E.ON U.S.

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PUBLIC SERVICE COMMISSION

Ms. Stephanie L. Stumbo
Executive Director
Kentucky Public Service Commission
211 Sower Boulevard
Frankfort, KY 40601

E.ON U.S. LLC
State Regulation and Rates
220 West Main Street
PO Box 32010
Louisville, Kentucky 40232
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November 7, 2008

THE APPLICATIONS OF BIG RIVERS ELECTRIC CORPORATION FOR: (I) APPROVAL OF WHOLESALE TARIFF ADDITIONS FOR BIG RIVERS ELECTRIC CORPORATION, (II) APPROVAL OF TRANSACTIONS, (III) APPROVAL TO ISSUE EVIDENCES OF INDEBTEDNESS, AND (IV) APPROVAL OF AMENDMENTS TO CONTRACTS; AND OF E.ON U.S., LLC, WESTERN KENTUCKY ENERGY CORP., AND LG&E ENERGY MARKETING, INC. FOR APPROVAL OF TRANSACTIONS – Case No. 2007-00455

Dear Ms. Stumbo:

Enclosed please find and accept for filing the original and six (6) copies of E.ON U.S. LLC's response to the Attorney General's Supplemental Request for Information dated October 24, 2008, in the above-referenced matter.

Included in this filing are updates of information provided in response to the Attorney General's Initial Request for Information dated February 1, 2008 and updated information provided in response to the Attorney General's Supplemental Request for Information dated February 27, 2008.

Also enclosed are an original and ten (10) copies of a Petition for Confidential Protection regarding information provided in response to various questions.

Should you have any questions or need any additional information, please contact me at your convenience.

Sincerely,

Rick E. Lovekamp

Rick E. Lovekamp

cc: Parties of Record

VERIFICATION

STATE OF KENTUCKY)
) **SS:**
COUNTY OF JEFFERSON)

The undersigned, **Dan Arbough**, being duly sworn, deposes and says that he is the Treasurer, for E.ON U.S. Services Inc., that he has personal knowledge of the matters set forth in the responses for which he is identified as the witness, and the answers contained therein are true and correct to the best of his information, knowledge and belief.

DAN ARBOUGH

Subscribed and sworn to before me, a Notary Public in and before said County and State, this 6th day of November, 2008.

(SEAL)
Notary Public

My Commission Expires:

August 31, 2011

VERIFICATION

STATE OF KENTUCKY)
) SS:
COUNTY OF JEFFERSON)

The undersigned, **Valerie L. Scott**, being duly sworn, deposes and says that she is the Controller, for E.ON U.S. Services Inc., that she has personal knowledge of the matters set forth in the responses for which she is identified as the witness, and the answers contained therein are true and correct to the best of her information, knowledge and belief.

Valerie L. Scott
VALERIE L. SCOTT

Subscribed and sworn to before me, a Notary Public in and before said County and State, this 7th day of November, 2008.

Victoria B. Harper (SEAL)
Notary Public

My Commission Expires:
Sept 20, 2010

VERIFICATION

STATE OF KENTUCKY)
) SS:
COUNTY OF JEFFERSON)

The undersigned, **Paul W. Thompson**, being duly sworn, deposes and says that he is the Senior Vice President, Energy Services for E.ON U.S. Services Inc., that he has personal knowledge of the matters set forth in the responses for which he is identified as the witness, and the answers contained therein are true and correct to the best of his information, knowledge and belief.

PAUL W. THOMPSON

Subscribed and sworn to before me, a Notary Public in and before said County and State, this 6 day of November, 2008.

(SEAL)
Notary Public

My Commission Expires:

My Commission Expires
July 21, 2009

VERIFICATION

STATE OF KENTUCKY)
) SS:
COUNTY OF JEFFERSON)

The undersigned, **David Sinclair**, being duly sworn, deposes and says that he is the Vice President, Energy Marketing for E.ON U.S. Services Inc., that he has personal knowledge of the matters set forth in the responses for which he is identified as the witness, and the answers contained therein are true and correct to the best of his information, knowledge and belief.

DAVID SINCLAIR

Subscribed and sworn to before me, a Notary Public in and before said County and State, this 7th day of November, 2008.

Victoria B. Harper (SEAL)
Notary Public

My Commission Expires:
Sept 20, 2010

VERIFICATION

STATE OF KENTUCKY)
) SS:
COUNTY OF JEFFERSON)

The undersigned, **Russel A. Hudson**, being duly sworn, deposes and says that he is the Director, Energy Services Accounting and Budgeting for E.ON U.S. Services Inc., that he has personal knowledge of the matters set forth in the responses for which he is identified as the witness, and the answers contained therein are true and correct to the best of his information, knowledge and belief.

Russel A. Hudson
RUSSEL A. HUDSON

Subscribed and sworn to before me, a Notary Public in and before said County and State, this _______ day of November, 2008.

Victoria B. Harper (SEAL)
Notary Public

My Commission Expires:
Sept 20, 2010

VERIFICATION

STATE OF KENTUCKY)
) **SS:**
COUNTY OF JEFFERSON)

The undersigned, **Ralph Bowling**, being duly sworn, deposes and says that he is the Vice President, Power Production for E.ON U.S. Services Inc., that he has personal knowledge of the matters set forth in the responses for which he is identified as the witness, and the answers contained therein are true and correct to the best of his information, knowledge and belief.

Ralph Bowling
RALPH BOWLING

Subscribed and sworn to before me, a Notary Public in and before said County and State, this 7th day of November, 2008.

Victoria B. Harper (SEAL)
Notary Public

My Commission Expires:
Sept 20, 2010

E.ON U.S. LLC

UPDATED Response to the AG's Request for Information
Dated February 1, 2008

Updated Response filed November 7, 2008

Case No. 2007-00455

Question No. 24

Witness: Dan Arbough

Q-24. Provide copies of each (U.S.) Equities analyst report on E.ON since January 1, 2005.

A-24. See files on the enclosed CD for analyst reports that have been issued since the prior response.

E.ON U.S. LLC

UPDATED Response to the AG's Request for Information Dated February 1, 2008

Updated Response filed November 7, 2008

Case No. 2007-00455

Question No. 25

Witness: Valerie L. Scott

Q-25. Provide documents which show the current size of E.ON's U.S. markets by state as divided between retail, wholesale and other (or other/different market descriptions as applicable).

A-25.

AVERAGE NUMBER OF CUSTOMERS PER MONTH AS OF DECEMBER 31, 2007

	Kentucky: Electric	Kentucky: Gas	Virginia: Electric	Tennessee: Electric
Residential	766,441	299,887	25,321	5
Small Commercial, Large Commercial, & Industrial	121,231	24,279	3,688	0
Large Industrial	2,248	272	91	0
Public Street & Highway Lighting	4,889	0	43	0
Other Public Authority	9,445	1,044	813	0
Sales for Resale & Wholesale sales	72	0	0	0
Total	904,326	325,482	29,956	5

E.ON U.S. LLC

UPDATED Response to the AG's Request for Information
Dated February 1, 2008

Updated Response filed November 7, 2008

Case No. 2007-00455

Question No. 83

Witness: Paul W. Thompson

Q-83. Please reference the testimony of Paul W. Thompson, page 13, regarding "WKEC has agreed to pay to the smelter customers, collectively, at the closing a sum of money in immediately available funds." State the amount of that sum of money.

A-83. WKEC will deliver to a financial institution at closing a cash payment in the amount of $70 million to be held in escrow for a ten-year period following the date of the closing, for the purpose of providing the smelter load a financial source for monthly rebates associated with the recent increases in the forecasted costs of fuel required for the operation of the generation stations to serve the smelter load. See Revisions to the Testimony of Paul Thompson, submitted June 11, 2008 page 3, lines 17-22.

In addition to this consideration, the E.ON parties have agreed to make a lump sum payment, to the smelters' escrow agent under the escrow agreement; and those funds will be distributed by the escrow agent to the smelters pursuant to the escrow agreement over a thirty month period. See, Supplemental Direct Testimony of Paul A. Thompson, submitted October 9, 3008, page 9, lines 11-16, Exhibit PWT-4.

WKEC has also agreed to pay the smelter customers, collectively, at the closing a sum of money in immediately available funds. This information was provided in response to the AG's Request for Information Dated February 1, 2008 which was submitted to the Commission under seal pursuant to a petition for confidential treatment and to the AG pursuant to the existing confidentiality agreement.

E.ON U.S. LLC

UPDATED Response to the AG's Request for Information
Dated February 1, 2008

Updated Response filed November 7, 2008

Case No. 2007-00455

Question No. 84

Witness: Paul W. Thompson

Q-84. Please state when E.ON anticipates it will receive the requested tax rulings from IRS and Kentucky Revenue Cabinet.

A-84. As expected, both rulings were received prior to the end of the second quarter of this year.

E.ON U.S. LLC

UPDATED Response to the AG's Request for Information
Dated February 1, 2008

Updated Response filed November 7, 2008

Case No. 2007-00455

Question No. 85

Witness: Paul W. Thompson / David Sinclair

Q-85. Provide the complete joint application and supporting documentation for the parties waiver from the Federal Trade Commission under the Hart-Scott-Rodino Antitrust Improvements Act ("HSR Filing"). If the filing has not yet been made, please state when it is anticipated the HSR filing will be made.

a. If the HSR filing has not yet been made, provide each document that is being considered for inclusion when the filing is made.

A-85.

a. The parties continue to develop their respective applications (and supporting documentation) to the Federal Trade Commission ("FTC") under the Hart-Scott-Rodino Antitrust Improvements Act. Once completed, the E.ON filing and attached documents will be provided under seal. The parties anticipate that their respective applications will be filed with the FTC in mid-December, 2008.

E.ON U.S. LLC

UPDATED Response to the AG's Request for Information
Dated February 1, 2008

Updated Response filed November 7, 2008

Case No. 2007-00455

Question No. 86

Witness: Paul W. Thompson / David Sinclair

Q-86. Identify and provide the filings before the Federal Energy Regulatory Commission necessitated by this proposed transaction.

A-86. On June 13, 2008, E.ON notified the Commission and the parties of record in this proceeding of the issuance of the Federal Energy Regulatory Commission approvals necessary to the consummation of the unwind transactions. Such approvals are described below and are attached as exhibits to the June 13, 2008 notice.

On May 9, 2008, FERC issued a Notice of Cancellation of certain Western Kentucky Energy Corp. rate schedules and agreements effective on the date the unwind transaction is consummated. See Western Kentucky Energy Corp., Docket No. ER08-677-000 (Letter Order of May 9, 2008).

On May 13, 2008, FERC entered its Order on Jurisdiction in LG&E Energy Marketing, Inc., Docket No. ER08-678-000, 123 FERC 7 61,147 (May 13, 2008), disclaiming jurisdiction over the Generation Dispatch Support Services Agreement between LG&E Energy Marketing and Big Rivers.

On May 22, 2008, FERC entered its Order Authorizing Disposition of Jurisdiction Facilities in Western Kentucky Energy Corp., E.ON 71s. LLC, Docket No. EC08-54-000, 123 FERC 7 62,153 (May 22, 2008).

E.ON U.S. LLC

UPDATED Response to the AG's Request for Information
Dated February 1, 2008

Updated Response filed November 7, 2008

Case No. 2007-00455

Question No. 90

Witness: Paul W. Thompson / David Sinclair

Q-90. Provide E.ON's strategic plan for generation assets and operations in Kentucky, or at any necessary higher level (geographic or business) if such a plan does not exist for Kentucky.

A-90. The E.ON companies submitted The 2008 Joint Integrated Resource Plan of Louisville Gas and Electric Company and Kentucky Utilities Company on April 21, 2008 in Case No. 2008-00148. As noted in our response to the AG's February 1, 2008 Request for Information, the Integrated Resource Plan provides historical and projected demand, resource and financial data, and other operating performance and system information.

E.ON U.S. LLC

UPDATED Response to the AG's Request for Information
Dated February 1, 2008

Updated Response filed November 7, 2008

Case No. 2007-00455

Question No. 96

Witness: David Sinclair

Q-96. Provide any available and current market and industry research on aluminum commodity markets and aluminum smelting that have been reviewed and considered by E.ON.

A-96. Attached are reports that include current aluminum market and industry data. E.ON U.S. began reviewing this information in April 2008 and updates to this information occur on a bi-weekly frequency.

30 September 2008 | 35 pages

M/Metals: Scarcity vs. Trough Pricing

Positive on Coal, Copper, Gold ... Cautious on the Rest

John H Hill, CFA

Graham Wark

Paul Cheng

- **Commodity forecast climb-down** — In conjunction with the CIR global team, we are cutting forecasts for 2009-10 to reflect China slowdown, dis-inflationary developments, and the short/medium term impacts of the US financial crisis We are cutting Copper and Aluminum forecasts from aggressive, Street-high levels For next year we expect Copper at $3 65/lb (prev $4 75) and Aluminum at 1 30 (prev $1 80) *These are well above current spot and futures curves* Other changes include lower Iron Ore forecasts, and mixed moves in Coal

- **Drives earnings lower** — As a result we are cutting EPS estimates and target prices Cuts are material for FCX, AA, and TCK – all of which remain Buy-rated on valuation with a 12-month view Parlous cyclical conditions have pushed stocks *below "peak" multiples to 2-3x EV/EBITDA Yet, valuation is seldom a catalyst*

- **Copper looks best. Aluminum deterred, deferred.** Copper is well-positioned due to supply-side constraints, which span shortfalls at current mines, delays at mega-projects, and contract cancellations by host governments Aluminum has been a disappointment, as Chinese energy shortages have eased and smelter cuts were *less-than-advertised, while demand from construction/transport is imploding*

- **Ranking the resources** — Favorite sub-groups are Coal, Copper, and Gold On the other hand, Steel, Aluminum, Nickel, Lead, and Zinc are flirting with surplus, and will thus be more challenged Please see full-length companion commodity report

- ***See note*** — For FCX sensitivities, AA earnings build-up, and points at the quarter

	Rating		Target Price		Current Year Estimates		Next Year Estimates	
Ticker	Old	New	Old	New	Old	New	Old	New
AA	*1M*	*1H*	*US$50 00*	*US$30 00*	*US$2 98*	*US$2 00*	*US$4 79*	*US$3.51*
FCX	1H	1H	US$138 00	US$90 00	US$9 92	US$8 83	US$16 57	US$11 46
TCKb TO	1H	1H	C$55 00	C$41 00	C$5 48	C$5 17	C$8.76	C$10 13

See Appendix A-1 for Analyst Certification and important disclosures.

Contents

3Q Earnings and Commodity Forecasts

In conjunction with the CIR global Metals team, we are cutting base metals forecasts for 2009-10 and re-casting company EPS estimates

This reflects China slowdown, dis-inflationary developments, and the short and medium term impact of the US derivatives/financial crisis. Conditions on-the-ground in Metals are consistent with the headlines, featuring slack demand, end-user de-stocking, higher inventories, and lower merchant premia. Cyclically soft conditions seem likely in 2009.

See Fig 1 for summary of CIR global commodity forecast changes.

Backing away from aggressive forecasts. Most significantly, we are cutting *Copper and Aluminum 2009-10 forecasts from aggressive levels. For next year* we now expect Copper at $3.65/lb (prev $4.75) and Aluminum at 1.30 (prev 1.80). These are well above current spot and futures curves

See companion global commodity report, "Trough Cycle Analysis"

Copper looks best among base metals. We continue to see Copper as well-positioned due to supply-side constraints, which span shortfalls at current mines, delays at mega-projects, and contract cancellations by host governments. There is a secular component to demand, and substitution potential is modest. As a result, Copper is likely to remain in balance to slight deficit through 2010 with prices maintained well above trough-cycle levels. *With Copper dipping below $3.00/lb, it is only slightly above the top of the cost* curve in the $2.40 – 2.50/lb range. Replacement costs are probably more relevant to long-term prices, as suggested by 5-year futures that are in the $2.90/lb range

It's not working. Exchange inventory builds of +50% YTD are too big to ignore.

Aluminum deterred, defered. Aluminum has been a disappointment, as Chinese smelter cuts tied to energy shortages in 1H/08 were less than advertised, while demand from construction/transport is imploding. China accounts for one-third of global production, and is at the top of the cost curve with average smelter costs of $1.12 and as much as 30% of capacity sub-economic. Self-sufficiency objectives and better power availability are likely to prevent large-scale shutdowns. As a result, Aluminum surplus appears likely in 2009-10, and as a result the CIR global commodities team is backing away from aggressive forecasts above $2.00/lb, and now expect $1.30/lb in 2009. Downside from current levels seems limited. We continue to be believers in Aluminum's "Power cost determinism," in a carbon and energy constrained future, but catalysts have clearly been pushed out to 2009-10

The Commodity Supercycle lives. We regard current conditions to be a severe correction amid a secular bull market for M/Metals. Demand-side drivers from BRIC-country industrialization / urbanization remain intact, while supply continues to be constrained by resource scarcity, infrastructure bottlenecks, and the forces of resource nationalism. Indeed, the next up-leg for the M/Metals could be even more powerful than its predecessor because when global economic activity recovers, demand will be amplified by re-stocking while supply is pinched by mine cutbacks/closures and project delays.

Favorites: Gold, Coal, Copper. In the current environment, our favorite M/Metals sub-groups are Gold, thermal/met Coal, and Copper. Steel, Aluminum, Nickel, Lead, and Zinc are closer to commodity surplus, and will thus be more challenged

New Commodity Forecasts

We are rolling out a new commodity price deck across the M/Metals sector, consistent with slower growth scenarios and flow-though to construction and consumer durables

Most notably, the CIR global commodities team is backing down from Street-high 2009 base metals forecasts of Aluminum at $1.80 – 2.00/lb and Copper at $4.75 – 5.00/lb. However, new forecasts remain well above spot and the futures curve.

The pattern is similar in Iron Ore, where we now expect price moves of +10% / -20% in 2009-10 (prev +30% / 0%).

Forecast changes are mixed for Coal, with hard coking grades maintained, Semi-soft and PCI being raised, and Thermal being cut slightly.

Please see full-length companion commodity report for detail.

Figure 1. Base Metals Forecast Summary

As of 9/30/2008	Citi Commodity Forecast								
	3Q/08E	4Q/08E	2008E	1Q/09E	2Q/09E	3Q/09E	4Q/09E	2009E	2010E
Aluminum ($/lb)									
New	**$1.28**	**$1.15**	**$1.25**	**$1.20**	**$1.20**	**$1.40**	**$1.40**	**$1.30**	**$1.60**
Old	$1.28	$1.30	$1.29	$1.60	$1.60	$2.00	$2.00	$1.80	$2.20
Change	0.00	-0.15	-0.04	-0.40	-0.40	-0.60	-0.60	-0.50	-0.60
Percentage Change	*0%*	*-12%*	*-3%*	*-25%*	*-25%*	*-30%*	*-30%*	*-28%*	*-27%*
LME Futures			1.24					1.13	1.20
Alumina ($/T)									
New	***$370***	***$360***	***$368***	***$390***	***$390***	***$450***	***$450***	***$420***	***$510***
Old	$370	$410	$380	$510	$510	$640	$640	$575	$700
Change	$0	-$50	-$13	-$120	-$120	-$190	-$190	-$155	-$190
Percentage Change	*0%*	*-12%*	*-3%*	*-24%*	*-24%*	*-30%*	*-30%*	*-27%*	*-27%*
Copper ($/lb)									
New	**$3.49**	**$3.30**	**$3.53**	**$3.50**	**$3.60**	**$3.75**	**$3.75**	**$3.65**	**$4.00**
Old	$4.00	$4.00	$3.65	$4.00	$4.50	$5.00	$5.00	$4.75	$5.50
Change	-$0.51	-$0.70	-$0.11	-$0.50	-$0.90	-$1.25	-$1.25	-$1.10	-$1.50
Percentage Change	*-13%*	*-18%*	*-3%*	*-13%*	*-20%*	*-25%*	*-25%*	*-23%*	*-27%*
LME Futures			3.43					2.88	2.86
Zinc ($/lb)									
New	***$1.10***	***$0.96***	***$0.60***	***$0.75***	***$0.90***	***$0.70***	***$0.70***	***$0.70***	***$0.80***
Old	$1.10	$0.96	$0.79	$0.75	$0.90	$0.70	$0.70	$0.70	$0.80
Change	$0.00	$0.00	$0.02	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
Percentage Change	*0%*	*0%*	*2%*	*0%*	*0%*	*0%*	*0%*	*0%*	*0%*
LME Futures			0.90					0.78	0.81

Source: Citi Investment Research

Impacts to Company Earnings

Commodity forecast changes drive a new set of earnings estimates, with cuts to Alcoa, Freeport, and Teck Cominco. All remain Buy rated based on extremely low valuation multiples, and divergence between the equities and their underlying commodities. Copper remains our favorite among base metals, although near-term catalysts seem scant.

We expect consensus 3Q and 2008 estimates on Freeport to come down, based on the influence of quarter-end provisional pricing. We expect consensus on Teck for 2009/10 to rise significantly as the Fording met Coal acquisition is factored into models.

Please see company summary sections for key points to watch at the quarter.

Figure 2. EPS Revision Summary

	3Q08E	4Q08E	2008 E	2009E	2010E	Rating	Target
Alcoa							
New EPS	**0.48**	**0.36**	**2.00**	**3.51**	**5.06**	**Buy (1H)**	**$30**
Previous	0.83	1.00	2.98	4.79	6.45	Buy (1M)	50
Change	-0.35	-0.64	-0.98	-1.28	-1.38	*Current*	*$22.58*
Percentage Change	*-42%*	*-64%*	*-33%*	*-27%*	*-21%*	*ETR*	*35.5%*
Consensus	*0.59*	*0.69*	2.39	3.28	4.14		
Freeport							
New EPS	**1.37**	**2.41**	**8.83**	**11.46**	**12.25**	**Buy (1H)**	**$90**
Previous	1.96	2.92	9.92	16.57	19.50	Buy (1H)	138
Change	-0.59	-0.50	-1.09	-5.11	-7.25	*Curr Price*	*$56.85*
Percentage Change	*-30%*	*-17%*	*-11%*	*-31%*	*-37%*	*ETR*	*61.8%*
Consensus	*1.80*	*2.75*	*9.33*	*12.03*	*13.34*		
Teck Cominco							
New EPS	**1.32**	**1.97**	**5.17**	**10.13**	**14.37**	**Buy (1H)**	**$41**
Previous	1.76	1.85	5.48	8.76	12.13	Buy (1H)	55
Change	-0.45	0.11	-0.31	1.37	2.24	*Curr Price*	*$31.05*
Percentage Change	*-25%*	*6%*	*-6%*	*16%*	*18%*	*ETR*	*35.3%*
Consensus	*1.47*	*1.56*	*4.91*	*6.77*	*6.23*		

Source: Citi Investment Research

Excerpts from the Global Report

Trough Prices

Please see full-length companion report, "Trough Cycle Analysis" by the CIR global commodities team led by Alan Heap.

Given the current highly uncertain economic outlook trough cycle commodity prices provide a valuable tool against which to benchmark valuations and to gauge risk. Trough cycle prices are supported by production costs and margins, we do not believe prices will fall below these levels for a sustained period (months)

Current marginal costs do not provide an accurate guide to trough prices, the analysis takes into account that costs fall as prices fall, and margins are compressed. The degrees of cost reduction and margin compression vary between commodities depending on cost structure (steepness of the cost curve, amount of swing production) and industry characteristics (barriers to exit, price elasticity of supply).

Figure 3. Summary of Trough Prices

		Current Price	Trough Price	Downside (%)	Long term price
Copper	USc/lb	320	200	-38%	160
Aluminium	USc/lb	110	100	-9%	130
Zinc	USc/lb	80	70	-13%	80
Nickel	US$/lb	7 6	4 7	-38%	6 00
Iron Ore	US$/t	135	50	-63%	60 00
Coking Coal	US$/t	300	80	-73%	120 00
Thermal Coal	US$/t	125	50	-60%	50 00

Source: Bloomberg, Citi Investment Research

Figure 4. Industry Averages

		Current Margin	Trough Margin	Current Cost	Cost decline (%)
Copper	USc/lb	63	40	137	15
Aluminium	USc/lb	34	20	85	7
Zinc	USc/lb	22	15	70	20
Nickel	US$/lb	51	27	2 8	20
Iron Ore	US$/t	67	50	28	11
Coking Coal	US$/t	84	40	55	5
Thermal Coal	US$/t	78	40	33	5

Source: Citi Investment Research

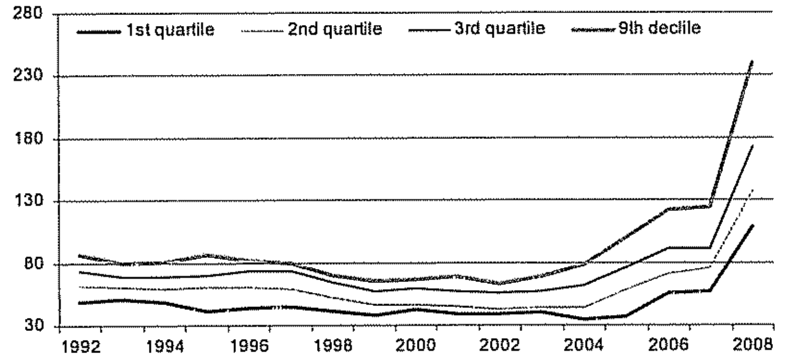
In an oversupplied market prices militate towards a level that is determined in the mix between cash production costs and margins. Typically this process takes between one and two years

However it is too simplistic to assert that marginal costs will set a floor to prices

Costs decline as prices fall

As prices fall so do costs High cost operations close, and others take steps to reduce costs by deferring no essential expenditures, reducing maintenance and high grading, TC's fall, by-product credits decline, and commodity exchange rates may weaken

Figure 5. Costs fall by around 20% from peak to trough - Copper

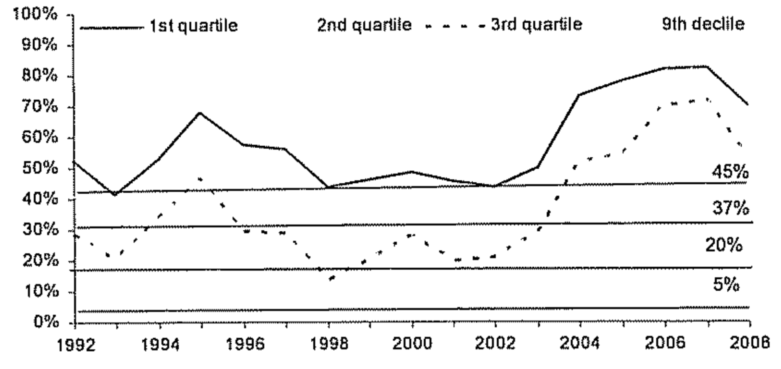


Source: Brook Hunt, Citi Investment Research

Margins are compressed

Lower costs do not fully mitigate the impact of lower prices however; margins are also compressed.

Figure 6. The degree of margin compression is consistent across cycles



Source: Brook Hunt, Citi Investment Research

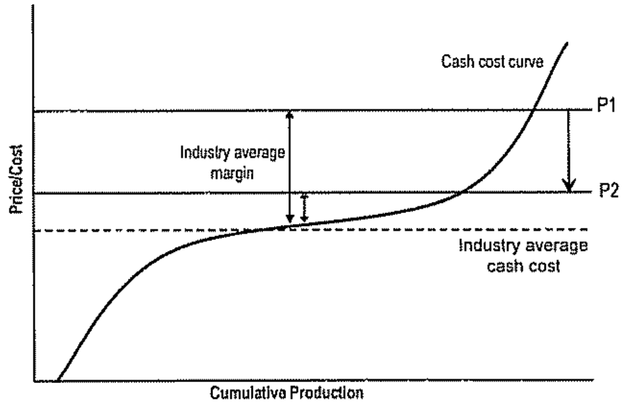
We find that trough cycle margins are consistent across cycles for any given commodity, but vary widely between commodities

Factors contributing to differences in trough cycle margins are structural differences between commodities They include:

- The shape of the cost curve A steep cost curve means that high cost producers curb output rapidly, inducing a rapid supply response and helping preserve margins of the lower cost players A flat cost curve may encourage producers to remain in operation, hoping a competitor will close first Some commodities have a structurally steeper cost curve (e g iron ore) than others which are much flatter (e g zinc)

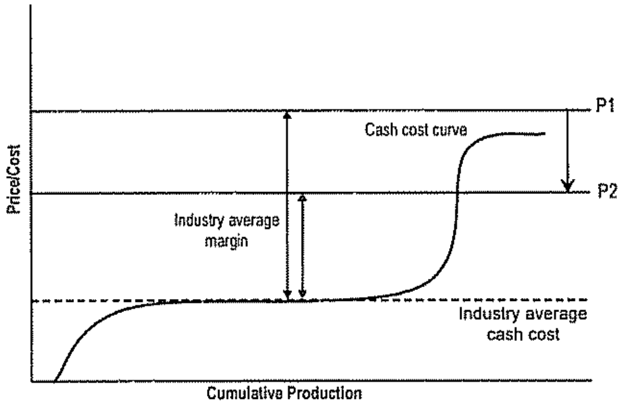
A driver of high returns – shape of cost curve

Figure 7. Margin compression in Zinc industry – spread across the industry



Source: Citigroup Investment Research

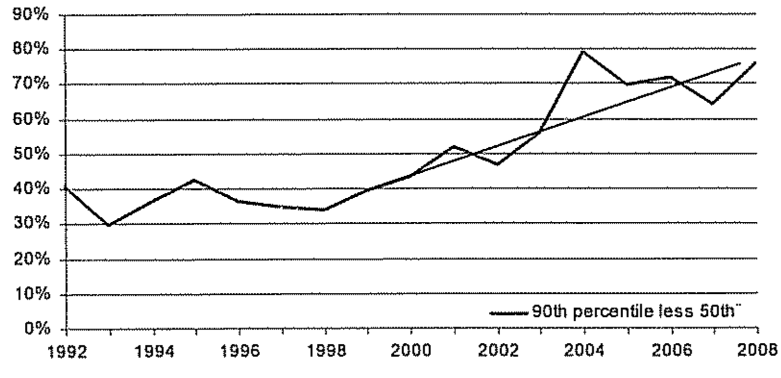
Figure 8 Margin compression in Iron ore industry – high cost produces feel the pain



Source: Citigroup Investment Research

In most commodities however we find that cost curves have been steepening in recent years

Figure 9. Cost curves are steepening – Copper



Source: Brook Hunt, Citi Investment Research

- The nature of the top end of the cost curve. If the top of the cost curve is occupied by a fragmented group of small producers curtailments can be expected to occur rapidly, allowing the average margin to fall. If on the other hand the top of the cost curve is occupied by a large block of production (as is the case in aluminium and coking coal) this is not swing supply and the economics of this production will tend to set a more solid floor to prices
- Barriers to exit. If barriers to exit are high (as was the case in zinc) producers will continue to operate at a loss so long as they believe prices will recover at some point in the not too distant future and operational losses are less then the cost of closure.
- Cross subsidization. If companies have both high and low cost operations, cross subsidization may occur

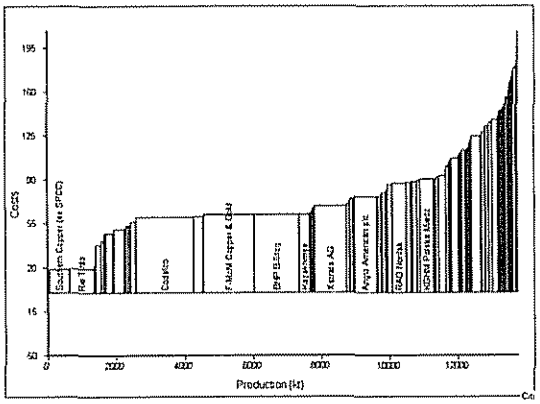
Besides determining trough prices, the way in which a commodity behaves in a trough has implications for sustained margins. Commodities with deep and prolonged troughs often also have poor long run margins. In most cases trough prices are lower than long term prices

Recent trends

The commodity bull market has induced a number of changes in the industry.

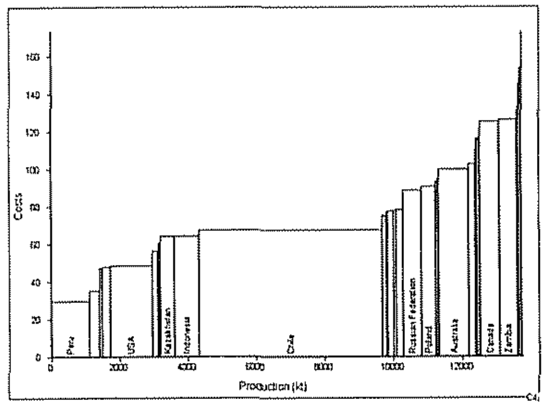
- Steeper cost curves. Cost curves have steepened in the last few years as production from high cost operations has increased. To some degree this steepening is structural: new supply is high cost
- Cost inflation. Some of the inflationary elements in cost have a structural component especially energy prices. Others, whilst not structural, are likely to persist, such as long lead time equipment and labour.
- Exchange rate moves. The extreme volatility in exchange rates caused shifts in the shape of cost curve and the position of producers on the curve
- Margin compression reduced by structural change. Changes in the ownership structure of industries such as consolidation and the increased role of the major diversifieds, is likely to induce a more rational behaviour, earlier closures, and better margin preservation as a result.
- By-product credits. High by-product credits have lowered costs, often for low cost producers, contributing to steeper cost curves
- Treatment charges. TCs are a highly variable cost

Figure 10. 2007 - Copper Cost Curve by Operation (USc/lb)



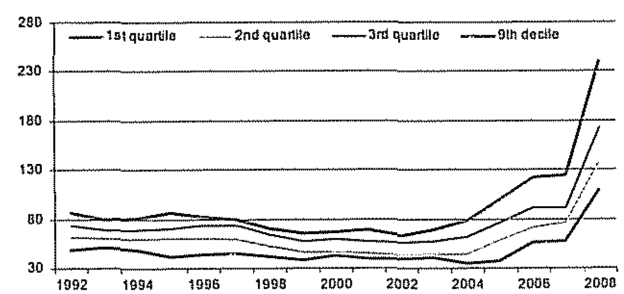
Source: Brook Hunt, Citi Investment Research

Figure 11. 2007 - Copper Cost Curve by Country (USc/lb)



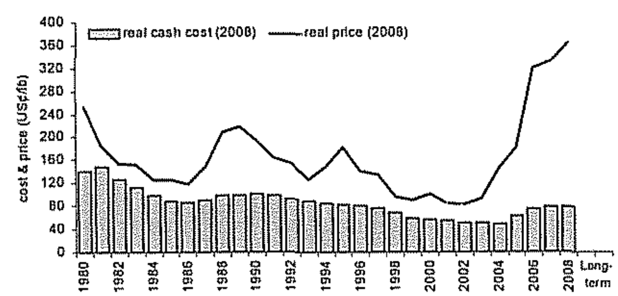
Source: Brook Hunt, Citi Investment Research

Figure 12. Copper Cost Trends at various cost points (USc/lb)



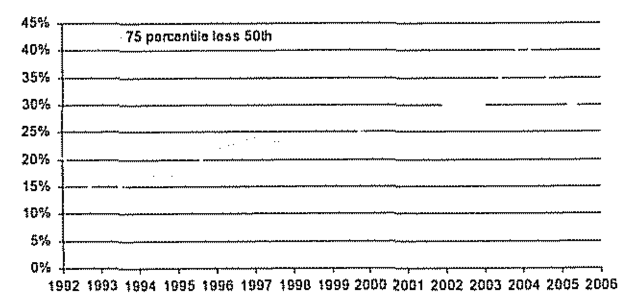
Source: Brook Hunt, Citi Investment Research

Figure 13. Long Run Copper Cost Trend



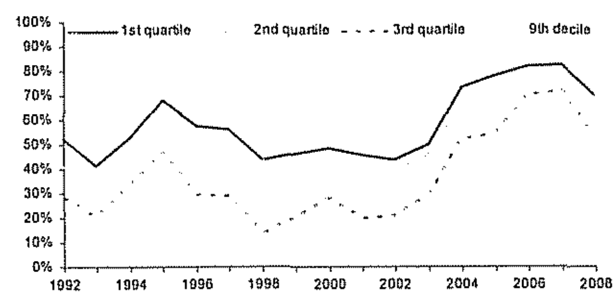
Source: Brook Hunt, Citi Investment Research

Figure 14. Copper Cost Curve Change (75%-50% point)



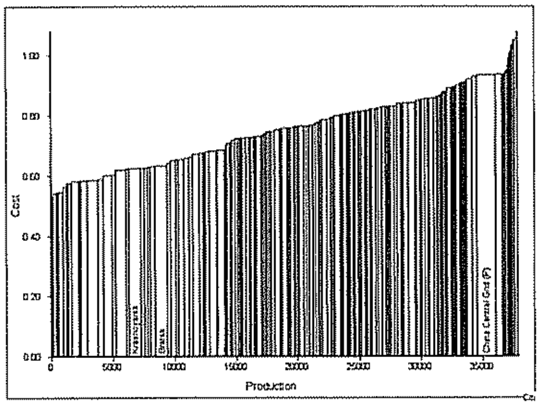
Source: Brook Hunt, Citi Investment Research

Figure 15. Copper Margins %



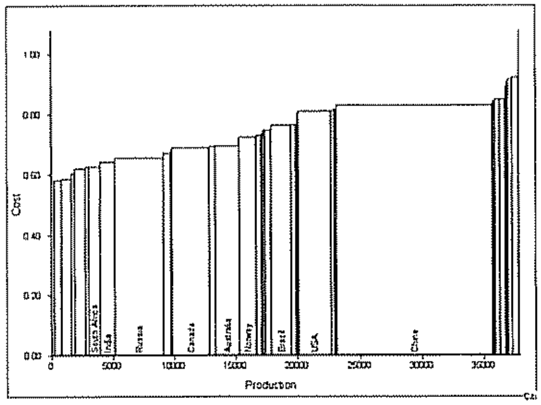
Source: Brook Hunt, Citi Investment Research

Figure 16. Aluminium Operation Cost Curve (US¢/lb) – 2007



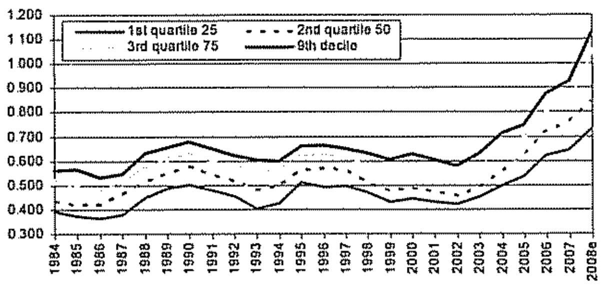
Source: Brook Hunt, Citi Investment Research

Figure 17. Aluminium Country Cost Curve (US¢/lb) – 2007



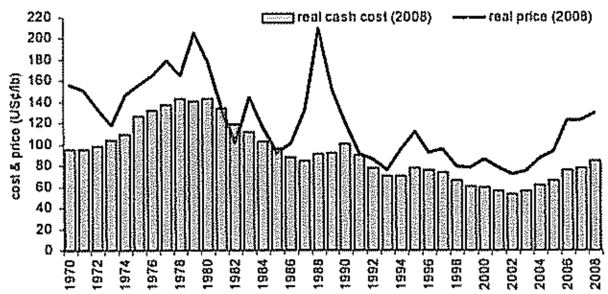
Source: Brook Hunt, Citi Investment Research

Figure 18. Aluminium Cost Trent (US$/lb) at various cost points



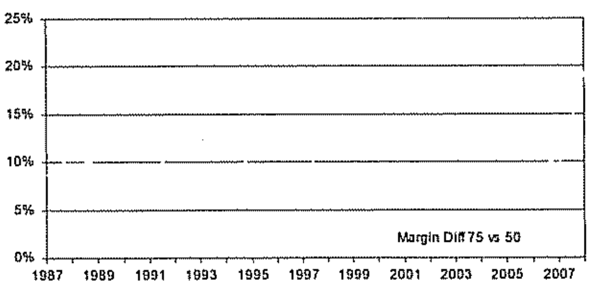
Source: Brook Hunt, Citi Investment Research

Figure 19. Long Run Aluminium Cost Trend



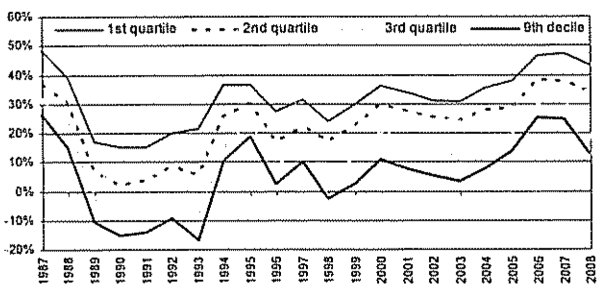
Source: Brook Hunt, Citi Investment Research

Figure 20. Aluminum Cost Curve Change (75%-50% point)



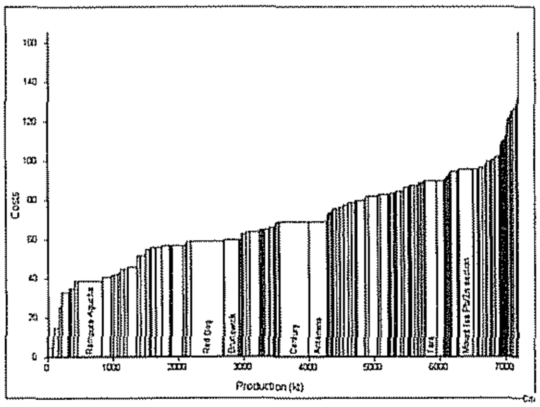
Source: Brook Hunt, Citi Investment Research

Figure 21. Aluminium Margins %



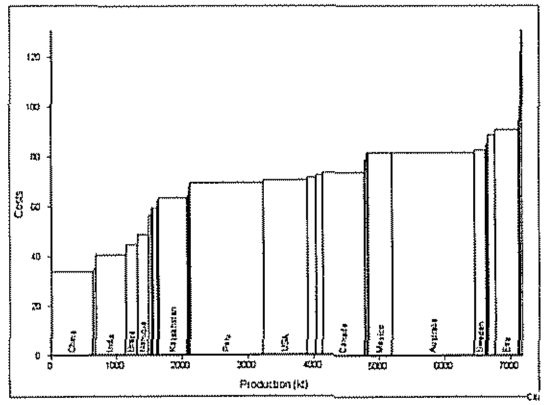
Source: Brook Hunt. Citi Investment Research

Figure 22. 2007 - Zinc Cost Curve by Operation (USc/lb)



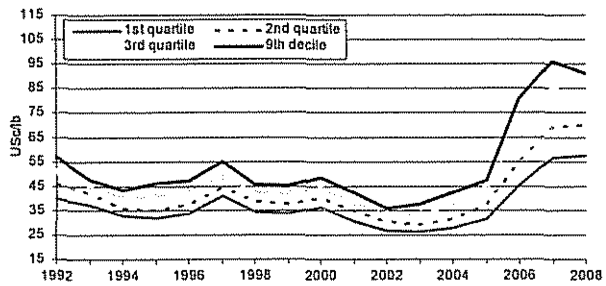
Source: Brook Hunt, Citi Investment Research

Figure 23. 2007 - Zinc Cost Curve by Country (USc/lb)



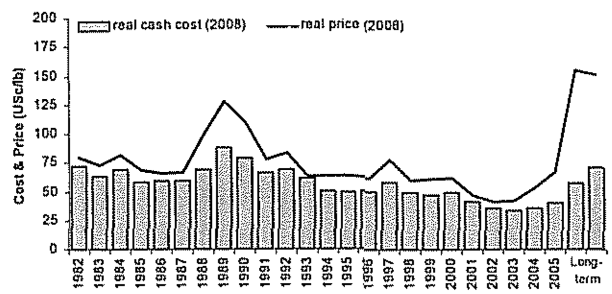
Source: Brook Hunt, Citi Investment Research

Figure 24 Zinc Cost Trends at various cost points



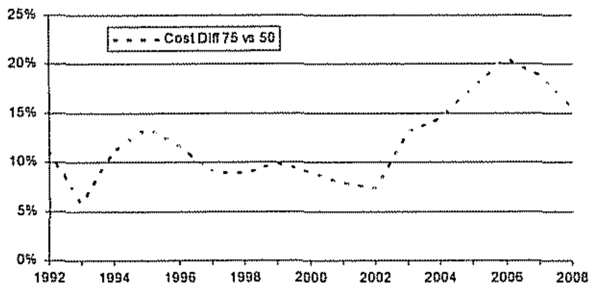
Source: Brook Hunt. Citi Investment Research

Figure 25. Long Run Zinc Cost Trend



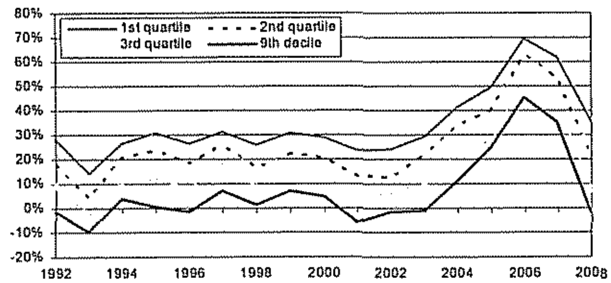
Source: Brook Hunt, Citi Investment Research

Figure 26. Zinc Cost Curve Change (75%-50% point)



Source:Brook Hunt, Citi Investment Research

Figure 27. Zinc Margins %



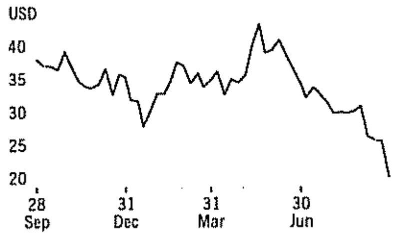
Source: Brook Hunt, Citi Investment Research

Company Focus

Rating change ☑
Target price change ☑
Estimate change ☑

Buy/High Risk	**1H**
from Buy/Medium Risk	
Price (30 Sep 08)	US$22.58
Target price	US$30.00
from US$50.00	
Expected share price return	32.9%
Expected dividend yield	2.7%
Expected total return	35.5%
Market Cap	US$18,366M

Price Performance (RIC: AA.N, BB: AA US)



ALCOA Inc (AA)

Aluminum Persists as "Leading Laggard" in M/Metals

- **Bullish thesis deferred** — While we continue to be believers in Aluminum's longer term "power cost determinism," catalysts have been pushed out to 2009 as Chinese smelter cutbacks as have been less-than-advertised and exchange inventories continue to mount, now up +52.3% YTD.

- **Lowering aluminum forecast** — After surging to +$1.45/lb, Aluminum has given up nearly all its gains YTD. CIR has revised 2009/10 estimates to $1.30 / $1.60 (prev $1.80 / 2.20).

- **Lowering estimates** — Consistent with lower commodity forecasts, FX impact, and input escalation, we are cutting estimates across the board. Also relevant are volume losses from the Rockdale (TX) smelter shutdown; diesel switching costs due to the regional W Australian gas outage; and sharp escalation in Caustic Soda and Petcoke up +50%.

- **Cutting target. Raising risk rating to "High." Maintaining Buy rating** — Our longstanding positive view on Alcoa has been solely based on the view that Aluminum would finally join the Supercycle after lagging for 4-5 years. This was expressed in CIR's Street-high forecasts of $1.80 – 2.00/lb for 2009-10, which have now been sliced. We see limited restructuring / divestiture opportunities for Alcoa, as easy steps have already been taken. The next crop of projects has been pushed out. Transformative, non-commodity catalysts for Alcoa could include breaking the LME linkage in alumina contracts and moving to market-based pricing; and/or acquiring Alumina Ltd which controls a minority position in Alcoa's high-margin refinery system.

- **Conference call** — Tues, Oct-7, 2pm ET. 800-901-5226 Pass Code: ALCOA

- **Please see** – Valuation section of this note for model summary and sensitivities

EPS	Q1	Q2	Q3	Q4	FY	FC Cons
2007A	0.79A	0.81A	0.58A	0.36A	2.55A	2.60A
2008E	**0.50A**	**0.66A**	**0.48E**	**0.36E**	**2.00E**	**2.39E**
Previous	0.50A	0.66A	0.83E	1.00E	2.98E	na
2009E	**na**	**na**	**na**	**na**	**3.51E**	**3.28E**
Previous	na	na	na	na	4.79E	na
2010E	**na**	**na**	**na**	**na**	**5.06E**	**4.14E**
Previous	na	na	na	na	6.45E	na

Source: Company Reports and dataCentral. CIR. FC Cons: First Call Consensus

Fiscal year end 31-Dec	2006	2007	2008E	2009E	2010E
Valuation Ratios					
P/E adjusted (x)	7.9	8.9	11.3	6.4	4.5
EV/EBITDA adjusted (x)	4.4	3.8	5.7	3.9	2.6
P/BV (x)	1.3	1.2	1.0	0.9	0.7
Dividend yield (%)	2.7	3.0	3.0	3.0	3.0
Per Share Data (US$)					
EPS adjusted	2.84	2.55	2.00	3.51	5.06
EPS reported	2.57	2.94	1.87	3.51	5.06
BVPS	16.73	19.27	22.97	25.69	30.53
DPS	0.60	0.68	0.68	0.68	0.68
Profit & Loss (US$M)					
Net sales	30,512	30,748	29,521	32,074	37,301
Operating expenses	-26,152	-25,324	-26,510	-27,352	-30,136
EBIT	**4,360**	**5,424**	**3,010**	**4,722**	**7,165**
Net interest expense	-384	-401	-391	-410	-397
Non-operating/exceptionals	-543	-532	*-40*	*0*	*0*
Pre-tax profit	**3,433**	**4,491**	**2,579**	**4,312**	**6,768**
Tax	-835	-1,555	-754	-1,164	-2,166
Extraord./Min.Int./Pref.div	-352	-374	-285	-339	-630
Reported net income	**2,246**	**2,562**	**1,540**	**2,809**	**3,973**
Adjusted earnings	2,488	2,216	1,648	2,811	3,975
Adjusted EBITDA	5,642	6,692	4,346	6,167	8,681
Growth Rates (%)					
Sales	16.1	0.8	-4.0	8.6	16.3
EBIT adjusted	65.7	24.4	-44.5	56.9	51.7
EBITDA adjusted	44.6	18.6	-35.1	41.9	40.8
EPS adjusted	88.9	-10.5	-21.3	75.2	44.3
Cash Flow (US$M)					
Operating cash flow	**2,567**	**2,979**	**2,726**	**4,593**	**6,119**
Depreciation/amortization	1,282	1,268	1,335	1,445	1,516
Net working capital	-1,082	119	-272	0	0
Investing cash flow	**-2,841**	**-1,625**	**-2,030**	**-2,600**	**-2,000**
Capital expenditure	-3,205	-3,636	-3,044	-2,600	-2,000
Acquisitions/disposals	379	52	2,271	0	0
Financing cash flow	**-379**	**-1,965**	**-1,069**	**-2,075**	**-1,866**
Borrowings	679	654	579	0	-511
Dividends paid	-923	-958	-819	-875	-1,155
Change in cash	**-615**	**-582**	**-327**	**-82**	**2,252**
Balance Sheet (US$M)					
Total assets	**37,274**	**38,803**	**39,823**	**41,408**	**44,436**
Cash & cash equivalent	506	483	483	401	2,654
Accounts receivable	3,435	3,053	2,830	3,178	3,413
Net fixed assets	14,813	16,879	19,182	20,336	20,820
Total liabilities	**20,843**	**20,327**	**18,406**	**18,500**	**17,905**
Accounts payable	2,680	2,787	2,621	2,759	2,807
Total Debt	7,235	7,142	6,763	6,784	6,273
Shareholders' funds	**16,431**	**18,476**	**21,416**	**22,908**	**26,531**
Profitability/Solvency Ratios (%)					
EBITDA margin adjusted	*18.5*	*21.8*	*14.7*	*19.2*	*23.3*
ROE adjusted	17.8	14.5	9.6	14.6	18.2
ROIC adjusted	12.9	13.1	7.4	11.3	15.4
Net debt to equity	41.0	36.0	29.3	27.9	13.6
Total debt to capital	30.6	27.9	24.0	22.8	19.1

For further data queries on Citi's full coverage universe please contact CIR Data Services Americas at CIRDataServicesAmericas@citi.com or +1-212-816-5336

Powered by: dataCentral

Alcoa Model and Valuation Summary

Figure 28. Key Alcoa Model Assumptions

Alcoa Inc. MODEL SUMMARY	2003	2004	2005	2006 Year	2007 Year	2008E 1Q 08A	2Q 08A	3Q 08E	4Q 08E	Year	2009E Year	2010E Year
(US$ mm, Except Per Share)												
Operating Data												
- Alumina Prod'n ('000s mt)	6,798	14,343	14,614	15,128	15,084	3,870	3,820	3,960	3,940	15,590	16,818	17,478
- Aluminum Prod'n ('000s mt)	3,508	3,365	3,554	3,552	3,693	995	1,030	980	995	4,000	4,059	4,139
- Spot Aluminum Price / lb	$0.65	$0.78	$0.86	$1.17	$1.20	$1.24	$1.33	$1.31	$1.15	$1.26	$1.30	$1.60
- Realized Aluminum Price / lb	$0.70	$0.85	$0.91	$1.21	$1.26	$1.27	$1.33	$1.32	$1.19	$1.28	$1.34	$1.60
- ATOI (mln)	1,712	2,138	2,155	3,551	3,178	666	830	655	566	2,717	3,932	5,862

Source: Citi Investment Research

Figure 29. Alcoa Earnings Build-up

AA 3Q / 08 versus	2Q 08	3Q 07
Hist Ally Price	$1.33	$1.16
3Q/08 Applied[1]	$1.31	$1.31
Difference	-$0.02	$0.15
Metal Sensitivity[2]	($0.03)	$0.23
Op EPS	$0.66	$0.58
Subtotal	$0.63	$0.81
W Australia outage	($0.03)	
Texas Outage	($0.03)	
Materials escalation	($0.11)	
FX Benefit	$0.02	
Total	$0.48	

Notes:
[1] LME cash @ 1-mo lag; now 15 days
[2] Each 1c/lb chg in Ally = 6c to EPS / yr

Source: Brook Hunt, Citi Investment Research

Figure 30. Alcoa Forex Sensitivity

Currency	2Q08	3Q08	Q/Q chng	Weight	Total % chng
Australian Dollar	0.944	0.890	-5.7%	45%	-2.6%
Canadian Dollar	0.990	0.961	-2.9%	30%	-0.9%
Brazilian Real	0.605	0.604	-0.2%	20%	0.0%
EURO	1.563	1.505	-3.7%	5%	-0.2%
FX Basket			**-3.7%**		
AA EPS Impact[1]		**0.02**			

Notes
[1] Each 1% chg in currency basket = 2c/yr to EPS

Source: Brook Hunt, Citi Investment Research

Valuation Changes

We have reduced our target price to $30/sh (from $50) to reflect lower estimates due to lower Aluminum forecast, FX impact, cost escalation in key inputs, as well as lower valuation multiples The PE multiple declines to 8x (previously 11x) on our 2009 EPS of $3.51 (previously $4.79) yielding $28/sh (previously $53), and the OCF multiple declines to 7x (previously 8x) on our OCF/sh of $5.32 (previously $6.64) yielding $37/sh (previously $53). Our long-term Aluminum assumption is $1 30/lb (previously $1.55/lb), resulting in a DCF-derived value of $23 (previously $42). Our weighting is 35/35/30 P/E, OCF,DCF, respectively

Figure 31. AA Valuation Summary

Alcoa - AA 1H (BUY - High Risk)					
Earnings Multiples		**$28**	**DCF Analysis**		**$23**
2009E EPS	$3.51		Cost of Equity	8 4%	
Target Multiple	8 0x	$28 08	Cost of Debt	3 5%	
Current 2009E P/E Mult	*6.4x*		Beta to S&P500	1 30	
			WACC	7 0%	
Cash Flow Multiples		**$37**	Enterprise Value	27,520 5	
2009E OCF/Share	$5 32		B/S Adjustments	(9,537 0)	
Target Multiple	7 0x	$37 21	Equity Value	17,984	$23 00
Current 2009E P/CFLO Mu	*4 2x*		*Current P/NAV Mult*	*0 98x*	

Current Share Price	$22 58
Target Price	**$30.00**
Appreciation to Target	32 9%
Dividend Yield	2 7%
Expected Total Return	35.5%

Source: Citi Investment Research

Company Focus

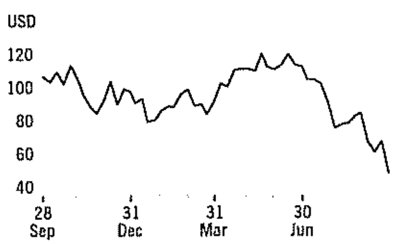
Freeport McMoran Copper & Gold Inc (FCX)

The Deepest of Deep Value. Cutting target on Top Pick

Target price change ☑
Estimate change ☑

Buy/High Risk	1H
Price (30 Sep 08)	US$56.85
Target price	US$90 00
from US$138 00	
Expected share price return	58 3%
Expected dividend yield	3.5%
Expected total return	**61.8%**
Market Cap	US$21,828M

Price Performance (RIC: FCX.N, BB: FCX US)



- **More Copper Cuts rattle FCX EPS** — CIR commodity strategists have pushed out the timeframe for a Copper recovery The 2009E Copper forecast of $3.65 per lb (previously $4 75/lb) shaves earnings by 31% with a 37% cut in 2010E. Although no longer extremely bullish, CIR Copper forecasts are still above spot, and the futures curve

- **Volumes and Costs** — We have made no changes to volumes, but have slightly trimmed operating costs by roughly 3% at the mine level in 2009/10 to reflect slightly lower inputs

- **Cutting 3Q EPS to $1.37/sh** – We have reduced EPS to $1 38/sh (-30%) due largely to the falling Copper prices in the quarter. Similar to 4Q07, FCX faces the difficulty of a double headwind from negative adjustments to 2Q prior period sales, plus 3Q realizations far below average prices.

  - **2Q provisional pricing** – At June 30, FCX had attributable copper sales of 369 million pounds of copper provisionally priced at $3 88 per pound Each $0 05 change in price results in an approximate $11 mln affect on FCX's 2008 net income. At average 3Q prices ($3 49/lb) the net income reduction is $86 mln ($0 19/sh).

  - **3Q realizations** – Due to falling copper prices in the period we estimate realizations for 3Q at $3 10, vs average spot prices of $3 49/lb. The lower than average realizations are a result of a majority of sales (Cu in concentrate) provisionally priced on the last day of the period (Sep 30 spot is $2 91/lb with a shallow backwardation).

- ***Valuation cut*** — *We have reduced the target price to $90/sh (from $138) to* reflect lower Copper earnings and lower unit resource and NAV multiples after a severe negative revaluation of global M/Metals equities. The unit resource multiple is down to $0 35 (previously $0 65) and our NAV multiple is now 1 25x (previously 1 6x). PE and OCF multiples are unchanged (at near "peak-cycle" 8x and 6x respectively). See Valuation section below for details

- **Reiterate Top Pick** – With low trading multiples, high margins and positive fundamentals, we continue to expect significant upside Reiterate Buy rating and Top Pick status.

EPS	Q1	Q2	Q3	Q4	FY	FC Cons
2007A	2 74A	3 20A	2 32A	1.19A	9 46A	9 84A
2008E	**2.78A**	**2 27A**	**1.37E**	**2.41E**	**8.83E**	**9.33E**
Previous	2 78A	2 27A	1 96E	2 92E	9 92E	na
2009E	**na**	**na**	**na**	**na**	**11.46E**	**12 03E**
Previous	na	na	na	na	16 57E	na
2010E	**na**	**na**	**na**	**na**	**12 25E**	**13.34E**
Previous	na	na	na	na	19.50E	na

Source: Company Reports and dataCentral. CIR FC Cons: First Call Consensus

Fiscal year end 31-Dec	2006	2007	2008E	2009E	2010E
Valuation Ratios					
P/E adjusted (x)	8.3	6.0	6.4	5.0	4.6
EV/EBITDA adjusted (x)	7 6	3 6	3 4	2.6	2 3
P/BV (x)	8.6	1 4	1 3	1 0	1.3
Dividend yield (%)	8 4	2 2	3.3	3 5	35 2
Per Share Data (US$)					
EPS adjusted	6.83	9 46	8 83	11 46	12.25
EPS reported	6 63	7 64	8.66	11.46	12 25
BVPS	6 62	39 51	44 57	55.16	42 87
DPS	4 75	1 25	1.88	2.00	20 00
Profit & Loss (US$M)					
Net sales	5,790	17,360	21,500	25,602	27,665
Operating expenses	-2,922	-10,753	-13,319	-14,598	-15,397
EBIT	**2,869**	**6,607**	**8,181**	**11,003**	**12,268**
Net interest expense	-76	-516	-545	-412	-373
Non-operating/exceptionals	33	95	46	12	12
Pre-tax profit	**2,826**	**6,187**	**7,682**	**10,603**	**11,907**
Tax	-1,201	-2,415	-2,694	-4,029	-4,525
Extraord./Min.Int./Pref.div.	-229	-1,002	-1,320	-1,543	-1,796
Reported net income	**1,396**	**2,769**	**3,668**	**5,031**	**5,586**
Adjusted earnings	*1,440*	*3,465*	*3,747*	*5,031*	*5,586*
Adjusted EBITDA	3,096	7,858	10,035	13,008	14,394
Growth Rates (%)					
Sales	38 6	199.8	23.8	19 1	8.1
EBIT adjusted	31 8	130 3	23 8	34.5	11.5
EBITDA adjusted	27 5	153.8	27 7	29.6	10 7
EPS adjusted	41.8	38 5	-6 7	29.7	6.9
Cash Flow (US$M)					
Operating cash flow	**1,866**	**6,212**	**4,664**	**7,904**	**9,150**
Depreciation/amortization	228	1,251	1,854	2,005	2,127
Net working capital	*-114*	*1,058*	*-2,193*	*-475*	*-380*
Investing cash flow	**-223**	**-14,861**	**-2,919**	**-2,480**	**-2,360**
Capital expenditure	-251	-1,755	-2,974	-2,480	-2,360
Acquisitions/disposals	34	-13,053	-1	0	0
Financing cash flow	**-1,499**	**9,355**	**-1,636**	**-2,299**	**-10,322**
Borrowings	-291	5,297	203	0	-282
Dividends paid	-1,137	-1,563	-1,726	-2,307	-10,048
Change in cash	**144**	**706**	**109**	**3,125**	**-3,533**
Balance Sheet (US$M)					
Total assets	**5,390**	**40,035**	**42,977**	**47,553**	**44,806**
Cash & cash equivalent	907	1,626	1,798	4,924	1,391
Accounts receivable	486	1,295	1,927	2,578	2,811
Net fixed assets	3,099	25,784	26,902	27,377	27,610
Total liabilities	**2,773**	**19,722**	**20,386**	**20,855**	**20,746**
Accounts payable	572	3,328	2,472	2,972	3,145
Total Debt	721	7,211	7,571	7,540	7,258
Shareholders' funds	**2,617**	**20,313**	**22,592**	**26,698**	**24,060**
Profitability/Solvency Ratios (%)					
EBITDA margin adjusted	53 5	45 3	46 7	50 8	52 0
ROE adjusted	140 7	42 2	23.3	26.4	28 2
ROIC adjusted	46 8	22 0	15 0	17 9	19 5
Net debt to equity	*-7 1*	*27 5*	*25 6*	*9 8*	*24 4*
Total debt to capital	21.6	26 2	25.1	22.0	23 2

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Powered by: dataCentral

Freeport Model and Valuation Summary

Figure 32. Key FCX Model Assumptions

FREEPORT COPPER & GOLD MODEL SUMMARY	2004	2005	2006A Year	2007A Year	2008E 1Q 08A	2Q 08A	3Q 08E	4Q 08E	Year	2009E Year	2010E Year
Operating Data											
- Equity Copper Production (mln lbs)	903	1.320	1 089	3 231	722	772	833	984	3.310	3,736	4.031
- Equity Moly Production (mln lbs)	0	0	0	55	18	18	18	17	71	74	93
- Equity Gold Production (k ozs)	1 320	2 528	1.552	2 101	247	224	232	394	1 096	1.956	1,882
- Consolidated Copper Sales mined (mln lb)	992	1,457	1,201	3,371	911	942	1,008	1,175	4,036	4,473	4,862
- Cash Cost / lb Copper byproduct ($ / lb)	0.57	0.09	0.63	0.81	1.02	1.26	1.23	0.97	1.13	0.81	0.94
- Cash Cost / lb Copper coproduct ($ / lb)	0.81	0.64	1.24	1.26	1.50	1.63	1.51	1.36	1.51	1.36	1.44
- Realized Copper Price ($ / lb)	1.33	1.70	3.02	3.26	3.69	3.85	3.10	3.30	3.58	3.65	4.00
- Realized Moly Price ($ / lb)	12.63	26.38	22.34	25.90	31.67	31.59	31.80	33.00	32.02	35.00	25.00
- Realized Gold Price ($ / oz)	409	445	604	701	933	912	865	900	902	950	1,000

Source: Citi Investment Research

Valuation Changes

We have reduced our target price to $90/sh (from $138) to reflect lower Copper earnings and lower unit resource and NAV multiples after a severe negative revaluation of global M/Metals equities. The PE multiple remains at 8x on our 2009 EPS of $11.46 (previously $16.57) yielding $92/sh (previously $133), the OCF multiple remains 6x on our OCF/sh of $15.37 (previously $20.50) yielding $92/sh (previously $123). The unit resource multiple is down to $0.35 (previously $0.65) on payable reserve equivalent of 106.8 bln lbs (unchanged) yielding $84/sh (previously $156), and our DCF now yields $90/sh (previously $139/sh) primarily from the reduction in the NAV multiple to 1.25x (previously 1.6x). Each method is equally weighted.

Figure 33. FCX Valuation Summary

Freeport Copper & Gold — FCX 1H (Buy - High Risk)

Earnings Multiples - 25%		$92
2009E EPS	11.46	
Non-Ferrous Multiple	8.0x	$91.7
Current 2009E P/E Mult	*5.0x*	

Cash Flow Multiples - 25%		$92
2009E OCF/Share	$15.37	
Non-Ferrous Multiple	6.0x	$92.2
Current 2009E P/CFLO Mult	*3.7x*	

Unit Resource - 25%		$84
Reserves (P2, payable)		
Copper (bln lbs)	77.2	
Gold (mln oz)	38.3	
Moly (bln lbs)	1.8	
Copper Equivalent[1] (bln lbs)	106.8	
$/lb equivalent multiple	$0.35	$83.8

DCF Analysis - 25%		$90
Cost of Equity	9.4%	
Cost of Debt (after tax)	5.1%	
Beta to S&P500	1.07	
WACC	9.2%	
Reserve Life (Years)	33.1	
B/S Adjustments	(5.716)	$72.25
Current P/NAV Mult	*0.8x*	
Target P/NAV Multiple	1.25x	

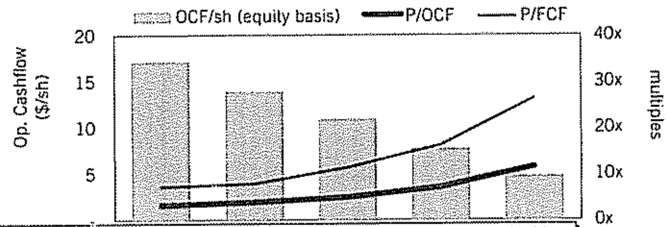
Current Share Price	$56.85
Target Price	**$90.00**
Appreciation to Target	58.3%
Dividend Yield	3.5%
Expected Total Return	61.8%

2009 Copper : $3.65 /lb
2009 Gold : $950 /oz
2009 Moly: $35 /lb

1) Metals prices used for copper equivalent conversion: $1.60/lb Cu, $6/lb Co, $10/lb Mo, $700/oz Au, $12/oz Ag

Source: Citi Investment Research

Figure 34. FCX EBITDA, OCF and NI sensitivities and current valuation under 5 price scenarios



Price Pairs:					
Copper ($/lb)	$4 00	$3 50	$3 00	$2 50	$2 00
Moly ($/lb)	$35	30	25	20	15
Gold ($/oz)	$1,000	900	900	800	800
2009 Cashflows ($ blns):					
EBITDA (Consolidated)	$14 27	11 52	8 98	6 23	3 70
OCF (Attributable to FCX)	$7 74	6 29	4 96	3 51	2 18
Net Income	$5.94	4.49	3.16	1.71	0.38
Valuation:					
EV/EBITDA (1)	2 9x	3 6x	4 6x	6 7x	11 3x
P/OCF	3 3x	4 1x	5 2x	7 3x	11 7x
P/E	4.3x	4.8x	8.1x	15.0x	67.5x

1 - Minority Interests estimated market value (based on a 8x payout ratio)

Book EV Estimate: $32.915 mlns
Market[1] EV Estimate: $41.606 mlns
Share Price: $57

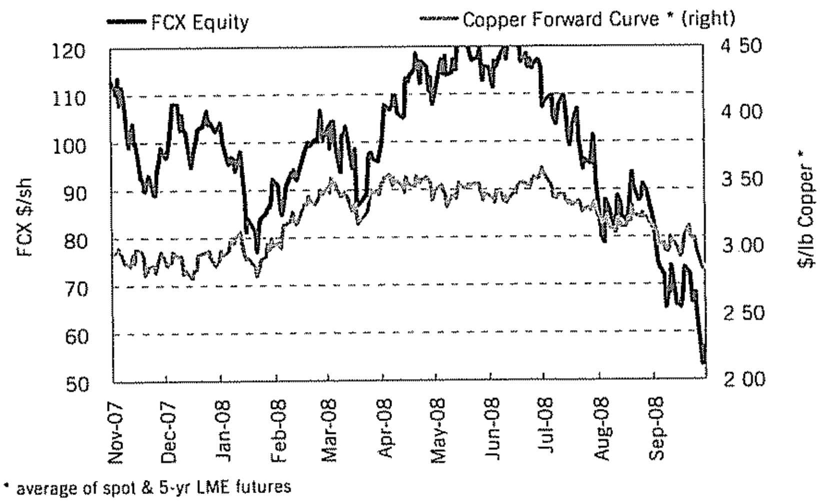
FCX Published Sensitivity: $0.20/lb Cu ($490 mln Net Income, $1 10/sh EPS); $2/lb Mo ($100, $0.22/sh); $ 50/oz Au ($45, $0 10)

Source: Citi Investment Research

Since Jul '08 FCX shares have corrected over 50% while the Copper forward curve has slipped ~22%

Note: The copper forward curve is defined as an average of spot and the 5 25-yr futures

Figure 35. FCX shares and the Copper forward curve



* average of spot & 5-yr LME futures

Source: Citi Investment Research

Our dynamic earnings-expectations model yields forward PE and P/OCF based on published OCF and Metals sensitivities. We add energy sensitivities based on daily WTI Oil changes applied to 20% of COGS

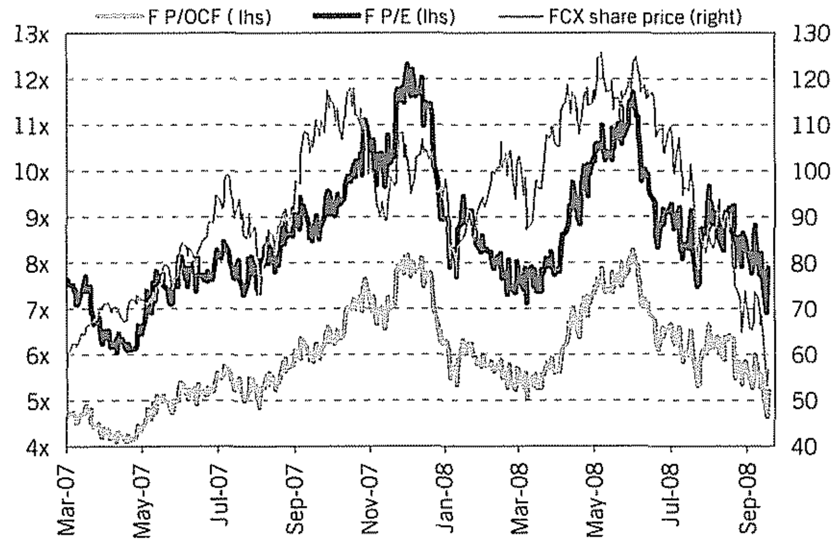
Observations:
Broader market turmoil in Mar-08 saw multiples compress to a low 7.5x PE and 5.1x OCF. Prior peaks in Dec-07 were +12x PE and +8x cashflow

Current levels of 7.9x earnings and 5.2x OCF appear very attractive

From here, a worst-case short-term downside might be $2.5/lb Copper at a 10x multiple, equal to $46/sh.

FCX Multiples may be overstated relative to peers on PE (due to Phelps DD&A step-up) and understated on EV/EBITDA (due to low book value of minorities in the EV calculation)

Figure 36. FCX Forward multiples using daily spot commodity prices, including oil (energy cost)



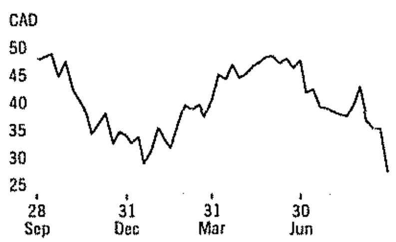
Note: Adjusted for various non-operating affects over time including Phelps Hedge losses, diluted shares / preferred dividends; OCF is net of minority interest payout; base case annualized OCF is $7 9 bln at $3 50/lb Copper, $30/lb Mo, $900/oz Gold and $130/bbl WTI
Source: Company reports and Citi Investment Research analysis

Company Focus

Target price change ☑
Estimate change ☑

Buy/High Risk	1H
Price (30 Sep 08)	C$30 22
Target price	C$41 00
from C$55.00	
Expected share price return	35 7%
Expected dividend yield	3.3%
Expected total return	39.0%
Market Cap	C$13,320M
	US$12,739M

Price Performance (RIC: TCKb.TO, BB: TCK/B CN)



Teck Cominco Ltd (TCKb.TO)

Adjusting Model for Copper & 100% of Elk Valley

- **Adding Coal offsets lower Copper** — We have made two-way revisions to TCK EPS estimates. The downside from lower CIR Copper forecasts is more than offset from accretion assuming full ownership of the Elk Valley (BC) Coal assets with that transaction expected to close end-Oct
- ***Fording Canadian Coal*** — *At end-Sept shareholders of Fording (FDG, not* rated) approved the sale of EVC to Teck Cominco In hindsight the timing of the deal appears to mark a top in asset prices, yet we see met as geologically scarce, and structurally supply-constrained thus we remain positive on TCK. The greatest visible risk is a scenario where steel capacity cuts significantly slacken met coal markets and threaten excess cashflow for debt payments.
- **Fort Hills appears unviable** — After another capex blowout (+50%) at Fort Hills announced Sep-17th, the market value of UTS Energy shares has fallen to a level indicating Teck's share in the project is now a liability Deferral of massive outlays on Fort Hills could positively accelerate EVC debt repayment.
- **Shaving 3Q estimates** — Similar to Freeport, lower average pricing and a soft outlook prompts a reduction to TCK base metals earnings with 3Q EPS cut to C$1.30 (from C$1 76)
- **Valuation** — With the addition of 100% of Elk Valley Coal, EBITDA is over 60% from met coal on 2009E. We cut valuation multiples to reflect the overweight on met coal that CIR estimates at peak cycle levels next year The target price is now C$41/sh (from C$55) to reflect higher coking Coal earnings from near-term estimates (up ~17%) and lower multiples See Valuation section below for details

EPS	Q1	Q2	Q3	Q4	FY	FC Cons
2007A	0 83A	1 13A	1.38A	0 67A	3 99A	3 95A
2008E	**0.77A**	**1.13A**	**1.32E**	**1 97E**	**5.17E**	**4 91E**
Previous	*0.77A*	*1 13A*	*1 76E*	*1 85E*	*5 48E*	*na*
2009E	**2 03E**	**2 33E**	**2.90E**	**2 87E**	**10 13E**	**6.77E**
Previous	2 11E	1 93E	2 33E	2 39E	8 76E	na
2010E	**3.66E**	**3.54E**	**3 55E**	**3.62E**	**14.37E**	**6.23E**
Previous	*3 00E*	*2 90E*	*3 07E*	*3 17E*	*12 13E*	*na*

Source: Company Reports and dataCentral, CIR FC Cons: First Call Consensus

Fiscal year end 31-Dec	2006	2007	2008E	2009E	2010E
Valuation Ratios					
P/E adjusted (x)	5 8	7 6	5 8	3 0	2 1
EV/EBITDA adjusted (x)	3 0	4 0	4 6	2 7	1 7
P/BV (x)	2 0	1 7	3 1	1 4	1 0
Dividend yield (%)	2.3	3 2	3 1	3.3	3.3
Per Share Data (C$)					
EPS adjusted	5 21	3 99	5 17	10 13	14 37
EPS reported	5 60	3 71	5 17	10 13	14 37
BVPS	15 17	17 47	9 61	21 13	31 31
DPS	0 69	0 96	0.93	1 00	1 00
Profit & Loss (C$M)					
Net sales	6,539	6,371	8,067	13,477	16,087
Operating expenses	-3,168	-3,879	-4,556	-6,520	-7,053
EBIT	**3,371**	**2,492**	**3,511**	**6,957**	**9,034**
Net interest expense	-97	91	-120	-846	-442
Non-operating/exceptionals	336	-70	-13	-32	817
Pre-tax profit	**3,610**	**2,513**	**3,378**	**6,079**	**9,409**
Tax	-1,215	-796	-1,194	-1,160	-2,401
Extraord /Min Int /Pref div	36	-102	138	-85	-131
Reported net income	**2,431**	**1,615**	**2,322**	**4,833**	**6,878**
Adjusted earnings	2,261	1,737	2,322	4,833	6,878
Adjusted EBITDA	3,635	2,825	3,897	7,635	9,596
Growth Rates (%)					
Sales	48 1	-2 6	26 6	67 1	19 4
EBIT adjusted	83 8	-26 1	40 9	98 1	29 9
EBITDA adjusted	72 4	-22 3	37 9	95 9	25 7
EPS adjusted	85.3	-23.4	29.6	96 1	41.8
Cash Flow (C$M)					
Operating cash flow	**2,929**	**1,715**	**3,517**	**7,157**	**7,548**
Depreciation/amortization	264	333	385	678	562
Net working capital	305	-282	178	-42	-22
Investing cash flow	**-98**	**-3,949**	**-13,107**	**-1,692**	**-2,292**
Capital expenditure	-488	-1,093	-1,714	-1,692	-2,292
Acquisitions/disposals	390	-2,896	-11,393	0	0
Financing cash flow	**-835**	**-1,081**	**9,180**	**-2,560**	**-5,605**
Borrowings	-210	14	9,968	-2,000	-5,000
Dividends paid	-296	-426	-441	-473	-474
Change in cash	**1,970**	**-3,604**	**-410**	**2,902**	**-349**
Balance Sheet (C$M)					
Total assets	**11,447**	**13,757**	**25,162**	**28,505**	**28,722**
Cash & cash equivalent	5,281	1,408	963	3,778	3,298
Accounts receivable	723	593	892	1,218	1,454
Net fixed assets	3,838	7,807	19,817	20,030	20,361
Total liabilities	**4,855**	**5,977**	**20,547**	**18,420**	**13,764**
Accounts payable	763	1,017	1,108	1,083	1,208
Total Debt	1,509	1,554	11,540	9,540	4,540
Shareholders' funds	**6,592**	**7,811**	**4,615**	**10,085**	**14,958**
Profitability/Solvency Ratios (%)					
EBITDA margin adjusted	55 6	44 3	48 3	56 7	59 6
ROE adjusted	41 4	24 3	37 9	66 4	55 3
ROIC adjusted	51 4	24 7	17 8	34 4	38 2
Net debt to equity	-57 2	1 9	229 2	57 1	8 3
Total debt to capital	18 6	16 6	71 4	48 6	23 3

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Teck Cominco Model and Valuation Summary

Figure 37. Key TCKb.TO Model Assumptions

Teck Cominco Limited MODEL SUMMARY	2003	2004	2005	2006 Year	2007 Year	2008E 1Q 08A	2Q 08A	3Q 08E	4Q 08E	Year	2009E Year	2010E Year
Operating Data - Production												
- Total Consolidated Copper (kT)	261	260	263	258	255	72	80	72	72	296	283	381
- Elk Valley Coal (kT - 40%)	7 590	9,457	9,848	8,690	9,025	2 357	2,602	2,400	5,000	12 358	24,000	25,000
- Trail Smelter Zinc (kT)	283	296	223	296	292	74	62	72	72	270	290	290
- Red Dog Zinc (kT)	573	554	568	558	575	139	130	147	136	551	577	565
- Highland Valley Copper (kT)	180	158	188	165	140	26	28	26	26	105	100	152
- Antamina Copper (kT)	57	82	84	88	74	17	21	18	18	74	65	71
- Primary Gold (k oz)	269	268	248	230	205	57	70	63	82	273	262	258

Source: Citi Investment Research

Valuation Changes

We have lowered our target price to C$41/sh (from C$55) to reflect a negative revaluation of M/Metals equities globally. Earnings have been upgraded and multiples downgraded to reflect the highly cashflow accretive EVC acquisition that overweights the portfolio to met coal, a commodity that CIR estimates at peak cycle levels next year. EPS estimates are up ~17% in 2009/10. Higher 2009E estimates merit lower multiples in our blended approach as follows: the PE multiple is now 5.0x (previously 7.5x) on our EPS of C$10.13 (previously C$8.76) yielding C$51/sh (previously C$66), the OCF multiple is now 3.0x (previously 5.0x) on our OCF/sh of C$14.91 (previously C$9.49) yielding C$45/sh (previously C$47), the EBITDA multiple is 3.0x (previously 4.0x) on our EBITDA estimate of C$7.6 bln (previously C$5.5 bln) yielding C$27/sh (previously C$49), and our DCF now yields C$42/sh (previously C$58/sh) primarily from the reduced NAV multiple of 1.1x (previously 1.3x) and revaluation of Fort Hills given the capital cost increase. The addition of leverage to fund the EVC purchase should merit a steeper than average discount to global peers. Each method is equally weighted.

