Base Metals Investing

Zurich October 2, 2007

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Rational Speculation Model

A formal system for valuing a spec stock

Three Steps

- Outcome Analysis – what is the dream target and the key assumptions behind it?
- Probability Analysis – where in the exploration cycle is the project and what is it “worth” now?
- Risk-Reward Analysis – is it a good, fair, or poor bet?

Outcome Analysis Questions

- What kind of deposit style is it?
- Can you name a deposit similar to your target?
- What is the analogue worth?
- What is the physical footprint of your target?
- How many tonnes* does that represent?
- What grade are you looking for?
- Are there metallurgical issues that affect recoveries or costs?
- What are your long term metal price assumptions?
- What is the rock value at these grades and prices?
- What would the in situ value be?
- Where is the project located?
- Are there infrastructure issues such as transportation, water supply and power?
- What is such a deposit worth in DCF and comparable market valuation terms?

*Calculate Tonnage Potential: Length x Width x Depth x SG

What would the dream target look like?

Orebody Footprint Arithmetic

- Visualize the geometry of the target or zone
- Calculate rock volume for each “zone” (in cubic metres)
  Volume of rock = length x width x thickness
- Calculate tonnage = volume x specific gravity (2.6 for ordinary rock, 4.5 for massive sulphides)
- Assign grade for recoverable metals (g/t or %)
- Calculate rock value = metal price x grade
- Deposit’s gross value = tonnage x rock value

What are the key inputs for mining cash flow?

Revenue Inputs

Tonnage
Grade
Recovery
Commodity Price
Production Rate

Cost Inputs

Operating Cost
Taxes
Capital Cost

Annual Gross Revenue

less Operating Costs

= Operating Profit

less Taxes

= After Tax Cash Flow

What is an orebody worth?

Discounted Cash Flow Model

$$\sum \frac{\text{Annual Cash Flow}}{(1 + \text{Discount Rate})^n}$$

Less Capital Cost

n = mine life (years of mining)

NPV

NPV(rate,value1,value2,...)

Returns the net present value of an investment based on a discount rate and a series of future payments (negative values) and income (positive values).

More Outcome Analysis Questions

- What is the scale of your dream target:: $100 million, $500 million, or $2 billion?
- Who operates the project, for how long, and what is their agenda if it is not you?
- When are you vested and what ownership related deadlines apply?
- How are you funding the exploration cycle?
- What is the timeline for your exploration cycle?
- Are there any title issues?
- Are there any geopolitical risk issues?
- Are there any local or aboriginal issues?
- Are there environmental risk issues?
- Are there any specific permitting obstacles?
- What is being done about any of these obstacles?

Increase the DCF discount rate to adjust the dream target value downwards for extra risks.

Probability Analysis Questions

- What is your fully diluted?
- What is your stock price?
- What exploration stage is it at?
- What are the intrinsic odds of delivering the dream target as a mine?
- What is your net project interest?
- What does the market say your play is worth right now (the “Implied Project Value”)?

Calculate Play’s IPV: FD x Price / net interest

How is the market pricing a project?

Lithic's Crypto Project

Calculating Implied Project Value

$$= \frac{\text{Fully Diluted Shares X Market Price}}{\text{Net Project Interest}}$$

$$= \frac{(43{,}526{,}369 \times \$0.63)}{1.0}$$

$$= \$27{,}000{,}000$$

How do we get to a mine?

Stage	Exploration Cycle Stage	Objective	Time Required
0	Grassroots	Conceptual, land acquisition	1 year
1	Target Generation & Drilling	Filtering for drill targets	1-2 years
2	Discovery Delineation	Defining the limits of a discovery - tonnage & grade	1-2 years
3	Infill Drilling	Producing a mineable reserve estimate	1-2 years
4	Bulk Sample & Metallurgy	Evaluating recoveries and optimal processing method	1 year
5	Prefeasibility	Establishing a mining plan and associated costs	1-2 years
6	Feasibility & Permitting	Securing regulatory approval and a production decision	1-3 years
7	Construction	Building the mine	1-3 years
8	Production	Mining cash flow	10-20 years

Implied Values for Flagship Projects

Prices as of Sept 28, 2007	Flagship Project	Exploration Stage	Fully Diluted	Price	Net Interest	Implied Value
Blackstone Ventures	Espedalen	Target Drilling	112,137,775	$0.90	100.0%	$101,000,000
Centrasia Mining Corp	Souker	Prefeasibility	66,686,207	$1.20	100.0%	$80,000,000
Golden Valley Mines Ltd	Cheechoo	Target Generation	69,584,564	$0.50	80.0%	$43,000,000
Global Hunter Corp	Corona de Cobre	Infill Drilling	94,482,087	$0.26	100.0%	$25,000,000
Intl PBX Ventures Ltd	Copaquire	Discovery Delineation	105,105,498	$0.60	100.0%	$66,000,000
Lithic Resources Ltd	Crypto	Infill Drilling	43,526,369	$0.63	100.0%	$27,000,000
Petaquilla Copper Ltd	Petaquilla	Prefeasibility	179,567,782	$2.00	26.0%	$1,377,000,000

What are the intrinsic odds of becoming an economic mine at each stage of the exploration cycle?

	Exploration Cycle Stages	Probability	Ladder	
	Mineral Plays	Chance	Leverage	Odds
M0	Grassroots	0.5-1%	100-200	99-199:1
M1	Target Drilling	1-2.5%	40-100	39-99:1
M2	Discovery Delineation	2.5-5%	20-40	19-39:1
M3	Infill Drilling	5-10%	10-20	9-19:1
M4	Bulk Sample & Metallurgy	10-25%	4-10	3-9:1
M5	Prefeasibility	25-50%	2-4	1-3:1
M6	Permitting	50-75%	1.3-2	0.3-1:1
M7	Construction	75-100%	1	0-0.3:1
M8	Production	100%		

The Probability Ladder

Step 3 – Risk-Reward Analysis

- Determine appropriate dream target
- Calculate Implied Project Value
- Assign exploration stage
- Plot onto IPV Chart
- See which probability ladder applies
- Review the target outcome from step 1
- Assess speculative value
- Note information flow timeline

Reviewing a Basic Gambling Concept

The probability of an anticipated outcome should match the payout delivered when the outcome is achieved.

- Fair Bet – 10:1 odds, pays 10:1
- Poor Bet – 10:1 odds, pays 5:1
- Good Bet – 5:1 odds, pays 10:1

Applying basic gambling logic to exploration projects

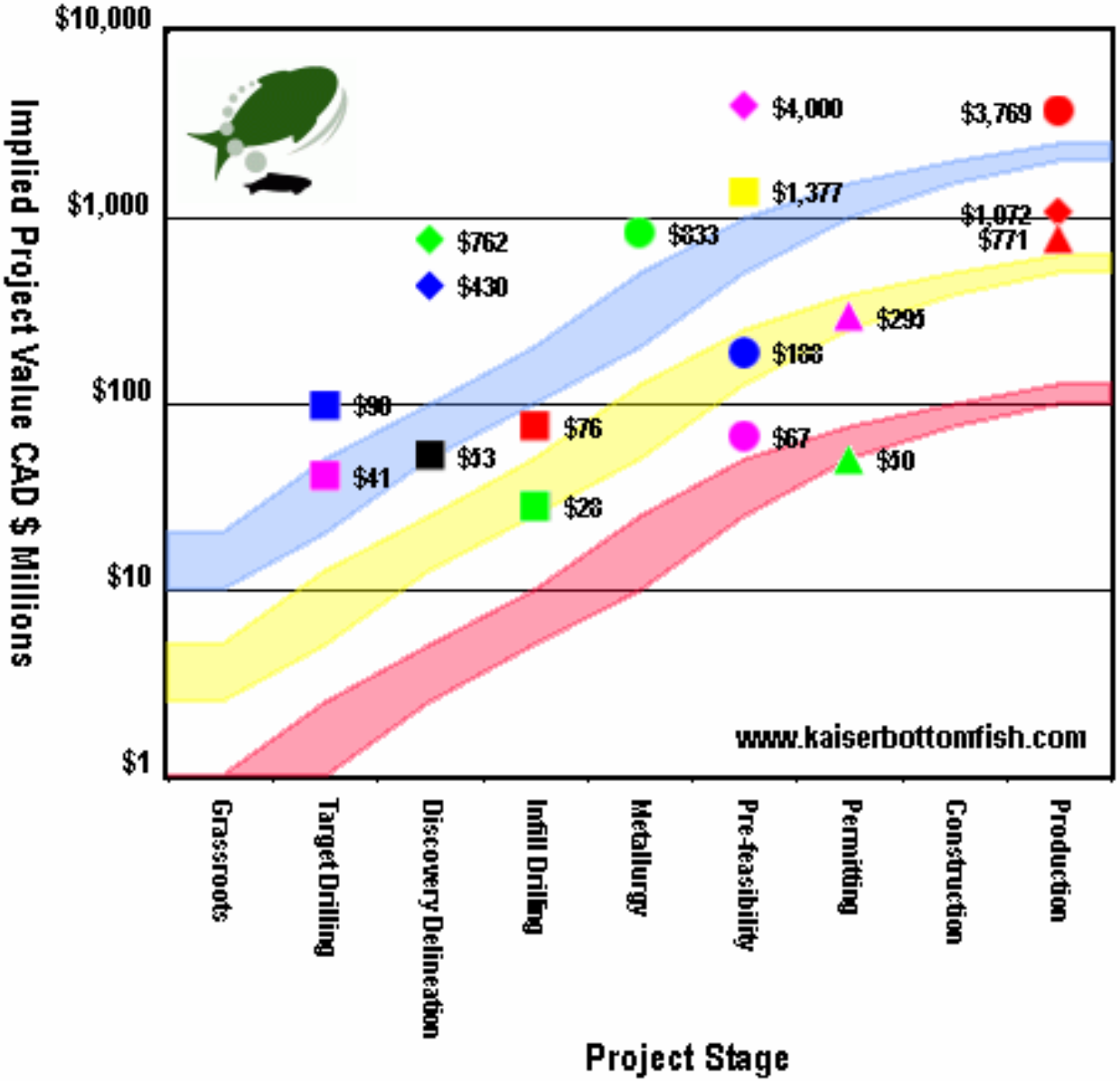
	Exploration Cycle Stages	Probability	Ladder		Valuation	Channels	(TPV in	$ Millions)
	Mineral Plays	Chance	Leverage	Odds	$100 UPV	$500 UPV	$1,000 UPV	$2,000 UPV
M0	Grassroots	0.5-1%	100-200	99-199:1	<$1	$2.5-5	$5-10	$10-20
M1	Target Drilling	1-2.5%	40-100	39-99:1	$1-2.5	$5-12.5	$10-25	$20-50
M2	Discovery Delineation	2.5-5%	20-40	19-39:1	$2.5-5	$12.5-25	$25-50	$50-100
M3	Infill Drilling	5-10%	10-20	9-19:1	$5-10	$25-50	$50-100	$100-200
M4	Bulk Sample & Metallurgy	10-25%	4-10	3-9:1	$10-25	$50-125	$100-250	$200-500
M5	Prefeasibility	25-50%	2-4	1-3:1	$25-50	$125-250	$250-500	$500-1,000
M6	Permitting	50-75%	1.3-2	0.3-1:1	$50-750	$250-375	$500-750	$1,000-1,500
M7	Construction	75-100%	1	0-0.3:1	$75-100	$375-500	$750-1,000	$1,500-2,000
M8	Production	100%			$100	$500	$1,000	$2,000

Use the IPV (Implied Project Value) Charts as a Visual Aid

Find the fair speculative value corresponding to the target outcome and the exploration stage

Base Metals Swiss Conference

Tuesday, October 02, 2007



Dream Target Channels

- $100 million Dream Target Channel
- $500 million Dream Target Channel
- $2 billion Dream Target Channel

Key Projects

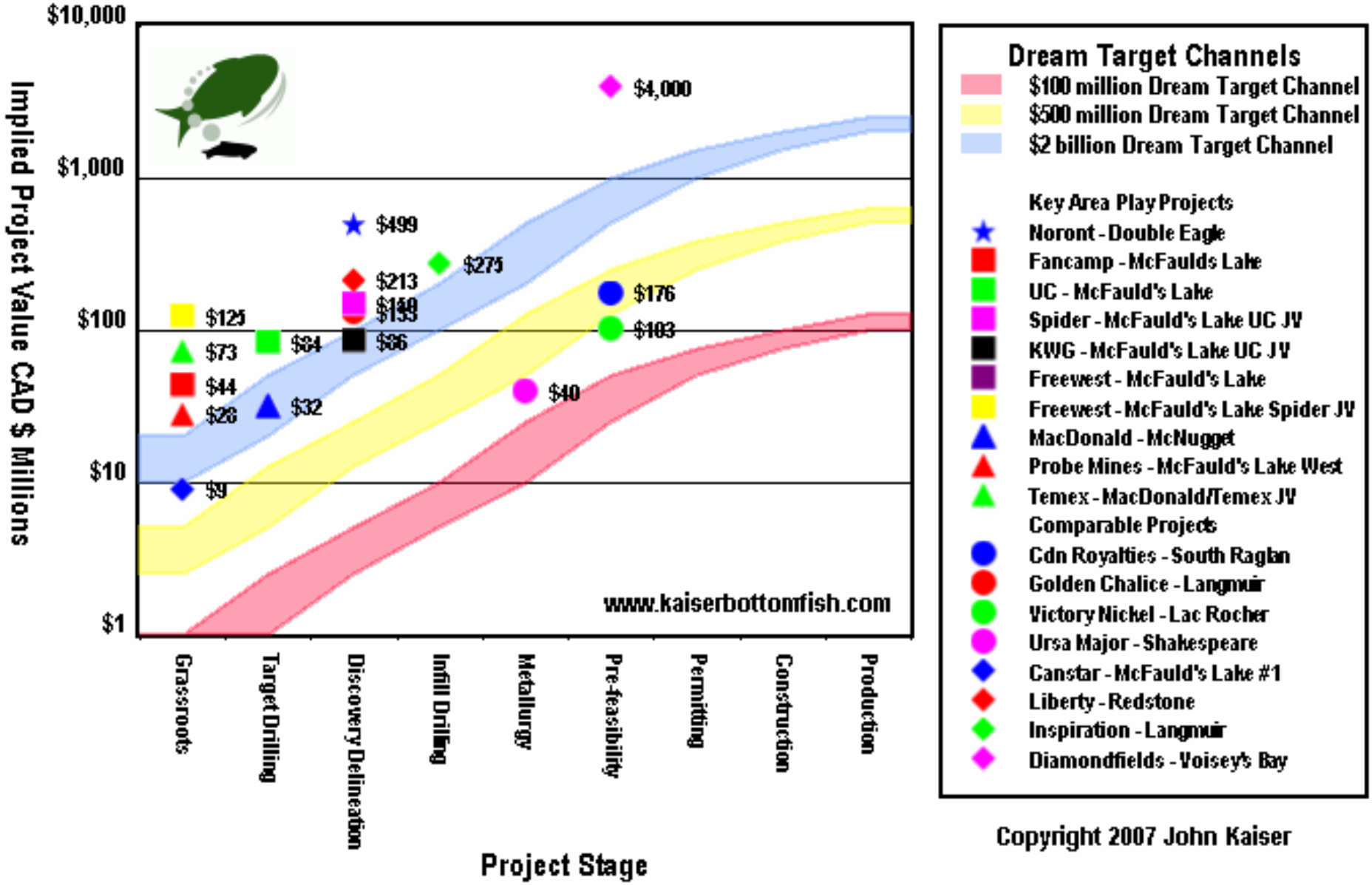
- Blackstone - Espedalen
- Centrasia - Souker
- Global Hunter - Corona de Cobre
- Golden Valley - Cheechoo
- Intl PBX - Copaquire
- Lithic - Crypto
- Petaquilla Copper - Petaquilla

