

European Steel

Run Down, Pay Down, Write Down: boosting sector returns

- **Steel Sector Confessional** — With the mining sector confessing its sins and working to repent through management change, impairments and capex cuts, we believe the steel sector should do the same. The sector now trails the miners significantly, with negative EVA of 4.3% forecast for the rest of the decade. Meanwhile the miners are expected to continue to generate positive EVA of 1.6%. Steel needs to reverse this value destruction and at least catch up with the miners if it is to attract long term investment into the space, otherwise it is likely to remain essentially a trading sector which tracks seasonal cyclicity. We argue that as an act of penance the sector needs to; 1) Stop Building Capacity, 2) Run Down Assets, 3) Write Down Assets.
- **Do Not Build New Capacity** — Current replacement costs for steel capacity average \$1050/t for blast furnaces and ~\$750 for Electric Arc Furnaces (EAF). To justify building new assets at these costs would require consistent peak-of-cycle EBITDA margins of ~\$210/t for blast furnaces and \$150/t for EAF. For the purposes of consolidation M&A is likely to remain a feature – on our calculations the fair acquisition value for existing capacity is ~\$470-560/t of annual capacity, in line with historical M&A and significantly below replacement cost. In short, it is better to buy than to build.
- **Run Down Assets** — To improve returns, the sector should run down its assets and liabilities. Under our extreme scenario the sector completely cuts capex over the next 5 years in order to depreciate its fixed assets and uses the cash to reduce debt and/or pay dividends. However, in Europe this would achieve 2017 ROIC of 7.9% - short of the 11.2% which would deliver EVA of 1.6%, equal to the miners. This suggests that the sector will also need to take write-downs on its assets.
- **Write Down Assets** — Running down assets alone will not suffice, so we believe asset write-downs and capacity closures are required. The magnitude of the write down would depend on the willingness to run down the assets in conjunction. Using a 2017 target EVA of 1.6%, we estimate the European sector will need to write down between 17-43% of its current book value, or \$11-29bn. The sector currently trades on 0.52x book, suggesting the market already assumes a write down at the high end.
- **Neutral on the Sector** – The sector's inability to deliver positive returns underlines our neutral view. We prefer Voestalpine for quality of product and Salzgitter for balance sheet strength (both Buy rated). We are Neutral on ArcelorMittal – structural European problems offset the attractive US and mining assets. SSAB and Kloeckner (Sell rated) are our least favoured stocks, due to the European overhang

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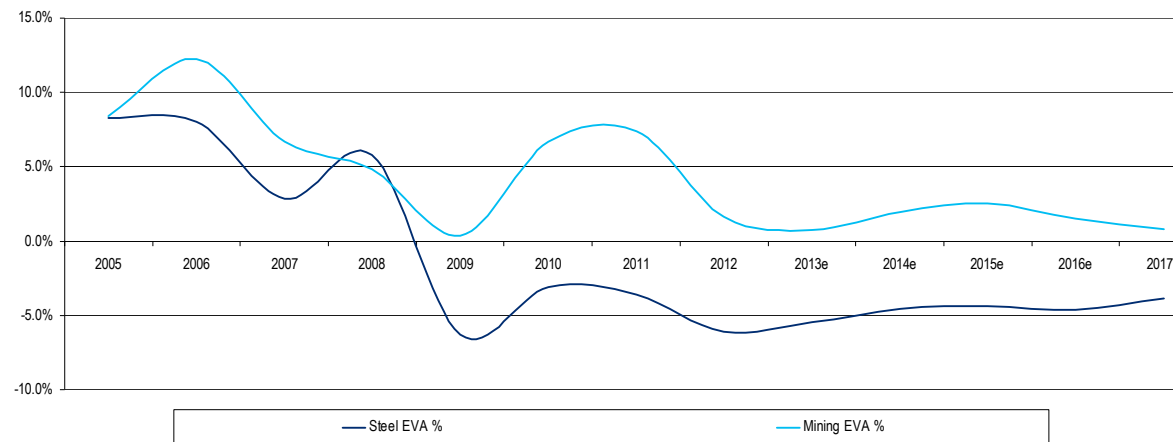
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Steel Sector Confessional

- With the mining sector currently confessing its sins and working to repent for these through management change, impairments and re-focus on shareholders, we believe the steel sector should do the same. The steel sector now trails the mining sector significantly, with negative EVA of 4.3% forecast for the rest of the decade. Meanwhile the miners are expected to continue to generate positive EVA of 1.6%. The sector needs to correct this value destruction and catch up with the miners if it is to attract long term investment into the space, otherwise it is likely to remain essentially a trading sector with equities volatile on the back of seasonal cyclicity.
- As an act of penance we believe the steel sector needs to do the following:
 1. **Do not build new capacity** - Buy existing capacity if you must
 2. **Run Down Assets** – Cut Capex, Pay down liabilities and then consider cash returns to shareholders
 3. **Write Down Assets** – Simply cutting capex will not be enough to correct negative EVA generation. We believe write downs will also be necessary. The magnitude of these write-downs will depend upon the willingness and ability of the sector to run down assets beforehand