Figure 38. TCKb.TO Valuation Summary

Teck Cominco - TCKb.TO 1H (BUY - High Risk)

PE Multiples - 25%		$51
2009E EPS	$10.14	
Target Multiple	5.0x	$50.68
Current P/EPS Mult	*3.0x*	

EBITDA Multiples - 25%		$27
2009E EBITDA (millions)	$7.635	
Target Multiple	3.0x	$22.904
Current 2007E EV/EBITDA Mult	*3.2x*	

Cash Flow Multiples - 25%		$45
2009E OCF/Share	$14.91	
Target Multiple	3.0x	$44.74
Current P/CFLO Mult	*2.0x*	

DCF Analysis - 25%		$42
W.A.C.C. (discount factor)	6.3%	
PV of Interim CF	$24.702	
Target Multiple	1.10x	$27.173
Adjustments		($8.028)
Sum		$19.144
Current P/NAV Mult	*0.9x*	

Current Share Price	$30.22
Target Price	**$41.00**
Appreciation to Target	35.7%
Dividend Yield	3.3%
Expected Total Return	39.0%

note: all figures in CAD

Source: Citi Investment Research

ALCOA Inc

Company description

Alcoa Inc (AA) is one of the world's largest producers of alumina and aluminum Founded in 1888 and headquartered in Pittsburgh, PA, Alcoa is active in over 40 countries with 130,000 employees Key segments include Alcoa World Alumina and Chemicals (60% owned), which holds bauxite mining and alumina refining assets; Primary Metals, which consists of a worldwide system of smelters; Flat-Rolled, which produces sheet products; and Engineered Solutions for the transport and aerospace industries.

Investment strategy

We rate the shares of Alcoa Inc Buy / High Risk (1H). Despite near-term macro-concerns, our positive stance is based on the belief that power cost escalation, as well as decelerating growth of quality bauxite supplies will ultimately result in higher Aluminum prices. While our thesis has been pushed out to 2009, we believe that AA's share price already reflects the commodities correction

Valuation

Our $30 target price on Alcoa is based on: 1) *2009 Price to forward earnings* (P/E), 2) 2009 Price to operating cash flows (OCF), 3) and Discounted Cash Flow (DCF), with respective weightings of 35/35/30

Aluminum companies have historically traded in a range of P/E ratios from 6x-20x with an average of 15x Due to re-rating in metals/mining stocks, we are applying a low-end multiple range of 8x multiple to 2009E to yield a value of $28/sh.

Aluminum companies have historically traded in a range of OCF ratios from 4x-14x with an average of 9x. Due to re-rating in metals/mining stocks, we are applying a low-end multiple range of 7x to 2009E to yield a value of $37/sh

Our detailed DCF model yields a value of $23/sh

Risks

We rate Alcoa Inc High Risk. Despite its large size, steady growth in dividends, and high interest coverage, the shares have seen higher volatility in 2008 due to the fluctuations in aluminum prices, which have ranged $1.07-$1.46/lb As an industrial cyclical company, the greatest single risk facing Alcoa is the scope and pace of global economic growth. Should the major industrial economies lapse back into recession, Alcoa's revenues and earnings would suffer.

Aluminum accounts for roughly two-thirds of revenue, and we estimate that every $0 01/lb change to the annual aluminum price impacts EPS by $0.10. Should our Aluminum price forecasts be materially too high, or too low, this would cause financial results to deviate substantially from our estimates.

Other company specific risks include major development projects in Trinidad, Jamaica, Brazil, and Iceland, which might be delayed, cancelled or subject to *material cost overruns. Operating in over* 40 countries (*excluding* North America), Alcoa is subject to foreign political and currency risks. Alcoa is reliant on the supply of cheap, reliable electricity

If the negative impact on the company from any of these factors proves to be greater than we anticipate, it may prevent the stock from achieving our target price

Freeport McMoran Copper & Gold Inc

Company description

Freeport-McMoRan Copper & Gold Inc is the largest publicly traded copper producer (#2 in world with about 9% of mined market share) It operates the massive Grasberg complex in Indonesia, and has various copper and moly producing mines in North and South America following the Mar-07 acquisition of Phelps Dodge Key growth projects are Safford (Arizona), Tenke (DR Congo) and Climax (Colorado) Attributable proven and probable reserves to the company amount to 77 0 billion lbs of copper, 37 million ounces of gold and some 1 9 billion lbs of molybdenum, plus silver and cobalt Key challenges/opportunities will be unprecedented underground conversion at Grasberg (completed by 2015), bringing growth projects into production, particularly Tenke, and managing relatively high-cost operations in the event copper prices recede back to historical levels The company employs about 22,000 people Other assets include copper smelting & refining and molybdenum processing facilities

Investment strategy

We rate the shares of Freeport-McMoRan Copper & Gold Inc Buy/ High Risk (1H), predicated on our positive outlook for metals prices (copper, molybdenum, and gold) that allow Freeport's mines to operate at strong profitability ratios and provide ample free cash flows for de-leveraging and distributing to shareholders Freeport's Grasberg complex in Indonesia is one of the mining industry's most compelling assets Distinguished by its massive size and high ore grades, Grasberg has grown to the status of both the world's second largest copper mine and single largest gold mine The significant gold byproduct lends financial strength and cyclical diversification Phelps Dodge assets acquired Mar-2007 include an array of low-grade SX/EW operations in the USA that operate at low strip ratios and high efficiency, plus attractive copper interests in Peru and Chile Phelps Dodge also added significant primary and byproduct molybdenum operations, plus depth/breadth of management and technical prowess

Valuation

We value Freeport-McMoRan Copper & Gold Inc at $90 per share derived from four methods We apply the multiples analysis on 2009 EPS and OCF estimates, payable reserves, and discounted cashflow modeling Each method is equally weighted

We view the cycle of nonferrous metals earnings multiples since 1990 as 28x-17x-10x (trough-mid-peak) Applying a mid-peak level multiple of 8x yields a value of $92/sh

We view the cycle of nonferrous metals OCF multiples as 16x-10x-6x Applying a 6x multiple yields a value of $92

We also value Freeport on its recoverable proven and probable reserves We apply a $0 35/lb multiple on copper equivalent metal This is in line with peers and yields a value of $84

Our discounted cash flow (DCF) is based on a beta of 1 1, yielding a blended cost of capital of 9 2% The sum of DCFs plus cash, less debt equals net asset value We apply a 1 25x multiple to reflect conservatism of our long-term metal prices (call option on assets, exploration holdings) This yields a value of $90.

Risks

We rate Freeport shares High Risk because the company is non-diversified with more than 70% of revenues from Copper sales Base metals mining equities trade at compressed valuation multiples to other Metals companies as a result of backwardation Should metals prices fall rapidly, multiples expansion may not offset negative sentiment Mining risks include:

Project-specific risks: unpredictable geology (geotechnical stability, earthquakes), weather (excessive or lack of rainfall), fires, labor action, supplier delays, reserve and metallurgical variance, among others The Grasberg underground transition in the 2010–15 time frame involves block cave mining methods on an unprecedented scale

Market risks: primarily uncertainty of future metals prices for Gold and Copper prices and other macroeconomic market forces that tend to remain out of the influence of project managers

Political / Policy risks: Government policies dictate the conditions of environmental permitting, social responsibilities, subsidies, and tax policies Adverse events in Indonesia, (e g threats of Papuan secession, challenges Contract of Work) or other jurisdictions could impact the company's operations and financial results.

Capital markets risk: currency and interest rate risks are particularly relevant to international mining companies

If the negative impact on the company from any of these factors proves to be more negative than we anticipate, the stock may have difficulty achieving our target price

Teck Cominco Ltd

Company description

Teck Cominco is a diversified mining company based in Vancouver, British Colombia in Canada The 2001 merger between Teck Corp and Cominco helped realize operational synergies via scale and vertical integration. The company employs roughly 8,000 people at mines in North America, South America and Australia The flagship operation is the Red Dog mine in Alaska, the largest zinc mine in the world Other key assets are the Highland Valley copper-moly mine, Elk Valley Coal, and a share of the Antamina copper-zinc-moly mine. The Cominco zinc smelter in Trail partially secures concentrate offtake, and also produces valuable downstream specialty products The Quebrada Blanca and Andacollo copper mines and the poly-metallic Duck Pond mine were added in the acquisition of Aur Resources completed in Aug-2007. Two gold mines and several development-stage gold properties are a small, but valuable part of the portfolio. Investments in myriad junior companies provide potential growth opportunities, as well as a major commitment to fund development capex and provide mining expertise for a 20% minority interest in the massive Fort Hills (Alberta, Canada) oilsands property, where a total of $15bln (100%) may be invested before initial production.

Investment strategy

We rate the shares of Teck Cominco Ltd. Buy/ High Risk (1H), predicated on our positive outlook for metals prices (copper, zinc, molybdenum, and gold) that should provide ample cashflows for reinvestment in growth projects and returning to shareholders. Significant operating cashflows are generated from an array of Copper mines, the world's largest Zinc mine, North America's largest complex of Metallurgical Coal mines, and a Zinc smelting complex in British Columbia. Primarily located in stable political jurisdictions, these assets are uniquely levered to benefit from rapid industrialization in developing economies

A trading discount to peers is probable due to a tiered voting structure (A shares have 100x voting power of B shares) that limits shareholder opportunity to participate in the rapidly consolidating mining sector

Valuation

We value Teck Cominco Ltd. at C$41 per share derived based on an average of four methods: Multiples analysis on 2009 earnings, operating cashflow and EBITDA estimates, and discounted cashflow analysis.

Loss-making periods aside, we view the cycle of nonferrous metals earnings multiples since 1990 as 28x-17x-5x (trough-mid-peak) In the valuation framework, we apply a near-peak multiple of 5.0x for a value of $51/sh.

Forward P/Cashflow measures have been more reliable across loss-making time-cycles. We view the cycle of nonferrous metals OCF multiples as 20x-12x-3x Applying a peak multiple of 3x yields a value of $45

Forward EV/EBITDA measures have been the most reliable across loss-making time-cycles We view the cycle of nonferrous metals EBITDA multiples as 15x-9x-3x. Applying a peak multiple of 3x yields a value of $27 In making peer comparisons this method should be scrutinized for the new minority interests from the Chilean operations of Aur Resources, and Teck Cominco's higher-than-average corporate tax rate.

Our Discounted Cash Flow (DCF) is based on a blended cost of capital of 6.3% Key long-term assumptions are CAD/USD at $1, along with base metals prices at $1.6/lb for Copper, $0 7/lb Zinc, and $150/T of Benchmark Met Coal A 1 1x multiple to reflect conservatism of our long-term metal prices (call option on assets, exploration holdings) The sum of DCFs plus cash, less debt equals Net Asset Value (NAV). This yields a value of $42/sh

Risks

We rate Teck shares High Risk because the cashflows are dependent on industrial cyclical commodity prices that are currently near all-time highs Base metals mining equities trade at compressed valuation multiples to other Metals companies as a result of backwardation. Should metals prices fall rapidly, multiples expansion may not offset cashflow deterioration. Mining risks include:

Project-specific risks: unpredictable geology (geotechnical stability, earthquakes), weather (excessive or lack of rainfall), fires, labor action, supplier delays, reserve and metallurgical variance, among others.

Market risks: primarily uncertainty of future metals prices for Zinc and Copper prices and other macroeconomic market forces that tend to remain out of the influence of project managers The high cost of the Highland Valley mine could render production uneconomic if copper prices return to cycle lows before production is planned to cease in 2019.

Political / Policy risks: Government policies dictate the conditions of environmental permitting, social responsibilities, subsidies, and tax policies

Capital markets risk: currency and interest rate risks are particularly relevant to international mining companies.

If the negative impact on the company from any of these factors proves to be worse than we anticipate, the stock may have difficulty achieving our target price

Appendix A-1

Analyst Certification

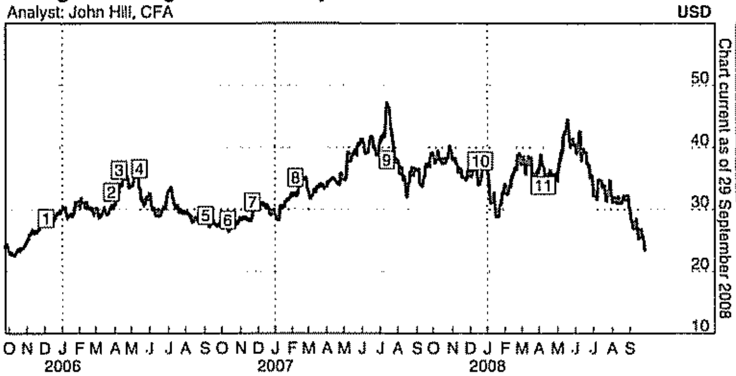
Each research analyst(s) principally responsible for the preparation and content of all or any identified portion of this research report hereby certifies that, with respect to each issuer or security or any identified portion of the report with respect to an issuer or security that the research analyst covers in this research report, all of the views expressed in this research report accurately reflect their personal views about those issuer(s) or securities. Each research analyst(s) also certify that no part of their compensation was, is, or will be, directly or indirectly, related to the specific recommendation(s) or view(s) expressed by that research analyst in this research report.

IMPORTANT DISCLOSURES

Alcoa Inc (AA)

Ratings and Target Price History - Fundamental Research

Analyst: John Hill, CFA



#	Date	Rating	Target Price	Closing Price
1:	4 Dec 05	1M	*36.00	27.97
2:	28 Mar 06	1M	*37.00	30.17
3:	10 Apr 06	1M	*40.00	32.83
4:	14 May 06	1M	*43.00	33.47
5:	4 Sep 06	*2M	*31.00	28.89
6:	11 Oct 06	2M	*30.00	26.85
7:	21 Nov 06	2M	*31.00	29.19
8:	7 Feb 07	*1M	*44.00	32.15
9:	13 Jul 07	1M	*52.00	47.35
10:	19 Dec 07	1M	*48.00	34.49
11:	8 Apr 08	1M	*50.00	37.18

*Indicates change

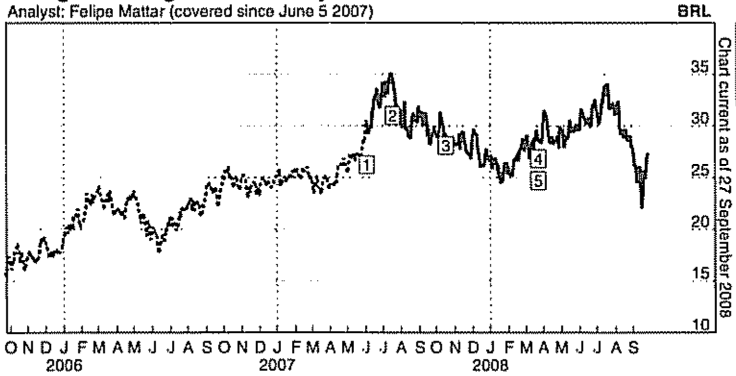
—— Covered
········ Not covered

Rating/target price changes above reflect Eastern Standard Time

Copel (CPLE6.SA)

Ratings and Target Price History - Fundamental Research

Analyst: Felipe Mattar (covered since June 5 2007)



#	Date	Rating	Target Price	Closing Price
1:	4 Jun 07	2M	32.00	30.49
2:	18 Jul 07	*3M	*37.00	34.74
3:	17 Oct 07	*2M	*33.00	29.30
4:	24 Mar 08	2M	*32.20	29.12
5:	24 Mar 08	2M	*35.00	29.12

*Indicates change

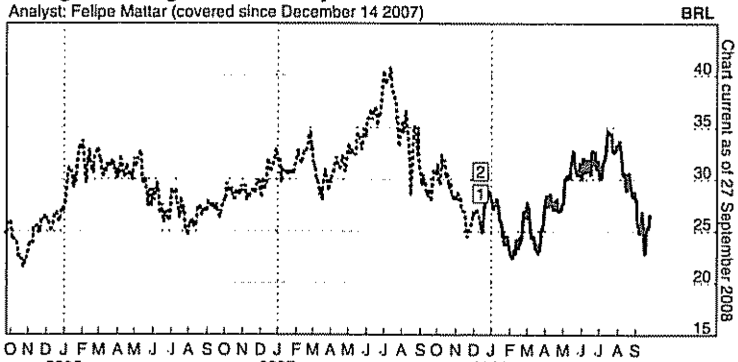
—— Covered
········ Not covered

Rating/target price changes above reflect Eastern Standard Time

EDP - Energias do Brasil SA (ENBR3.SA)

Ratings and Target Price History - Fundamental Research

Analyst: Felipe Mattar (covered since December 14 2007)



#	Date	Rating	Target Price	Closing Price
1:	13 Dec 07	1M	41.10	25.74
2:	13 Dec 07	1M	*36.80	25.74

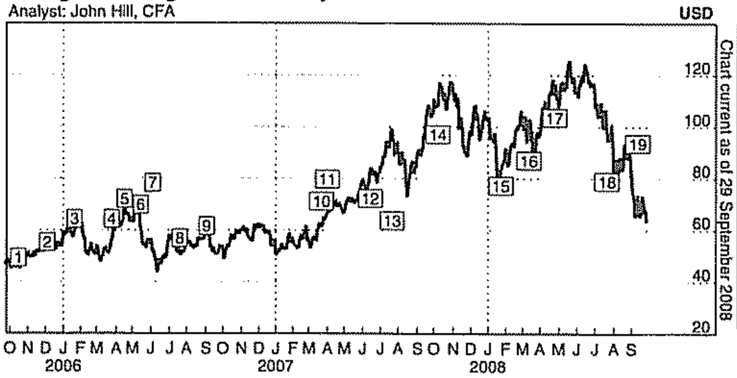
*Indicates change

Covered
Not covered
Rating/target price changes above reflect Eastern Standard Time

Freeport-McMoRan Copper & Gold Inc. (FCX)

Ratings and Target Price History - Fundamental Research

Analyst: John Hill, CFA



#	Date	Rating	Target Price	Closing Price
1:	16 Oct 05	2H	*51.00	47.94
2:	4 Dec 05	2H	*56.00	54.44
3:	23 Jan 06	2H	*58.00	58.30
4:	27 Mar 06	2H	*60.00	56.19
5:	18 Apr 06	2H	*70.00	69.57
6:	14 May 06	2H	*76.00	61.50
7:	4 Jun 06	2H	*63.00	51.91
8:	20 Jul 06	2H	*57.00	51.21
9:	4 Sep 06	*1H	*72.00	61.59
10:	22 Mar 07	1H	*80.00	61.91
11:	2 Apr 07	1H	*78.00	66.73
12:	14 Jun 07	1H	*104.00	83.65
13:	23 Jul 07	1H	*120.00	98.99
14:	8 Oct 07	1H	*122.00	108.13
15:	24 Jan 08	1H	*107.00	83.43
16:	12 Mar 08	1H	*125.00	101.88
17:	24 Apr 08	1H	*145.00	112.61
18:	22 Jul 08	1H	*142.00	100.53
19:	11 Sep 08	1H	*138.00	68.26

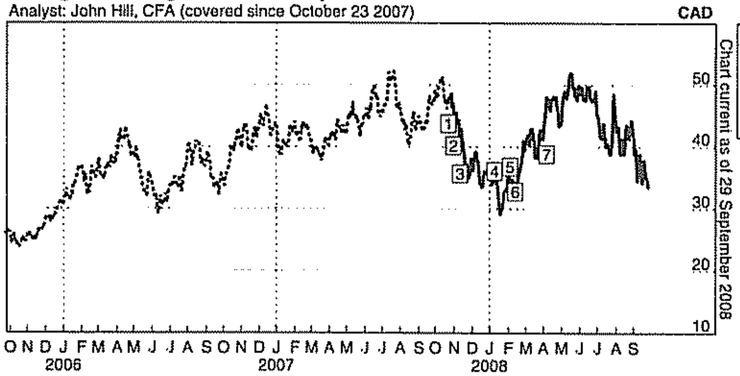
*Indicates change

Covered
Not covered
Rating/target price changes above reflect Eastern Standard Time

Teck Cominco Ltd (TCKb.TO)

Ratings and Target Price History - Fundamental Research

Analyst: John Hill, CFA (covered since October 23 2007)



#	Date	Rating	Target Price	Closing Price
1:	23 Oct 07	1H	60.00	47.42
2:	31 Oct 07	1H	*59.00	47.31
3:	11 Nov 07	1H	*57.00	41.58
4:	9 Jan 08	1H	*46.00	34.29
5:	5 Feb 08	1H	*50.00	34.63
6:	13 Feb 08	1H	*45.00	33.97
7:	7 Apr 08	1H	*55.00	46.50

*Indicates change

Covered
Not covered
Rating/target price changes above reflect Eastern Standard Time

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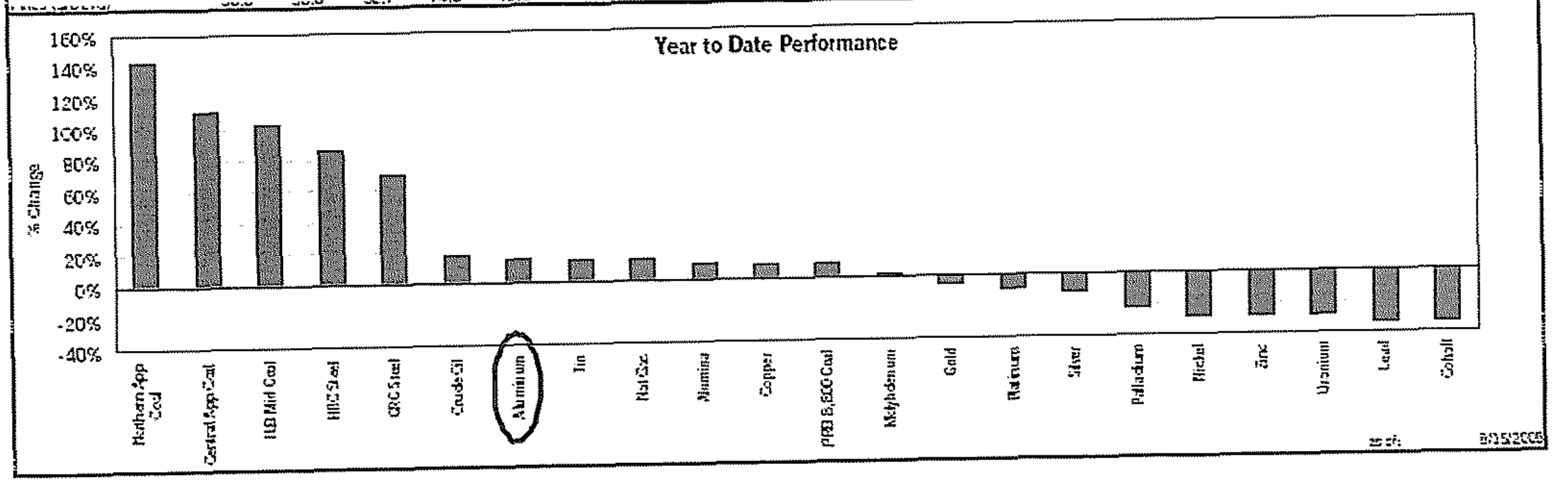
Recent pullback in Ally due to macro concerns, firmer US$, and Chinese capacity adds. Ultimately, power cost/availability are deterministic.

Aluminum has pulled back to $1.23/lb, down from year-high of $1.46/lb, on macro concerns, but still up +15% YTD. Datapoints are mixed. CRU suggests that world #1 producer China may add 14% capacity, despite production cuts due to power shortfalls. Export taxes may be hiked +15% on alloys effective Aug-20. Exchange inventories are up YTD, while the Total Stock Ratio remains near record lows. Ultimately, we view power costs and availability as deterministic, with impacts on current smelters and future capacity, and remain positive on Aluminum into 2009

Commodity Prices and Citi Forecast Deck

Figure 7. Commodity Price History & Citi Forecasts

Commodity	2003	2004	2005	2006	2007	'08 TD	1Q/08	2Q/08	3QTD	Forecast 3Q/08E	4Q/08E	2008E	2009E	2010E	2011E	current 15-Aug	QTD Chg	YTD Chg
Base Metals Aluminum ($/lb)	0.65	0.77	0.86	1.17	1.20	1.30	1.24	1.33	1.35	1.50	1.70	1.44	2.00	2.20	2.00	1.23	-11.7%	15.5%



Note: Citi's Global Commodity Strategist are Alan Heap for Bulks and Base Metals, John Hill for Gold & Silver and Gerhard Engelbrecht for Platinum Group Metals

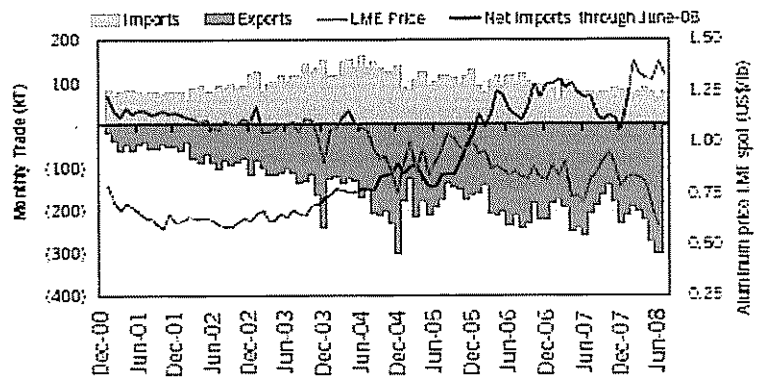
Sources: Bloomberg, America Metals Market, Energy Information Administration, Platts Coal, Citi Investment Research

China Metals and Energy Imports

Presented below are China's imports and exports of Copper, Aluminum, Zinc, Steel Oil and Coal, as reported by China General Administration of Customs. Note the high apparent price elasticity for Copper and Zinc, moderate elasticity for Aluminum and Steel, and inelasticity for Oil.

On Aug 15 China enacted higher export taxes for Aluminum alloys and certain types of Coal.

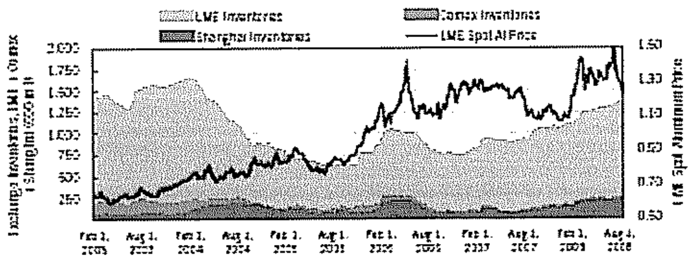
Figure 9. China Aluminum Trade



Source: China's General Administration of Customs and Citi Investment Research

Aluminum has pulled back to $1.23/lb on a firmer US Dollar, macro slowdown fears, as well as concerns over new Chinese capacity adds.

Figure 14. Aluminum Prices and Inventories



Historical Prices	15-Aug	QTD	YTD avg	YTD chg	2007 avg
Aluminum Prices ($/lb)	1.23	1.33	1.33	15.5%	1.20
Price Outlook	**2008**	**2009**	**2010**	**2011**	**2012**
Aluminum Futures ($/lb)	1.25	1.32	1.37	1.41	1.44
Citi Forecasts ($/lb)	1.44	2.03	2.20	2.00	2.00
Inventory Position	**Current**	**YTD chg**	**YTD chg**	**2007**	**2006**
All Exchanges (tonnes)	1,322,320	226,466	26.7%	1,032,694	733,294
Merchant Premia (Avg)	**Jun-08**	**May-08**	**Apr-08**	**2007**	**2006**
U.S. Midwest (c/lb)	4.4	4.5	4.5	3.2	5.4
Western Europe ($/t)	95	103	106	146	124
Japan +3m Western ($/t)	85	80	80	67	71

Source: Brook Hunt, Bloomberg and Citi Investment Research

IAI reported June global output of 3.3 mT, +1.4% MoM, +7.3% YoY and +7.3% YTD.

Figure 15. Global Aluminum Production

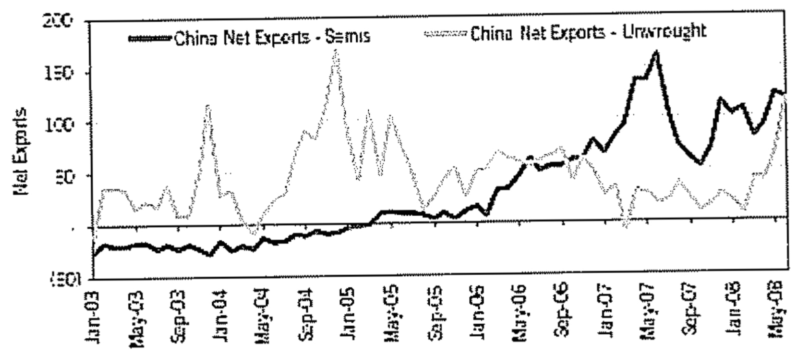
Aluminum	2007		Jun-08			
000's tonnes	Tons	Y/Y	Tons	MoM †	YoY	YTD
Africa	1,815	-2.6%	139	1.2%	-6.7%	-6.6%
North America	5,642	5.8%	480	-1.0%	4.1%	6.5%
Latin America	2,558	2.6%	221	1.9%	5.2%	4.9%
Asia (ex-China)	3,717	6.4%	324	0.8%	5.9%	5.4%
China	12,607	34.8%	1,172	3.8%	13.3%	11.2%
West Europe	4,305	3.1%	389	0.2%	9.9%	11.3%
E./C. Europe	4,460	5.2%	380	-0.1%	4.1%	6.6%
Oceania	2,313	1.7%	188	-0.9%	-1.1%	0.1%
Total	**37,418**	**12.6%**	**3,293**	**1.4%**	**7.3%**	**7.3%**
Total ex-China	**24,811**	**3.9%**	**2,121**	**0.1%**	**4.2%**	**5.4%**

† - adjusted for days in month

Source: IAI and Citi Investment Research

China is exporting less primary and semi-fabricated metal due to import/export tax changes. It remains a major importer of scrap.

Figure 16. Net Exports of Semi Fabricated and Unwrought Aluminum from China – Monthly

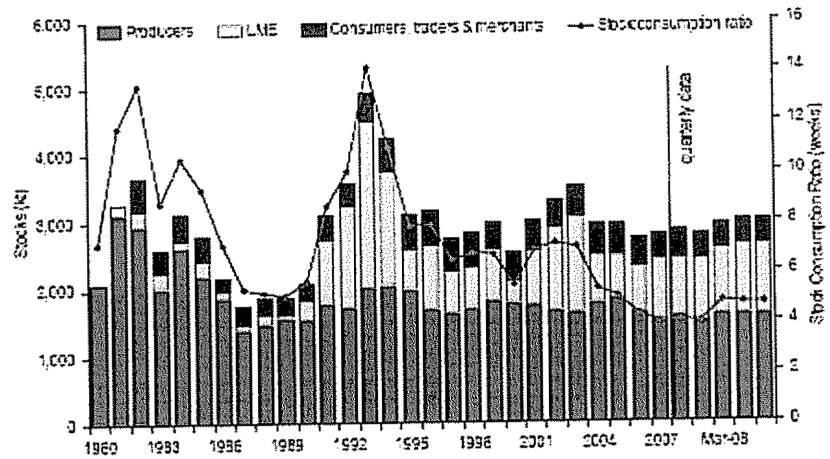


Source: China General Administration of Customs, Citi Investment Research

Exchange inventories remain high, up 28.7% YTD.

Yet, the stock consumption ratio remains near its historic minimum.

Figure 17. Aluminum Stocks & Aluminum Stock: Consumption Ratio

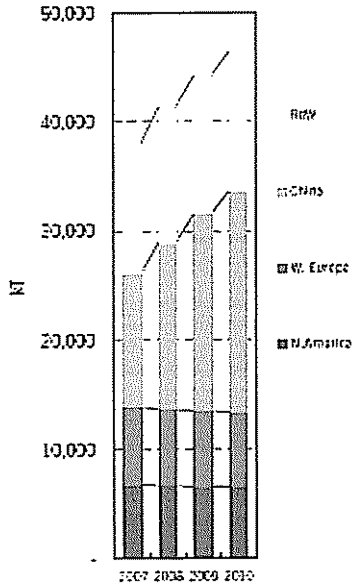


Source: WBMS, LME, Citi Investment Research

Brook Hunt Released its July Aluminum Publication showing higher production and surplus estimates for 2008-10. Consumption estimates worldwide are unchanged compared to June estimates. It is expecting aluminum prices of $1.34 for 2008-09 and $1.32 for 2010.

- **Aluminum Consumption:** The latest global Aluminum consumption growth forecasts are slightly lower for 2007-08, which are 10.4%, 8.9%, 6.8%, and 4.9% for 2007/08/09/10, respectively (vs. 10.4%, 9.7%, 6.6%, and 4.6% previously). Demand in China is expected to grow 25.5%, 18%, and 12% in 2008-10. However, the latest forecasts are -307 kt, -205 kt, and -46 kt lower than June estimates. Demand in Western Europe is expected to decline in 2008-10. 4.6% in 2007, -2.4% in 2008, -1.2% in 2009, and -0.5% in 2010, all unchanged from June estimates. N. American demand estimates expected to decline by -7.8% in 2007, -1.4% in 2008, -1.2% in 2009, and -1.2% in 2010, all unchanged from June estimates.

Figure 18. Aluminum Demand by Region



Source: Brook Hunt and Citi

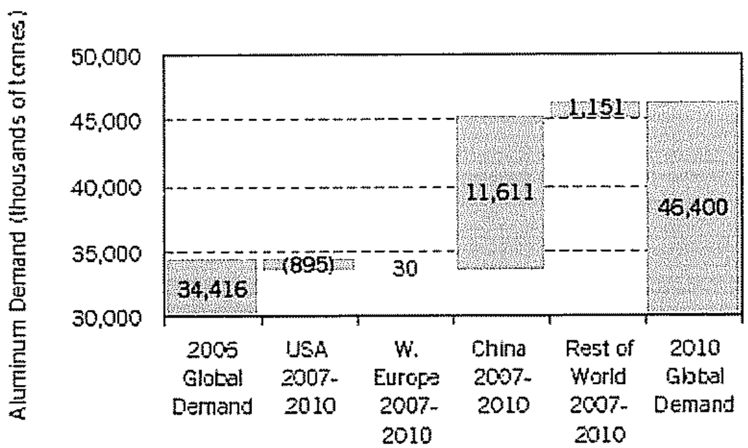
- **Aluminum Production:** Refined global aluminum production levels expected to be 38.1 kt (+12.3%) in 2007, 41.6 kt (+9%) in 2008, 45.9 kt (+10.5%) in 2009, and 49.3 kt (+7.3%) in 2010. These estimates vary by -50 kt, -408 kt, +37 kt, and +131 kt from June estimates. China's production is expected to be 12.6 kt (+34%), 14.8 kt (+17%), 18 kt (+22%), and 20 kt (+11%) for 2007-10. These estimates are -48 kt and -250 kt lower for 2007-08 and unchanged for 2009-10.

- **Aluminum Balance:** A surplus of 118kt, 185 kt, 1723 kt, 2895 kt is estimated for 2007-10, vs. 168 kt, 307 kt, 1501 kt, 2738 kt previously.

- **Aluminum Price Forecast:** Price forecasts are $1.34 (unchanged) in 2008, $1.34/lb (unchanged) in 2009, $1.32 (up from $1.18).

- **Alumina Balance:** Forecast for Alumina balance is 405 kt, 1435 kt, 1395 kt, and 1057 kt for 2007-10. Previously, the estimates were 299 kt, 1113 kt, 1485 kt, and 1,581 kt for 2007-10. The declining balance in 2010 is consistent with Citi's view that the growth of high quality bauxite will become more scarce in coming years.

Figure 19. Brook Hunt's Aluminum Demand Changes, 2006-2010



Source: Brook Hunt June 2008 and Citi Investment Research

HY Metals and Mining

August monthly: Downgrading sector, STLD credit and METALS

Metals & Mining
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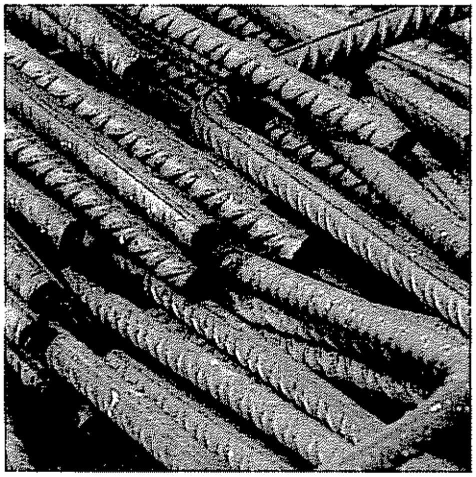
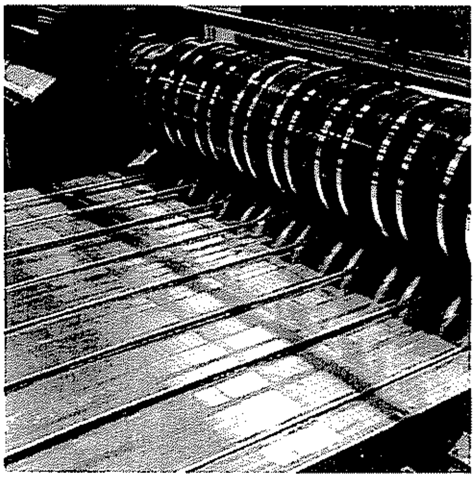
- **In this report, among other items, we downgrade the Metals & Mining credit sector to Underweight, downgrade Steel Dynamics credit to Underweight (both from Neutral) and downgrade Metals USA credit to Neutral.**
- **In our May monthly we posed the question, "are we in a steel price bubble."** We concluded that we most likely were but that it was unlikely the price bubble would burst in the short term. At $1,080 per ton, hot-rolled sheet prices have only come off $70 in the last three months.
- **Since the publication of our June aluminum sector focus, aluminum prices have fallen 9%.** Still, prices remain very high in a historical context.
- **Over the last three months, the overall high yield market has returned negative 3.7% while the metals & mining sector of the high yield market has returned positive 0.8%.** During the same period, the S&P is down 8.0%, but the AMEX Steel Index has moved down 23.9%.
- **We believe the stock market sell-off reflects a secular change in thinking regarding commodities.** However, we also recognize that the sell-off has likely been more a result of fear than it has been of concrete economic data.
- **Nevertheless, we believe enough risk now exists to metals bonds' trading levels to warrant a downgrade of the sector to Underweight.**
- **We recognize that bond investors may be seeing the end game better than equity investors. However, we believe the apparent shift in equity sentiment,** the strengthening of the US dollar, the decrease in steel scrap prices and high aluminum inventories warrant investors moving to a true "underweight" position.
- **That is, we advocate investors move to a more cautious position, trimming their metals positions and taking profits.**





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See page 43 for analyst certification and important disclosures.

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Metals USA: Downgrading to Neutral

- **As we indicated in our July monthly, we view Metals USA 2Q08 EBITDA of $93 million as a phenomenal result, but, likely, an outlier.** Although the company has done a great job at managing volume growth in an otherwise soft environment, we believe the inventory gains likely present in the 2Q08 results make an EBITDA repeat unlikely.
- **We expect leverage calculated on LTM EBITDA to continue to fall through the end of the year but believe this is already priced into the bonds.** The OpCo notes trade at a relatively rich 105 offered price (YTW 9.88%). Were the company to complete its proposed IPO, the OpCo notes would not directly benefit, with all cash raised going to pay down the HoldCo notes.
- **Metals USA is required to use the proceeds of any IPO to make a purchase offer for the $300 million HoldCo notes due 2012 at par plus accrued interest.** In the event Metals USA raises and receives the entire $200 million referenced in its amended S-1 filed 17-Jul-08 (that is, no portion of the sale represents sales of shares by Apollo), up to two-thirds of the issue would be retired. Bondholders would have to balance the purchase offer payment and the pro forma 1.0x reduction in leverage to 3.7x (only 0.5x wide of the OpCo notes) against the illiquidity of the remaining smaller issue.
- **However, in the event the company does not complete an IPO by the end of September, we would expect a dividend payment to Apollo.** The headline impact of this quarter's earnings encourages management to complete the IPO prior to the close of 3Q08.
- **We calculate that Metals USA could, at present, pay over a $70 million dividend.** Noteholders' interests are somewhat protected by Apollo/affiliate ownership of $91.4 million of the HoldCo notes (as of 16-Jul-08). Still, the cash benefit of a dividend may outweigh the benefit to Apollo from completing the IPO.
- **The 27.0% decrease in the AMEX STEEL Index from the date the company filed its S-1 makes us believe the likelihood of the IPO being completed has decreased.** Reliance Steel is down 12.0% over the same period.
- **If the IPO is completed** and roughly $200 million of the HoldCo issue retired, we think the remaining portion of the issue would trade to 96. If, instead, a dividend is paid, we anticipate the notes would trade down to around 84. Using a 50% likelihood for the IPO implies proper value for the HoldCo notes at 91.3, in line with the notes' current trading levels. We therefore are downgrading the HoldCo notes to Hold.
- **We continue to believe Metals USA is a well-run company.** If steel prices head up sharply or steel company equity prices increase, we would revisit our rating.

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Steel Dynamics: Credit facing headwinds, downgrading to Underweight

- **We are downgrading Steel Dynamics' debt to Underweight, reflecting our view that the notes trade rich relative to recent equity market movements,** likely shareholder friendly action, possible scrap compression and possible late-year headwinds to demand.

- **In terms of steel producers, Steel Dynamics is the cream of the crop.** However, we feel that impressive operating skills cannot overcome the combination of high leverage (for the rating), a lack of ratings upside possibilities and an apparent change in equity investor sentiment.

- **On 13-Aug-08, Steel Dynamics equity closed at $25.85 per share, a whopping 36% below its 19-Jun-08 close.** The fall is all the more remarkable when one takes into account that on July 22, the company reported its strongest quarter ever. Since 19-Jun-08, the STLD 7.75% of 2016 notes have fallen 2.25 points. Over the last month, while Steel Dynamics stock has fallen 25%, the STLD 7.75% of 2016 notes have actually increased 0.25 points.

- **We believe STLD will favor shareholder repurchases over debt repayment.** In the past two years, the company has completed over $825 million in share repurchases. On 29-Jul-08, the board upsized the shares authorized for repurchase by 5 million shares to 8.9 million shares. Although the current authorization is only equivalent to about $230 million at current stock prices, we would expect the company's future purchases to be equivalent to or greater than its historical repurchases.

- **Shareholder repurchases could leave very little for debt repayment.** We think the recent fall in equity prices will provide the company with more than enough impetus to aggressively repurchase shares.

- **In addition, the company has indicated continued interest in acquisitions.** We expect that shareholder-friendly actions and acquisitions will make long-term debt reduction unlikely.

- **Scrap prices have shown signs of weakness lately.** Were they to continue to weaken, we would expect Steel Dynamics' margins to expand initially but over time to compress, erasing some of the impressive profits the company has been generating.

- **We include our financial model.** In the model, we assume that free cash flow sits on the balance sheet instead of being used to pay down debt. This reflects our view that the majority of the cash will be used as previously mentioned.

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Steel Dynamics Inc.

STLD

FINANCIAL SUMMARY ($ mn)

Fiscal year-end December	Actual Full Year	Actual Full Year	Actual 1Q06	Actual 2Q06	Actual 3Q06	Actual 4Q06	Actual Full Year	Actual 1Q07	Actual 2Q07	Actual 3Q07	Actual 4Q07	Actual Full Year	Actual 1Q08	Actual 2Q08	Estimate 3Q08	Estimate 4Q08	Estimate Full Year	Estimate Full Year	Actual LTM
Income statement data	FYE 2004	FYE 2005	31-Mar-06	30-Jun-06	30-Sep-06	31-Dec-06	FYE 2006	31-Mar-07	30-Jun-07	30-Sep-07	31-Dec-07	FYE 2007	31-Mar-08	30-Jun-08	30-Sep-08	31-Dec-08	FYE 2008	FYE 2009	30-Jun-08
Steel shipments	3,423	3,553	1,035	1,247	1,289	1,187	4,758	1,163	1,115	1,588	1,345	5,550	1,491	1,433	1,434	1,433	5,859	6,287	5,857
Fabrication shipments	359	141	41	61	65	68	235	65	68	70	71	273	68	76	75	69	288	283	285
Non-ferrous scrap	0	0	0	(1)	0	0	0	(4)	23	(1)	595	613	927	853	877	835	3,492	3,342	2,375
Other shipments/ eliminations	(351)	(107)	(20)	(65)	(111)	(88)	(305)	33	25	(67)	(390)	(400)	48	49	50	47	195	195	(362)
Total shipments (000 tons)	3,432	3,534	1,056	1,222	1,244	1,167	4,688	1,256	1,233	1,558	1,619	5,837	2,535	2,471	2,436	2,431	9,934	10,096	8,195
yoy % chg	21.8%	4.7%	23.7%	38.2%	34.7%	25.5%	30.5%	19.0%	0.9%	25.1%	44.7%	30.2%	111.4%	110.8%	59.1%	44.8%	68.7%	-0.6%	67.3%
Revenues	$2,145	$2,185	$666	$821	$912	$843	$3,239	$866	$911	$1,157	$1,451	$4,385	$1,957	$2,404	$2,383	$2,235	$8,926	$8,838	$5,914
yoy % chg	117.3%	1.9%	16.7%	50.5%	82.5%	47.4%	48.2%	30.0%	11.0%	26.8%	72.8%	35.4%	119.7%	163.8%	106.1%	54.1%	103.6%	-1.0%	95.9%
Revenue per ton	$625	$608	$631	$672	$733	$720	$691	$689	$739	$737	$896	$726	$750	$973	$955	$920	$899	$875	$844
Cost of good sold	$1,457	$1,605	$451	$593	$535	$584	$2,294	$670	$662	$894	$1,155	$3,381	$1,507	$1,877	$1,809	$1,697	$6,825	$6,880	$5,427
SG&A	$87	$92	$28	$42	$46	$54	$171	$44	$45	$55	$80	$225	$85	$87	$87	$86	$325	$335	$287
Profit sharing	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$19	$27	$26	$25	$95	$97	$45
Adjusted EBITDA	$592	$485	$156	$185	$229	$202	$774	$202	$204	$208	$216	$829	$317	$414	$461	$429	$1,620	$1,515	$1,154
% Margin	27.6%	22.2%	23.4%	22.7%	25.1%	24.1%	23.9%	23.3%	22.4%	18.0%	14.9%	18.9%	16.6%	17.2%	19.3%	19.2%	18.1%	17.1%	16.7%
Adjusted EBITDA/Ton	$172	$135	$148	$153	$184	$173	$155	$160	$165	$132	$133	$137	$125	$167	$165	$176	$163	$150	$141
Less: Adjustments	($7)	($2)	($1)	($1)	($1)	($2)	($5)	($1)	$12	($1)	($5)	$5	($8)	($17)	$0	$0	($25)	$0	($30)
EBITDA	$599	$487	$157	$186	$233	$204	$778	$202	$193	$228	$221	$824	$324	$431	$461	$429	$1,645	$1,515	$1,184
% Margin	27.9%	22.3%	23.5%	22.8%	25.2%	24.3%	24.0%	23.4%	21.1%	18.0%	15.2%	18.8%	17.1%	17.9%	19.3%	19.2%	18.4%	17.1%	17.1%
EBITDA/Ton	$174	$135	$148	$154	$185	$175	$156	$161	$158	$133	$135	$136	$128	$174	$185	$176	$165	$150	$144
Depreciation and amortization	$85	$92	$25	$32	$31	$27	$115	$30	$35	$34	$38	$138	$65	$55	$55	$59	$231	$221	$192
EBIT	$507	$393	$131	$154	$199	$175	$659	$171	$158	$174	$178	$691	$252	$358	$436	$373	$1,388	$1,294	$962
% Margin	23.6%	18.0%	19.7%	18.8%	21.8%	20.9%	20.4%	19.8%	18.4%	15.0%	12.3%	15.8%	13.7%	14.9%	17.0%	16.7%	15.6%	14.6%	13.9%
EBIT/Ton	$148	$109	$124	$126	$160	$150	$141	$135	$135	$111	$110	$114	$99	$145	$183	$153	$140	$128	$117
Interest expense	$39	$34	$8	$8	$7	$8	$32	$7	$7	$15	$26	$55	$33	$35	$37	$36	$138	$132	$105
Other (income) expense	($7)	($2)	($1)	($1)	($1)	($2)	($5)	($1)	$12	($1)	($5)	$6	($8)	($17)	$0	$0	($25)	$0	($30)
EBT	$475	$361	$124	$147	$192	$168	$632	$165	$149	$160	$157	$630	$210	$340	$399	$337	$1,276	$1,163	$886
Tax provision (benefit)	$180	$139	$48	$51	$73	$63	$235	$63	$55	$59	$59	$236	$67	$129	$143	$128	$485	$442	$334
Income from continuing operations	$295	$222	$76	$97	$119	$105	$397	$102	$94	$101	$98	$395	$143	$210	$229	$209	$791	$721	$552
Non-recurring and unusual items, net of tax	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Net income	$295	$222	$76	$97	$119	$105	$397	$102	$94	$101	$98	$395	$143	$210	$229	$209	$791	$721	$552
Basic shares outstanding	197.1	178.5	174.1	182.9	199.4	185.1	187.9	192.6	185.9	179.5	185.3	186.3	189.0	193.4	194.5	194.5	192.4	194.5	192.4
Basic EPS	$1.50	$1.24	$0.44	$0.53	$0.60	$0.57	$2.11	$0.53	$0.50	$0.56	$0.53	$2.12	$0.75	$1.11	$1.18	$1.07	$4.11	$3.71	$2.95
Diluted shares outstanding	228.1	206.6	202.0	220.1	219.6	204.5	211.5	203.3	197.6	183.9	186.5	195.8	199.3	200.3	204.5	204.5	202.5	204.5	200.3
Diluted EPS	$1.32	$1.09	$0.38	$0.44	$0.54	$0.51	$1.89	$0.50	$0.48	$0.53	$0.50	$2.01	$0.72	$1.05	$1.12	$1.02	$3.91	$3.52	$2.79
Cash flow analysis																			
Net income (loss)	295	222	76	97	119	105	397	102	94	101	98	395	143	210	229	209	791	721	552
Depreciation and amortization	85	92	25	32	31	27	115	29	33	34	42	138	53	45	47	45	195	189	177
Deferred Taxes	107	22	0	(6)	(3)	8	(0)	(0)	(1)	(1)	14	13	(1)	(7)			(8)	-	6
Other	3	(1)	[illegible]	[illegible]	[illegible]	3	9	[illegible]	(1)	[illegible]	2	5	4	[illegible]	[illegible]	[illegible]	13	10	12
Working capital	(242)	(24)	35	(152)	(7)	(41)	(115)	15	(175)	114	(77)	(122)	14	(155)	[illegible]	62	(121)	50	(147)
Cash flow from operating activities	248	311	137	24	142	102	405	146	(50)	250	80	428	214	95	280	322	871	989	599
Maintenance Capex	(25)	(25)	(6)	(6)	(6)	(6)	(25)	(6)	(6)	(6)	(6)	(25)	(6)	(6)	(6)	(6)	(25)	(25)	(25)
Discretionary FCF	223	286	131	18	135	96	380	142	(57)	244	74	403	207	89	274	316	846	964	574
Discretionary Capex	(77)	(38)	(6)	(28)	(29)	(38)	(104)	(48)	(95)	(94)	(133)	(370)	(88)	(95)	(94)	(94)	(370)	(375)	(409)
Cash dividend	(7)	(18)	(4)	(9)	(10)	(14)	(36)	(15)	(14)	(14)	(13)	(56)	(14)	(19)	(19)	(19)	(72)	(76)	(60)
Issuance (purchase) of treasury stock	(55)	(187)	1	0	(161)	(87)	(247)	(103)	(132)	(199)	(100)	(534)	(46)				(45)	-	(344)
Free Cash Flow	83	43	119	(19)	(55)	(44)	(9)	(23)	(299)	(63)	(173)	(556)	59	(65)	161	202	358	492	(240)

Source: JPMorgan and Company Reports

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Steel Dynamics Inc.

FINANCIAL SUMMARY ($ mn)

Balance sheet data	Actual Full Year FYE 2004	Actual Full Year FYE 2005	Actual 1Q06 31-Mar-06	Actual 2Q06 30-Jun-06	Actual 3Q06 30-Sep-06	Actual 4Q06 31-Dec-06	Actual Full Year FYE 2006
Cash	$15	$55	$199	$54	$71	$29	$29
Senior secured debt	$25	$20	$19	$19	$49	$98	$98
Total senior debt	$333	$326	$324	$323	$352	$401	$401
Total debt	$448	$441	$434	$403	$432	$439	$439
Minority interest	$2	$1	$1	$2	$2	$1	$1
Shareholder equity	$847	$880	$972	$1,225	$1,173	$1,231	$1,231
Total capitalization	$1,298	$1,322	$1,407	$1,633	$1,607	$1,671	$1,671
Net Debt	$432	$375	$235	$349	$411	$410	$410
Discretionary FCF as % of total debt	49.7%	64.9%	64.9%	92.5%	121.4%	85.6%	85.6%
Credit statistics [1]							
EBITDA/Interest Expense	15.2x	14.1x	14.9x	17.5x	22.5x	24.1x	24.1x
EBITDA - CapEx / Interest Expense	12.6x	12.3x	13.2x	15.2x	19.2x	20.1x	20.1x
Senior Secured Debt/EBITDA	0.0x	0.0x	0.0x	0.0x	0.1x	0.1x	0.1x
Senior Debt/EBITDA	0.6x	0.7x	0.6x	0.6x	0.5x	0.5x	0.5x
Total Debt/EBITDA	0.8x	0.9x	0.8x	0.7x	0.6x	0.6x	0.6x
Net Debt/EBITDA	0.7x	0.8x	0.5x	0.6x	0.6x	0.5x	0.5x
Total Debt/Cap	35%	33%	31%	25%	27%	26%	26%
Net Debt/Cap	33%	28%	17%	21%	26%	25%	25%

Balance sheet data	Actual 1Q07 31-Mar-07	Actual 2Q07 30-Jun-07	Actual 3Q07 30-Sep-07	Actual 4Q07 31-Dec-07	Actual Full Year FYE 2007	Actual 1Q08 31-Mar-08	Actual 2Q08 30-Jun-08	Estimate 3Q08 30-Sep-08	Estimate 4Q08 31-Dec-08	Estimate Full Year FYE 2008	Estimate Full Year FYE 2009	Actual LTM 30-Jun-08
Cash	$28	$12	$11	$28	$28	$59	$115	$276	$479	$479	$370	$115
Senior secured debt	$113	$232	$864	$793	$793	$781	$821	$821	$821	$821	$821	$821
Total senior debt	$416	$732	$1,164	$1,993	$1,993	$1,981	$2,521	$2,521	$2,521	$2,521	$2,521	$2,521
Total debt	$453	$779	$1,201	$2,030	$2,030	$2,018	$2,537	$2,537	$2,537	$2,537	$2,537	$2,537
Minority interest	$1	$1	$1	$11	$11	$12	$12	$12	$12	$12	$12	$12
Shareholder equity	$1,225	$1,184	$1,080	$1,529	$1,529	$1,615	$1,985	$2,197	$2,385	$2,385	$3,029	$1,985
Total capitalization	$1,680	$1,955	$2,282	$3,570	$3,570	$3,645	$4,536	$4,745	$4,935	$4,935	$5,578	$4,536
Net Debt	$425	$758	$1,191	$2,001	$2,001	$1,959	$2,421	$2,260	$2,058	$2,058	$1,565	$2,421
Discretionary FCF as % of total debt	85.2%	41.1%	55.2%	19.9%	19.9%	23.2%	22.6%	31.5%	33.3%	33.3%	37.2%	22.6%
Credit statistics [1]												
EBITDA/Interest Expense	25.3x	27.6x	21.7x	15.0x	15.0x	12.1x	10.9x	11.0x	11.8x	11.8x	11.5x	10.9x
EBITDA - CapEx / Interest Expense	20.9x	19.8x	13.7x	7.8x	7.8x	6.5x	6.8x	7.6x	8.9x	8.9x	8.5x	6.8x
Senior Secured Debt/EBITDA	0.1x	0.3x	0.8x	1.0x	1.0x	0.8x	0.7x	0.6x	0.5x	0.5x	0.5x	0.7x
Senior Debt/EBITDA	0.5x	0.9x	1.4x	2.4x	2.4x	2.1x	2.2x	1.8x	1.6x	1.6x	1.7x	2.2x
Total Debt/EBITDA	0.6x	0.9x	1.5x	2.4x	2.4x	2.1x	2.2x	1.8x	1.6x	1.6x	1.7x	2.2x
Net Debt/EBITDA	0.5x	0.9x	1.5x	2.4x	2.4x	2.1x	2.1x	1.6x	1.3x	1.3x	1.0x	2.1x
Total Debt/Cap	27%	39%	53%	57%	57%	55%	56%	53%	51%	51%	45%	56%
Net Debt/Cap	25%	39%	52%	56%	56%	54%	53%	48%	42%	42%	28%	53%

(1) Calculated using LTM Adjusted EBITDA

CAPITALIZATION

($ mn)	Actual 30-Jun-08	Leverage
Cash	$115	
Senior Secured Revolver due 2012	$201	
Term loan A due 2012	$535	
Other secured debt	$84	
Senior secured debt	$821	0.7x
Senior unsecured 7.375% notes due 2012	$700	
Senior unsecured 6.75% notes due 2015	$500	
Senior unsecured 7.35% notes due 2016	$500	
Unamortized bond premium	$0	
Total senior debt	$2,521	2.2x
Conv. 4.0% notes due 2012 @ $17.00 - redeemable at Dec 2007	$15	
Total debt	$2,537	2.2x
Minority interest	$12	
Shareholder equity	$1,985	
Total Capitalization	$4,536	

Source: JPMorgan and Company Reports

LIQUIDITY

($ mn)		Actual 30-Jun-08
Cash		$115
Senior Secured Revolver due 2012	$874	
Amount outstanding	($201)	
Other restrictions	$0	
Net	$673	
Total Liquidity		$788

Source: JPMorgan and Company Reports

ASSET COVERAGE

($ mn)	Estimate 13-Aug-08
Stock price (USD)	$25.35
Shares outstanding	204.5
Market value of equity	$5,183
Net debt	$2,421
Minority interest	$12
Enterprise value	$7,616
Adjusted LTM EBITDA	$1,154
EV/EBITDA	6.6x
EV/2008E EBITDA	4.7x
Total Debt/EV	33%

Source: JPMorgan and Company Reports

DEBT AMORTIZATION SCHEDULE

($ mn)	Estimate 30-Jun-08
2008	$254
2009	$58
2010	$58
2011	$55
2012	$1,032
2013 and thereafter	$1,013

Source: JPMorgan and Company Reports

Recent events

- **AK Steel (AKS)**
  On 21-Jul-08, AK Steel announced a $21 million capital investment to further expand the company's Butler, Pennsylvania, grain-oriented electrical steel capabilities. The project should help improve the company's product mix facility and is expected to be completed in late 2009.

  AK Steel announced 2Q08 earnings on 22-Jul-08. Volume increased 2% over the same period in the prior year, driven by growth in value-added products. Prices increased 18% over 2Q08 and 13% sequentially, leading to record adjusted EBITDA of $292 million. Free cash flow of $106 million increased cash balances to $381 million. Net debt now stands at $284 million. Net leverage decreased 0.1x sequentially to 0.3x. Gross leverage remained steady at 0.7x.

  On 22-Jul-08, the company announced that its board of directors had authorized a $75 million early contribution to the company's pension trust fund to be paid during the third quarter.

  On 28-Jul-08, Moody's placed AK Steel's ratings under review for possible upgrade. The agency attributed the review to "the company's improved operating and financial profile driven by strong steel fundamentals and the company's meaningful reduction in debt, pension, and OPEB liabilities."

- **Aleris International, Inc. (ARS)**
  On 11-Aug-08, Aleris announced its 2Q08 results, in which the company reported adjusted EBITDA of $105 million, 9% above the same period in the prior year. Volumes in the global rolled and extruded products segment fell 1% while volumes in the global recycling segment rose 12%. Excluding the impact of acquisitions, volume decreased 4% from 2Q07 in the global rolled and extruded products segment and volume decreased 12% in the global recycling segment. Management explained the volume declines by citing continued "recessionary conditions prevalent in North America as well as pockets of softness in certain European end-use industries." EBITDA growth was aided by "strong productivity gains" and expansions in Europe. Net debt increased $34 million to $2.84 billion. Gross leverage through the sub notes remained steady sequentially at 8.0x. Net debt through the sub notes fell 0.1x to 7.7x.

- **California Steel Industries, Inc. (CALSTL)**
  On 21-Jul-08, Standard & Poor's released a summary of its BB corporate credit rating of California Steel. The outlook is stable, but S&P noted that the outlook could be revised to negative if leverage deteriorated and was maintained above 5.0x. Factors – including the company's "weak business position, very limited diversity due to reliance on one plant, close ties to the economic cycle of California, and heavy dependence on volatile steel slab costs" – act to constrain higher ratings.

- **Century Aluminum Company (CENX)**
  On 24-Jul-08, Century Aluminum released its 2Q08 earnings. Shipments were 5% greater than in the same quarter in the prior year. Management struck an optimistic tone, noting that it continued to believe that "metal markets, while volatile, will demonstrate long-term upward pressure consistent with ongoing

cost increases and supply constraints as well as increasing metal demand from emerging economies." Adjusted EBITDA of $169 million increased 48% over the same period in the prior year and 66% sequentially. Gross debt remained steady at $433 million; net debt decreased slightly to $49 million. Gross leverage decreased 0.1x to 1.0x; net leverage decreased to 0.1x.

- **Essar Steel Algoma Inc. (AGACN)**
  On 12-Aug-08, ESSAR Steel Algoma said that it planned to start up its No. 6 Blast Furnace that evening. The No. 6 Blast Furnace is a component of Algoma's planned expansion to 4 million saleable tons.

- **Fortescue Metals Group (FMGAU)**
  On 29-Jul-08, Fortescue stated that it had loaded more than 4 million tonnes of product onto 25 ships. This is roughly equivalent to US$310 million gross revenue generation in the first 11 weeks of the company's life.

  On 1-Aug-08, Fortescue announced that a ship loaded with 155,000 tonnes of iron ore of the company's product had run aground in the Port Hedland shipping channel. There were no injuries and no hydrocarbon releases. The ship was refloated on 1-Aug-08. The responsibility for the costs of the refloating operation plus any charges for ship repairs will be borne by the ship's owner, SK Shipping PLC Europe.

  On 4-Aug-08, the CEO, Andrew Forrest, said that the company may reach 55 million tons of annual production (run-rate levels) in early 2009

  On 12-Aug-08, the *Sydney Morning Herald* reported that Fortescue "is forging ahead with plans to more than double its annual production capacity to 120 million tonnes of iron ore a year." This figure is up from the previously mentioned 100 million tonnes per year and reflects better-than-expected performance from the car dumper, with Forrest noting consistent unloading of two iron ore cars at least every 90 seconds.

- **Freeport-McMoRan Copper & Gold Inc. (FCX)**
  On 22-Jul-08, Freeport reported 2Q08 results. Adjusted EBITDA of $2.5 billion was 18% below the same period in the prior year as a result of higher unit costs, lower gold volumes, and slightly lower copper volumes offset by higher metals prices and molybdenum volumes. Free cash flow for the quarter was negative $108 million, but management stated that it expects to generate $4.4 billion in cash from operations in the second half of the year, based on $3.75/lb. copper. With momentum moving against copper (current spot price of around $3.40/lb.) that forecast may prove somewhat difficult to achieve. Gross leverage increased 0.1x to 0.8x.

  On 22-Jul-08, Freeport announced that its board of directors had authorized an increase in its annual dividend from $1.75 per share to $2.00 per share beginning with the November 2008 dividend payment. The share-repurchase program was expanded from 20 million shares authorized to 30 million shares. The company said that its "financial policy will be reviewed on an ongoing basis and will be designed to maintain a strong balance sheet, enable financial flexibility to invest in organic growth and provide strong cash returns to shareholders subject to market conditions."

On 29-Jul-08, Moody's released a Credit Analysis of Freeport in which the agency noted that the Ba1 corporate family rating "reflects Freeport's high debt level of approximately $9 billion (including Moody's standard adjustments), its primary concentration in copper and resultant variation in earnings and cash flow, and its significant capital expenditure requirements to increase production and improve its cost position." Moody's also stated that "Freeport's debt level still remains a constraining rating factor given the company's extreme dependence on volatile copper prices and propensity to emphasize shareholder returns."

- **Gerdau Ameristeel Corporation (GNACN)**
  On 6-Aug-08, Gerdau Ameristeel reported 2Q08 results. Adjusted EBITDA of $521 million was 117% over the same period in the prior year. Shipments increased 48% from 2Q07. Free cash flow of negative $52 million in addition to the $204 million paid for the CSI acquisition and the increase in ownership of PCS led cash to fall $329 million sequentially to $312 million. Gross debt stayed steady at $3.07 billion. Gross leverage decreased 0.5x to 2.1x due to the growth in LTM EBITDA. Net leverage only decreased 0.1x, to 1.9x, due to the decrease in cash from the acquisition spend.

- **Indalex Holding Corp. (INDALX)**
  On 7-Aug-08, Indalex announced the institution of an energy surcharge beginning 11-Aug-08 to help pass along the costs for natural gas, diesel fuel and electricity to the company's customers. The August surcharge is 4.2 cents per pound.

  On 13-Aug-08, Indalex announced 2Q08 earnings. We calculate the company generated $8 million EBITDA, down 36% from the same period in the prior year, and 63% over 2Q06 levels. However, the EBITDA was more than three times as large as 1Q08's. Volume was down 14% year over year due to continued weakness in end markets. The company had a heavy cash burn, with negative $25 million free cash flow, due to heavy capital expenditures ($12 million) and working capital spend ($10 million). Gross leverage increased 2.3x to 13.1x.

- **Noranda Aluminum Acquisition Corp. (NRNDA)**
  On 12-Aug-08, Noranda reported 2Q08 adjusted EBITDA of $80 million, slightly below our $84 million estimate. EBITDA was virtually flat year over year. A 6% increase in aluminum prices over the prior year was offset by a 9% increase in the company's cash costs and continued weakness in the downstream businesses' end markets. Net debt increased $95 million sequentially, reflecting the previously announced $102 million dividend. Gross OpCo leverage was down 0.1x to 3.0x. HoldCo leverage stands at 3.8x. The company announced that it entered into natural gas forward swaps for 25% of its estimated exposure through 2012 at an average price of $9.51 per million BTU.

- **Novelis Inc. (HINDAL)**
  On 1-Aug-08, Novelis said that it had identified a noncash error "largely related" to accounting for the company's acquisition by Hindalco Industries Limited. The company should not have recorded a deferred tax liability associated with the stepup in basis related to nonamortizable assets (primarily goodwill). As a result of this error, Novelis also overstated a tax benefit. Novelis estimated the net effect of these noncash errors was to overstate net income for the fiscal year ended 31-Mar-08 by about $45 million. The company is reassessing its evaluation of the effectiveness of its internal control over financial reporting.

- **RathGibson (RATHGI)**
  On 11-Aug-08, RathGibson announced that Harley Kaplan had departed his position as chairman and CEO. While an executive search is under way, Mike Schwartz, president and COO, will function as the interim CEO, and John Janitz, a current member of the board, will function as the nonexecutive chairman of the board.

- **Russel Metals (RUSCN)**
  The company released its 2Q08 results on 5-Aug-08. Adjusted EBITDA of $128 million was 137% above the same period in the prior year and 134% above the prior quarter. Management pointed to consistent demand in the metals service center segment and increased demand in the energy tubular products segment. Free cash flow of $35 million raised cash balances to $236 million. Gross leverage decreased 0.2x to 0.7x. Liquidity at quarter end stood at around $365 million. Management said that working capital should continue to expand, consuming cash for the remainder of the year. The company remains "optimistic" that it will "maintain the positive momentum of the second quarter."

- **Ryerson Inc. (RYI)**
  Ryerson reported 2Q08 adjusted EBITDA on a LIFO basis of $42 million on 5-Aug-08. On a FIFO basis, the company's adjusted EBITDA was $129 million. For a discussion of the company's results and why we believe the bonds offer a compelling return opportunity, please see our report Ryerson Inc : 2Q08: Living LIFO in a FIFO world, published 8-Aug-08.

- **Steel Dynamics (STLD)**
  On 21-Jul-08, Steel Dynamics reported 2Q08 results. Adjusted EBITDA of $414 million was a bit more than double the amount in the same period in the prior year. Shipments likewise more than doubled. The company generated negative free cash flow, principally due to a near-$200 million working capital usage. Gross leverage increased 0.1x to 2.2x. Net leverage stayed flat at 2.1x. Chairman and CEO Keith Busse said that the company's outlook "continues to be very positive." The company's "order activity remains strong for steel products and metals recycling volumes are running at a record pace." Busse attempted to look beyond 2008, prognosticating "that the U.S. steel marketplace will remain attractive for domestic producers, as strong global steel demand continues; steelmaking resources and ocean freight costs remain high; and a weaker dollar remains."

  On 29-Jul-08, the company announced that its board had approved an increase of 5 million shares to its existing repurchase program, increasing the total number of shares authorized to 8.9 million shares. Since September 2004, the company has repurchased 46 million shares of its common stock.

  On 5-Aug-08, Steel Dynamics announced a number of organizational changes including appointment of Mark Millet as executive vice president for Metals Recycling and Ferrous Resources and president and COO of OmniSource Corporation, taking over the role vacated by Danny Rifkin upon his departure from the company. Millet retains his responsibilities for the company's iron-making projects.

- **Wise Metals (WISMET)**
  On 19-Jul-08, Standard & Poor's affirmed Wise Metals Group's CCC corporate

credit rating with a "developing" outlook. The ratings agency also assigned a recovery rating of 6 (0 to 10% recovery) to the $150 million senior secured notes due 2012. The notes are rated CC. The ratings and outlook reflects "the company's participation in a mature and consolidated industry, limited operating diversity, customer concentration risk, negative operating margins, thin liquidity, and aggressive financial leverage" balanced against "the likelihood that new sales contracts could help reverse [Wise's] recent poor financial performance."