Comparable Projects

- Quadra - Robinson
- Redcorp - Tulsequah Chief
- Weda Bay - Halmahera
- Cdn Royalties - South Raglan
- Thompson Creek - Endako Mine
- Peru Copper - Toromocho
- Tamerlane - Pine Point
- Noront - Double Eagle
- Rio Narcea - Aguablanca
- Virginia Gold - Eleonore
- Diamondfields - Voisey's Bay

McFauld's Lake Area Play Valuations

Friday, September 28, 2007

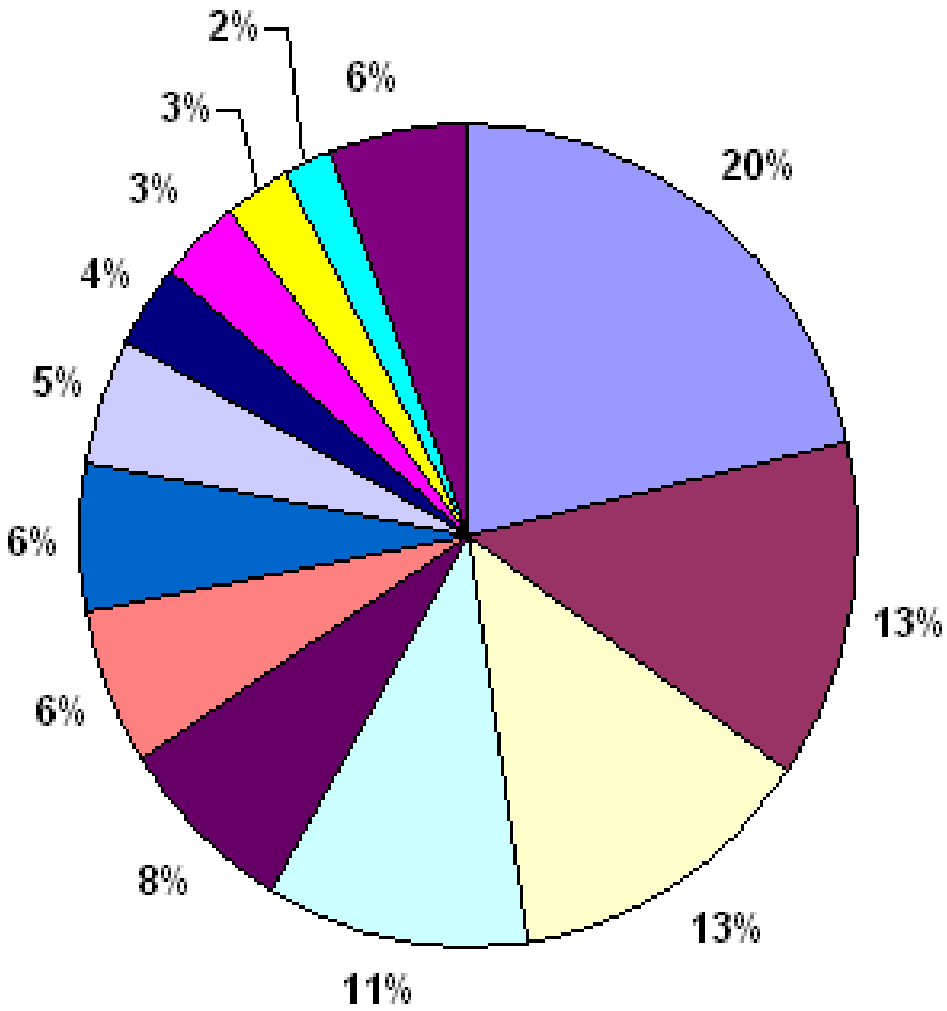


Profit Making Exit Strategies

- Cash Takeover by Major – Absolute Liquidity
- Paper Takeover by Intermediate – Absolute Liquidity
- Merger among Equals – Partial Liquidity
- Equity Stake Purchase by Major – Partial Liquidity
- Repricing through graduation to next exploration stage – Minor Liquidity
- Repricing through exploration driven expansion of dream target value – Minor Liquidity
- Repricing through upwards adjustment of consensus outllook for long term metal prices – Minor Liquidity
- Repricing through bigger market profile – Minor Liquidity
- Repricing through adjustment to comparables – Minor Liquidity

Global Nickel Production

2005 Total: 3.3 billion lbs

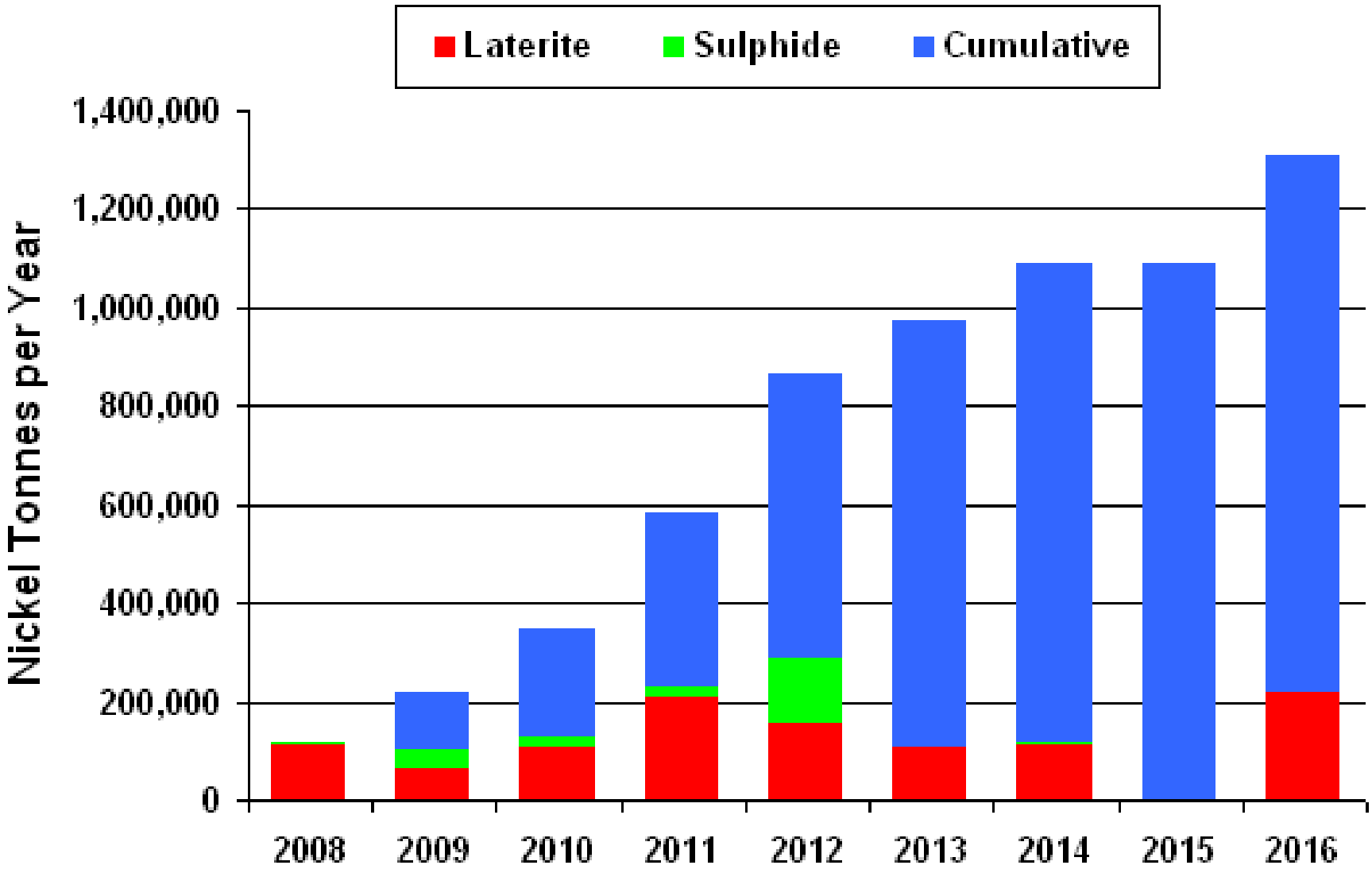


- Russia
- Canada
- Australia
- Indonesia
- New Caledonia
- China
- Colombia
- Cuba
- Brazil
- Dominican Republic
- South Africa
- Botswana
- Others

Source: USGS 2005 Yearbook

Projected New Nickel Supply

(2007 Estimated Supply: 1,600,000 tonnes)



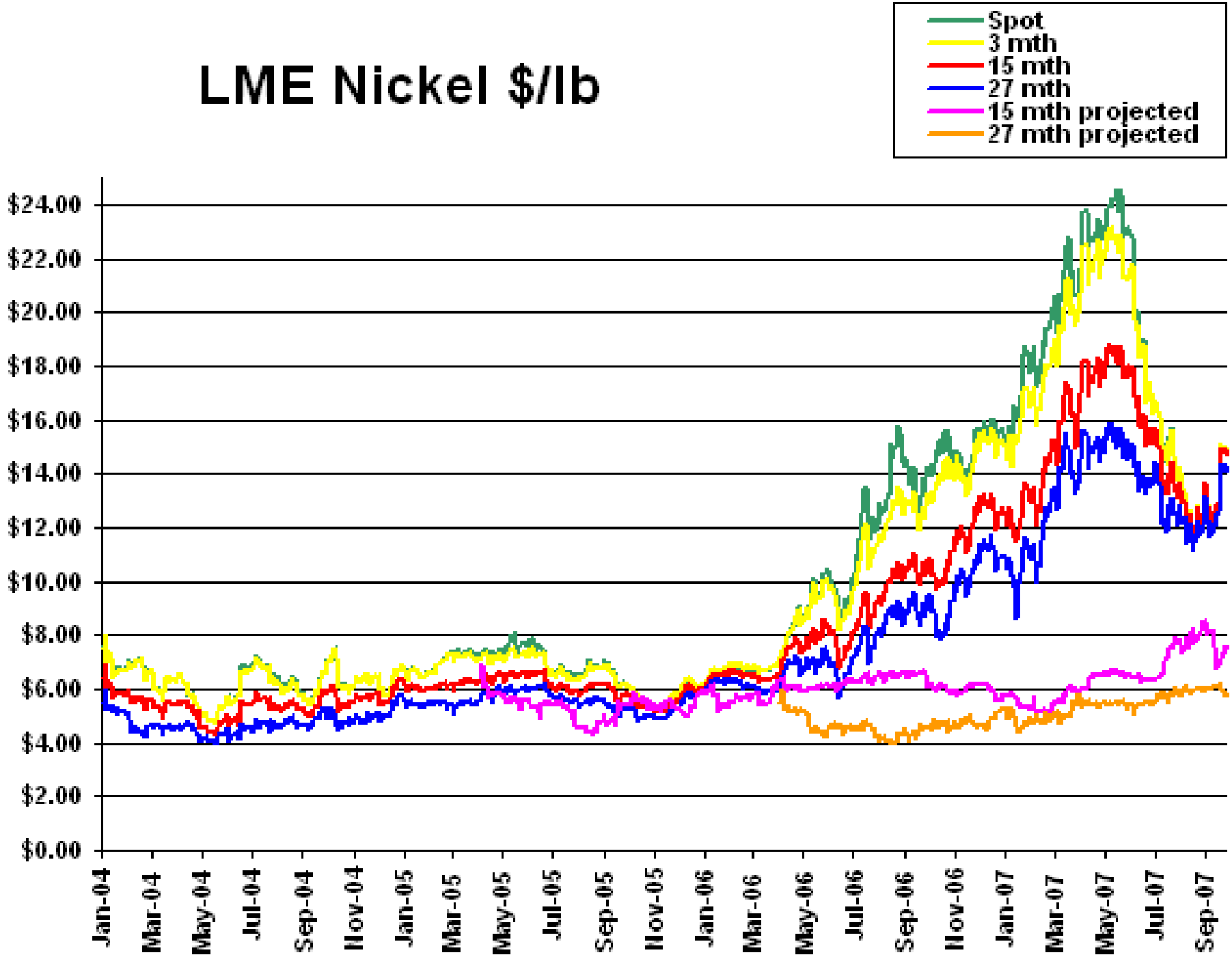
Source: USGS 2005 Yearbook

Major New Nickel Supply

- Ravensthorpe – Australia – 50 MT – 2008 - BHP
- Goro – New Caledonia – 60 MT – 2008 - CVRD
- Onca Puma – Brazil - 57 MT – 2009 - CVRD
- Vermelho – Brazil - 46 MT– 2010 – CVRD
- Barro Alto – Brazil – 36 MT – 2010 - Anglo
- Eagle – United States – 15 MT – 2010 (S) – Rio Tinto
- Marlborough – Australia - 60 MT– 2011
- Koniambo – New Caledonia – 60 MT– 2011 – Xstrata
- Raglan Exp – Canada – 15 MT – 2011 (S) - Xstrata
- Weda Bay – Indonesia – 48 MT– 2012 - Eramet
- Kabanga – Tanzania – 25 MT – 2012 (S) - Xstrata
- Honeymoon – Australia – 40 MT – 2012 (S) - Norilsk
- Ambatovy – Madagascar – 60 MT– 2012 - Sherritt
- Mt Margaret – Australia – 45 MT– 2013 - Minara
- Sablayan – Philippines – 60 MT – 2013 - Crew
- Araguaia – Brazil – 38 MT – 2013 - Xstrata
- Kalgoorlie – Australia – 50 MT – 2014 - CVRD

