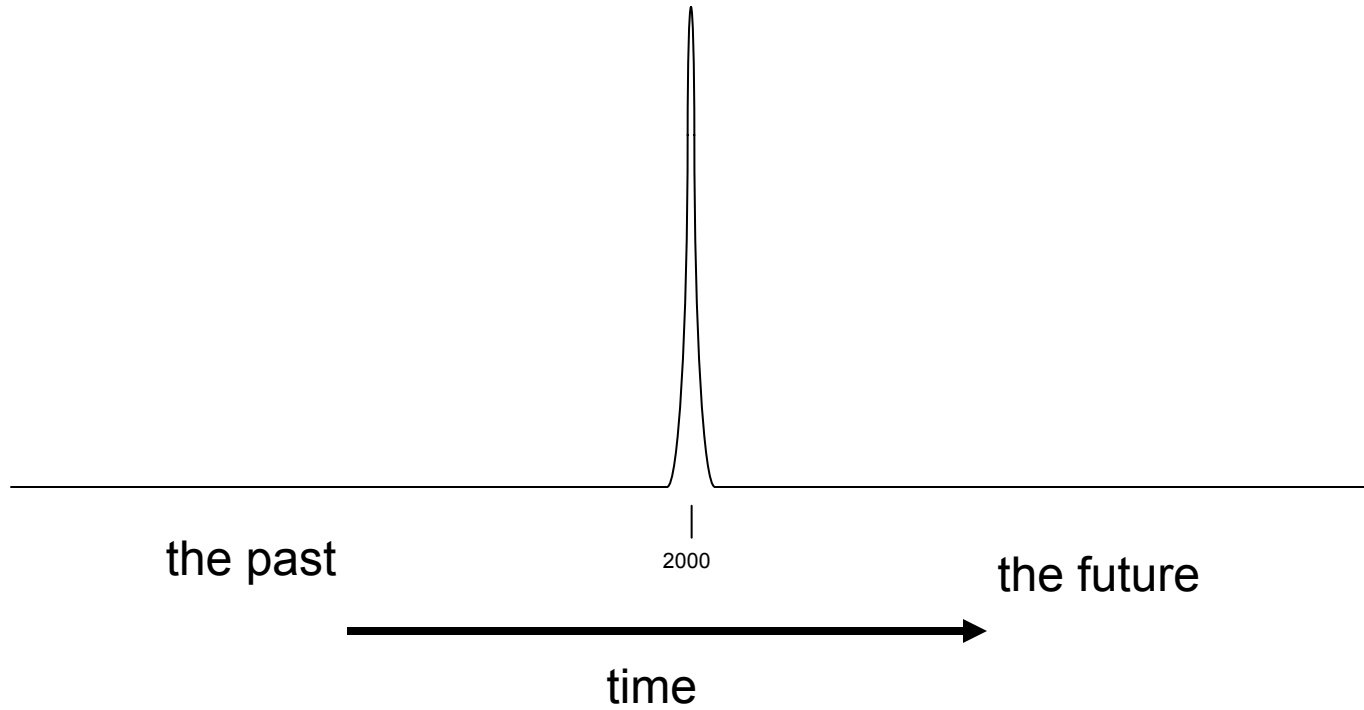
BRIC

- The Gulf
 - That's not BRIC !
 - Nonetheless, the Gulf area is growing at an **ASTOUNDING** rate. Have any of you noticed that oil prices are high ?