In Case You Missed It: HY Metals & Mining Reports

Date	Title
08-Aug-08	Ryerson Inc : 2Q08: Living LIFO in a FIFO world
18-Jul-08	HY Metals and Mining : July monthly: Metals USA (our thoughts post 2Q08 earnings)
15-Jul-08	Metals USA Holdings : Good 2Q08, HoldCo notes still the way to go
01-Jul-08	Novelis Inc. : Management meeting takeaways
20-Jun-08	Novelis Inc. : Good 4Q08, Reaffirming our Overweight
20-Jun-08	Noranda Aluminum : Timing is everything
19-Jun-08	HY Metals and Mining : June monthly: Aluminum sector focus
17-Jun-08	Noranda Aluminum : Initiating with an Overweight
20-May-08	Metals USA Holdings : IPO filing could be good news for HoldCo notes
20-May-08	Ryerson Inc : On track, 2Q08 should be even better
09-May-08	HY Metals and Mining : May monthly: Steel sector focus
29-Apr-08	Metals USA Holdings : Hold on to your hats, Upgrading HoldCo notes due 2012 to Buy
10-Apr-08	Freeport-McMoRan Copper & Gold : Investment grade catalyst achieved - Downgrading to Neutral
08-Apr-08	HY Metals and Mining : April monthly: Aleris (Update), Indalex (Downgrading to Neutral), Ryerson (Reaffirming our Overweight)
31-Mar-08	Steel Dynamics : Hold on new 7.75% of '16, reaffirming our Neutral
17-Mar-08	HY Metals and Mining : March monthly: Freeport (Update), Metals USA (Initiation), Novelis/Hindalco (Update)
12-Mar-08	Metals USA, Inc : Looking for the right entry point, Initiating with a Neutral
06-Feb-08	HY Metals and Mining : February monthly: Indalex - Relish the yield

Metals and Mining STW credit tracker, ranked by Δm/m

Bond and JPMorgan HY Index STW	31-Dec-07	11-Jul-08	12-Aug-08	Tightened by Absolute Δ m/m[1]	Tightened by Absolute Δ y/y
AKS 7.750% 2012	441	502	439	64	3
ATI 8.375% 2011	318	399	355	44	(37)
HY - Mining	368	423	390	33	(21)
FCX 8.250% 2015	339	420	390	30	(51)
FCX 8.375% 2017	337	418	389	29	(52)
METALS 11.125% 2015	677	705	681	24	(4)
ARS 10.000% 2016	985	1,333	1,312	21	(327)
HY Metals/Minerals	465	520	509	11	(44)
GNACN 10.375% 2011	349	574	567	7	(218)
WISMET 10.250% 2012	854	1,122	1,116	5	(263)
CALSTL 6.125% 2014	508	587	582	5	(73)
HY - Steel	444	500	500	0	(56)
RYI 12.000% 2015	847	904	904	0	(57)
MT 6.500% 2014	239	300	300	(1)	(61)
HY B	563	800	804	(4)	(241)
HY Split BB	451	560	566	(6)	(115)
FMGAU 10.625% 2016	438	421	429	(8)	9
ARS 9.000% 2014	897	1,147	1,156	(10)	(260)
HY BB	442	497	511	(14)	(70)
HY Summary	597	774	791	(17)	(194)
STLD 6.750% 2015	368	431	448	(18)	(80)
HY Split BBB	317	422	443	(21)	(125)
RUSCN 6.375% 2014	433	434	455	(21)	(22)
FMGAU 10.000% 2013	436	453	476	(23)	(40)
CENX 7.500% 2014	416	449	473	(24)	(57)
HINDAL 7.250% 2015	470	528	552	(24)	(82)
STLD 7.375% 2012	383	453	479	(27)	(97)
HY - Other Metals	593	685	712	(27)	(119)
FCX 6.875% 2014	327	305	335	(30)	(9)
AGACN 9.875% 2015	1,009	744	778	(34)	232
RATHGI 11.250% 2014	792	896	931	(35)	(139)
HY CCC	980	1,328	1,376	(48)	(396)
HY Split B	734	945	995	(51)	(261)
INDALX 11.500% 2014	1,097	2,270	2,323	(54)	(1,227)
GTI 10.250% 2012	553	485	541	(57)	12
HY - Metal Fabricators/Service Centers	746	788	864	(76)	(118)
Max	1,097	2,270	2,323	64	232
Min	239	300	300	(76)	(1,227)
Median	458	524	547	(12)	(71)
Average	561	681	691	(10)	(129)

Source: JPMorgan

Metals and Mining dollar price credit tracker, ranked by Δm/m

Bond dollar price	31-Dec-07	11-Jul-08	12-Aug-08	Price increased by (bp) Absolute Δ m/m	Absolute Δ y/y
FCX 8.375% 2017	$107.25	$103.50	$105.62	$2.12	($1.63)
ATI 8.375% 2011	$106.50	$104.35	$106.11	$1.76	($0.39)
FCX 8.250% 2015	$106.00	$103.25	$105.00	$1.75	($1.00)
METALS 11.125% 2015	$103.50	$103.00	$104.50	$1.50	$1.00
AKS 7.750% 2012	$100.50	$100.25	$101.63	$1.38	$1.13
ARS 10.000% 2016	$81.00	$69.00	$70.13	$1.13	($10.88)
CALSTL 6.125% 2014	$88.00	$86.50	$87.38	$0.88	($0.63)
WISMET 10.250% 2012	$94.50	$88.50	$89.25	$0.75	($5.25)
MT 6.500% 2014	$102.68	$100.58	$101.15	$0.57	($1.53)
RYI 12.000% 2015	$98.75	$97.00	$97.50	$0.50	($1.25)
ARS 9.000% 2014	$83.50	$76.00	$76.25	$0.25	($7.25)
GNACN 10.375% 2011	$105.25	$103.88	$103.88	$0.00	($1.38)
FMGAU 10.625% 2016	$114.50	$116.00	$116.00	$0.00	$1.50
STLD 6.750% 2015	$96.50	$94.50	$94.25	($0.25)	($2.25)
RUSCN 6.375% 2014	$92.63	$94.00	$93.75	($0.25)	$1.13
STLD 7.375% 2012	$100.50	$99.00	$98.63	($0.38)	($1.88)
FCX 6.875% 2014	$101.00	$102.73	$102.25	($0.48)	$1.25
HINDAL 7.250% 2015	$94.00	$92.50	$92.00	($0.50)	($2.00)
INDALX 11.500% 2014	$88.00	$58.50	$58.00	($0.50)	($30.00)
GTI 10.250% 2012	$103.13	$103.50	$103.00	($0.50)	($0.13)
FMGAU 10.000% 2013	$109.50	$109.00	$108.50	($0.50)	($1.00)
CENX 7.500% 2014	$98.50	$98.00	$97.50	($0.50)	($1.00)
RATHGI 11.250% 2014	$100.00	$95.75	$95.00	($0.75)	($5.00)
AGACN 9.875% 2015	$82.00	$94.75	$93.75	($1.00)	$11.75
Max				$2 12	$11 75
Min				($1 00)	($30 00)
Median				$0 00	($1 13)
Average				$0.29	($2.36)

Source: JPMorgan

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Comparative company

	Steel							
Company	AK Steel	Algoma Steel	California Steel	Gerdau Steel	Nucor Corp	Rath Gibson	Steel Dynamics	US Steel
Equity ticker	AKS			GNA	NUE		STLD	X
Bond ticker	AKS	AGA CN	CALSTL	GNA CN	NUE	RATHGI	STLD	X
Volume and Income statement (LTM)								
Shipments (000's tons)	6,487	2.498	1.749	8,844	24,965		8.195	25.335
Revenues	$7,442	$1,867	$1,433	$7.709	$20,721	$357	$6.914	$20.829
EBITDA	$936	$135	$111	$1,473	$3,455	$48	$1,154	$2,205
EBITDA margin	12.6%	7.2%	7.7%	19.1%	16.7%	13.3%	16.7%	10.6%
Interest expense	$50	$66	$10	$154	$55	$25	$106	$133
Net income	$461	($31)	$43	$690	$1,737	($11)	$552	$1,207
Cash Flow (LTM)								
CapEx	$156	$141	$33	$147	$823	$10	$434	$711
CFO	$214	$239	$112	$728	$1.918	($1)	$592	$1,440
Discretionary FCF	$134	$98	$79	$634	$1,094	($11)	$567	$729
FCF	$47	$98	$79	$441	$407	($13)	($247)	$504
Capitalization								
Cash	$381	$10	$160	$312	$2.792	$3	$115	$391
Senior unsecured	$116	$455	$40	$2.666	$443	$65	$821	$1.508
Total senior	$665	$921	$190	$3,070	$3.268	$276	$2.521	$3.220
Total OpCo	$665	$921	$190	$3,070	$3.268	$276	$2.537	$3,220
Minority interest				$35	$315		$12	$125
Shareholder's equity	$1,303	$566	$381	$4,167	$8,080	$210	$1,988	$6,409
Capitalization	$1,968	$1,487	$571	$7,271	$11,664	$485	$4,536	$9,754
Enterprise value and liquidity								
Stock price	$53.06	Private	Private	$14.18	$52.74	Private	$25.85	$137.92
Equity market capitalization	$5,954	Private	Private	$6,140	$16.537	Private	$4,921	$16,204
Enterprise value	$6,238	$1,578	$719	$8,932	$17,329	$310	$7,354	$19,158
Liquidity	$1,062	$203	$269	$1,117	$3,787	$25	$788	$1,596
Credit Statistics								
EBITDA/Interest Expense	18 7x	2.0x	11.4x	9.6x	63.1x	1 9x	10.9x	16 6x
EBITDA - CapEx / Interest Expense	15.6x	-0 1x	8.0x	8.6x	48.1x	1 5x	6 8x	11.2x
Senior secured leverage	0.1x	3 4x	0.4x	1 8x	0.1x	1.4x	0.7x	0 7x
Total senior leverage	0.7x	6 8x	1 7x	2 1x	0.9x	5 8x	2.2x	1.5x
Total OpCo leverage	0.7x	6 8x	1 7x	2.1x	0.9x	5.8x	2.2x	1.5x
Senior unsecured debt/cap	6%	31%	7%	37%	4%	13%	18%	15%
Total senior debt/cap	34%	62%	33%	42%	28%	57%	56%	33%
Total OpCo debt/cap	34%	62%	33%	42%	28%	57%	56%	33%
EV/EBITDA	6.7x	11.7x	6.5x	6.1x	5.0x	6.5x	6.4x	8.7x
Total Debt/EV	11%	58%	26%	34%	19%	89%	34%	17%
EV/ton	$962	$632	$411	$1,010	$694		$897	$756
EBITDA/ton	$144	$54	$63	$166	$138		$141	$87
EV/Revenues	84%	84%	50%	116%	84%	87%	106%	92%
Bond One								
Description	Sr Nts	Sr Nts	Sr Nts	Sr Nts	Sr Nts	Sr Nts	Sr Nts	Sr Nts
Coupon	7.750%	9.875%	6.125%	10.375%	4.875%	11.250%	7 375%	5.650%
Maturity	06/15/12	06/15/15	03/15/14	07/15/11	10/01/2012	02/15/14	11/01/12	06/01/13
Outstanding	$550	$450	$150	$405	$350	$200	$700	$300
Rating	B1/BB-	Caa1/B-	Ba3/BB-	Ba1/BB+	A1/A+	B3/B	Ba2/BB+	Baa3/BB+
Offer price	$99.25	$94.75	$86.50	$103.88		$95.50	$99.00	$97.02
Yield	7 97%	10.98%	9.24%	7.98%		12.39%	7.65%	6.37%
STW	499bp	744bp	589bp	579bp		904bp	457bp	314bp
Bond Two								
Description							Sr Nts	Sr Nts
Coupon							6.750%	6.050%
Maturity							04/01/15	06/01/17
Outstanding							$500	$450
Rating							Ba2/BB+	Baa3/BB+
Offer price							$94.50	$91.76
Yield							7.82%	7 33%
STW							431bp	351bp

1 Algoma enterprise value estimated using purchase price at time of transaction Data presented in $CAD.
2 California Steel Industries and RathGibson enterprise value estimated using a 6.5x multiple of LTM EBITDA

Sources: Company reports and JPMorgan

Comparative company analysis

	Mining	Aluminum					
Company	Freeport-McMoRan	Aleris Intl	Century Aluminum	Indalex	Noranda Aluminum	Novelis (Hindalco)	Wise Metals
Equity ticker	FCX		CENX				
Bond ticker	FCX	ARS	CENX	INDALX	NRNDA	HINDAL	WISMET
Income statement (LTM)							
Revenues	$20,363	$6,473	$1,903	$1,025	$1,306	$11,246	$1,050
EBITDA	$9,620	$355	$434	$24	$297	$439	($15)
EBITDA margin	47%	5%	23%	2%	23%	4%	-1%
Interest expense	$587	$219	$13	$31	$99	$199	$35
Net income	$3,512	($104)	($340)	($63)	$25	($117)	($83)
Cash Flow (LTM)							
CapEx	$2.246	$187	$32	$43	$56	$202	$21
CFO	$5,099	$3	$338	$14	$103	$175	($66)
Discretionary FCF	$3.666	($97)	$217	($3)	$140	$55	($87)
FCF	$1,072	($185)	$217	($29)	$35	$20	($87)
Capitalization							
Cash	$1,648	$113	$384	$3	$23	$326	$2
Restricted cash			$3				$2
Senior secured	$493	$1.709	$8	$120	$393	$1.184	$233
Total senior debt	$7,364	$2,441	$433	$321	$903	$2,627	$383
Total OpCo	$7,364	$2.840	$433	$321	$903	$2.627	$383
Total through HoldCo					$1.121		
Minority interest	$1,552					$149	
Preferred stock	$3,975						
Shareholder's equity	$16,197	$3,793	$344	($25)	($277)	$3,523	($186)
Capitalization	$29,088	$6,633	$776	$295	$845	$6,299	$196
Enterprise value and liquidity							
Stock price	$88.50	Private	$50.30	Private	Private	Private	Private
Equity market capitalization	$33.915	Private	$2,397	Private	Private	Private	Private
Enterprise value	$45,158	$2,305	$2,446	$270	$1,150	$4,500	nm
Liquidity	$0	$442	$472	$47	$267	$908	$178
Credit Statistics							
EBITDA/Interest Expense	16.4x	1.6x	32 7x	0.8x	3.0x	2.2x	nm
EBITDA - CapEx / Interest Expense	12.6x	0.8x	30.3x	-0.6x	2.4x	1.2x	nm
Senior secured leverage	0 1x	4.8x	0.0x	4.9x	1 3x	2 7x	nm
Total senior leverage	0.8x	6.9x	1.0x	13.1x	3.0x	6.0x	nm
Total OpCo leverage	0.8x	8.0x	1 0x	13.1x	3 0x	6.0x	nm
Through HoldCo leverage					3.8x		
Senior unsecured debt/cap	2%	26%	1%	41%	47%	18%	119%
Total senior debt/cap	25%	37%	56%	109%	107%	42%	195%
Total OpCo debt/cap	25%	43%	56%	109%	107%	42%	195%
Through HoldCo debt/cap					133%		
EV/EBITDA	4.7x	6.5x	5.6x	11.0x	3.9x	10.3x	
Total Debt/EV	16%	123%	18%	119%	98%	58%	
EV/Revenues	222%	36%	129%	26%	88%	40%	nm
Bond One							
Description	Sr Nts	Sr Nts	Sr Nts	Sr Nts	FRNs	Sr Nts	Sr Nts
Coupon	8.250%	9.000%	7.500%	11.500%	L+400	7 250%	10.250%
Maturity	04/01/15	12/15/14	08/15/14	02/01/14	05/15/2015	02/15/15	05/15/12
Outstanding	$1,500	$600	$250	$198	$510	$1,400	$150
Rating	Ba2/BBB-	B3/B-	B1/BB-	Caa3/CCC+	B3/B-e	B3/B	Ca/CC
Offer price	$103.00	$76.25	$97.63	$58.50		$92.38	$88.75
Yield	7.46%	14.86%	8.00%	26.08%		8.80%	14.15%
STW	429bp	1141bp	458bp	2274bp		531bp	1119bp
Bond Two							
Description	Sr Nts	Sr Nts			HoldCo FRNs		
Coupon	8.375%	10.000%			L+575		
Maturity	04/01/17	12/15/16			11/15/2014		
Outstanding	$3,500	$400			$220		
Rating	Ba2/BBB-	Caa1/B-			Caa1/CCC+e		
Offer price	$103.50	$69.00					
Yield	7.69%	17.07%					
STW	418bp	1332bp					

1 Freeport-McMoRan EBITDA presented pro forma for Phelps Dodge transaction. Last quarter interest expense annualized. Other data presented is actual historicals.
2 Aleris and Indalex enterprise values estimated using a 6.5x multiple of LTM EBITDA.
3 Noranda enterprise value estimated using purchase price at time of transaction.
4. Novelis enterprise value assumed at $4.5 billion

Sources: Company reports and JPMorgan

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Comparative company analysis

Company	Allegheny Tech	GrafTech Intl	Metals USA	Reliance Steel	Russel Metals	Ryerson Inc.
	Other Metals Companies					
Equity ticker	ATI	GTI		RS	RUS.CN	RYI
Bond ticker	ATI	GTI	METALS	RS	RUSCN	RYI
Income statement (LTM)						
Revenues	$5,413	$1,130	$1,984	$7,521	$2,791	$5,537
EBITDA	$1.100	$294	$199	$859	$275	$245
EBITDA margin	20%	26%	10%	11%	10%	4%
Interest expense	($1)	$23	$56	$72	$8	$102
Net income	$654	$166	$69	$437	$161	$2
Cash Flow (LTM)						
CapEx	$551	$58	$15	$154	$18	$45
CFO	$620	$179	$25	$597	$279	$267
Discretionary FCF	$68	$121	$10	$443	$261	$243
FCF	$0	$121	($5)	$302	$147	$196
Capitalization						
Cash	$310	$14	$18	$90	$236	$59
Restricted cash						$6
Senior secured	$33	$86	$644	$305	$7	$688
Total senior debt	$524	$161	$644	$1.151	$182	$1.258
Total OpCo	$524	$161	$644	$1.151	$182	$1.258
Total through HoldCo			$944			
Minority interest		$0				
Preferred stock						
Shareholder's equity	$2,427	$506	$221	$2,265	$946	$480
Capitalization	$2,951	$667	$1,165	$3,416	$1,127	$1,738
Enterprise value and liquidity						
Stock price	$48.39	$19.05	Private	$58.84	$29.20	Private
Equity market capitalization	$4.892	$2.277	Private	$4.290	$1.847	Private
Enterprise value	$5,106	$2,425	$1,294	$5,351	$1,793	$1,980
Liquidity	$666	$120	$166	$892	$365	$518
Credit Statistics						
EBITDA/Interest Expense	NM	12 7x	3.5x	12.0x	33 9x	2.4x
EBITDA - CapEx / Interest Expense	NM	10 2x	3.3x	9.8x	31 7x	2 0x
Senior secured leverage	0.0x	0 3x	3.2x	0.4x	0.0x	2 8x
Total senior leverage	0 5x	0 5x	3.2x	1 3x	0 7x	5 1x
Total OpCo leverage	0 5x	0 5x	3.2x	1 3x	0.7x	5 1x
Through HoldCo leverage			4.7x			
Senior unsecured debt/cap	1%	13%	55%	9%	1%	40%
Total senior debt/cap	18%	24%	55%	34%	16%	72%
Total OpCo debt/cap	18%	24%	55%	34%	16%	72%
Through HoldCo debt/cap			81%			
EV/EBITDA	4.6x	8.2x	6.5x	6.2x	6.5x	8.1x
Total Debt/EV	10%	7%	73%	22%	10%	64%
EV/Revenues	94%	215%	65%	71%	64%	36%
Bond One						
Description	Sr Nts	Sr Nts	Sr Sec Nts	Sr Nts	Sr Nts	Sr Sec Nts
Coupon	8.375%	10.250%	11 125%	6.200%	6.375%	12.000%
Maturity	12/15/11	02/15/12	12/01/15	11/15/2016	03/01/14	11/01/15
Outstanding	$300	$39	$275	$350	$175	$425
Rating	Baa3/BBB-	Ba3/BB	B3/CCC	Baa3 /*-/BBB-	Ba2/BB	B2/B+
Offer price	$104.26	$103.50	$104.00		$93.50	$97.00
Yield	6.94%	6.82%	10.13%		7.83%	12.63%
STW	409bp	489bp	682bp		447bp	904bp
Bond Two						
Description	Debentures		PIK HoldCo	Sr Nts		Sr Sec FRNs
Coupon	6.950%		L+600	6.850%		L+737 5
Maturity	12/15/25		07/01/12	11/15/2036		11/01/2014
Outstanding	$150		$300	$250		$150
Rating	Baa3/BBB-		Caa1/CCC /*+	Baa3 /*-/BBB-		B2/B+
Offer price	$93.41					
Yield	7.64%					
STW	343bp					

1 Metals USA EV estimated using a 6.5x multiple of LTM EBITDA
2 Russel Metals data presented in $CAD
3. Ryerson EV estimated using purchase price at time of transaction EBITDA reflects exclusion of LIFO expense

Sources: Company reports and JPMorgan

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Relative value analysis

Coupon	Description	Recommendation	Maturity	Ratings Moody's S&P	Current	Recent Quotes Offer	Recent Quotes Yield	Recent Quotes Spread	YTW Date	Next Call Date Date	Next Call Date Price	EBITDA LTM	EBITDA/ Interest LTM	Debt/ EBITDA LTM	Debt/ TEV
STEEL COMPANIES															
AK Steel Corp.															
7.750%	Sr Nts	Hold	15-Jun-12	B1/BB-	$550	$101.63	6.78%	439bp	15-Jun-10	15-Jun-09	$101.29	$936	18.7x	0.7x	11%
Algoma Acquisition Corp.[1]															
9.875%	Sr Nts	NR	15-Jun-15	Caa1/B-	$450	$93.75	11.20%	778bp	15-Jun-15	15-Jun-11	$104.94	$135	2.0x	6.8x	58%
California Steel Industries, Inc.[2]															
6.125%	Sr Nts	NR	15-Mar-14	Ba3/BB-	$150	$87.38	9.05%	582bp	15-Mar-14	15-Mar-09	$103.06	$111	11.4x	1.7x	26%
Gerdau Ameristeel Corp.[*]															
10.375%	Sr Nts	NR	15-Jul-11	Ba1/BB+	$405	$103.88	7.82%	567bp	15-Jul-09	15-Jul-09	$101.79	$1,473	9.6x	2.1x	34%
International Steel Group (Mittal Steel, USA)[3]															
6.500%	Sr Nts	NR	15-Apr-14	Baa2/BBB+	$500	$101.15	6.25%	300bp	15-Apr-14	nc	nc	$22,818	17.2x	1.7x	25%
Nucor Corp.															
4.875%	Sr Nts	NR	1-Oct-12	A1/A+	$350	$101.11	4.57%	158bp	1-Oct-12	nc	nc	$3,455	63.1x	0.9x	19%
RathGibson, Inc.[4]															
11.250%	Sr Nts	NR	15-Feb-14	B3/B	$200	$95.00	12.54%	931bp	15-Feb-14	15-Feb-10	$105.63	$48	1.9x	5.8x	89%
Steel Dynamics Inc.[5]															
7.375%	Sr Nts	Sell	1-Nov-12	Ba2/BB+	$700	$98.63	7.76%	479bp	1-Nov-12	nc	nc	$1,154	10.9x	2.2x	33%
6.750%	Sr Nts	Sell	1-Apr-15	Ba2/BB+	$500	$94.25	7.88%	448bp	1-Apr-15	1-Apr-11	$103.38	$1,154	10.9x	2.2x	33%
7.750%	Sr Nts	Sell	15-Apr-16	Ba2/BB+	$500	$98.25	8.06%	450bp	15-Apr-16	15-Apr-12	$103.88	$1,154	10.9x	2.2x	33%
United States Steel Corp.															
6.050%	Sr Nts	NR	1-Jun-17	Baa3/BB+	$450	$92.53	7.21%	349bp	1-Jun-17	nc	nc	$2,205	16.6x	1.5x	17%
ALUMINUM COMPANIES															
Aleris International Inc.															
9.000%	Sr Nts	NR	15-Dec-14	B3/B-	$600	$76.25	14.92%	1156bp	15-Dec-14	15-Dec-10	$104.50	$355	1.6x	6.9x	106%
10.000%	Sr Sub Nts	NR	15-Dec-16	Caa1/B-	$400	$70.13	16.77%	1312bp	15-Dec-16	15-Dec-11	$105.00	$355	1.6x	8.0x	123%
Century Aluminum Co.															
7.500%	Sr Nts	NR	15-Aug-14	B1/BB-	$250	$97.50	8.03%	473bp	15-Aug-14	15-Aug-09	$103.75	$434	32.7x	1.0x	18%
Indalex Holding[6]															
11.500%	Sr Nts	Hold	1-Feb-14	Caa3/CCC+	$198	$58.00	26.45%	2323bp	1-Feb-14	1-Feb-10	$108.63	$24	0.8x	13.1x	119%
Noranda Aluminum[7]															
6.828%	FRNs	Buy	15-May-15	B3/B-e	$510	na	na	nm	nm	15-Sep-08	$102.00	$297	3.0x	3.0x	79%
8.578%	HoldCo FRNs	Buy	15-Nov-14	Caa1/CCC+e	$220	na	na	nm	nm	15-Sep-08	$102.00	$297	3.0x	3.8x	98%
Novelis Inc.[8]															
7.250%	Sr Nts	Buy	15-Feb-15	B3/B	$1399	$92.00	8.90%	552bp	15-Feb-15	15-Feb-10	$103.63	$439	2.2x	6.0x	58%
Wise Metals Group LLC															
10.250%	Sr Nts	NR	15-May-12	Ca/CC	$150	$89.25	14.02%	1116bp	15-May-12	15-May-09	$102.56	($15)	NM	NM	NM

Note: EBITDA is Adjusted EBITDA. Interest Expense is based on LTM values.
1. Algoma enterprise value estimated using purchase price at time of transaction. Data presented in SCAD.
2. California Steel Industries enterprise value estimated using a 6.5x multiple of LTM EBITDA.
3. International Steel Group credit metrics shown pro forma for Mittal Steel.
4. RathGibson enterprise value estimated using a 6.5x multiple of LTM EBITDA.
5. Aleris EV estimated using a 6.5x multiple of LTM pro forma EBITDA excluding special items and including synergies.
6. Indalex enterprise value estimated using a 6.0x multiple of estimated mid-cycle EBITDA.
7. Noranda enterprise value of $1.15 billion reflects purchase price.
8. Novelis enterprise value assumed at $4.5 billion.

Sources: Company reports and JPMorgan.

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Relative value analysis

Coupon	Description	Recommendation	Maturity	Ratings Moody's S&P	Current	Recent Quotes Offer	Recent Quotes Yield	Recent Quotes Spread	YTW Date	Next Call Date Date	Next Call Date Price	EBITDA LTM	EBITDA/ Interest LTM	Debt/ EBITDA LTM	Debt/ TEV
COAL COMPANIES															
Arch Western Finance															
6.750%	Sr Nts	NR	1-Jul-13	B1/BB-	$950	$99.50	6.87%	375bp	1-Jul-13	1-Jul-09	$102.25	$682	9.0x	2.0x	16%
Massey Energy Co.															
6.625%	Sr Nts	NR	15-Nov-10	B2/B+	$360	$102.25	4.09%	225bp	15-Nov-08	15-Nov-08	$101.66	$516	9.9x	2.1x	19%
6.875%	Sr Nts	NR	15-Dec-13	B2/B+	$760	$97.50	7.45%	425bp	15-Dec-13	15-Dec-09	$103.44	$516	9.9x	2.1x	19%
Peabody Energy Corp.															
6.875%	Sr Nts	NR	15-Mar-13	Ba1/BB	$650	$102.25	5.92%	334bp	15-Mar-11	15-Mar-09	$102.29	$1,170	5.1x	2.8x	17%
5.875%	Sr Nts	NR	15-Apr-16	Ba1/BB	$250	$96.00	6.55%	299bp	15-Apr-16	15-Apr-09	$102.94	$1,170	5.1x	2.8x	17%
MINING COMPANIES															
Freeport-McMoRan Copper & Gold[1]															
6.875%	Sr Nts	Hold	1-Feb-14	Baa1/BBB-	$350	$102.25	6.14%	335bp	1-Feb-12	1-Feb-09	$103.44	$9,620	16.4x	0.1x	1%
5.883%	FRNs	Hold	1-Apr-15	Ba2/BBB-	$1000	$101.25	7.47%	nm	nm	1-Apr-09	$102.00	$9,620	16.4x	0.8x	16%
8.250%	Sr Nts	Hold	1-Apr-15	Ba2/BBB-	$1500	$105.00	6.96%	390bp	1-Apr-13	1-Apr-11	$104.13	$9,620	16.4x	0.8x	16%
8.375%	Sr Nts	Hold	1-Apr-17	Ba2/BBB-	$3500	$105.62	7.29%	389bp	1-Apr-15	1-Apr-12	$104.19	$9,620	16.4x	0.8x	16%
8.750%	Sr Nts[2]	Hold	1-Jun-11	Baa2/BBB-	$108	$106.84	6.05%	342bp	1-Jun-11	nc	nc	$9,620	16.4x	0.8x	16%
7.125%	Sr Nts[2]	Hold	1-Nov-27	Baa2/BBB-	$115	$104.00	6.75%	255bp	1-Nov-27	nc	nc	$9,620	16.4x	0.8x	16%
9.500%	Sr Nts[2]	Hold	1-Jun-31	Baa2/BBB-	$194	$130.07	6.87%	256bp	1-Jun-31	nc	nc	$9,620	16.4x	0.8x	16%
6.125%	Sr Nts[2]	Hold	15-Mar-34	Baa2/BBB-	$150	$94.18	6.60%	220bp	15-Mar-34	nc	nc	$9,620	16.4x	0.8x	16%
Fortescue Metals Group Ltd[3]															
10.625%	Sr Nts	NR	1-Sep-16	B1/B+	$1080	$116.00	7.90%	429bp	1-Sep-16	nc	nc	$1	0.0x	NM	16%
10.000%	Sr Nts	NR	1-Sep-13	B1/B+	$320	$108.50	7.92%	476bp	1-Sep-13	nc	nc	$1	0.0x	NM	16%
MISCELLANEOUS															
Allegheny Technologies															
8.375%	Sr Nts	NR	15-Dec-11	Baa3/BBB-	$300	$106.11	6.31%	355bp	15-Dec-11	nc	nc	$1,100	nm	0.5x	10%
Graftech Finance Inc.															
10.250%	Sr Nts	NR	15-Feb-12	Ba3/BB	$39	$103.00	7.44%	541bp	15-Feb-09	15-Feb-09	$101.71	$294	12.7x	0.5x	7%
Metals USA[4]															
11.125%	Sr Sec Nts	Hold	1-Dec-15	B3/CCC	$275	$104.50	10.00%	681bp	1-Dec-13	1-Dec-10	$105.56	$199	3.5x	3.2x	50%
8.791%	HoldCo FRNs	Hold	1-Jul-12	Caa1/CCC /*+	$300	$91.50	11.56%	nm	nm	15-Sep-08	$102.00	$199	3.5x	4.7x	73%
Russel Metals[5]															
6.375%	Sr Nts	NR	1-Mar-14	Ba2/BB	$175	$93.75	7.78%	455bp	1-Mar-14	1-Mar-09	$103.19	$275	33.9x	0.7x	10%
Reliance Steel & Aluminum Co.															
6.200%	Sr Nts	NR	15-Nov-16	Baa3 /*-/BBB-	$350	$90.50	7.78%	410bp	15-Nov-16	nc	nc	$859	12.0x	1.3x	22%
Ryerson Inc.[6]															
12.000%	Sr Sec Nts	Buy	1-Nov-15	B2/B+	$425	$97.50	12.53%	904bp	1-Nov-15	1-Nov-11	$106.00	$245	2.4x	5.1x	64%
10.176%	Sr Sec FRNs	Buy	1-Nov-14	B2/B+	$150	na	na	nm	nm	1-Nov-09	$106.00	$245	2.4x	5.1x	64%

Note: EBITDA is Adjusted EBITDA. Interest Expense is based on LTM values.
1. Freeport-McMoRan EBITDA presented pro forma for Phelps Dodge transaction.
2. Former Phelps Dodge notes now guaranteed by Freeport.
3. Fortescue (FMGAU) values translated using December 31, 2007 exchange rates.
4. Metals USA enterprise value estimated using a 6.5x multiple of LTM EBITDA. Interest expense at OpCo level.
5. Russel Metals data presented in $CAD.
6. Ryerson enterprise value estimated using purchase price at time of transaction. Ryerson EBITDA reflects exclusion of LIFO expense.

Sources: Company reports and JPMorgan.

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Relative value analysis: ranked by YTW

Issuer	Coupon	Maturity	Outstanding	Moody's	S&P	Price	YTW	STW	YTW Date	LTM EBITDA	Enterprise Value	EBITDA/ Interest	Debt/ EBITDA	Debt/ EV
Indalex Holding	11.500%	01-Feb-14	198	Caa3	CCC+	58.00	26.45%	2,323bp	01-Feb-14	$24	$270	0.8x	13.1x	119%
Aleris International Inc	10.000%	15-Dec-16	400	Caa1	B-	70.13	16.77%	1,312bp	15-Dec-16	$355	$2,305	1.6x	8.0x	123%
Aleris International Inc	9.000%	15-Dec-14	600	B3	B-	76.25	14.92%	1,156bp	15-Dec-14	$355	$2,305	1.6x	6.9x	106%
Wise Metals	10.250%	15-May-12	150	Ca	CC	89.25	14.02%	1,116bp	15-May-12	-$15	nm	nm	nm	
RathGibson	11.250%	15-Feb-14	200	B3	B	95.00	12.54%	931bp	15-Feb-14	$48	$310	1.9x	5.8x	89%
Ryerson Inc.	12.000%	01-Nov-15	425	B2	B+	97.50	12.53%	904bp	01-Nov-15	$245	$1,980	2.4x	5.1x	64%
Algoma Steel	9.875%	15-Jun-15	450	Caa1	B-	93.75	11.20%	778bp	15-Jun-15	$135	$1,578	2.0x	6.8x	58%
Metals USA	11.125%	01-Dec-15	275	B3	CCC	104.50	10.00%	681bp	01-Dec-13	$199	$1,294	3.5x	3.2x	50%
California Steel Industries	6.125%	15-Mar-14	150	Ba3	BB-	87.38	9.05%	582bp	15-Mar-14	$111	$719	11.4x	1.7x	26%
Novelis	7.250%	15-Feb-15	1,399	B3	B	92.00	8.90%	552bp	15-Feb-15	$439	$4,500	2.2x	6.0x	58%
Steel Dynamics	7.750%	15-Apr-16	500	Ba2	BB+	98.25	8.06%	450bp	15-Apr-16	$1,154	$7,354	10.9x	2.2x	34%
Century Aluminum	7.500%	15-Aug-14	250	B1	BB-	97.50	8.03%	473bp	15-Aug-14	$434	$2,446	32.7x	1.0x	18%
FMG Finance Pty Ltd	10.000%	01-Sep-13	320	B1	B+	108.50	7.92%	476bp	01-Sep-13	$1	$23,045	0.0x	nm	16%
FMG Finance Pty Ltd	10.625%	01-Sep-16	1,080	B1	B+	116.00	7.90%	429bp	01-Sep-16	$1	$23,045	0.0x	nm	16%
Steel Dynamics	6.750%	01-Apr-15	500	Ba2	BB+	94.25	7.88%	448bp	01-Apr-15	$1,154	$7,354	10.9x	2.2x	34%
Gerdau Ameristeel	10.375%	15-Jul-11	405	Ba1	BB+	103.88	7.82%	567bp	15-Jul-09	$1,473	$8,932	9.6x	2.1x	34%
Russel Metals	6.375%	01-Mar-14	175	Ba2	BB	93.75	7.78%	455bp	01-Mar-14	$275	$1,793	33.9x	0.7x	10%
Steel Dynamics	7.375%	01-Nov-12	700	Ba2	BB+	98.63	7.76%	479bp	01-Nov-12	$1,154	$7,354	10.9x	2.2x	34%
Massey Energy	6.875%	15-Dec-13	760	B2	B+	97.50	7.45%	425bp	15-Dec-13	$516	$5,667	9.9x	2.1x	19%
UCAR Finance	10.250%	15-Feb-12	39	Ba3	BB	103.00	7.44%	541bp	15-Feb-09	$294	$2,425	12.7x	0.5x	7%
Freeport-McMoRan Copper & Gold	8.375%	01-Apr-17	3,500	Ba2	BBB-	105.62	7.29%	389bp	01-Apr-15	$9,620	$45,158	16.4x	0.8x	16%
Freeport-McMoRan Copper & Gold	8.250%	01-Apr-15	1,500	Ba2	BBB-	105.00	6.96%	390bp	01-Apr-13	$9,620	$45,158	16.4x	0.8x	16%
Arch Western Finance	6.750%	01-Jul-13	950	B1	BB-	99.50	6.87%	375bp	01-Jul-13	$682	$8,259	9.0x	2.0x	16%
Phelps Dodge	9.500%	01-Jun-31	194	Baa2	BBB-	130.07	6.87%	256bp	01-Jun-31	$9,620	$45,158	16.4x	0.8x	16%
AK Steel	7.750%	15-Jun-12	550	B1	BB-	101.63	6.78%	439bp	15-Jun-10	$936	$6,238	18.7x	0.7x	11%
Phelps Dodge	7.125%	01-Nov-27	115	Baa2	BBB-	104.00	6.75%	255bp	01-Nov-27	$9,620	$45,158	16.4x	0.8x	16%
Phelps Dodge	6.125%	15-Mar-34	150	Baa2	BBB-	94.18	6.60%	220bp	15-Mar-34	$9,620	$45,158	16.4x	0.8x	16%
Peabody Energy	5.875%	15-Apr-16	250	Ba1	BB	96.00	6.55%	299bp	15-Apr-16	$1,170	$19,162	5.1x	2.8x	17%
US Steel Corp	5.650%	01-Jun-13	300	Baa3	BB+	97.26	6.32%	322bp	01-Jun-13	$2,205	$19,158	16.6x	1.5x	17%
Allegheny Technologies Inc	8.375%	15-Dec-11	300	Baa3	BBB-	106.11	6.31%	355bp	15-Dec-11	$1,100	$5,106	nm	0.5x	10%
International Steel Group	6.500%	15-Apr-14	500	Baa2	BBB+	101.15	6.25%	300bp	15-Apr-14	$22,818	$150,358	17.2x	1.7x	25%
Freeport-McMoRan	6.875%	01-Feb-14	350	Baa1	BBB-	102.25	6.14%	335bp	01-Feb-12	$9,620	$45,158	16.4x	0.1x	1%
Phelps Dodge	8.750%	01-Jun-11	108	Baa2	BBB-	106.84	6.05%	342bp	01-Jun-11	$9,620	$45,158	16.4x	0.8x	16%
Peabody Energy	6.875%	15-Mar-13	650	Ba1	BB	102.25	5.92%	334bp	15-Mar-11	$1,170	$19,162	5.1x	2.8x	17%
Massey Energy	6.625%	15-Nov-10	360	B2	B+	102.25	4.09%	225bp	15-Nov-08	$516	$5,667	9.9x	2.1x	19%

Sources: Company reports and JPMorgan.

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Relative value analysis: ranked by Debt/EV

Issuer	Coupon	Maturity	Outstanding	Moody's	S&P	Price	YTW	STW	YTW Date	LTM EBITDA	Enterprise Value	EBITDA/ Interest	Debt/ EBITDA	Debt/ EV
Aleris International Inc	10.000%	15-Dec-16	400	Caa1	B-	70.13	16.77%	1,312bp	15-Dec-16	$355	$2,305	1.6x	8.0x	123%
Indalex Holding	11.500%	01-Feb-14	198	Caa3	CCC+	58.00	26.45%	2,323bp	01-Feb-14	$24	$270	0.8x	13.1x	119%
Aleris International Inc	9.000%	15-Dec-14	600	B3	B-	76.25	14.92%	1,156bp	15-Dec-14	$355	$2,305	1.6x	6.9x	106%
RathGibson	11.250%	15-Feb-14	200	B3	B	95.00	12.54%	931bp	15-Feb-14	$48	$310	1.9x	5.8x	89%
Ryerson Inc.	12.000%	01-Nov-15	425	B2	B+	97.50	12.53%	904bp	01-Nov-15	$245	$1,980	2.4x	5.1x	64%
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Wise Metals	10.250%	15-May-12	150	Ca	CC	89.25	14.02%	1,116bp	15-May-12	-$15	nm	nm	nm	

Sources: Company reports and JPMorgan.

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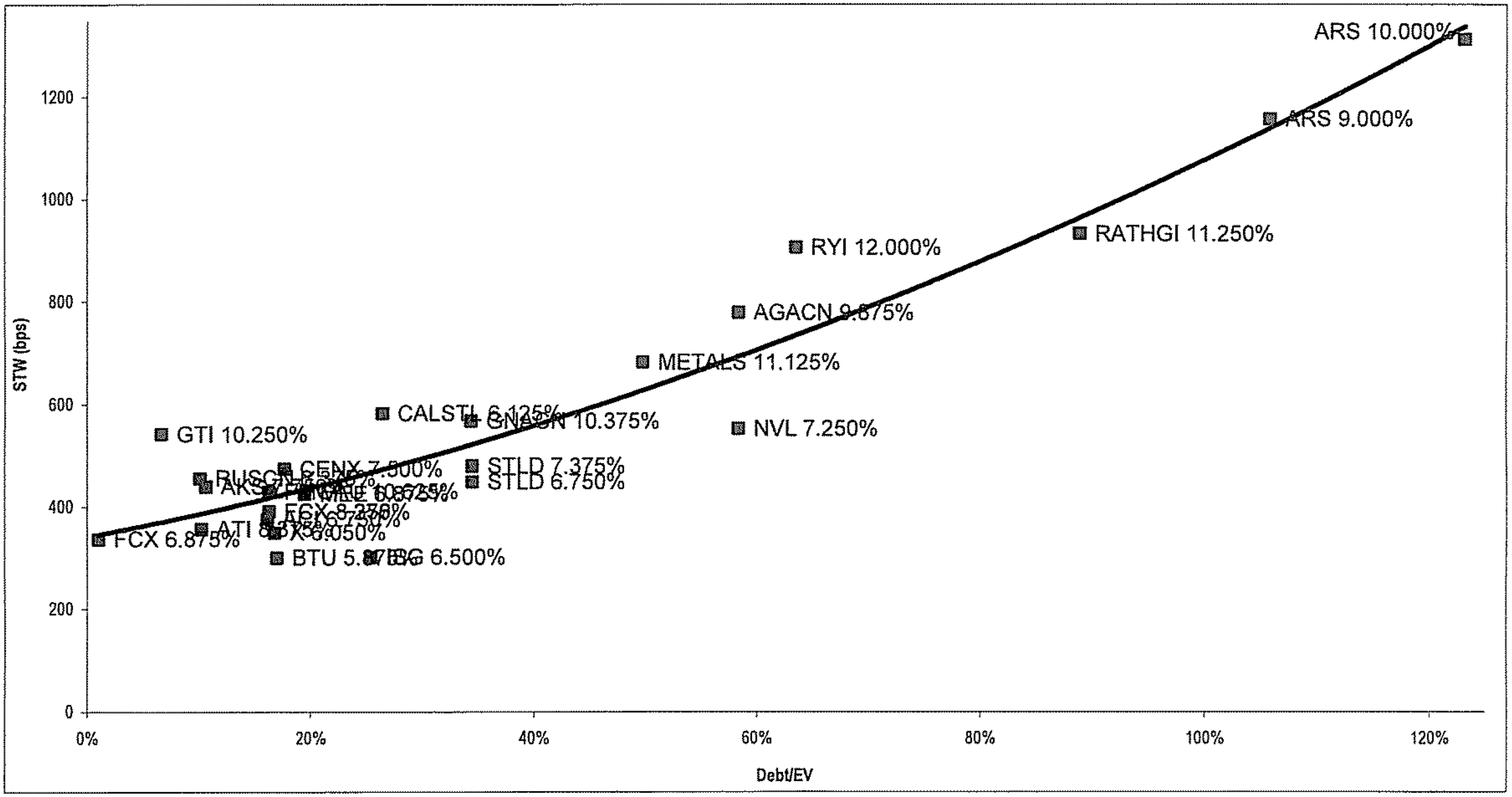
Relative value analysis: STW vs debt/EV



Sources: Company reports and JPMorgan.

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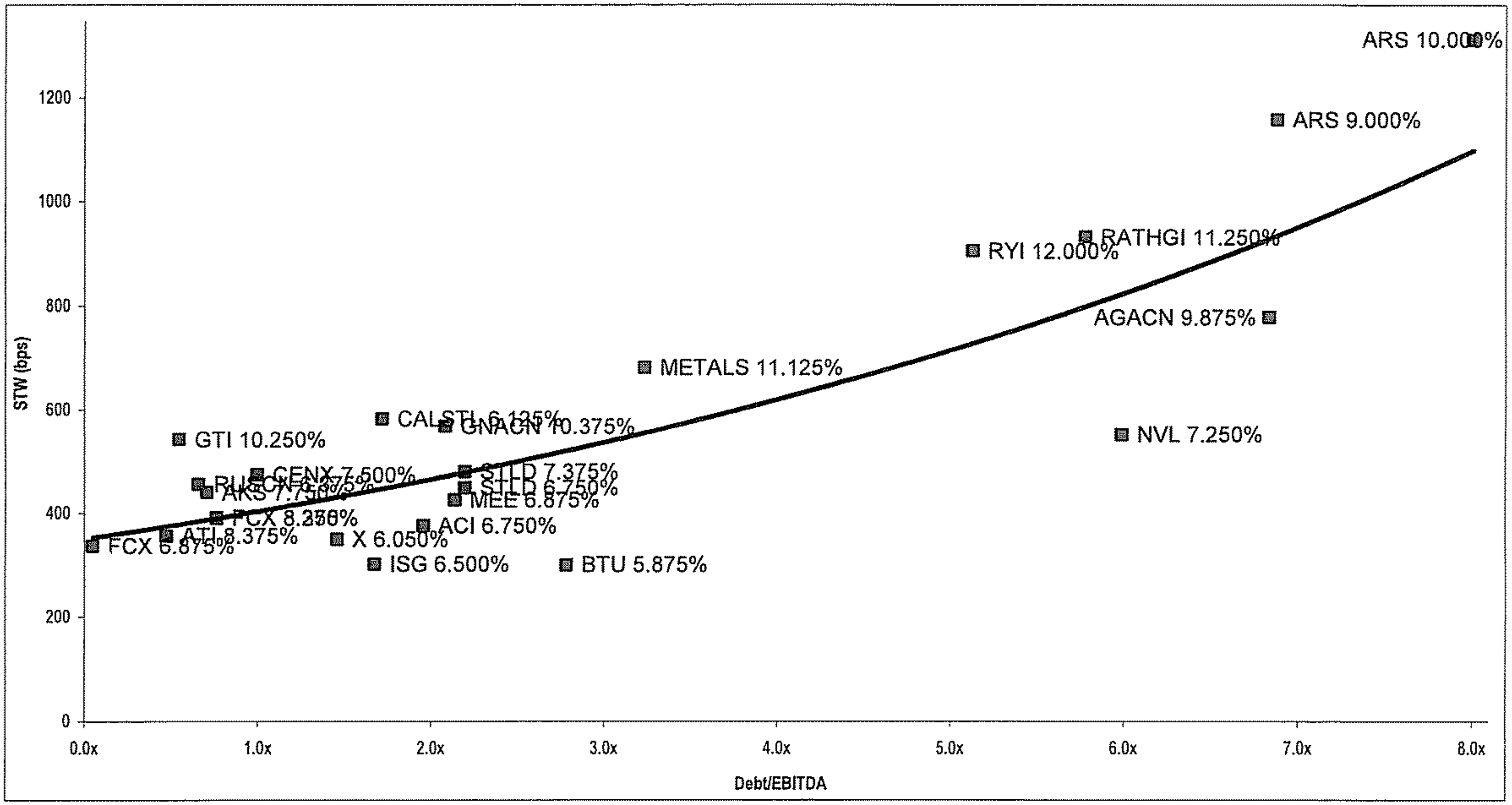
Relative value analysis: STW vs debt/EBITDA



Sources: Company reports and JPMorgan.

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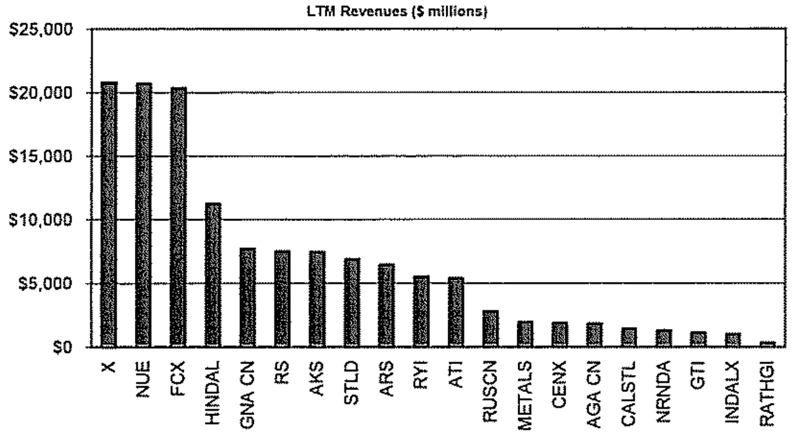
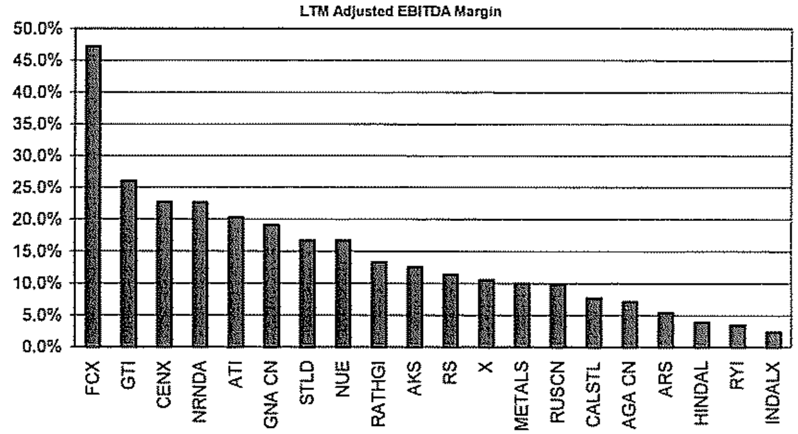
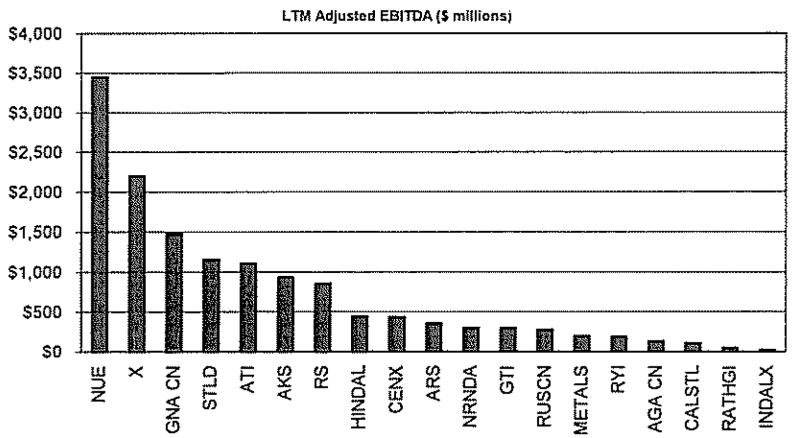
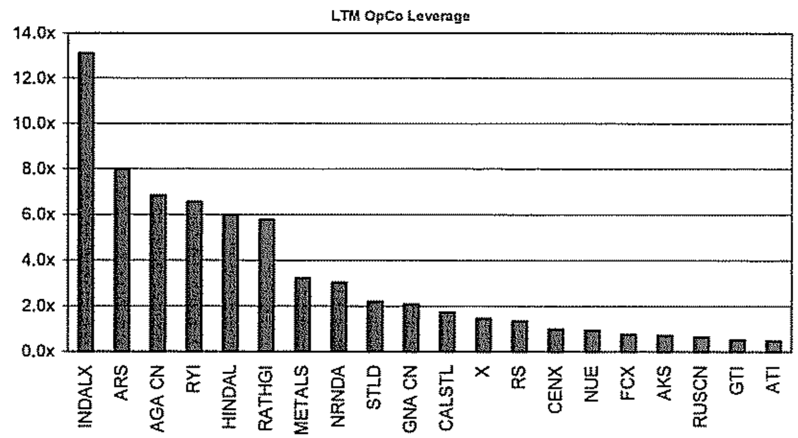
Rankings









Source: JPmorgan and company reports. Note: Freeprot-McMoRan excluded from EBITDA graph for sizing purposes.

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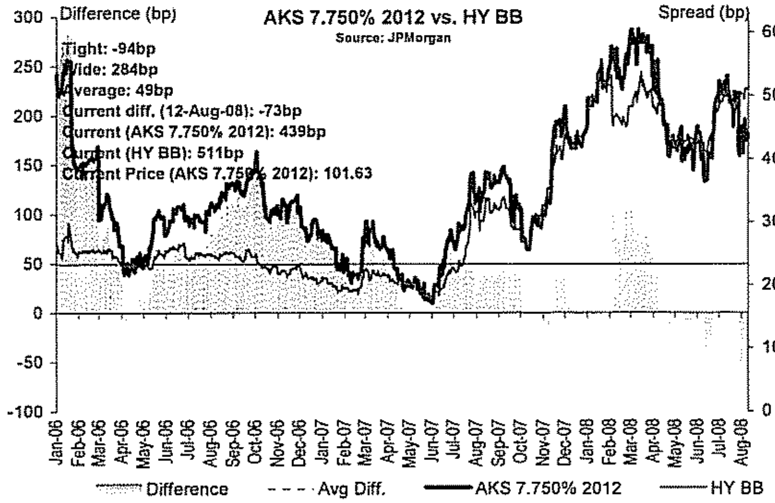
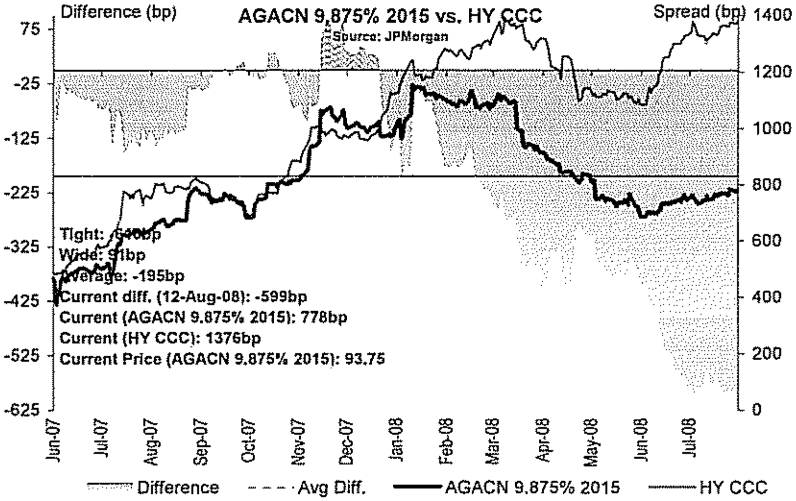
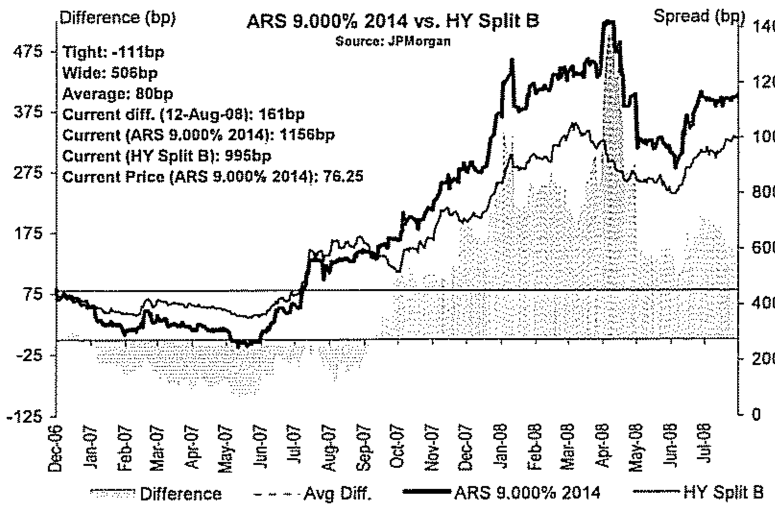
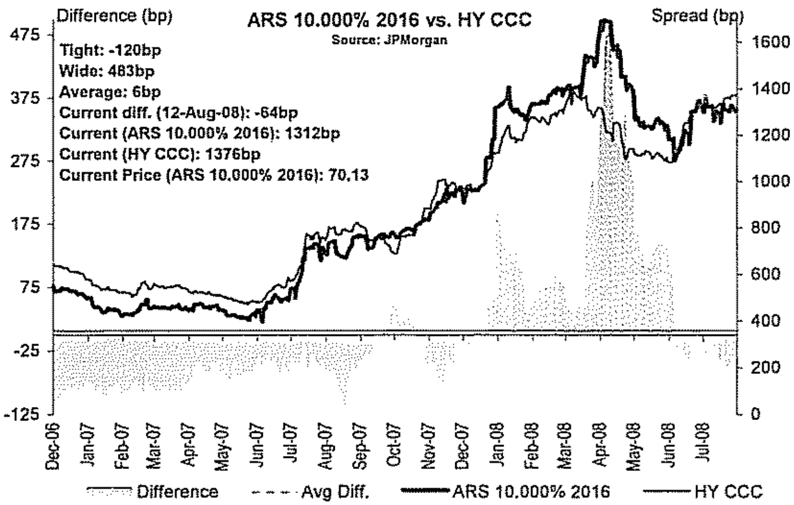
Individual bond trading history

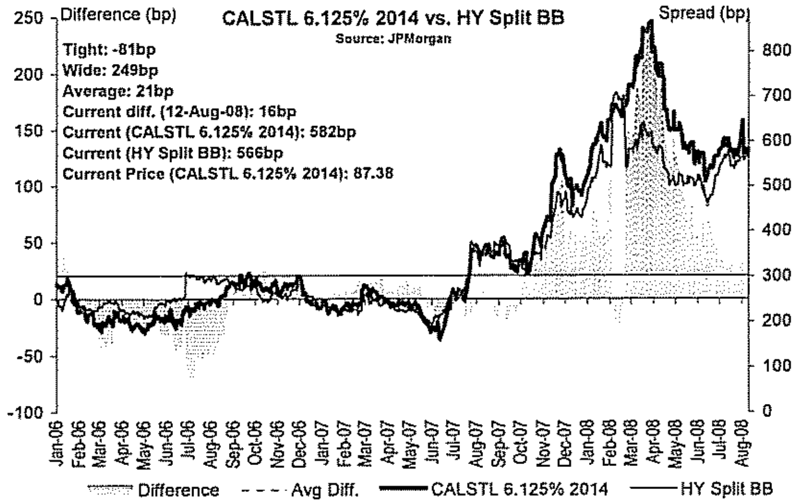


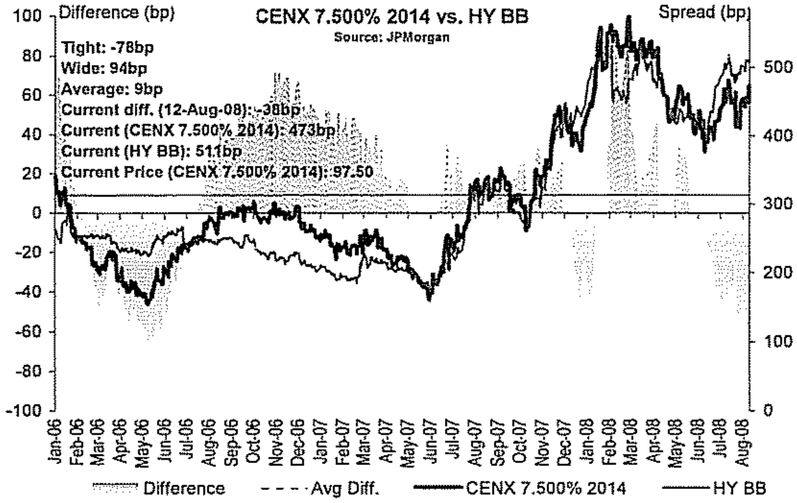


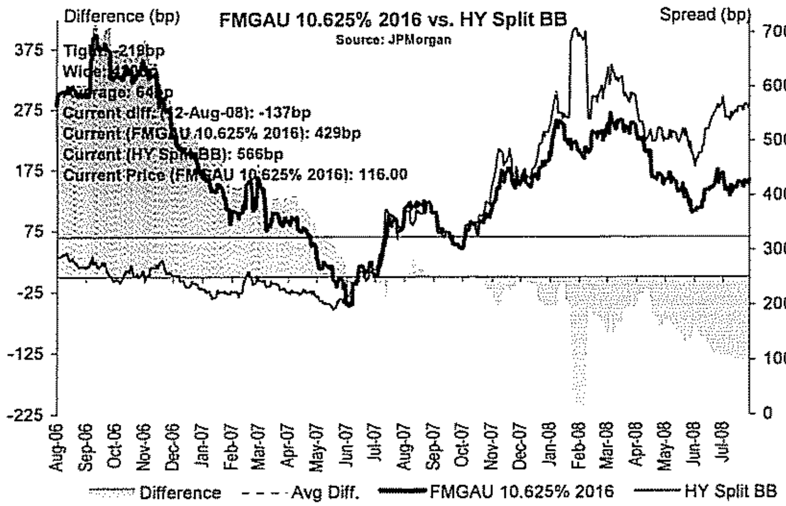


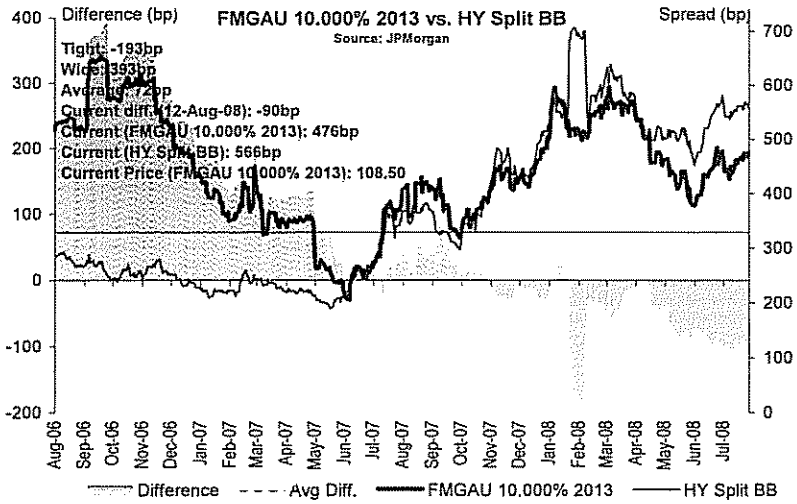


Individual bond trading history (continued)









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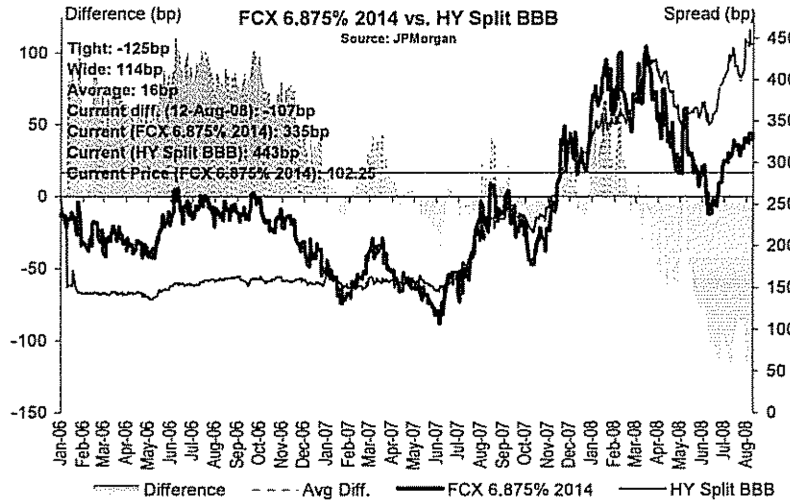
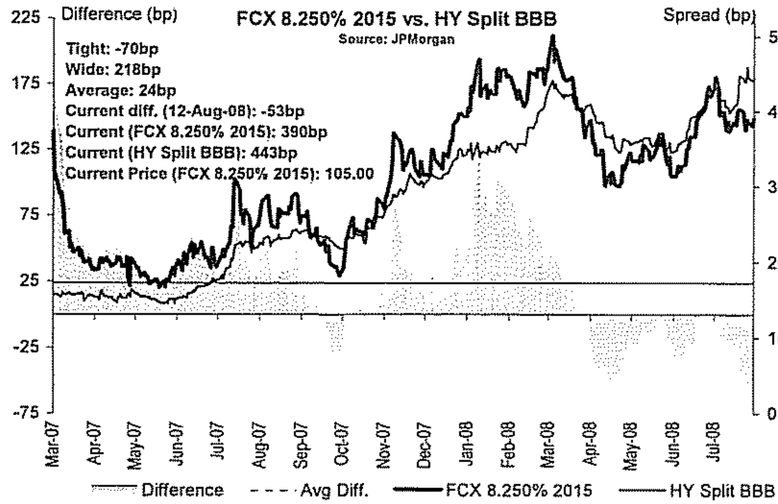
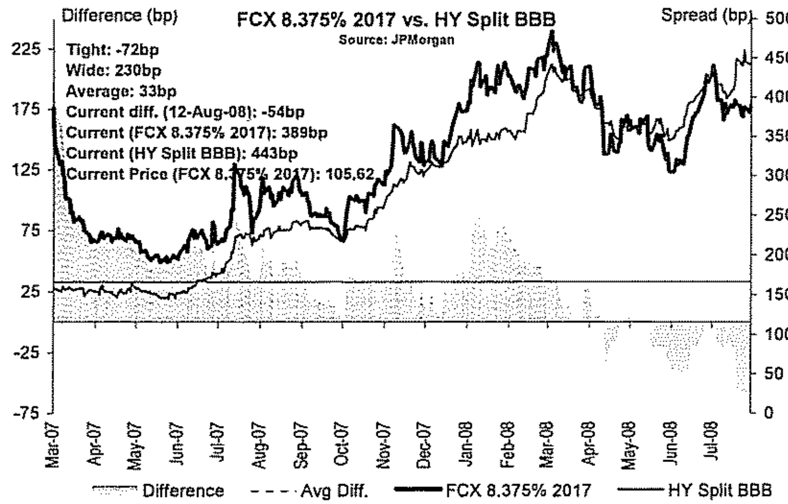
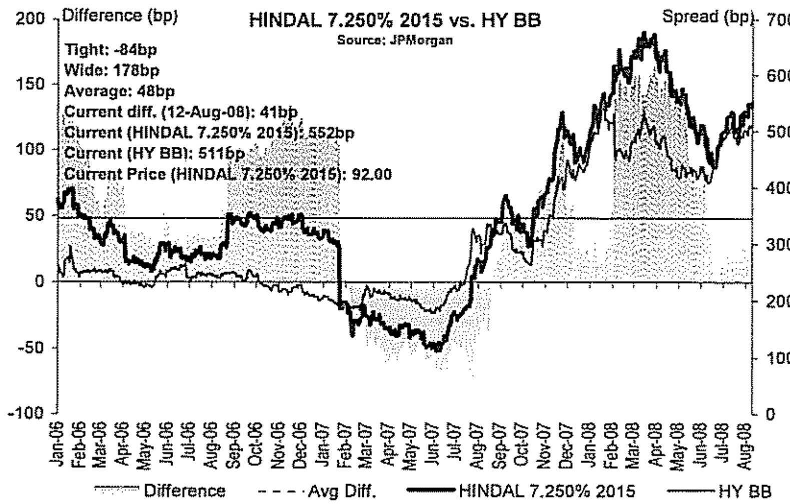
Individual bond trading history (continued)









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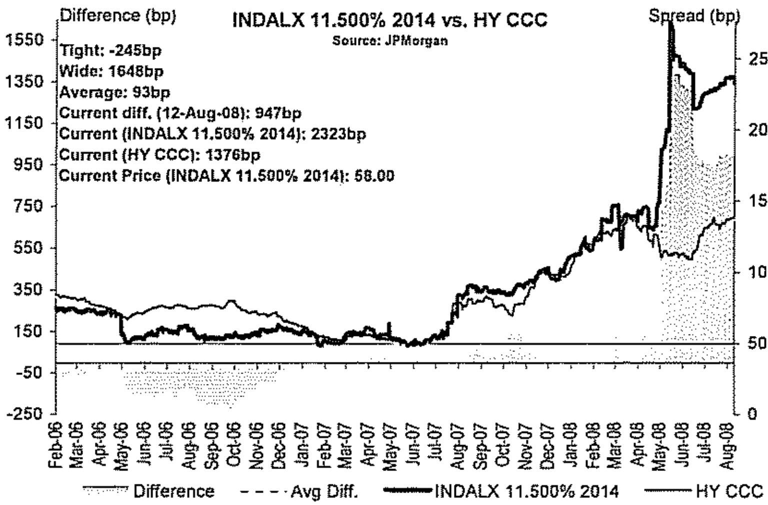
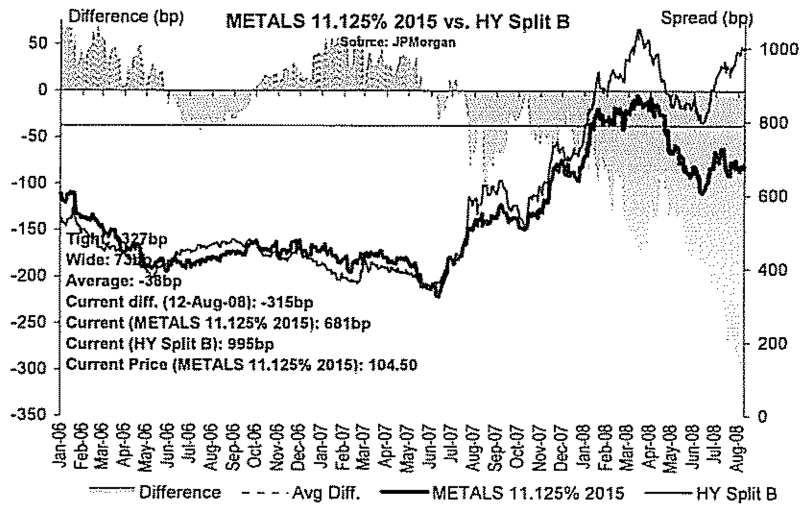
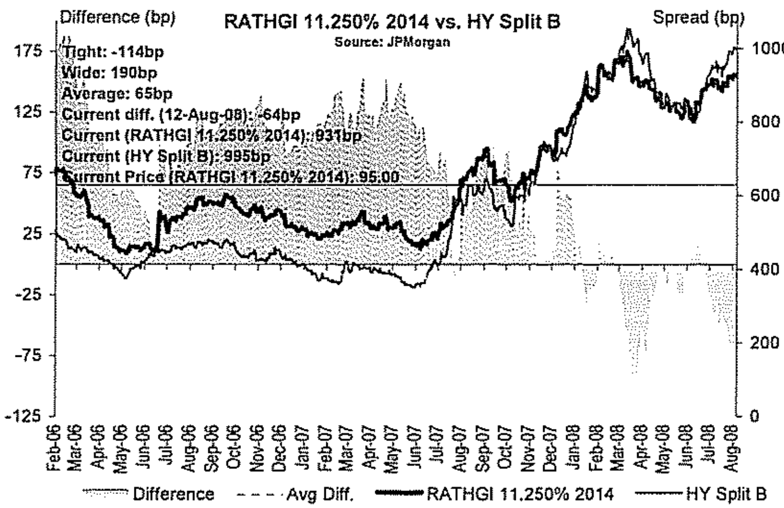
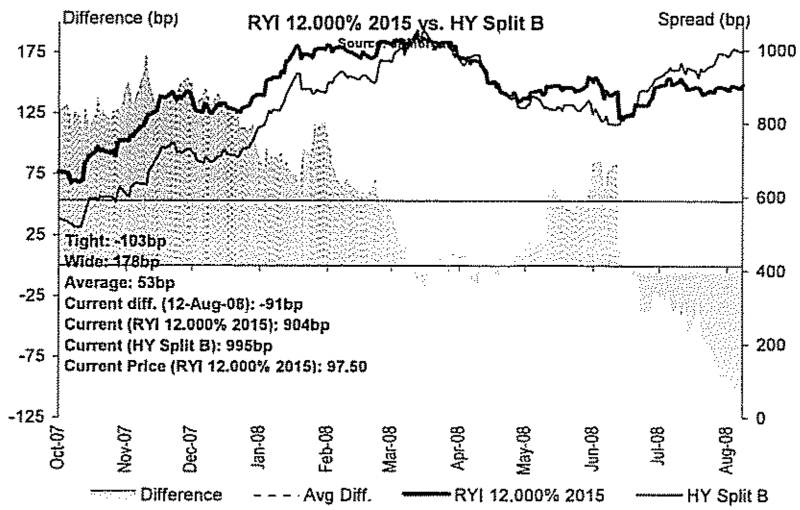
Individual bond trading history (continued)









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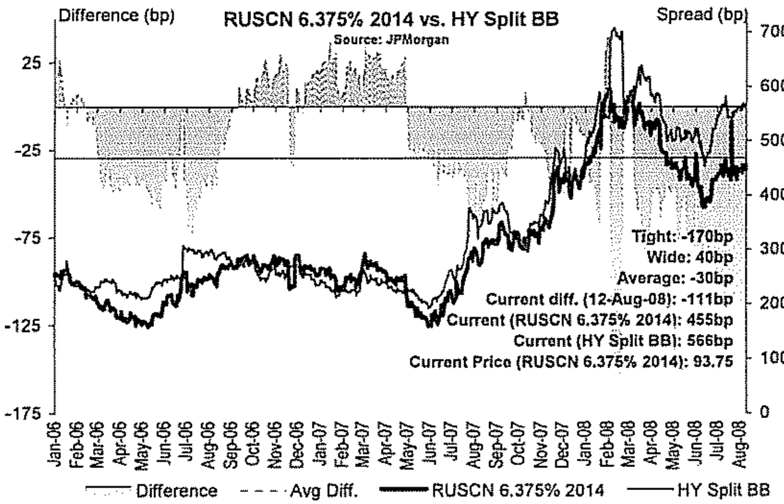
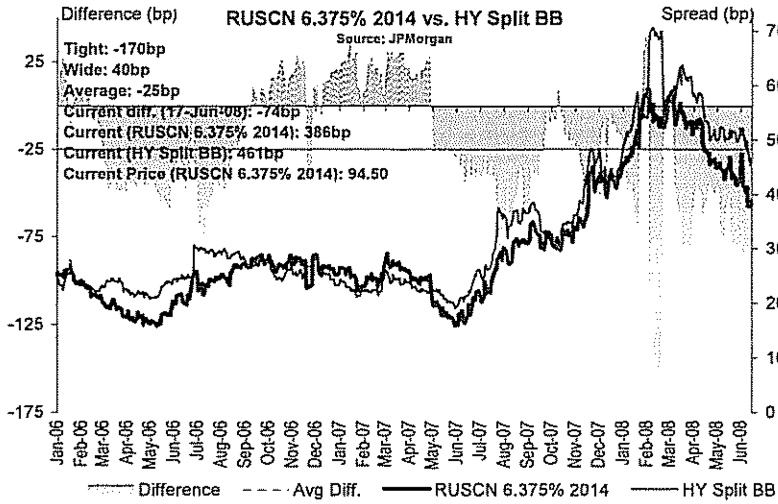
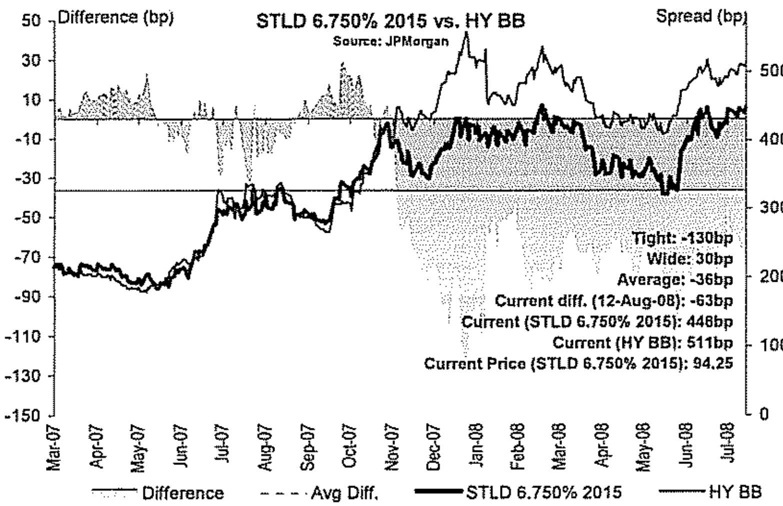
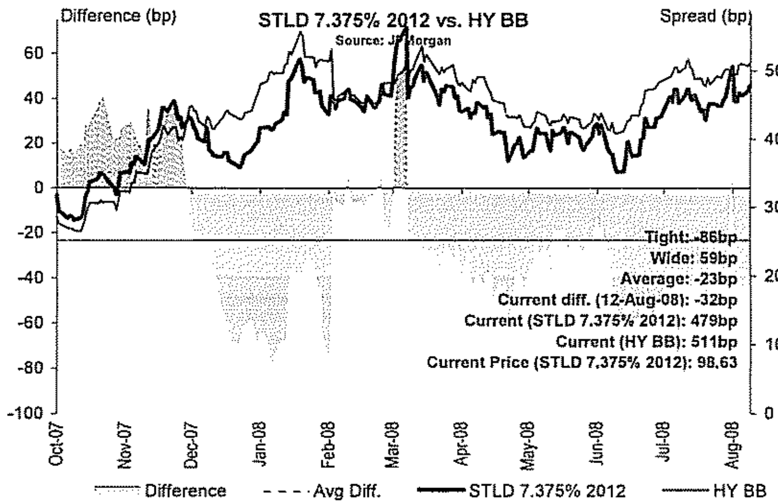
Individual bond trading history (continued)









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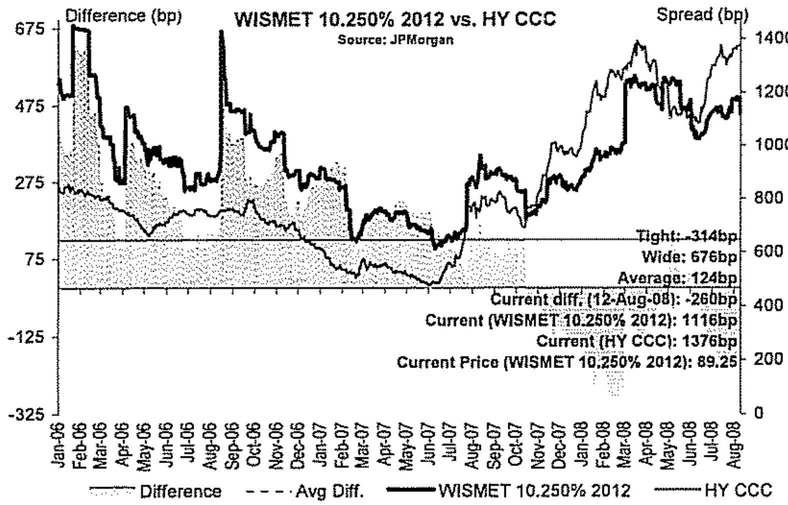
Individual bond trading history (continued)



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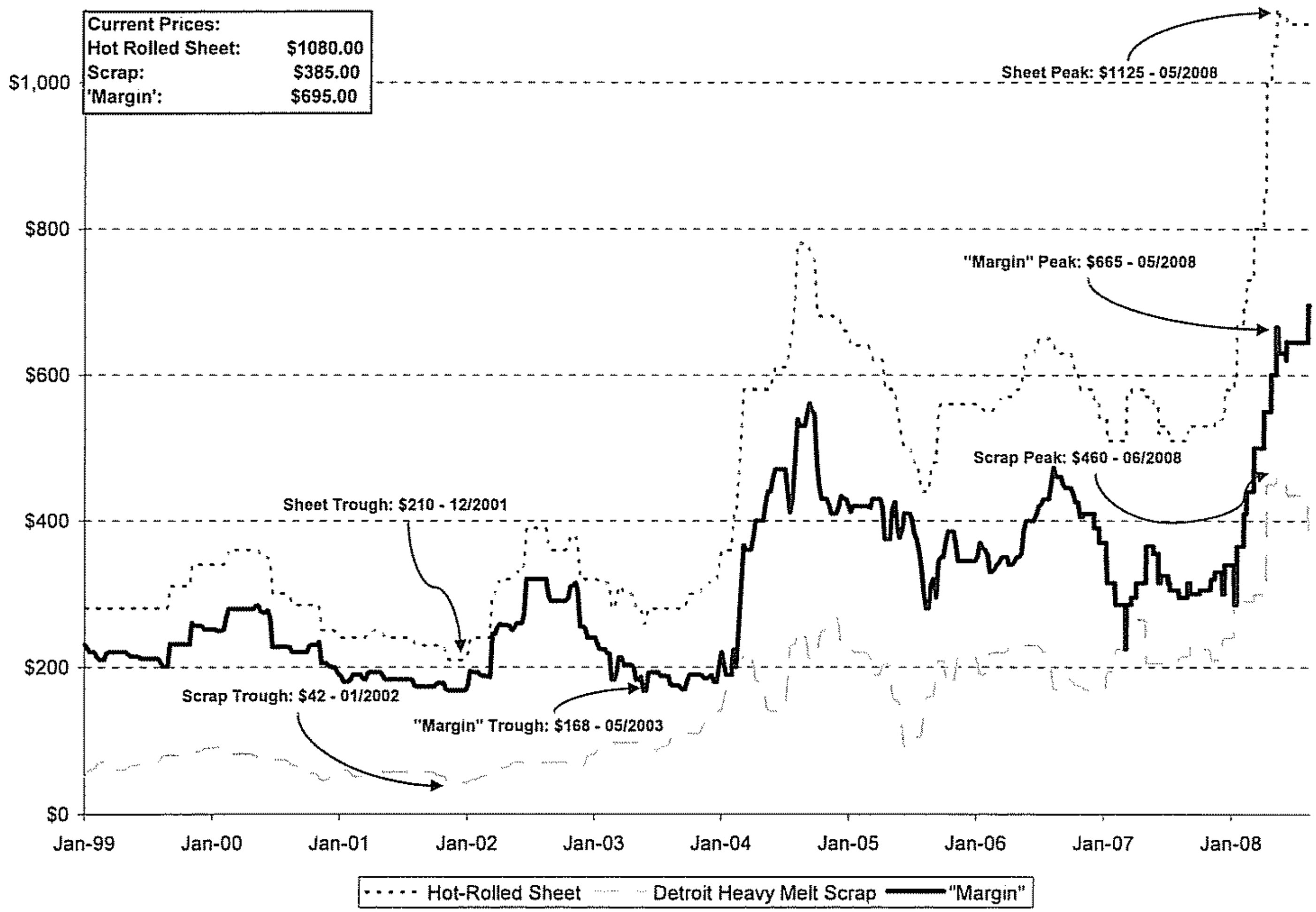
Domestic steel prices: flat-rolled and scrap ($/ton)



Source: American Metal Market (AMM).

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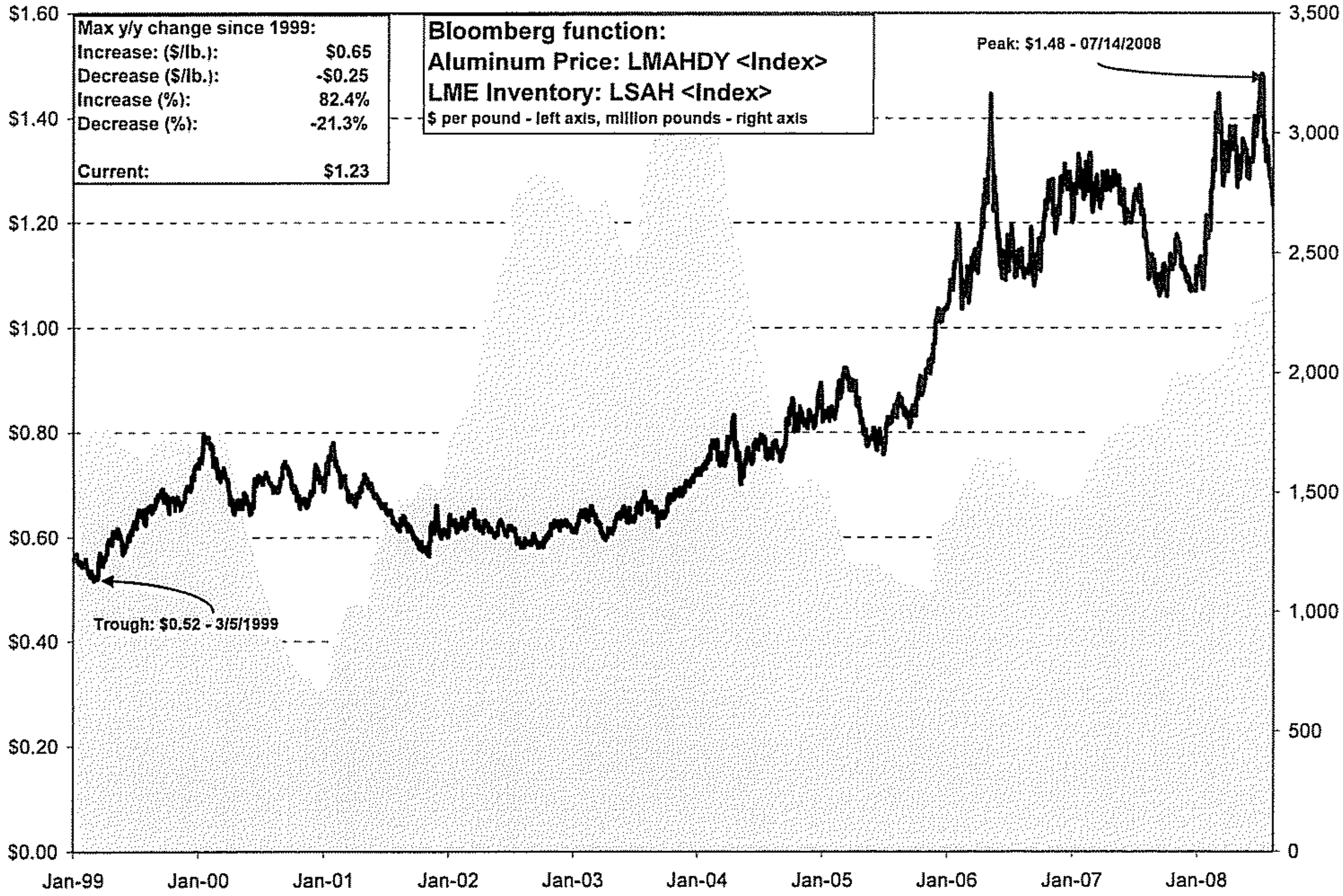
LME aluminum spot price ($/lb.)