LME Nickel $/lb

LME Nickel $/lb

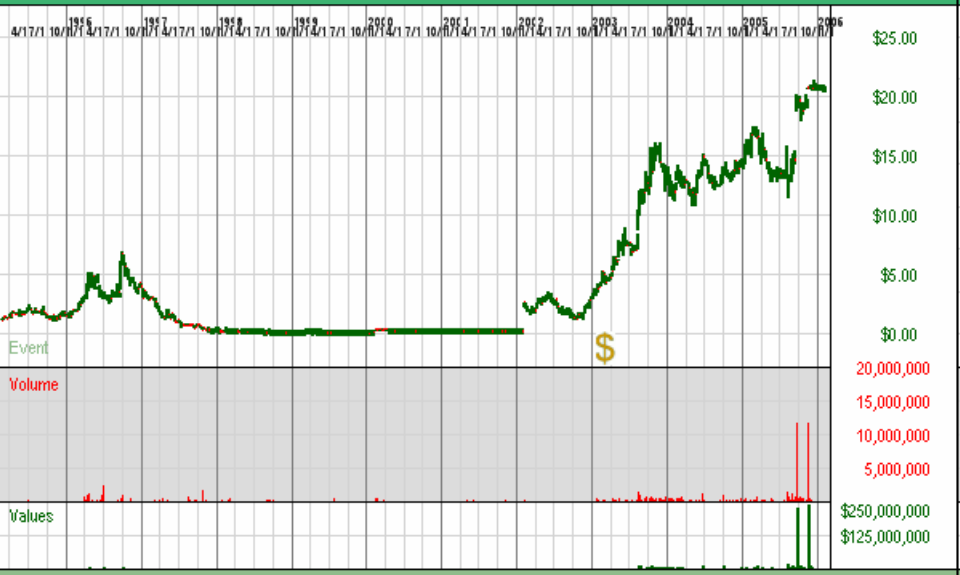


Recent Nickel Related Buyouts

- Rio Narcea - $5.50 cash - $1 billion (sulphide - Spain)
- Weda Bay - $2.70 cash - $269 million (laterite – New Caledonia)
- Canico - $20.80 cash - $930 million (laterite - Brazil)
- Lionore - $27.50 cash - $6.8 billion (sulphide – Botswana, Australia, South Africa)
- Dynatec - $5.12 value - $1.6 billion (laterite - Madagascar)

Canico Resource Corp

2/26/1995 TO 2/8/2006



Issued:	41,690,790	High:	$21.18 on 12/14/2005	Max Volume:	11,752,800 on 11/11/2005
Diluted:	45,171,290	Low:	$0.06 on 7/20/1999	Max Value:	$243,459,252 on 11/11/2005

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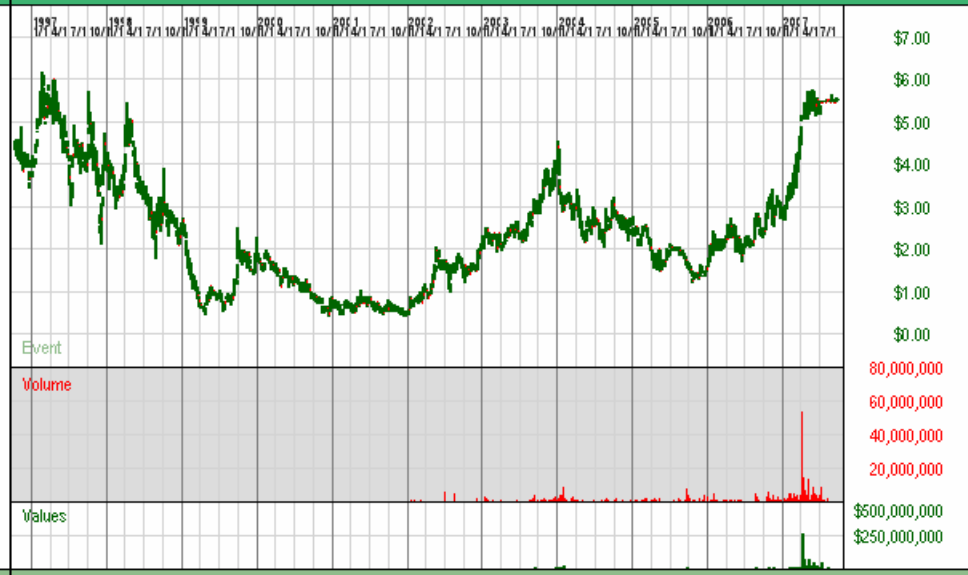
CNI - TSX - CAD $20.61

Rio Narcea Gold Mines Ltd

10/15/1996 TO 9/28/2007



Issued:	160,883,513	High:	$6.20 on 2/20/1997	Max Volume:	53,449,800 on 4/4/2007
Diluted:	194,847,422	Low:	$0.40 on 12/18/2000	Max Value:	$271,792,233 on 4/4/2007

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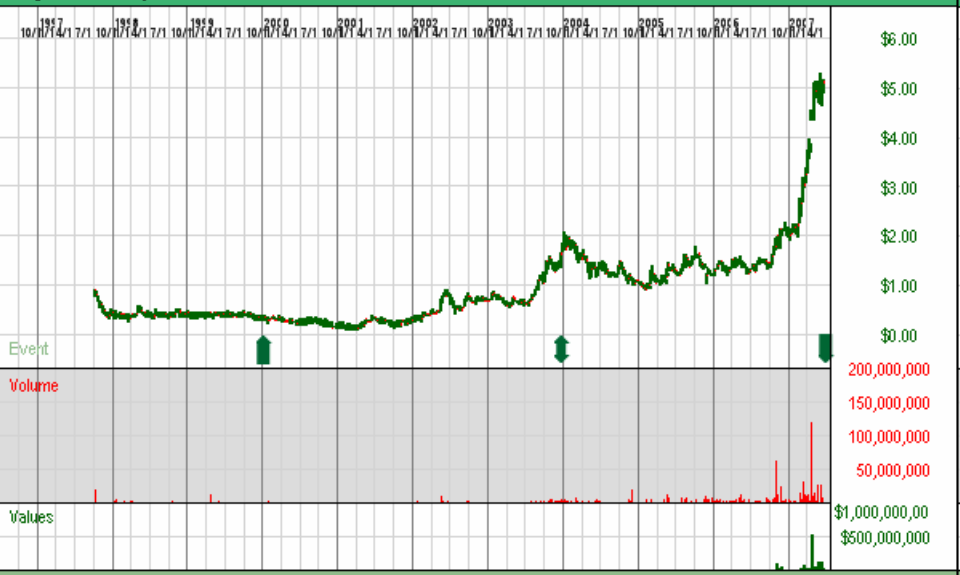
RNG - TSX - CAD $5.50

Dynatec Corporation

7/17/1996 TO 6/30/2007



Issued:	305,681,776	High:	$5.29 on 6/1/2007	Max Volume:	120,755,000 on 4/20/2007
Diluted:	322,622,231	Low:	$0.13 on 4/6/2001	Max Value:	$536,755,975 on 4/20/2007

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DY - TSX - CAD $5.12

Weda Bay Minerals Inc

9/20/1995 TO 9/2/2006

Issued:	99,434,808	High:	$5.65 on 3/12/1997	Max Volume:	5,002,900 on 3/15/2006
Diluted:	99,539,808	Low:	$0.07 on 11/19/2002	Max Value:	$13,382,758 on 3/15/2006

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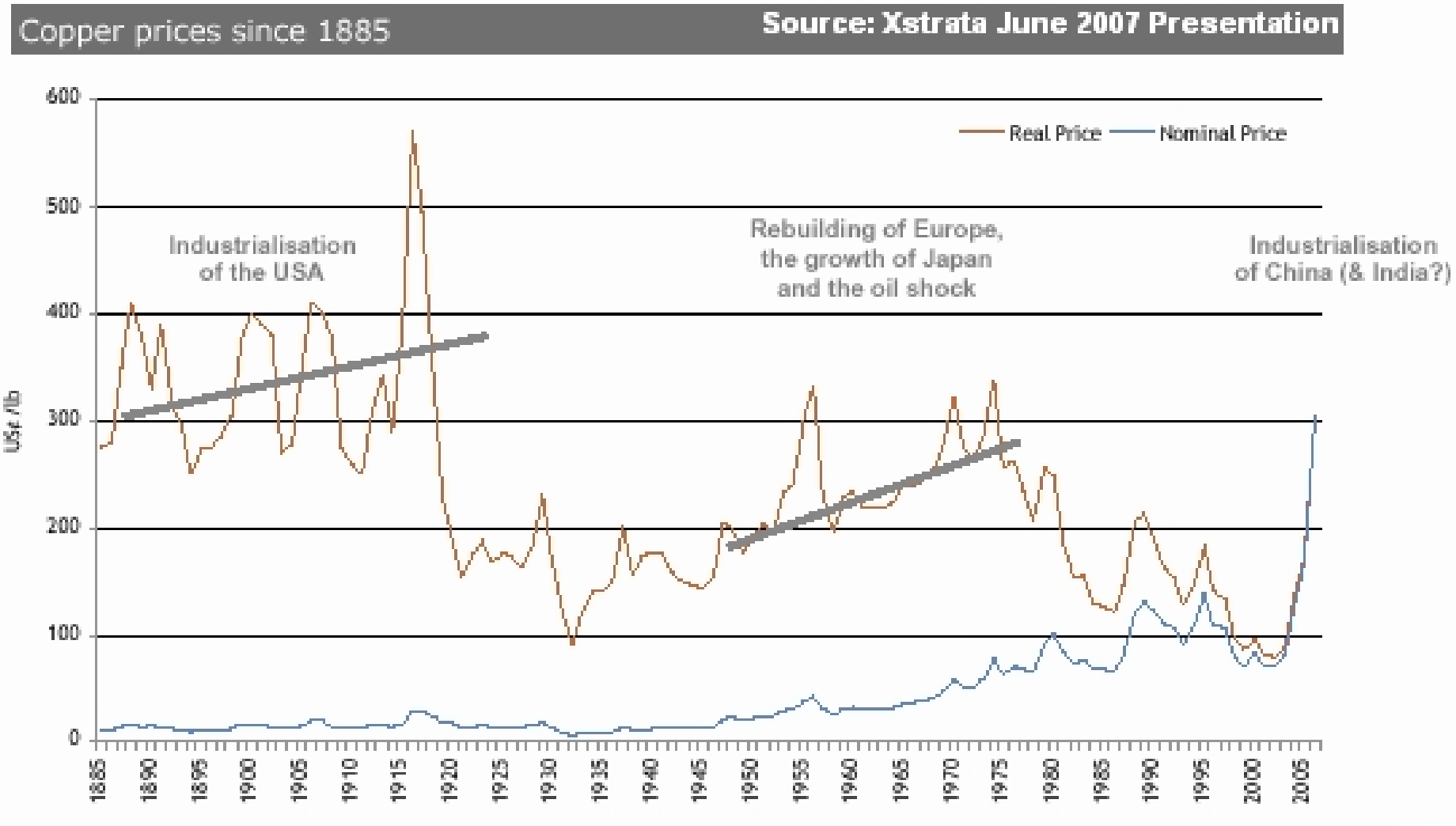
WDA - TSX - CAD $2.67

Copper Supply Pipeline

- Credit Suisse Report – Sept 14, 2007
- 66 new projects in pipeline: 75% greenfield, 25% brownfield, $66 billion Capex
- 8 million tonnes new supply by 2015 on top of current 16 million tonnes
- Need 4.3% annual demand growth compared to 3.9% average since 1997 to absorb supply surge in 2011-2014, but deficit likely in 2008-2009
- If rest of world averages 1%, Chinese and Indian demand need to average 9%
- 48% of new supply grades < 0.6% Cu
- Needs $1.92 / lb long term copper for 15% IRR
- Zambia/Congo only 15% of new supply
- Chilean supply growth plateauing

Super Cycle or Business Cycle?



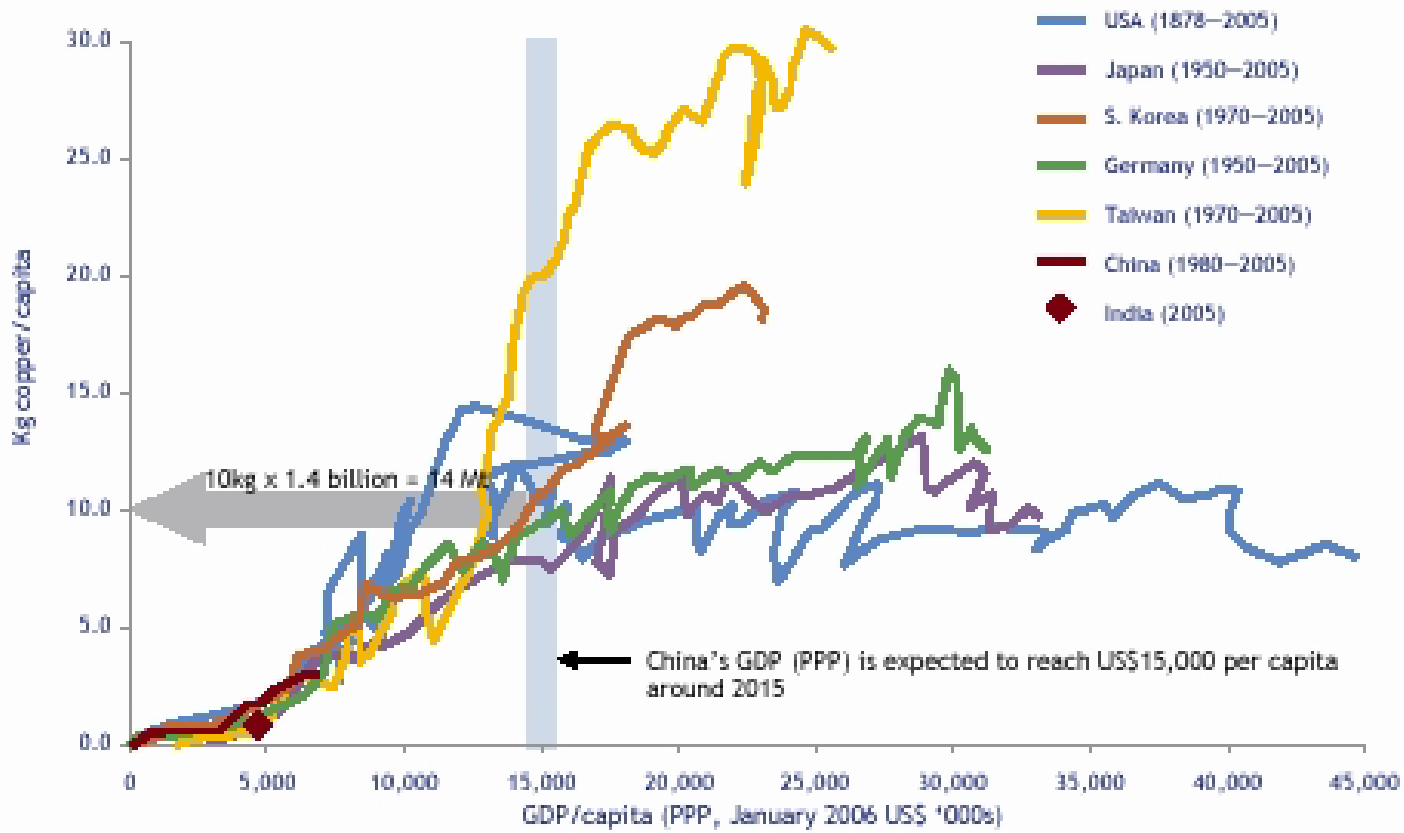
Price spikes can occur due to supply issues, but a true super-cycle is underpinned by demand