The Hubbert curve



production and consumption of fossil fuels



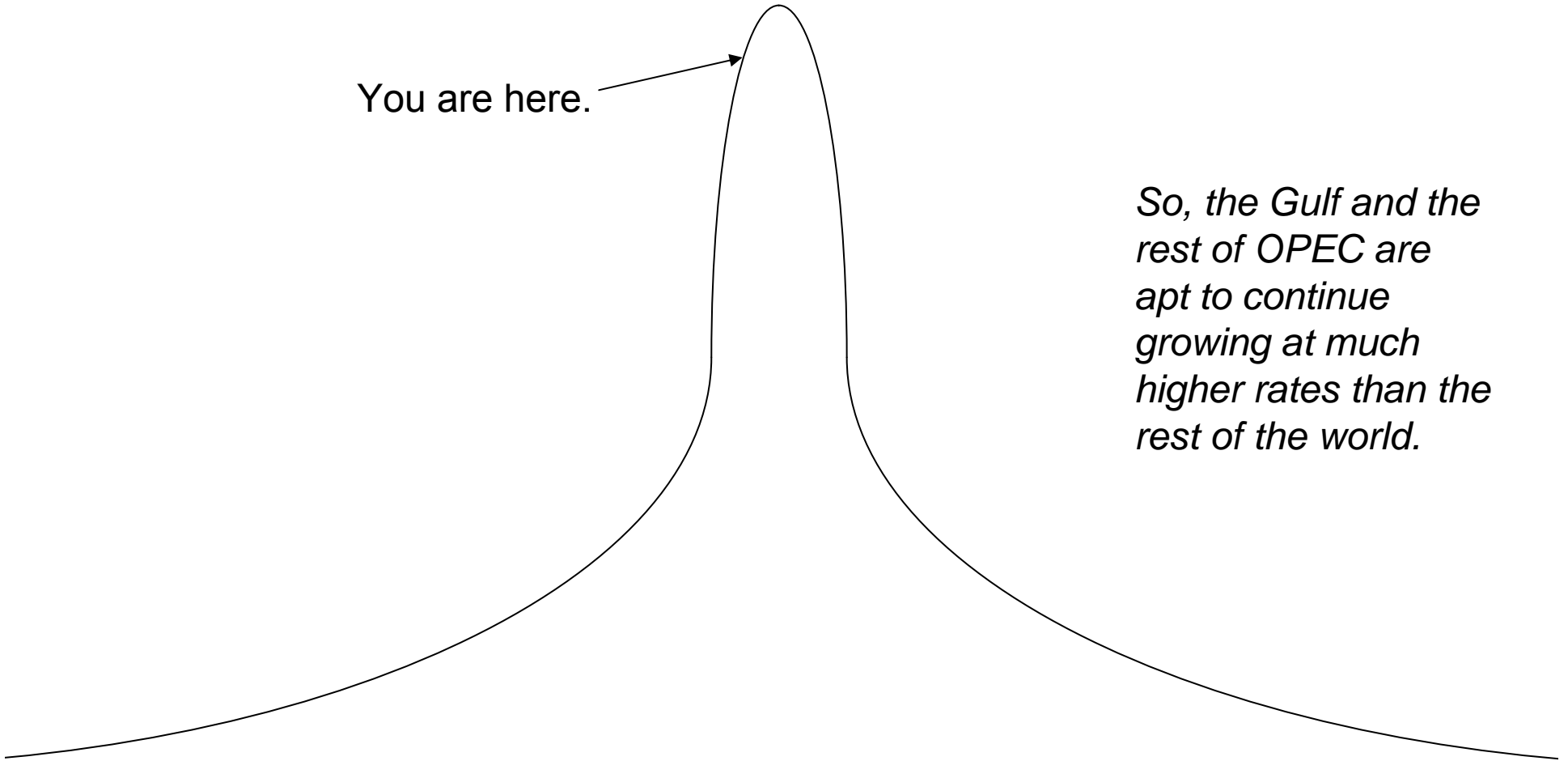
More about Hubbert

He was right before, he'll be right again.

You are here.



So, the Gulf and the rest of OPEC are apt to continue growing at much higher rates than the rest of the world.




forecast

- Let's make some guesses.



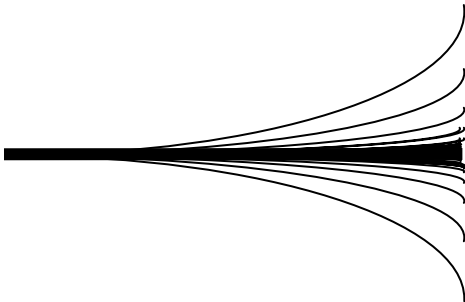
Metallics

	2006	2010	2015
<i>Metallics requirements</i>			
Steel production	1,243.8	1507.7	1,700.0
EAF production	399.3	465.2	546.6
% EAF	32.1%	30.9%	32.2%
EAF metallics required	439.2	511.7	601.2
			
<i>Metallics sources</i>			
Scrap	341.3	381.3	448.2
Captive DRI	45.2	64.8	82.6
Merchant DRI/HBI	<u>11.7</u>	<u>18.7</u>	<u>23.4</u>
Total DRI	56.9	83.4	106.1
(% of EAF charge)	13.0%	16.3%	17.6%

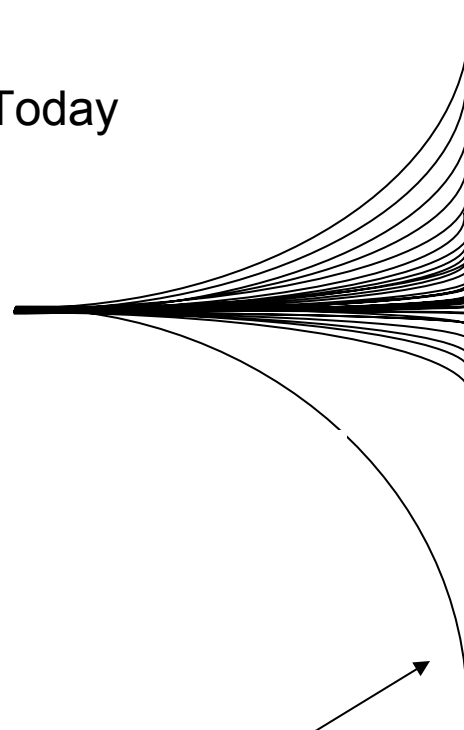


Forecast for the price of iron

Typical times



Today



What's this?



Let's call that "caveats".



caveats

There's always a chance that things can go badly.

- The U.S. credit problem spreads**
- China reaches the end of this economic cycle**
- A 'credit problem' breaks out in China**
- An asteroid strikes**



- Thank you.

*This is the slide that reminds
him to sit down and stop
talking.*