Source: Bloomberg.

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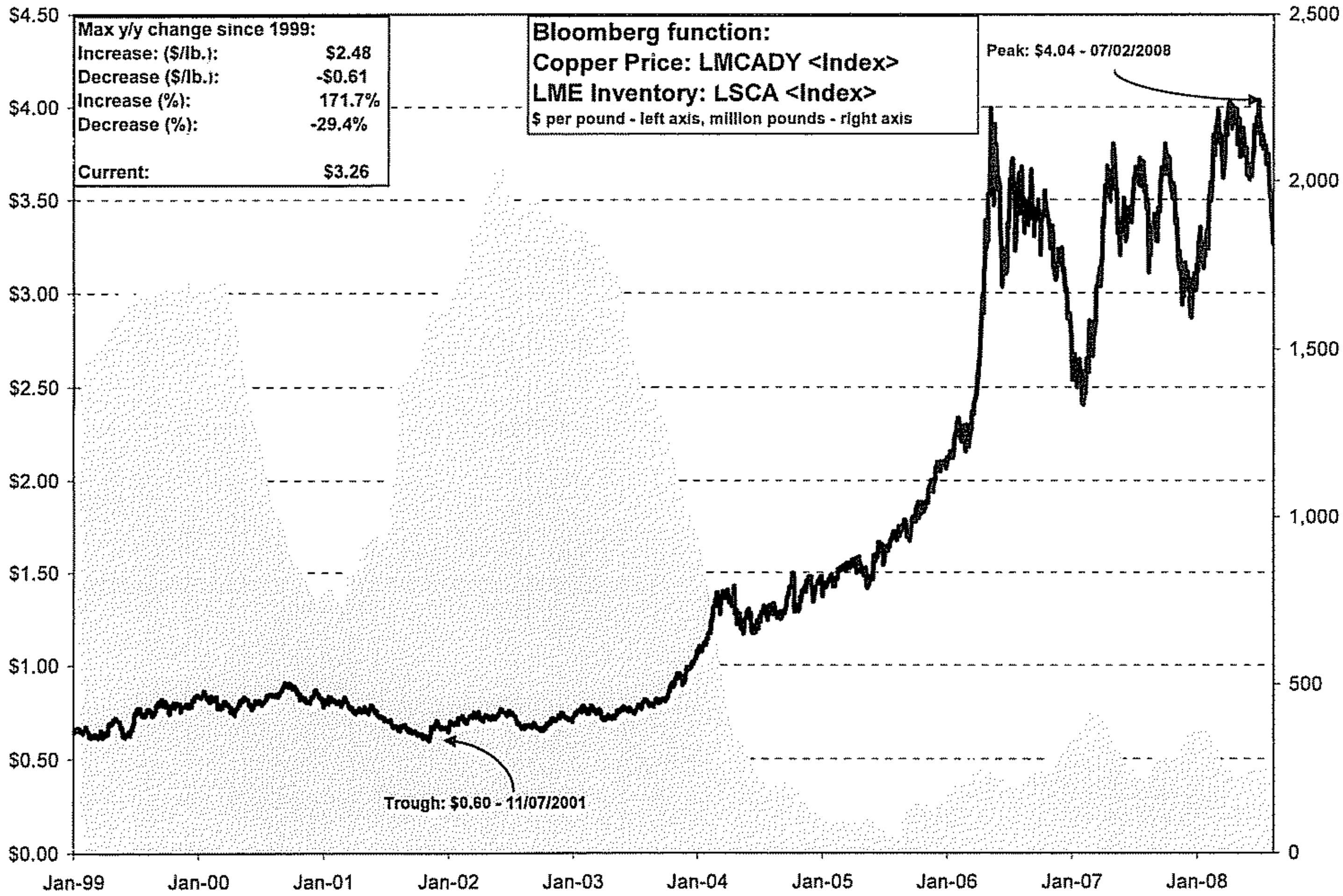
LME copper spot price ($/lb.)



Source: Bloomberg.

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Gold spot price ($/oz.)

Source: Bloomberg.

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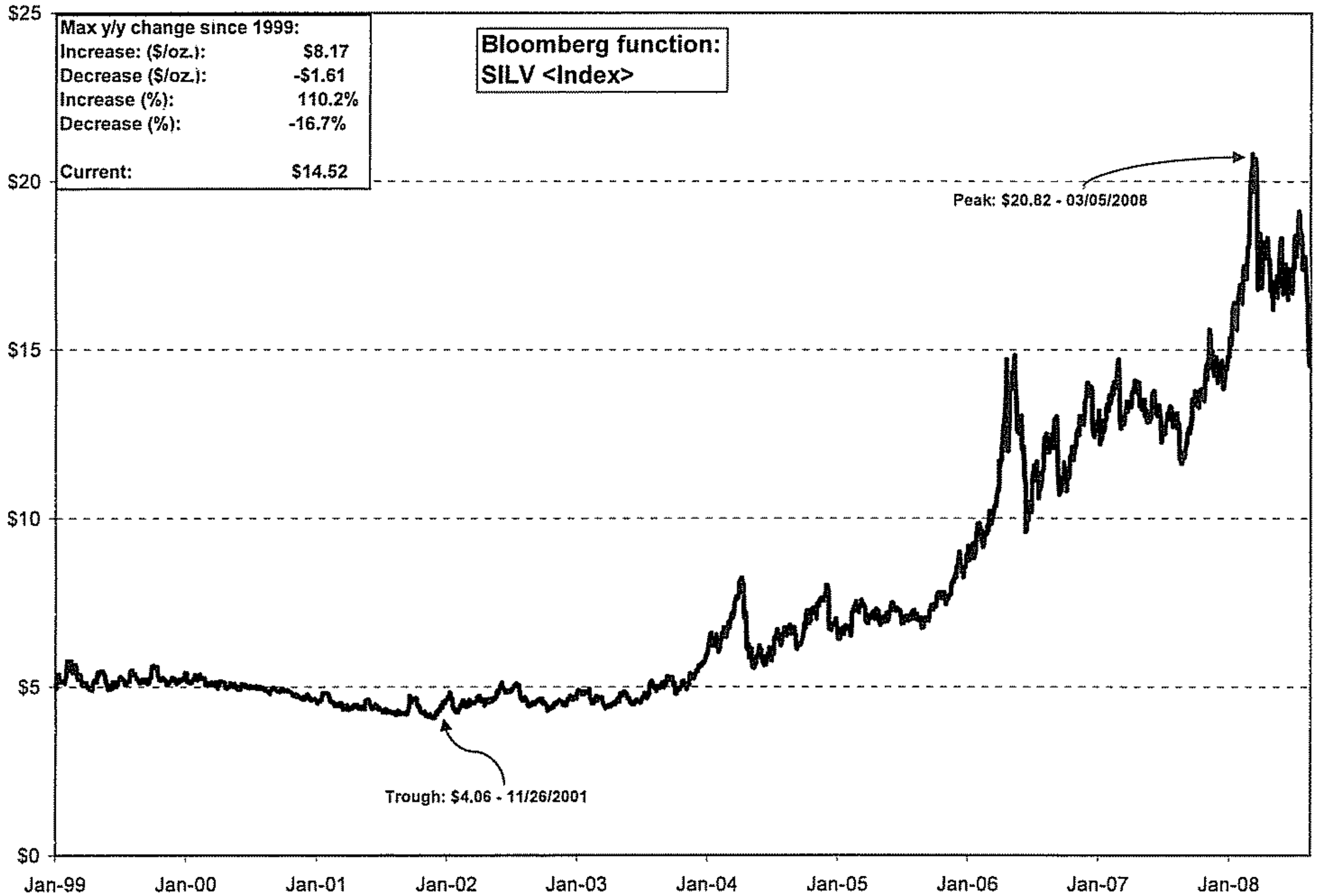
Silver spot price ($/oz.)



Source: Bloomberg.

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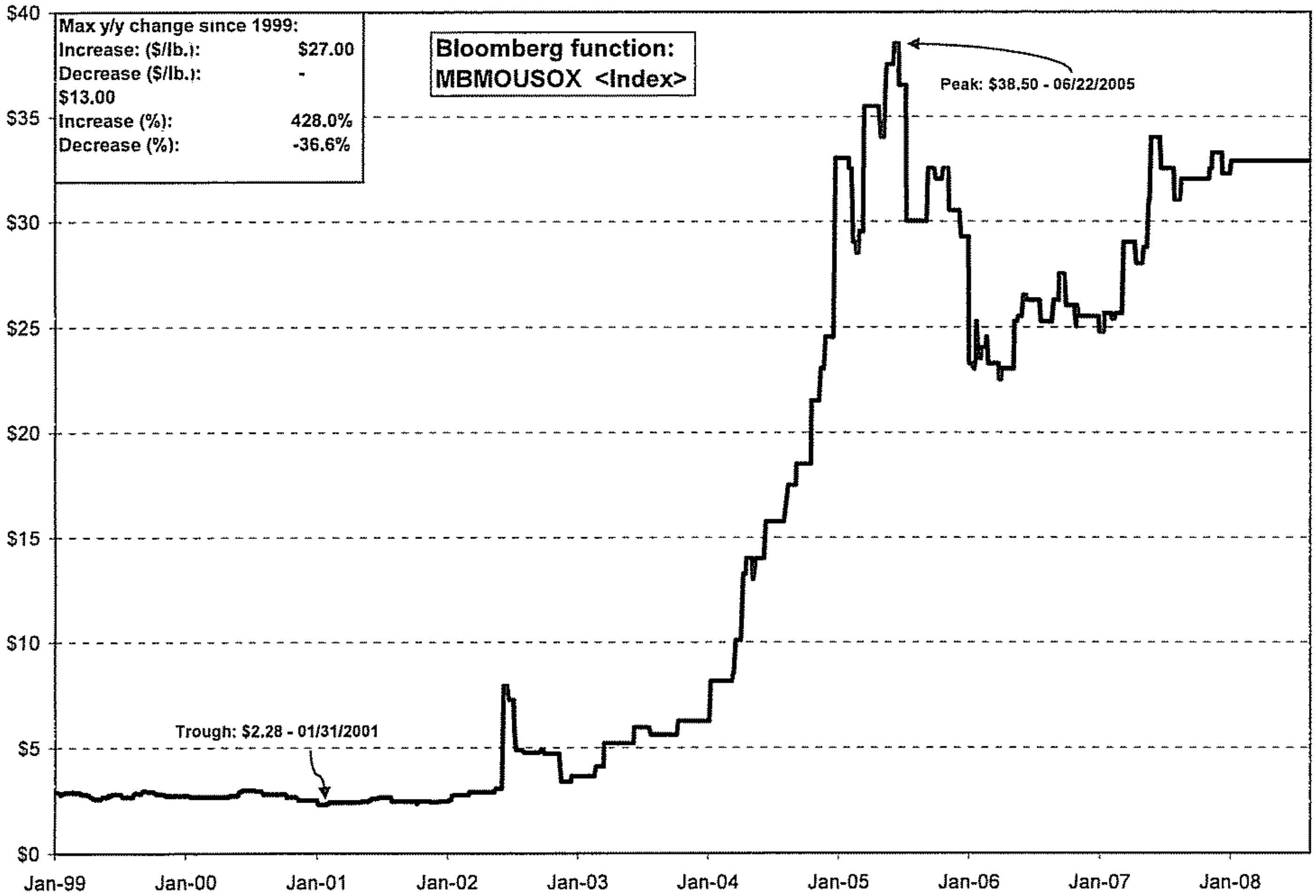
Molybdenum (canned molybdic oxide) price ($/lb.)



Source: Bloomberg.

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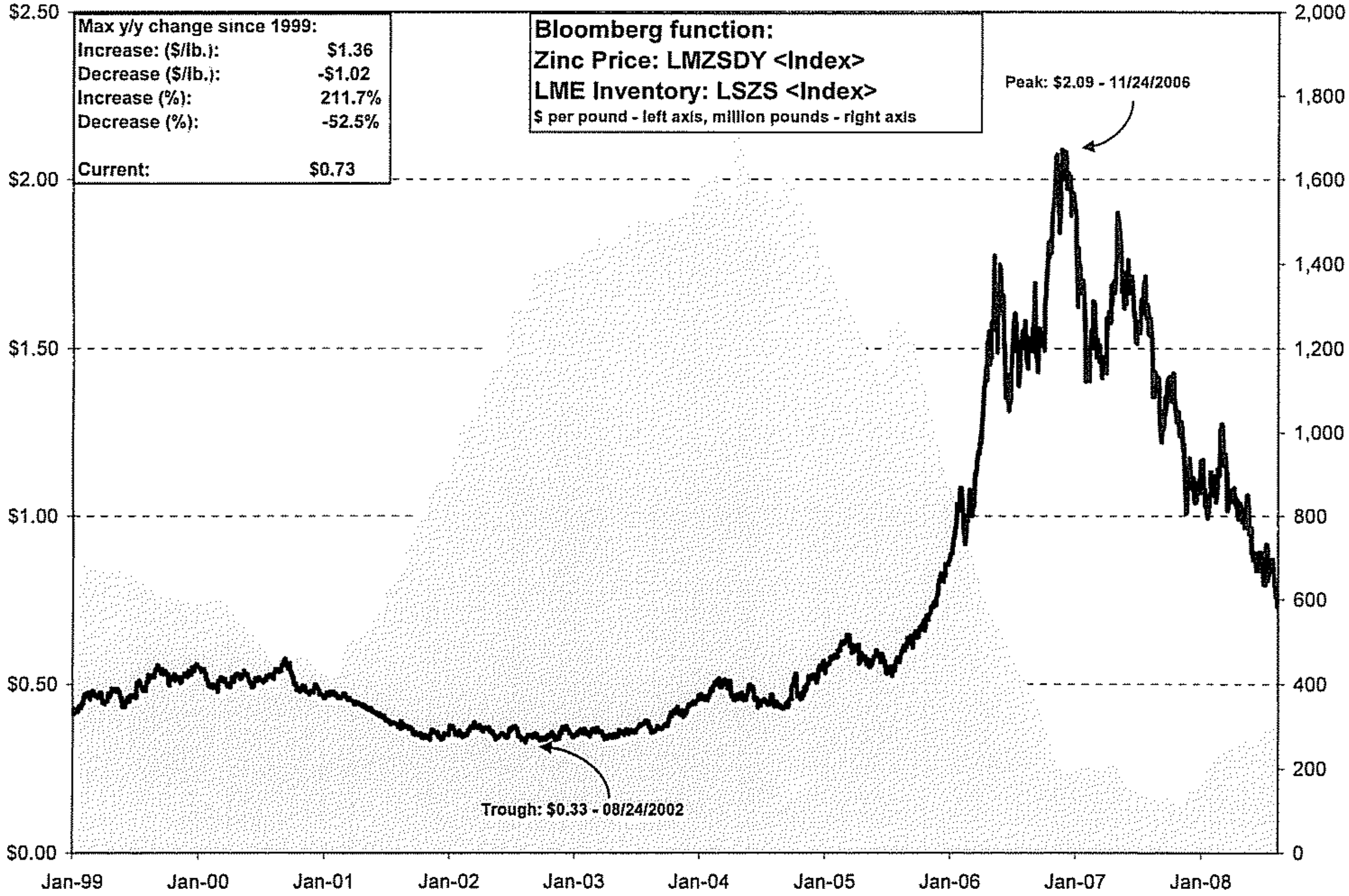
Zinc price ($/lb.)



Source: Bloomberg.

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Nickel price ($/lb.)

Source: Bloomberg.

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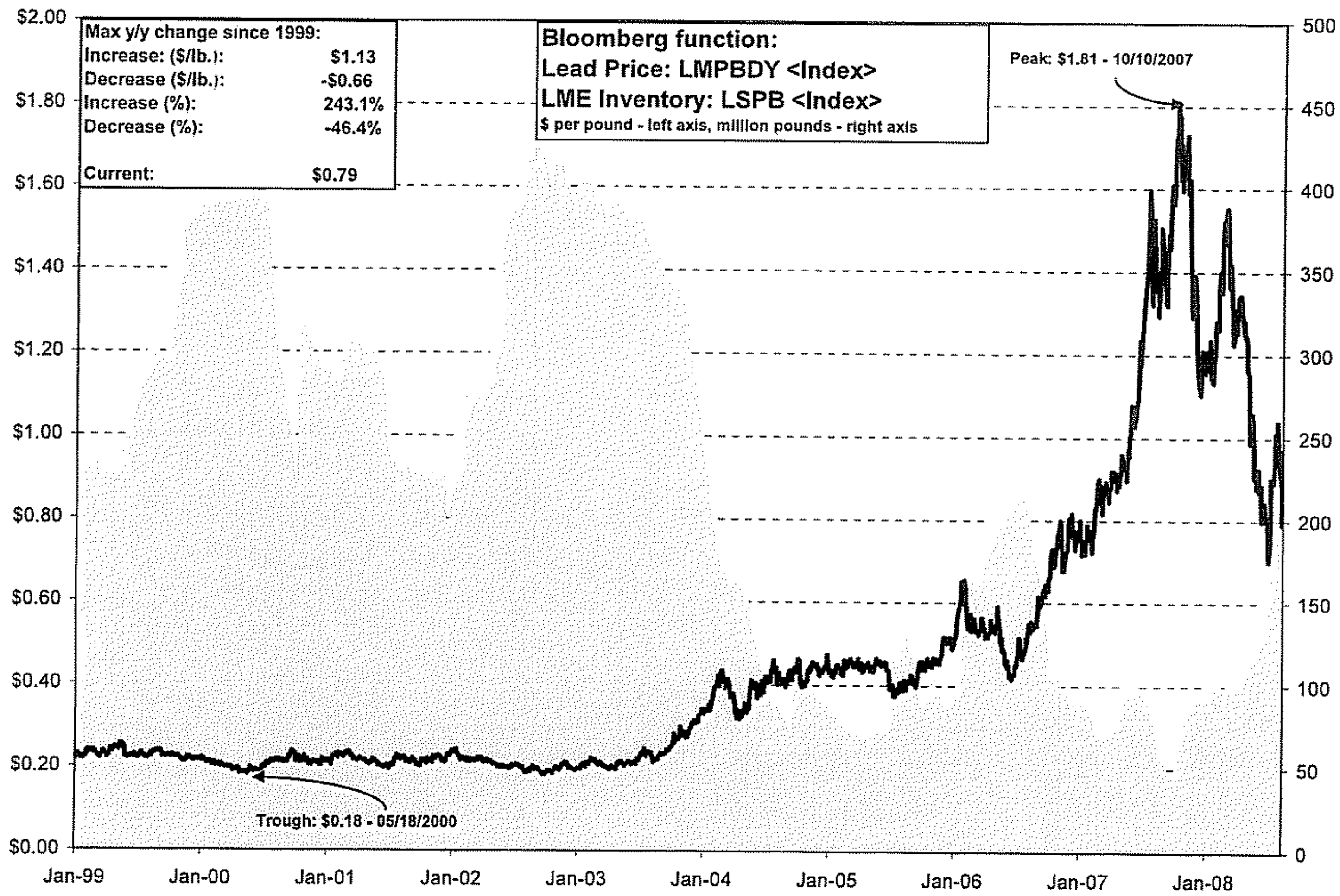
Lead price ($/lb.)



Source: Bloomberg.

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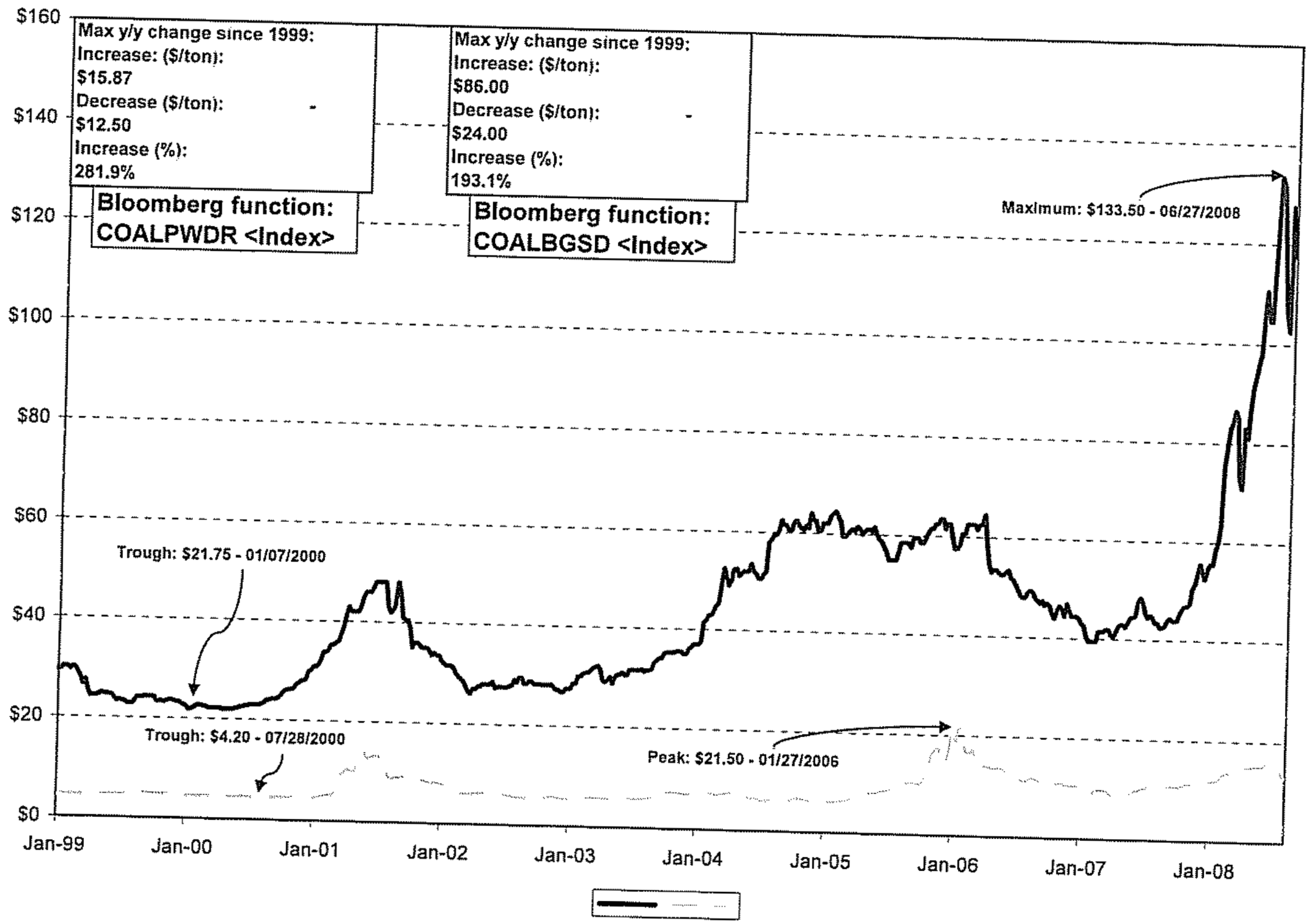
Coal spot prices ($/ton)



Source: Bloomberg.

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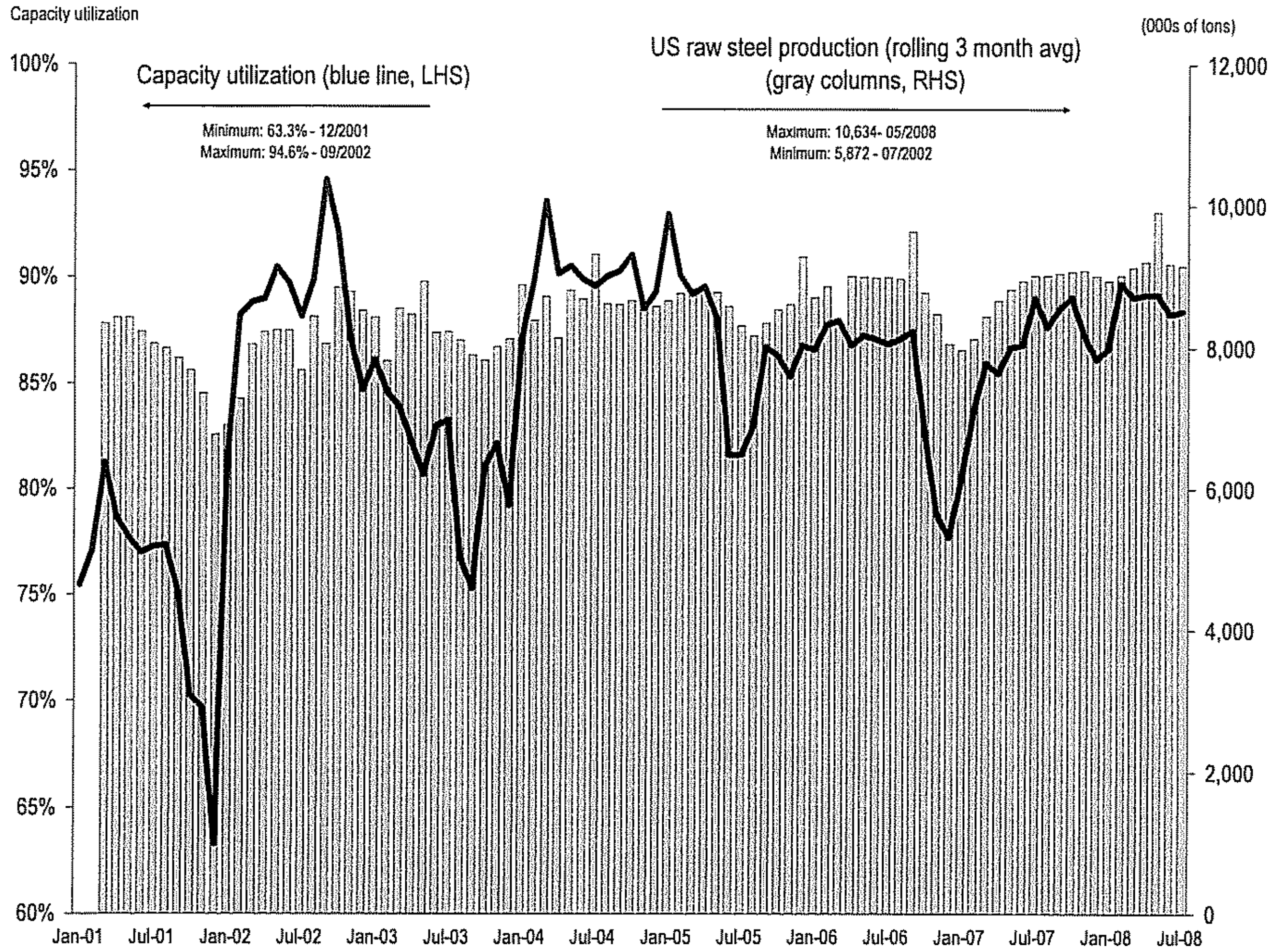
US steel industry: monthly capacity utilization vs raw steel production



Source: AISI.

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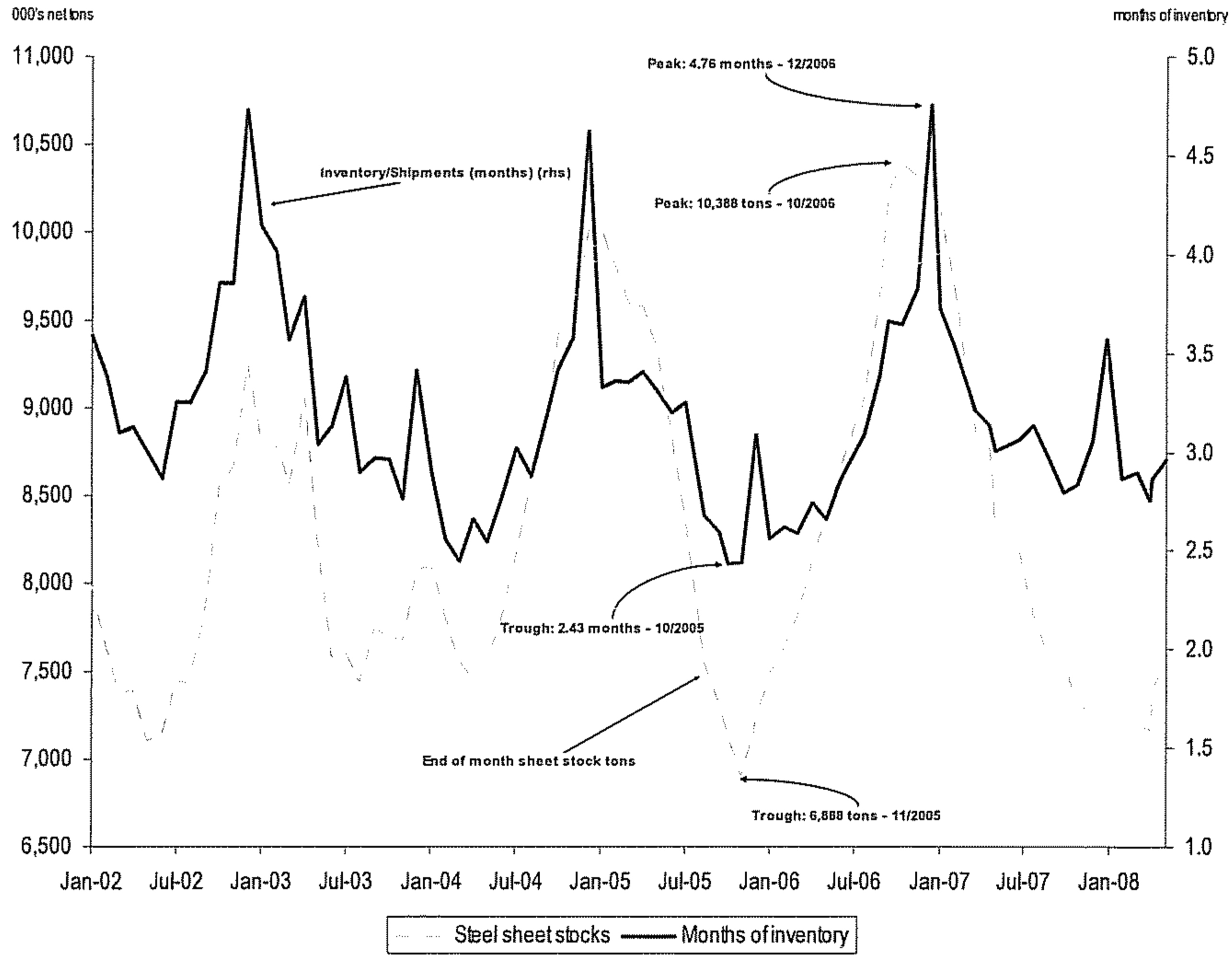
US sheet stock inventory vs months of sheet inventory on hand



Source: CRU Group.

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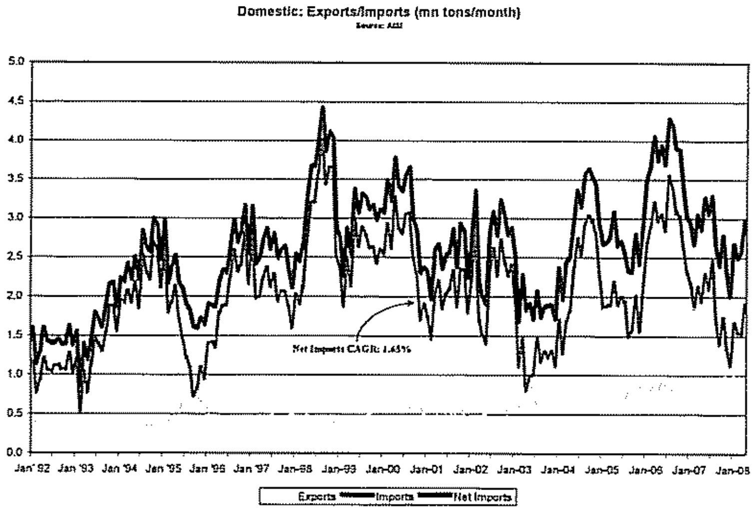
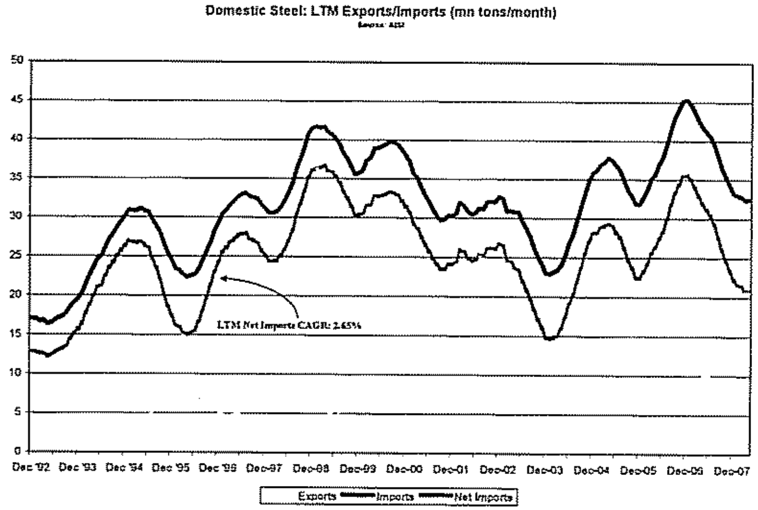
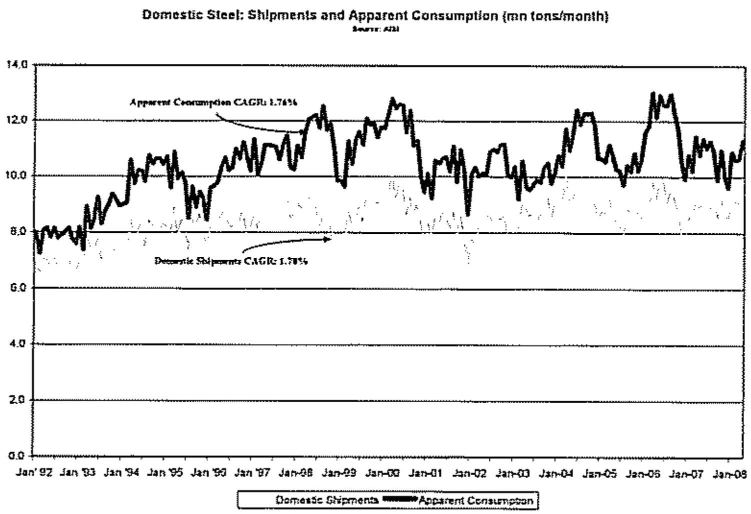
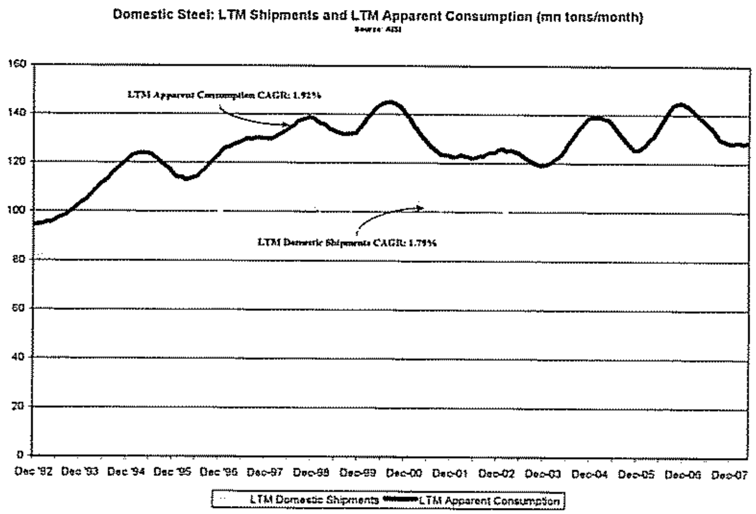
Domestic steel: imports, exports, shipments, and apparent consumption









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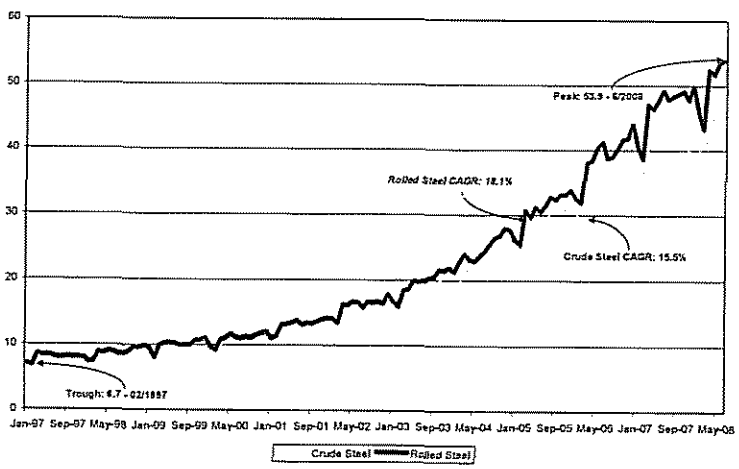
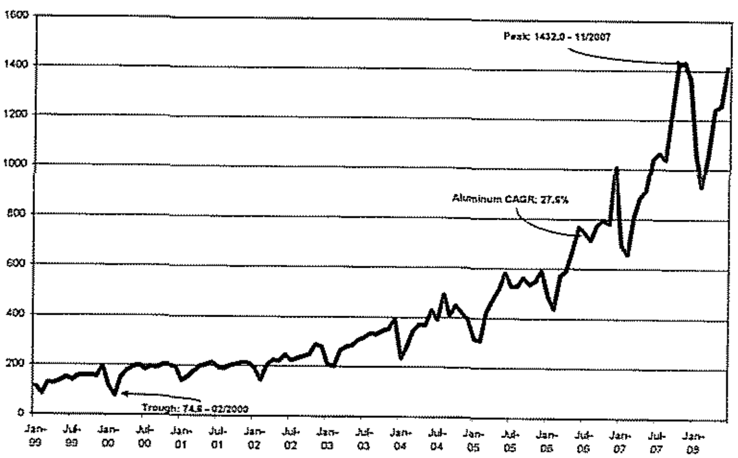
Chinese metals data

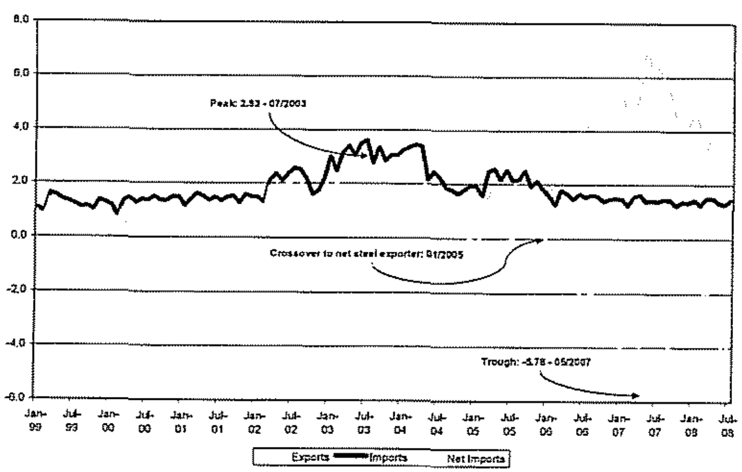
Chinese Steel Output (mn tons/month)



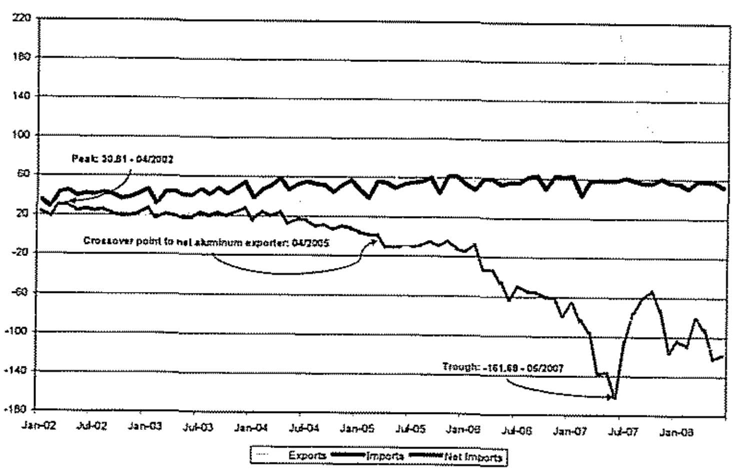
China Aluminum Output (000 tons/month)



Chinese Imports/Exports Commodity Steel Products (mn tons/month)



Chinese Imports/Exports Commodity Aluminum (000 tons/month)



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High Grade Metals & Mining

Credit Ratios

Company Credit Ratios and Pricing Data

- Alcoa
- ArcelorMittal
- Barrick
- BHP Billiton
- CVRD (Vale)
- Glencore
- Newmont
- Nucor
- Rio Tinto
- US Steel
- Xstrata

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$ in millions

Company	Alcoa	ArcelorMittal	Barrick	BHP Billiton	CVRD (Vale)	Glencore
Country	US	Luxembourg	Canada	Australia, UK	Brazil	Switzerland
Bond Ticker	AA	MTNA	ABX	BHP	CVRDFN	GLENCR
Equity Ticker	AA	MT	ABX	BHP AU / BLT LN	RIO	N/A
Ratings	Baa1/BBB+	Baa2/BBB+	Baa1/A-	A1/A+	Baa3/BBB	Baa2/BBB
Outlooks	S/S	S/S	S/S	N/S	URU/CWP	S/P
Primary products	Aluminum Alumina	Steel & Steel Products (integrated)	Gold Copper	Nickel Base Metals (Copper, uranium, zinc, etc.) Petroleum Iron Ore, Metallurgical Coal & Energy Coal Aluminum	Iron Ore Nickel	Marketing, Sourcing, & Logistics of Commodities
Business segments - Revenues	Flat-rolled Products: 30% Primary Metals: 21% Engineered Solutions: 19% Packaging and Consumer: 11% Extruded and Consumer: 10% Alumina: 6% *Note: Sold packaging and consumer business in Dec-07 for $2.7bn to Rank Group (NZ)*	Flat Carbon Europe: 28% Long Carbon Americas & Europe: 19% Flat Carbon Americas: 18% Asia & Africa CIS: 15% Steel Solutions and Services (AM3S): 13% Stainless Steel: 7%	Gold: 79% Copper: 21%	Stainless Steel Materials: 17% Base Metals: 15% Aluminum: 15% Petroleum: 15% Iron Ore: 12% Energy Coal: 10% Metallurgical Coal: 10%	Ferrous minerals (Iron): 46% Non-ferrous minerals (Nickel & by-products): 40% Aluminum: 8% Logistics: 4% Other Investments: 1%	Energy products: 59% Metals and minerals: 34% Agricultural products: 7%
Geographic mix - Revenues	United States: 55% Europe: 25% Pacific: 14% Other Americas: 6%	Europe: 56% United States: 19% Americas ex. US: 14% Asia & Africa: 11%	South America: 37% North America: 32% Australia Pacific: 24% Africa: 7%	Europe: 28% China: 20% Australia: 11% Japan: 10% Other Asia: 10% North America: 7% South Korea: 5% Southern Africa: 4%	Europe: 22% China: 18% Domestic Market: 16% Asia ex. Japan & China: 12% Japan: 12% United States: 9% Americas ex. US: 8% Middle East/Africa/Oceania: 3%	Europe: 40% The Americas: 30% Asia/Africa/Mid. East/Australia: 30%
Operating highlights, *LTM as of*	*03/31/2008*	*03/31/2008*	*03/31/2008*	*12/31/2007*	*03/31/2008*	*03/31/2008*
Revenue	$30,215	$110,549	$7,201	$50,899	$32,585	$152,283
EBITDA	4,376	20,098	3,447	21,800	15,957	7,935
EBITDA Margin	*14.5%*	*18.2%*	*47.9%*	*42.8%*	*49.0%*	*5.2%*
Credit Fundamentals						
Total Debt	$8,496	$34,658	$4,371	$14,298	$20,523	$12,858 [1]
Gross Interest	417	1,918	83	826	1,294	1,337
Cash	378	7,244	1,931	2,142	2,254	791
Credit Statistics						
Debt/CAP	35%	30%	22%	31%	35%	42%
Debt/EBITDA (x)	1.9x	1.7x	1.3x	0.7x	1.3x	1.6x
EBITDA/Gross Interest	10.5x	10.5x	41.5x	26.4x	12.3x	5.9x
Cash Flow						
Operating Cash Flow *(after w/c changes)*	$2,298	$15,884	$2,297	$16,683	$10,138	$239 [2]
Capex	(3,601)	(5,435)	($1,053)	($7,417)	($7,170)	($1,761)
Dividends	(831)	(2,416)	($291)	($2,788)	($2,528)	($798)
Free Cash Flow	(2,135)	8,013	973	6,478	440	(2,320)
Market Valuation						
Equity Market Capitalization (US$ billions)	$28.2	$130.4	$40.7	$200.8	$145.8	N/A
Enterprise Value	$36.3	$157.8	$43.2	$212.8	$164.1	N/A
EV/EBITDA (x)	8.3x	7.8x	12.5x	9.8x	10.3x	N/A

Source: Company reports, Bloomberg, JPMorgan.

1. Total debt ($21,660m) less marketable securities ($352m) and 90% of marketable inventories ($3,305m)

2. LTM Operating cash flow before working capital changes amounted to $5,835m

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$ in millions

Company	Newmont	Nucor	Rio Tinto	US Steel	Xstrata
Country	US	US	Australia, UK	US	Switzerland
Bond Ticker	NEM	NUE	RIOLN	X	XTALN
Equity Ticker	NEM	NUE	RTP	X	XTALN
Ratings	Baa2/BBB+	A1/A+	A3/BBB+	Baa3/BB+	Baa2/BBB+
Outlooks	S/CWN	S/S	P/CWP	S/N	S/S
Primary products	Gold Copper	Steel & Steel Products (mini-mill)	Iron Ore Aluminum/Alumina Copper/Gold Thermal & coking coal, Uranium Diamonds	Steel & Steel Products (integrated)	Copper Nickel Zinc Thermal & Coking Coal Alloys (ferrochrome, vanadium, platinum)
Business segments - Revenues	Gold: 78% Copper: 22%	Steel mills: 80% Steel products: 18% Raw materials: 1%	Iron Ore: 30% Aluminum: 24% Copper: 18% Energy: 15% Diamonds and Industrial Materials: 13% Other: 1%	Flat-rolled Products: 60% US Steel Europe (USSE): 28% Tubular Products: 12%	Copper: 45% Nickel: 18% Zinc: 17% Coal: 15% Alloys: 5% Technology: 1%
Geographic mix - Revenues	United States: 29% Indonesia: 28% Peru: 20% Australia/New Zealand: 15% Ghana: 6% Other (Canada, Mexico, Bolivia): 2%	Pre-dominantly North America. Exported 10% of products in 2007. Expanding in Europe - Two new JV's with Duferco SA (Italy) and Sidenor (Greece)	North America: 23% Europe: 20% China: 18% Japan: 17% Other Asia: 12% Australia and NZ: 6% Other: 5%	North America: 72% Europe: 28%	Europe: 34% Asia: 30% North America: 24% South America: 6% Australia: 4% Africa: 2%
Operating highlights, LTM as of	*03/31/2008*	*03/31/2008*	*12/31/2007*	*03/31/2008*	*12/31/2007*
Revenue	$6,213	$17,798	$45,600 [3]	$18,313	$28,542
EBITDA	2,855	3,059	17,300 [3]	1,624	11,008
EBITDA Margin	46.0%	17.2%	37.9%	8.9%	38.6%
Credit Fundamentals					
Total Debt	$3,147	$2,679	$46,827 [4]	$3,350	$13,123
Gross Interest	101	70	2,355 [4]	178	1,131
Cash	1,014	734	1,545	454	1,148
Credit Statistics					
Debt/CAP	25%	32%	64% [4]	38%	34%
Debt/EBITDA (x)	1.1x	0.9x	2.7x [3,4]	2.1x	1.2x
EBITDA/Gross Interest	28.3x	43.4x	7.3x [3,4]	9.2x	9.7x
Cash Flow					
Operating Cash Flow (*after w/c changes*)	$1,099	$2,037	$17,300 [5]	$1,663	$7,414
Capex	(1,782)	($655)	($9,000) [6]	($711)	($2,849)
Dividends	(548)	($722)	($1,507) [6]	($100)	($928)
Free Cash Flow	(1,211)	660	6,793	852	3,638
Market Valuation					
Equity Market Capitalization (US$ billions)	$22.3	$20.8	$152.9	$19.5	$73.9
Enterprise Value	$24.5	$22.8	$205.1	$22.4	$85.9
EV/EBITDA (x)	8.6x	7.4x	12.0x	13.8x	7.8x

Source: Company reports, Bloomberg, JPMorgan.

3. Pro forma for Alcan purchase, 4. Pro forma for $5bn debt issuance in June-08, 5. JPMorgan estimate, 6. 2008 Company estimate

Company	Alcoa	ArcelorMittal	Barrick	BHP Billiton	Glencore
Country	US	Luxembourg	Canada	Australia, UK	Switzerland
Bond Ticker	AA	MTNA	ABX	BHP	GLENCR
Equity Ticker	AA	MT	ABX	BHP.AU / BLT.LN	N/A
Ratings	Baa1/BBB+	Baa2/BBB+	Baa1/A-	A1/A+	Baa2/BBB
Outlooks	S/S	S/S	S/S	N/S	S/P
Bond and CDS Pricing *as of 7/10/08*					
Issuer	*ALCOA INC*	*ARCELORMITTAL*	*ABX FINANCING CO*	*BHP BILLITON FINANCE*	*GLENCORE FUNDING LLC*
Coupon	5.55	6.125	5.75	5.4	6
Maturity	02/01/2017	06/01/2018	10/15/2016	03/29/2017	04/15/2014
Amt Outstanding	$750,000,000	$1,500,000,000	$400,000,000	$750,000,000	$950,000,000
Bond Price	92.8	97.7	97.5	95.7	99.2
Spread over treasury - bid (benchmark)	290bp (10yr)	265bp (10yr)	235bp (10yr)	225bp (10yr)	330bp (5yr)
Z-spread	228bp	197bp	178bp	164bp	227bp
5 yr CDS (mid)	120bp	N/A	73bp	N/A	N/A

Company	Newmont	Nucor	Rio Tinto	US Steel	Xstrata
Country	US	US	Australia, UK	US	Switzerland
Bond Ticker	NEM	NUE	RIOLN	X	XTALN
Equity Ticker	NEM	NUE	RTP	X	XTA.LN
Ratings	Baa2/BBB+	A1/A+	A3/BBB+	Baa3/BB+	Baa2/BBB+
Outlooks	S/CWN	S/S	P/CWP	S/N	S/S
Bond and CDS Pricing *as of 7/10/08*					
Issuer	*NEWMONT MINING CORP*	*NUCOR CORP*	*RIO TINTO FIN USA LTD*	*US STEEL CORP*	*XSTRATA FINANCE CANADA*
Coupon	5.875	5.85	6.5	7	6.9
Maturity	04/01/2035	06/01/2018	07/15/2018	02/01/2018	11/15/2037
Amt Outstanding	$600,000,000	$500,000,000	$1,750,000,000	$500,000,000	$500,000,000
Bond Price	85.3	101.5	101.1	98.3	95.6
Spread over treasury - bid (benchmark)	270bp (30yr)	185bp (10yr)	255bp (10yr)	345bp (10yr)	285bp (30yr)
Z-spread	229bp	115bp	186bp	279bp	246bp
5 yr CDS (mid)	85bp	58bp	NA	180bp	80bp

Source: Company reports, Bloomberg, JPMorgan.

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JPMorgan

HY Metals and Mining

June monthly: Aluminum sector focus

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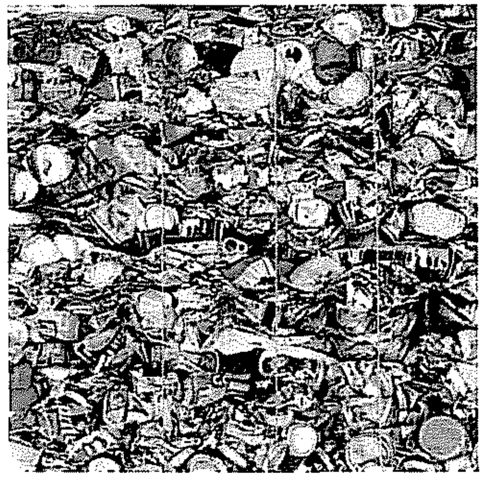
- **In addition to our normal features, we focus this month on the aluminum market.**

- **Although aluminum prices are 6% off of their early March high, they remain high in a historical context.** Aluminum prices have increased over 25% since the beginning of the year. The last time aluminum prices were around $1.30 per lb. for a sustained period of time Reagan was president. Price increases have been exacerbated by increased energy costs, raw material shortages (bauxite), and production outages.

- **However, underlying these dynamics is steady growth in demand led by developing economies.** World aluminum consumption experienced 6% CAGR from 1998 to 2007. Global consumption in 2007 grew 8% to 76.4 billion pounds and worldwide stocks ended the year at 47 days of consumption, their lowest ever recorded levels. Alcoa projects 2008 aluminum demand growth rates of 24% in China and 8% in India, the Middle East, and the CIS. This growth is balanced by the expectation of paltry 1% growth in Europe and 5% shrinkage in North America.

- **Still, Chinese growth may not be as robust as expected.** Many investors have expected Chinese demand growth to lead the country to become a net importer of aluminum. As one of our commodities research strategists points out (linked here), growth in Chinese aluminum smelting capacity will likely delay China's evolution to a net importer. Downside risks to Chinese demand also exist post-Olympics and if the U.S. economic malaise spreads. China is over 25% of worldwide aluminum demand, so a fall in Chinese demand could easily bring prices down sharply.

- **The change to an upward-sloping aluminum forward curve illustrates the shift in market perception away from a reversion to the historical long-term pricing.** Figure 1, below, illustrates LME aluminum price forward curves for each of the last six years. Unlike in previous years, the current curve slopes upward, indicating a belief in the underlying strength of demand.



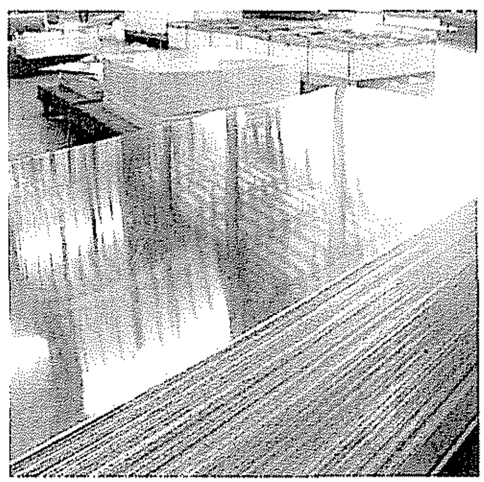


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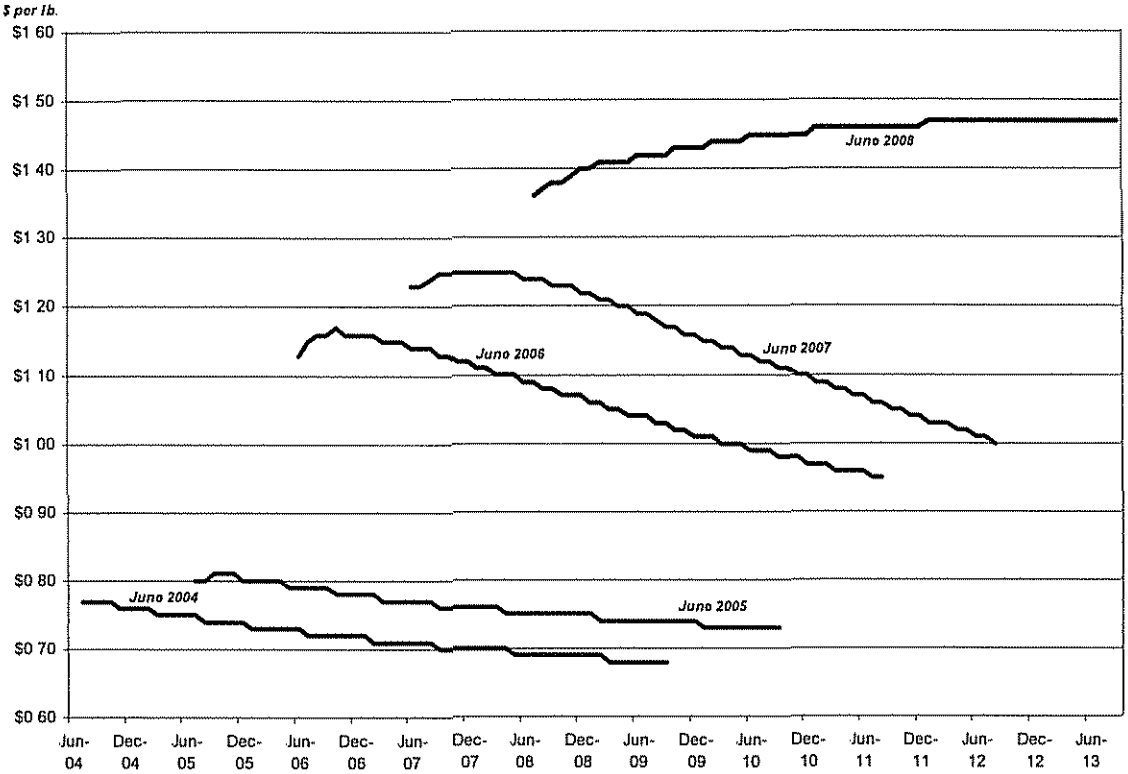
Figure 1: LME aluminum price forward curves



Source: JPMorgan and Bloomberg

- **Primary aluminum producers such as Century Aluminum and Noranda should benefit in a rising price environment.** Unlike downstream companies that also have to contend with local demand dynamics, upstream producers can always sell at the global price (see our June 17, 2008 initiation on Noranda linked here). In the worst case scenario, an upstream producer could sell its aluminum to the closest LME warehouse. This is a useful "out" to have given the 4% year-over-year fall in U.S. and Canadian aluminum demand during the first quarter. Indeed, producers appear to have been making use of the LME option, with LME warehouse stocks rising 15% since the end of 2007. Upstream producers are still tied to the global demand market and weakness in the United States may eventually force world prices down. However, supply disruptions like the recent earthquake in China and high oil prices (aluminum production is an extremely energy-intensive process) should provide support in the mid-term.

- **On the downstream aluminum front, we believe that the best offense is a solid defense.** Unlike primary aluminum producers, downstream companies face the triple headwind of higher-priced inventory, lower demand, and a general inability to increase their margins due to pass-through pricing mechanisms. These pass-through mechanisms are invaluable in falling price environments as downstream companies are able to largely maintain margins while primary producers see their profits evaporate. But in times of rising prices, downstream companies are unable to fully enjoy the benefit of selling a commodity product. Ideally, in market downturns downstream producers would enjoy the benefit of countercyclical cash flows as working capital is released. However, in a weak demand/rising price environment, downstream companies suffer from rising inventory costs. We believe that these factors will continue to weigh on downstream companies and would advise investors to steer clear of the space. We believe the one exception in the space is Novelis (JPMorgan HY Buy-rated 7.25% notes of 2015). In our view, Novelis' exposure to worldwide markets as well as its implicit guarantee from its parent company make it an good defensive play in this hard-hit sector. However, we do note Novelis' parent has exposure to the primary aluminum market.

- **Bonds in the overall metals and mining sector continue to sharply outperform the overall high yield market.** Year-to-date, the high yield market overall has returned 0.96%, while the Metals and Mining index has returned 4.58%.

High Yield Aluminum Bonds

		Amt			Market Data as of 18-Jun-08			
Company	Coupon	($ mn)	Maturity	Rating	Offer Price	YTW	STW	Recommendation
Aleris International Inc.	9.00%	$600	15-Dec-2014	B3/B-	84.25	12.65%	910bp	NR
Aleris International Inc.	10.00%	$400	15-Dec-2016	Caa1/B-	79.00	14.35%	1080bp	NR
Century Aluminum	7.50%	$250	15-Aug-2014	B1/BB-	101.00	7.20%	365bp	NR
Indalex Holding	11.50%	$198	01-Feb-14	Caa3/CCC+	60.50	24.95%	2210bp	Hold
Noranda Aluminum (OpCo)	6ML+400	$510	15-May-15	B3/B-	91.50	8.85%	n/a	Buy
Noranda Aluminum (HoldCo)	6ML+575	$220	15-Nov-14	Caa1/CCC+	91.50	10.80%	n/a	Buy
Novelis (Hindalco)	7.25%	$1399	15-Feb-15	B3/B	95.50	8.15%	460bp	Buy
Wise Metals	10.25%	$150	15-May-12	Ca/CC	89.75	13.75%	1090bp	NR

Source: JPMorgan

Recent events

- **Aleris International, Inc. (ARS)**
  On May 14, 2008, Aleris reported 1Q08 results. Adjusted non-pro forma EBITDA of $79 million decreased 25% from the same period in the prior year, but increased 60% sequentially. Global rolled and extruded products shipments decreased 7% year-over-year while global recycling shipments, driven by the acquisition of Wabash Alloys, increased 14% over 1Q07. Free cash flow before including the effect of the $276 million sale of the company's zinc business was negative $216 million. Debt increased $20 million to nearly $2.8 billion and liquidity stands above $400 million. Gross leverage increased 0.3x to 6.6x at the senior level and 7.7x at the sub level.

  On May 14, 2008, Aleris announced that J. Steven Whisler had been elected to the Aleris board of directors, expanding the board to seven members. Mr. Whisler is the ex-Chairman and CEO of Phelps Dodge Corporation and is currently a director of a number of companies including Burlington Northern Santa Fe, USAirways Group, and the International Paper Company.

  On May 21, 2008, Aleris announced that on May 16, the employment of Joseph Mallak, Senior Vice President, Finance, Chief Accounting Officer, and Controller, had been terminated without cause. The company said that Scott McKinley was elected Senior Vice President and Controller of the company. Prior to Mr. McKinley's September 2006 employment with Aleris, he had served as CFO for Lubrizol Corporation's Specialty Chemicals Segment.

  On May 23, 2008, the company announced that John Wasz, who had previously been the Executive Vice President and President, Rolled Products North America, would move into the role of Special Advisor to the Chief Executive Officer, Steven J. Demetriou, beginning June 1, 2008. K. Alan Dick, formerly Senior Vice President Manufacturing, Rolled Products North America, will succeed John Wasz following Mr. Wasz's promotion.

  On May 27, 2008, Aleris announced that Galdino Claro would join the company on June 3, 2008 as Executive Vice President and CEO, Aleris Americas, reporting to Mr. Demetriou. Previously, Mr. Claro had served as President and CEO of Heico Metal Processing Group and as Vice President, Operations of Alcoa Global Packaging.

- **Algoma Steel Inc. (AGACN)**
  On May 14, 2008, Algoma Steel reported 1Q08 results. Adjusted EBITDA of $71 million was 33% higher than the same period in the prior year, driven by a 6% increase in volumes (17% in plate steel shipments) and a decrease in SG&A costs. Free cash flow of $87 million was used to reduce debt balances by $66 million. The increase in LTM EBITDA and the decrease in debt decreased LTM gross leverage 1.6x to 6.8x. Management remains "optimistic about Algoma's overall financial performance throughout the course of this year" and expects "increased volumes will be sustainable over the long term."

- **California Steel Industries, Inc. (CALSTL)**
  On May 9, 2008, CALSTL announced that Vicente Wright will relinquish his

position as Chairman of the Board to assume the position of President and CEO of the company, effective July 1, 2008 The current President and CEO, Masakazu Kurushima, will assume the position of Chairman of the Board. The rotation is in accordance with the policy of the Company's shareholders, JFE Steel Corporation and Rio Doce Limited (CVRD).

- **Freeport-McMoRan Copper & Gold Inc. (FCX)**
  On May 22, 2008, Standard & Poor's released an analysis of Freeport in which they noted that the rating outlook could be revised to positive "if the markets remain strong and the company reduces debt further, or if [FCX] continues to improve its geographic or commodity diversification." However, the agency noted that Freeport "remains burdened by exposure in Indonesia and the inherent volatility of the commodity markets."

  On June 5, 2008, Freeport reported the results of its annual shareholder meeting. Shareholders voted to increase the number of authorized shares to 1.8 billion.

- **Fortescue Metals Group (FMGAU)**
  On May 16, 2008, the company announced that it had loaded iron ore on its first ship.

  On May 20, 2008, Andre Bush, CEO of Port Hedland Port Authority, said that the Authority does not expect any problems "even when Fortescue come[s] on stream...there is plenty of capacity."

  Fortescue's executive director of operations, Graeme Rowley, said on May 22, 2008 that the company was "still on track" to be shipping "probably 22 million to 23 million tons by year-end [2008]."

  On June 16, 2008, Rowley said that "project completion" was likely to be achieved in July or August 2008.

  On June 16, 2008, Standard & Poor's released an analysis of FMG in which it noted that its negative outlook for the company was predicated on the "the potential for increased costs and working capital under the project's remaining construction contracting structure," potential delays in the project's completion, and a weak liquidity position The agency said that the credit ratings on the project are unlikely to improve in the near to medium term.

- **Gerdau Ameristeel Corporation (GNACN)**
  On May 12, 2008, Gerdau Ameristeel reported 1Q08 results in which adjusted EBITDA of $387 million was 58% above the same quarter in the prior year, principally due to the purchase of Chaparral Steel. EBITDA increased 23% sequentially. Shipments increased 26% over 1Q07 and 9% over 4Q07. Cash balances and debt were roughly flat sequentially. The increase in LTM EBITDA decreased gross leverage 0.3x quarter-over-quarter. During 1Q08, the company took a $23 million write-down to the carrying value of auction rate securities to their fair market value of $72 million. President and CEO, Mario Longhi, said that the "outlook for the near term remains positive despite the unprecedented level of volatility in raw material costs."

- **Graftech International Ltd. (GTI)**
  On May 15, 2008, Standard & Poor's raised the corporate credit rating on

GrafTech to BB- from B+. The outlook is stable. The upgrade reflects GrafTech's "strengthening financial profile following significant debt reduction, good operational performance, and enhanced cash flow generation supported by currently favorable market conditions." The agency also noted "management's commitment to preserve a conservative balance sheet and adequate liquidity."

On May 30, 2008, GrafTech called for redemption on June 19, 2008 of 100% of the $225 million aggregate outstanding 1.625% convertible senior debentures due 2024 at par plus accrued and unpaid interest. Holders have the right to convert the debenture into roughly 60.3 shares of stock per $1,000 principal ($16.58 per share).

On June 3, 2008, Moody's upgraded GrafTech's corporate family rating to Ba2 from B1 and upgraded the 10.25% senior unsecured notes rating to Ba3 from B2 reflecting the company's improved operating performance, positive free cash flow, and significant debt reduction. The outlook is stable.

- **Indalex Holding Corp. (INDALX)**
  On May 14, 2008, Indalex released its 1Q08 results. Adjusted EBITDA (as calculated by JPMorgan) of $3 million was down 77% from the same period in the prior year. Volume in the quarter decreased 10% from 1Q07; the first quarter of 2007 was already 15% below the prior year's quarter (1Q06). Additional restructuring costs that we do not add back acted as a further drag on 1Q08 EBITDA. Free cash flow of negative $47 million was driven by a $30 million increase in working capital. The revolver/overdraft balance increased $44 million. Gross leverage jumped 3.6x sequentially to 10.8x and will likely continue to increase over the next couple of quarters as higher EBITDA quarters continue to roll off. The CEO looked forward, noting that the company's restructuring activities "leave [Indalex] in a very strong position for the future." Our latest report on Neutral-rated Indalex can be found here.

  In April, the board approved the closing of its Modesto, California plant and management stated that the closure of the 92-person plant would be completed by the end of July 2008. The closure is expected to result in $3.3 million of expenses in 2Q08, including $1.2 million of "future cash expenditures."

  On May 21, 2008, Indalex amended its credit agreement. The amendments provided for: 1) a $15 million non-amortizing loan from an affiliate of Sun Capital, the equity sponsor of the company; 2) a second $15 million non-amortizing term loan to be provided at the sole discretion of Sun Capital; and 3) an increase in the amount of real estate sales permitted as sale-leaseback transactions from $5 million to $20 million. The new loans will bear interest at L+750 (or a Base Rate plus margin if elected), with an additional 75bp margin due if availability falls below $35 million and a LIBOR floor of 3.25%. The loan's collateral is subject to a waterfall provision. As of May 19, 2008, the company had $12.7 million available under the capital lease/attributable debt basket of the 11.5% senior notes due 2014 and $15.0 million available under the general basket of the notes.

  On May 28, 2008, Moody's downgraded Indalex's corporate family rating to Caa2 from Caa1 and the 11.5% second lien senior secured note rating to Caa3 from Caa2. The rating outlook is negative. Moody's said that despite the new term loans, the agency "believes that continued weaker operating performance combined with capital spending levels will likely result in negative free cash flow generation through at least 2008." Ratings could be downgraded further if Indalex is challenged to meet interest payments or is unable to bolster availability under its credit facility. The outlook could stabilize if restructuring activities stem losses and "if the company were to generate sustained periods of breakeven cash flow."

On May 29, 2008, Standard & Poor's affirmed the B- corporate credit rating on Indalex, lowered the rating on the second lien notes due 2014 to CCC+ from B-, and revised the recovery rating to 5, indicating a 10-30% recovery of principal in the event of default. The outlook is negative. The agency noted that although "the company's liquidity position remains precarious," it expects "the company has adequate liquidity to support its operations and working capital needs in the next few quarters."

On June 12, 2008, the company said that Clarence Terry resigned from the Board of Directors and was replaced by David Finnigan, a Managing Director of Sun Capital Partners, Inc. The company also confirmed that Sun Capital Securities Offshore Fund, Ltd. owns $10.1 million of the 11.5% senior notes due 2014 that the Fund had purchased on the open market in 2007.

- **Metals USA Holdings Corp. (METALS)**
  On May 19, 2008, Metals USA filed an S-1 with the SEC for an IPO. For a discussion of the filing and its possible implications, please read our May 20, 2008 report *Metals USA Holdings IPO filing could be good news for HoldCo notes* (linked here).

  On May 19, 2008, Standard & Poor's placed its B- corporate credit rating on Metals USA on CreditWatch with positive implications. The agency noted that it "could raise the ratings one notch if the IPO is completed as planned and market conditions remain sufficiently favorable to allow the company to keep its financial risk profile at a level consistent with the higher rating."

- **Noranda Aluminum Acquisition Corp. (NRNDA)**
  On May 9, 2008, Noranda Aluminum and Century Aluminum announced that Larry Holley had been named president and general manager of Gramercy Alumina LLC and St. Ann Bauxite Limited effective May 8, 2008. Mr. Holley most recently served as president of El Dorado Chemical Company, a manufacturer and marketer of commodity chemicals.

  On May 9, 2008, Noranda announced that effective May 5, 2008, Kyle Lorentzen was appointed to the newly created Chief Operating Officer position. Mr. Lorentzen was previously Vice President of Corporate Development with Berry Plastics Corporation.

  On May 16, 2008, Noranda released its 1Q08 results. External upstream shipments decreased 8% over the same period in the prior year; however, total upstream shipments were flat. Downstream shipments decreased 2% from 1Q07. Revenues decreased 13% from the same period in the prior year largely due to the decrease in the average Midwest price for primary aluminum. Adjusted EBITDA of $85 million decreased 8% from 1Q07 and increased 35% sequentially. Cash balances increased $73 million and debt balances remained largely unchanged.

Gross leverage increased 0.1x to 3 1x at the OpCo level and to 3.8x at the HoldCo level.

For our in-depth view of Noranda, please read our June 17, 2008 initiation *Noranda Aluminum · Initiating with an Overweight* (linked here).

- **Novelis Inc. (HINDAL)**
  On May 23, 2008, Novelis announced a price increase of two cents per pound on certain of its alloy products, due to "the continued escalation of transportation and energy costs." The increase will be effective for all new, non-fixed pricing North American contracts on sales made on or after June 1, 2008 for shipment on or after July 1, 2008.

  On May 26, 2008, Novelis announced that it was investing $30 million in its Brazilian operations over the next 18 months in a number of projects designed to increase production capacity and introduce new technology.

  On June 18, 2008, The Economic Times reported that Hindalco Industries, Novelis' parent, is considering a nearly $1 billion rights issue and a $1.8 billion issuance in debt to refinance the $2.8 billion bridge funding from the acquisition of Novelis.

- **PNA Group Inc. (PNAGRO)**
  On May 13, 2008, PNA Group announced its 1Q08 results. Adjusted EBITDA of $40 million was 36% above the same period in the prior year. The meager 2% increase in shipments masks a shift from tolled to non-tolled flat-rolled shipments. The company's debt increased $87 million sequentially to about $770 million at the HoldCo following the company's $45 million purchase of Sugar Steel, a processor and distributor of carbon structural products. The company continues to expand, progressing on two new facilities in the Long Products and Plate segment. Free cash flow of negative $46 million was driven by a $57 million use of working capital. Gross leverage at the OpCo level increased 0.3x sequentially to 5.0x. At the HoldCo level, gross leverage is 6.4x.

  On June 17, 2008, Reliance Steel & Aluminum announced that it had reached an agreement to acquire PNA Group from Platinum Equity in a transaction valued at $1.1 billion. The agreement calls for a $315 million payment for the outstanding stock less certain adjustments. The transaction was expected to be completed within 60 days, subject to obtaining regulatory approvals, and to be financed from borrowings under Reliance Steel's revolver and a $750 million combined debt and equity issuance.

  Following the Reliance Steel/Platinum Equity announcement, Moody's placed PNA's ratings on review for possible upgrade given "strategic benefits PNA would be able to realize as part of a larger organization, as well as the potential for an improved debt position given that the existing debt will be refinanced." Moody's concurrently placed Reliance Steel on review for possible downgrade.

  On June 17, 2008, Standard & Poor's placed PNA on CreditWatch with positive implications given that it expects "a portion of the proceeds from the sale [to Reliance] to be used to repay all of PNA's debt outstanding." The agency stated that Reliance Steel's ratings and outlook are unchanged following the purchase announcement reflecting the expectation that the company's growth strategy "will be pursued in a manner that maintains investment grade credit metrics consistent with the rating."

- **RathGibson Inc. (RATHGI)**
  On May 9, 2008, Standard & Poor's released an analysis of RathGibson in which it said that the agency would consider a downgrade "if the company's liquidity position comes under pressure or if operating performance weakens further." Alternatively, the agency could consider moving the outlook to stable from negative "if the company's credit measures improve to levels consistent with a 'B' rating."

  On May 12, 2008, Moody's downgraded RathGibson corporate family rating to B3 from B2 and affirmed the B3 senior unsecured note rating. Moody's noted that "RathGibson's performance has not improved significantly over the last two years despite generally higher overall prices, reasonable strength in several end markets, and two material acquisitions."

  On June 16, 2008, RathGibson reported 1Q09 results (period ending April 30, 2008). Adjusted EBITDA of $12 million was 21% below the same period in the prior year. Shipments fell 15% from the prior year partially due to a decrease in demand for exchanger, nickel, pressure coil, encapsulated wire, and general commercial products. Free cash flow during the quarter was negative $5 million. Debt increased by $27 million sequentially to fund the acquisition of Mid-South Control Line, a distributor of stainless steel and nickel alloy tubing and accessories to the oil and gas industry. LTM gross leverage increased 0.9x to 5.8x.

- **Russel Metals Inc. (RUSCN)**
  On May 12, 2008, Russel Metals reported 1Q08 results. Adjusted EBTIDA of $55 million was 7% above the same period in the prior year and 29% above 4Q07 driven by improved margin from higher steel prices. Free cash flow of $15 million and a $7 million increase in debt increased cash $18 million to $200 million. Gross leverage was flat at 0.9x. Liquidity remains strong at over $400 million.

  On June 11, 2008, the company announced that the average analyst 2Q08 consensus earnings estimate of $0.78 per share was understated by 35% to 45%, implying a "proper" estimate of $1.05 to $1.13 per share. Management said that steel price increases have enhanced Russel's margins in all of the company's segments including the service center segment. The company noted that "current economic conditions and uncertainty on the sustainability of the steel price increases make it difficult to project the earnings levels for the second half of 2008."

- **Ryerson Inc. (RYI)**
  On May 13, 2008, Ryerson released its 1Q08 results. For our take on the company's earnings and the bonds, please see our May 20, 2008 report *Ryerson Inc On track, 2Q08 should be even better* (linked here).

- **Steel Dynamics (STLD)**
  On May 22, 2008, CEO, Keith Busse, raised 2008 earnings guidance to $3.00 to $3.25 per share from $2.63 to $2.88 per share while maintaining the company's $0.80 to $0.90 per share 2Q08 guidance.

On June 12, 2008, Steel Dynamics increased its 2Q08 guidance from a range of \$0.80 to \$0.90 per share to a range of \$0.90 to \$0.95 "based primarily on stronger than anticipated shipping volume and selling values for flat-rolled steel products and stronger volume and margins in recycling."

On June 16, 2008, Steel Dynamics announced that it had completed the acquisition of Recycle South, a large regional scrap metal recycler. Steel Dynamics had already owned 25% of Recycle South and acquired the remaining 75% for approximately \$515 million.

On June 16, 2008, the company announced that Daniel Rifkin's employment with the firm will terminate no later than July 1, 2008. Mr. Rifkin has not resigned as a director of the company and indicated that his resignation as an employee "is based both upon certain post-acquisition differences with Company management over the operational and strategic direction of the Company's scrap business, as well as his desire to pursue other business opportunities."

- **Wise Metals Group LLC (WISMET)**
  On May 19, 2008, Wise Metals announced its 1Q08 results. Shipments of 209 million pounds were 23% above 1Q07 from higher levels of can sheet volumes driven by new foreign contract can sheet business. Adjusted EBITDA of \$15.6 million was 212% higher than the same period in the prior year. Free cash flow, driven down by a \$60 million use of working capital, was negative \$56 million causing debt to grow by roughly the same amount to \$383 million.