China-India Modernization: Scale Shift in Demand

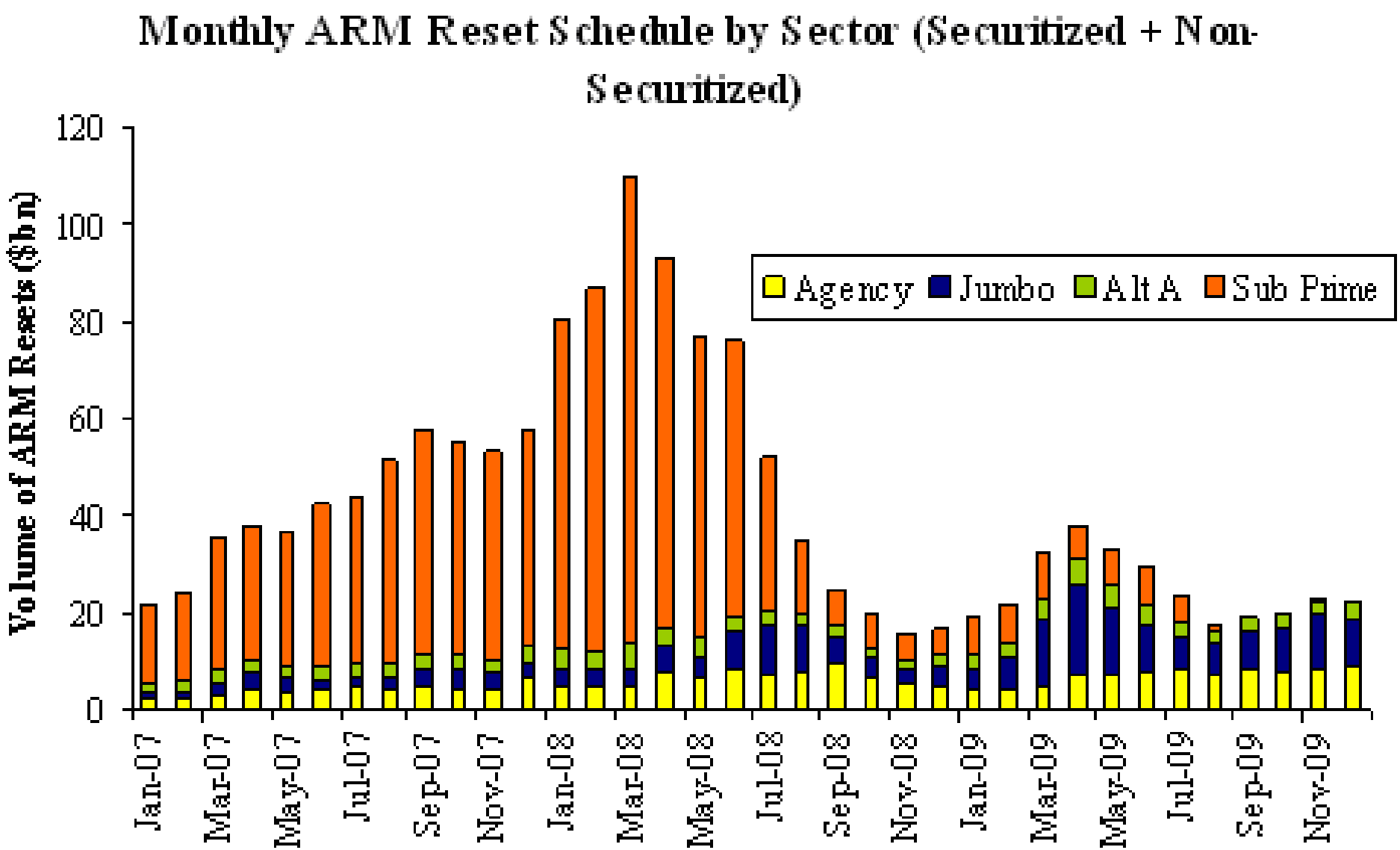
Importance of the China Effect

xstrata

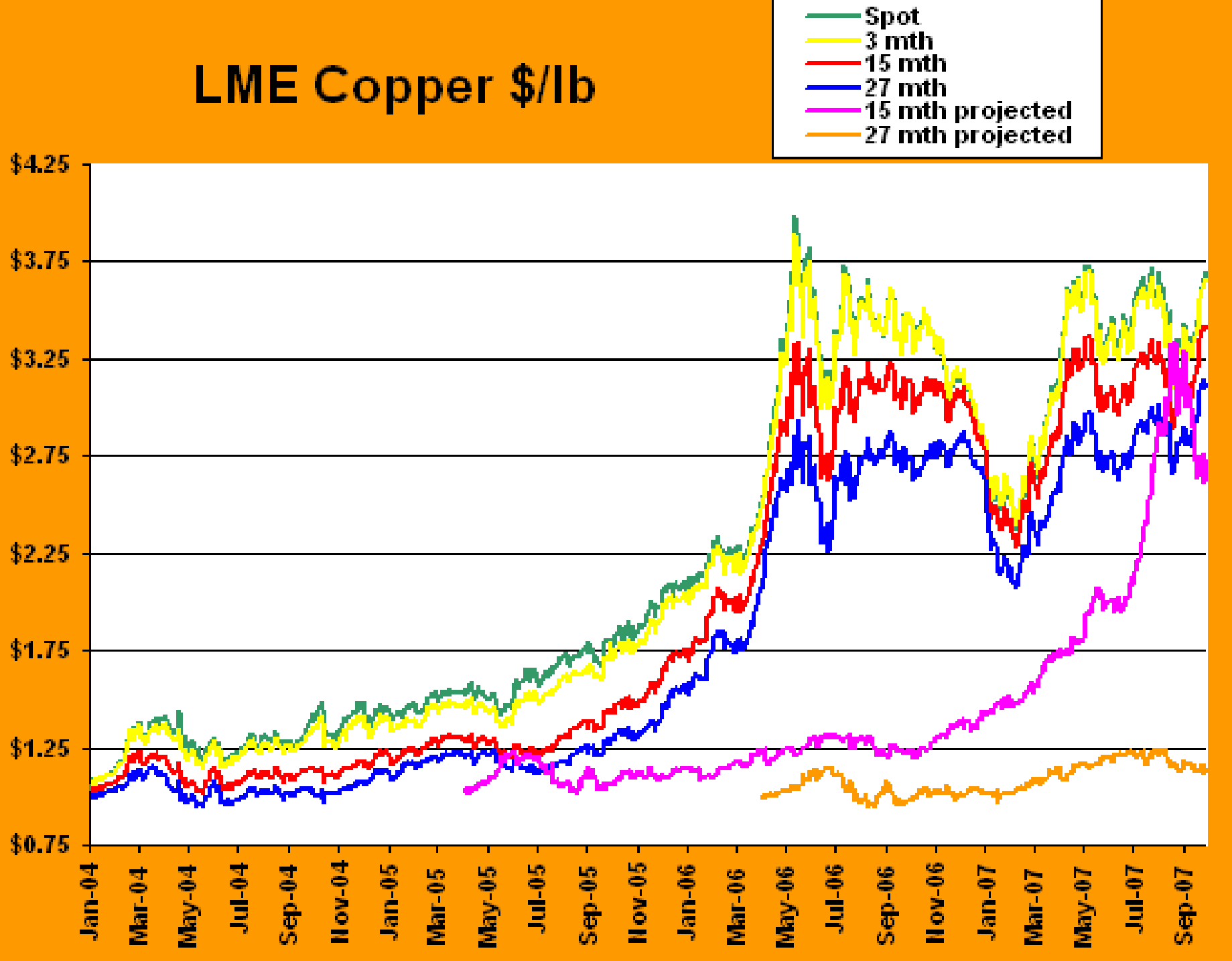
Copper intensity per capita



- If China's GDP achieves 2015 forecast it is likely to require an additional 9Mtpa of copper
- This means growing global copper production by over 50% to meet Chinese demand alone

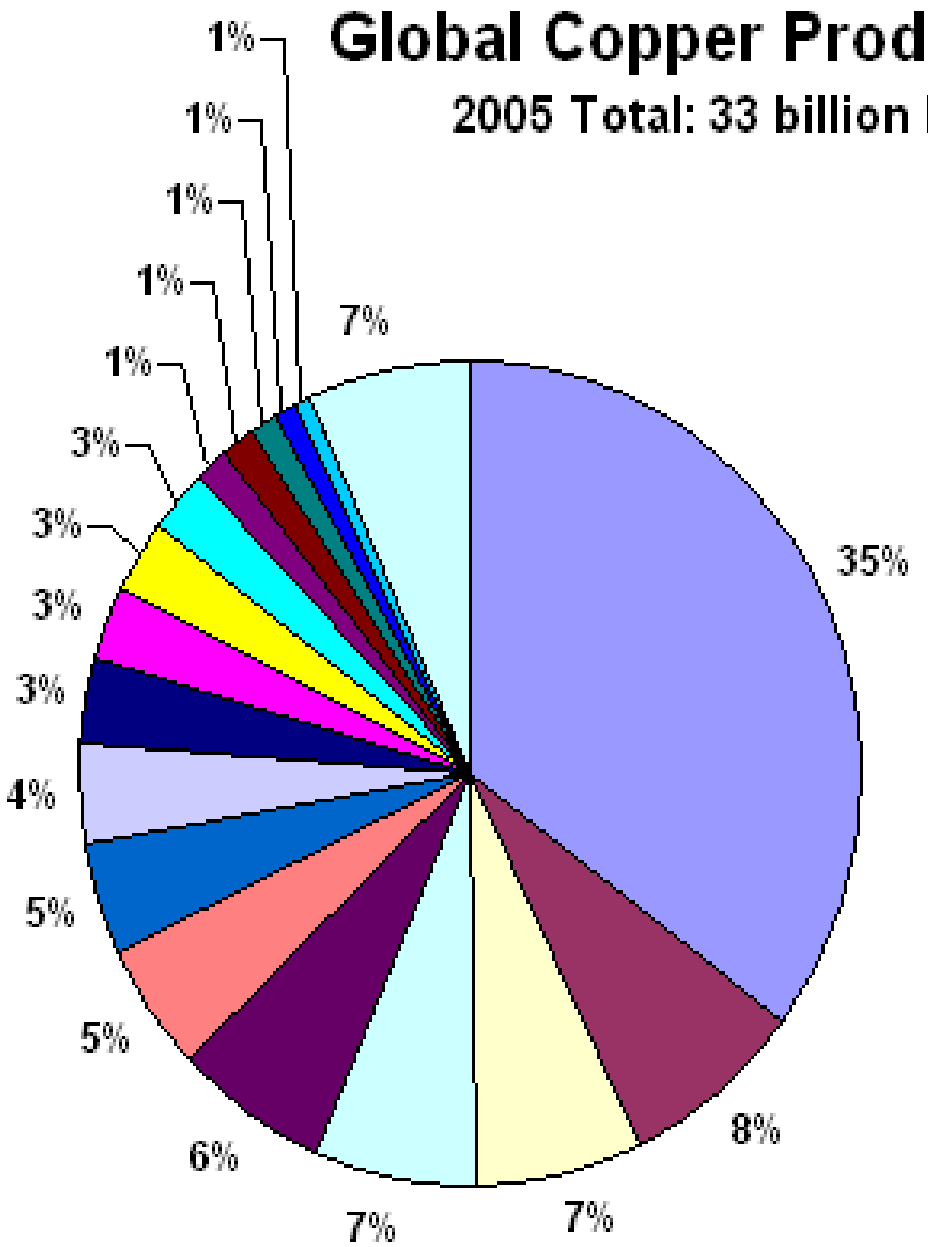

Monthly ARM Reset Schedule by Sector (Securitized + Non-Securitized)
Volume of ARM Resets ($bn)
120
100
80
60
40
20
0
Agency
Jumbo
Alt A
Sub Prime
Jan-07
Mar-07
May-07
Jul-07
Sep-07
Nov-07
Jan-08
Mar-08
May-08
Jul-08
Sep-08
Nov-08
Jan-09
Mar-09
May-09
Jul-09
Sep-09
Nov-09

LME Copper $/lb



Global Copper Production

2005 Total: 33 billion lbs

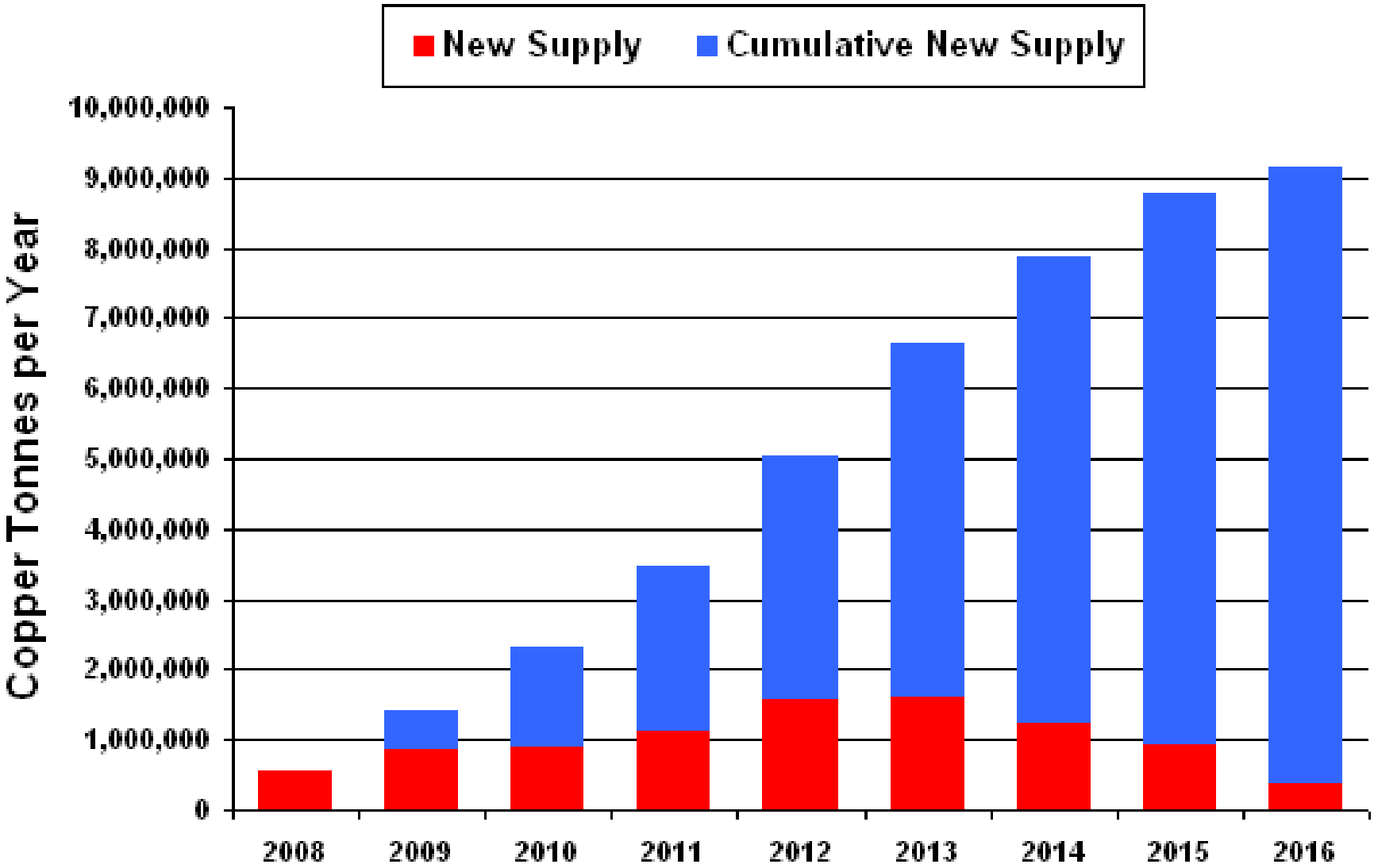


- Chile
- United States
- Indonesia
- Peru
- Australia
- China
- Russia
- Canada
- Poland
- Zambia
- Mexico
- Kazakhstan
- Iran
- Papua New Guinea
- Argentina
- Brazil
- Congo
- Others