Figure 1. Global Steel EVA is expected to be negative over the next 5 years, trailing the mining sector. This needs to change if the sector is to attract long term investors

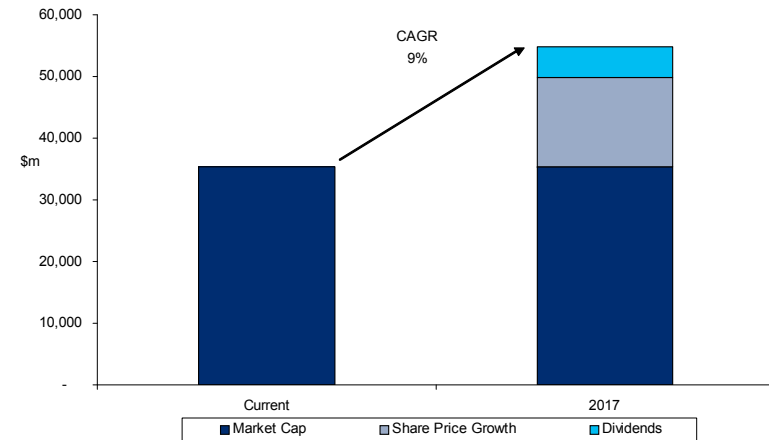


Source: dataCentral, Citi Research

What does the Sector Currently Offer?

- Using an adjusted Gordon Growth model we calculate that over the next 5 years the European sector can offer 9% annual return through share price appreciation and dividends, below the 15% minimum we base our buy recommendations on. This is also a highly leveraged sector, so it is reasonable that investors would want a better return to reflect this potential volatility.
- Since 2009 the sector has lacked an investment case that would attract longer term interest, due to weak end demand, overcapacity and volatile raw material prices. As the chart below highlights, the sector's trading activity has correlated closely with seasonal cyclicality – that is, the sector tends to rally ahead of a Q1/Q2 restock along the supply chain, then roll over when the restock is perceived to be complete.
- Without taking tough self help action we believe the sector is in danger of remaining a trading one, with little to attract long term investors.

Figure 2. Gordon Growth Implied Shareholder return – European Steel Sector



Source: Citi Research

Figure 3. The sector has traded on near term seasonal cyclicality due to a relative lack of long term investment catalysts – RSI chart



Source: dataCentral, Citi Research

1) Don't Build New Capacity

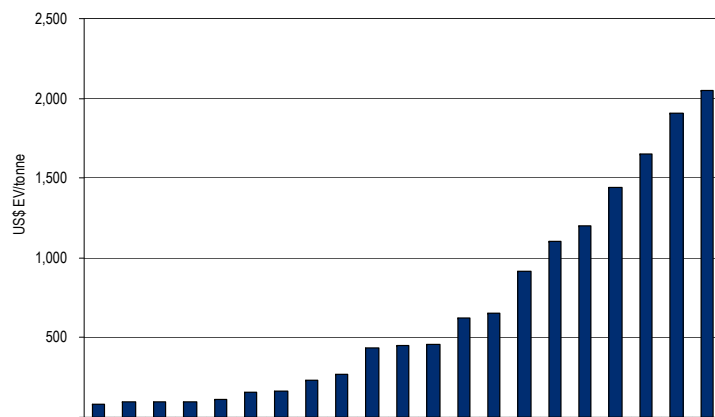
- Average replacement costs for new capacity (before capex blowouts) are ~\$1,050/t of annual capacity for blast furnaces and \$700-800/t for electric arc furnaces
- Sector M&A transactions over the last 15 years on EV/tonne basis have averaged \$400-600/t, almost half replacement cost. Clearly there is a large disconnect between the perceived earnings potential of steel assets and the cost of building them. The message here is **Don't build new capacity**
- To justify building new capacity at current replacement costs, we calculate the sector would need to start generating peak-cycle EBITDA/tonne margins of \$210/t for blast furnaces and \$150/t for Electric Arc Furnaces. EBITDA margins in 2012 averaged c.\$100/t including the impact of raw materials integration and downstream activities

Figure 4. Peak EBITDA Margins required to justify replacement costs

Global Margin Required for BV = Replacement Costs	Unit	Blast Furnace	EAF	Global BF/EAF Weighting
Replacement Cost	\$/t	1,050	750	930
Required Return on Capital	%	10%	10%	10%
PAT	\$/t	105	75	93
Tax Rate	%	25%	25%	25%
EBT	\$/t	140	100	124
Interest	\$/t	19	14	17
EBIT	\$/t	159	114	141
D&A	\$/t	53	38	47
EBITDA Margin required	\$/t	211	151	187