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In Case You Missed It: HY Metals & Mining Reports

Date	Title
17-Jun-08	Noranda Aluminum : Initiating with an Overweight
20-May-08	Metals USA Holdings : IPO filing could be good news for HoldCo notes
20-May-08	Ryerson Inc : On track, 2Q08 should be even better
9-May-08	HY Metals and Mining : May monthly: Steel sector focus
29-Apr-08	Metals USA Holdings : Hold on to your hats, Upgrading HoldCo notes due 2012 to Buy
10-Apr-08	Freeport-McMoRan Copper & Gold : Investment grade catalyst achieved - Downgrading to Neutral
8-Apr-08	HY Metals and Mining : April monthly: Aleris (Update), Indalex (Downgrading to Neutral), Ryerson (Reaffirming our Overweight)
31-Mar-08	Steel Dynamics : Hold on new 7.75% of '16, reaffirming our Neutral
17-Mar-08	HY Metals and Mining : March monthly: Freeport (Update), Metals USA (Initiation), Novelis/Hindalco (Update)
12-Mar-08	Metals USA, Inc : Looking for the right entry point, Initiating with a Neutral
06-Feb-08	HY Metals and Mining : February monthly: Indalex - Relish the yield
16-Jan-08	Novelis Inc. : Upgrading to Overweight
04-Jan-08	HY Metals and Mining : January Monthly: NRNDA, MUSA, WISMET
06-Dec-07	HY Metals and Mining : December monthly: Best bond pick (FCX) and sector outlook (Neutral)
09-Nov-07	November monthly: AKS (downgrade to Neutral) and FCX (upgrade to Buy of 6.875% of '14 notes)

Metals and Mining STW credit tracker, ranked by Δm/m

Bond and JPMorgan HY Index STW	31-Dec-07	16-May-08	17-Jun-08	Tightened by: Absolute Δ m/m[1]	Tightened by: Absolute Δ y/y
INDALX 11.500% 2014	1,097	2,759	2,145	613	(1,049)
PNAGRO 10.750% 2016	800	826	330	496	471
WISMET 10.250% 2012	854	1,235	1,036	200	(182)
GNACN 10.375% 2011	349	368	229	139	119
HY - Metal Fabricators/Service Centers	746	836	707	129	39
ARS 9.000% 2014	897	997	889	108	8
METALS 11.125% 2015	677	709	611	98	66
HY - Other Metals	593	716	621	94	(29)
ARS 10.000% 2016	985	1,278	1,187	91	(202)
RYI 12.000% 2015	847	900	814	86	33
FMGAU 10.000% 2013	436	462	380	81	56
HINDAL 7.250% 2015	470	538	462	76	8
CALSTL 6.125% 2014	508	594	530	64	(21)
FCX 6.875% 2014	327	309	249	59	78
RUSCN 6.375% 2014	433	445	386	59	47
FMGAU 10.625% 2016	438	428	370	57	67
CENX 7.500% 2014	416	456	400	56	16
AGACN 9.875% 2015	1,009	749	695	54	314
FCX 8.375% 2017	337	360	313	48	24
HY Metals/Minerals	465	486	438	48	27
GTI 10.250% 2012	553	490	446	44	107
HY - Steel	444	448	407	41	38
HY Split B	734	839	798	41	(64)
HY Split BB	451	501	461	40	(10)
STLD 7.375% 2012	383	405	369	36	14
STLD 6.750% 2015	368	360	333	26	34
HY - Mining	368	367	341	26	27
HY Summary	597	672	647	24	(50)
HY B	563	659	639	20	(76)
RATHGI 11.250% 2014	792	839	821	17	(30)
FCX 8.250% 2015	339	334	320	14	19
AKS 7.750% 2012	441	398	391	7	50
HY BB	442	425	418	7	24
HY Split BBB	317	359	353	6	(36)
MT 6.500% 2014	239	279	278	1	(39)
HY CCC	980	1,111	1,119	(8)	(139)
ATI 8.375% 2011	318	346	357	(11)	(39)

Source: JPMorgan

Comparative company

Company	AK Steel	Algoma Steel	California Steel	Gerdau Steel	Nucor Corp	Rath Gibson	Steel Dynamics	US Steel
	Steel							
Equity ticker	AKS			GNA	NUE		STLD	X
Bond ticker	AKS	AGA CN	CALSTL	GNA CN	NUE	RATHGI	STLD	X
Volume and income statement (LTM)								
Shipments (000's tons)	6,461	2.498	1.760	8,039	22.638		6,956	23.793
Revenues	$7,075	$1,867	$1.337	$6,495	$17.798	$357	$5,421	$18,313
EBITDA	$908	$135	$54	$1,192	$3,042	$48	$944	$1,624
EBITDA margin	12.8%	7.2%	4.1%	18.3%	17.1%	13.3%	17.4%	8.9%
Interest expense	$55	$66	$10	$127	$33	$25	$78	$142
Net income	$426	($31)	$7	$567	$1,501	($11)	$435	$841
Cash Flow (LTM)								
CapEx	$126	$141	$34	$150	$655	$10	$435	$711
CFO	$307	$239	$133	$772	$1.953	($1)	$493	$1,440
Discretionary FCF	$228	$98	$99	$677	$1,298	($11)	$468	$729
FCF	$176	$98	$99	$485	$577	($13)	($474)	$504
Capitalization								
Cash	$272	$10	$59	$641	$734	$3	$59	$454
Senior unsecured	$116	$455	$0	$2.670	$854	$65	$781	$1.542
Total senior	$665	$921	$150	$3,076	$2.679	$276	$1.981	$3.252
Total OpCo	$665	$921	$150	$3.076	$2.679	$276	$2.018	$3,252
Minority interest				$44	$287		$12	$100
Shareholder's equity	$1,154	$566	$337	$3,881	$5,426	$210	$1,616	$5,778
Capitalization	$1,820	$1,487	$487	$7,001	$8,392	$485	$3,645	$9,130
Enterprise value and liquidity								
Stock price	$70.62	Private	Private	$18.69	$76.42	Private	$39.16	$174.80
Equity market capitalization	$7.910	Private	Private	$8,085	$22.040	Private	$7.397	$20,576
Enterprise value	$8,303	$1,578	$354	$10,565	$24.272	$310	$9,368	$23,474
Liquidity	$952	$203	$168	$1,224	$1,386	$25	$786	$1,688
Credit Statistics								
EBITDA/Interest Expense	16.4x	2.0x	5.4x	9.4x	92.2x	1.9x	12.1x	11.4x
EBITDA - CapEx / Interest Expense	14.1x	-0.1x	2.0x	8.2x	72.4x	1.5x	6.5x	6.4x
Senior secured leverage	0.1x	3.4x	0.0x	2.2x	0.3x	1.4x	0.8x	0.9x
Total senior leverage	0.7x	6.8x	2.8x	2.6x	0.9x	5.8x	2.1x	2.0x
Total OpCo leverage	0.7x	6.8x	2.8x	2.6x	0.9x	5.8x	2.1x	2.0x
Senior unsecured debt/cap	6%	31%	0%	38%	10%	13%	21%	17%
Total senior debt/cap	37%	62%	31%	44%	32%	57%	54%	36%
Total OpCo debt/cap	37%	62%	31%	44%	32%	57%	55%	36%
EV/EBITDA	9.1x	11.7x	6.5x	8.9x	8.0x	6.5x	9.9x	14.5x
Total Debt/EV	8%	58%	42%	29%	11%	89%	22%	14%
EV/ton	$1,285	$632	$201	$1,314	$1,072		$1,347	$987
EBITDA/ton	$141	$54	$31	$148	$134		$136	$68
EV/Revenues	117%	84%	26%	163%	136%	87%	173%	128%
Bond One								
Description	Sr Nts	Sr Nts	Sr Nts	Sr Nts	Sr Nts	Sr Nts	Sr Nts	Sr Nts
Coupon	7.750%	9.875%	6.125%	10.375%	4.875%	11.250%	7.375%	5.650%
Maturity	06/15/12	06/15/15	03/15/14	07/15/11	10/01/2012	02/15/14	11/01/12	06/01/13
Outstanding	$550	$450	$150	$405	$350	$200	$700	$300
Rating	B1/BB-	Caa1/B-	Ba3/BB-	Ba1/BB+	A1/A+	B3/B	Ba2/BB+	Baa3/BB+
Offer price	$101.75	$95.50	$87.25	$104.00		$97.25	$100.75	$96.04
Yield	6.79%	10.81%	9.02%	4.03%		11.92%	7.17%	6.60%
STW	391bp	695bp	530bp	229bp		821bp	369bp	298bp
Bond Two								
Description							Sr Nts	Sr Nts
Coupon							6.750%	6.050%
Maturity							04/01/15	06/01/17
Outstanding							$500	$450
Rating							Ba2/BB+	Baa3/BB+
Offer price							$97.75	$93.32
Yield							7.17%	7.07%
STW							333bp	299bp

1 Algoma enterprise value estimated using purchase price at time of transaction Data presented in $CAD.
2. California Steel Industries and RathGibson enterprise value estimated using a 6 5x multiple of LTM EBITDA

Sources: Company reports and JPMorgan

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Comparative company analysis

	Mining	Aluminum					
Company	Freeport-McMoRan	Aleris Intl	Century Aluminum	Indalex	Noranda Aluminum	Novelis (Hindalco)	Wise Metals
Equity ticker	FCX		CENX				
Bond ticker	FCX	ARS	CENX	INDALX	NRNDA	HINDAL	WISMET
Income statement (LTM)							
Revenues	$20,720	$6,375	$1,822	$1,065	$1,322	$11,014	$1,050
EBITDA	$10.176	$362	$378	$29	$302	$415	($15)
EBITDA margin	49%	6%	21%	3%	23%	4%	-1%
Interest expense	$629	$217	$17	$32	$95	$204	$35
Net income	$3,670	($68)	($308)	($17)	$11	($251)	($65)
Cash Flow (LTM)							
CapEx	$2.121	$193	$31	$41	$44	$161	$21
CFO	$6,171	$118	($45)	$27	$237	($286)	($69)
Discretionary FCF	$4,702	$18	$186	$11	$193	($400)	($90)
FCF	$2,330	($75)	$186	$61	$168	($357)	($90)
Capitalization							
Cash	$1,831	$89	$367	$1	$148	$133	$2
Restricted cash			$1				$2
Senior secured	$700	$1,651	$8	$112	$424	$1.263	$233
Total senior debt	$7,571	$2,383	$433	$313	$934	$2.753	$383
Total OpCo	$7.571	$2.782	$433	$313	$934	$2.753	$383
Total through HoldCo					$1.152		
Minority interest	$1.509					$150	
Preferred stock	$3,975						
Shareholder's equity	$15,331	$893	$341	($9)	($133)	$3,477	($186)
Capitalization	$28,386	$3,675	$774	$304	$1,019	$6,380	$196
Enterprise value and liquidity							
Stock price	$122.18	Private	$70.31	Private	Private	Private	Private
Equity market capitalization	$46,795	Private	$2,892	Private	Private	Private	Private
Enterprise value	$58,019	$2,356	$2,958	$270	$1,150	$4,500	nm
Liquidity	$0	$409	$464	$24	$394	$650	$178
Credit Statistics							
EBITDA/Interest Expense	16.2x	1 7x	22.5x	0.9x	3.2x	2.0x	nm
EBITDA - CapEx / Interest Expense	12.8x	0.8x	20.7x	-0.4x	2.7x	1 2x	nm
Senior secured leverage	0.1x	4.6x	0.0x	3.9x	1.4x	3.0x	nm
Total senior leverage	0.7x	6.6x	1 1x	10.8x	3 1x	6.6x	nm
Total OpCo leverage	0 7x	7 7x	1 1x	10.8x	3 1x	6.6x	nm
Through HoldCo leverage					3.8x		
Senior unsecured debt/cap	2%	45%	1%	37%	42%	20%	119%
Total senior debt/cap	27%	65%	56%	103%	92%	43%	195%
Total OpCo debt/cap	27%	76%	56%	103%	92%	43%	195%
Through HoldCo debt/cap					113%		
EV/EBITDA	5.7x	6.5x	7.8x	9.3x	3.8x	10.8x	
Total Debt/EV	13%	118%	15%	116%	100%	61%	
EV/Revenues	280%	37%	162%	25%	87%	41%	nm
Bond One							
Description	Sr Nts	Sr Nts	Sr Nts	Sr Nts	FRNs	Sr Nts	Sr Nts
Coupon	8.250%	9.000%	7.500%	11.500%	L+400	7.250%	10.250%
Maturity	04/01/15	12/15/14	08/15/14	02/01/14	05/15/2015	02/15/15	05/15/12
Outstanding	$1,500	$600	$250	$198	$510	$1,400	$150
Rating	Ba2/BBB-	B3/B-	B1/BB-	Caa3/CCC+	B3/B-	B3/B	Ca/CC
Offer price	$105.88	$84.00	$100.25	$60.00		$94.00	$89.75
Yield	6.79%	12.69%	7.42%	25.16%		8.44%	13.72%
STW	320bp	889bp	400bp	2145bp		482bp	1036bp
Bond Two							
Description	Sr Nts	Sr Nts			HoldCo FRNs		
Coupon	8.375%	10.000%			L+575		
Maturity	04/01/17	12/15/16			11/15/2014		
Outstanding	$3,500	$400			$220		
Rating	Ba2/BBB-	Caa1/B-			Caa1/CCC+		
Offer price	$107.50	$73.00					
Yield	6.97%	15.90%					
STW	313bp	1187bp					

1 Freeport-McMoRan EBITDA presented pro forma for Phelps Dodge transaction. Last quarter interest expense annualized. Other data presented is actual historicals.
2 Aleris and Indalex enterprise values estimated using a 6 5x multiple of LTM EBITDA.
3. Noranda enterprise value estimated using purchase price at time of transaction
4 Novelis enterprise value assumed at $4.5 billion.

Sources: Company reports and JPMorgan

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Comparative company analysis

	Other Metals Companies						
Company	Allegheny Tech	GrafTech Intl	Metals USA	PNA Group	Reliance Steel	Russel Metals	Ryerson Inc.
Equity ticker	ATI	GTI			RS	RUS.CN	RYI
Bond ticker	ATI	GTI	METALS	PNAGRO	RS	RUSCN	RYI
Income statement (LTM)							
Revenues	$5,423	$1,067	$1,872	$1,699	$7,322	$2,588	$5,709
EBITDA	$1.171	$301	$152	$120	$806	$201	$228
EBITDA margin	22%	28%	8%	7%	11%	8%	4%
Interest expense	$0	$29	$63	$46	$75	$7	$93
Net income	$691	$177	$37	$32	$404	$112	$38
Cash Flow (LTM)							
CapEx	$502	$53	$19	$18	$135	$17	$55
CFO	$701	$180	$81	$31	$675	$235	$471
Discretionary FCF	$199	$127	$62	$21	$540	$218	$447
FCF	$136	$127	$51	($17)	$400	$105	$413
Capitalization							
Cash	$468	$7	$23	$6	$97	$200	$39
Restricted cash				$2			$6
Senior secured	$21	$22	$610	$349	$242	$14	$635
Total senior debt	$524	$97	$610	$599	$1.127	$183	$1.211
Total OpCo	$524	$321	$610	$599	$1.127	$183	$1.211
Total through HoldCo			$910	$769			
Minority interest		$0		$2			
Preferred stock							
Shareholder's equity	$2,286	$178	($116)	$79	$2,093	$898	$502
Capitalization	$2,811	$499	$794	$850	$3,220	$1,081	$1,712
Enterprise value and liquidity							
Stock price	$63.97	$26.79	Private	Private	$73.11	$30.75	Private
Equity market capitalization	$6,467	$2.765	Private	Private	$5,312	$1.942	Private
Enterprise value	$6,524	$3,079	$987	$1,100	$6,343	$1,926	$1,980
Liquidity	$884	$205	$158	$119	$965	$421	$518
Credit Statistics							
EBITDA/Interest Expense	3904.3x	10.4x	2.4x	2.6x	10 7x	27 1x	2 5x
EBITDA - CapEx / Interest Expense	2232.0x	8.6x	2 1x	2.2x	8.9x	24 8x	1 9x
Senior secured leverage	0.0x	0.1x	4 0x	2.9x	0.3x	0.1x	2.8x
Total senior leverage	0.4x	0.3x	4.0x	5.0x	1 4x	0.9x	5.3x
Total OpCo leverage	0.4x	1 1x	4.0x	5.0x	1 4x	0.9x	5.3x
Through HoldCo leverage			6.0x	6.4x			
Senior unsecured debt/cap	1%	4%	77%	41%	8%	1%	37%
Total senior debt/cap	19%	19%	77%	71%	35%	17%	71%
Total OpCo debt/cap	19%	64%	77%	71%	35%	17%	71%
Through HoldCo debt/cap			115%	91%			
EV/EBITDA	5.6x	10.2x	6.5x	9.1x	7.9x	9.6x	8.7x
Total Debt/EV	8%	10%	92%	70%	18%	10%	61%
EV/Revenues	120%	289%	53%	65%	87%	74%	35%
Bond One							
Description	Sr Nts	Sr Nts	Sr Sec Nts	Sr Nts	Sr Nts	Sr Nts	Sr Sec Nts
Coupon	8 375%	10.250%	11 125%	10.750%	6.200%	6.375%	12.000%
Maturity	12/15/11	02/15/12	12/01/15	09/01/16	11/15/2016	03/01/14	11/01/15
Outstanding	$300	$39	$275	$250	$350	$175	$425
Rating	Baa3/BBB-	Ba3/BB-	B3/CCC	B3/B-	Baa3 /*-/BBB-	Ba2/BB	B2/B+
Offer price	$104.73	$103.75	$105.50	$116.50		$94.50	$99.75
Yield	6.83%	6.85%	9.80%	6.49%		7.58%	12.04%
STW	357bp	446bp	611bp	330bp		386bp	814bp
Bond Two							
Description	Debentures		PIK HoldCo	PIK HoldCo	Sr Nts		Sr Sec FRNs
Coupon	6.950%		L+600	L+700	6.850%		L+737.5
Maturity	12/15/25		07/01/12	02/15/2013	11/15/2036		11/01/2014
Outstanding	$150		$300	$170	$250		$150
Rating	Baa3/BBB-		Caa1/CCC /*+	Caa1 /*+/B- /*+	Baa3 /*-/BBB-		B2/B+
Offer price	$94.78						
Yield	7.49%						
STW	308bp						

1 Metals USA EV estimated using a 6.5x multiple of LTM EBITDA. PNA Group represents proposed transaction value
2 Russel Metals data presented in $CAD
3. Ryerson enterprise value estimated using purchase price at time of transaction
Sources: Company reports and JPMorgan

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Relative value analysis

Coupon	Description	Recommendation	Maturity	Ratings Moody's S&P	Current	Recent Quotes Offer	Recent Quotes Yield	Recent Quotes Spread	YTW Date	Next Call Date Date	Next Call Date Price	EBITDA LTM	EBITDA/ Interest LTM	Debt/ EBITDA LTM	Debt/ TEV
STEEL COMPANIES															
AK Steel Corp.															
7.750%	Sr Nts	Hold	15-Jun-12	B1/BB-	$550	$101.75	6.79%	391bp	15-Jun-10	15-Jun-09	$101.29	$908	16.4x	0.7x	8%
Algoma Acquisition Corp.[1]															
9.875%	Sr Nts	NR	15-Jun-15	Caa1/B-	$450	$95.50	10.81%	695bp	15-Jun-15	15-Jun-11	$104.94	$135	2.0x	6.8x	58%
California Steel Industries, Inc.[2]															
6.125%	Sr Nts	NR	15-Mar-14	Ba3/BB-	$150	$87.25	9.02%	530bp	15-Mar-14	15-Mar-09	$103.06	$54	5.4x	2.8x	42%
Gerdau Ameristeel Corp.*															
10.375%	Sr Nts	NR	15-Jul-11	Ba1/BB+	$405	$104.00	4.03%	229bp	15-Jul-08	15-Jul-08	$103.58	$1,192	9.4x	2.6x	29%
International Steel Group (Mittal Steel, USA)[3]															
6.500%	Sr Nts	NR	15-Apr-14	Baa2/BBB+	$500	$99.94	6.51%	278bp	15-Apr-14	nc	nc	$20,098	17.9x	1.7x	20%
Nucor Corp.															
4.875%	Sr Nts	NR	1-Oct-12	A1/A+	$350	$100.78	4.67%	127bp	1-Oct-12	nc	nc	$3,042	92.2x	0.9x	11%
RathGibson, Inc.[4]															
11.250%	Sr Nts	NR	15-Feb-14	B3/B	$200	$97.25	11.92%	821bp	15-Feb-14	15-Feb-10	$105.63	$48	1.9x	5.8x	89%
Steel Dynamics Inc.[5]															
7.375%	Sr Nts	Hold	1-Nov-12	Ba2/BB+	$700	$100.75	7.17%	369bp	1-Nov-12	nc	nc	$944	12.1x	2.1x	22%
6.750%	Sr Nts	Hold	1-Apr-15	Ba2/BB+	$500	$97.75	7.17%	333bp	1-Apr-15	1-Apr-11	$103.38	$944	12.1x	2.1x	22%
7.750%	Sr Nts	Hold	15-Apr-16	Ba2/BB+	$500	$100.75	7.58%	385bp	15-Apr-14	15-Apr-12	$103.88	$944	12.1x	2.1x	22%
United States Steel Corp.															
6.050%	Sr Nts	NR	1-Jun-17	Baa3/BB+	$450	$93.32	7.07%	299bp	1-Jun-17	nc	nc	$1,624	11.4x	2.0x	14%
ALUMINUM COMPANIES															
Aleris International Inc.															
9.000%	Sr Nts	NR	15-Dec-14	B3/B-	$600	$84.00	12.69%	889bp	15-Dec-14	15-Dec-10	$104.50	$362	1.7x	6.6x	101%
10.000%	Sr Sub Nts	NR	15-Dec-16	Caa1/B-	$400	$73.00	15.90%	1187bp	15-Dec-16	15-Dec-11	$105.00	$362	1.7x	7.7x	118%
Century Aluminum Co.															
7.500%	Sr Nts	NR	15-Aug-14	B1/BB-	$250	$100.25	7.42%	400bp	15-Aug-12	15-Aug-09	$103.75	$378	22.5x	1.1x	15%
Indalex Holding[6]															
11.500%	Sr Nts	Hold	1-Feb-14	Caa3/CCC+	$198	$60.00	25.16%	2145bp	1-Feb-14	1-Feb-10	$108.63	$29	0.9x	10.8x	116%
Noranda Aluminum[7]															
6.828%	FRNs	Buy	15-May-15	B3/B-	$510	na	na	nm	nm	21-Jul-08	$102.00	$302	3.2x	3.1x	81%
8.578%	HoldCo FRNs	Buy	15-Nov-14	Caa1/CCC+	$220	na	na	nm	nm	21-Jul-08	$102.00	$302	3.2x	3.8x	100%
Novelis Inc.[8]															
7.250%	Sr Nts	Buy	15-Feb-15	B3/B	$1399	$94.00	8.44%	462bp	15-Feb-15	15-Feb-10	$103.63	$415	2.0x	6.6x	61%
Wise Metals Group LLC															
10.250%	Sr Nts	NR	15-May-12	Ca/CC	$150	$89.75	13.72%	1036bp	15-May-12	15-May-09	$102.56	($15)	-0.4x	-25.8x	NM

Note: EBITDA is Adjusted EBITDA. Interest Expense is based on LTM values.
1. Algoma enterprise value estimated using purchase price at time of transaction. Data presented in $CAD.
2. California Steel Industries enterprise value estimated using a 6.5x multiple of LTM EBITDA.
3. International Steel Group credit metrics shown pro forma for Mittal Steel.
4. RathGibson enterprise value estimated using a 6.5x multiple of LTM EBITDA.
5. Aleris EV estimated using a 6.5x multiple of LTM pro forma EBITDA excluding special items and including synergies.
6. Indalex enterprise value estimated using a 6.0x multiple of estimated mid-cycle EBITDA.
7. Noranda enterprise value of $1.15 billion reflects purchase price.
8. Novelis enterprise value assumed at $4.5 billion.

Sources: Company reports and JPMorgan.

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Relative value analysis

Coupon	Description	Recommendation	Maturity	Ratings Moody's S&P	Current	Recent Quotes Offer	Recent Quotes Yield	Recent Quotes Spread	YTW Date	Next Call Date Date	Next Call Date Price	EBITDA LTM	EBITDA/ Interest LTM	Debt/ EBITDA LTM	Debt/ TEV
COAL COMPANIES															
Arch Western Finance															
6.750%	Sr Nts	NR	1-Jul-13	B1/BB-	$950	$98.75	7.05%	341bp	1-Jul-13	1-Jul-08	$103.38	$553	7.3x	2.6x	12%
Massey Energy Co.															
6.625%	Sr Nts	NR	15-Nov-10	B2/B+	$360	$99.50	6.85%	386bp	15-Nov-10	15-Nov-08	$101.66	$437	8.8x	2.5x	14%
6.875%	Sr Nts	NR	15-Dec-13	B2/B+	$760	$98.38	7.24%	355bp	15-Dec-13	15-Dec-09	$103.44	$437	8.8x	2.5x	14%
Peabody Energy Corp.															
6.875%	Sr Nts	NR	15-Mar-13	Ba1/BB	$650	$100.25	6.77%	370bp	15-Mar-11	15-Mar-09	$102.29	$994	4.3x	3.4x	13%
5.875%	Sr Nts	NR	15-Apr-16	Ba1/BB	$250	$94.75	6.75%	279bp	15-Apr-16	15-Apr-09	$102.94	$994	4.3x	3.4x	13%
MINING COMPANIES															
Freeport-McMoRan Copper & Gold[1]															
6.875%	Sr Nts	Hold	1-Feb-14	Baa1/BBB-	$350	$103.50	5.79%	249bp	1-Feb-12	1-Feb-09	$103.44	$10,176	16.2x	0.1x	1%
5.883%	FRNs	Hold	1-Apr-15	Ba2/BBB-	$1000	$101.25	7.56%	nm	nm	1-Apr-09	$102.00	$10,176	16.2x	0.7x	13%
8.250%	Sr Nts	Hold	1-Apr-15	Ba2/BBB-	$1500	$105.88	6.79%	320bp	1-Apr-13	1-Apr-11	$104.13	$10,176	16.2x	0.7x	13%
8.375%	Sr Nts	Hold	1-Apr-17	Ba2/BBB-	$3500	$107.50	6.97%	313bp	1-Apr-15	1-Apr-12	$104.19	$10,176	16.2x	0.7x	13%
8.750%	Sr Nts[2]	Hold	1-Jun-11	Baa2/BBB-	$108	$105.82	6.54%	342bp	1-Jun-11	nc	nc	$10,176	16.2x	0.7x	13%
7.125%	Sr Nts[2]	Hold	1-Nov-27	Baa2/BBB-	$115	$101.43	6.99%	252bp	1-Nov-27	nc	nc	$10,176	16.2x	0.7x	13%
9.500%	Sr Nts[2]	Hold	1-Jun-31	Baa2/BBB-	$194	$126.87	7.11%	254bp	1-Jun-31	nc	nc	$10,176	16.2x	0.7x	13%
6.125%	Sr Nts[2]	Hold	15-Mar-34	Baa2/BBB-	$150	$88.99	7.06%	241bp	15-Mar-34	nc	nc	$10,176	16.2x	0.7x	13%
Fortescue Metals Group Ltd[3]															
10.625%	Sr Nts	NR	1-Sep-16	B1/B+	$1080	$117.50	7.70%	370bp	1-Sep-16	nc	nc	$1	0.0x	NM	11%
10.000%	Sr Nts	NR	1-Sep-13	B1/B+	$320	$110.75	7.46%	380bp	1-Sep-13	nc	nc	$1	0.0x	NM	11%
MISCELLANEOUS															
Allegheny Technologies															
8.375%	Sr Nts	NR	15-Dec-11	Baa3/BBB-	$300	$104.73	6.83%	357bp	15-Dec-11	nc	nc	$1,171	3904.3x	0.4x	8%
Graftech Finance Inc.															
10.250%	Sr Nts	NR	15-Feb-12	Ba3/BB-	$39	$103.75	6.85%	446bp	15-Feb-09	15-Feb-09	$101.71	$301	10.4x	1.1x	10%
Metals USA[4]															
11.125%	Sr Sec Nts	Hold	1-Dec-15	B3/CCC	$275	$105.50	9.80%	611bp	1-Dec-13	1-Dec-10	$105.56	$152	2.4x	4.0x	62%
8.698%	HoldCo FRNs	Buy	1-Jul-12	Caa1/CCC /*+	$300	$94.75	10.42%	nm	nm	21-Jul-08	$102.00	$152	2.4x	6.0x	92%
PNA Group[5]															
10.750%	Sr Nts	NR	1-Sep-16	B3/B-	$250	$116.50	6.49%	330bp	1-Sep-11	1-Sep-11	$105.38	$120	2.6x	5.0x	54%
9.676%	HoldCo FRNs	NR	15-Feb-13	Caa1 /*+/B- /*+	$170	$100.50	9.47%	nm	nm	21-Jul-08	$102.00	$120	2.6x	6.4x	70%
Russel Metals[6]															
6.375%	Sr Nts	NR	1-Mar-14	Ba2/BB	$175	$94.50	7.58%	386bp	1-Mar-14	1-Mar-09	$103.19	$201	27.1x	0.9x	10%
Reliance Steel & Aluminum Co.															
6.850%	Sr Nts	NR	15-Nov-36	Baa3 /*-/BBB-	$250	$92.48	7.49%	281bp	15-Nov-36	nc	nc	$806	10.7x	1.4x	18%
Ryerson Inc.[7]															
12.000%	Sr Sec Nts	Buy	1-Nov-15	B2/B+	$425	$99.75	12.04%	814bp	1-Nov-15	1-Nov-11	$106.00	$228	2.5x	5.3x	61%
10.248%	Sr Sec FRNs	Buy	1-Nov-14	B2/B+	$150	na	na	nm	nm	1-Nov-09	$106.00	$228	2.5x	5.3x	61%

Note: EBITDA is Adjusted EBITDA. Interest Expense is based on LTM values.
1. Freeport-McMoRan EBITDA presented pro forma for Phelps Dodge transaction.
2. Former Phelps Dodge notes now guaranteed by Freeport.
3. Fortescue (FMGAU) values translated using December 31, 2007 exchange rates.
4. Metals USA enterprise value estimated using a 6.5x multiple of LTM EBITDA. Interest expense at OpCo level.
5. PNA Group enterprise value represents proposed transaction value.
6. Russel Metals data presented in $CAD.
7. Ryerson enterprise value estimated using purchase price at time of transaction.

Sources: Company reports and JPMorgan.

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Relative value analysis: ranked by YTW

Issuer	Coupon	Maturity	Outstanding	Moody's	S&P	Price	YTW	STW	YTW Date	LTM EBITDA	Enterprise Value	EBITDA/ Interest	Debt/ EBITDA	Debt/ EV
Indalex Holding	11.500%	01-Feb-14	198	Caa3	CCC+	60.00	25.16%	2,145bp	01-Feb-14	$29	$270	0.9x	10.8x	116%
Aleris International Inc	10.000%	15-Dec-16	400	Caa1	B-	73.00	15.90%	1,187bp	15-Dec-16	$362	$2,356	1.7x	7.7x	118%
Wise Metals	10.250%	15-May-12	150	Ca	CC	89.75	13.72%	1,036bp	15-May-12	-$15	nm	nm	nm	
Aleris International Inc	9.000%	15-Dec-14	600	B3	B-	84.00	12.69%	889bp	15-Dec-14	$362	$2,356	1.7x	6.6x	101%
Ryerson Inc.	12.000%	01-Nov-15	425	B2	B+	99.75	12.04%	814bp	01-Nov-15	$228	$1,980	2.5x	5.3x	61%
RathGibson	11.250%	15-Feb-14	200	B3	B	97.25	11.92%	821bp	15-Feb-14	$48	$310	1.9x	5.8x	89%
Algoma Steel	9.875%	15-Jun-15	450	Caa1	B-	95.50	10.81%	695bp	15-Jun-15	$135	$1,578	2.0x	6.8x	58%
Metals USA	11.125%	01-Dec-15	275	B3	CCC	105.50	9.80%	611bp	01-Dec-13	$152	$987	2.4x	4.0x	62%
California Steel Industries	6.125%	15-Mar-14	150	Ba3	BB-	87.25	9.02%	530bp	15-Mar-14	$54	$354	5.4x	2.8x	42%
Novelis	7.250%	15-Feb-15	1,399	B3	B	94.00	8.44%	462bp	15-Feb-15	$415	$4,500	2.0x	6.6x	61%
FMG Finance Pty Ltd	10.625%	01-Sep-16	1,080	B1	B+	117.50	7.70%	370bp	01-Sep-16	$1	$33,694	0.0x	nm	11%
Russel Metals	6.375%	01-Mar-14	175	Ba2	BB	94.50	7.58%	386bp	01-Mar-14	$201	$1,926	27.1x	0.9x	10%
FMG Finance Pty Ltd	10.000%	01-Sep-13	320	B1	B+	110.75	7.46%	380bp	01-Sep-13	$1	$33,694	0.0x	nm	11%
Century Aluminum	7.500%	15-Aug-14	250	B1	BB-	100.25	7.42%	400bp	15-Aug-12	$378	$2,958	22.5x	1.1x	15%
Massey Energy	6.875%	15-Dec-13	760	B2	B+	98.38	7.24%	355bp	15-Dec-13	$437	$7,991	8.8x	2.5x	14%
Steel Dynamics	6.750%	01-Apr-15	500	Ba2	BB+	97.75	7.17%	333bp	01-Apr-15	$944	$9,368	12.1x	2.1x	22%
Steel Dynamics	6.750%	01-Apr-15	500	Ba2	BB+	97.75	7.17%	333bp	01-Apr-15	$944	$9,368	12.1x	2.1x	22%
Steel Dynamics	7.375%	01-Nov-12	700	Ba2	BB+	100.75	7.17%	369bp	01-Nov-12	$944	$9,368	12.1x	2.1x	22%
Phelps Dodge	9.500%	01-Jun-31	194	Baa2	BBB-	126.87	7.11%	254bp	01-Jun-31	$10,176	$58,019	16.2x	0.7x	13%
Phelps Dodge	6.125%	15-Mar-34	150	Baa2	BBB-	88.99	7.06%	241bp	15-Mar-34	$10,176	$58,019	16.2x	0.7x	13%
Arch Western Finance	6.750%	01-Jul-13	950	B1	BB-	98.75	7.05%	341bp	01-Jul-13	$553	$12,256	7.3x	2.6x	12%
Phelps Dodge	7.125%	01-Nov-27	115	Baa2	BBB-	101.43	6.99%	252bp	01-Nov-27	$10,176	$58,019	16.2x	0.7x	13%
Freeport-McMoRan Copper & Gold	8.375%	01-Apr-17	3,500	Ba2	BBB-	107.50	6.97%	313bp	01-Apr-15	$10,176	$58,019	16.2x	0.7x	13%
UCAR Finance	10.250%	15-Feb-12	39	Ba3	BB-	103.75	6.85%	446bp	15-Feb-09	$301	$3,079	10.4x	1.1x	10%
Massey Energy	6.625%	15-Nov-10	360	B2	B+	99.50	6.85%	386bp	15-Nov-10	$437	$7,991	8.8x	2.5x	14%
Allegheny Technologies Inc	8.375%	15-Dec-11	300	Baa3	BBB-	104.73	6.83%	357bp	15-Dec-11	$1,171	$6,524	3904.3x	0.4x	8%
AK Steel	7.750%	15-Jun-12	550	B1	BB-	101.75	6.79%	391bp	15-Jun-10	$908	$8,303	16.4x	0.7x	8%
Freeport-McMoRan Copper & Gold	8.250%	01-Apr-15	1,500	Ba2	BBB-	105.88	6.79%	320bp	01-Apr-13	$10,176	$58,019	16.2x	0.7x	13%
Peabody Energy	6.875%	15-Mar-13	650	Ba1	BB	100.25	6.77%	370bp	15-Mar-11	$994	$25,789	4.3x	3.4x	13%
Peabody Energy	5.875%	15-Apr-16	250	Ba1	BB	94.75	6.75%	279bp	15-Apr-16	$994	$25,789	4.3x	3.4x	13%
US Steel Corp	5.650%	01-Jun-13	300	Baa3	BB+	96.04	6.60%	298bp	01-Jun-13	$1,624	$23,474	11.4x	2.0x	14%
Phelps Dodge	8.750%	01-Jun-11	108	Baa2	BBB-	105.82	6.54%	342bp	01-Jun-11	$10,176	$58,019	16.2x	0.7x	13%
International Steel Group	6.500%	15-Apr-14	500	Baa2	BBB+	99.94	6.51%	278bp	15-Apr-14	$20,098	$173,734	17.9x	1.7x	20%
PNA Group Inc	10.750%	01-Sep-16	250	B3	B-	116.50	6.49%	330bp	01-Sep-11	$120	$1,100	2.6x	5.0x	54%
Freeport-McMoRan	6.875%	01-Feb-14	350	Baa1	BBB-	103.50	5.79%	249bp	01-Feb-12	$10,176	$58,019	16.2x	0.1x	1%
Gerdau Ameristeel	10.375%	15-Jul-11	405	Ba1	BB+	104.00	4.03%	229bp	15-Jul-08	$1,192	$10,565	9.4x	2.6x	29%

Sources: Company reports and JPMorgan.

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Relative value analysis: ranked by Debt/EV

Issuer	Coupon	Maturity	Outstanding	Moody's	S&P	Price	YTW	STW	YTW Date	LTM EBITDA	Enterprise Value	EBITDA/ Interest	Debt/ EBITDA	Debt/ EV
Aleris International Inc	10.000%	15-Dec-16	400	Caa1	B-	73.00	15.90%	1,187bp	15-Dec-16	$362	$2,356	1.7x	7.7x	118%
Indalex Holding	11.500%	01-Feb-14	198	Caa3	CCC+	60.00	25.16%	2,145bp	01-Feb-14	$29	$270	0.9x	10.8x	116%
Aleris International Inc	9.000%	15-Dec-14	600	B3	B-	84.00	12.69%	889bp	15-Dec-14	$362	$2,356	1.7x	6.6x	101%
RathGibson	11.250%	15-Feb-14	200	B3	B	97.25	11.92%	821bp	15-Feb-14	$48	$310	1.9x	5.8x	89%
Metals USA	11.125%	01-Dec-15	275	B3	CCC	105.50	9.80%	611bp	01-Dec-13	$152	$987	2.4x	4.0x	62%
Novelis	7.250%	15-Feb-15	1,399	B3	B	94.00	8.44%	462bp	15-Feb-15	$415	$4,500	2.0x	6.6x	61%
Ryerson Inc.	12.000%	01-Nov-15	425	B2	B+	99.75	12.04%	814bp	01-Nov-15	$228	$1,980	2.5x	5.3x	61%
Algoma Steel	9.875%	15-Jun-15	450	Caa1	B-	95.50	10.81%	695bp	15-Jun-15	$135	$1,578	2.0x	6.8x	58%
PNA Group Inc	10.750%	01-Sep-16	250	B3	B-	116.50	6.49%	330bp	01-Sep-11	$120	$1,100	2.6x	5.0x	54%
California Steel Industries	6.125%	15-Mar-14	150	Ba3	BB-	87.25	9.02%	530bp	15-Mar-14	$54	$354	5.4x	2.8x	42%
Gerdau Ameristeel	10.375%	15-Jul-11	405	Ba1	BB+	104.00	4.03%	229bp	15-Jul-08	$1,192	$10,565	9.4x	2.6x	29%
Steel Dynamics	7.375%	01-Nov-12	700	Ba2	BB+	100.75	7.17%	369bp	01-Nov-12	$944	$9,368	12.1x	2.1x	22%
Steel Dynamics	6.750%	01-Apr-15	500	Ba2	BB+	97.75	7.17%	333bp	01-Apr-15	$944	$9,368	12.1x	2.1x	22%
Steel Dynamics	6.750%	01-Apr-15	500	Ba2	BB+	97.75	7.17%	333bp	01-Apr-15	$944	$9,368	12.1x	2.1x	22%
International Steel Group	6.500%	15-Apr-14	500	Baa2	BBB+	99.94	6.51%	278bp	15-Apr-14	$20,098	$173,734	17.9x	1.7x	20%
Century Aluminum	7.500%	15-Aug-14	250	B1	BB-	100.25	7.42%	400bp	15-Aug-12	$378	$2,958	22.5x	1.1x	15%
US Steel Corp	5.650%	01-Jun-13	300	Baa3	BB+	96.04	6.60%	298bp	01-Jun-13	$1,624	$23,474	11.4x	2.0x	14%
Massey Energy	6.625%	15-Nov-10	360	B2	B+	99.50	6.85%	386bp	15-Nov-10	$437	$7,991	8.8x	2.5x	14%
Massey Energy	6.875%	15-Dec-13	760	B2	B+	98.38	7.24%	355bp	15-Dec-13	$437	$7,991	8.8x	2.5x	14%
Freeport-McMoRan Copper & Gold	8.250%	01-Apr-15	1,500	Ba2	BBB-	105.88	6.79%	320bp	01-Apr-13	$10,176	$58,019	16.2x	0.7x	13%
Freeport-McMoRan Copper & Gold	8.375%	01-Apr-17	3,500	Ba2	BBB-	107.50	6.97%	313bp	01-Apr-15	$10,176	$58,019	16.2x	0.7x	13%
Phelps Dodge	8.750%	01-Jun-11	108	Baa2	BBB-	105.82	6.54%	342bp	01-Jun-11	$10,176	$58,019	16.2x	0.7x	13%
Phelps Dodge	7.125%	01-Nov-27	115	Baa2	BBB-	101.43	6.99%	252bp	01-Nov-27	$10,176	$58,019	16.2x	0.7x	13%
Phelps Dodge	9.500%	01-Jun-31	194	Baa2	BBB-	126.87	7.11%	254bp	01-Jun-31	$10,176	$58,019	16.2x	0.7x	13%
Phelps Dodge	6.125%	15-Mar-34	150	Baa2	BBB-	88.99	7.06%	241bp	15-Mar-34	$10,176	$58,019	16.2x	0.7x	13%
Peabody Energy	6.875%	15-Mar-13	650	Ba1	BB	100.25	6.77%	370bp	15-Mar-11	$994	$25,789	4.3x	3.4x	13%
Peabody Energy	5.875%	15-Apr-16	250	Ba1	BB	94.75	6.75%	279bp	15-Apr-16	$994	$25,789	4.3x	3.4x	13%
Arch Western Finance	6.750%	01-Jul-13	950	B1	BB-	98.75	7.05%	341bp	01-Jul-13	$553	$12,256	7.3x	2.6x	12%
FMG Finance Pty Ltd	10.625%	01-Sep-16	1,080	B1	B+	117.50	7.70%	370bp	01-Sep-16	$1	$33,694	0.0x	nm	11%
FMG Finance Pty Ltd	10.000%	01-Sep-13	320	B1	B+	110.75	7.46%	380bp	01-Sep-13	$1	$33,694	0.0x	nm	11%
UCAR Finance	10.250%	15-Feb-12	39	Ba3	BB-	103.75	6.85%	446bp	15-Feb-09	$301	$3,079	10.4x	1.1x	10%
Russel Metals	6.375%	01-Mar-14	175	Ba2	BB	94.50	7.58%	386bp	01-Mar-14	$201	$1,926	27.1x	0.9x	10%
Allegheny Technologies Inc	8.375%	15-Dec-11	300	Baa3	BBB-	104.73	6.83%	357bp	15-Dec-11	$1,171	$6,524	3904.3x	0.4x	8%
AK Steel	7.750%	15-Jun-12	550	B1	BB-	101.75	6.79%	391bp	15-Jun-10	$908	$8,303	16.4x	0.7x	8%
Freeport-McMoRan	6.875%	01-Feb-14	350	Baa1	BBB-	103.50	5.79%	249bp	01-Feb-12	$10,176	$58,019	16.2x	0.1x	1%
Wise Metals	10.250%	15-May-12	150	Ca	CC	89.75	13.72%	1,036bp	15-May-12	-$15	nm	nm	nm	

Sources: Company reports and JPMorgan.

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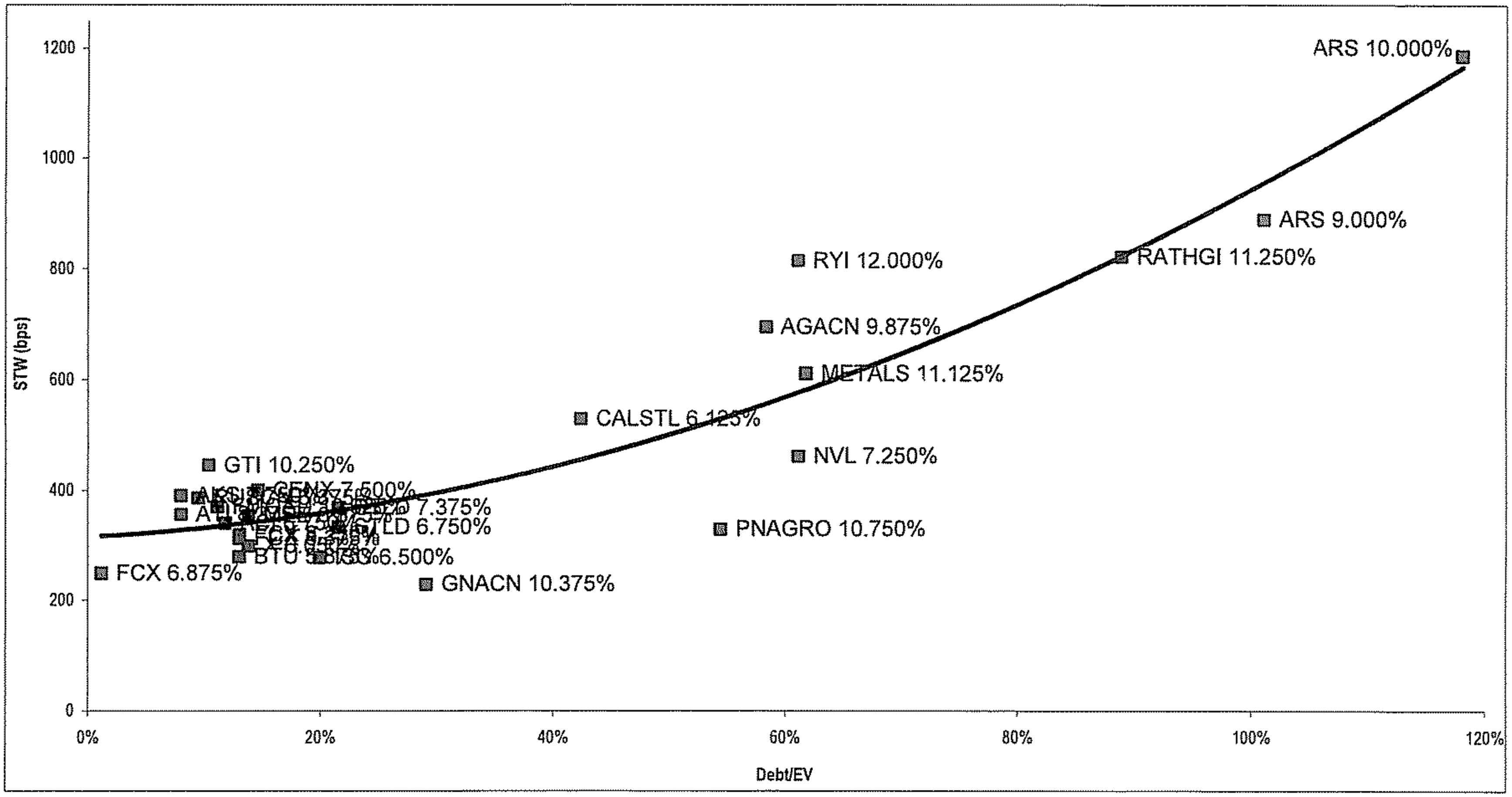
Relative value analysis: STW vs debt/EV



Sources: Company reports and JPMorgan.

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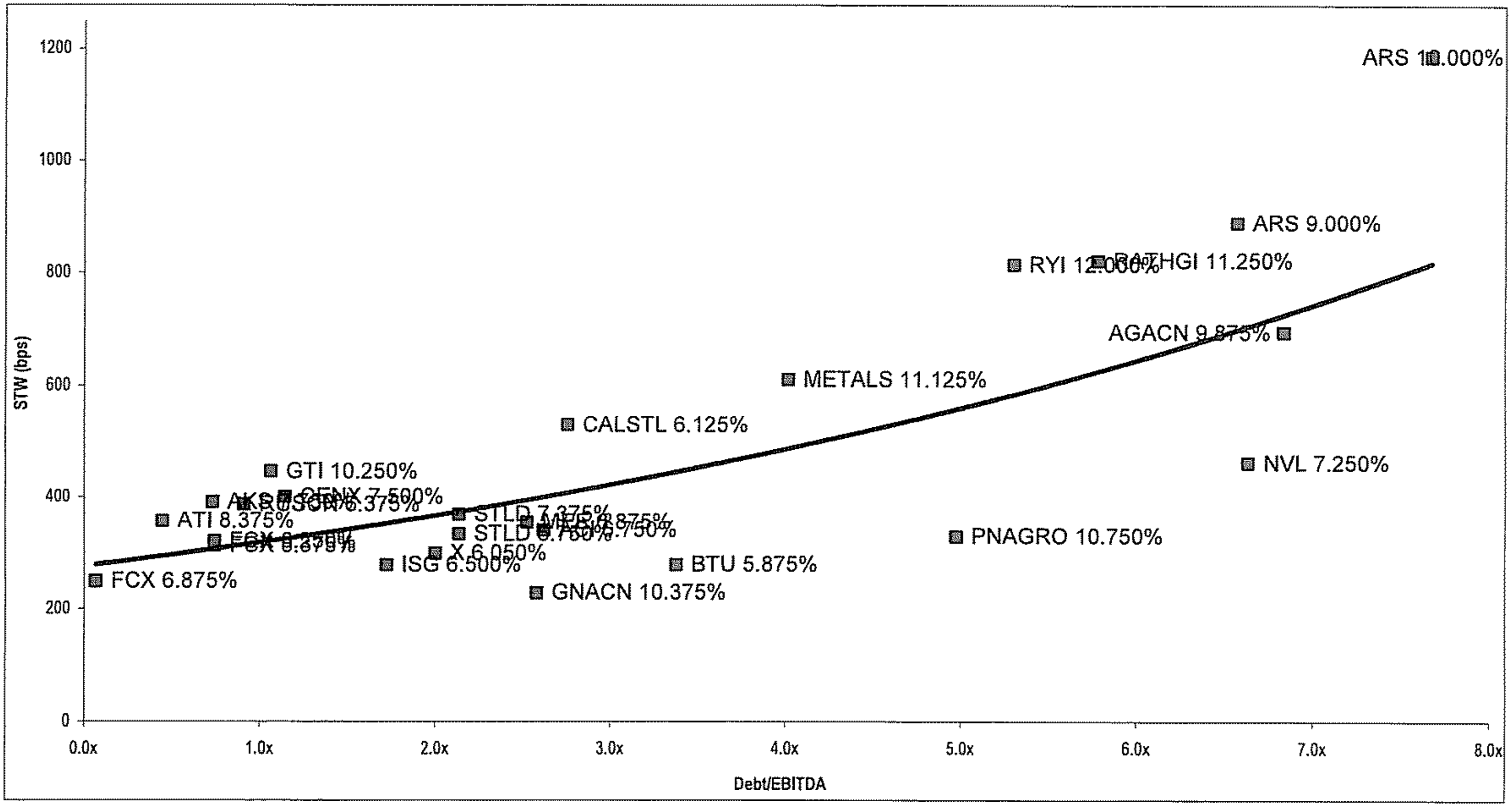
Relative value analysis: STW vs debt/EBITDA



Sources: Company reports and JPMorgan.

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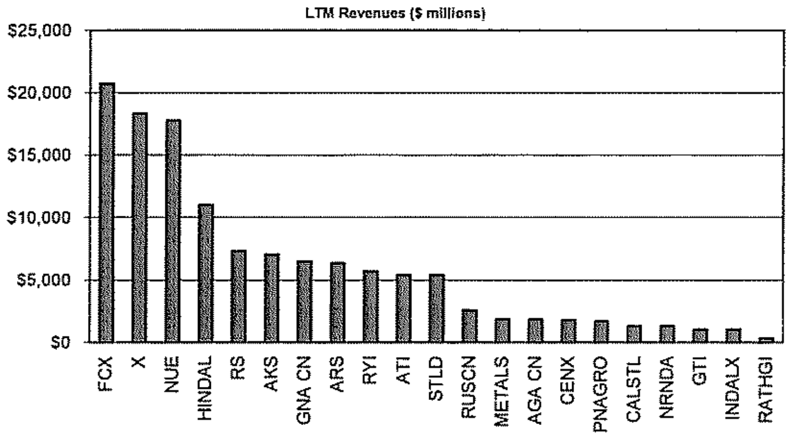
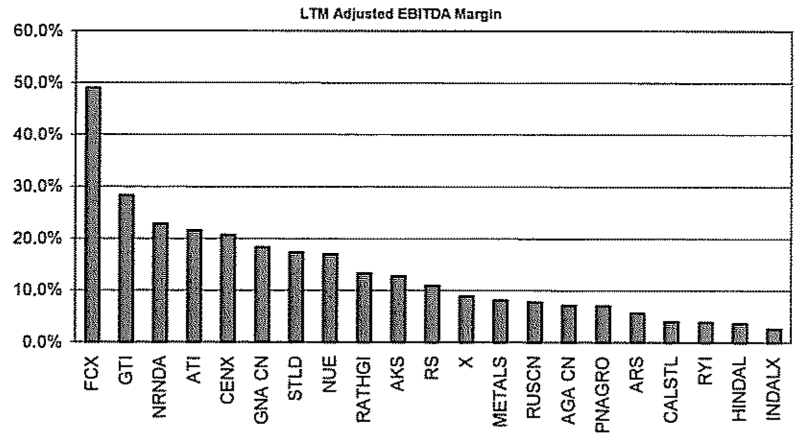
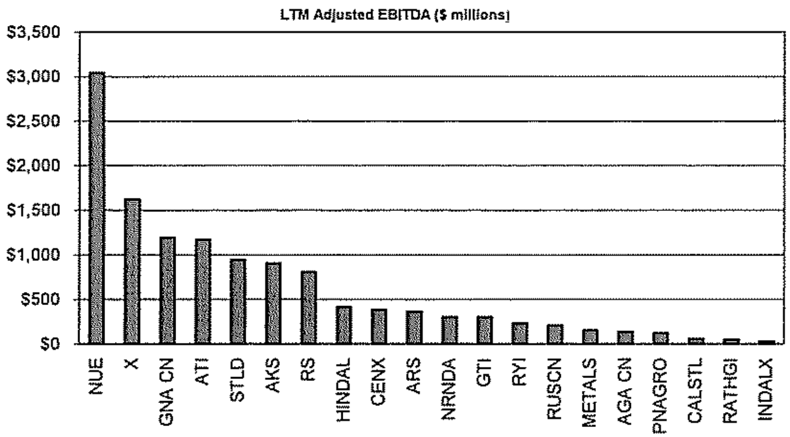
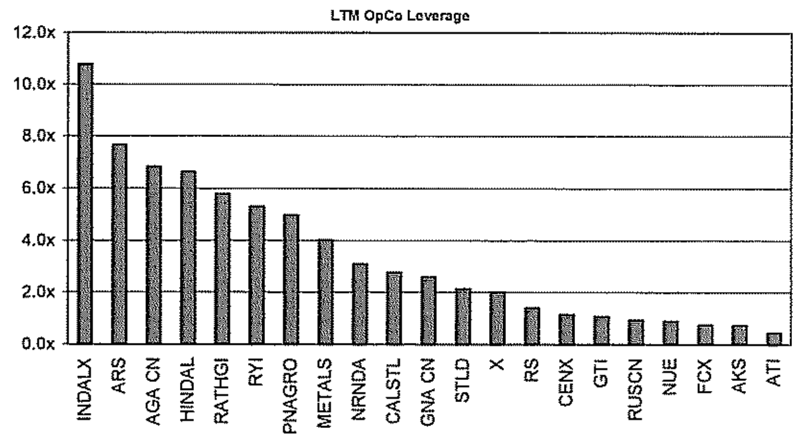
Rankings









Source: JPMorgan and company reports. Note: Freeprot-McMoRan excluded from EBITDA graph for sizing purposes.

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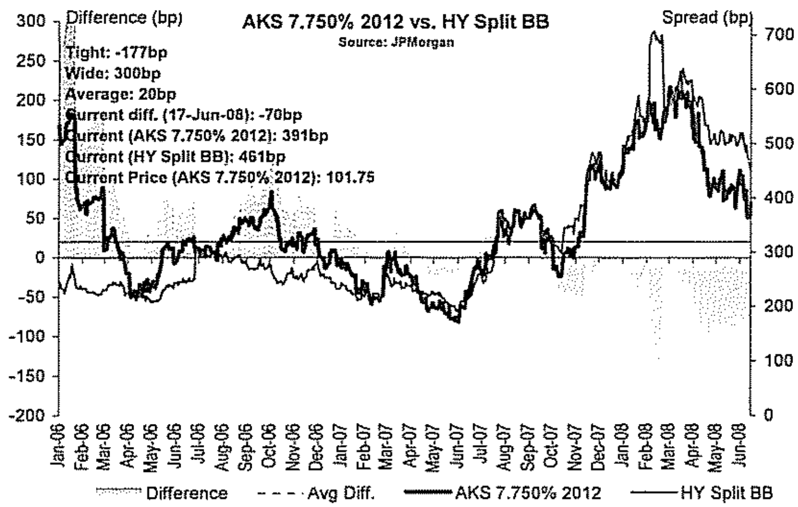
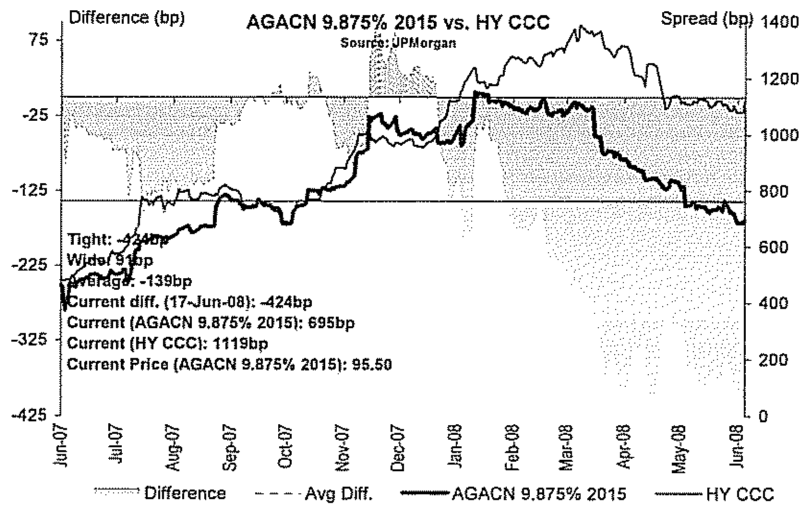
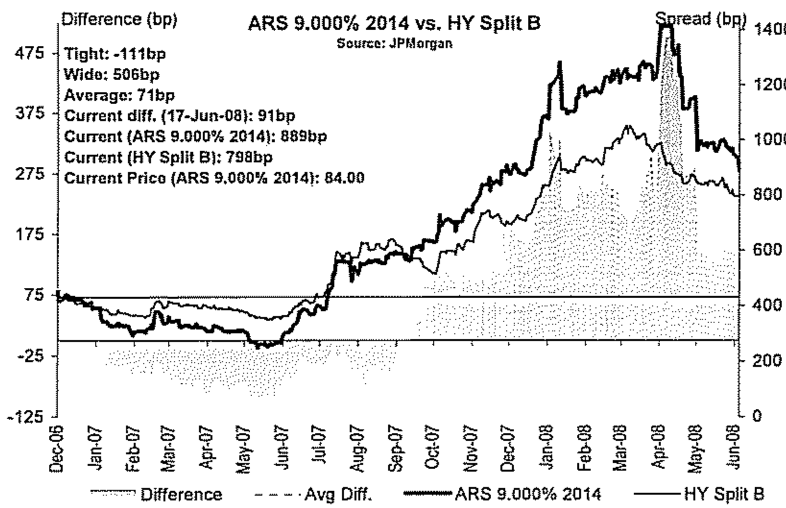
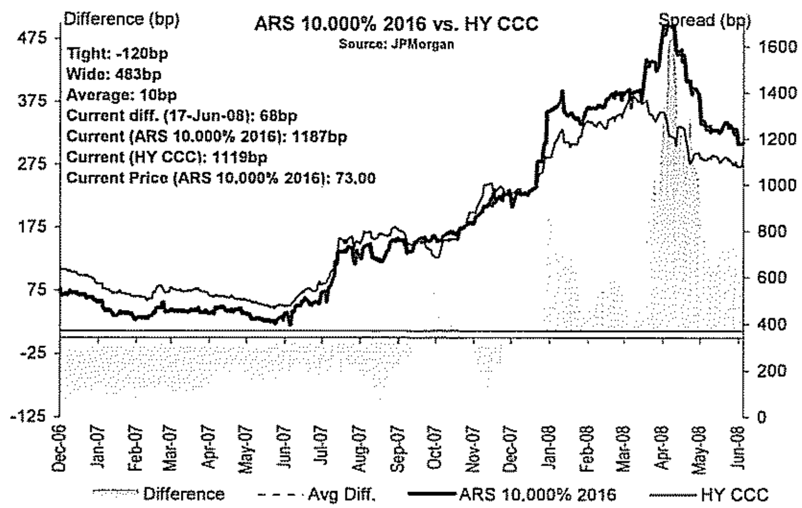
Individual bond trading history









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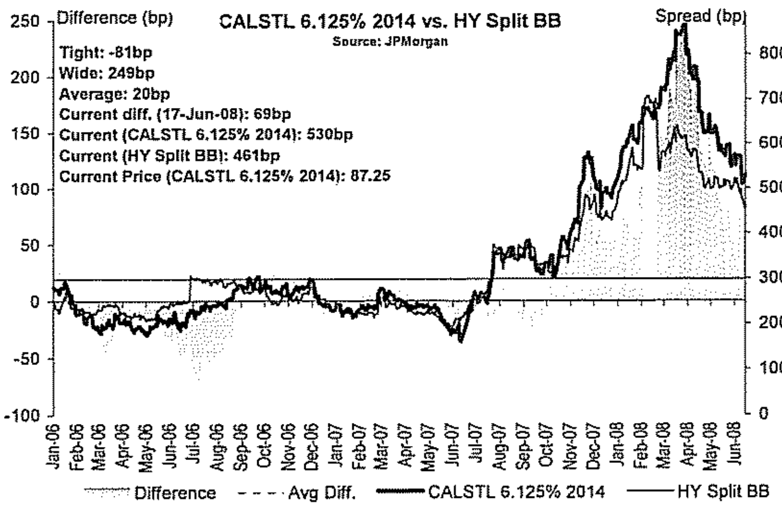
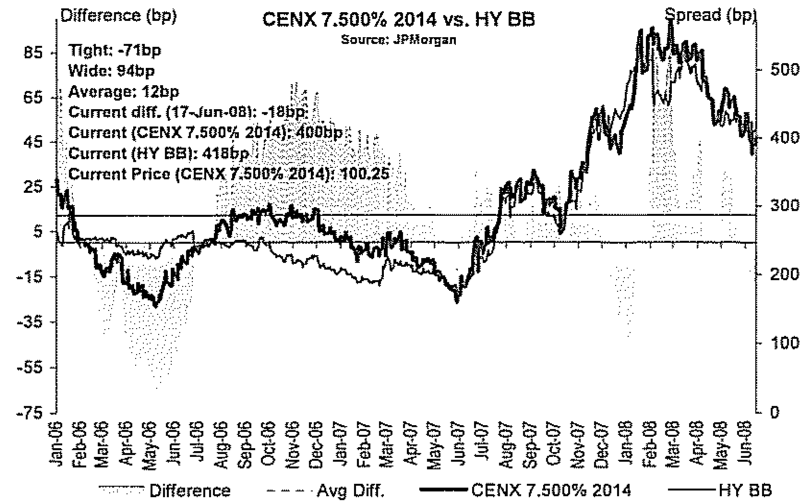
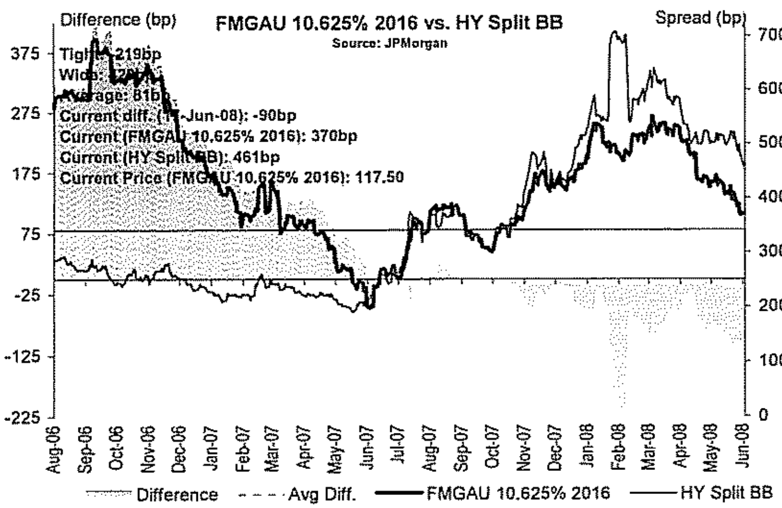
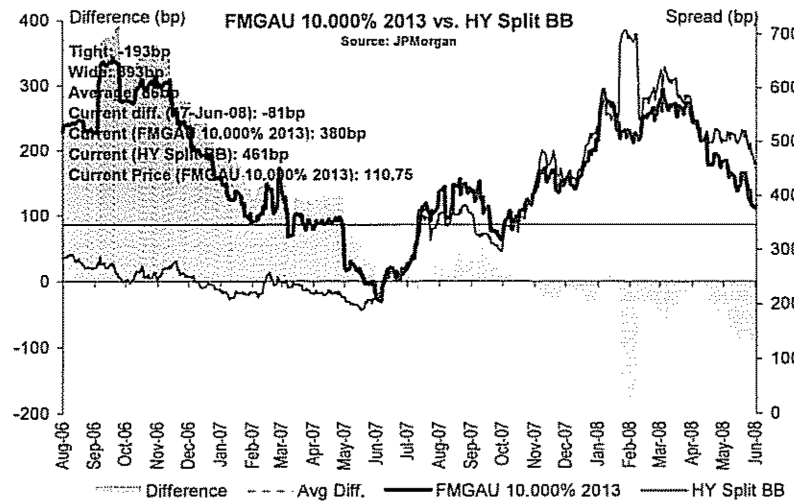
Individual bond trading history (continued)









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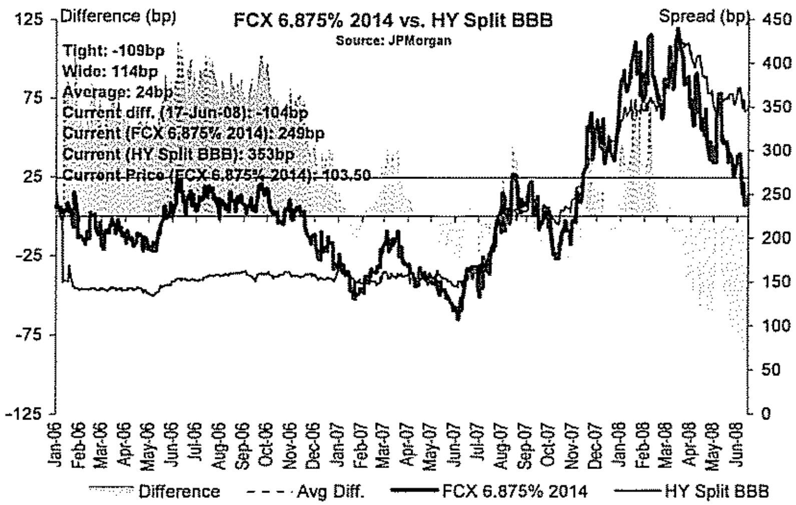
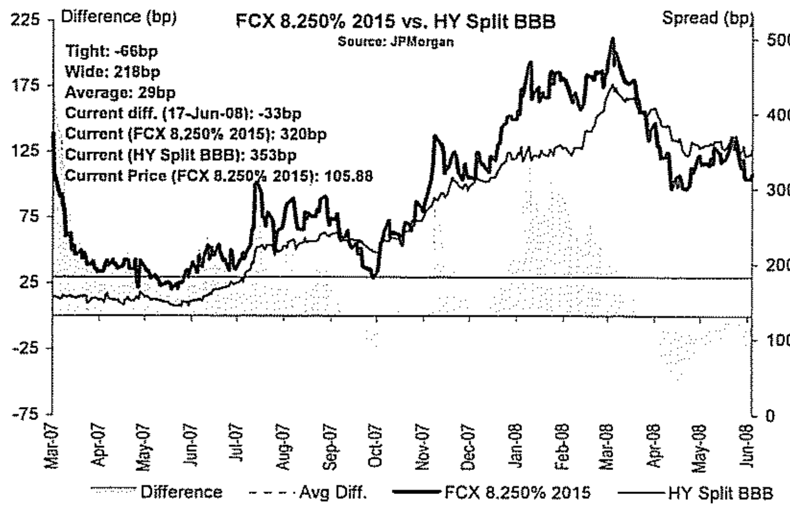
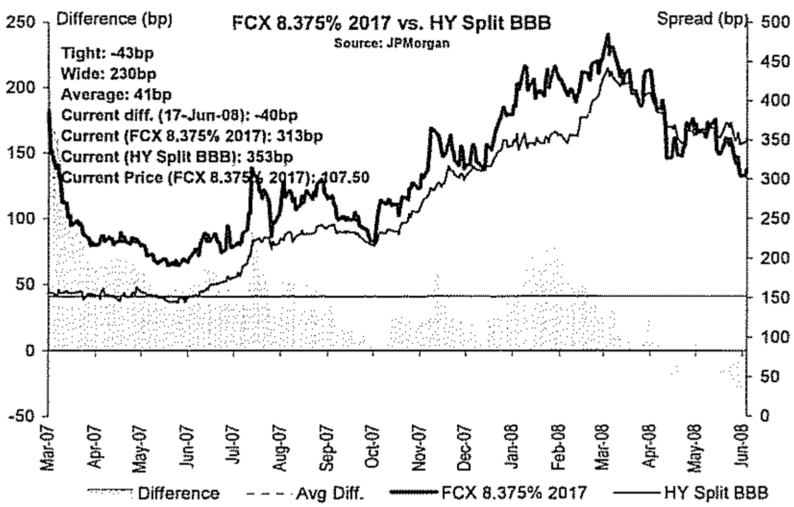
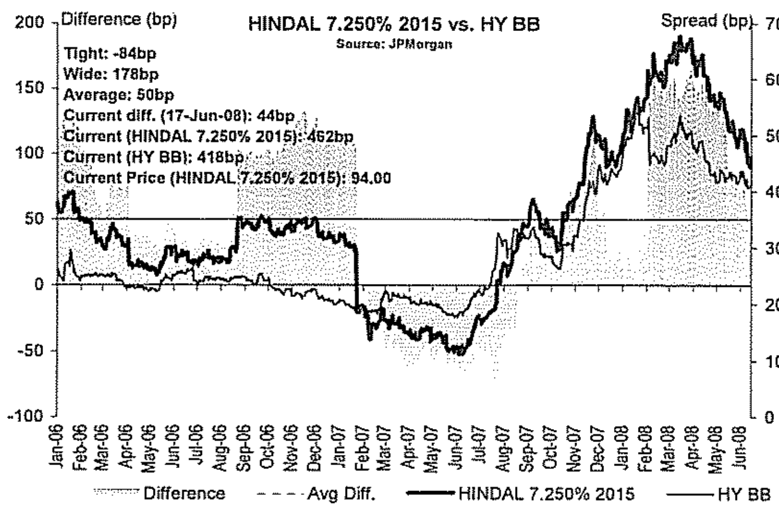
Individual bond trading history (continued)









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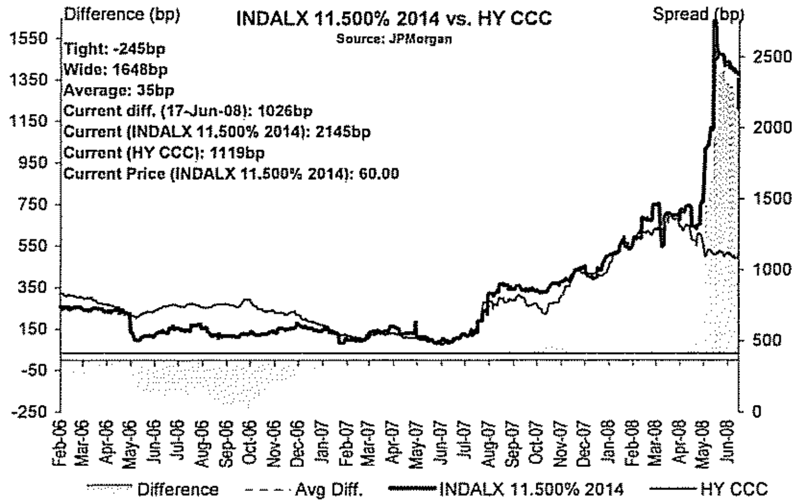
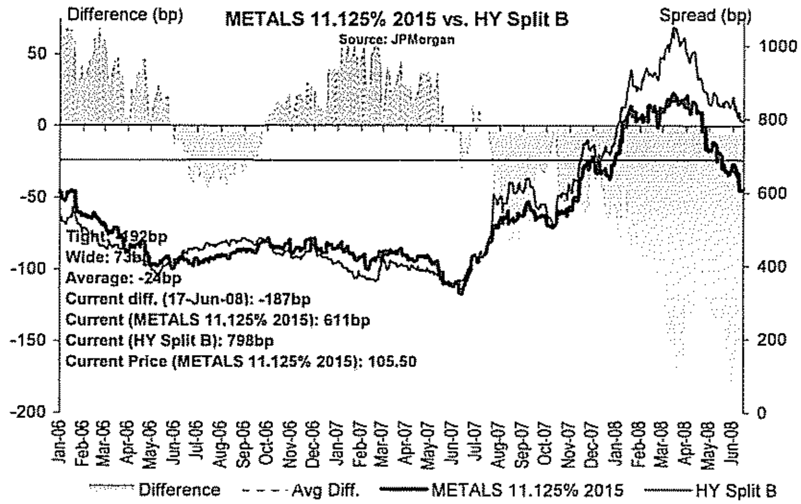
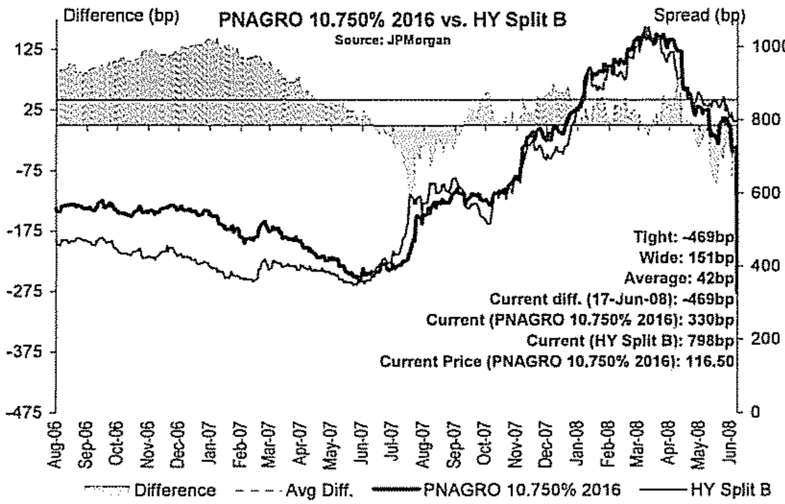
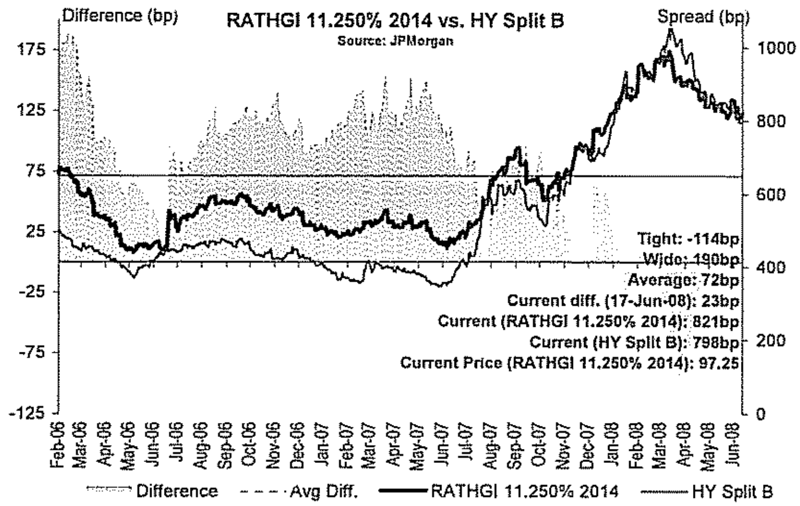
Individual bond trading history (continued)









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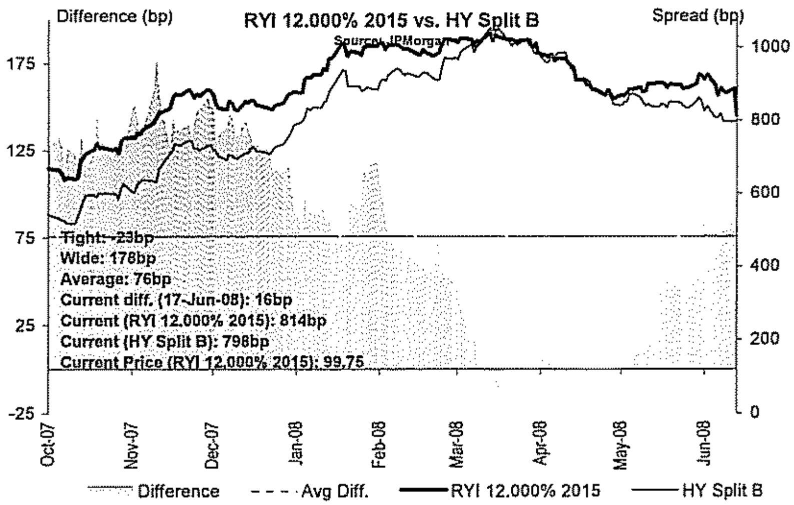
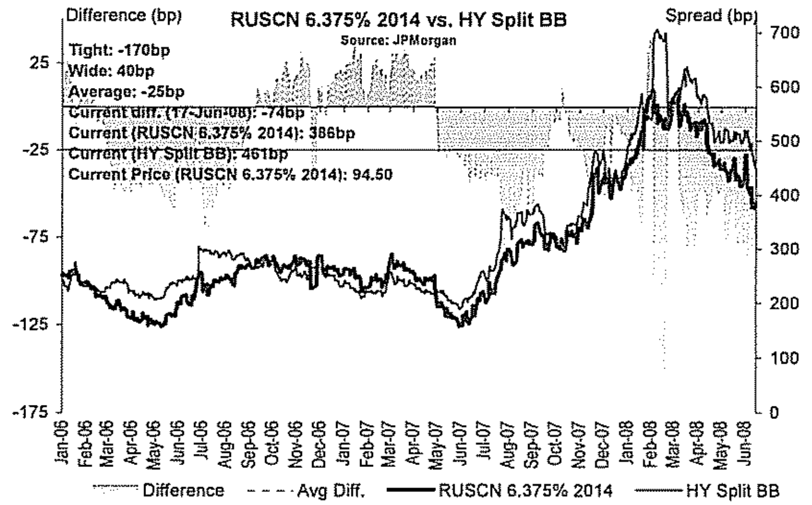
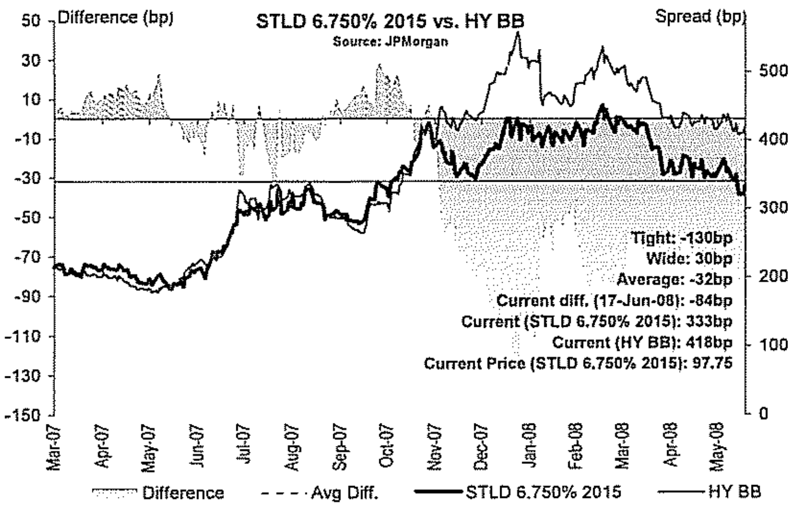
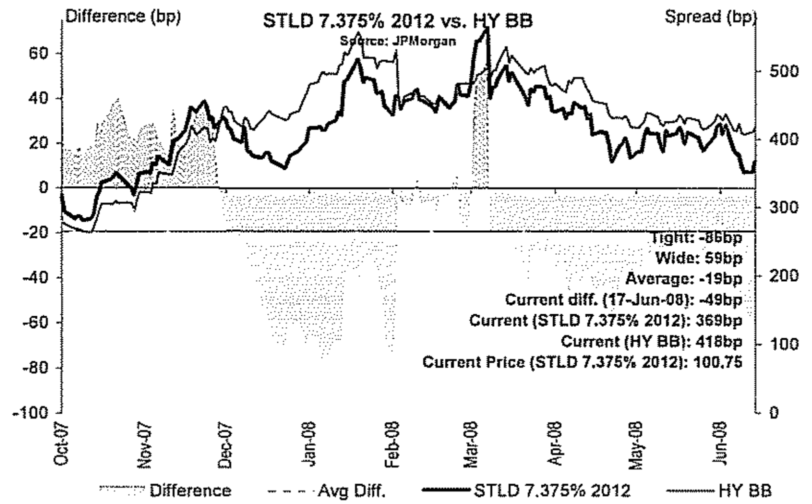
Individual bond trading history (continued)









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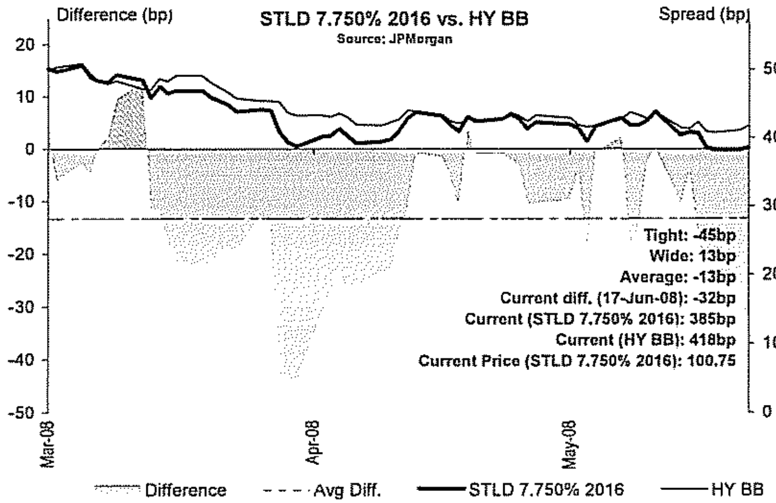
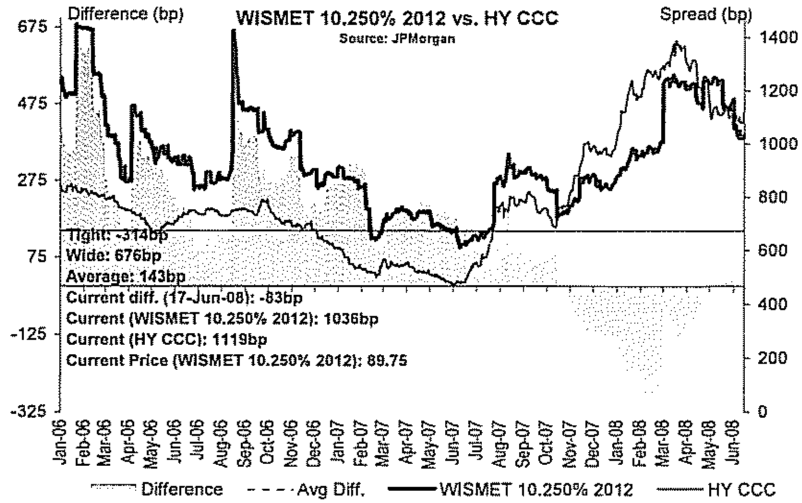
Individual bond trading history (continued)





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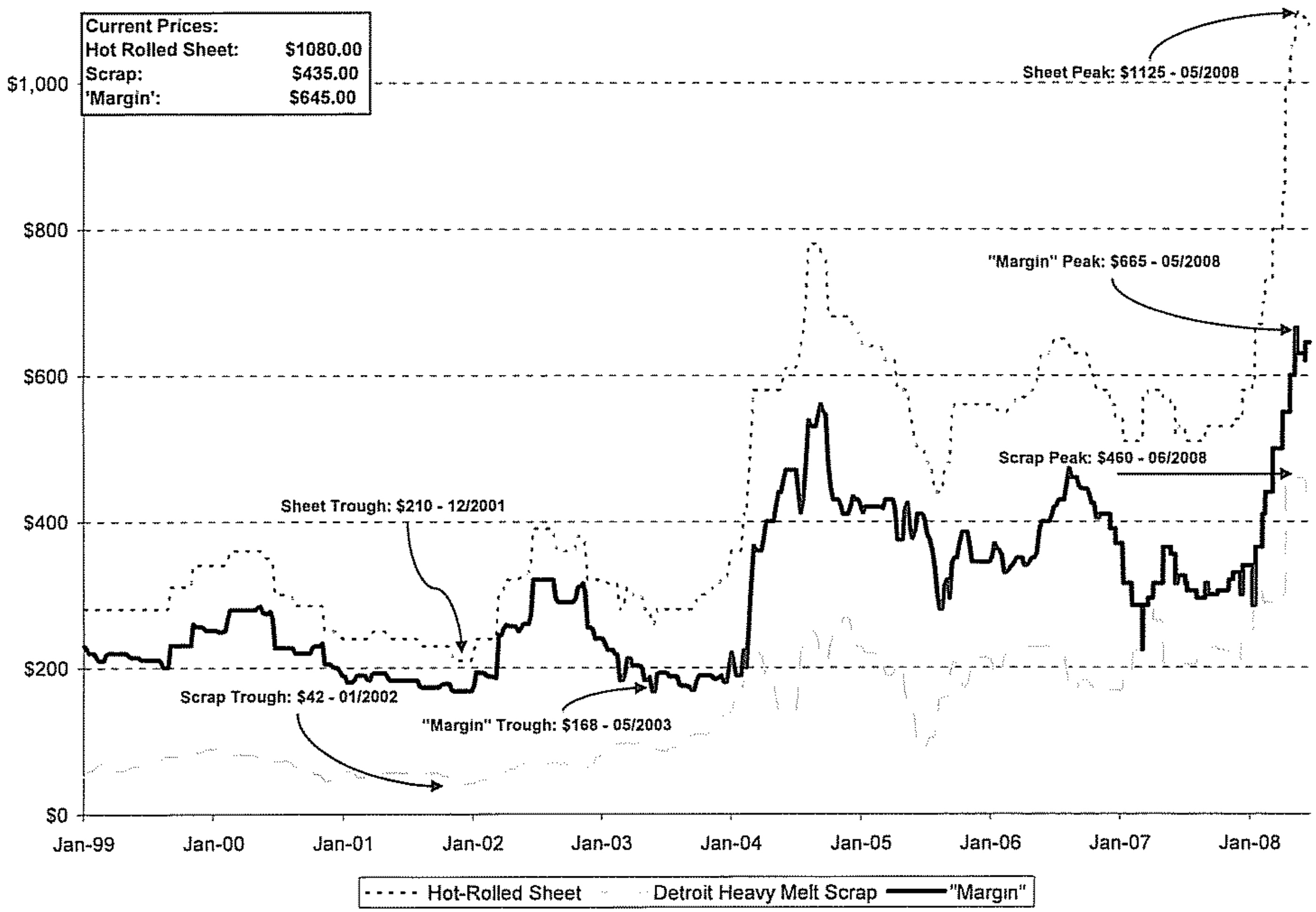
Domestic steel prices: flat-rolled and scrap ($/ton)



Source: American Metal Market (AMM).