Source: USGS 2005 Yearbook

Projected New Copper Supply

(2007 Estimated Supply: 16,800,000 tonnes)



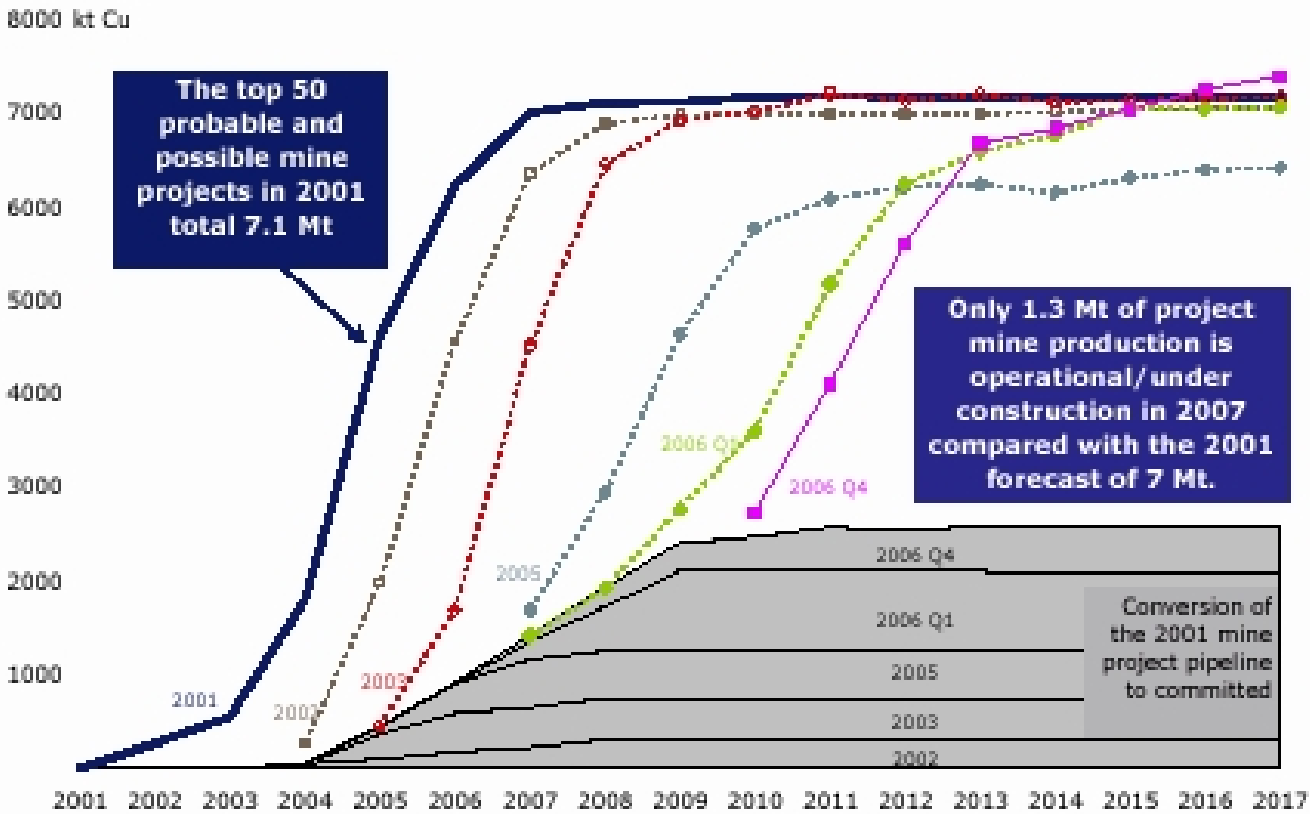
Source: Credit Suisse September 2007

Supply-side optimism fails to reflect today's higher cost reality

xstrata

- There is a gap between the expectation and the reality of project delivery
- High prevailing prices have not yet shortened this expectation gap
- Shortage of skills and equipment, riskier jurisdictions and higher costs leading to longer lead times

Copper Output Growth from New Projects: Expectations vs Reality



- Higher long-term prices due to increased marginal cost of supply
- Supply will take time to catch up with rampant demand growth

Globalization and its Discontents

Major

New

Copper

Supply

- Spence – Chile – 195 MT – 2008 - BHP
- Lumwana – Zambia - 150 MT – 2009 - Equinox
- Chuquicamata Exp – Chile - 175 MT – 2009 - Codelco
- Safford - USA - 100 MT– 2009 – Freeport
- Gaby – Chile – 150 MT – 2009 – Codelco
- Tenke Fungurume – Congo - 90 MT - 2010 - Freeport
- Collahuasi Exp 1 – Chile - 205 MT – 2011 – Codelco
- Toromocho – Peru – 250 MT – 2011 – Chinalco
- Los Bronces – Chile – 180 MT – 2011 - Anglo
- Oyu Tolgoi – Mongolia – 150 MT – 2012 – Ivanhoe
- Rio Blanco – Peru – 210 MT – 2012 – Monterrico
- KOV Restart – Congo – 250 MT – 2012 - Nikanor
- Las Bambas – Peru – 285 MT – 2013 - Xstrata
- El Pachon – Peru – 220 MT – 2013 – Xstrata
- Quellaveco – Peru – 200 MT – 2013 – Anglo
- Reko Diq – Pakistan – 200 MT – 2013 – Antofagasta/Barrick
- Galore Creek – Canada – 202 MT – 2014 - Teck/Novagold
- Collahuasi Exp 2 – Chile – 341 MT – 2014 – Codelco
- Pebble – USA – 250 MT – 2015 – Anglo/NDM

Recent Copper Related Buyouts

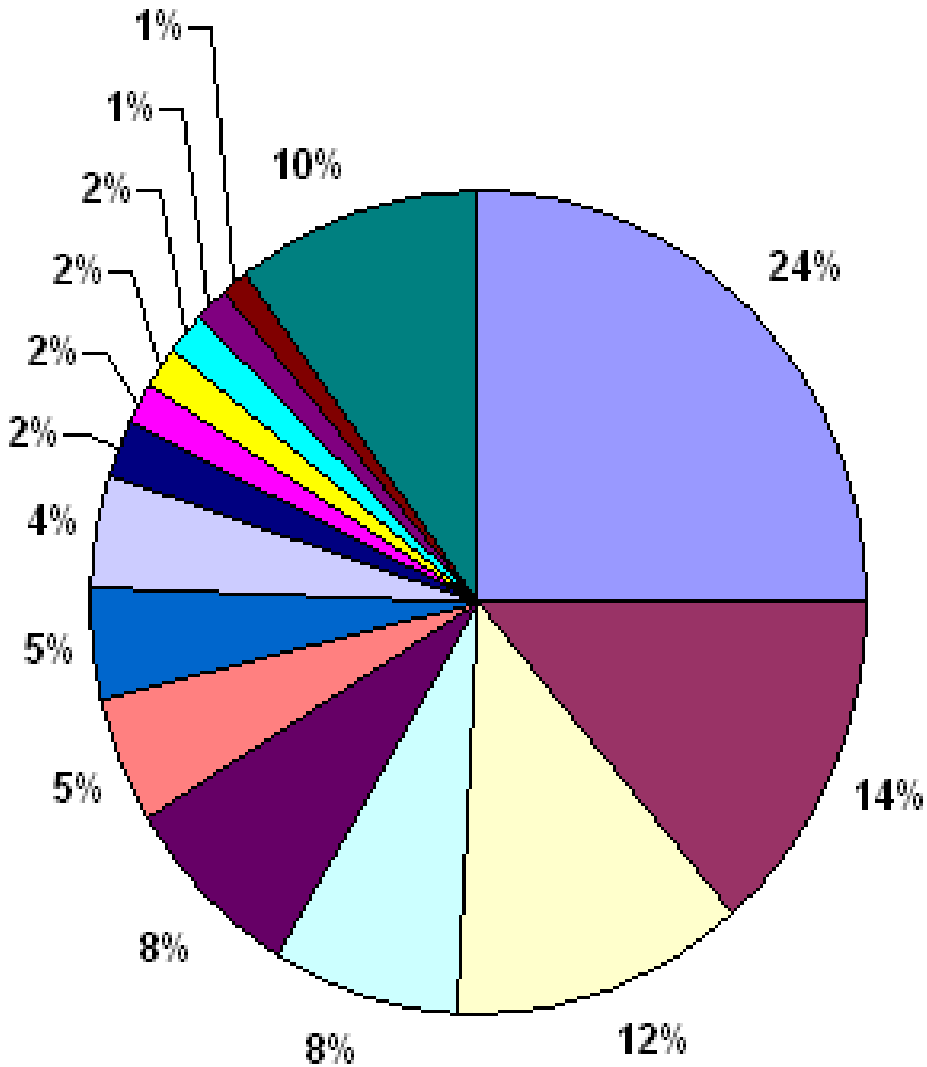
- Peru Copper - $6.60 cash - $833 million (Chile)
- Regalito Copper- $6.60 cash - $152 million (Chile)

Zinc & Lead

- SEDEX, Volcanogenic Massive Sulphides (VMS), Replacement/Manto, Skarns
- Silver and Gold by-product credits
- Large mines: Red Dog (Teck-Cominco), Century (Zinifex), Mt Isa (Xstrata), Rampura Agucha (Hindustan), Antamina (BHP, Xstrata, Teck),
- Many smaller carbonate replacement style orebodies: China, Mexico, Ireland etc