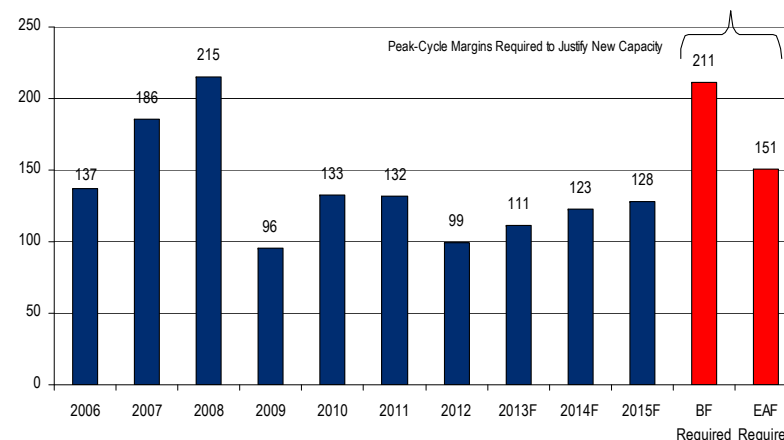
Source: Citi Research

Figure 5. Sector EV/tonne M&A multiples have averaged \$400-600/t



Source: Citi Research

Figure 6. Only peak-cycle margins would cover the cost of capital for new capacity



Source: Citi Research

What Would You Pay For a Steel Mill?

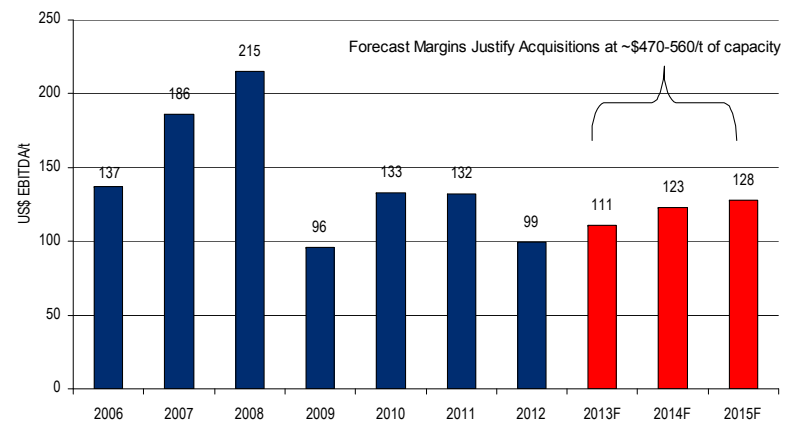
- Although sector balance sheets are not in particularly good shape (see page 5), **M&A will be a necessary requirement in the sector if it is to consolidate further and tackle the significant capacity overhang.** In addition there are likely to be some bargains out there every so often for those with an opportunistic mindset. This being the case we need to know what is a fair value for an acquisition. If you were interested in acquiring steel assets, how much would you pay?
- A key theme of this report is that asset values need to start reflecting the structurally lower earnings potential from these assets. With this in mind, we **think the fair value is one that has to be justifiable given the earnings outlook. Our EBITDA/t average global margin forecast in the medium term is ~\$110-130/t.** We need to know the acquisition price at which the asset can cover its cost of capital on these margins.
- Based on our 10.5% average global WACC and \$110-130/t EBITDA margin forecast, we calculate that in order to cover the cost of capital, the **fair acquisition value for steel assets is ~\$470-560/t, within the average historical range of \$400-600/t in the last 15 years**

Figure 7. We assume a fair acquisition value is that where the asset can cover its cost of capital. We base the cost of capital on the average WACC for our global steel coverage

Fair Acquisition Value	Unit	\$110/t margins	\$120/t	\$130/t
EBITDA	\$/t	110	120	130
D&A	\$/t	24	26	28
EBIT	\$/t	86	94	102
Interest	\$/t	20	22	24
EBT	\$/t	66	72	78
Tax Rate	%	25%	25%	25%
PAT	\$/t	50	54	59
Required Return on Capital	%	10.5%	10.5%	10.5%
Acquisition Value	\$/t	474	517	560

Source: Citi Research

Figure 8. Given our medium term global EBITDA/t forecast, we think the fair acquisition value for steel assets is \$470-560/t, within the historical average range.