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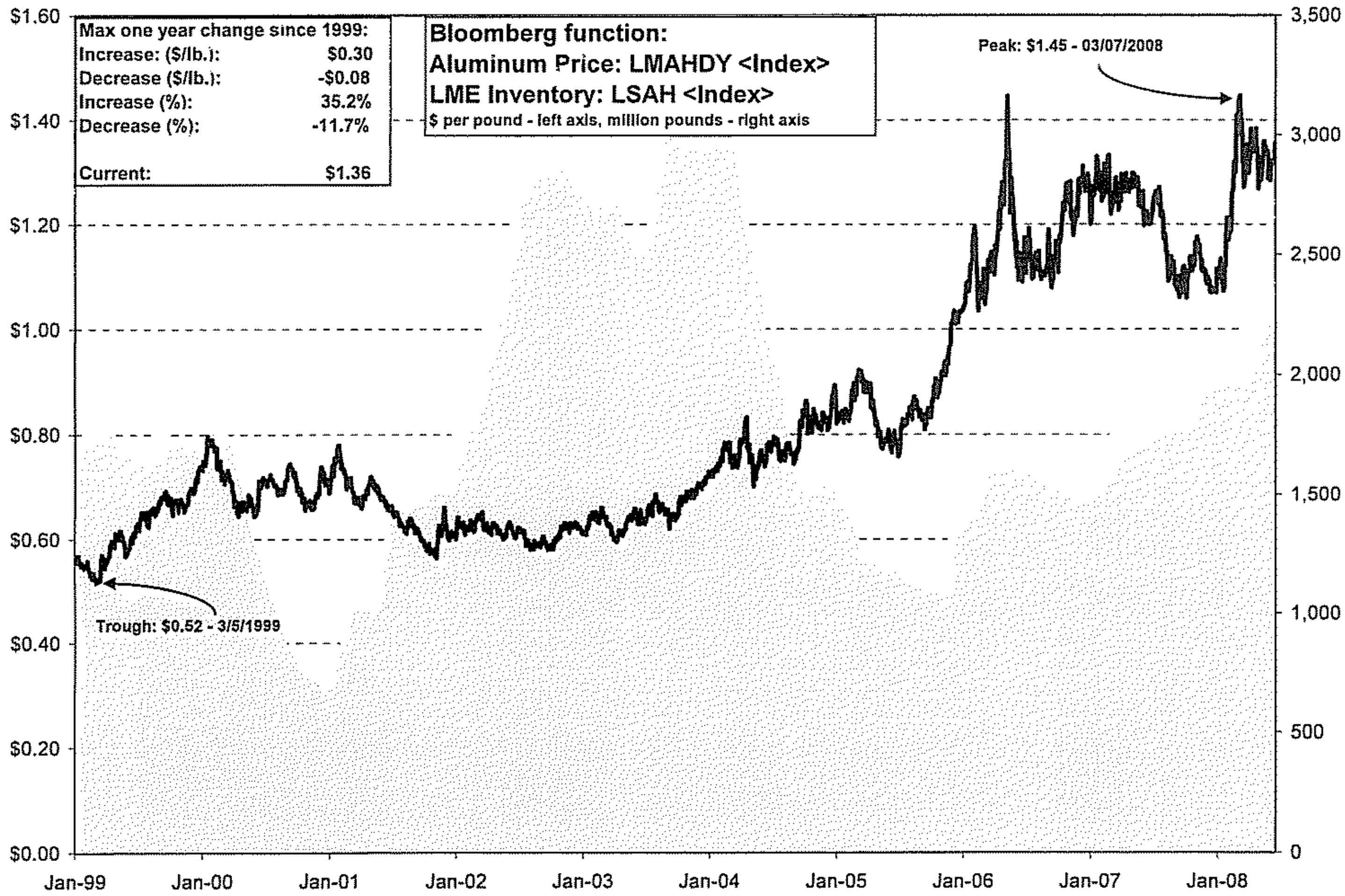
LME aluminum spot price ($/lb.)



Source: Bloomberg.

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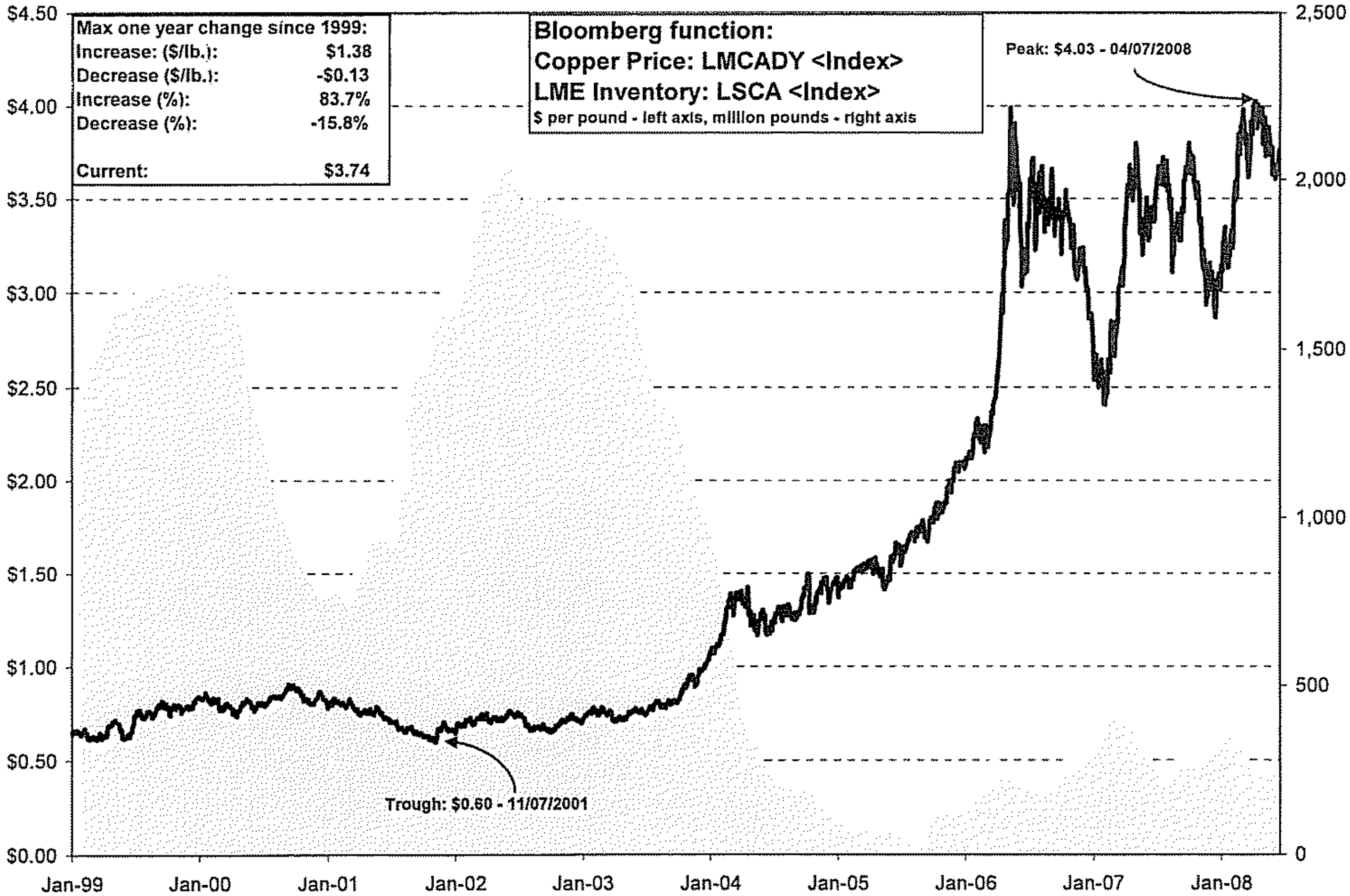
LME copper spot price ($/lb.)



Source: Bloomberg.

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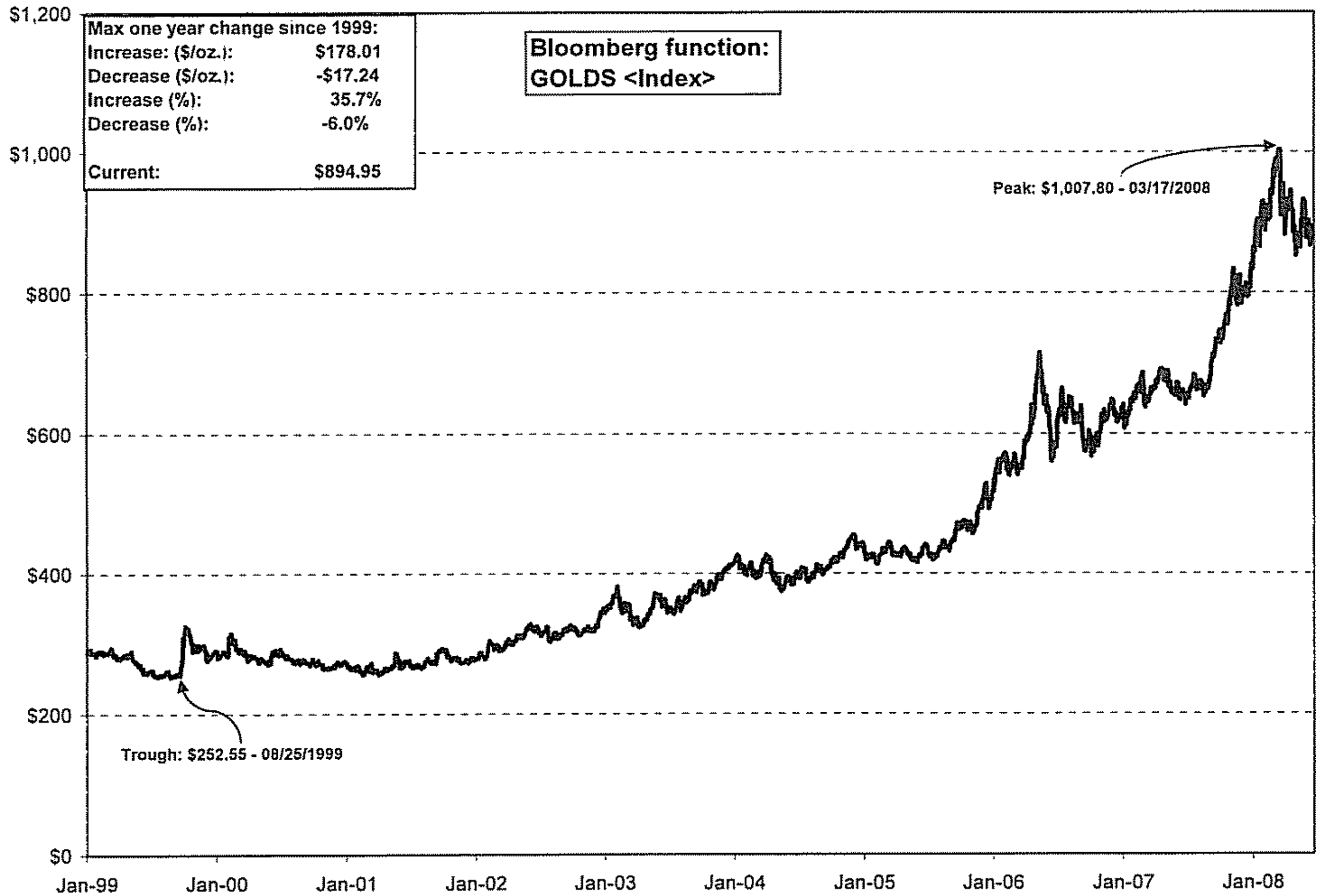
Gold spot price ($/oz.)



Source: Bloomberg.

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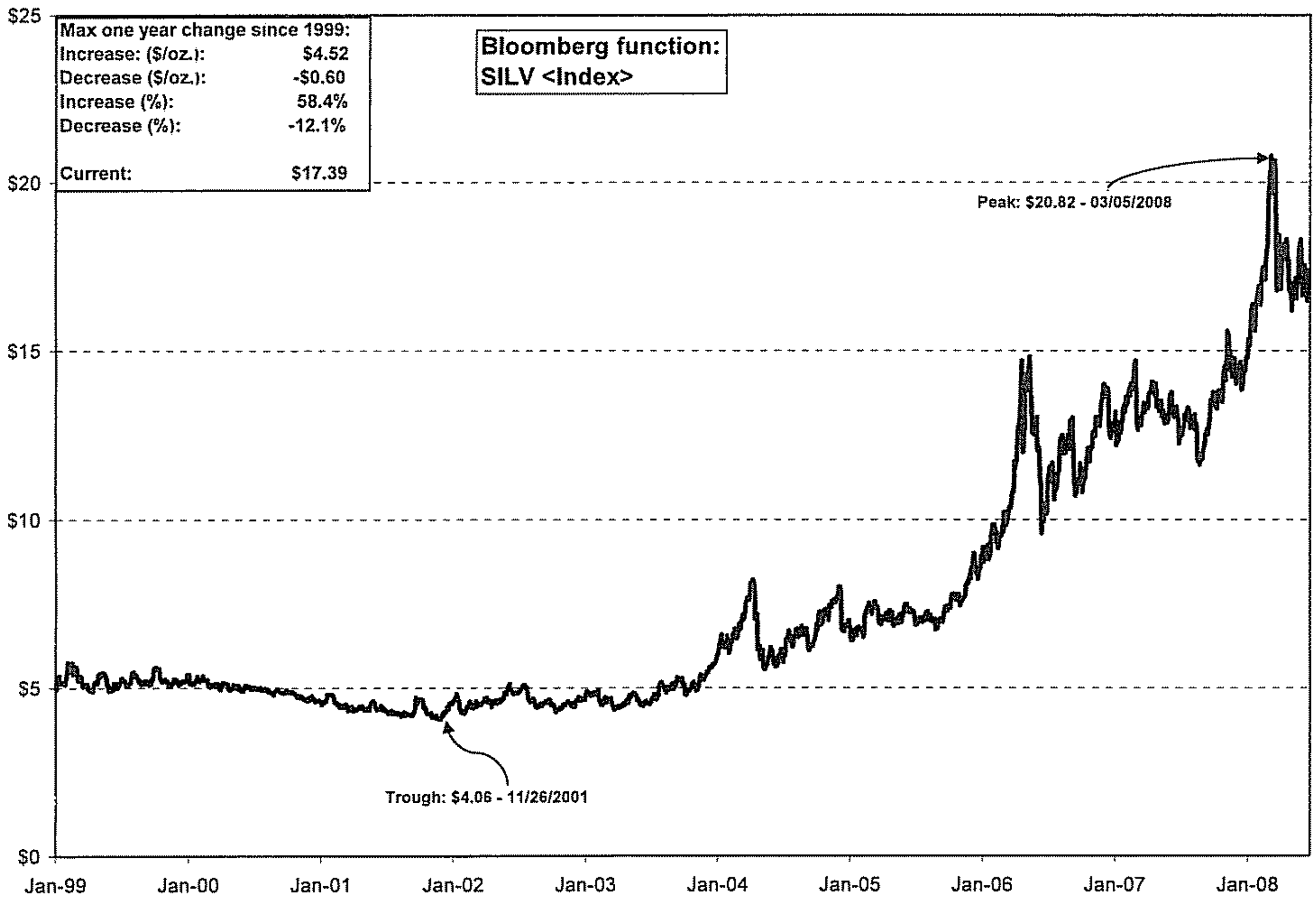
Silver spot price ($/oz.)



Source: Bloomberg.

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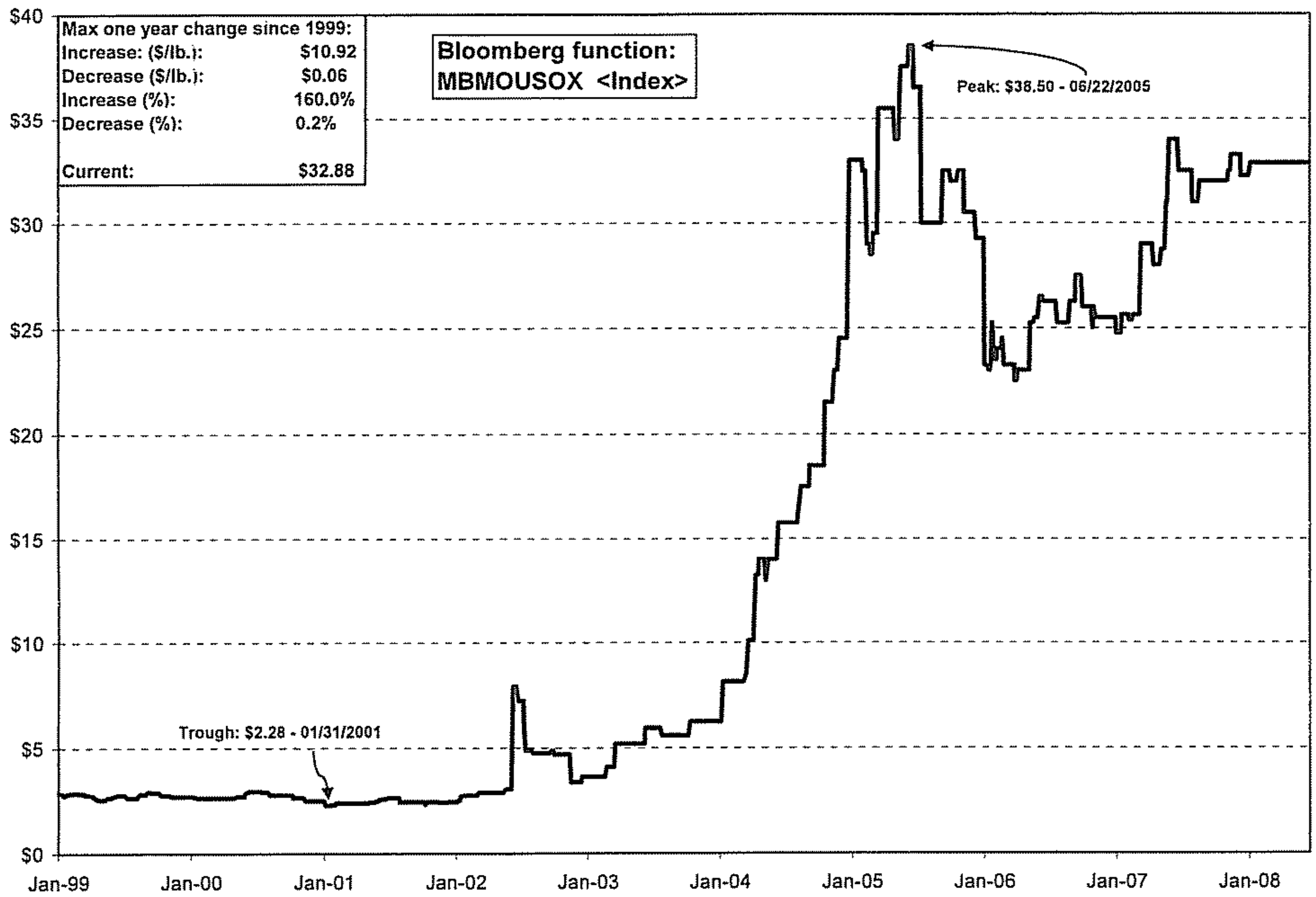
Molybdenum (canned molybdic oxide) price ($/lb.)



Source: Bloomberg.

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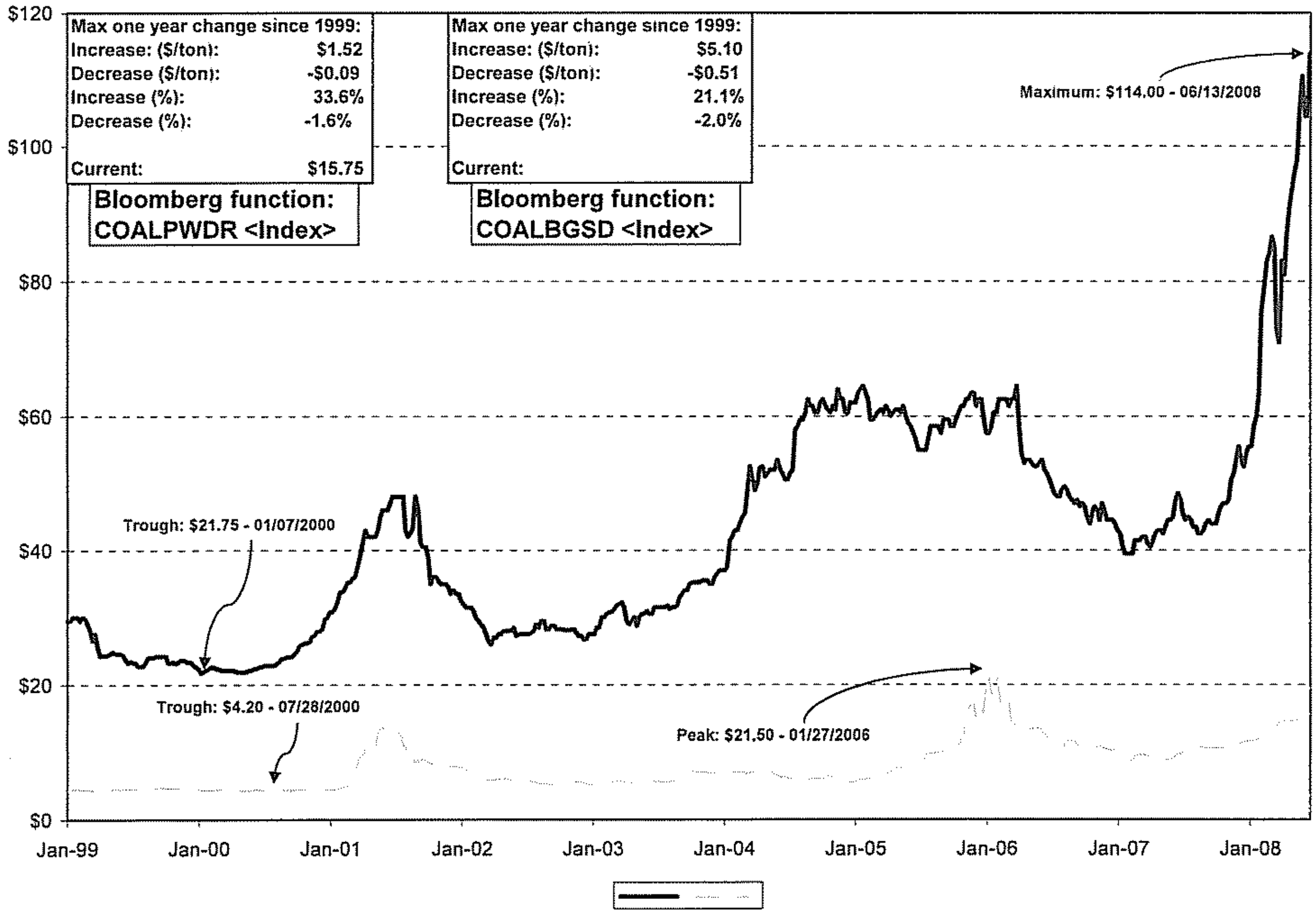
Coal spot prices ($/ton)



Source: Bloomberg.

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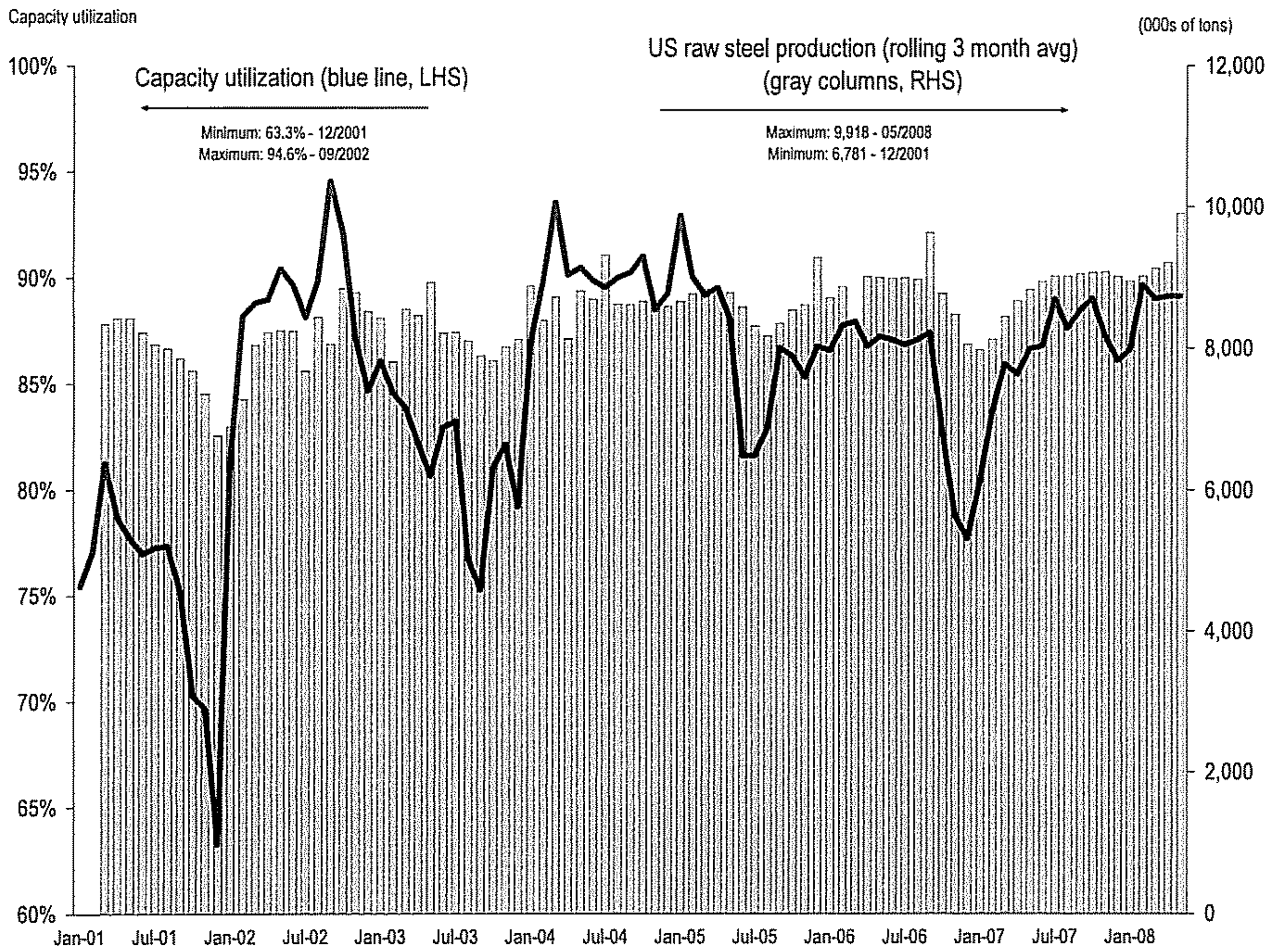
US steel industry: monthly capacity utilization vs raw steel production



Source: AISI.

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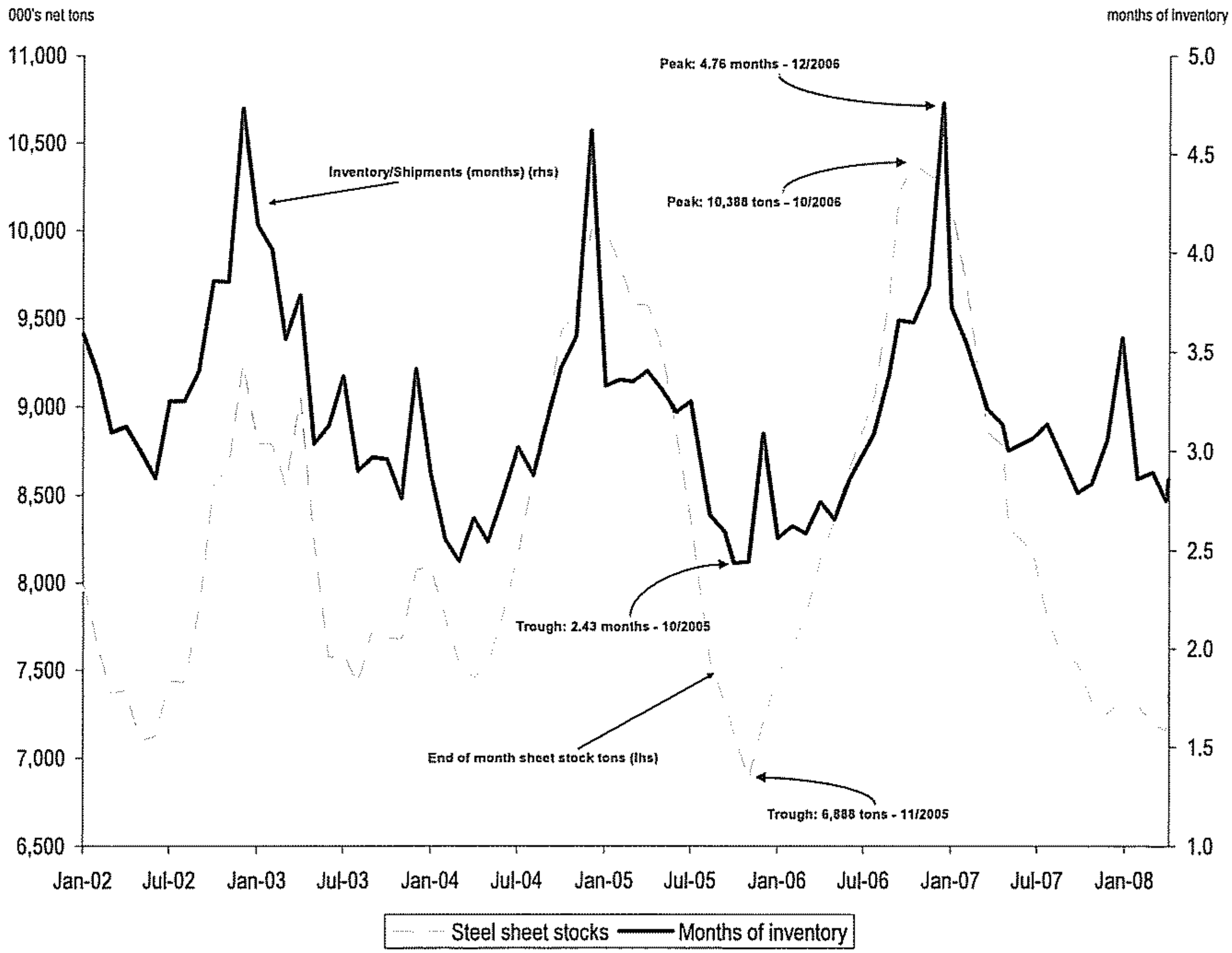
US sheet stock inventory vs months of sheet inventory on hand



Source: CRU Group.

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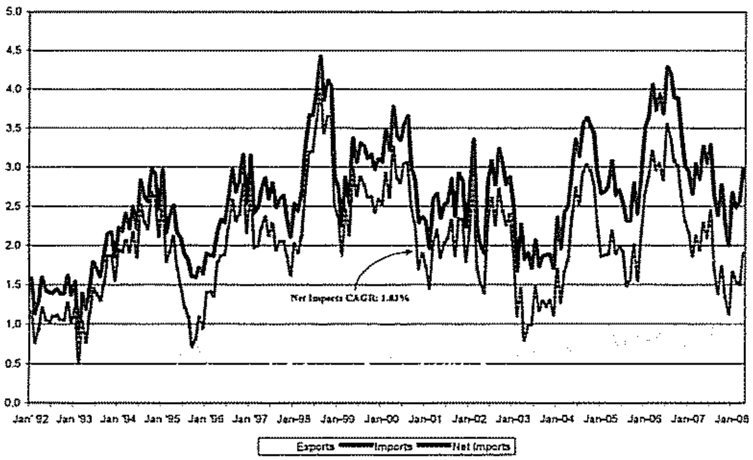
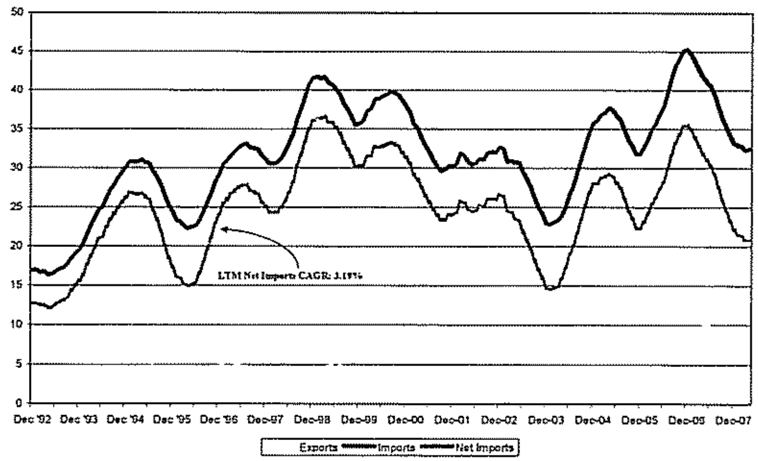
Domestic steel: imports, exports, shipments, and apparent consumption

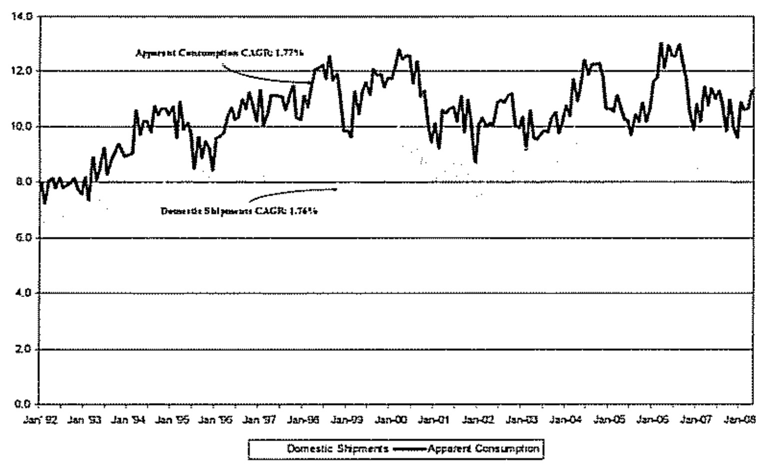
Domestic: Exports/Imports (mn tons/month)



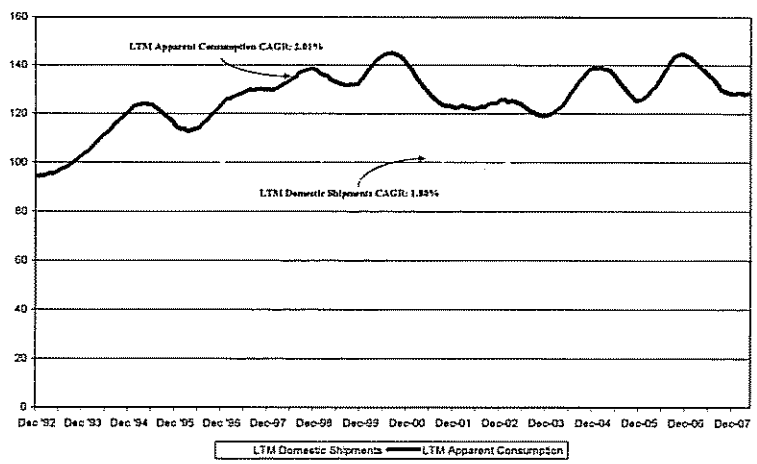
Domestic Steel: LTM Exports/Imports (mn tons/month)



Domestic Steel: Shipments and Apparent Consumption (mn tons/month)



Domestic Steel: LTM Shipments and LTM Apparent Consumption (mn tons/month)



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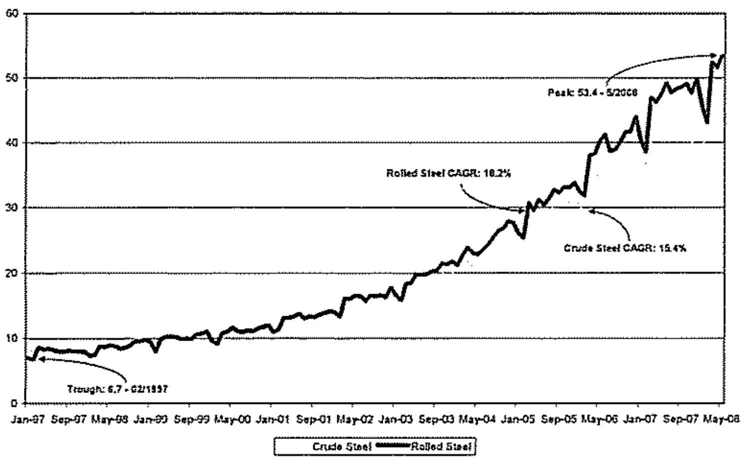
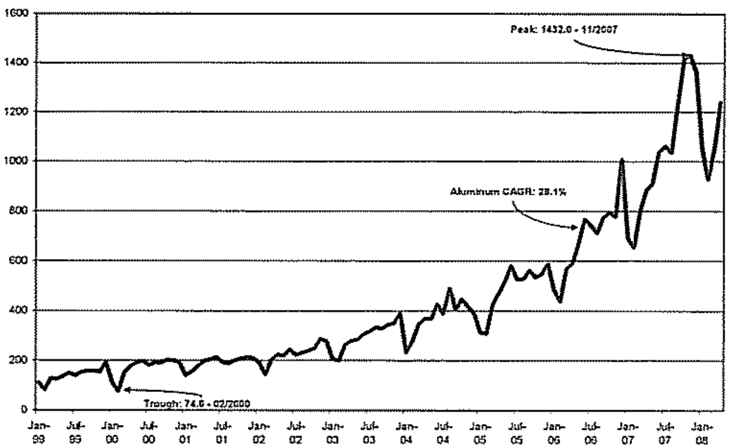
Chinese metals data

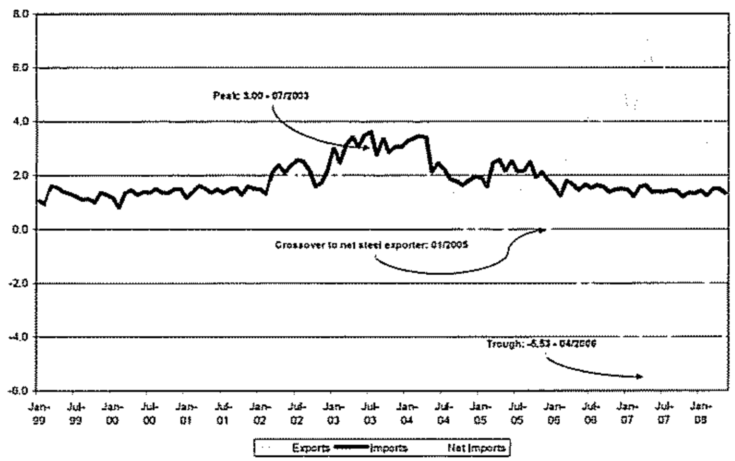
Chinese Steel Output (mn tons/month)



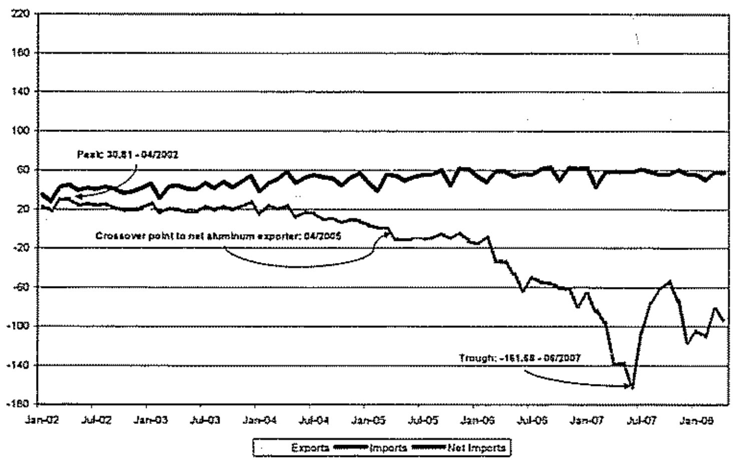
China Aluminum Output (000 tons/month)



Chinese Imports/Exports Commodity Steel Products (mn tons/month)



Chinese Imports/Exports Commodity Aluminum (000 tons/month)



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HY Metals and Mining

July monthly: Metals USA (our thoughts post 2Q08 earnings)

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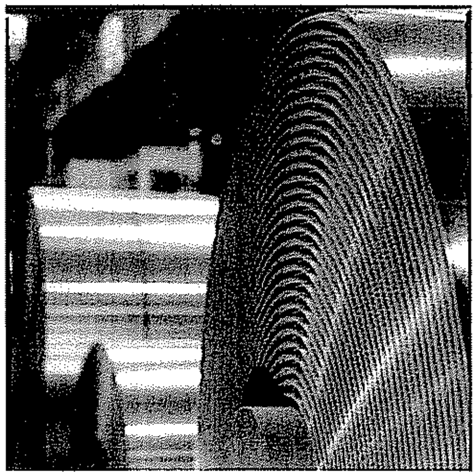
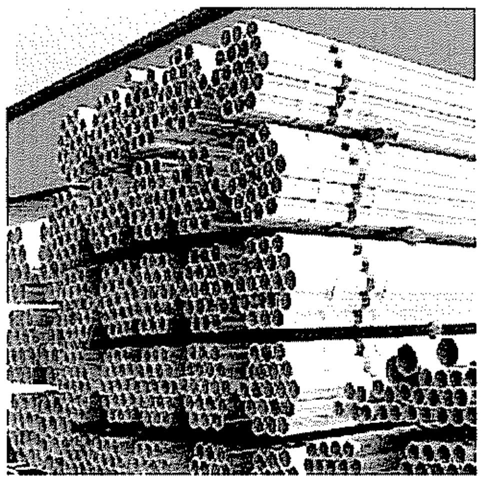
- **In this report, among other items, we provide an update of Metals USA following 2Q08 earnings and the conference call.** We believe management will try to complete the proposed IPO by the end of September. If successful, the company is required to make an offer for a portion of the HoldCo bonds. If unsuccessful, we believe the company would consider paying a dividend. We think the former is substantially more likely than the latter and believe the HoldCo notes should trade at around $95.00 to $95.50, reflecting the weighted average value of the outcomes.
- **Spot steel prices remained at $1080 per ton,** according to AMM, but in the last few weeks, several mills have announced price increases for September shipments. Scrap stayed at $435 per ton.
- **Steel raw material pricing looks to remain strong.** On 23-Jun-08, Rio Tinto reached an agreement with Baosteel for greater than an 80% increase in iron ore prices. On 16-Jul-08, Cleveland-Cliffs proposed a $10 billion acquisition of Alpha Natural Resources predicated on the value of metallurgical coal assets.
- **Aluminum reached an all-time high of $1.48/lb. on 14-Jul-08** after a Chinese industry association announced that the country's 20 largest smelters, representing 70% of Chinese production, had agreed to cut production between 5 and 10%.
- **Three service centers have reported 2Q08 results** (Metals USA, Reliance Steel and Novamerican). Whereas all cite a weak economy, metals demand seems to be proving more resilient than the past month's equity commodity sell-off would imply.
- **We believe investors have become increasingly nervous that global demand may weaken materially,** following some preliminary signs of weakening Chinese demand. Reading Chinese demand tea leaves likely should keep commodities volatile.
- **Bonds in the sector have performed much better than the overall high yield market.** Year to date, the high yield market overall has returned -3.08%, while the Metals and Mining index has essentially returned the absolute value of the market at 3.09%.





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Recent events

- **AK Steel (AKS)**
  On 15-Jul-08, AK Steel announced that it will increase its spot prices for carbon steel products by $50 per ton for orders scheduled for delivery 1-Sep-08 or later, citing increased global demand and "the need to recover increases in steelmaking inputs."

- **Aleris International, Inc. (ARS)**
  On 26-Jun-08, Aleris Rolled Products Europe announced a 3% price increase on the total conversion price of coil and sheet delivered to certain Specialty Product segments. The price increase was in response to "increased costs for energy, transport, materials and other items" and was effective for all new orders and contracts booked on or after 1-Jul-08.

  On 2-Jul-08, Aleris announced that it had declared force majeure on its operations at the Cap de la Madeleine, Quebec aluminum rolling mill following a lock out. The lock out resulted from an inability to produce a new agreement with the unionized workforce who had been working without a contract since 1-Feb-08.

  On 12-Jul-08, Aleris announced that it would permanently close the Cap de la Madeleine facility "because of the permanent and irreparable damage suffered by the operations as a result of the ongoing labor issues."

- **California Steel Industries, Inc. (CALSTL)**
  On 15-Jul-08, California Steel reported 2Q08 results. Shipments of 432,771 tons were 2% lower than the same period in the prior year, driven by an 18% decline in galvanized shipments. EBITDA of $80 million was 229% above 2Q07's $24 million. The company stated a "continued focus on cost controls" enabled the performance improvement. Cash flow from operating activities was $69 million.

- **Century Aluminum Company (CENX)**
  On 7-Jul-08, Century Aluminum agreed with Glencore to terminate all of the Century's primary aluminum financial forward sales contracts in exchange for a $730 million payment and the issuance of 160,000 shares of convertible preferred stock by Century to Glencore. The total transaction value is estimated at $1.7 billion. Century had the option to defer $505 million of the cash payment until 31-Aug-08.

  On 10-Jul-08, Century announced that it had issued 6.5 million shares of its common stock at $62.25 per share. On 14-Jul-08, Century announced that the underwriters had exercised the full over-allotment option, selling an additional 975,000 shares at $62.25 per share. The $442 million total net proceeds were to be used to pay a portion of the cash payment associated with the Glencore forward sales contracts.

- **Essar Steel Algoma Inc. (AGACN)**
  On 23-Jun-08, Algoma Steel Inc. changed its name to Essar Algoma Steel Inc. in conjunction with the launch of a new corporate brand for all member companies of Essar Global.

- **Fortescue Metals Group (FMGAU)**
  On 26-Jun-08, Fortescue CFO, Chris Catlow, told the AAP that the average 85% increase in benchmark iron ore achieved by Rio Tinto would enable Fortescue to achieve EBITDA of $3.4 billion for the 2008/09 financial year. The CFO said "with this recent iron ore price rise, we're selling iron ore at around $90 per tonne and because it's only costing us around $20 per tonne, we're making around $70 for every tonne that we ship."

  On 7-Jul-08, Fortescue said it had settled its long term iron ore contracts with Asian producers at iron ore prices in line with those struck between Rio Tinto and Baosteel on 23-Jun-08

- **Gerdau Ameristeel Corporation (GNACN)**
  On 2-Jul-08, Standard & Poor's revised its outlook on Gerdau Ameristeel to stable from negative and affirmed all ratings, including the BB+ corporate credit rating. The revision to the outlook reflected Gerdau's "strong recent operating performance... solid credit metrics; and currently favorable industry conditions, characterized by low import competition." The agency noted a return to a negative outlook could follow a deterioration in financial metrics caused by a decline in steel prices and volumes or an incurrence of "substantial" debt to pursue acquisitions. A revision to positive outlook could occur "if industry conditions remain resilient and the company is able to improve and maintain leverage closer to its targeted levels of 35% debt to capitalization."

  On 3-Jul-08, Gerdau announced that it had approved the first two phases of its previously announced Jacksonville steel mill expansion. The expansion project is planned to create a melting and rolling capacity in excess of 1.0 million tons per year in rebar products.

- **Indalex Holding Corp. (INDALX)**
  On 18-Jun-08, Indalex reported that on 13-Jun-08, it entered into a real estate sale-leaseback with NL Ventures VI Indalex, LLC with respect to the company's City of Industry, California facility. The sale-leaseback generated cash proceeds of about $14 million, which Indalex intends to use to temporarily reduce borrowings under the revolver. The company confirmed that it would apply the proceeds to purchase non-working capital assets within one year as stipulated by the 11.5% senior secured notes' indenture.

- **Metals USA Holdings Corp. (METALS)**
  On 1-Jul-08, Metals USA increased the Tranche A Commitments of the ABL facility by $100 million. The facility now stands at $625 million. All existing terms under the ABL facility, including the facility's low rate (as low as L+100) remain unchanged.

  On 14-Jul-08, Metals USA reported its 2Q08 results. For our take on the record breaking EBITDA of $93 million, please see the section entitled *Metals USA Our thoughts post 2Q08 conference call* later in this report.

- **Noranda Aluminum Acquisition Corp. (NRNDA)**
  On 27-Jun-08, Moody's issued a report in which it noted that Noranda's $103 million dividend payment would have no impact on Noranda's rating or stable outlook citing "high aluminum prices, good liquidity, lack of substantive debt maturities, and the company's hedge position." The agency said it expected the

company "to continue to be cash generative and able to cover interest payments and capital expenditures."

- **Novelis Inc. (HINDAL)**
  On 19-Jun-08, Novelis released results for its fiscal year ended 31-Mar-08. We provide our take on earnings in a 20-Jun-08 report linked here.

  Following earnings, we met with company management. Our thoughts from the meeting are summarized in our 01-Jul-08 report linked here.

  On 19-Jun-08, the Novelis Board of Directors approved a long-term incentive plan for key Novelis employees, including executive officers. The plan provides for short-term incentives for the 2009 fiscal year tied to EBITDA, operating free cash flow and environment, health and safety improvement targets. Although the EBITDA and operating cash flow performance thresholds are not disclosed, we believe the plan helps to align incentives with bondholders.

  On 2-Jul-08, Jeff Schwaneke, Chief Accounting Officer, Vice President and Controller of Novelis Inc. resigned.

  On 14-Jul-08, Novelis Europe announced that it would raise conversion prices of all its aluminum flat-rolled products by up to 10% due to "the rising costs of energy, alloys and various operating materials."

- **PNA Group Inc. (PNAGRO)**
  On 01-Jul-08, Reliance Steel commenced a tender offer to purchase PNA's OpCo 10.75% senior notes due 2016 and the HoldCo senior floating rate toggle notes due 2013.

  On 16-Jul-08, Reliance Steel announced that all $250 million 10.75% senior notes due 2016 and $170 million senior floating rate toggle notes due 2013 had been tendered.

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In Case You Missed It: HY Metals & Mining Reports

Date	Title
15-Jul-08	Metals USA Holdings : Good 2Q08, HoldCo notes still the way to go
01-Jul-08	Novelis Inc. : Management meeting takeaways
20-Jun-08	Novelis Inc. : Good 4Q08, Reaffirming our Overweight
20-Jun-08	Noranda Aluminum : Timing is everything
19-Jun-08	HY Metals and Mining : June monthly: Aluminum sector focus
17-Jun-08	Noranda Aluminum : Initiating with an Overweight
20-May-08	Metals USA Holdings : IPO filing could be good news for HoldCo notes
20-May-08	Ryerson Inc : On track, 2Q08 should be even better
9-May-08	HY Metals and Mining : May monthly: Steel sector focus
29-Apr-08	Metals USA Holdings : Hold on to your hats, Upgrading HoldCo notes due 2012 to Buy
10-Apr-08	Freeport-McMoRan Copper & Gold : Investment grade catalyst achieved - Downgrading to Neutral
8-Apr-08	HY Metals and Mining : April monthly: Aleris (Update), Indalex (Downgrading to Neutral), Ryerson (Reaffirming our Overweight)
31-Mar-08	Steel Dynamics : Hold on new 7.75% of '16, reaffirming our Neutral
17-Mar-08	HY Metals and Mining : March monthly: Freeport (Update), Metals USA (Initiation), Novelis/Hindalco (Update)
12-Mar-08	Metals USA, Inc : Looking for the right entry point, Initiating with a Neutral
06-Feb-08	HY Metals and Mining : February monthly: Indalex - Relish the yield
16-Jan-08	Novelis Inc. : Upgrading to Overweight
04-Jan-08	HY Metals and Mining : January Monthly: NRNDA, MUSA, WISMET

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Metals USA: Our thoughts post 2Q08 conference call

- **We view Metals USA 2Q08 EBITDA of $93 million as a phenomenal result, but, likely, an outlier.** The EBITDA was more than double EBITDA in the same period in the prior year and helped to decrease leverage 0.9x sequentially at the OpCo level to 3.2x and 1.3x at the HoldCo level to 4.7x.
- **Management attributed the upside surprise to the company's focus on customers who would prove more resilient in an economic downturn,** share gain by seeking out customers whose needs were not met by competitors, and the ability to "achieve price increases down the chain."
- **We attribute a large portion of the EBITDA increase to inventory gains.** Metals USA accounts for its inventory on a FIFO basis. As we discussed in our March 12, 2008 initiation (link here), during periods of rising inventory prices, Metals USA will experience inventory gains. This inventory earnings windfall is normally accompanied by a hit to cash flow; we calculate a $78 million working capital use in 2Q08 at the OpCo level.
- **We do not view the inventory gain as a recurring component of earnings.** Management's postulation on the 2Q08 conference call that "costs will continue to put further upward pressure on future steel prices" may prove true. Several mills have come out in the last few weeks with proposed September price increases. Still, we doubt we will see another $400-plus per ton increase in steel prices over the next six months.
- **Service centers' customers can only pay so much.** Unlike mills who can take advantage of export opportunities, service centers primarily sell to a domestic market. Under normal circumstances, at extreme prices, demand begins to dry up. The current economic malaise and credit crisis likely makes demand even more elastic. For this reason, we believe that each $100 per ton increase in steel prices provides marginally less benefit to service centers.
- **Metals USA is required to use the proceeds of any IPO to make a purchase offer for the $300 million HoldCo notes due 2012 at par plus accrued interest.** In the event Metals USA raises and receives the entire $200 million referenced in its amended S-1 filed 17-Jul-08 (that is, no portion of the sale represents sales of shares by Apollo), up to two-thirds of the issue would be retired. Bondholders must balance the purchase offer payment and the pro forma 1.0x reduction in leverage to 3.7x (only 0.5x wide of the OpCo notes) against the illiquidity of the remaining smaller issue.
- **In the event the company does not complete an IPO by the end of September, we believe the company would consider paying a dividend payment to Apollo.** The headline impact of this quarter's earnings encourages management to complete the IPO prior to the close of 3Q08. Although noteholders' interest are somewhat protected by Apollo/affiliate ownership of $91.4 million of the HoldCo notes (as of 16-Jul-08), we calculate that Metals USA could at present pay over a $70 million dividend.
- **We believe the weighted average value of these outcomes implies a fair value of $95.00 to $95.50 for the HoldCo notes.** Please call for details.

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Metals USA, Inc.

MUSA

FINANCIAL SUMMARY ($ mm)

Fiscal year-end December	Actual	Actual	Actual	Actual	Actual	Actual	Actual	Actual	Actual	Actual	Estimate	Estimate	Estimate	Estimate	Estimate	Estimate	Estimate	Estimate	Actual
	Full Year	Full Year	Full Year	1Q07	2Q07	3Q07	4Q07	Full Year	1Q08	2Q08	3Q08	4Q08	Full Year	1Q09	2Q09	3Q09	4Q09	Full Year	LTM
Income statement data	FYE 2004	FYE 2005	FYE 2006	31-Mar-07	30-Jun-07	30-Sep-07	31-Dec-07	FYE 2007	31-Mar-08	30-Jun-08	30-Sep-08	31-Dec-08	FYE 2008	31-Mar-09	30-Jun-09	30-Sep-09	31-Dec-09	FYE 2009	30-Jun-08
Plates and Shapes	751	740	843	212	207	207	200	826	220	240	232	220	912	225	245	233	227	934	867
Flat Rolled and Non-Ferrous	773	723	680	168	155	144	147	614	165	164	162	150	644	163	169	165	154	651	823
Corporate and other	(22)	(24)	(18)	(3)	(3)	(2)	(3)	(11)	(2)	(3)	(3)	(3)	(11)	(3)	(3)	(3)	(3)	(12)	(10)
Shipments (000 tons)	1,502	1,439	1,505	377	359	349	344	1,429	386	401	391	367	1,545	386	414	355	378	1,573	1,490
yoy % chg	15.6%	-4.2%	4.6%	-2.1%	-7.9%	-7.4%	-2.5%	-5.0%	2.4%	11.7%	12.0%	6.8%	8.1%	0.0%	3.2%	1.0%	3.0%	1.8%	1.0%
Revenues	$1,510	$1,639	$1,803	$463	$481	$470	$432	$1,845	$489	$593	$588	$556	$2,227	$572	$596	$563	$533	$2,264	$1,994
yoy % chg	52.7%	8.6%	10.0%	7.7%	5.0%	-1.7%	-1.2%	2.4%	5.7%	23.3%	25.3%	28.7%	20.7%	16.9%	0.4%	-4.2%	-4.2%	1.7%	6.7%
Revenue per ton	$1,005	$1,139	$1,198	$1,227	$1,340	$1,346	$1,256	$1,291	$1,267	$1,479	$1,505	$1,515	$1,441	$1,481	$1,439	$1,426	$1,409	$1,439	$1,340
Cost of good sold	$1,225	$1,434	$1,547	$401	$409	$407	$350	$1,597	$423	$472	$500	$481	$1,877	$505	$524	$488	$453	$1,980	$1,653
SG&A	$110	$118	$115	$30	$28	$25	$26	$112	$29	$33	$35	$33	$131	$34	$35	$34	$32	$138	$117
Impairment of property and equipment	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Loss (gain) on sale of equipment	$0	$0	$0	$0	$0	$0	$0	$0	$0	($2)	$0	$0	$0	$0	$0	$0	$0	$0	($2)
Adjusted EBITDA	$181	$109	$155	$35	$46	$36	$30	$146	$40	$93	$54	$42	$228	$33	$37	$43	$39	$152	$193
% Margin	12.0%	6.6%	8.7%	7.5%	9.5%	7.7%	6.9%	7.9%	8.2%	15.6%	9.1%	7.6%	10.2%	5.8%	6.2%	7.6%	7.3%	6.7%	10.0%
Adjusted EBITDA/Ton	$120	$75	$104	$92	$127	$104	$87	$102	$104	$231	$138	$116	$147	$85	$89	$108	$103	$97	$134
Adjustments	$5	$21	$16	$4	$1	$2	$4	$11	$4	$4	$1	$1	$9	$1	$1	$1	$1	$4	$13
EBITDA	$176	$88	$140	$31	$45	$35	$26	$135	$37	$89	$53	$41	$218	$32	$36	$42	$38	$148	$180
% Margin	11.6%	5.3%	7.8%	6.8%	9.3%	7.3%	6.0%	7.3%	7.5%	15.0%	9.0%	7.5%	9.8%	5.7%	6.0%	7.4%	7.1%	6.5%	9.4%
EBITDA/Ton	$117	$61	$93	$81	$124	$99	$75	$95	$95	$221	$135	$113	$141	$84	$87	$105	$101	$94	$126
Depreciation and amortization	$2	$5	$21	$5	$5	$5	$7	$22	$6	$5	$9	$5	$24	$6	$6	$6	$6	$25	$23
EBIT	$174	$83	$119	$26	$39	$29.3	$19.3	$114	$31	$83	$46	$35	$195	$26	$30	$35	$32	$123	$163
% Margin	11.5%	5.1%	6.6%	5.5%	8.2%	6.2%	4.5%	6.2%	6.4%	14.1%	7.9%	6.3%	8.7%	4.6%	5.0%	6.3%	6.0%	5.4%	8.2%
EBIT/Ton	$116	$58	$79	$68	$110	$84	$56	$79	$81	$206	$119	$95	$126	$66	$71	$99	$84	$78	$110
Interest expense	$5	$16	$54	$15	$15	$14	$14	$58	$16	$12	$13	$13	$54	$13	$13	$13	$13	$52	$56
Other (income) expense	($3)	($0)	($1)	$0	$0	($0)	$0	$0	($0)	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
EBT	$168	$67	$65	$11	$25	$15	$5	$56	$16	$71	$34	$22	$141	$13	$16	$22	$19	$70	$107
Tax provision (benefit)	$63	$25	$25	$4	$10	$7	($2)	$19	$6	$27	$13	$8	$54	$5	$6	$8	$7	$27	$35
Income from continuing operations	$105	$42	$40	$7	$15	$8	$8	$37	$10	$44	$21	$14	$87	$8	$10	$14	$12	$44	$59
Non-recurring and unusual items, net of tax	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
OpCo net income	$105	$42	$40	$7	$15	$8	$8	$37	$10	$44	$21	$14	$87	$8	$10	$14	$12	$44	$59
Cash flow analysis																			
Net income (loss)	105	42	40	7	15	8	8	37	10	44	21	14	87	8	10	14	12	44	69
Depreciation and amortization	2	5	23	6	5	5	7	24	7	6	7	7	26	7	7	7	7	28	25
Other	16	4	(2)	6	3	(1)	2	9	0	4	1	1	6	1	1	1	1	4	5
Working capital	(251)	127	(105)	(10)	7	48	13	57	(56)	(78)	(40)	78	(95)	(74)	(21)	50	36	(8)	(74)
Cash flow from operating activities	(129)	177	(45)	8	30	60	29	127	(40)	(24)	(11)	99	23	(58)	(3)	71	55	65	25
Maintenance Capex/	(17)	(20)	(17)	(6)	(6)	(5)	(6)	(22)	(3)	(2)	(5)	(5)	(15)	(5)	(5)	(5)	(5)	(18)	(15)
Discretionary FCF	(146)	157	(63)	1	24	55	23	105	(42)	(26)	(16)	94	8	(63)	(7)	66	51	47	10
Discretionary Capex	-	-	-					-										-	-
Cash dividend	-	-	(25)	(6)	(5)	(4)	(2)	(18)	(5)	(5)	(7)	(7)	(24)	(7)	(7)	(7)	(7)	(28)	(15)
OpCo Free Cash Flow	(146)	157	(88)	(5)	19	51	22	87	(47)	(31)	(23)	87	(16)	(70)	(14)	59	44	18	(5)

Source: *JPMorgan and Company Reports*

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Metals USA, Inc.