Global Zinc Production

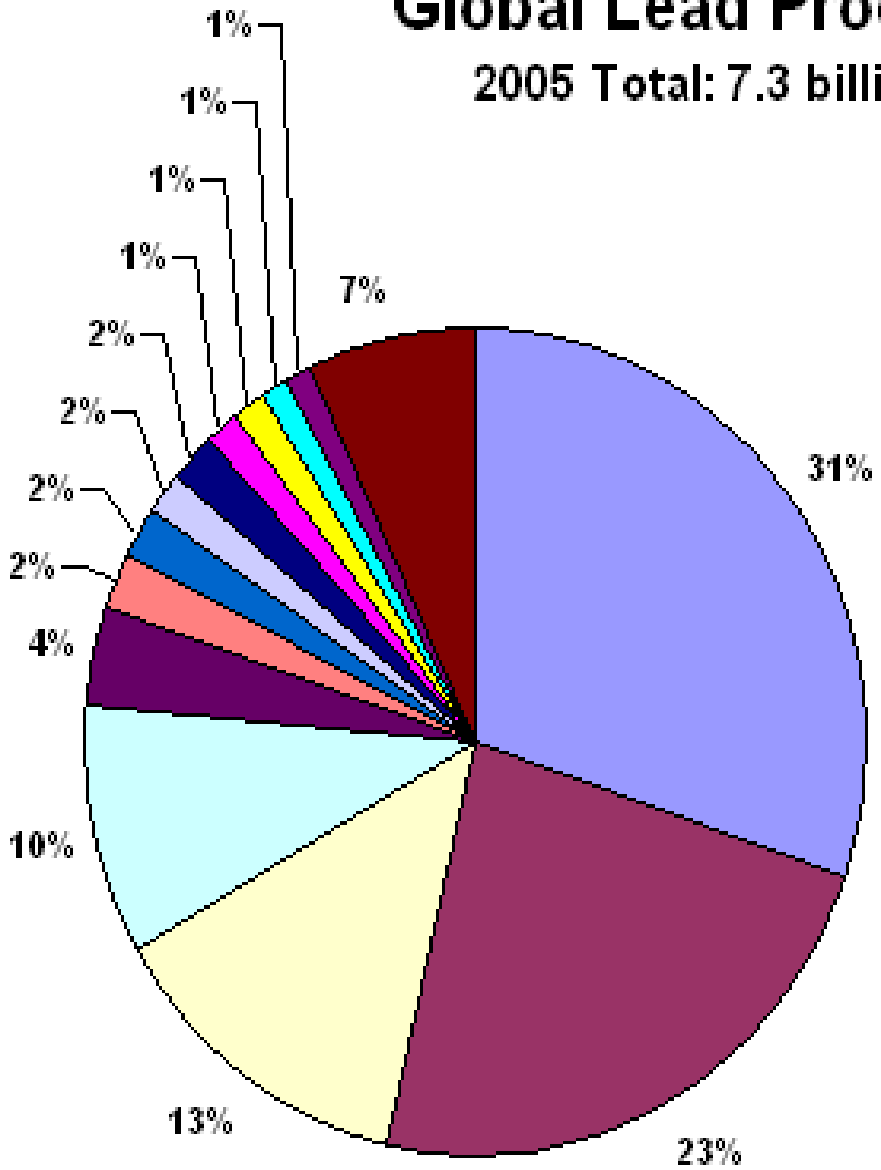
2005 Total: 22 billion lbs



Source: USGS 2005 Yearbook

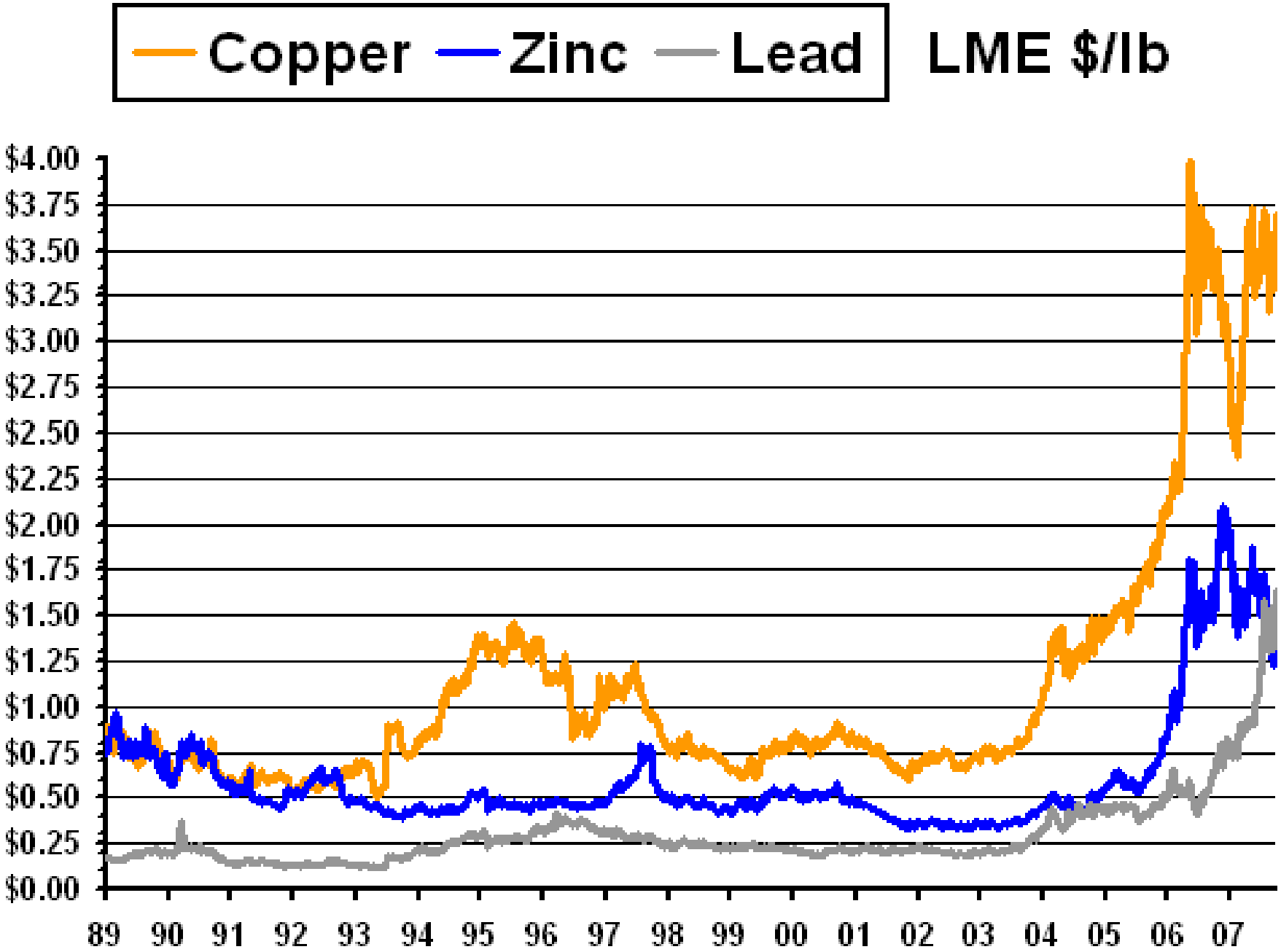
Global Lead Production

2005 Total: 7.3 billion lbs



- China
- Australia
- United States
- Peru
- Mexico
- Canada
- Ireland
- Sweden
- India
- Poland
- Kazakhstan
- South Africa
- Russia
- Others

Source: USGS 2005 Yearbook


Copper
Zinc
Lead
LME $/lb
$4.00
$3.75
$3.50
$3.25
$3.00
$2.75
$2.50
$2.25
$2.00
$1.75
$1.50
$1.25
$1.00
$0.75
$0.50
$0.25
$0.00
89
90
91
92
93
94
95
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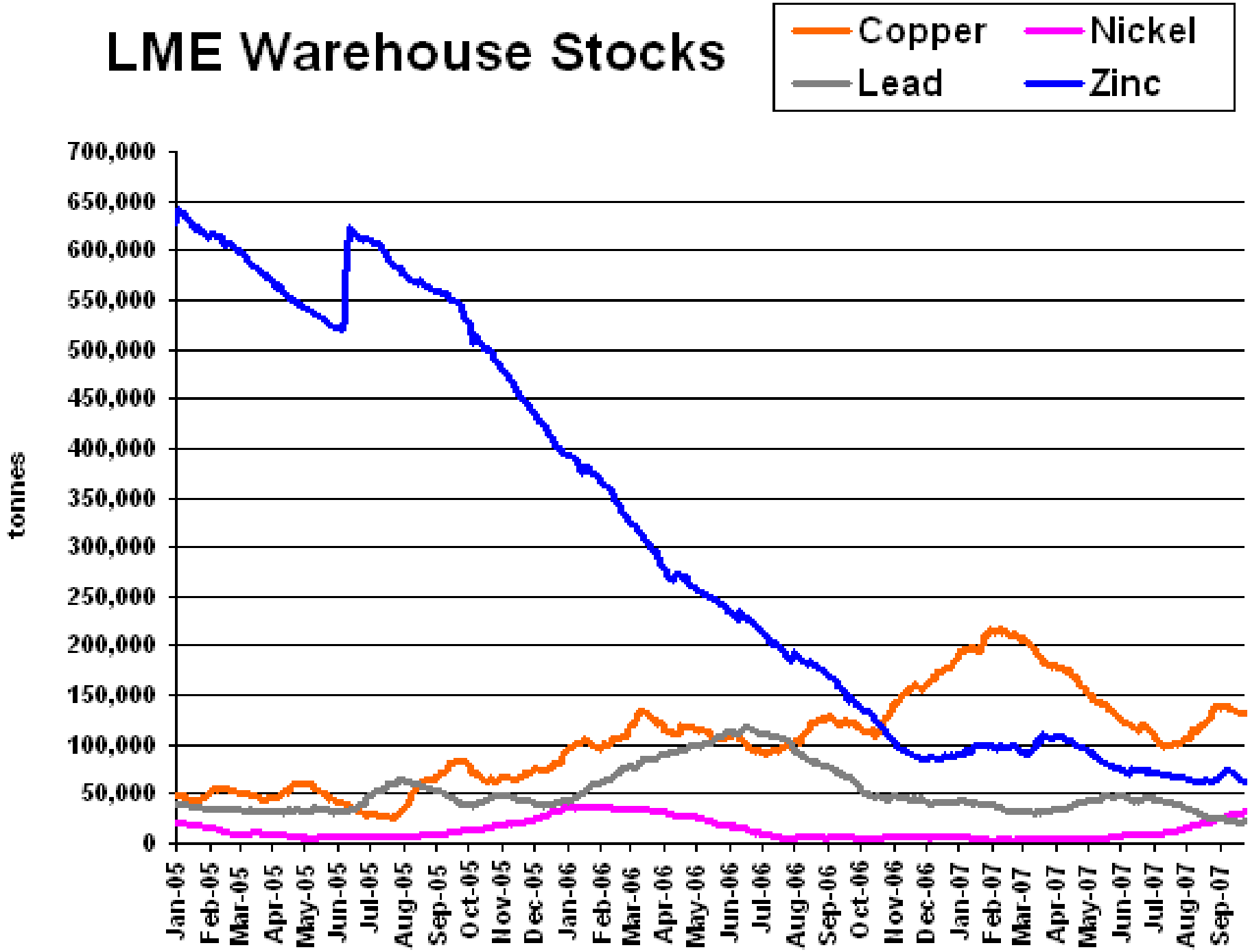
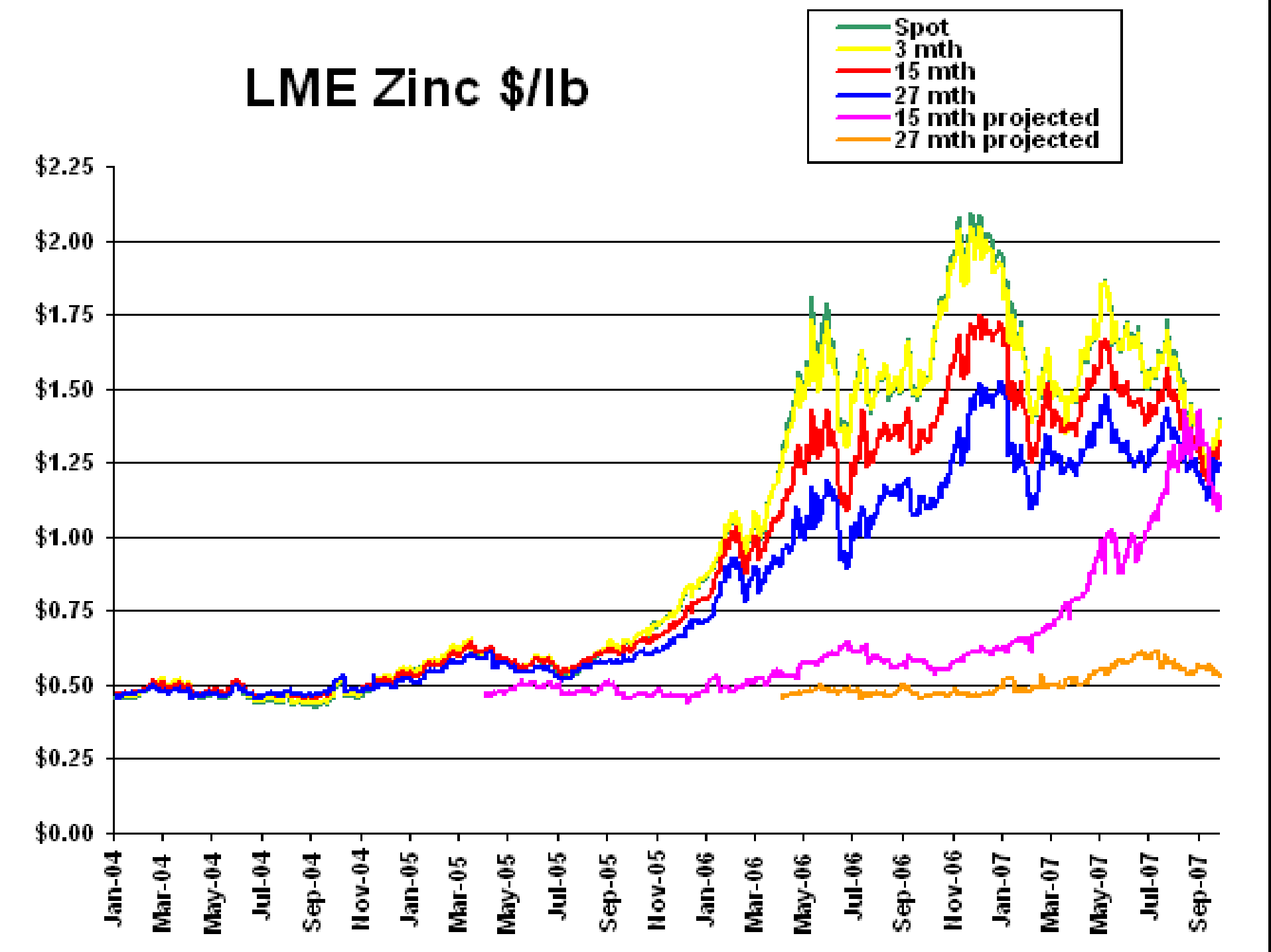
97
98
99
00
01
02
03
04
05
06
07