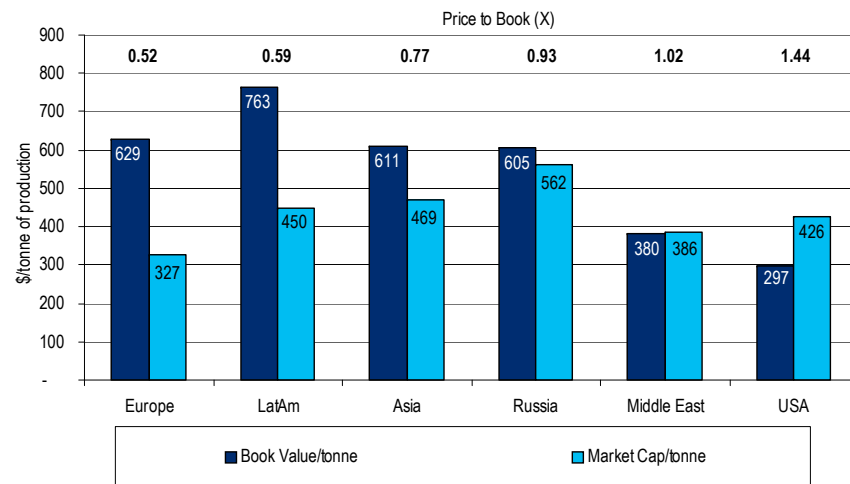


Source: Citi Research

2) Run Down The Assets: Reduce Book Value Through Capex Cuts

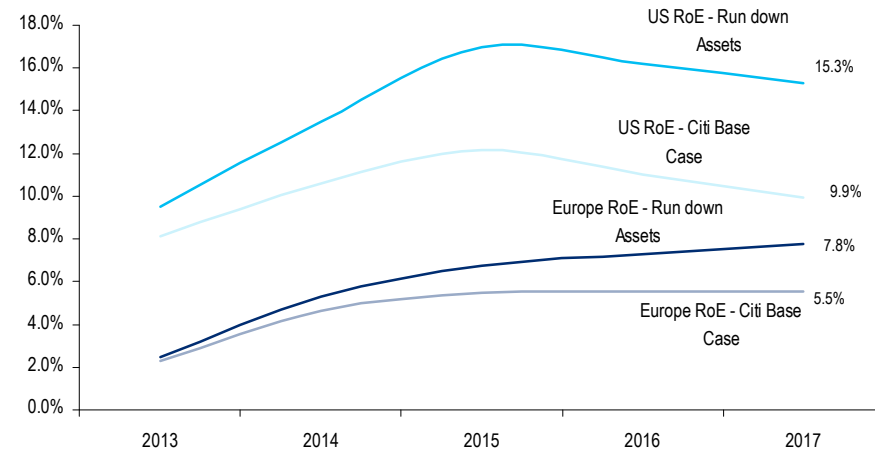
- **Low price to book valuations are a popular topic of debate in the steel sector.** Can the sector improve returns by running down assets rather than taking large write downs? The major step here would be to cut capex to the minimal level of sustaining capex, allow Property, Plant and Equipment (PPE) to depreciate naturally and reduce book value. See Appendix for Capex/D&A charts
- A simple scenario is to **assume the sector cuts capex to zero, allows PPE to depreciate and book value to reduce.** 5 years of this would add 2.3% of RoE in Europe and 5.4% in the US (Figure 10). Obviously this is not a long term solution; some minimum amount of sustaining capex would be required. However, even this extreme scenario does not do enough for the European sector to move its RoE above the cost of equity. This would suggest that write-downs may also be needed in Europe
- This scenario also **requires the assumption that any cash gained from slashing capex is returned to shareholders** rather than debt repayment, otherwise book value – the difference between assets and liabilities – does not reduce. The potential flaw here is that unlike the mining sector – for which we have advocated increased capital returns to shareholders – the **steel sector's balance sheet does not necessarily permit this.** The sector is running debt levels based on what we believe is no longer a fair book value. Therefore debt repayments rather than dividends is (at least initially) a key consideration. Return on Invested Capital (ROIC) is therefore a better test of whether the sector can run down its assets.