FINANCIAL SUMMARY ($ mn)

Balance sheet data	Actual Full Year FYE 2004	Actual Full Year FYE 2005	Actual Full Year FYE 2006	Actual 1Q07 31-Mar-07	Actual 2Q07 30-Jun-07	Actual 3Q07 30-Sep-07	Actual 4Q07 31-Dec-07	Actual Full Year FYE 2007	Actual 1Q08 31-Mar-08	Actual 2Q08 30-Jun-08
Cash	$13	$11	$14	$12	$18	$11	$14	$14	$19	$18
Credit facility (old)	$253	$0	$0	$0	$0	$0	$0	$0	$0	$0
ABL Facility due 2011	$0	$191	$329	$332	$320	$300	$281	$281	$334	$362
11.125% Sr Secured Notes due 2015	$0	$275	$275	$275	$275	$275	$275	$275	$275	$275
Industrial revenue bond	$5	$6	$6	$5	$5	$6	$6	$6	$6	$6
Mortgage note	$7	$0	$0	$0	$0	$0	$0	$0	$0	$0
Other	$5	$1	$1	$1	$1	$4	$4	$4	$3	$2
Total OpCo debt	*$271*	*$474*	*$611*	*$614*	*$601*	*$585*	*$565*	*$565*	*$618*	*$644*
FRN Sr Toggle PIK notes (L+625) due 2012	$0	$0	$150	$150	$150	$300	$300	$300	$300	$300
Total debt	$271	$474	$761	$764	$751	$885	$865	$865	$918	$944
OpCo Shareholder equity	$328	$132	$143	$146	$156	$161	$168	$168	$178	$221
Total capitalization	$599	$606	$903	$910	$908	$1,046	$1,033	$1,033	$1,096	$1,165
NetDebt	$258	$482	$745	$751	$734	$874	$852	$852	$899	$926
Discretionary FCF as % of total debt	NM	33.2%	NM	NM	NM	9.2%	12.2%	12.2%	6.6%	1.0%
Credit statistics [1]										
EBITDA/OpCo Interest Expense	21.5x	6.7x	2.9x	2.8x	2.8x	2.6x	2.5x	2.5x	2.6x	3.5x
EBITDA - CapEx / OpCo Interest Expense	*19.4x*	*5.5x*	*2.6x*	*2.5x*	*2.4x*	*2.2x*	*2.2x*	*2.2x*	*2.3x*	*3.3x*
OpCo Debt/EBITDA	1.5x	4.4x	3.9x	3.8x	3.7x	3.9x	3.9x	3.9x	4.1x	3.2x
HoldCo Debt/EBITDA	1.5x	4.4x	4.9x	4.8x	4.6x	5.9x	5.9x	5.9x	6.0x	4.7x
NetDebt/EBITDA	1.4x	4.3x	4.8x	4.7x	4.5x	5.8x	5.8x	5.8x	5.9x	4.7x
Total OpCo Debt/Cap	45%	78%	67%	67%	66%	56%	55%	55%	56%	55%
Total Debt/Cap	45%	78%	84%	84%	83%	85%	84%	84%	84%	81%
NetDebt/Cap	43%	76%	82%	83%	81%	84%	82%	82%	82%	79%

Balance sheet data	Estimate 3Q08 30-Sep-08	Estimate 4Q08 31-Dec-08	Estimate Full Year FYE 2008	Estimate 1Q09 31-Mar-09	Estimate 2Q09 30-Jun-09	Estimate 3Q09 30-Sep-09	Estimate 4Q09 31-Dec-09	Estimate Full Year FYE 2009	Actual LTM 30-Jun-08
Cash	$18	$18	$18	$18	$18	$18	$18	$18	$18
Credit facility (old)	$0	$0	$0	$0	$0	$0	$0	$0	$0
ABL Facility due 2011	$385	$297	$297	$367	$381	$322	$279	$279	$362
11.125% Sr Secured Notes due 2015	$275	$275	$275	$275	$275	$275	$275	$275	$275
Industrial revenue bond	$6	$6	$6	$6	$6	$6	$6	$6	$6
Mortgage note	$0	$0	$0	$0	$0	$0	$0	$0	$0
Other	$2	$2	$2	$2	$2	$2	$2	$2	$2
Total OpCo debt	*$667*	*$580*	*$580*	*$650*	*$664*	*$605*	*$561*	*$561*	*$644*
FRN Sr Toggle PIK notes (L+625) due 2012	$300	$300	$300	$300	$300	$300	$300	$300	$300
Total debt	$967	$880	$880	$950	$964	$905	$861	$861	$944
OpCo Shareholder equity	$235	$242	$242	$243	$246	$252	$257	$257	$221
Total capitalization	$1,202	$1,121	$1,121	$1,192	$1,210	$1,157	$1,118	$1,118	$1,165
NetDebt	$949	$862	$862	$931	$946	$887	$843	$843	$926
Discretionary FCF as % of total debt	NM	1.1%	0.9%	NM	0.8%	10.0%	5.4%	5.4%	1.0%
Credit statistics [1]									
EBITDA/OpCo Interest Expense	4.0x	4.3x	4.2x	4.3x	3.2x	3.0x	2.9x	2.9x	3.5x
EBITDA - CapEx / OpCo Interest Expense	*3.7x*	*4.0x*	*4.0x*	*4.0x*	*2.8x*	*2.6x*	*2.6x*	*2.6x*	*3.3x*
OpCo Debt/EBITDA	3.1x	2.5x	2.5x	2.9x	4.0x	3.9x	3.7x	3.7x	3.2x
HoldCo Debt/EBITDA	4.5x	3.8x	3.9x	4.3x	5.8x	5.8x	5.7x	5.7x	4.7x
NetDebt/EBITDA	4.4x	3.8x	3.8x	4.2x	5.7x	5.7x	5.6x	5.6x	4.7x
Total OpCo Debt/Cap	55%	52%	52%	54%	55%	52%	50%	50%	55%
Total Debt/Cap	80%	78%	78%	80%	80%	78%	77%	77%	81%
NetDebt/Cap	79%	77%	77%	78%	78%	77%	75%	75%	79%

(1) Calculated using LTM Adjusted EBITDA

CAPITALIZATION
($ mn)

	Actual 30-Jun-08	Leverage
Cash	$18	
ABL Facility due 2011	$362	
11.125% Sr Secured Notes due 2015	$275	
Industrial revenue bond	$6	
Other	$2	
OpCo debt	$644	3.2x
FRN Sr Toggle PIK notes (L+625) due 2012	$300	
Total debt	$944	4.7x
OpCo Shareholders Equity	$221	
Total Capitalization	$1,165	

Source: JPMorgan and Company Reports

ASSET COVERAGE
($ mn)

	Estimate 30-Jun-08
EV/EBITDA assumption	6.5x
EBITDA	$199
EV	$1,294
Debt	$944
Debt/EV	73%

Source: JPMorgan and Company Reports

LIQUIDITY
($ mn)

		Actual 30-Jun-08
Cash		$18
ABL Facility due 2011	$525	
Amount outstanding	*($362)*	
Restrictions	$0	
Letters of credit	($15)	
Net		$148
Total Liquidity		$166

Source: JPMorgan and Company Reports
Note: ABL Facility upsized to $625 million on 1-Jul-08

DEBT AMORTIZATION SCHEDULE
($ mn)

	Actual 31-Dec-07
2008	$2
2009	$2
2010	$0
2011	$281
2012	$330
Thereafter	$281

Source: JPMorgan and Company Reports

Metals and Mining STW credit tracker, ranked by Δm/m

Bond and JPMorgan HY Index STW	31-Dec-07	17-Jun-08	17-Jul-08	Tightened by Absolute Δ m/m[1]	Absolute Δ y/y
MT 6.500% 2014	239	278	306	(28)	(68)
GTI 10.250% 2012	553	446	489	(43)	64
AGACN 9.875% 2015	1,009	695	744	(49)	265
FMGAU 10.625% 2016	438	370	420	(50)	18
ATI 8.375% 2011	318	357	409	(52)	(91)
CENX 7.500% 2014	416	400	458	(58)	(42)
CALSTL 6.125% 2014	508	530	589	(59)	(80)
RUSCN 6.375% 2014	433	386	447	(61)	(14)
HINDAL 7.250% 2015	470	462	531	(69)	(62)
HY - Other Metals	593	621	691	(69)	(98)
METALS 11.125% 2015	677	611	682	(71)	(5)
FMGAU 10.000% 2013	436	380	454	(74)	(18)
HY Split BBB	317	353	429	(76)	(111)
FCX 6.875% 2014	327	249	326	(77)	1
HY - Mining	368	341	421	(80)	(53)
HY Metals/Minerals	465	438	521	(82)	(56)
RATHGI 11.250% 2014	792	821	904	(83)	(113)
HY BB	442	418	501	(83)	(59)
HY - Metal Fabricators/Service Centers	746	707	790	(83)	(44)
WISMET 10.250% 2012	854	1,036	1,119	(84)	(266)
STLD 7.375% 2012	383	369	457	(88)	(74)
RYI 12.000% 2015	847	814	904	(90)	(57)
HY Split BB	451	461	554	(93)	(103)
HY - Steel	444	407	503	(96)	(59)
STLD 6.750% 2015	368	333	431	(98)	(63)
FCX 8.375% 2017	337	313	418	(106)	(81)
AKS 7.750% 2012	441	391	499	(108)	(58)
FCX 8.250% 2015	339	320	429	(108)	(89)
INDALX 11.500% 2014	1,097	2,145	2,274	(129)	(1,177)
HY Summary	597	647	781	(133)	(183)
HY Split B	734	798	935	(136)	(201)
ARS 10.000% 2016	985	1,187	1,332	(145)	(347)
HY B	563	639	806	(167)	(243)
HY CCC	980	1,119	1,347	(228)	(367)
ARS 9.000% 2014	897	889	1,141	(252)	(244)
GNACN 10.375% 2011	349	229	579	(349)	(230)
Max	1,097	2,145	2,274	(28)	265
Min	239	229	306	(349)	(1,177)
Median	458	442	526	(83)	(71)
Average	561	582	684	(102)	(122)

Source: JPMorgan

Metals and Mining dollar price credit tracker, ranked by Δm/m

				Price increased by (bp)	
Bond and JPMorgan HY Index STW	31-Dec-07	17-Jun-08	17-Jul-08	Absolute Δ m/m	Absolute Δ y/y
MT 6.500% 2014	$102.68	$99.94	$100.30	$0.35	($2.39)
GNACN 10.375% 2011	$105.25	$104.00	$103.88	($0.13)	($1.38)
GTI 10.250% 2012	$103.13	$103.75	$103.50	($0.25)	$0.38
ATI 8.375% 2011	$106.50	$104.73	$104.26	($0.47)	($2.25)
CALSTL 6.125% 2014	$88.00	$87.25	$86.50	($0.75)	($1.50)
AGACN 9.875% 2015	$82.00	$95.50	$94.75	($0.75)	$12.75
WISMET 10.250% 2012	$94.50	$89.75	$88.75	($1.00)	($5.75)
RUSCN 6.375% 2014	$92.63	$94.50	$93.50	($1.00)	$0.88
FCX 6.875% 2014	$101.00	$103.50	$102.26	($1.24)	$1.26
METALS 11.125% 2015	$103.50	$105.50	$104.00	($1.50)	$0.50
INDALX 11.500% 2014	$88.00	$60.00	$58.50	($1.50)	($29.50)
FMGAU 10.625% 2016	$114.50	$117.50	$116.00	($1.50)	$1.50
HINDAL 7.250% 2015	$94.00	$94.00	$92.38	($1.63)	($1.63)
STLD 7.375% 2012	$100.50	$100.75	$99.00	($1.75)	($1.50)
RATHGI 11.250% 2014	$100.00	$97.25	$95.50	($1.75)	($4.50)
FMGAU 10.000% 2013	$109.50	$110.75	$109.00	($1.75)	($0.50)
AKS 7.750% 2012	$100.50	$101.75	$99.25	($2.50)	($1.25)
CENX 7.500% 2014	$98.50	$100.25	$97.63	($2.63)	($0.88)
RYI 12.000% 2015	$98.75	$99.75	$97.00	($2.75)	($1.75)
FCX 8.250% 2015	$106.00	$105.88	$103.00	($2.88)	($3.00)
STLD 6.750% 2015	$96.50	$97.75	$94.50	($3.25)	($2.00)
FCX 8.375% 2017	$107.25	$107.50	$103.50	($4.00)	($3.75)
ARS 10.000% 2016	$81.00	$73.00	$69.00	($4.00)	($12.00)
ARS 9.000% 2014	$83.50	$84.00	$76.25	($7.75)	($7.25)
Max				$0 35	$12 75
Min				($7 75)	($29 50)
Median				($1 56)	($1 56)
Average				($1.93)	($2.73)

Source: JPMorgan

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Comparative company analysis

	Steel							
Company	AK Steel	Algoma Steel	California Steel	Gerdau Steel	Nucor Corp	Rath Gibson	Steel Dynamics	US Steel
Equity ticker	AKS			GNA	NUE		STLD	X
Bond ticker	AKS	AGA CN	CALSTL	GNA CN	NUE	RATHGI	STLD	X
Volume and income statement (LTM)								
Shipments (000's tons)	6,461	2,498	1.760	8,039	24,965		6,956	23.793
Revenues	$7,075	$1,867	$1.337	$6,495	$20.721	$357	$5,421	$18.313
EBITDA	$908	$135	$54	$1,192	$3,455	$48	$944	$1,624
EBITDA margin	12.8%	7.2%	4.1%	18 3%	16.7%	13.3%	17.4%	8.9%
Interest expense	$55	$66	$10	$127	$55	$25	$78	$142
Net income	$426	($31)	$7	$567	$1,737	($11)	$435	$841
Cash Flow (LTM)								
CapEx	$126	$141	$34	$150	$823	$10	$435	$711
CFO	$307	$239	$133	$772	$1.918	($1)	$493	$1,440
Discretionary FCF	$228	$98	$99	$677	$1,094	($11)	$468	$729
FCF	$176	$98	$99	$485	$407	($13)	($474)	$504
Capitalization								
Cash	$272	$10	$59	$641	$2.792	$3	$59	$454
Senior unsecured	$116	$455	$0	$2.670	$443	$65	$781	$1.542
Total senior	$665	$921	$150	$3,076	$3,268	$276	$1.981	$3.252
Total OpCo	$665	$921	$150	$3,076	$3,268	$276	$2.018	$3.252
Minority interest				$44	$315		$12	$100
Shareholder's equity	$1,154	$566	$337	$3,881	$8,080	$210	$1,616	$5,778
Capitalization	$1,820	$1,487	$487	$7,001	$11,664	$485	$3,645	$9,130
Enterprise value and liquidity								
Stock price	$48.24	Private	Private	$16.51	$59.81	Private	$31.09	$145.19
Equity market capitalization	$5,403	Private	Private	$7.142	$18,754	Private	$5,873	$17.091
Enterprise value	$5,796	$1,578	$354	$9,621	$19,546	$310	$7,843	$19.989
Liquidity	$952	$203	$168	$1,224	$3,787	$25	$786	$1,688
Credit Statistics								
EBITDA/Interest Expense	16.4x	2.0x	5.4x	9 4x	63.1x	1 9x	12 1x	11 4x
EBITDA - CapEx / Interest Expense	14 1x	-0.1x	2.0x	8 2x	48.1x	1 5x	6.5x	6 4x
Senior secured leverage	0.1x	3.4x	0.0x	2 2x	0 1x	1 4x	0.8x	0 9x
Total senior leverage	0.7x	6.8x	2.8x	2 6x	0.9x	5 8x	2.1x	2.0x
Total OpCo leverage	0.7x	6.8x	2.8x	2 6x	0 9x	5 8x	2.1x	2.0x
Senior unsecured debt/cap	6%	31%	0%	38%	4%	13%	21%	17%
Total senior debt/cap	37%	62%	31%	44%	28%	57%	54%	36%
Total OpCo debt/cap	37%	62%	31%	44%	28%	57%	55%	36%
EV/EBITDA	6.4x	11.7x	6.5x	8.1x	5.7x	6.5x	8.3x	12.3x
Total Debt/EV	11%	58%	42%	32%	17%	89%	26%	16%
EV/ton	$897	$632	$201	$1,197	$783		$1,128	$840
EBITDA/ton	$141	$54	$31	$148	$138		$136	$68
EV/Revenues	82%	84%	26%	148%	94%	87%	145%	109%
Bond One								
Description	Sr Nts	Sr Nts	Sr Nts	Sr Nts	Sr Nts	Sr Nts	Sr Nts	Sr Nts
Coupon	7.750%	9.875%	6.125%	10.375%	4.875%	11.250%	7.375%	5.650%
Maturity	06/15/12	06/15/15	03/15/14	07/15/11	10/01/2012	02/15/14	11/01/12	06/01/13
Outstanding	$550	$450	$150	$405	$350	$200	$700	$300
Rating	B1/BB-	Caa1/B-	Ba3/BB-	Ba1/BB+	A1/A+	B3/B	Ba2/BB+	Baa3/BB+
Offer price	$99.25	$94.75	$86.50	$103.88		$95.50	$99.00	$97.02
Yield	7 97%	10.98%	9.24%	7.98%		12.39%	7.65%	6.37%
STW	499bp	744bp	589bp	579bp		904bp	457bp	314bp
Bond Two								
Description							Sr Nts	Sr Nts
Coupon							6.750%	6.050%
Maturity							04/01/15	06/01/17
Outstanding							$500	$450
Rating							Ba2/BB+	Baa3/BB+
Offer price							$94.50	$91.76
Yield							7.82%	7.33%
STW							431bp	351bp

1 Algoma enterprise value estimated using purchase price at time of transaction Data presented in $CAD.
2. California Steel Industries and RathGibson enterprise value estimated using a 6.5x multiple of LTM EBITDA

Sources: Company reports and JPMorgan

Comparative company analysis

	Mining	Aluminum					
Company	Freeport-McMoRan	Aleris Intl	Century Aluminum	Indalex	Noranda Aluminum	Novelis (Hindalco)	Wise Metals
Equity ticker	FCX		CENX				
Bond ticker	FCX	ARS	CENX	INDALX	NRNDA	HINDAL	WISMET
Income statement (LTM)							
Revenues	$20,729	$6,375	$1,822	$1,065	$1,322	$11,246	$1,050
EBITDA	$10,176	$362	$378	$29	$302	$439	($15)
EBITDA margin	49%	6%	21%	3%	23%	4%	-1%
Interest expense	$629	$217	$17	$32	$95	$199	$35
Net income	$3,670	($68)	($398)	($17)	$11	($69)	($63)
Cash Flow (LTM)							
CapEx	$2,121	$193	$31	$41	$44	$202	$21
CFO	$6,171	$118	($45)	$27	$237	$175	($66)
Discretionary FCF	$4,702	$18	$186	$11	$193	$55	($87)
FCF	$2,330	($75)	$186	$81	$168	$20	($87)
Capitalization							
Cash	$1,631	$89	$367	$1	$148	$326	$2
Restricted cash			$1				$2
Senior secured	$700	$1,651	$8	$112	$424	$1,164	$233
Total senior debt	$7,571	$2,383	$433	$313	$934	$2,627	$383
Total OpCo	$7,571	$2,782	$433	$313	$934	$2,627	$383
Total through HoldCo					$1,152		
Minority interest	$1,509					$149	
Preferred stock	$3,975						
Shareholder's equity	$15,331	$893	$341	($9)	($133)	$3,538	($186)
Capitalization	$28,386	$3,675	$774	$304	$1,019	$6,314	$196
Enterprise value and liquidity							
Stock price	$99.45	Private	$56.30	Private	Private	Private	Private
Equity market capitalization	$38,089	Private	$2,316	Private	Private	Private	Private
Enterprise value	$49,313	$2,356	$2,382	$270	$1,150	$4,500	nm
Liquidity	$0	$409	$464	$24	$394	$908	$178
Credit Statistics							
EBITDA/Interest Expense	16.2x	1.7x	22.5x	0.9x	3.2x	2.2x	nm
EBITDA - CapEx / Interest Expense	12.8x	0.8x	20.7x	-0.4x	2.7x	1.2x	nm
Senior secured leverage	0.1x	4.6x	0.0x	3.9x	1.4x	2.7x	nm
Total senior leverage	0.7x	6.6x	1.1x	10.8x	3.1x	6.0x	nm
Total OpCo leverage	0.7x	7.7x	1.1x	10.8x	3.1x	6.0x	nm
Through HoldCo leverage					3.8x		
Senior unsecured debt/cap	2%	45%	1%	37%	42%	18%	119%
Total senior debt/cap	27%	65%	56%	103%	92%	42%	195%
Total OpCo debt/cap	27%	76%	56%	103%	92%	42%	195%
Through HoldCo debt/cap					113%		
EV/EBITDA	4.8x	6.5x	6.3x	9.3x	3.8x	10.3x	
Total Debt/EV	15%	118%	18%	116%	100%	58%	
EV/Revenues	238%	37%	131%	25%	87%	40%	nm
Bond One							
Description	Sr Nts	Sr Nts	Sr Nts	Sr Nts	FRNs	Sr Nts	Sr Nts
Coupon	8.250%	9.000%	7.500%	11.500%	L+400	7.250%	10.250%
Maturity	04/01/15	12/15/14	08/15/14	02/01/14	05/15/2015	02/15/15	05/15/12
Outstanding	$1,500	$600	$250	$198	$0	$1,400	$150
Rating	Ba2/BBB-	B3/B-	B1/BB-	Caa3/CCC+	B3/B-	B3/B	Ca/CC
Offer price	$103.00	$78.25	$97.63	$58.50		$92.38	$88.75
Yield	7.48%	14.88%	8.00%	28.08%		8.80%	14.15%
STW	429bp	1141bp	458bp	2274bp		531bp	1119bp
Bond Two							
Description	Sr Nts	Sr Nts			HoldCo FRNs		
Coupon	8.375%	10.000%			L+575		
Maturity	04/01/17	12/15/16			11/15/2014		
Outstanding	$3,500	$400			$0		
Rating	Ba2/BBB-	Caa1/B-			Caa1/CCC+		
Offer price	$103.50	$69.00					
Yield	7.69%	17.07%					
STW	418bp	1332bp					

1 Freeport-McMoRan EBITDA presented pro forma for Phelps Dodge transaction. Last quarter interest expense annualized. Other data presented is actual historicals
2 Aleris and Indalex enterprise values estimated using a 6.5x multiple of LTM EBITDA.
3 Noranda enterprise value estimated using purchase price at time of transaction
4 Novelis enterprise value assumed at $4.5 billion

Sources: Company reports and JPMorgan

Comparative company analysis

Company	Allegheny Tech	GrafTech Intl	Metals USA	Reliance Steel	Russel Metals	Ryerson Inc.
	Other Metals Companies					
Equity ticker	ATI	GTI		RS	RUS.CN	RYI
Bond ticker	ATI	GTI	METALS	RS	RUSCN	RYI
Income statement (LTM)						
Revenues	$5,423	$1,067	$1,984	$7,521	$2,688	$5,709
EBITDA	$1.171	$301	$199	$859	$201	$228
EBITDA margin	22%	28%	10%	11%	8%	4%
Interest expense	$0	$29	$56	$72	$7	$93
Net income	$691	$177	$69	$437	$112	$38
Cash Flow (LTM)						
CapEx	$502	$53	$15	$154	$17	$55
CFO	$701	$180	$25	$597	$235	$471
Discretionary FCF	$199	$127	$10	$443	$218	$447
FCF	$136	$127	($5)	$302	$105	$413
Capitalization						
Cash	$468	$7	$18	$90	$200	$39
Restricted cash						$8
Senior secured	$21	$22	$644	$298	$7	$635
Total senior debt	$524	$97	$644	$1.151	$183	$1.211
Total OpCo	$524	$321	$644	$1.151	$183	$1.211
Total through HoldCo			$944			
Minority interest		$0				
Preferred stock						
Shareholder's equity	$2,288	$178	$221	$2,265	$898	$502
Capitalization	$2,811	$499	$1,165	$3,416	$1,081	$1,712
Enterprise value and liquidity						
Stock price	$53.82	$24.30	Private	$66.13	$27.15	Private
Equity market capitalization	$5,441	$2,508	Private	$4,822	$1.715	Private
Enterprise value	$5,498	$2,822	$1,294	$5,883	$1,699	$1,980
Liquidity	$884	$205	$166	$899	$380	$518
Credit Statistics						
EBITDA/Interest Expense	3904 3x	10.4x	3 5x	12.0x	27 1x	2 5x
EBITDA - CapEx / Interest Expense	2232.0x	8.6x	3 3x	9.8x	24.8x	1 9x
Senior secured leverage	0.0x	0.1x	3 2x	0.3x	0.0x	2 8x
Total senior leverage	0.4x	0.3x	3 2x	1 3x	0.9x	5 3x
Total OpCo leverage	0.4x	1 1x	3 2x	1 3x	0.9x	5 3x
Through HoldCo leverage			4 7x			
Senior unsecured debt/cap	1%	4%	55%	9%	1%	37%
Total senior debt/cap	19%	19%	55%	34%	17%	71%
Total OpCo debt/cap	19%	64%	55%	34%	17%	71%
Through HoldCo debt/cap			81%			
EV/EBITDA	4.7x	9.4x	6.5x	6.8x	8.5x	8.7x
Total Debt/EV	10%	11%	73%	20%	11%	61%
EV/Revenues	101%	265%	65%	78%	68%	35%
Bond One						
Description	Sr Nts	Sr Nts	Sr Sec Nts	Sr Nts	Sr Nts	Sr Sec Nts
Coupon	6.375%	10.250%	11.125%	6.200%	6.375%	12.000%
Maturity	12/15/11	02/15/12	12/01/15	11/15/2016	03/01/14	11/01/15
Outstanding	$300	$39	$275	$350	$175	$425
Rating	Baa3/BBB-	Ba3/BB	B3/CCC	Baa3/BBB-	Ba2/BB	B2/B+
Offer price	$104.26	$103 50	$104 00		$93.50	$97 00
Yield	6.94%	6.62%	10 13%		7.83%	12.63%
STW	409bp	480bp	682bp		447bp	904bp
Bond Two						
Description	Debentures		PIK HoldCo	Sr Nts		Sr Sec FRNs
Coupon	6.950%		L+600	6.850%		L+737.5
Maturity	12/15/25		07/01/12	11/15/2036		11/01/2014
Outstanding	$150		$300	$250		$150
Rating	Baa3/BBB-		Caa1/CCC /*+	Baa3/BBB-		B2/B+
Offer price	$93.41					
Yield	7.64%					
STW	343bp					

1 Metals USA EV estimated using a 6.5x multiple of LTM EBITDA
2 Russel Metals data presented in $CAD
3 Ryerson enterprise value estimated using purchase price at time of transaction

Sources: Company reports and JPMorgan

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Relative value analysis

Coupon	Description	Recommendation	Maturity	Ratings Moody's S&P	Current	Recent Quotes Offer	Recent Quotes Yield	Recent Quotes Spread	YTW Date	Next Call Date Date	Next Call Date Price	EBITDA LTM	EBITDA/ Interest LTM	Debt/ EBITDA LTM	Debt/ TEV
STEEL COMPANIES															
AK Steel Corp.															
7.750%	Sr Nts	**Hold**	15-Jun-12	B1/BB-	$550	$99.25	7.97%	505bp	15-Jun-12	15-Jun-09	$101.29	$908	16.4x	0.7x	11%
Algoma Acquisition Corp.[1]															
9.875%	Sr Nts	NR	15-Jun-15	Caa1/B-	$450	$94.75	10.98%	749bp	15-Jun-15	15-Jun-11	$104.94	$135	2.0x	6.8x	58%
California Steel Industries, Inc.[2]															
6.125%	Sr Nts	NR	15-Mar-14	Ba3/BB-	$150	$86.50	9.24%	594bp	15-Mar-14	15-Mar-09	$103.06	$54	5.4x	2.8x	42%
Gerdau Ameristeel Corp.*															
10.375%	Sr Nts	NR	15-Jul-11	Ba1/BB+	$405	$103.88	7.98%	584bp	15-Jul-09	15-Jul-09	$101.79	$1,192	9.4x	2.6x	32%
International Steel Group (Mittal Steel, USA)[3]															
6.500%	Sr Nts	NR	15-Apr-14	Baa2/BBB+	$500	$100.97	6.29%	298bp	15-Apr-14	nc	nc	$20,098	17.9x	1.7x	23%
Nucor Corp.															
4.875%	Sr Nts	NR	1-Oct-12	A1/A+	$350	$101.42	4.50%	139bp	1-Oct-12	nc	nc	$3,455	63.1x	0.9x	17%
RathGibson, Inc.[4]															
11.250%	Sr Nts	NR	15-Feb-14	B3/B	$200	$95.50	12.39%	910bp	15-Feb-14	15-Feb-10	$105.63	$48	1.9x	5.8x	89%
Steel Dynamics Inc.[5]															
7.375%	Sr Nts	**Hold**	1-Nov-12	Ba2/BB+	$700	$99.00	7.65%	463bp	1-Nov-12	nc	nc	$944	12.1x	2.1x	26%
6.750%	Sr Nts	**Hold**	1-Apr-15	Ba2/BB+	$500	$94.50	7.82%	436bp	1-Apr-15	1-Apr-11	$103.38	$944	12.1x	2.1x	26%
7.750%	Sr Nts	**Hold**	15-Apr-16	Ba2/BB+	$500	$98.00	8.10%	449bp	15-Apr-16	15-Apr-12	$103.88	$944	12.1x	2.1x	26%
United States Steel Corp.															
6.050%	Sr Nts	NR	1-Jun-17	Baa3/BB+	$450	$92.43	7.22%	344bp	1-Jun-17	nc	nc	$1,624	11.4x	2.0x	16%
ALUMINUM COMPANIES															
Aleris International Inc.															
9.000%	Sr Nts	NR	15-Dec-14	B3/B-	$600	$76.50	14.80%	1139bp	15-Dec-14	15-Dec-10	$104.50	$362	1.7x	6.6x	101%
10.000%	Sr Sub Nts	NR	15-Dec-16	Caa1/B-	$400	$69.50	16.93%	1322bp	15-Dec-16	15-Dec-11	$105.00	$362	1.7x	7.7x	118%
Century Aluminum Co.															
7.500%	Sr Nts	NR	15-Aug-14	B1/BB-	$250	$97.38	8.05%	469bp	15-Aug-14	15-Aug-09	$103.75	$378	22.5x	1.1x	18%
Indalex Holding[6]															
11.500%	Sr Nts	**Hold**	1-Feb-14	Caa3/CCC+	$198	$58.50	26.08%	2280bp	1-Feb-14	1-Feb-10	$108.63	$29	0.9x	10.8x	116%
Noranda Aluminum[7]															
6.828%	FRNs	**Buy**	15-May-15	B3/B-e	$510	na	na	nm	nm	18-Aug-08	$102.00	$302	3.2x	3.1x	81%
8.578%	HoldCo FRNs	**Buy**	15-Nov-14	Caa1/CCC+e	$220	na	na	nm	nm	18-Aug-08	$102.00	$302	3.2x	3.8x	100%
Novelis Inc.[8]															
7.250%	Sr Nts	**Buy**	15-Feb-15	B3/B	$1399	$92.50	8.77%	534bp	15-Feb-15	15-Feb-10	$103.63	$439	2.2x	6.0x	58%
Wise Metals Group LLC															
10.250%	Sr Nts	NR	15-May-12	Ca/CC	$150	$88.75	14.15%	1125bp	15-May-12	15-May-09	$102.56	($15)	-0.4x	-25.8x	NM

Note: EBITDA is Adjusted EBITDA. Interest Expense is based on LTM values.
1. Algoma enterprise value estimated using purchase price at time of transaction. Data presented in $CAD.
2. California Steel Industries enterprise value estimated using a 6.5x multiple of LTM EBITDA.
3. International Steel Group credit metrics shown pro forma for Mittal Steel.
4. RathGibson enterprise value estimated using a 6.5x multiple of LTM EBITDA.
5. Aleris EV estimated using a 6.5x multiple of LTM pro forma EBITDA excluding special items and including synergies.
6. Indalex enterprise value estimated using a 6.0x multiple of estimated mid-cycle EBITDA.
7. Noranda enterprise value of $1.15 billion reflects purchase price.
8. Novelis enterprise value assumed at $4.5 billion.

Sources: Company reports and JPMorgan.

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Relative value analysis

Coupon	Description	Recommendation	Maturity	Ratings Moody's S&P	Current	Recent Quotes Offer	Recent Quotes Yield	Recent Quotes Spread	YTW Date	Next Call Date Date	Next Call Date Price	EBITDA LTM	EBITDA/ Interest LTM	Debt/ EBITDA LTM	Debt/ TEV
COAL COMPANIES															
Arch Western Finance															
6.750%	Sr Nts	NR	1-Jul-13	B1/BB-	$950	$97.75	7.30%	411bp	1-Jul-13	1-Jul-09	$102.25	$553	7.3x	2.6x	16%
Massey Energy Co.															
6.625%	Sr Nts	NR	15-Nov-10	B2/B+	$360	$99.75	6.74%	421bp	15-Nov-10	15-Nov-08	$101.66	$437	8.8x	2.5x	17%
6.875%	Sr Nts	NR	15-Dec-13	B2/B+	$760	$96.75	7.62%	436bp	15-Dec-13	15-Dec-09	$103.44	$437	8.8x	2.5x	17%
Peabody Energy Corp.															
6.875%	Sr Nts	NR	15-Mar-13	Ba1/BB	$650	$100.63	6.61%	400bp	15-Mar-11	15-Mar-09	$102.29	$994	4.3x	3.4x	16%
5.875%	Sr Nts	NR	15-Apr-16	Ba1/BB	$250	$92.25	7.20%	359bp	15-Apr-16	15-Apr-09	$102.94	$994	4.3x	3.4x	16%
MINING COMPANIES															
Freeport-McMoRan Copper & Gold[1]															
6.875%	Sr Nts	Hold	1-Feb-14	Baa1/BBB-	$350	$102.78	5.99%	316bp	1-Feb-12	1-Feb-09	$103.44	$10,176	16.2x	0.1x	1%
5.883%	FRNs	Hold	1-Apr-15	Ba2/BBB-	$1000	$99.75	7.66%	nm	nm	1-Apr-09	$102.00	$10,176	16.2x	0.7x	15%
8.250%	Sr Nts	Hold	1-Apr-15	Ba2/BBB-	$1500	$103.00	7.48%	435bp	1-Apr-13	1-Apr-11	$104.13	$10,176	16.2x	0.7x	15%
8.375%	Sr Nts	Hold	1-Apr-17	Ba2/BBB-	$3500	$103.25	7.74%	429bp	1-Apr-15	1-Apr-12	$104.19	$10,176	16.2x	0.7x	15%
8.750%	Sr Nts[2]	Hold	1-Jun-11	Baa2/BBB-	$108	$106.94	6.07%	340bp	1-Jun-11	nc	nc	$10,176	16.2x	0.7x	15%
7.125%	Sr Nts[2]	Hold	1-Nov-27	Baa2/BBB-	$115	$103.60	6.79%	254bp	1-Nov-27	nc	nc	$10,176	16.2x	0.7x	15%
9.500%	Sr Nts[2]	Hold	1-Jun-31	Baa2/BBB-	$194	$129.59	6.91%	255bp	1-Jun-31	nc	nc	$10,176	16.2x	0.7x	15%
6.125%	Sr Nts[2]	Hold	15-Mar-34	Baa2/BBB-	$150	$93.73	6.64%	219bp	15-Mar-34	nc	nc	$10,176	16.2x	0.7x	15%
Fortescue Metals Group Ltd[3]															
10.625%	Sr Nts	NR	1-Sep-16	B1/B+	$1080	$115.75	7.95%	428bp	1-Sep-16	nc	nc	$1	0.0x	NM	14%
10.000%	Sr Nts	NR	1-Sep-13	B1/B+	$320	$108.75	7.88%	466bp	1-Sep-13	nc	nc	$1	0.0x	NM	14%
MISCELLANEOUS															
Allegheny Technologies															
8.375%	Sr Nts	NR	15-Dec-11	Baa3/BBB-	$300	$104.74	6.79%	399bp	15-Dec-11	nc	nc	$1,171	3904.3x	0.4x	10%
Graftech Finance Inc.															
10.250%	Sr Nts	NR	15-Feb-12	Ba3/BB	$39	$103.50	6.84%	492bp	15-Feb-09	15-Feb-09	$101.71	$301	10.4x	1.1x	11%
Metals USA[4]															
11.125%	Sr Sec Nts	Hold	1-Dec-15	B3/CCC	$275	$104.00	10.13%	688bp	1-Dec-13	1-Dec-10	$105.56	$199	3.5x	3.2x	50%
8.791%	HoldCo FRNs	Buy	1-Jul-12	Caa1/CCC /*+	$300	$92.50	11.17%	nm	nm	18-Aug-08	$102.00	$199	3.5x	4.7x	73%
Russel Metals[5]															
6.375%	Sr Nts	NR	1-Mar-14	Ba2/BB	$175	$93.50	7.83%	453bp	1-Mar-14	1-Mar-09	$103.19	$201	27.1x	0.9x	11%
Reliance Steel & Aluminum Co.															
6.200%	Sr Nts	NR	15-Nov-16	Baa3/BBB-	$350	$90.50	7.77%	398bp	15-Nov-16	nc	nc	$859	12.0x	1.3x	20%
Ryerson Inc.[6]															
12.000%	Sr Sec Nts	Buy	1-Nov-15	B2/B+	$425	$97.00	12.63%	909bp	1-Nov-15	1-Nov-11	$106.00	$228	2.5x	5.3x	61%
10.248%	Sr Sec FRNs	Buy	1-Nov-14	B2/B+	$150	na	na	nm	nm	1-Nov-09	$105.00	$228	2.5x	5.3x	61%

Note: EBITDA is Adjusted EBITDA. Interest Expense is based on LTM values.
1. Freeport-McMoRan EBITDA presented pro forma for Phelps Dodge transaction.
2. Former Phelps Dodge notes now guaranteed by Freeport.
3. Fortescue (FMGAU) values translated using December 31, 2007 exchange rates.
4. Metals USA enterprise value estimated using a 6.5x multiple of LTM EBITDA. Interest expense at OpCo level.
5. Russel Metals data presented in $CAD.
6. Ryerson enterprise value estimated using purchase price at time of transaction.

Sources: Company reports and JPMorgan.

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Relative value analysis: ranked by YTW

Issuer	Coupon	Maturity	Outstanding	Moody's	S&P	Price	YTW	STW	YTW Date	LTM EBITDA	Enterprise Value	EBITDA/ Interest	Debt/ EBITDA	Debt/ EV
Indalex Holding	11.500%	01-Feb-14	198	Caa3	CCC+	60.00	25.16%	2,145bp	01-Feb-14	$29	$270	0.9x	10.8x	116%
Aleris International Inc	10.000%	15-Dec-16	400	Caa1	B-	73.00	15.90%	1,187bp	15-Dec-16	$362	$2,356	1.7x	7.7x	118%
Wise Metals	10.250%	15-May-12	150	Ca	CC	89.75	13.72%	1,036bp	15-May-12	-$15	nm	nm	nm	
Aleris International Inc	9.000%	15-Dec-14	600	B3	B-	84.00	12.69%	889bp	15-Dec-14	$362	$2,356	1.7x	6.6x	101%
Ryerson Inc.	12.000%	01-Nov-15	425	B2	B+	99.75	12.04%	814bp	01-Nov-15	$228	$1,980	2.5x	5.3x	61%
RathGibson	11.250%	15-Feb-14	200	B3	B	97.25	11.92%	821bp	15-Feb-14	$48	$310	1.9x	5.8x	89%
Algoma Steel	*9.875%*	*15-Jun-15*	*450*	*Caa1*	*B-*	*95.50*	*10.81%*	*695bp*	*15-Jun-15*	*$135*	*$1,578*	*2.0x*	*6.8x*	*58%*
Metals USA	11.125%	01-Dec-15	275	B3	CCC	105.50	9.80%	611bp	01-Dec-13	$199	$1,294	3.5x	3.2x	50%
California Steel Industries	6.125%	15-Mar-14	150	Ba3	BB-	87.25	9.02%	530bp	15-Mar-14	$54	$354	5.4x	2.8x	42%
Novelis	7.250%	15-Feb-15	1,399	B3	B	94.00	8.44%	462bp	15-Feb-15	$439	$4,500	2.2x	6.0x	58%
FMG Finance Pty Ltd	10.625%	01-Sep-16	1,080	B1	B+	117.50	7.70%	370bp	01-Sep-16	$1	$25,707	0.0x	nm	15%
Russel Metals	6.375%	01-Mar-14	175	Ba2	BB	94.50	7.58%	386bp	01-Mar-14	$201	$1,699	27.1x	0.9x	11%
FMG Finance Pty Ltd	10.000%	01-Sep-13	320	B1	B+	110.75	7.46%	380bp	01-Sep-13	$1	$25,707	0.0x	nm	15%
Century Aluminum	7.500%	15-Aug-14	250	B1	BB-	100.25	7.42%	400bp	15-Aug-12	$378	$2,382	22.5x	1.1x	18%
Massey Energy	6.875%	15-Dec-13	760	B2	B+	98.38	7.24%	355bp	15-Dec-13	$437	$6,348	8.8x	2.5x	17%
Steel Dynamics	6.750%	01-Apr-15	500	Ba2	BB+	97.75	7.17%	333bp	01-Apr-15	$944	$7,843	12.1x	2.1x	26%
Steel Dynamics	6.750%	01-Apr-15	500	Ba2	BB+	97.75	7.17%	333bp	01-Apr-15	$944	$7,843	12.1x	2.1x	26%
Steel Dynamics	7.375%	01-Nov-12	700	Ba2	BB+	100.75	7.17%	369bp	01-Nov-12	$944	$7,843	12.1x	2.1x	26%
Phelps Dodge	9.500%	01-Jun-31	194	Baa2	BBB-	126.87	7.11%	254bp	01-Jun-31	$10,176	$49,313	16.2x	0.7x	15%
Phelps Dodge	6.125%	15-Mar-34	150	Baa2	BBB-	88.99	7.06%	241bp	15-Mar-34	$10,176	$49,313	16.2x	0.7x	15%
Arch Western Finance	6.750%	01-Jul-13	950	B1	BB-	98.75	7.05%	341bp	01-Jul-13	$553	$9,299	7.3x	2.6x	16%
Phelps Dodge	7.125%	01-Nov-27	115	Baa2	BBB-	101.43	6.99%	252bp	01-Nov-27	$10,176	$49,313	16.2x	0.7x	15%
Freeport-McMoRan Copper & Gold	8.375%	01-Apr-17	3,500	Ba2	BBB-	107.50	6.97%	313bp	01-Apr-15	$10,176	$49,313	16.2x	0.7x	15%
UCAR Finance	*10.250%*	*15-Feb-12*	*39*	*Ba3*	*BB-*	*103.75*	*6.85%*	*446bp*	*15-Feb-09*	*$301*	*$2,822*	*10.4x*	*1.1x*	*11%*
Massey Energy	6.625%	15-Nov-10	360	B2	B+	99.50	6.85%	386bp	15-Nov-10	$437	$6,348	8.8x	2.5x	17%
Allegheny Technologies Inc	8.375%	15-Dec-11	300	Baa3	BBB-	104.73	6.83%	357bp	15-Dec-11	$1,171	$5,498	3904.3x	0.4x	10%
AK Steel	7.750%	15-Jun-12	550	B1	BB-	101.75	6.79%	391bp	15-Jun-10	$908	$5,796	16.4x	0.7x	11%
Freeport-McMoRan Copper & Gold	8.250%	01-Apr-15	1,500	Ba2	BBB-	105.88	6.79%	320bp	01-Apr-13	$10,176	$49,313	16.2x	0.7x	15%
Peabody Energy	6.875%	15-Mar-13	650	Ba1	BB	100.25	6.77%	370bp	15-Mar-11	$994	$21,082	4.3x	3.4x	16%
Peabody Energy	5.875%	15-Apr-16	250	Ba1	BB	94.75	6.75%	279bp	15-Apr-16	$994	$21,082	4.3x	3.4x	16%
US Steel Corp	*5.650%*	01-Jun-13	300	Baa3	BB+	*96.04*	6.60%	298bp	01-Jun-13	$1,624	$19,989	11.4x	2.0x	16%
Phelps Dodge	8.750%	01-Jun-11	108	Baa2	BBB-	105.82	6.54%	342bp	01-Jun-11	$10,176	$49,313	16.2x	0.7x	15%
International Steel Group	6.500%	15-Apr-14	500	Baa2	BBB+	99.94	6.51%	278bp	15-Apr-14	$20,098	$147,829	17.9x	1.7x	23%
Freeport-McMoRan	6.875%	01-Feb-14	350	Baa1	BBB-	103.50	5.79%	249bp	01-Feb-12	$10,176	$49,313	16.2x	0.1x	1%
Gerdau Ameristeel	10.375%	15-Jul-11	405	Ba1	BB+	104.00	4.03%	229bp	15-Jul-08	$1,192	$9,621	9.4x	2.6x	32%

Sources: Company reports and JPMorgan.

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Relative value analysis: ranked by Debt/EV

Issuer	Coupon	Maturity	Outstanding	Moody's	S&P	Price	YTW	STW	YTW Date	LTM EBITDA	Enterprise Value	EBITDA/ Interest	Debt/ EBITDA	Debt/ EV
Aleris International Inc	10.000%	15-Dec-16	400	Caa1	B-	73.00	15.90%	1,187bp	15-Dec-16	$362	$2,356	1.7x	7.7x	118%
Indalex Holding	11.500%	01-Feb-14	198	Caa3	CCC+	60.00	25.16%	2,145bp	01-Feb-14	$29	$270	0.9x	10.8x	116%
Aleris International Inc	9.000%	15-Dec-14	600	B3	B-	84.00	12.69%	889bp	15-Dec-14	$362	$2,356	1.7x	6.6x	101%
RathGibson	11.250%	15-Feb-14	200	B3	B	97.25	11.92%	821bp	15-Feb-14	$48	$310	1.9x	5.8x	89%
Ryerson Inc.	12.000%	01-Nov-15	425	B2	B+	99.75	12.04%	814bp	01-Nov-15	$228	$1,980	2.5x	5.3x	61%
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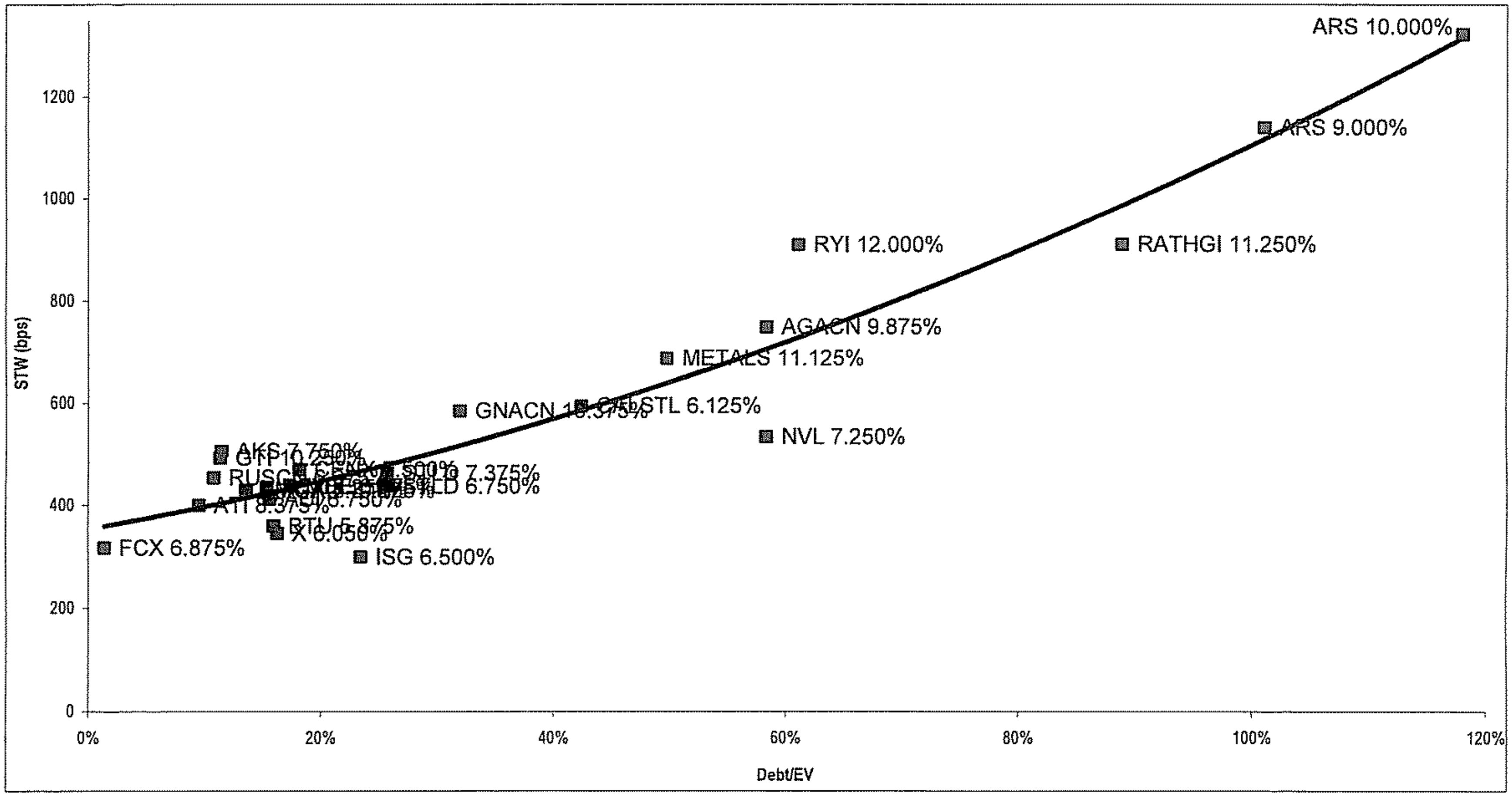
Freeport-McMoRan	6.875%	01-Feb-14	350	Baa1	BBB-	103.50	5.79%	249bp	01-Feb-12	$10,176	$49,313	16.2x	0.1x	1%
Wise Metals	10.250%	15-May-12	150	Ca	CC	89.75	13.72%	1,036bp	15-May-12	-$15	nm	nm	nm	

Sources: Company reports and JPMorgan.

Relative value analysis: STW vs debt/EV



Sources: Company reports and JPMorgan.

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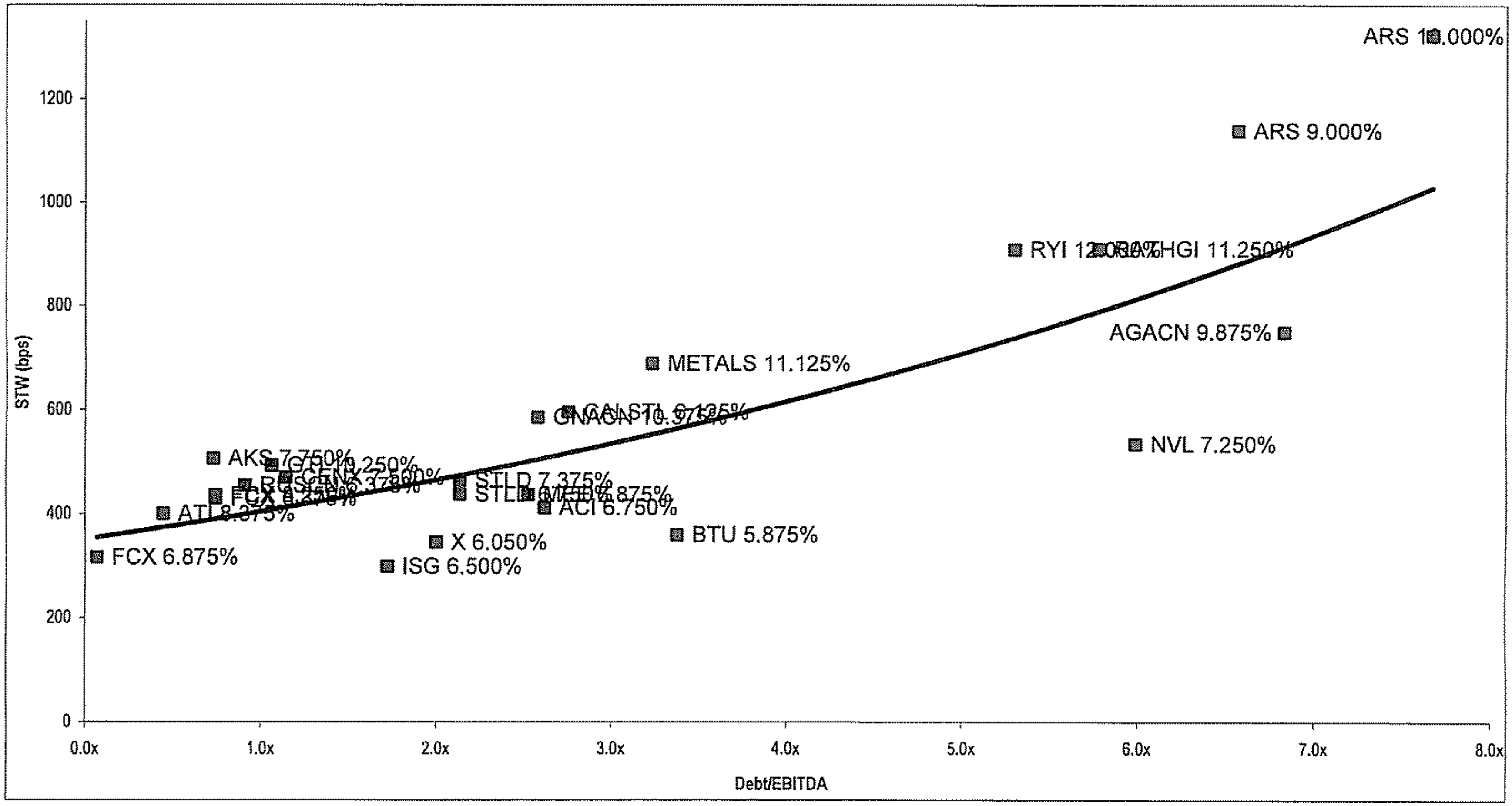
Relative value analysis: STW vs debt/EBITDA



Sources: Company reports and JPMorgan.

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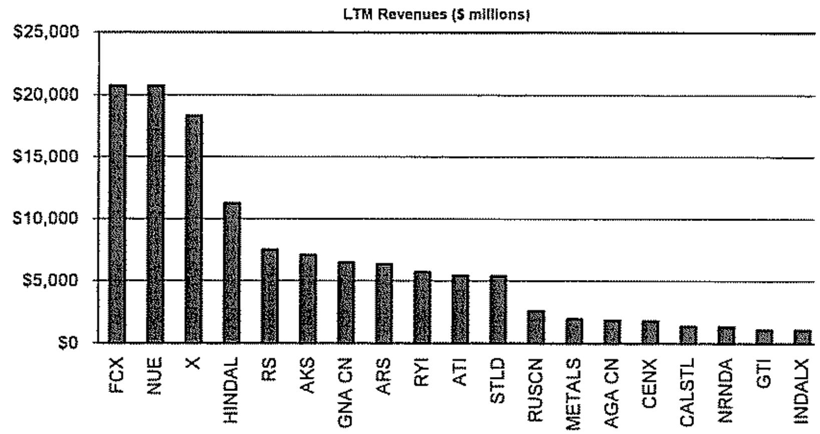
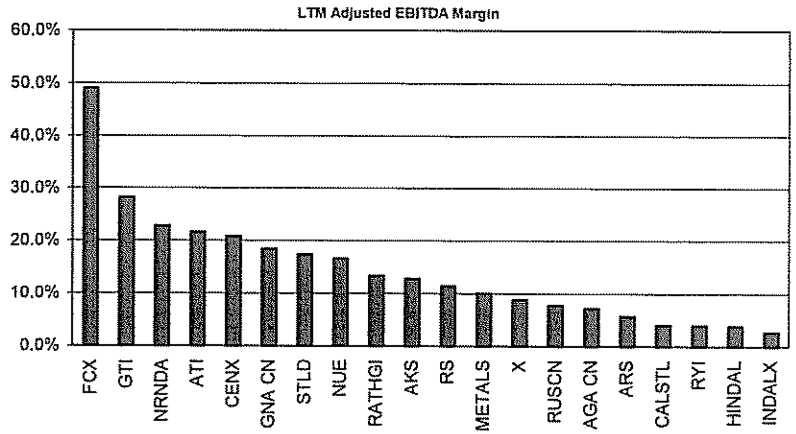
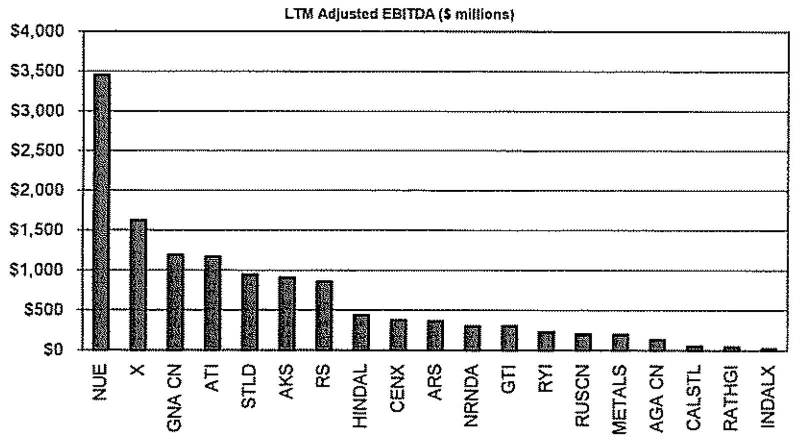
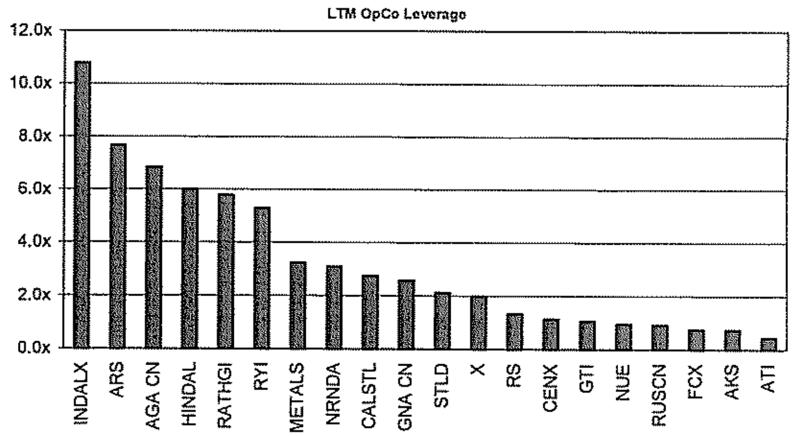
Rankings









Source: JPmorgan and company reports. Note: Freeport-McMoRan excluded from EBITDA graph for sizing purposes.

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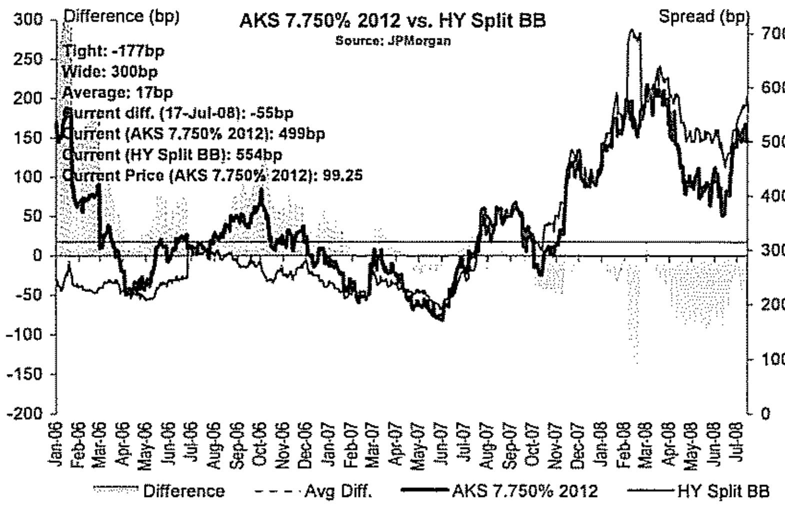
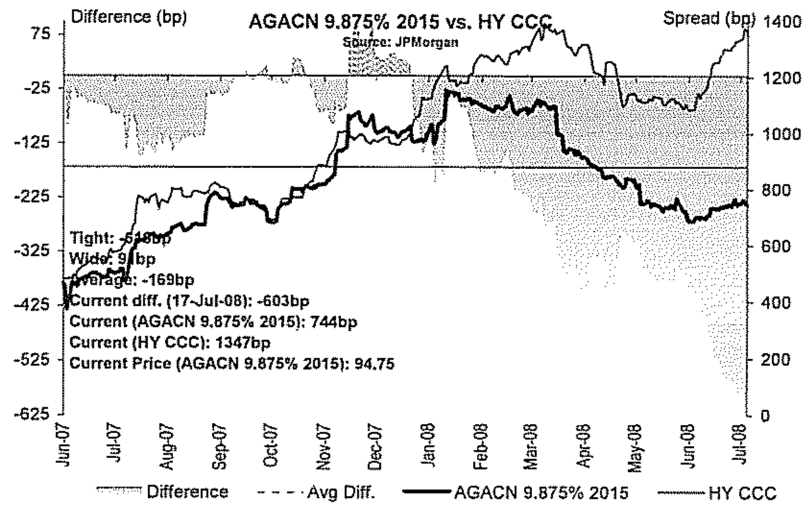
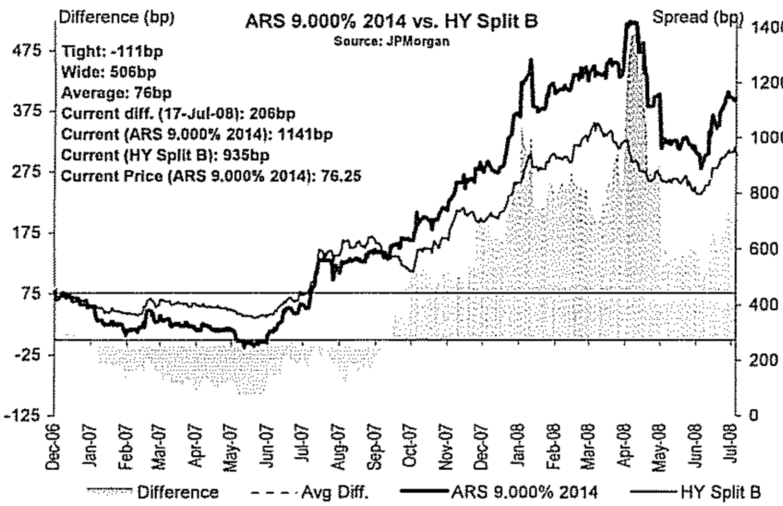
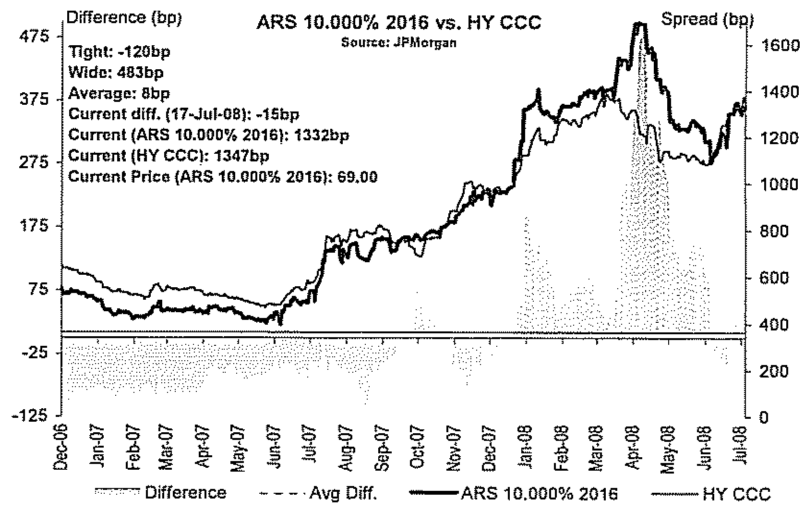
Individual bond trading history

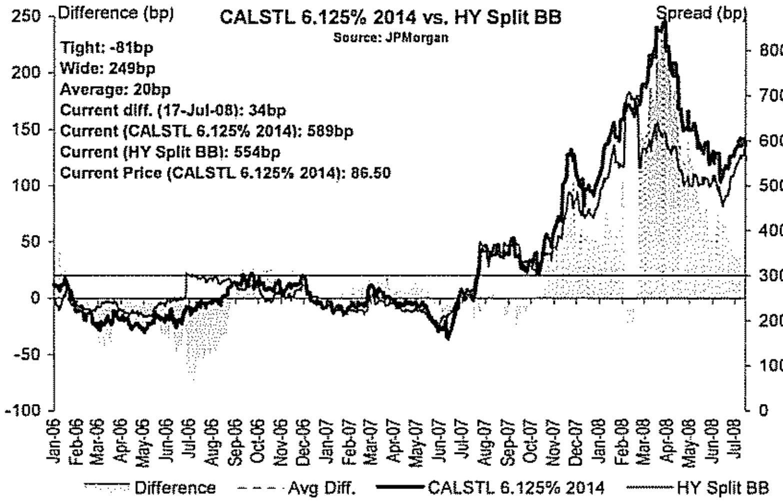


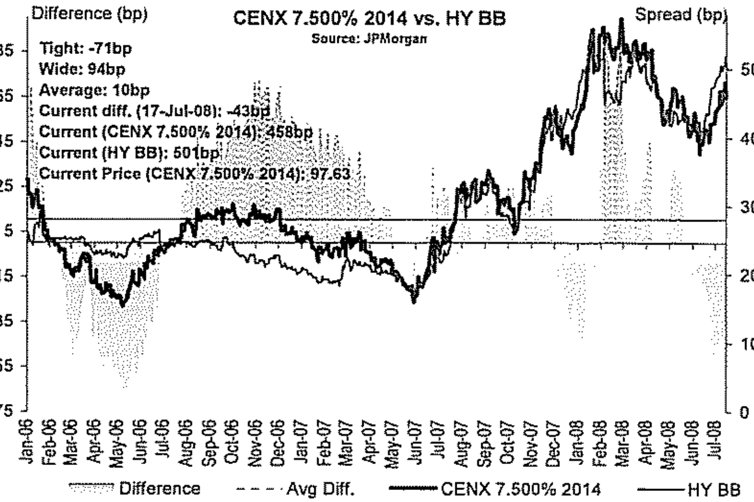


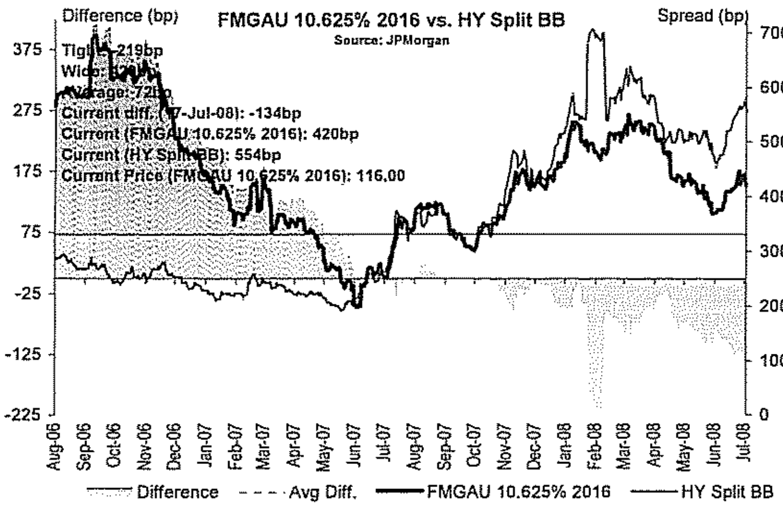


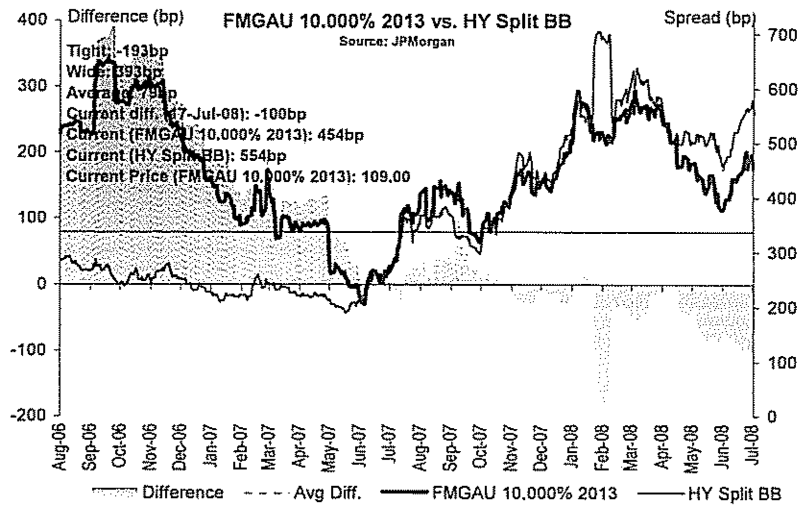


Individual bond trading history (continued)









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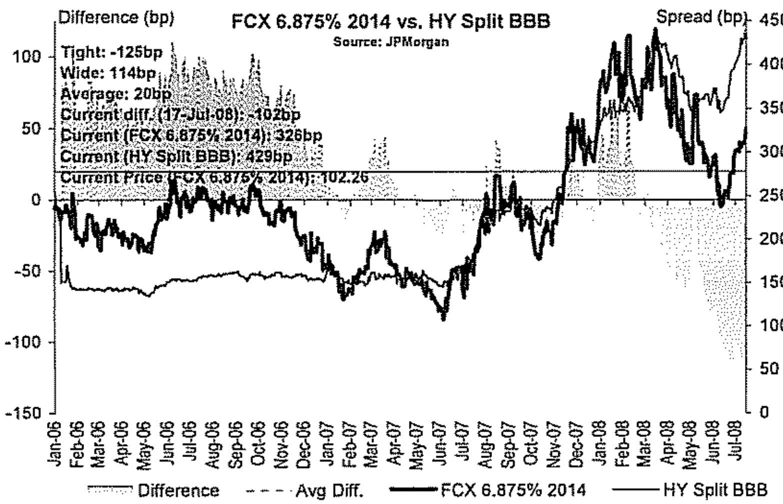

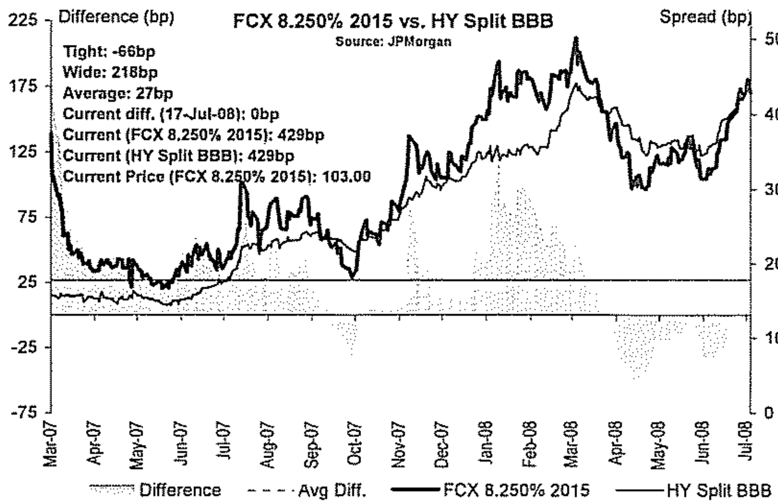

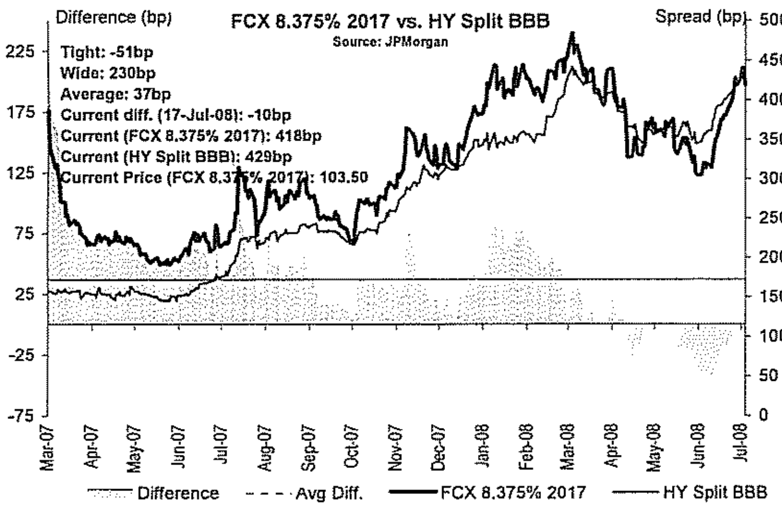

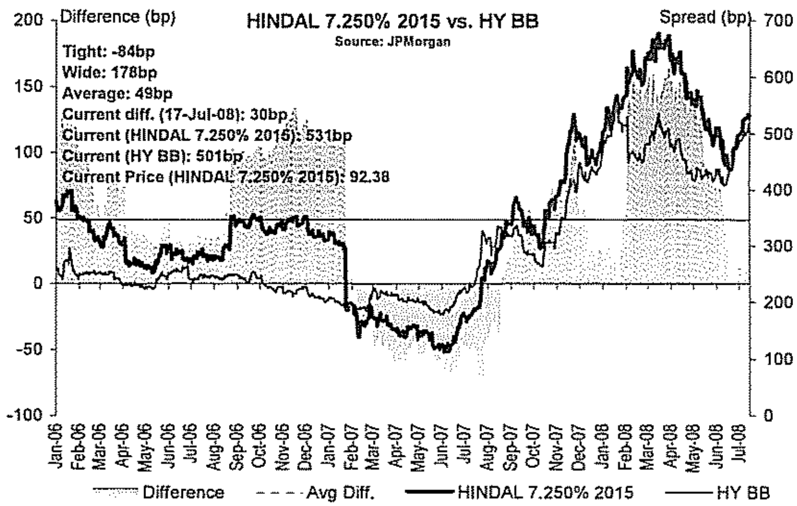

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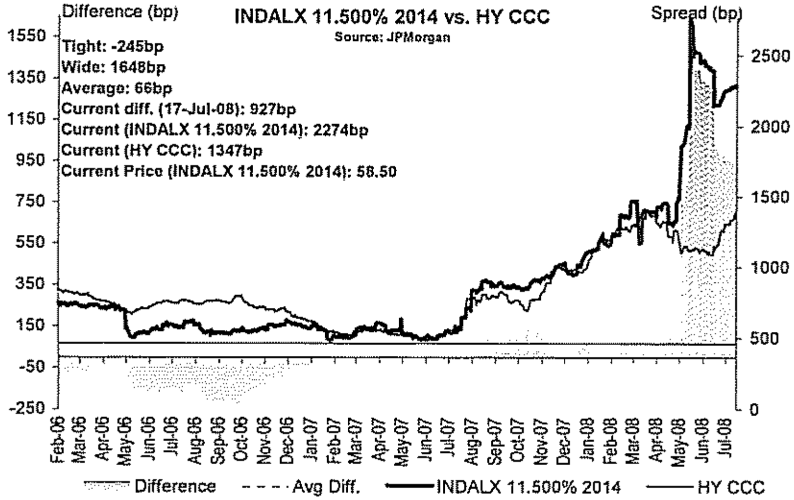

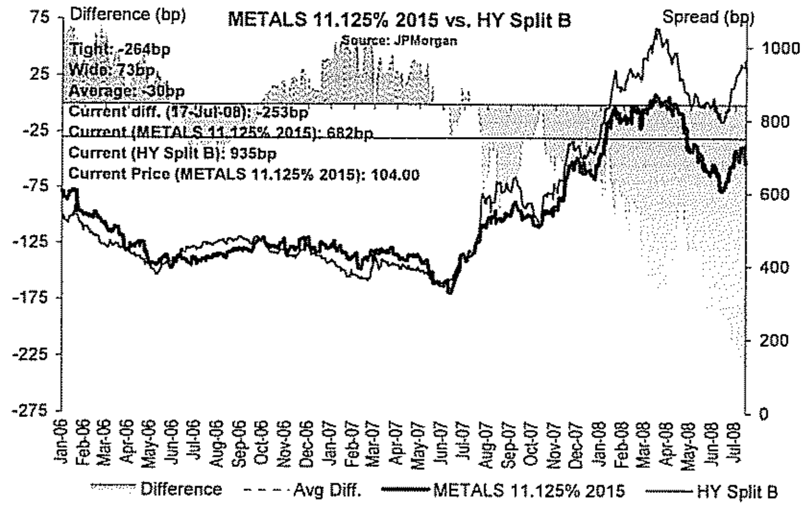

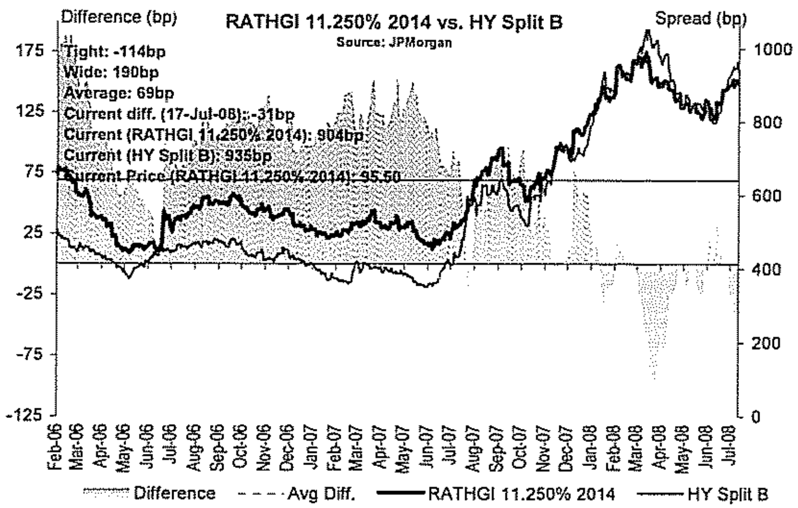

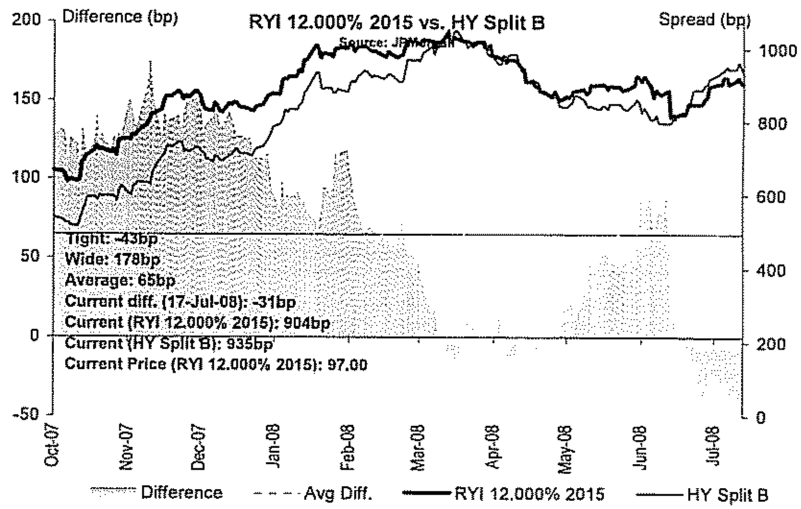

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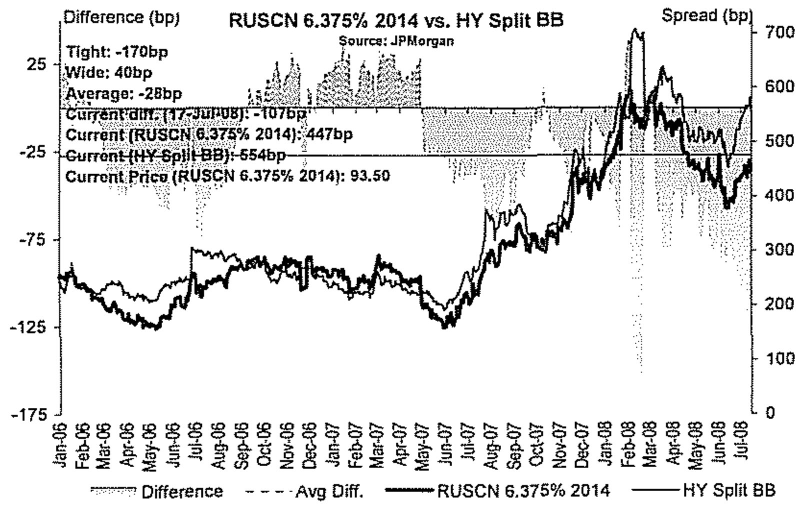

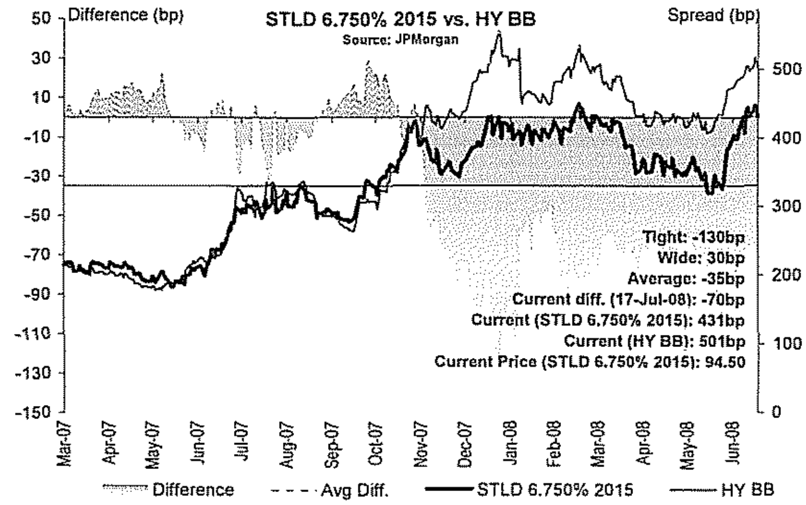

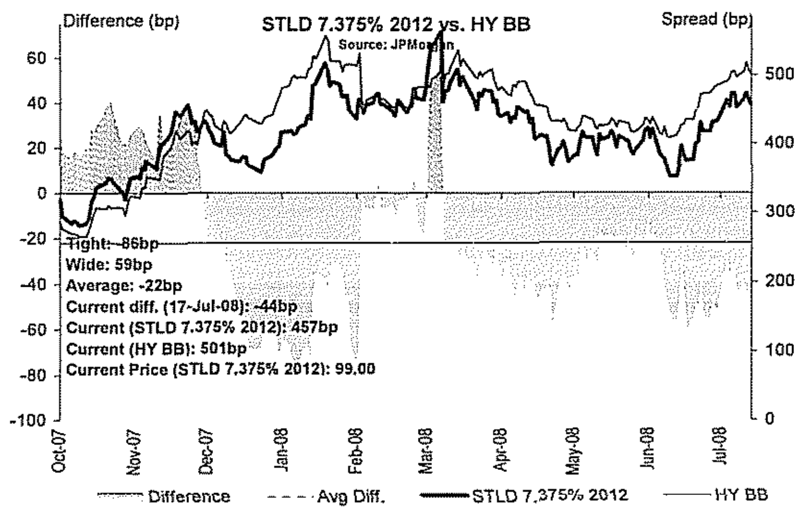

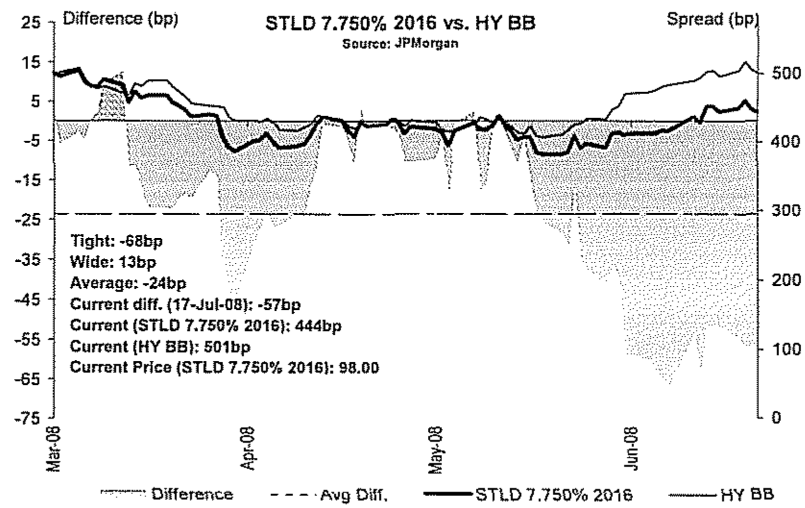

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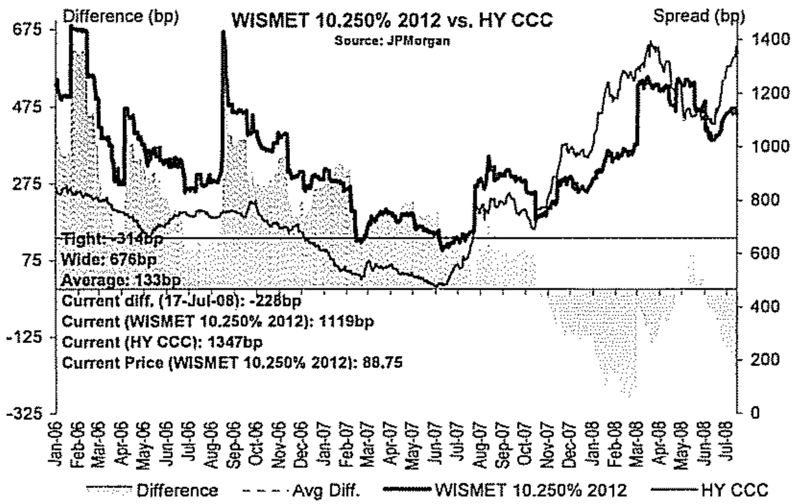

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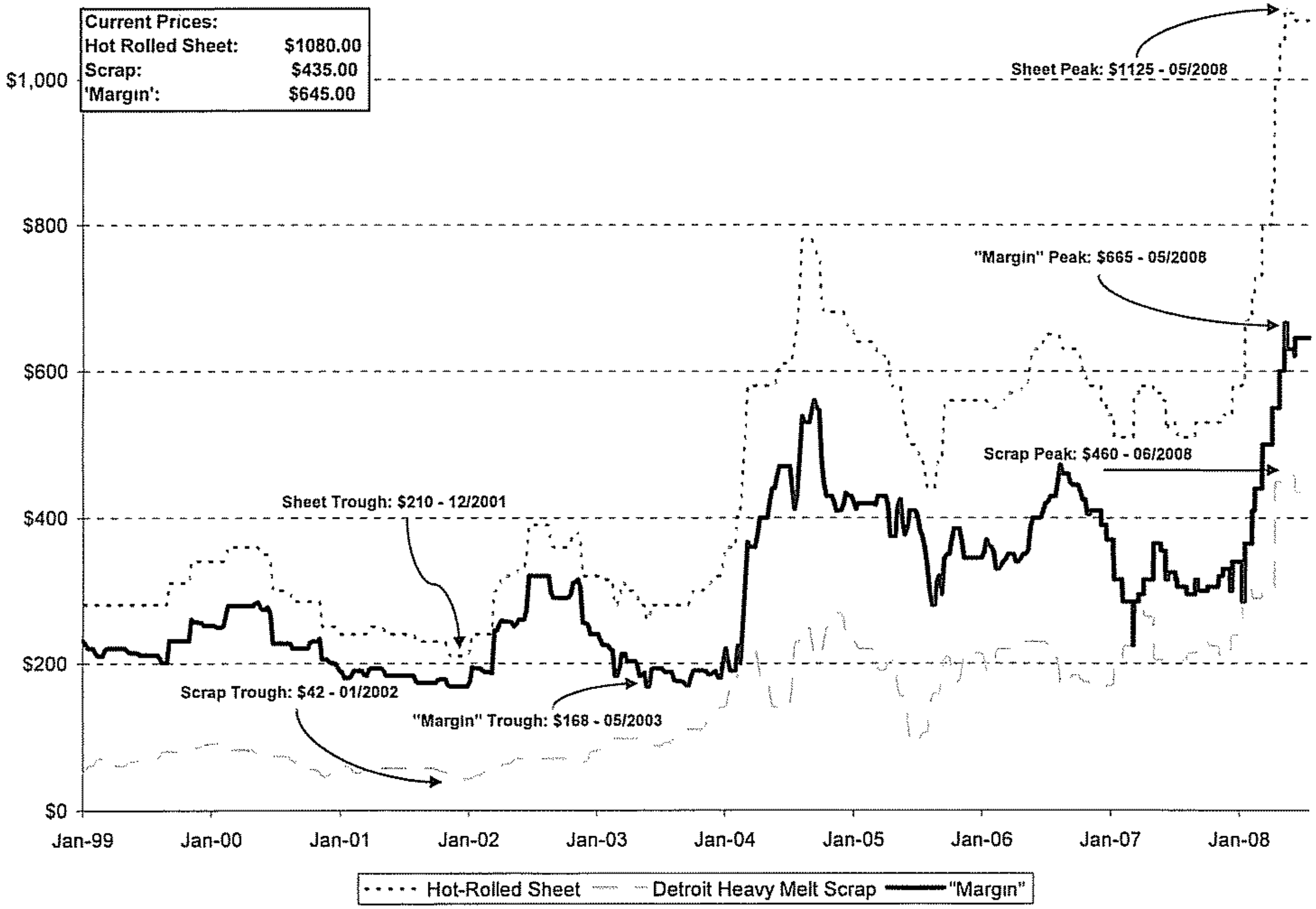
Domestic steel prices: flat-rolled and scrap ($/ton)



Source: American Metal Market (AMM).