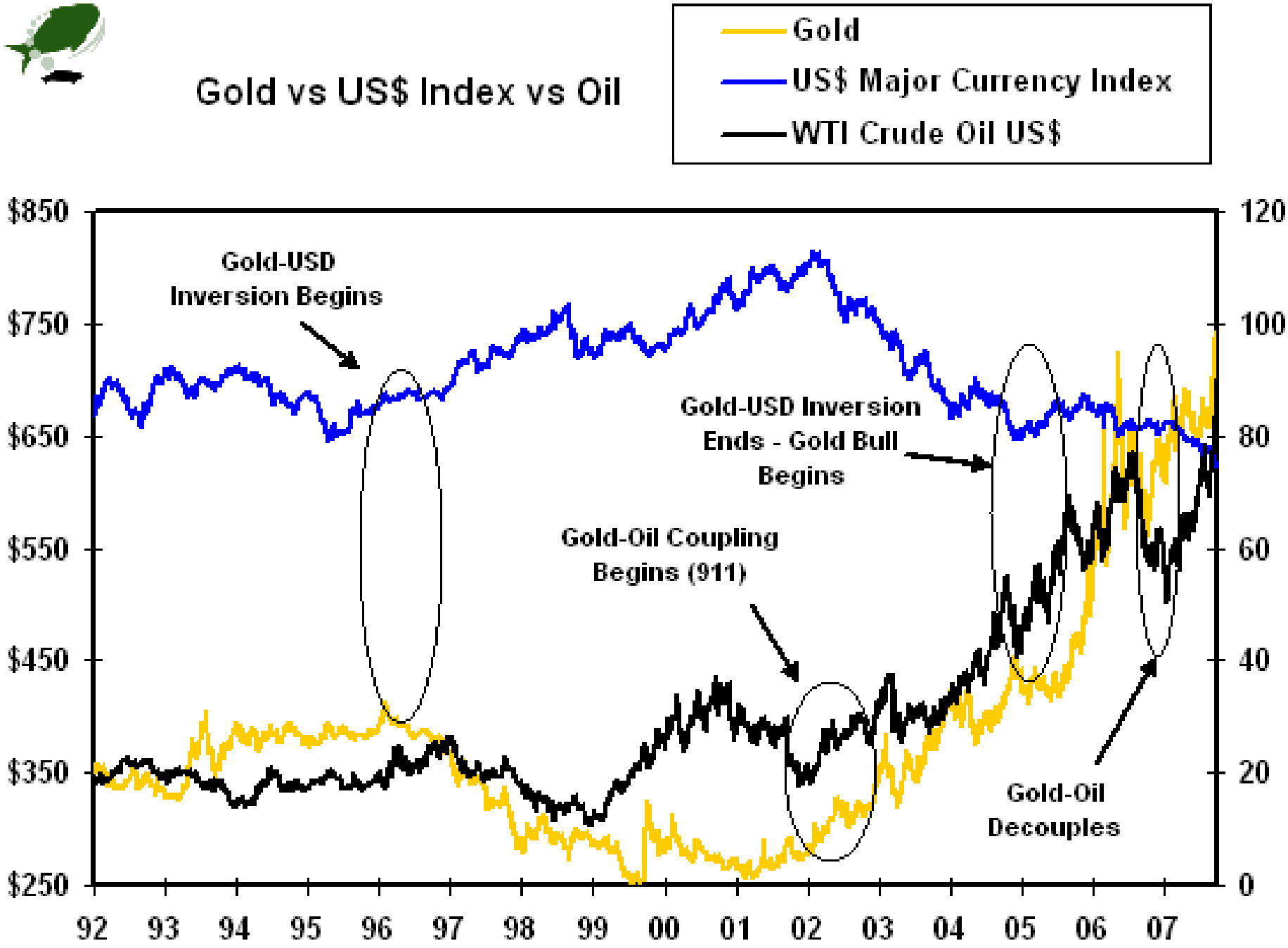
LME Warehouse Stocks

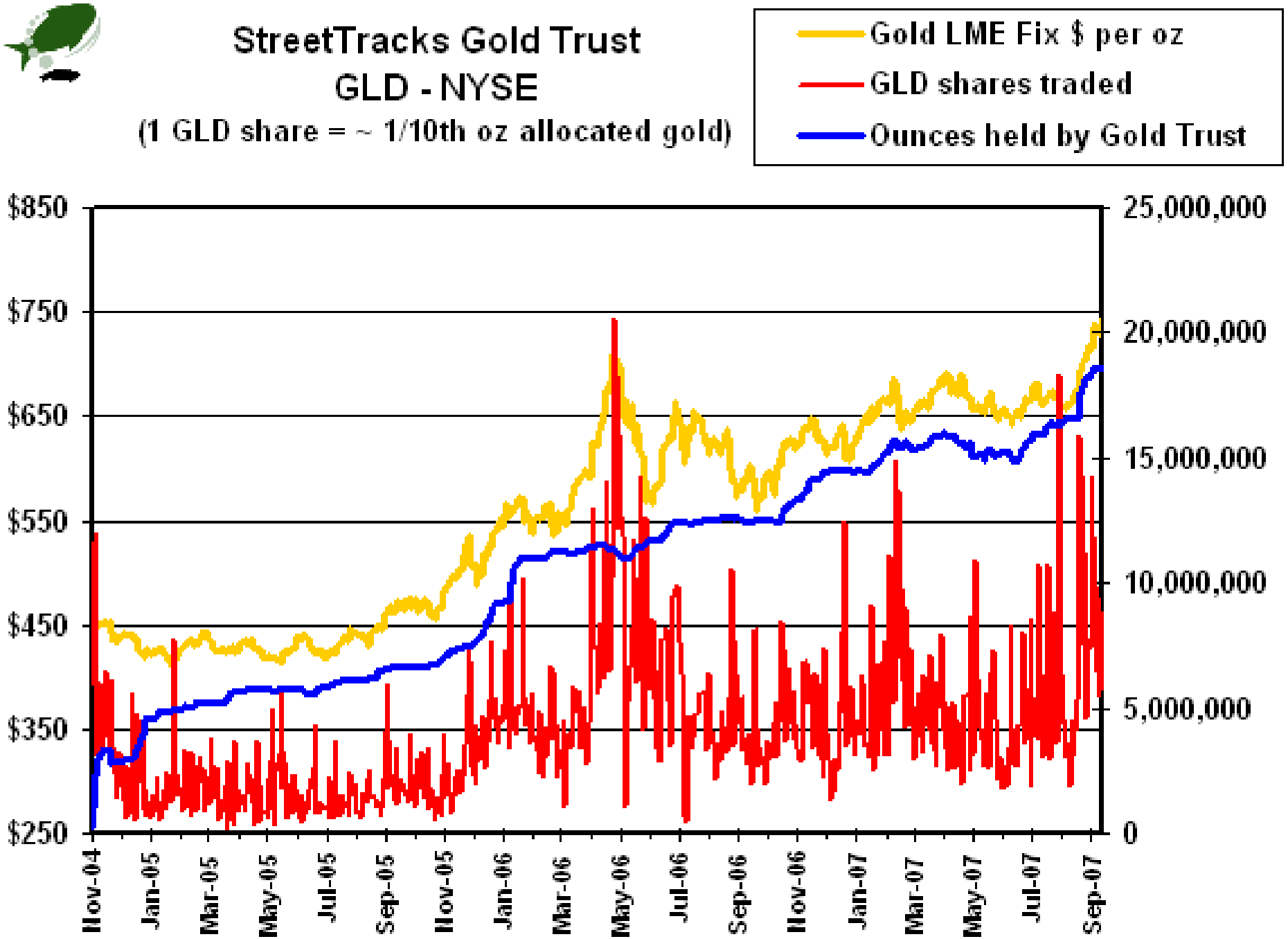



LME Zinc $/lb
Spot
3 mth
15 mth
27 mth
15 mth projected
27 mth projected
$2.25
$2.00
$1.75
$1.50
$1.25
$1.00
$0.75
$0.50
$0.25
$0.00
Jan-04
Mar-04
May-04
Jul-04
Sep-04
Nov-04
Jan-05
Mar-05
May-05
Jul-05
Sep-05
Nov-05
Jan-06
Mar-06
May-06
Jul-06
Sep-06
Nov-06
Jan-07
Mar-07
May-07
Jul-07
Sep-07

Recent Zinc-Lead Related Buyouts

- Western Silver - $33 / sh value paper bid by Glamis Gold, now part of Goldcorp - $1.6 billion (Mexico)

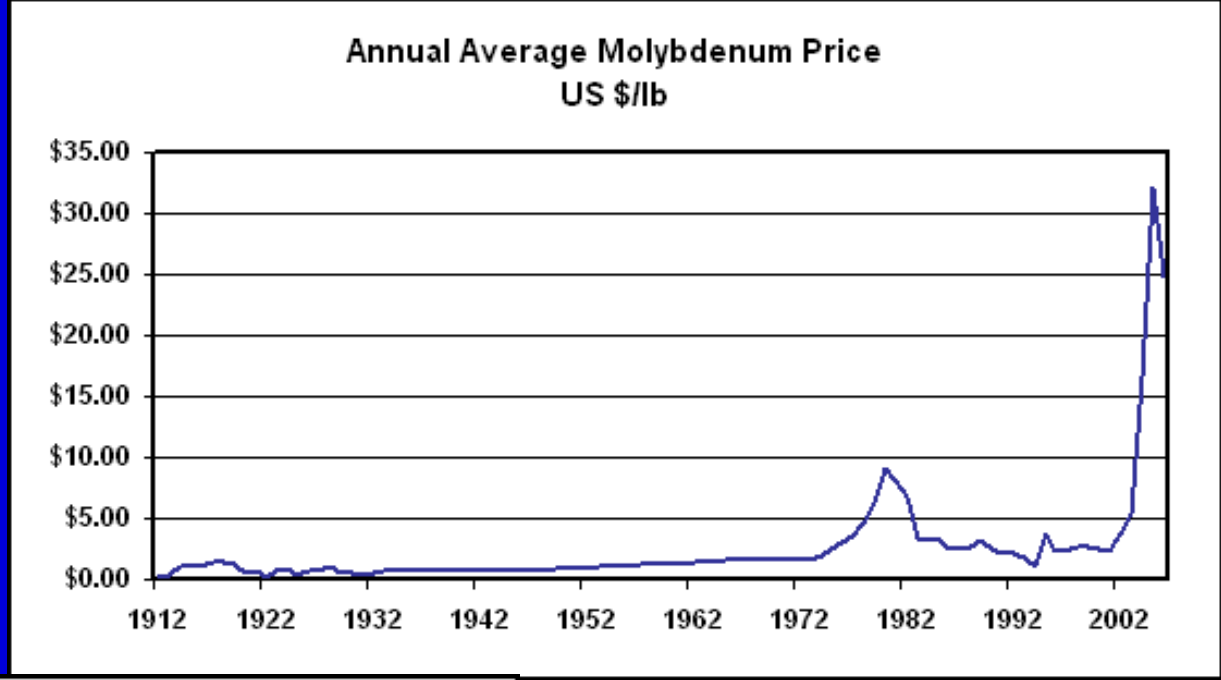

Gold vs US$ Index vs Oil
Gold
US$ Major Currency Index
WTI Crude Oil US$
$850
$750
$650
$550
$450
$350
$250
120
100
80
60
40
20
0
Gold-USD
Inversion Begins
Gold-USD Inversion
Ends - Gold Bull
Begins
Gold-Oil Coupling
Begins (911)
Gold-Oil
Decouples
92
93
94
95
96
97
98
99
00
01
02
03
04
05
06
07

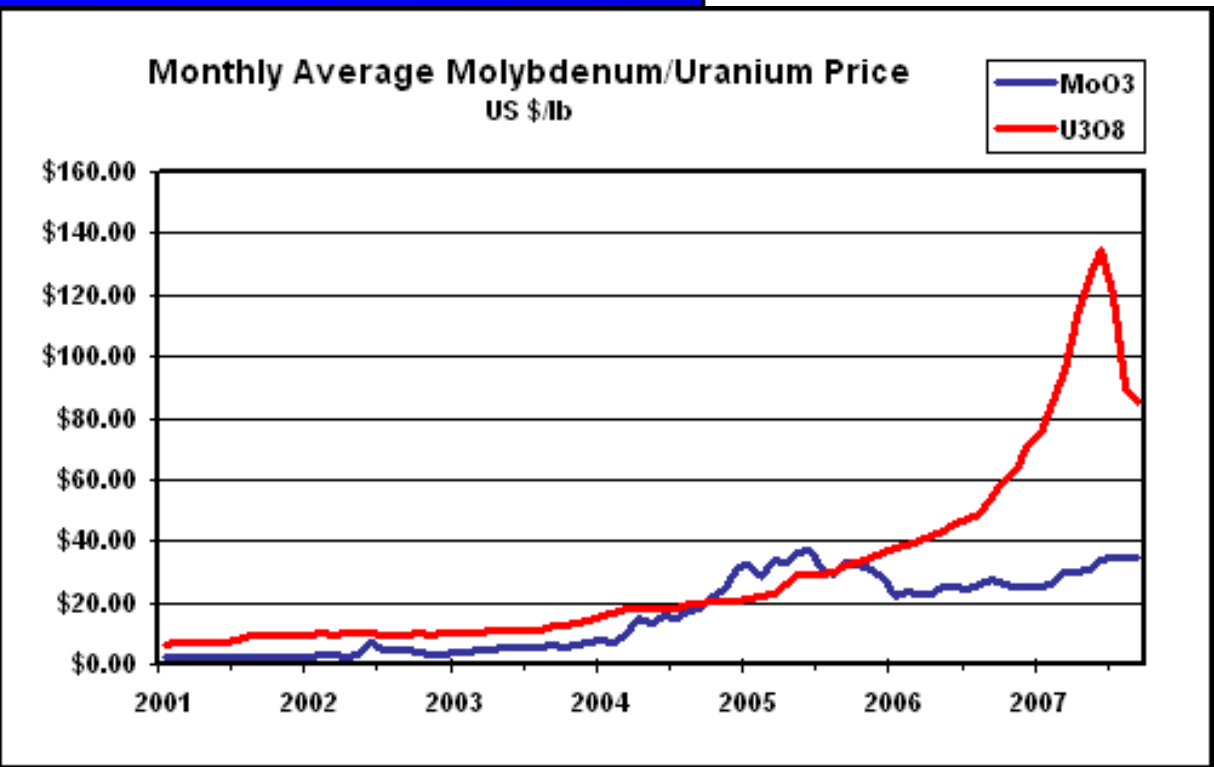

StreetTracks Gold Trust
GLD - NYSE
(1 GLD share = ~ 1/10th oz allocated gold)
Gold LME Fix $ per oz
GLD shares traded
Ounces held by Gold Trust
$850
$750
$650
$550
$450
$350
$250
25,000,000
20,000,000
15,000,000
10,000,000
5,000,000
0
Nov-04
Jan-05
Mar-05
May-05
Jul-05
Sep-05
Nov-05
Jan-06
Mar-06
May-06
Jul-06
Sep-06
Nov-06
Jan-07
Mar-07
May-07
Jul-07
Sep-07