Figure 9. Global Price to Book values per tonne



Source: dataCentral, Citi Research

Figure 10. RoE increase from cutting capex completely and running assets down

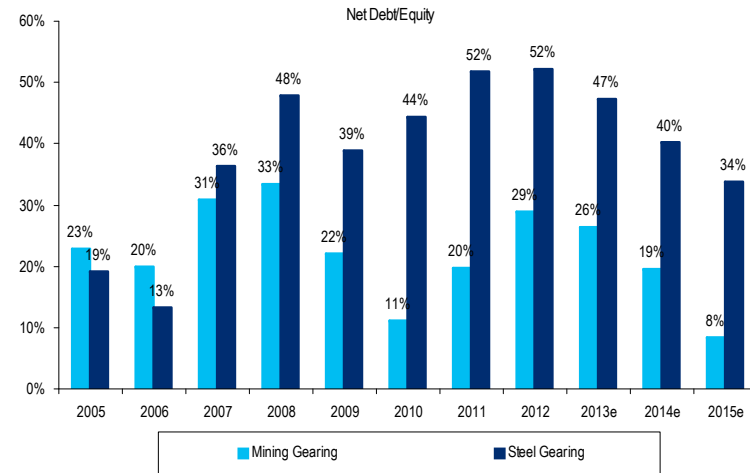


Source: dataCentral, Citi Research

What to Do With The Cash? Steel Vs Mining

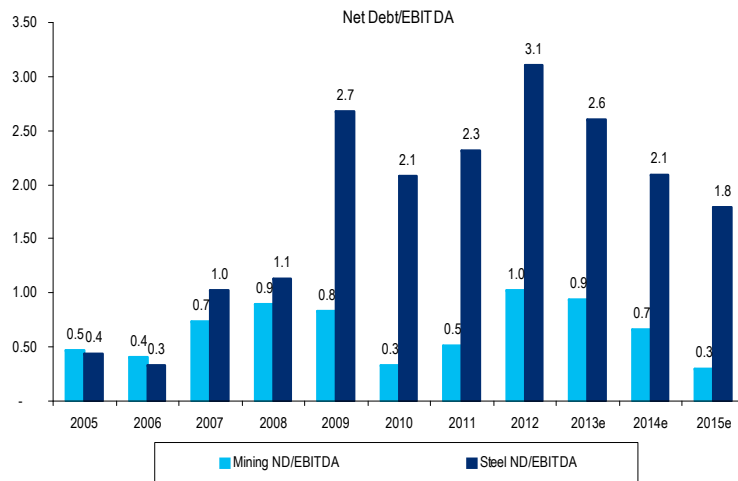
- The obvious answer for utilizing excess cash from cutting capex and sweating assets would be to return cash to shareholders. This has been a key theme we have pushed for the mining sector. However, the steel sector's balance sheet does not necessarily permit this.
- The sector is running debt levels based on what we believe is no longer a fair book value. **If the sector is to shrink its asset base it will also have to shrink its liabilities to bring gearing down.** Therefore debt repayments rather than dividends (at least initially) will also be a key consideration. **Return on Invested Capital (ROIC) may be a better test** of whether the sector can run down its assets effectively, since debt repayment and/or dividends will have the same impact of reducing the invested capital base

Figure 11. Steel ND/Equity has diverged from the Miners since the financial crisis...



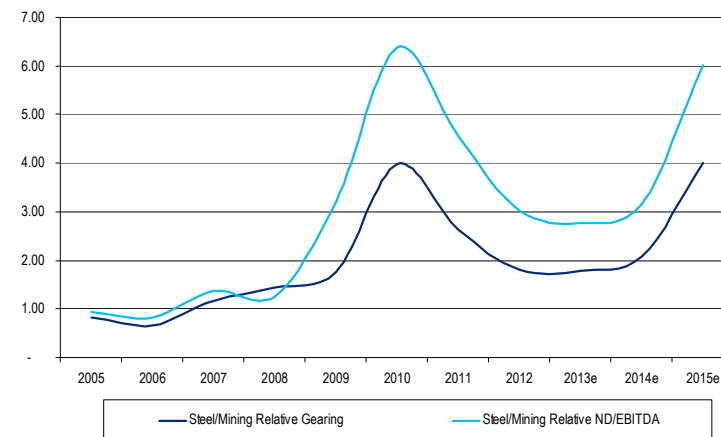
Source: dataCentral, Citi Research

Figure 12. And ND/EBITDA has also diverged



Source: dataCentral, Citi Research

Figure 13. But the divergence has been greater for ND/EBITDA, suggesting the profitability of the Steel asset base has structurally declined. Is the value of the steel asset base appropriate?