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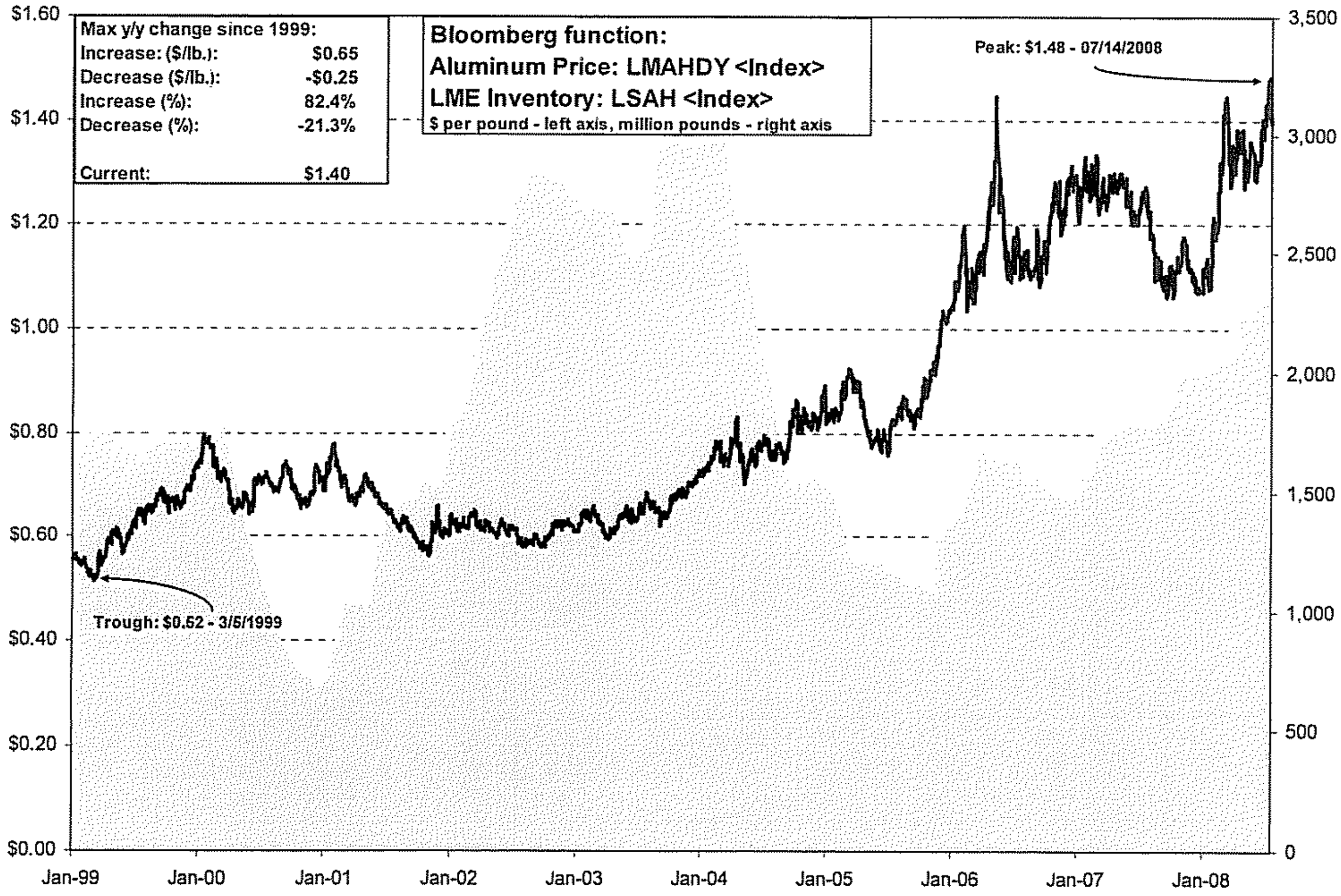
LME aluminum spot price ($/lb.)



Source: Bloomberg.

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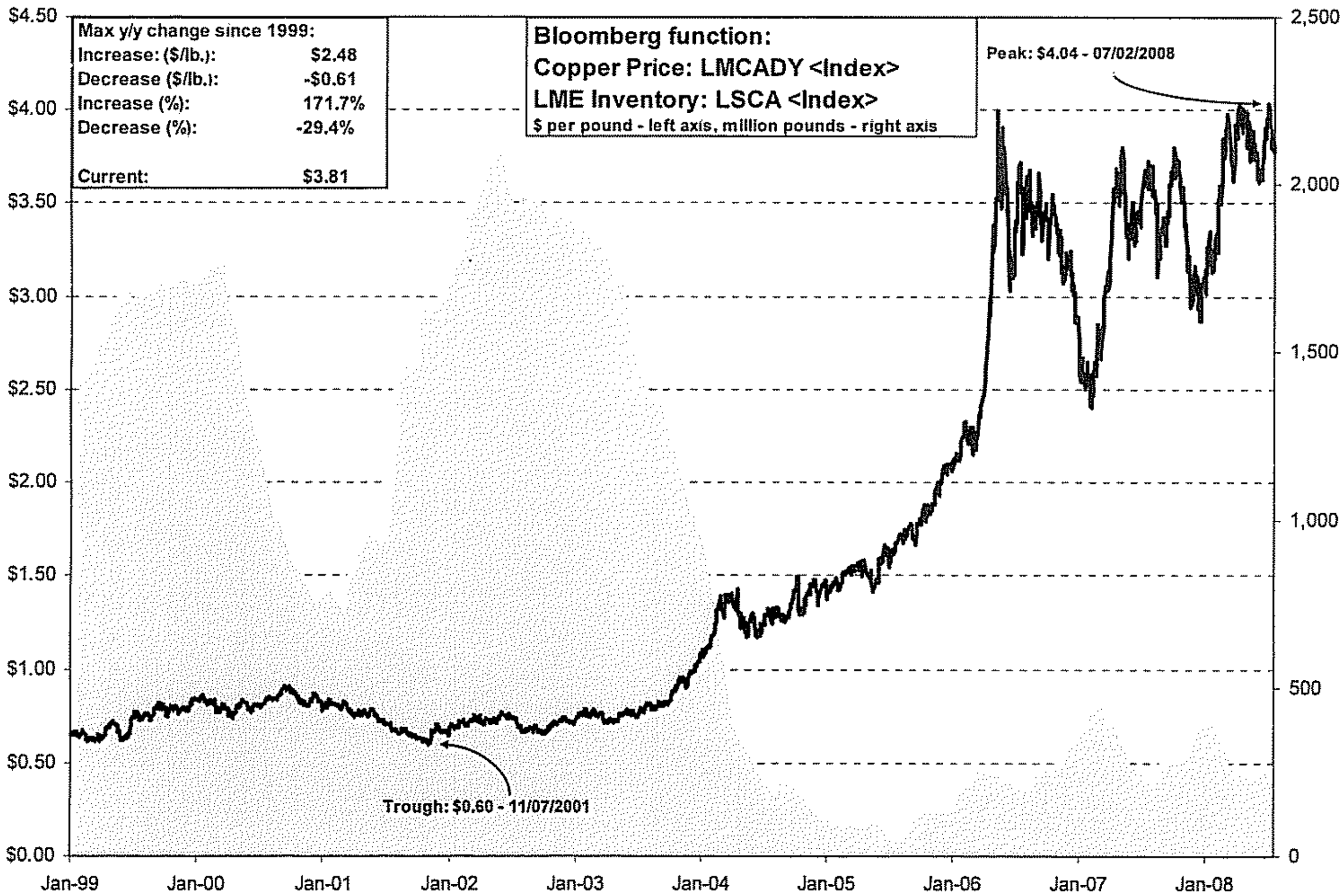
LME copper spot price ($/lb.)



Source: Bloomberg.

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Gold spot price ($/oz.)

Source: Bloomberg.

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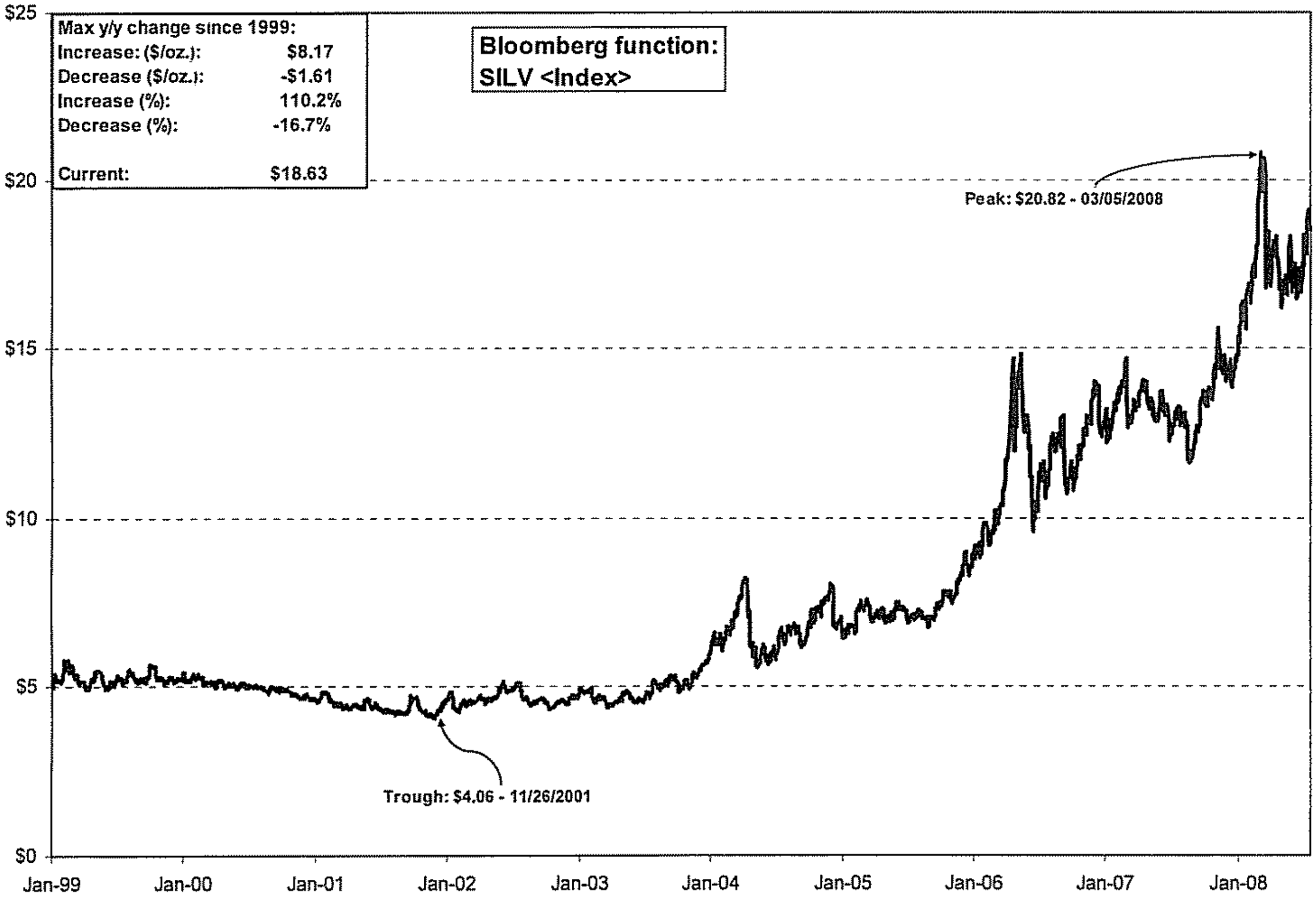
Silver spot price ($/oz.)



Source: Bloomberg.

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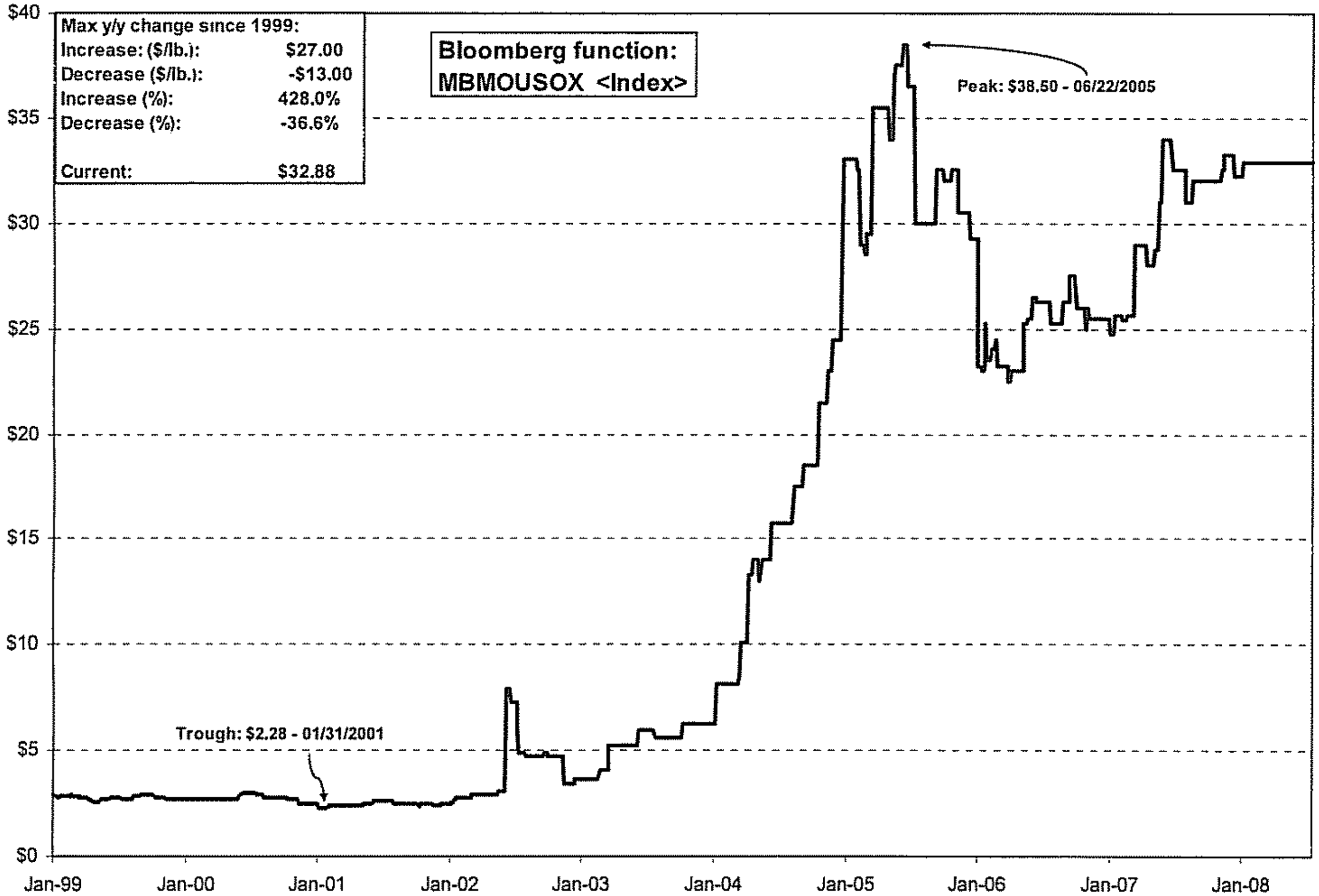
Molybdenum (canned molybdic oxide) price ($/lb.)



Source: Bloomberg.

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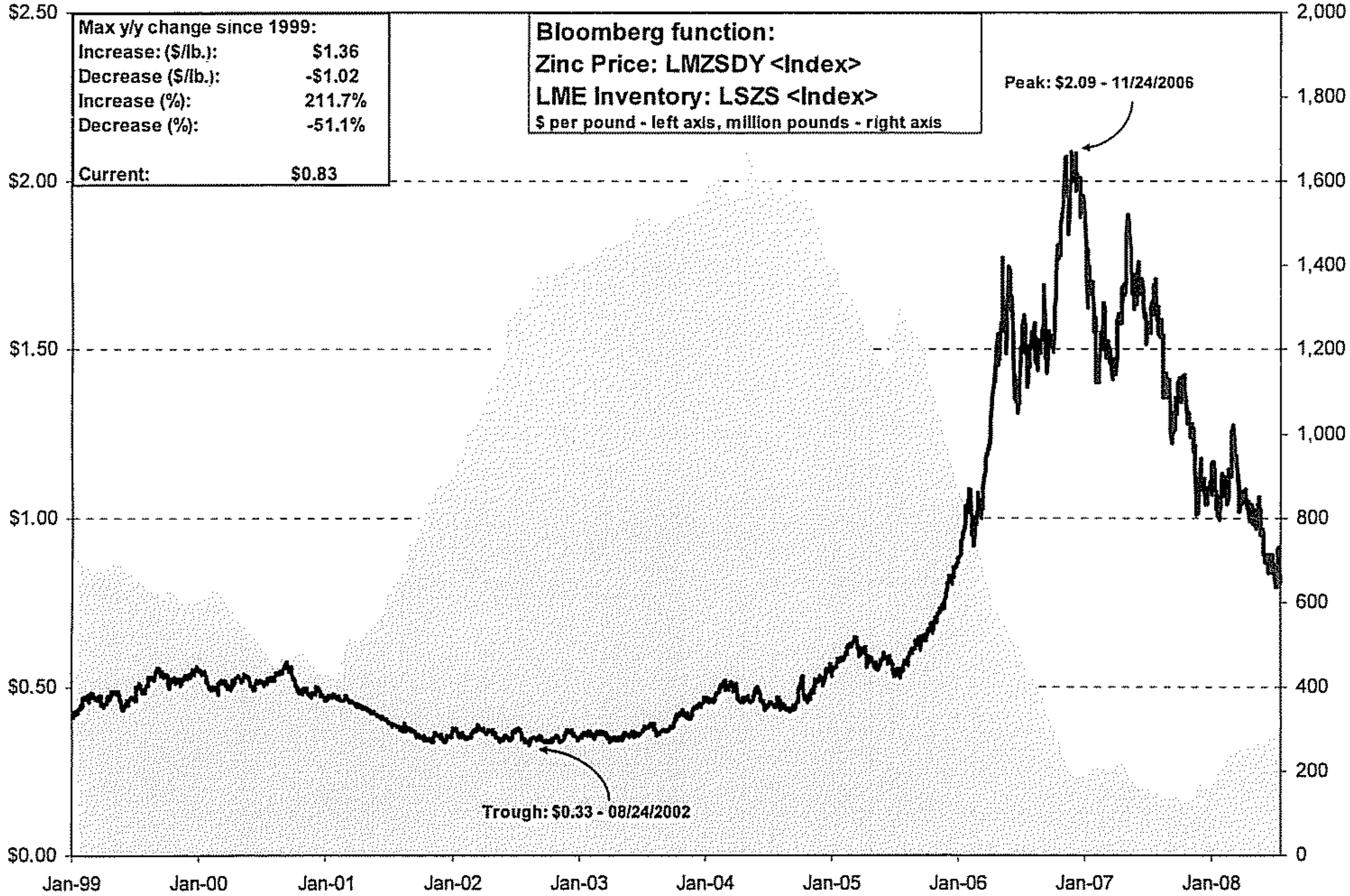
Zinc price ($/lb.)



Source: Bloomberg.

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Nickel price ($/lb.)

Source: Bloomberg.

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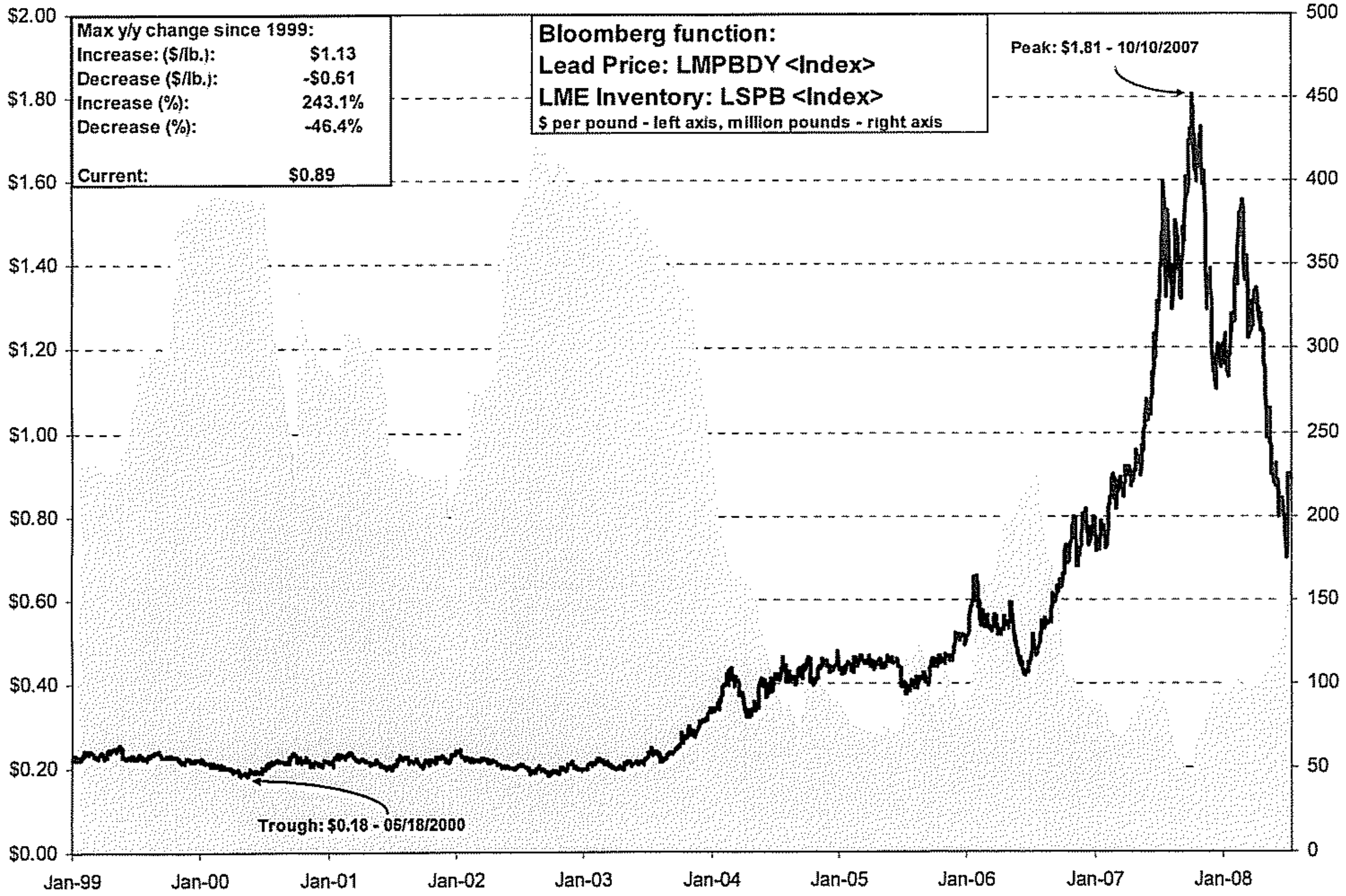
Lead price ($/lb.)



Source: Bloomberg.

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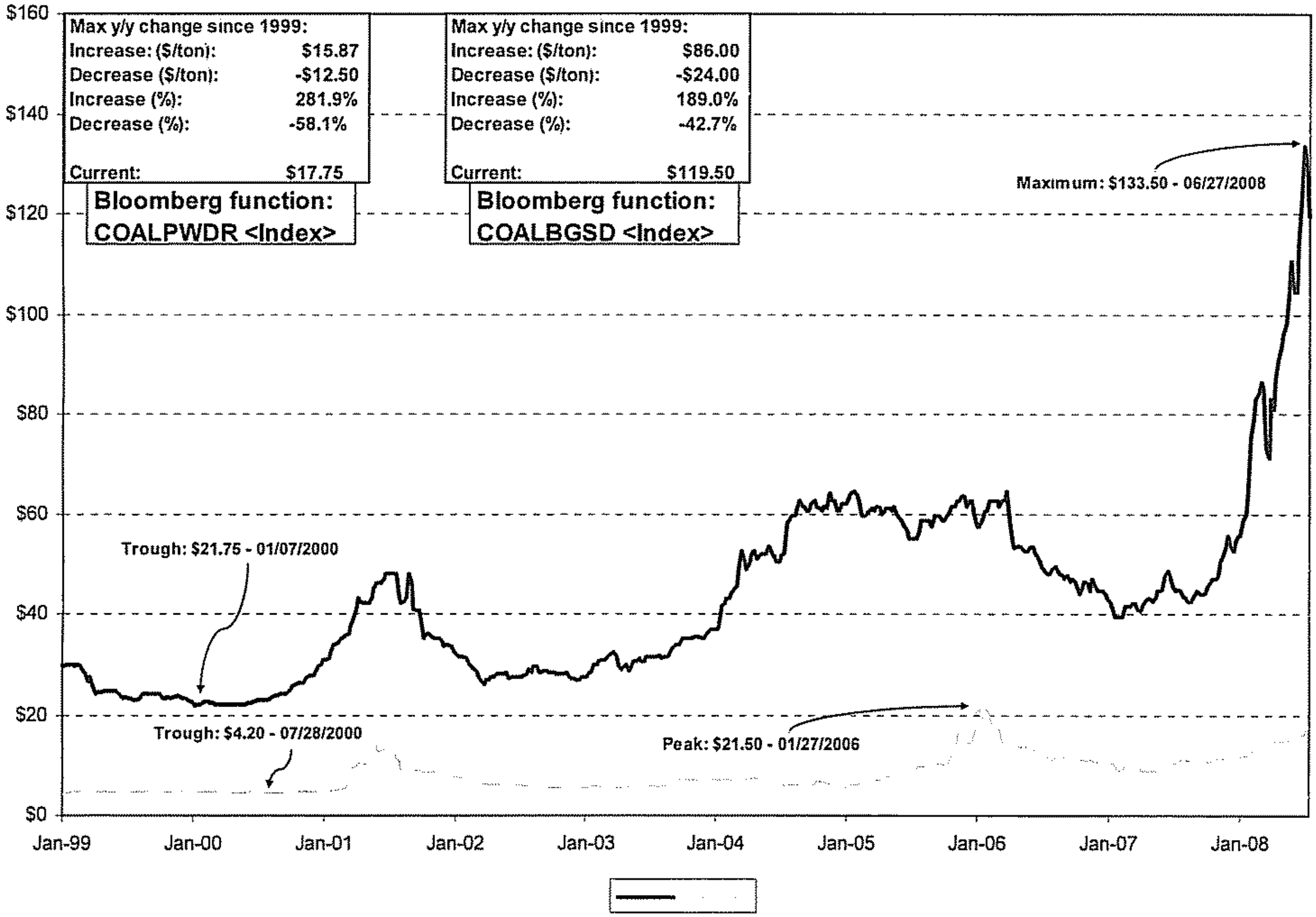
Coal spot prices ($/ton)



Source: Bloomberg.

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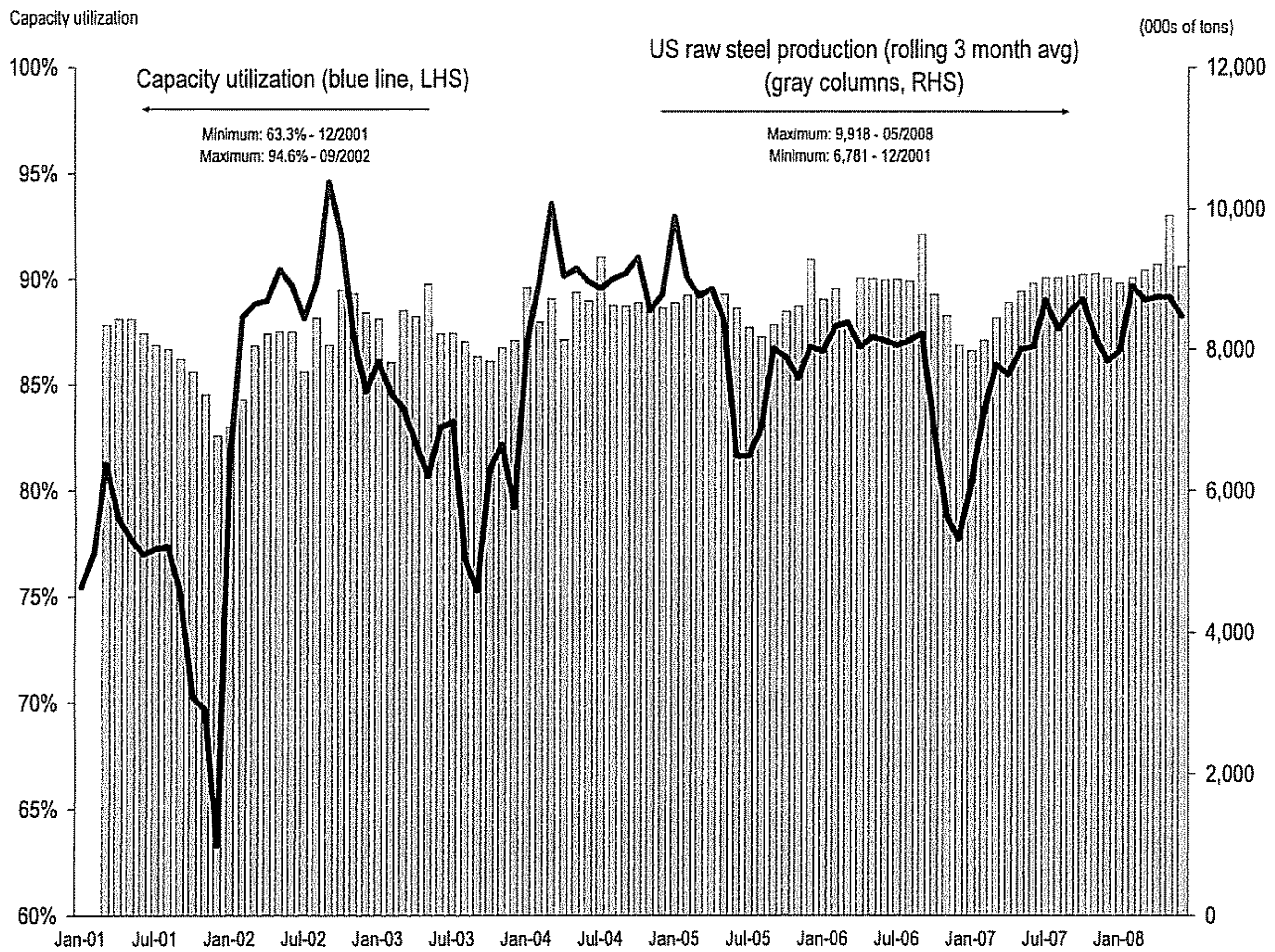
US steel industry: monthly capacity utilization vs raw steel production



Source: AISI.

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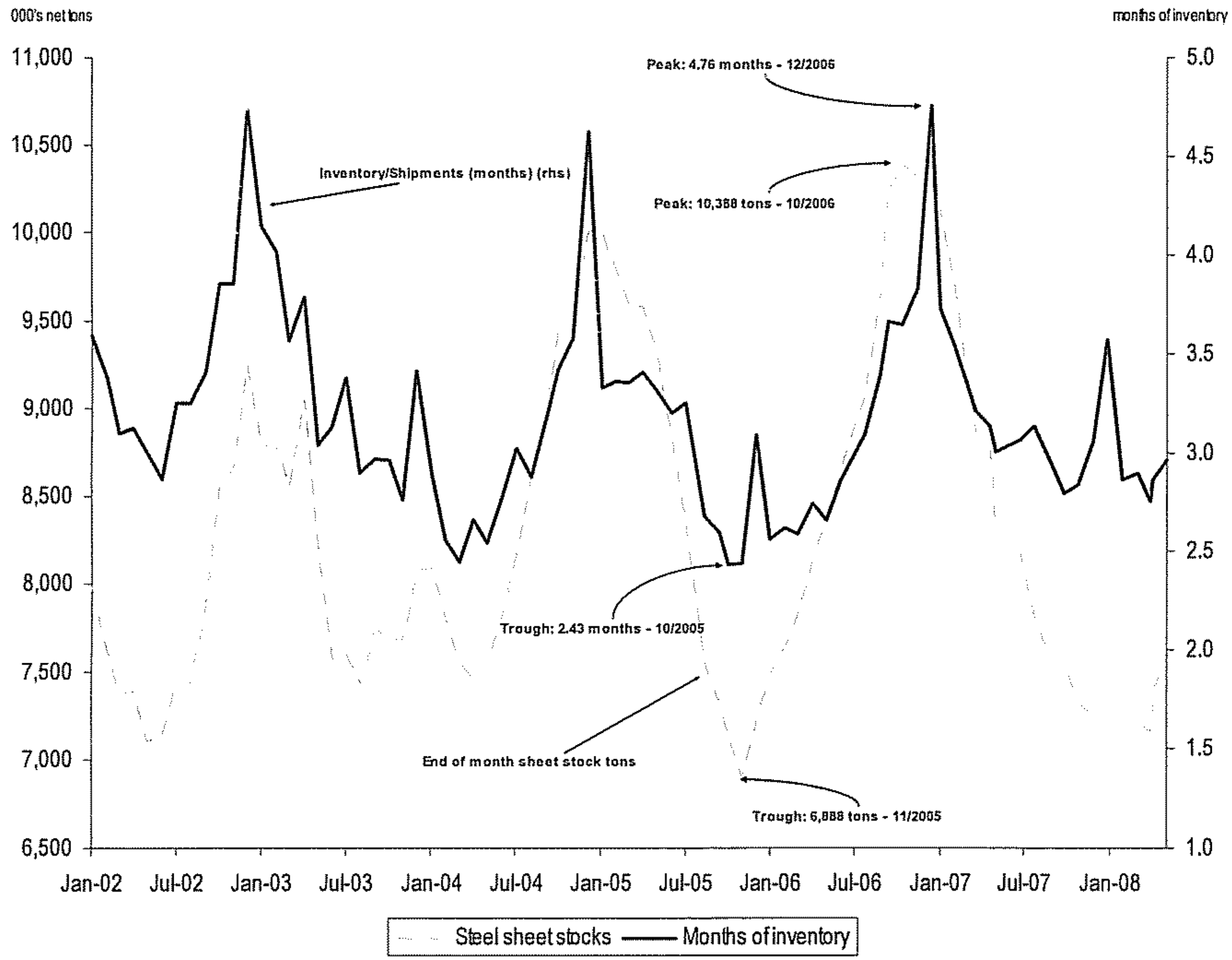
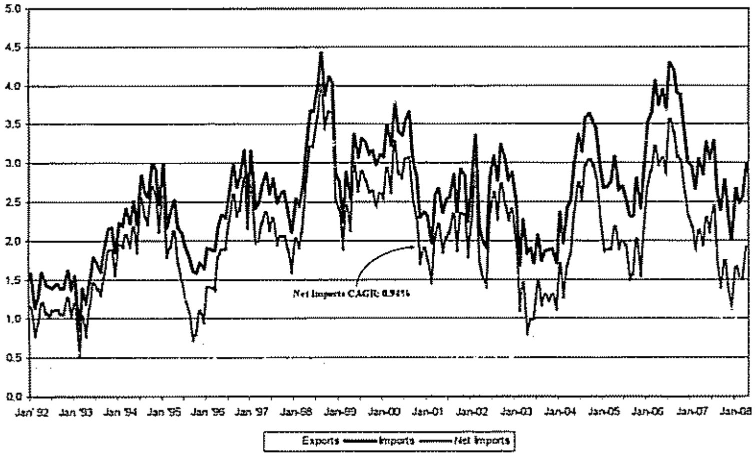
US sheet stock inventory vs months of sheet inventory on hand



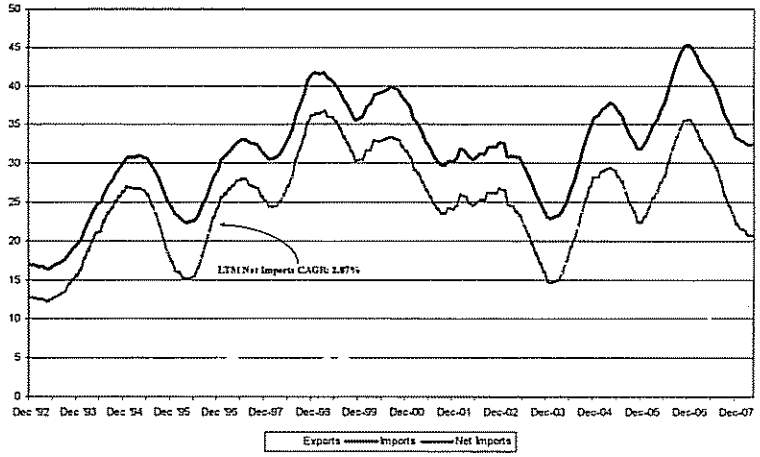
Source: CRU Group.

Domestic steel: imports, exports, shipments, and apparent consumption

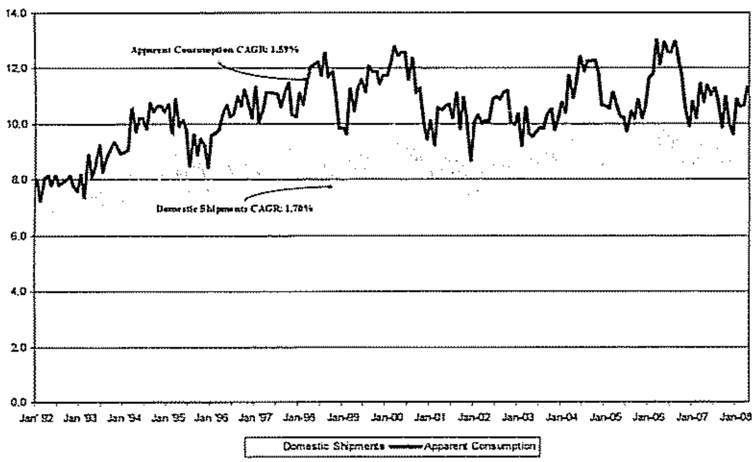
Domestic: Exports/Imports (mn tons/month)



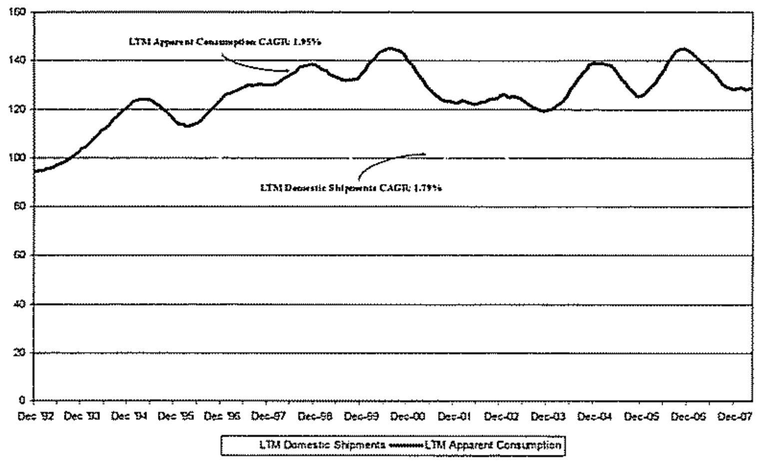
Domestic Steel: LTM Exports/Imports (mn tons/month)



Domestic Steel: Shipments and Apparent Consumption (mn tons/month)



Domestic Steel: LTM Shipments and LTM Apparent Consumption (mn tons/month)



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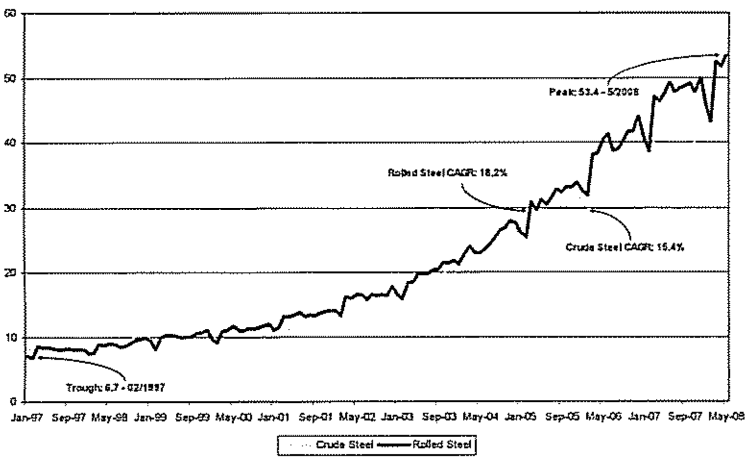
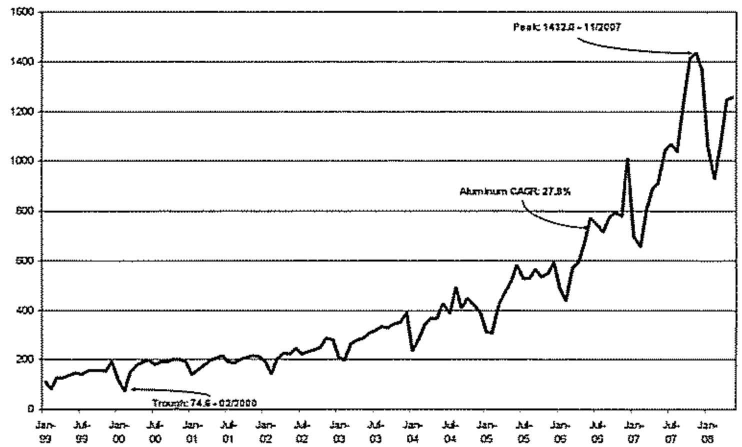
Chinese metals data

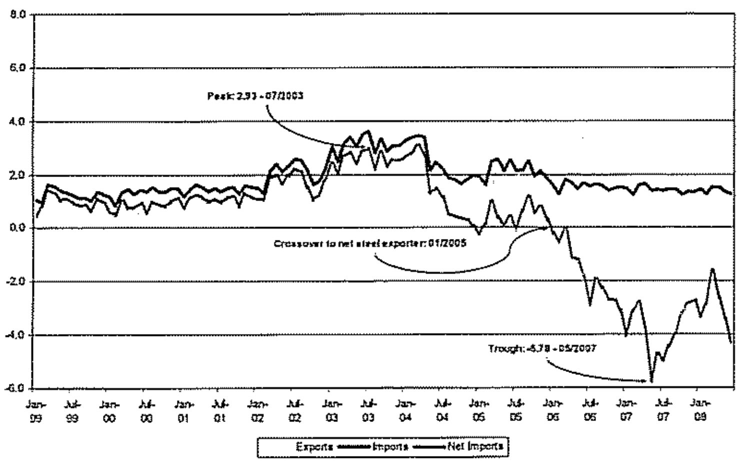
Chinese Steel Output (mn tons/month)
Source: National Bureau of Statistics



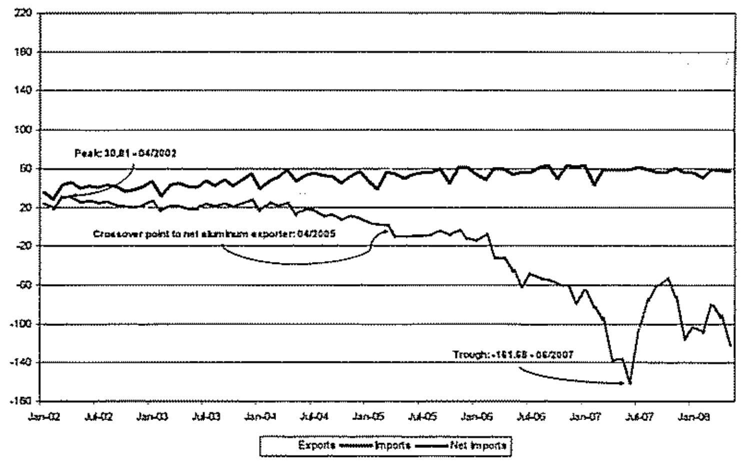
China Aluminum Output (000 tons/month)
Source: National Bureau of Statistics



Chinese Imports/Exports Commodity Steel Products (mn tons/month)
Source: Customs General Administration



Chinese Imports/Exports Commodity Aluminum (000 tons/month)
Source: Customs General Administration



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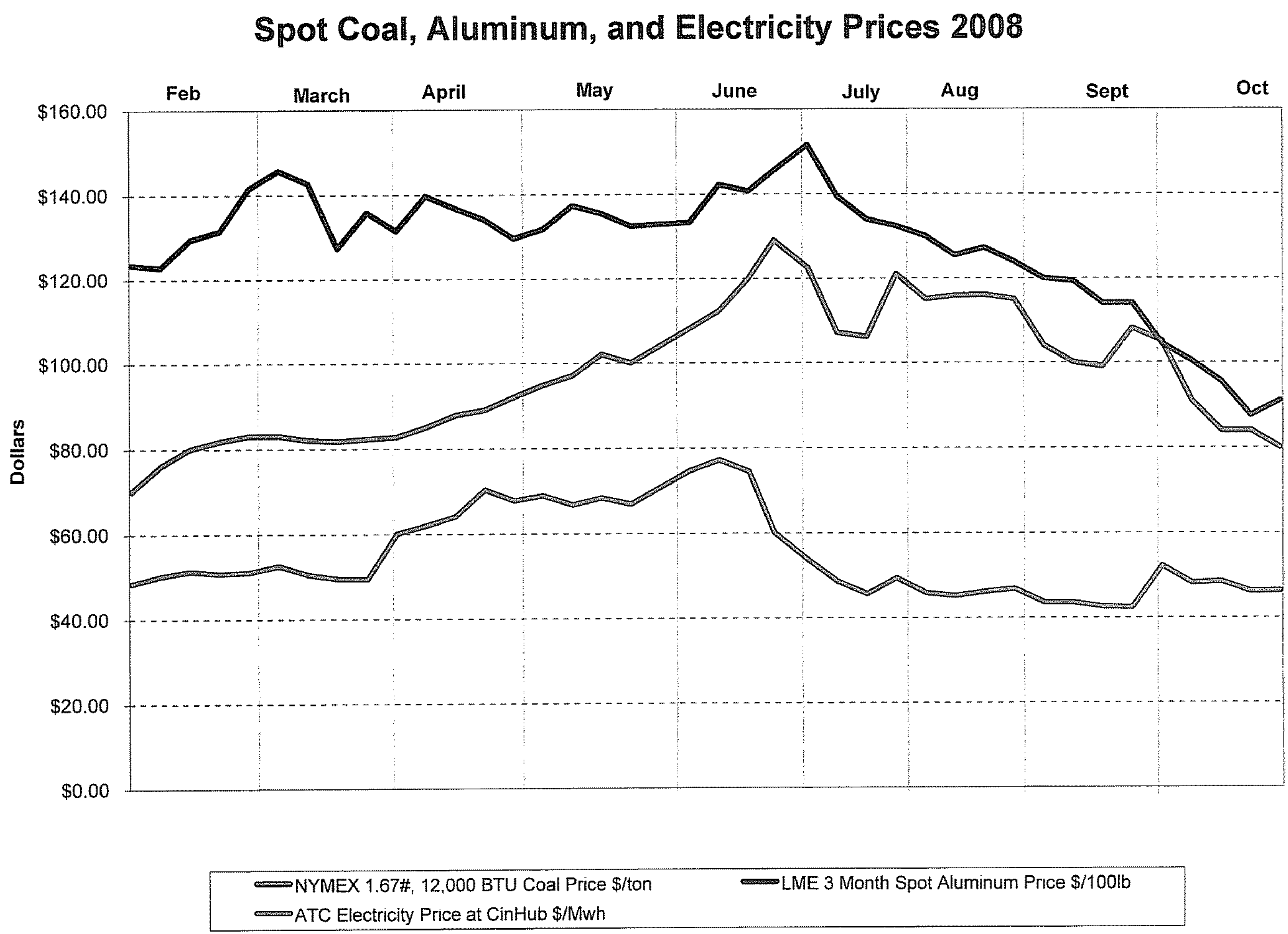
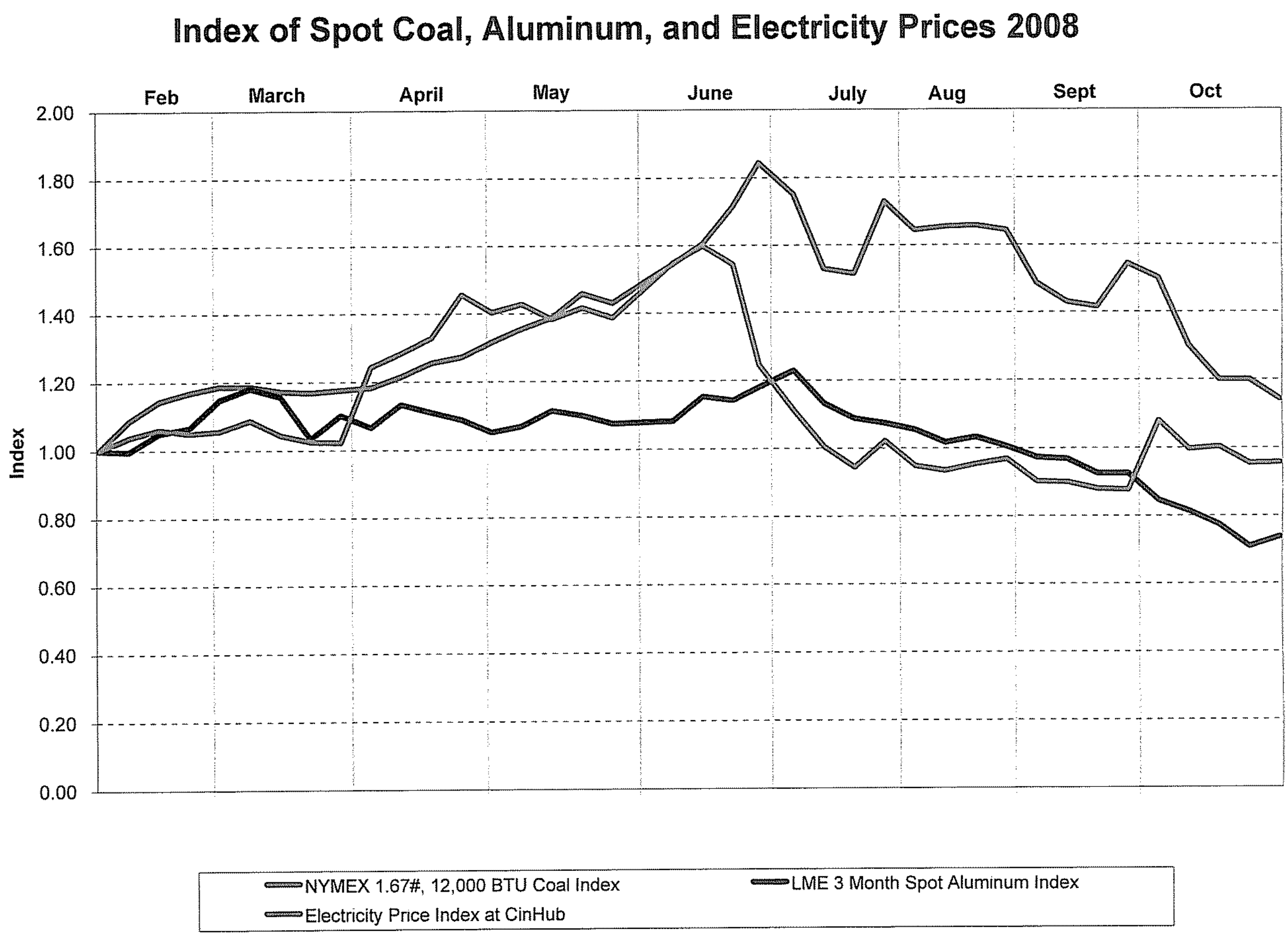
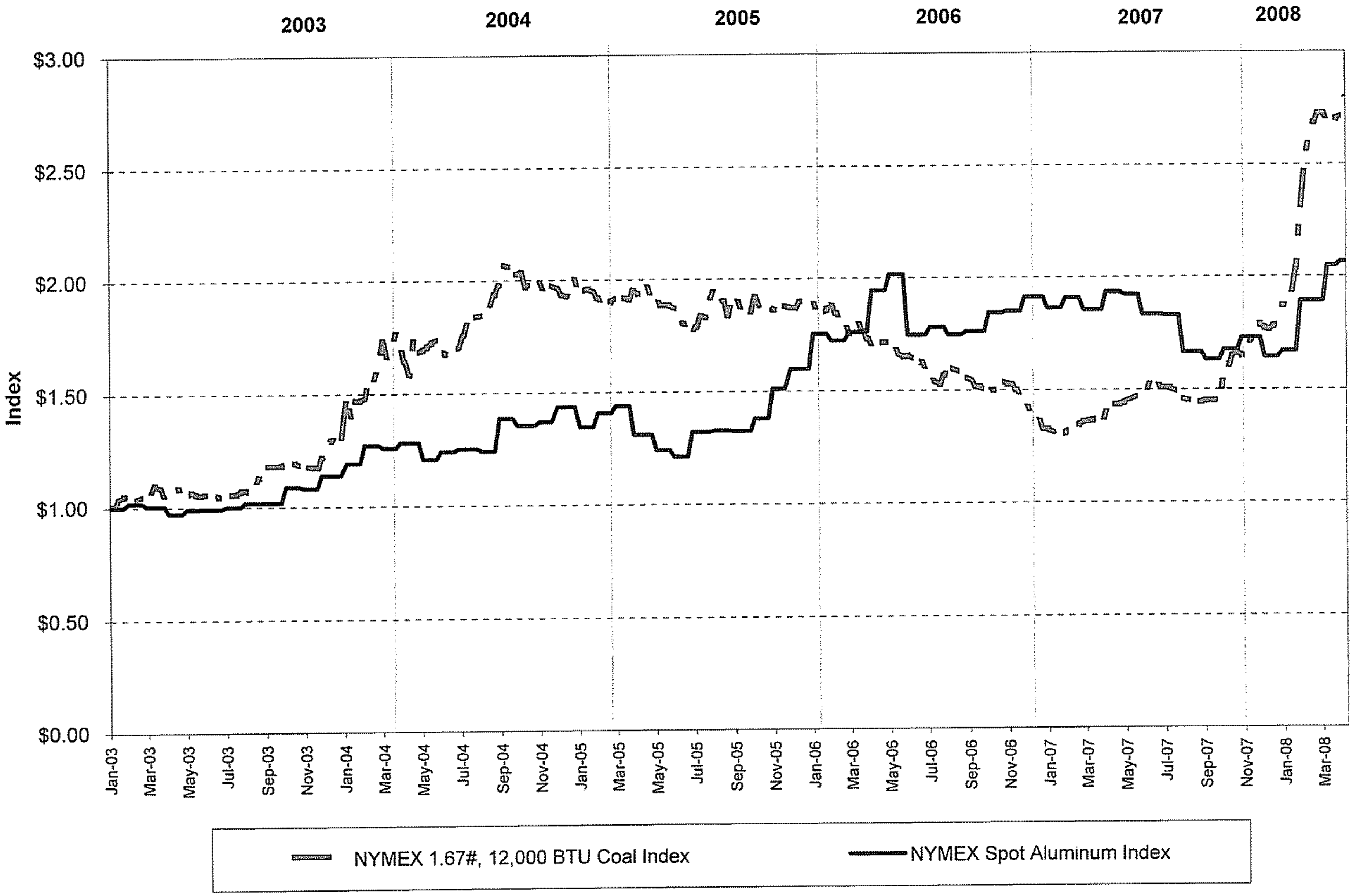
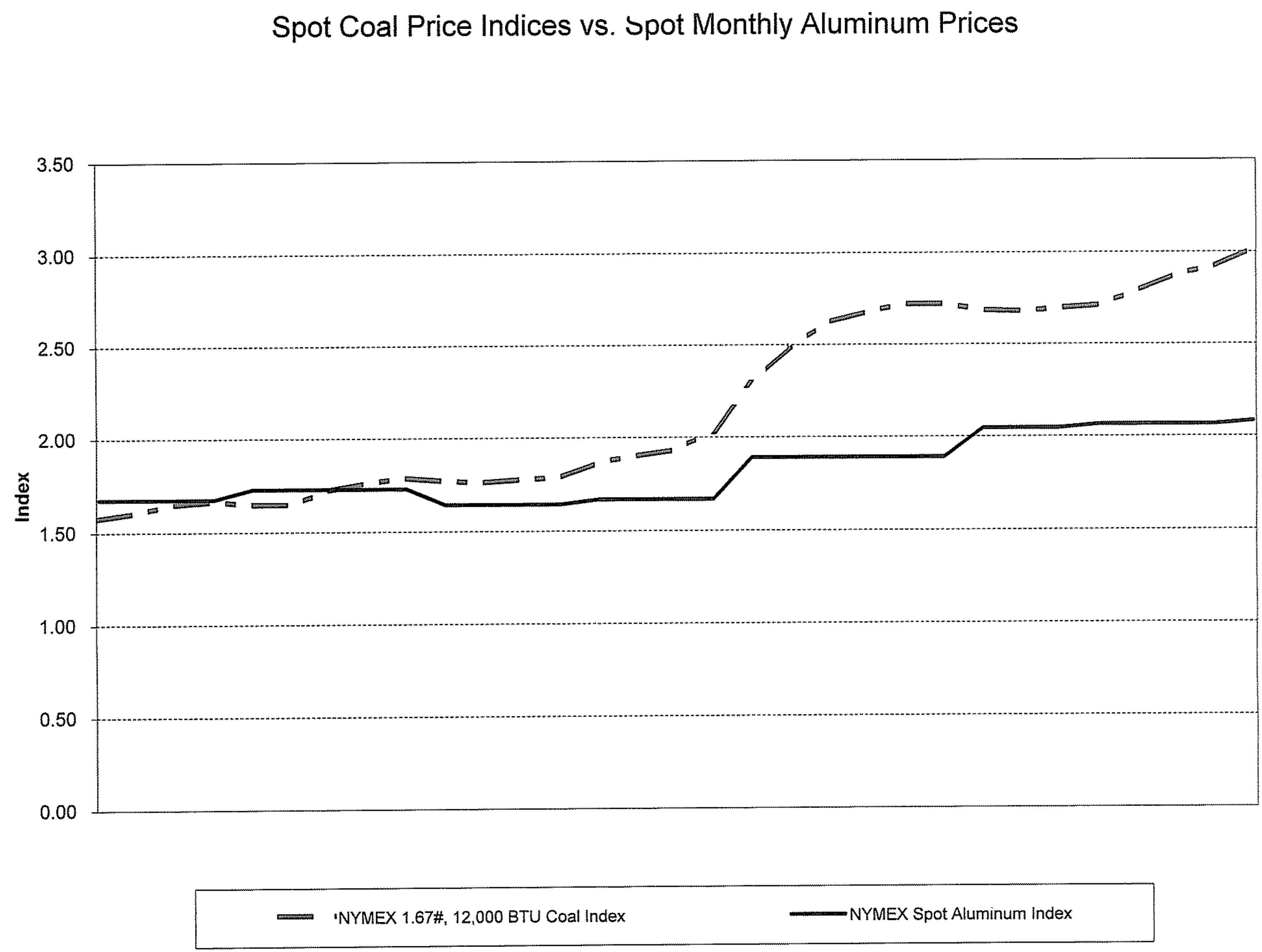

Spot Coal, Aluminum, and Electricity Prices 2008
Feb
March
April
May
June
July
Aug
Sept
Oct
$160.00
$140.00
$120.00
$100.00
$80.00
$60.00
$40.00
$20.00
$0.00
Dollars
NYMEX 1.67#, 12,000 BTU Coal Price $/ton
LME 3 Month Spot Aluminum Price $/100lb
ATC Electricity Price at CinHub $/Mwh


Index of Spot Coal, Aluminum, and Electricity Prices 2008
Feb
March
April
May
June
July
Aug
Sept
Oct
2.00
1.80
1.60
1.40
1.20
1.00
0.80
0.60
0.40
0.20
0.00
Index
NYMEX 1.67#, 12,000 BTU Coal Index
LME 3 Month Spot Aluminum Index
Electricity Price Index at CinHub

Spot Coal Indices vs. Spot Monthly Aluminum Prices





Spot Coal Price Indices vs. Spot Monthly Aluminum Prices
3.50
3.00
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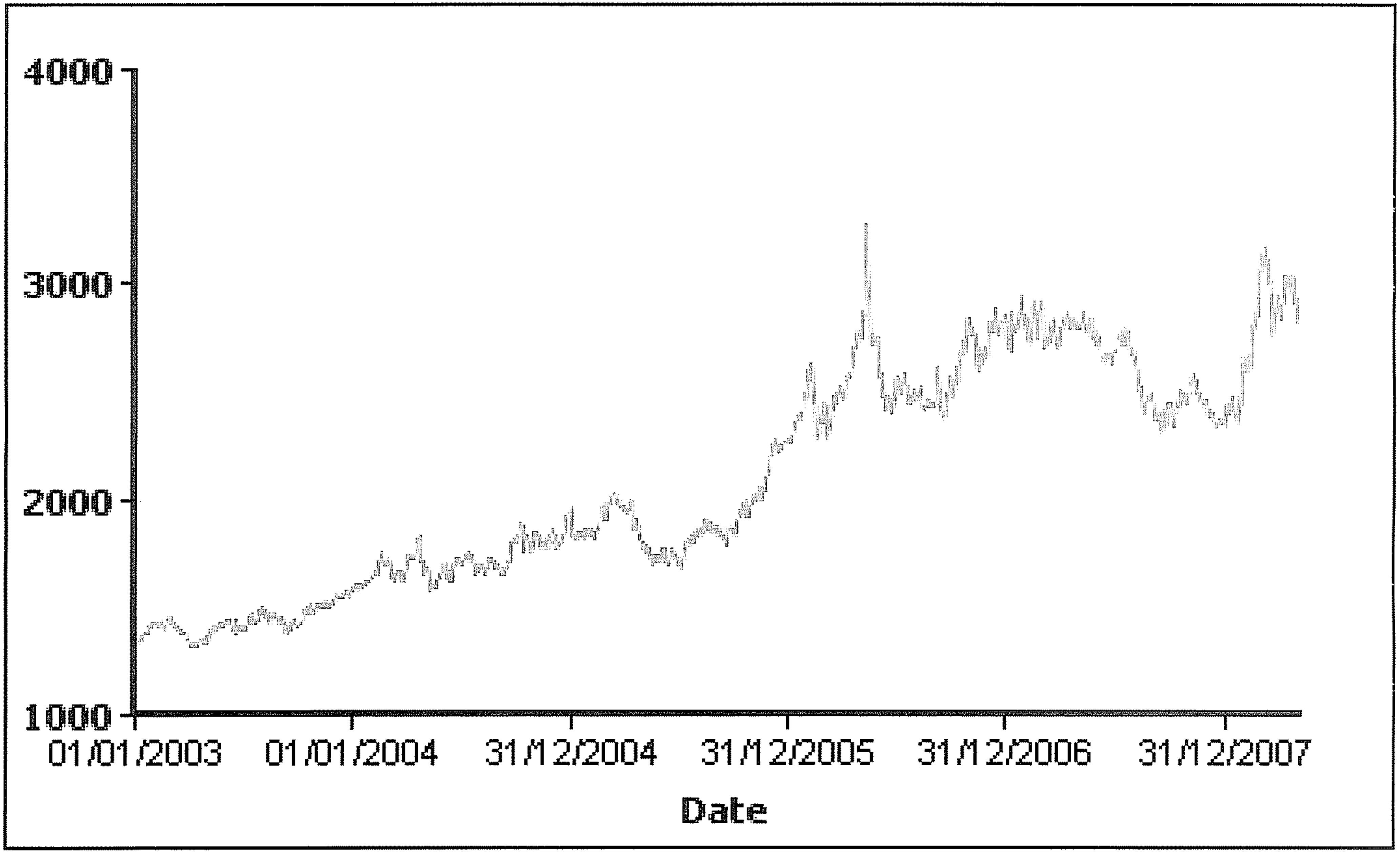
Index
NYMEX 1.67#, 12,000 BTU Coal Index
NYMEX Spot Aluminum Index


4000
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2000
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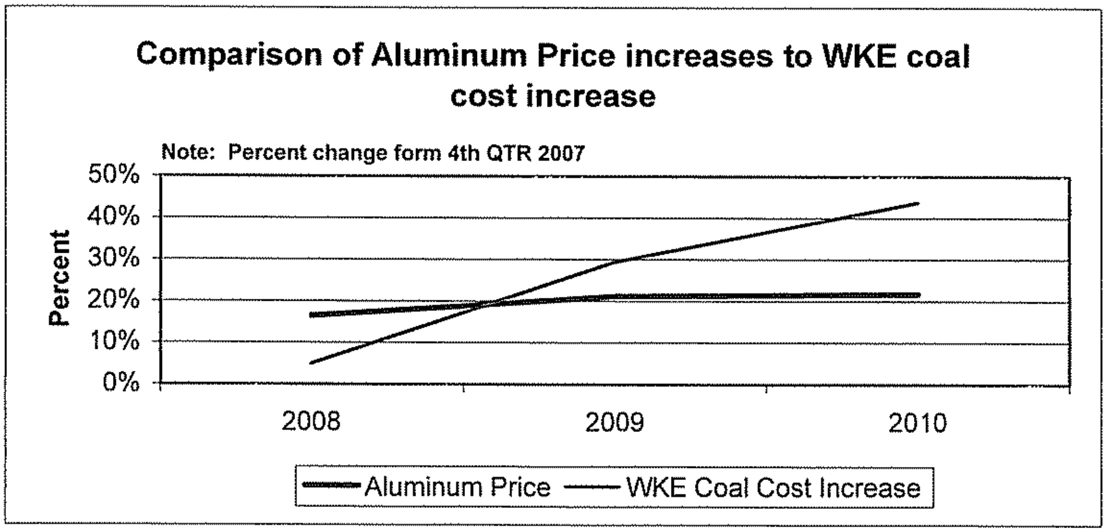
01/01/2003
01/01/2004
31/12/2004
31/12/2005
31/12/2006
31/12/2007
Date

WKE Unwind

Comparison of Aluminum Price increases to WKE coal cost increase since 4th QTR

Note: The following information is approximate and for discussion purposes only

	4th Qtr of 2007	2008	2009	2010
Aluminum LME prices				
Aluminum ($/Metric T)	2,443.67	2,845.92	2,961.00	2,976.00
% change over 4th QTR 2007		16.5%	21.2%	21.8%
Revenue Impact				
Alcan				
Production		196,000	196,000	196,000
Revenue Increase ($M)		79	101	104
Fuel Cost Impact		3	12	18
Net Impact		**76**	**89**	**86**
Century				
Production		244,000	244,000	244,000
Revenue Increase ($M)		98	126	130
Fuel Cost Impact		3	16	24
Net Impact		**95**	**110**	**106**
WKE Fuel Price Forecast (coal only)	2007 Coal Avg.			
$/mmBTU	1.53	1.60	1.98	2.20
% change over 2007 avg		4.8%	29.4%	43.8%
Fuel Cost Increase ($M)		8	48	72



RNCOS Releases a New Report- US Aluminum Market Analysis

RNCOS has recently added a new Market Research Report titled, "US Aluminum Market Analysis" to its report gallery. The report is an elaborate study of the aluminum market in the US.

/24-7PressRelease/ - NEW DELHI, INDIA- RNCOS has recently added a new Market Research Report titled, "US Aluminum Market Analysis" to its report gallery. The report is an elaborate study of the aluminum market in the US. It rationally discusses the past and current performance of the market and looks into its future prospects. This report helps the clients to analyze the trends and the developments in the US aluminum market vis-à-vis the global scenario.

The US aluminum industry depends on a variety of economic factors and its future performance is difficult to predict. The forecast given in this report is not based on a complex economic model, but is intended as a guide to the direction in which the market is likely to move.

For our research purpose, the market has been defined in terms of primary aluminum production.

Market Analysis

In terms of both its positive economic and environmental impact, the aluminum industry remains one of the most significant success stories nationally as well as internationally. Due to its benefit, the aluminum industry will shine in future. The global consumption of aluminum products, both upstream and downstream, is expected to double by 2020 annually.

The aluminum industry of the US is the world's largest single producer of primary aluminum. The US industry operates over 300 plants in 35 states, produces more than 23 Billion pounds of metal annually, and employs over 145,000 people with an annual payroll of about US$ 5 Billion. Aluminum is one of the few products and industries left in America that truly impacts every community in the country, either through physical plants and facilities, recycling, heavy industry, or consumption of consumer goods.

Key Findings

- By volume, the US aluminum industry is projected to grow by 210,000 Metric Tons (nearly 9%) during 2007-2011, attributed to enhanced energy supply capacity, new cost efficient production technologies and government support.
- Market demand is largely fueled by the need for aluminum by various industry sectors, particularly transport and packaging sector.
- The aluminum consumption market is highly relied on imported aluminum.
- Aluminum is chiefly imported from a number of countries, such as Canada, Russia, China and Mexico, where the cost of production is relatively less. This makes imported aluminum cost effective, thereby posing a significant challenge for the domestic producers.
- Positive outlook for the construction industry in the US will definitely boost revenue

growth of the aluminum industry.
- The industry offers huge opportunities for production equipment manufacturers as it is projected to enlarge its production to meet out domestic consumption demand.
- In spite of the lowering demand from automobile market, aluminum use in automobiles will continue to grow as aluminum content per vehicle is increasing.

Key Players

This section provides an overview of the key facts and financial position of players like Alcoa Inc., Alcan Inc., Century Aluminum Company, Aleris International Inc. and Novelis Inc.

Key Issues & Facts Analyzed

- What are the trends in the US aluminum market with respect to market value, production, consumption, price etc?
- What is import and export situation of aluminum in the country?
- What is the cost of energy and labor in various US states?
- What are the various avenues for growth for aluminum industry in the US?
- What are the challenges associated with this industry?

Research Methodology Used

Information Sources
Information has been sourced from books, newspapers, trade journals, and white papers, industry portals, government agencies, trade associations, monitoring industry news and developments, and through access to more than 3000 paid databases.

Analysis Methods
The analysis method includes ratio analysis, historical trend analysis, linear regression analysis using software tools, judgmental forecasting, and cause and effect analysis.

For more information visit: http://rncos.com/Report/IM581.htm
Current Industry News: http://www.rncos.com/Blog/

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E.ON U.S. LLC

UPDATED Response to the AG's Request for Information
Dated February 1, 2008

Updated Response filed November 7, 2008

Case No. 2007-00455

Question No. 99

Witness: Rusty Hudson

Q-99. Provide the amount and date of any asset book value write downs or other valuation write downs since 1997, which exceed $500k, and pertain to Lease Agreement facilities.

A-99. There have been no write-downs on individual assets since 1998 (when the BREC lease started) that exceeded $500k. There was an impairment charge recorded to WKE for $195,013,211 in September, 2008, based on a comparison of the forward market prices to satisfy the contractual sales requirements for BREC and the smelters, to the estimated loss on disposal for when the unwind occurs

E.ON U.S. LLC

UPDATED Response to the AG's Request for Information
Dated February 1, 2008

Updated Response filed November 7, 2008

Case No. 2007-00455

Question No. 100

Witness: Counsel / Paul W. Thompson / David Sinclair

Q-100. Provide E.ON/LEM current view of operating budgets (cost and revenues, multi-year forward looking) for facilities operated under the Lease Agreement.

a. Calculate and state the extent to which unit costs of power produced by the leased facilities are projected increase or decrease under this operating budget view.

A-100 The E.ON/WKE 2009 Medium Term Plan (budget) is still in process, and will not be approved by the E.ON Board until later in November or December. The operating budget data provided in the attachment is information from the E.ON/WKE 2009 Medium Term Plan Working Budget that was used to update the BREC financial model. The information contained in this attachment is confidential and is being filed pursuant to a Petition for Confidential Treatment. BREC used the E.ON/WKE budget to update their financial model, but they also made changes to it to reflect a different outage schedule and other changes in assumptions. The unit cost of power by year for the E.ON/WKE 2009 Medium Term Plan Working Budget, compared to the 2008 forecast, is as follows. The unit cost includes labor, non-labor, fuel and reagent costs, the smelter margin payments, and the lease payment to BREC. It does not include depreciation or interest expense.

Year	Cost of Power Per Mwh
2008	\$37.87
2009	\$41.96
2010	\$47.46
2011	\$42.53

E.ON U.S. LLC

UPDATED Response to the AG's Request for Information
Dated February 1, 2008

Updated Response filed November 7, 2008

Case No. 2007-00455

Question No. 102

Witness: Rusty Hudson

Q-102. Provide documents which show the prices of power provided to Big Rivers by E.ON under the relevant purchase power agreements versus the cost of producing that power, for the years 2005 to current.

A-102. The average price per Mwh of power sold to BREC compared to the variable production cost per Mwh for that power is as follows:

	Per Mwh	
Year	BREC Price	Variable Production Cost
2005	$19.48	$18.61
2006	$19.57	$18.66
2007	$19.88	$19.10
2008 (YTD September)	$20.10	$20.92

Note:
BREC Pricing includes revenues for the base sales, revenues for volumes in excess of the maximum on-peak take of 597 MW, and any penalties for volumes below the minimum off-peak take of 297 MW, divided by total BREC sales volumes.

Cost of production includes fuel costs, pet coke, fuel oil, natural gas, propane, fuels department, fuel handling, scrubber reagent, other cost of sales, and transmission, divided by total generation. It does not include the cost of SO2 and NOx emission allowances. The exchanges of current and future vintage allowances in 2005, 2006 and 2007 resulted in the expense numbers for SO2 and NOx emissions not being meaningful by year from a true production cost perspective.

E.ON U.S. LLC

UPDATED Response to the AG's Request for Information
Dated February 1, 2008

Updated Response filed November 7, 2008

Case No. 2007-00455

Question No. 103

Witness: Dan Arbough

Q-103. Provide all reports or presentations prepared by investment banking advisors for E.ON pertaining to the Unwind Transaction/Lease Agreement termination.

A-103. The E.ON Entities have not requested the preparation of reports or presentations from investment banking advisors pertaining to the Unwind Transaction/Lease Agreement termination.

E.ON U.S. LLC

UPDATED Response to the AG's Request for Information
Dated February 1, 2008

Updated Response filed November 7, 2008

Case No. 2007-00455

Question No. 107

Witness: Paul W. Thompson / David Sinclair

Q-107. Please reference the Application at page 17, paragraph 33. Describe the negotiations to date with Henderson. In the description include dates, people involved, and all matters discussed.

A-107. A description of the negotiations among E.ON U.S., Big Rivers and Henderson to date is provided in response to AG Question No. 10 dated October 24, 2008.

E.ON U.S. LLC

UPDATED Response to the AG's Request for Information
Dated February 1, 2008

Updated Response filed November 7, 2008

Case No. 2007-00455

Question No. 122

Witness: Paul W. Thompson / David Sinclair

Q-122. Please reference the testimony of Burns E. Mercer, page 9, regarding "fuel and environmental costs will fluctuate up or down depending on actual costs."

a. Provide documents which show the variation in fuel costs, by type of fuel, that has been experienced by E.ON since the inception of the Lease Transaction; and,

A-122. The fuel costs per MMBTU by year are as follows:

Period	Coal	Pet Coke	Combined
1998	$0.94	$0.77	$0.92
1999	$0.89	$0.74	$0.86
2000	$0.89	$0.58	$0.83
2001	$0.94	$0.75	$0.88
2002	$1.07	$0.73	$0.96
2003	$1.04	$0.78	$0.95
2004	$1.11	$0.71	$0.98
2005	$1.35	$0.78	$1.17
2006	$1.48	$0.90	$1.32
2007	$1.54	$0.80	$1.36
2008 (YTD 09/30)	$1.65	$0.95	$1.48

E.ON U.S. LLC

UPDATED Response to the AG's Request for Information Dated February 1, 2008

Updated Response filed November 7, 2008

Case No. 2007-00455

Question No. 126

Witness: Rusty Hudson

Q-126. Provide the most current SFAS No. 144 impairment review pertaining to the Big Rivers generation facilities.

A-126. The Impairment reviews from the third quarter of 2008 are attached. As noted on the questionnaire from Reid/Henderson Station 2, Items A1, A3, and A5, the reheat section of the HMPL 1 unit is slated for replacement in March, 2009. It will be handled as a normal asset replacement at that time, and is therefore not considered an impaired asset, since the current asset will still function up to the point in time of that replacement.

E.ON U.S. LLC

UPDATED Response to the AG's Request for Information
Dated February 1, 2008

Updated Response filed November 7, 2008

Case No. 2007-00455

Question No. 134

Witness: Ralph Bowling

Q-134. Regarding the "Environmental Matters" and "significant financial impacts on the use of fossil fuels for power generation" referenced in the Big Rivers 2005 Annual Report to Members (Exhibit 41), please provide any documents or studies performed by or for E.ON since January 2005 which address and/or estimate costs associated with the Big Rivers generating facilities and compliance with:

a. The EPA's Clean Air Mercury Rule (CAMR);

b. The EPA's Clean Air Interstate Rule (CAIR);

c. Performance goals of the Clean Water Act Section 316(b);

d. Regulation of carbon dioxide as a pollutant under the Clean Air Act; and,

e. Any other state or federal rules likely to cause additional cost in order to meet pollution standards or otherwise comply with those rules.

A-134. The Multi-pollutant Position Report and Proposed Compliant Plan (SO_2, NOx, Hg) And Multi-Media Compliant Evaluation was updated and modified on September 12, 2008. This updated report was included in BREC's motion to amend and supplement the application dated October 9, 2008.