China Price

Peak Oil

Global Warming



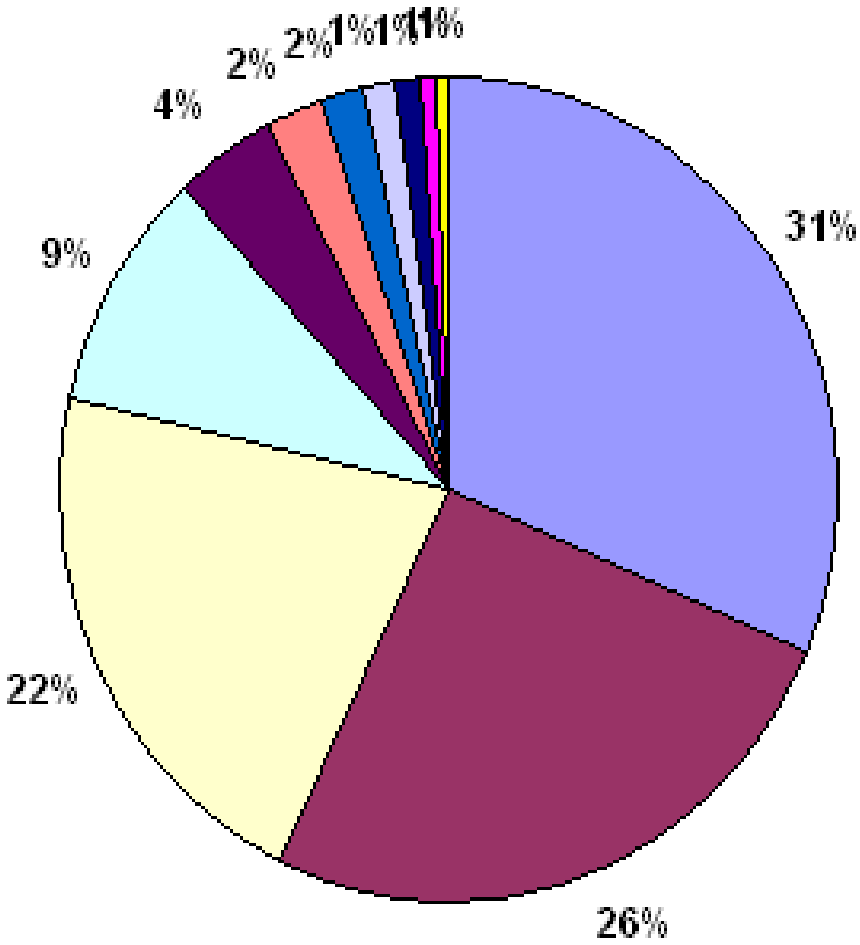


Infrastructure Renewal

The Green Revolution

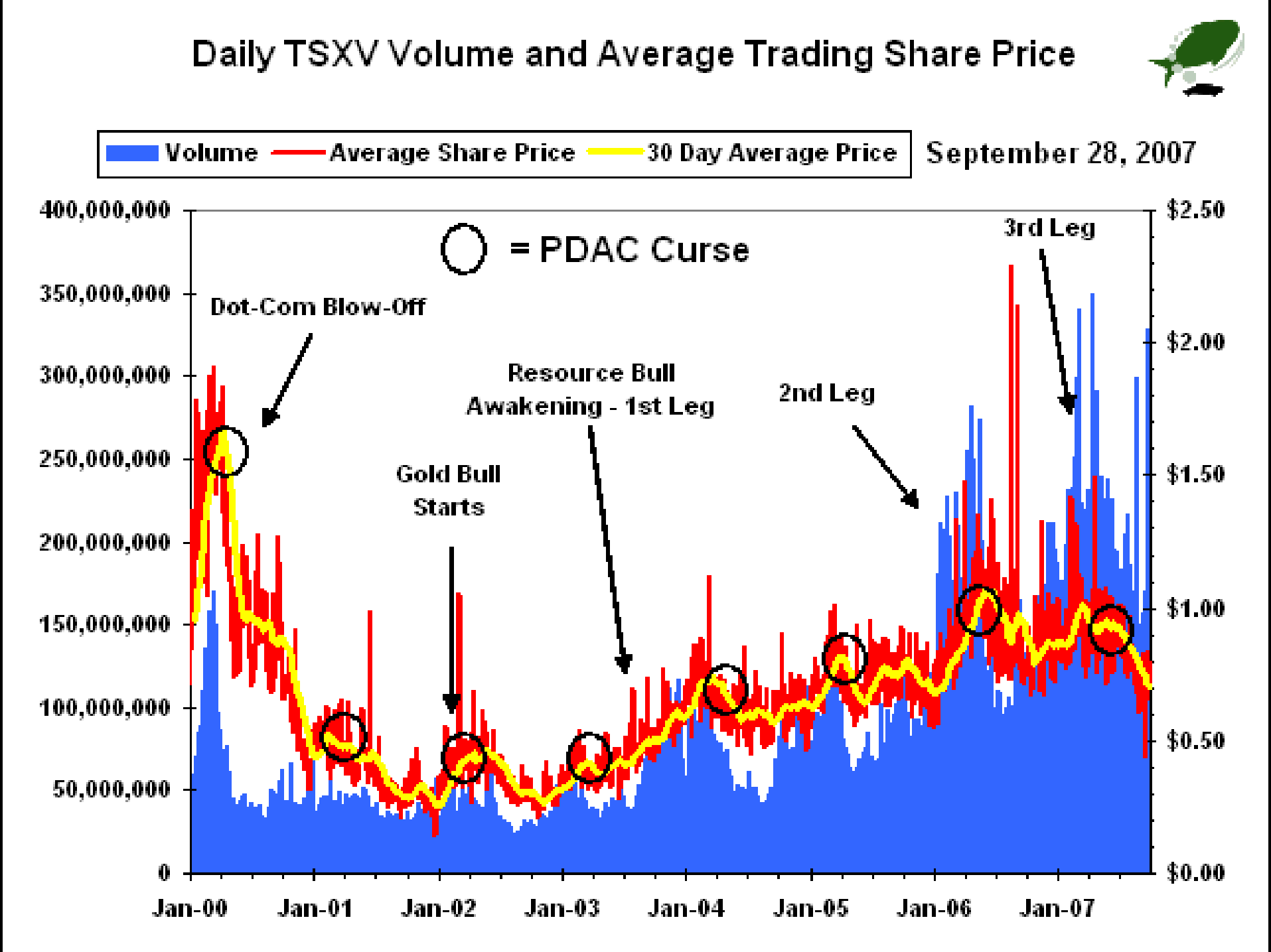
Global Molybdenum Production

2005 Total: 407 million lbs

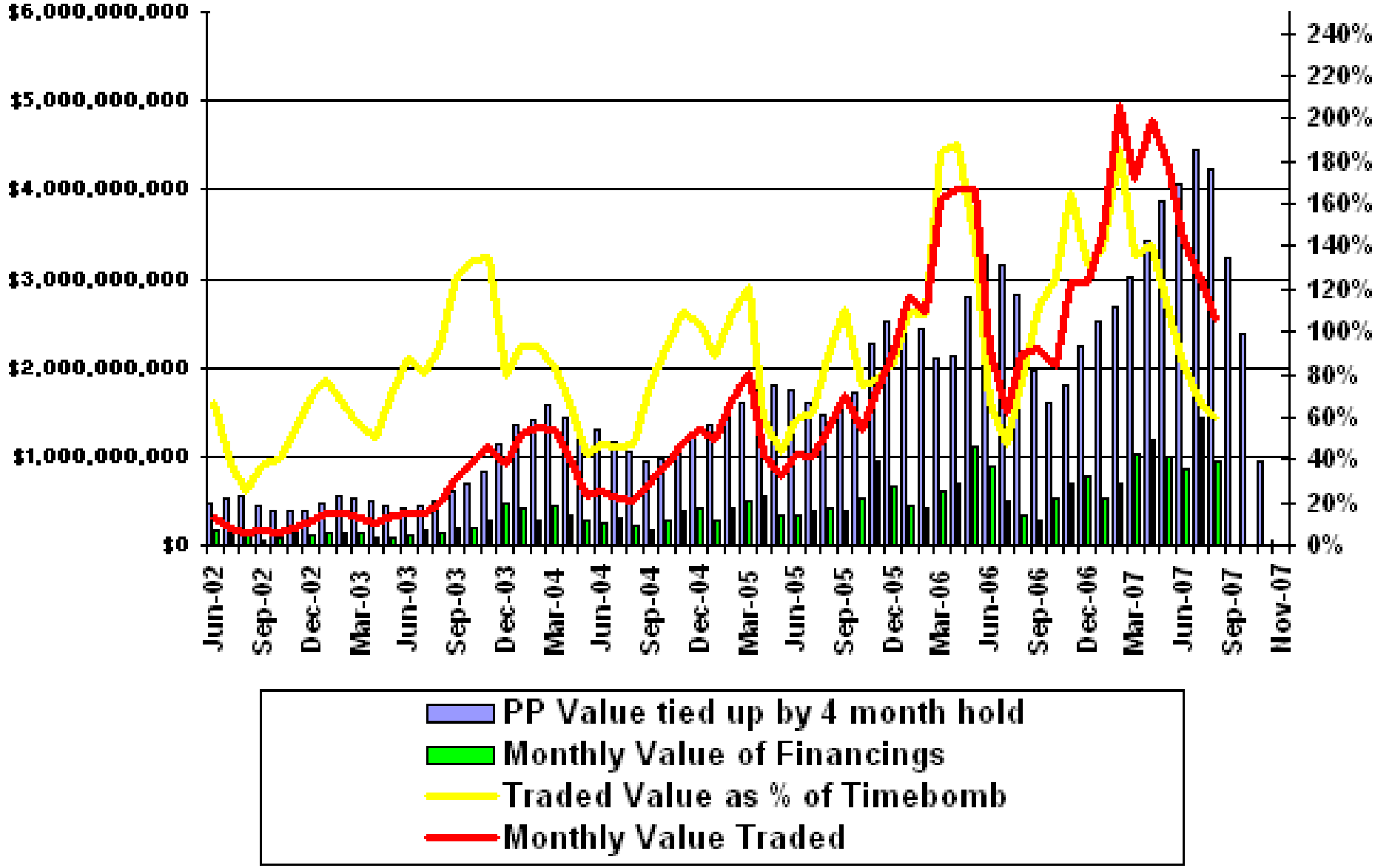


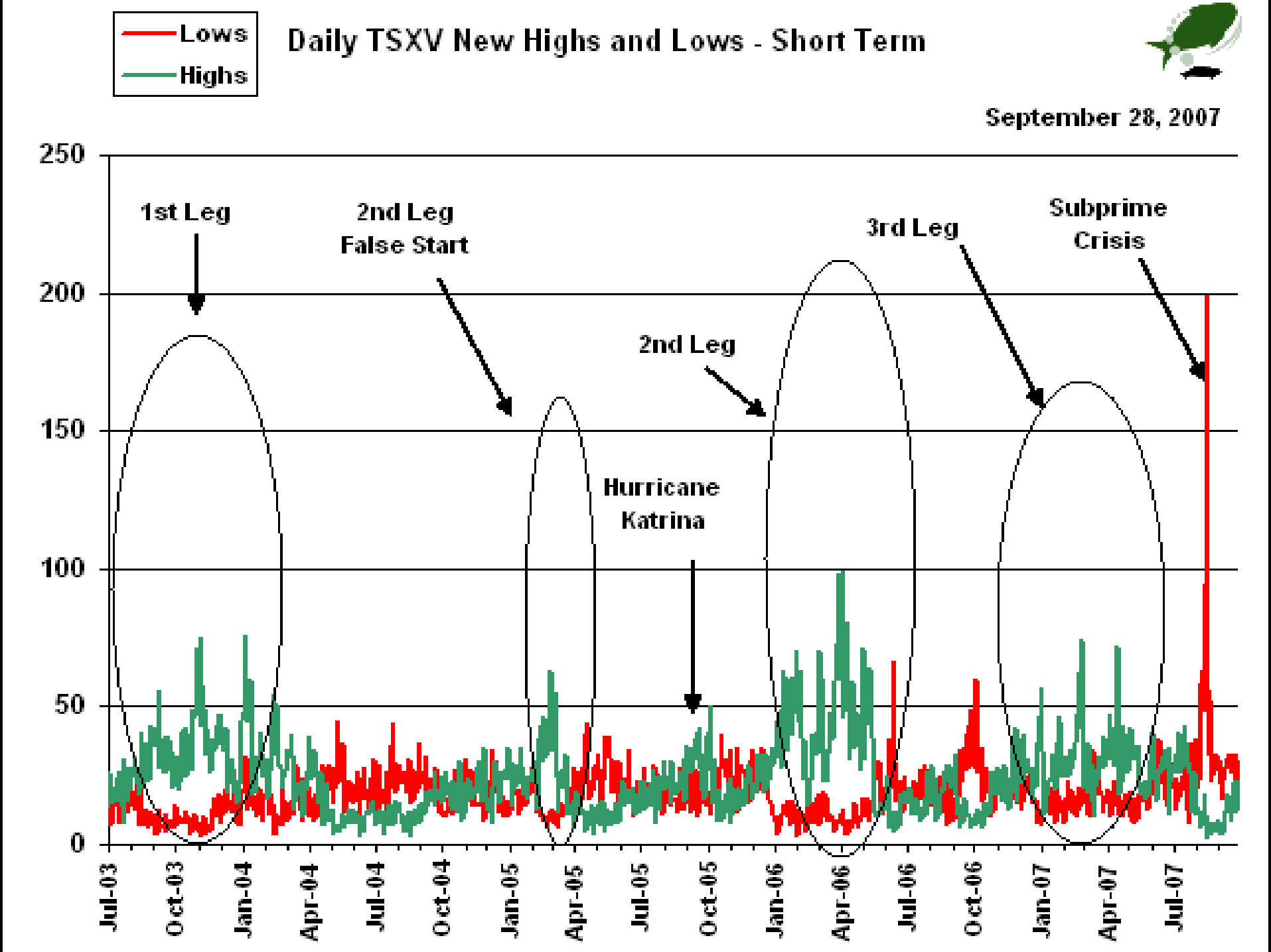
Source: USGS 2005 Yearbook

Daily TSXV Volume and Average Trading Share Price

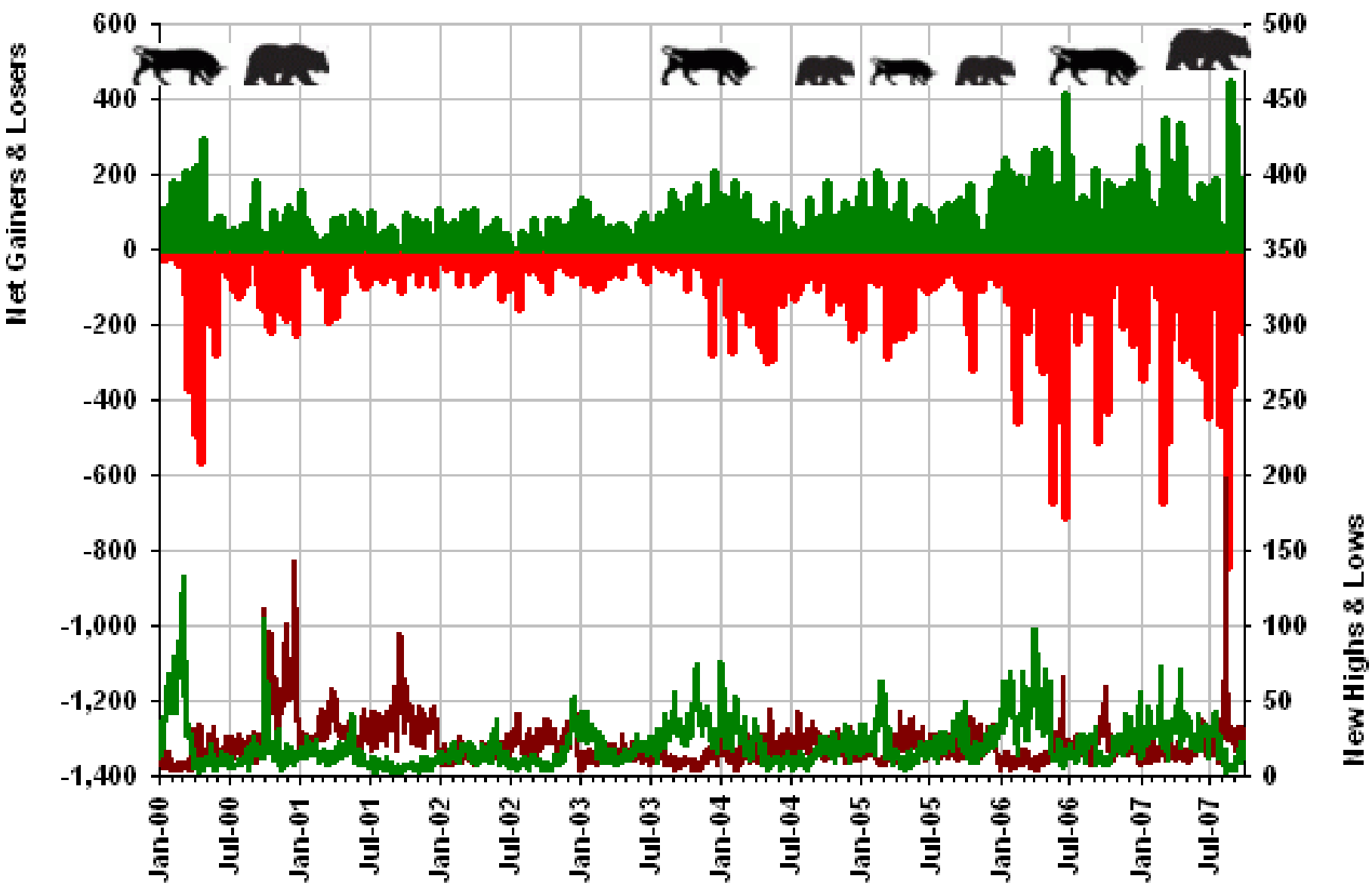


TSXV Private Placement Timebomb




Lows
Highs
Daily TSXV New Highs and Lows - Short Term
September 28, 2007
250
200
150
100
50
0
1st Leg
2nd Leg
False Start
2nd Leg
3rd Leg
Subprime
Crisis
Hurricane
Katrina
Jul-03
Oct-03
Jan-04
Apr-04
Jul-04
Oct-04
Jan-05
Apr-05
Jul-05
Oct-05
Jan-06
Apr-06
Jul-06
Oct-06
Jan-07
Apr-07
Jul-07

Daily TSXV Market Trends - Long Term



Scaling the Wall of Worry

- The race to production
- Metal prices have yet to peak
- A global prosperity driven bull market in gold
- A revival of discovery fueled speculation
- The Renewal of Aging Infrastructure
- Opportunities in the drive to Footprint Reduction
- The Pushback against Globalization
- The best is yet to come!