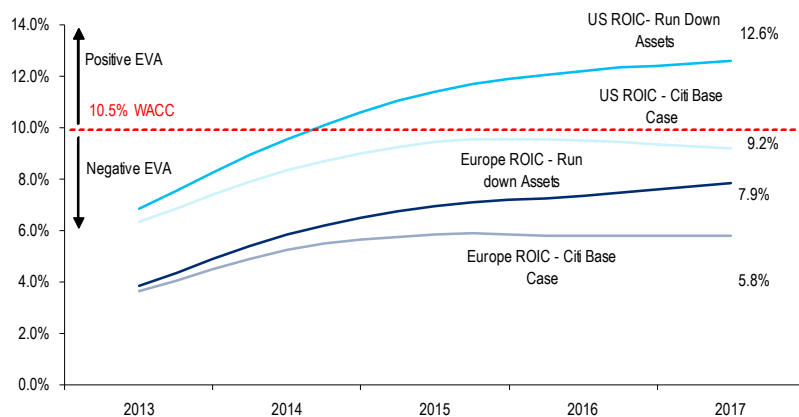


Source: dataCentral, Citi Research

Run Down The Assets: Reduce Invested Capital – Cut Capex, Boost EVA

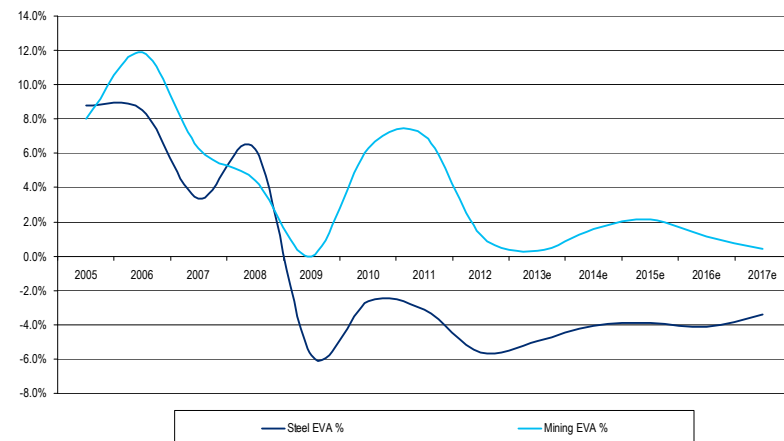
- Moving from the book value scenario to invested capital, we maintain the simple assumption that capex is slashed to zero, however we now assume that the **cash saved from capex is directed to either debt repayment or dividends**. Either is acceptable for the purposes of reducing invested capital; debt repayment lowers the total debt, while dividend payments reduce retained earnings and equity.
- We assume that the steel sector should aim to at least match the miners in returns generated to attract more investor interest. On Citi base case forecasts the **miners will deliver an average of 1.6% in Economic Value Added (EVA)**, which is calculated as ROIC-WACC, **while the steel sector will average -4.3%** (Figure 15). In other words the **steel sector needs to generate an extra 6% in ROIC by 2017 to catch up with the mining sector**.
- Comparing the European and US Steel Sectors (Figure 14), cutting capex and running assets for cash would see the **US steel sector cross into positive EVA territory by 2017** adding 3.4% of ROIC, while the **European sector adds 2.1% but still delivers negative EVA**. The **European sector needs to do more than just cut capex** in our view.
- Why the difference between the US and Europe? The US steel sector is expected to be more profitable at an operating level and also has the lowest book value per tonne globally at ~\$300/t and the lowest Invested capital per tonne at ~\$600/t. Both the higher profitability and lower asset base can be attributed to the sector's **bankruptcies and subsequent consolidation which took place around a decade ago**. In short, the **US sector has already taken the pain** to some extent. The European sector needs to go through this process in our view, though of course one would hope in a more organized manner.

Figure 14. Incremental ROIC from Cutting Capex would be sufficient for the US steels to generate positive EVA, but not European steels



Source: dataCentral, Citi Research

Figure 15. Global Steel EVA vs Global Mining EVA – Steel is expected to trail Mining by ~6% by mid-decade.

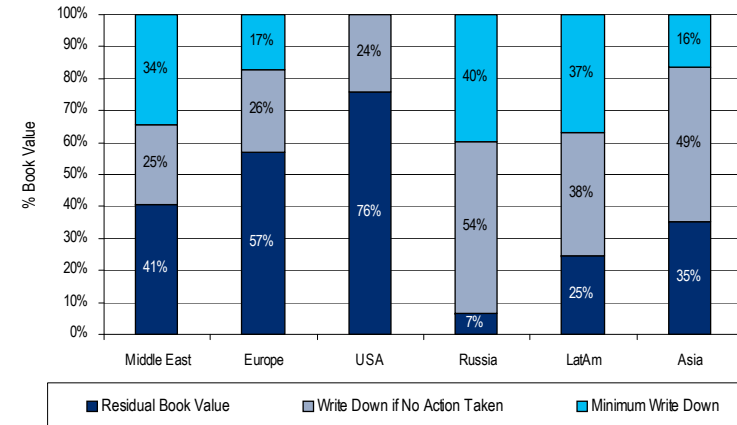


Source: dataCentral, Citi Research

3) Write Down Or Sell Assets

- Given the limited flexibility the steel sector (specifically Europe) has to increase returns through capex cuts, debt repayments and cash returns, we believe it will **need to consider writing down asset values** and shutting capacity. Mill closures are a politically sensitive issue (as we have seen in the last year), so capacity reduction and consolidation is not a problem with a near term solution.
- How much should be written down?** Let's assume the steel sector targets EVA creation equal to the mining sector within 5 years – 1.6% or 12.1% ROIC. Using this target ROIC, we can calculate how much needs to be written down to achieve this return under our Run Down scenario, in which capex is cut (see previous page), and our Base Case. If the sector has already begun to take action by cutting capex and running down assets, then the required write down will be lower than if they do nothing as per Citi base case. In **Europe we calculate a required write down of 17-43%, or \$11-29bn** in order to achieve the EVA of the mining sector. **The US by far the strongest sector, requiring a write down of between 0% and 24%, or 0 and \$3.8bn**
- Another key consideration here is whether to divest assets. Keeping an asset but taking a write down will reduce the asset base but lead to higher gearing, since liabilities are unchanged. Therefore if the group can sell the asset, even if it means a write down as well, it offers scope to raise some cash and reduce gearing. This would be preferable for non-core assets.

Figure 16. Potential Write Downs needed to Boost ROIC



Source: dataCentral, Citi Research

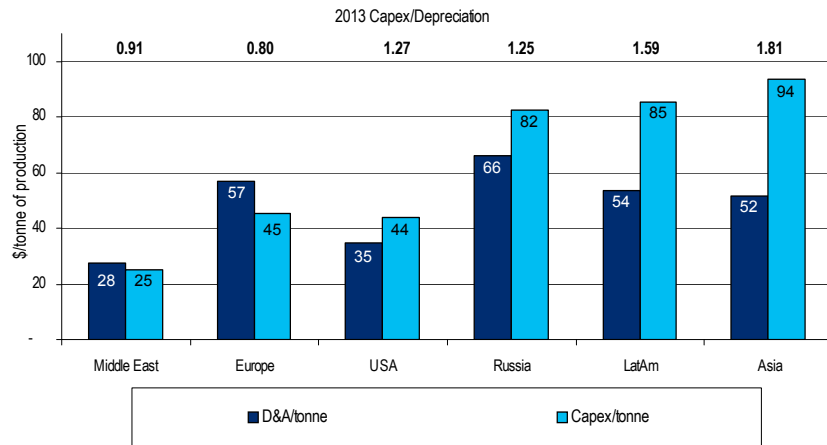
Figure 17. Potential Write Downs Needed – Summary Table

Region	Target ROIC	\$/t Write-down		Current BV/t	% Write-down		BV \$m	\$m Write-down		Price To Book	Adjusted Price to Book	
		Low	High		Low	High		Low	High		Low	High
Middle East	14.23%	131	225	380	34%	59%	5,566	1,916	3,301	1.02	1.56	2.51
Europe	11.19%	107	272	629	17%	43%	67,919	11,566	29,320	0.52	0.63	0.92
USA	11.09%	-	72	297	0%	24%	15,596	-	3,768	1.48	1.48	1.95
Russia	10.86%	240	565	605	40%	93%	32,789	13,004	30,611	0.93	1.54	13.96
LatAm	13.82%	283	574	763	37%	75%	27,420	10,162	20,625	0.59	0.93	2.36
Asia	12.54%	100	396	611	16%	65%	109,979	17,953	71,324	0.77	0.92	2.19

Source: dataCentral, Citi Research

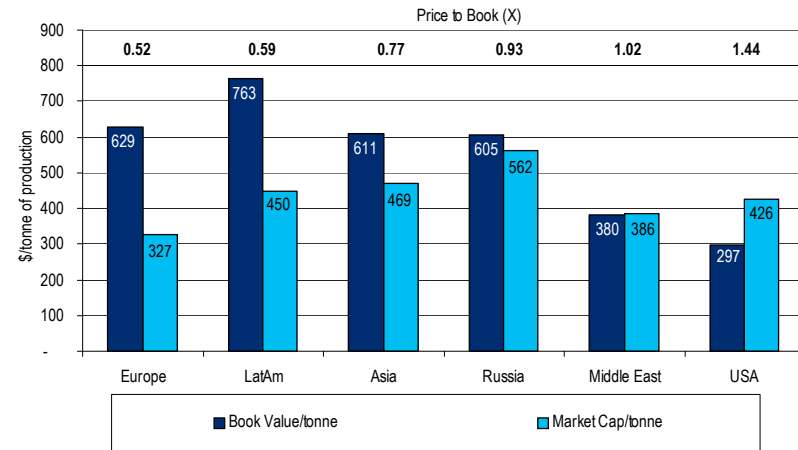
Appendix

Figure 18.2013 Regional Steel Capex/D&A – Europe has the highest D&A/tonne, after Russian steels, which have a high level of raw materials integration



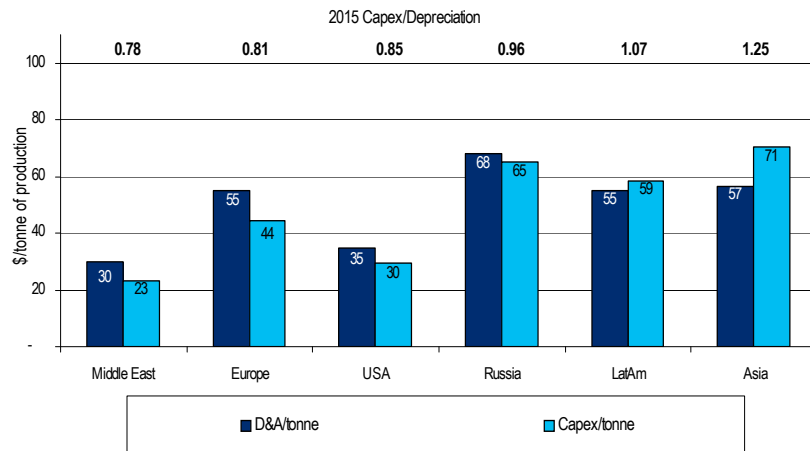
Source: Citi Research

Figure 19.2013 Regional Steel P/B– Europe has the second highest BV/tonne and the lowest market cap/tonne – the region is suffering the most from heavy assets and weak earnings



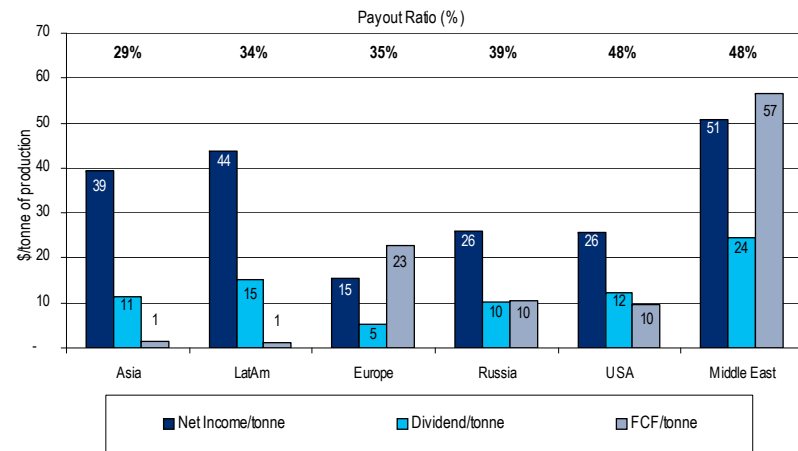
Source: Citi Research

Figure 20.2015 Capex/D&A – European Capex stable on 2013, while US reduces after raw materials integration investments by EAF producers in 2013



Source: Citi Research

Figure 21.2013 Dividend Payout Ratio + FCF/tonne – Dividends are lowest in Europe, suggesting room for improvement. However, balance sheets are also an issue.



Source: Citi Research

Figure 22. Global Steel Comp Sheet – Prices as of 28th Feb Close.

Company Name	Reuters Code	Rating	Market Cap	Share				P/E (x)			P/BVPS (x)			EV/EBITDA (x)			Dividend yield (%)			Free cash flow yield (%)			ROCE (%)		
				USD \$m	Ccy	Price	Target	Upside	2012A	2013E	2014E	2012A	2013E	2014E	2012A	2013E	2014E	2012A	2013E	2014E	2012A	2013E	2014E	2012A	2013E
UK/Europe																									
Klöckner & Co.	KCOGn.DE	3	1,472	EUR	11.30	9.50	(16%)	(13.6)	21.8	14.3	0.5	0.6	0.6	13.8	8.0	6.6	0.0	0.0	1.2	2.4	3.3	4.5	1.2	4.3	5.4
ArcelorMittal	ISPAAS	2	25,038	EUR	11.52	13.90	21%	(7.2)	26.7	11.8	0.5	0.4	0.4	5.8	5.0	3.8	4.4	1.3	1.3	6.2	10.2	11.6	4.8	2.8	4.0
SSAB	SSABa.ST	3	2,426	SEK	50.10	48.00	(4%)	nm	nm	20.1	0.6	0.6	0.6	14.0	14.0	7.8	3.5	2.0	2.0	17.9	1.9	4.4	1.2	(0.1)	3.1
Salzgitter AG	SZGG.DE	1	2,868	EUR	36.55	43.00	18%	nm	16.4	6.9	0.5	0.5	0.5	11.3	6.4	4.1	0.0	0.6	1.4	(7.3)	10.3	14.1	1.2	3.8	6.9
voestalpine AG	VOES.VI	1	5,823	EUR	25.86	34.00	31%	11.9	9.5	8.7	0.9	0.8	0.8	6.2	5.4	5.1	3.3	4.0	4.2	12.0	12.5	12.1	7.4	8.0	8.3
Asia																									
China																									
Maanshan Iron and Steel	0323.HK	3H	2,274	HKD	2.29	1.79	(22%)	(4.4)	24.9	8.3	0.6	0.6	0.5	10.2	4.6	3.4	0.0	1.1	3.4	2.6	(2.0)	27.4	(2.6)	4.8	7.9
Angang Steel	0347.HK	3H	4,907	HKD	5.26	4.39	(17%)	(10.3)	76.4	69.9	0.7	0.6	0.6	21.9	9.4	8.9	0.0	0.4	0.3	(2.7)	5.6	5.1	(2.0)	2.7	2.8
Baoshan Iron & Steel	600019.SS	2H	13,706	CNY	4.98	5.00	0%	7.3	15.5	12.5	0.7	0.8	0.7	6.7	5.5	4.7	5.5	2.6	3.2	29.1	10.4	13.4	1.7	4.5	5.4
India																									
Bhushan Steel	BSSL.BO	3	1,923	INR	461.5	305.4	(34%)	10.7	8.8		1.4	1.2		9.6	7.7		0.1	0.1		(10.4)	10.9		7.3	8.4	
Jindal Steel and Power	JNSP.BO	1	5,998	INR	348.9	567.0	63%	10.8	8.0	7.1	2.0	1.3	1.1	8.9	7.4	6.2	0.3	0.5	0.5	(7.0)	(6.8)	5.0	10.7	10.4	11.4
MOIL	MOIL.BO	3	748	INR	242.0	260.0	7%	10.2	8.8	7.9	1.6	1.3	1.2	5.1	3.6	2.8	2.0	2.3	2.4	7.0	7.9	8.1	43.9	37.5	35.4
Steel Authority of India	SAIL.BO	3	5,402	INR	71.10	75.00	5%	11.6	8.1	7.5	0.9	0.7	0.6	9.1	6.9	6.1	2.2	3.0	3.1	(15.7)	(19.1)	(0.5)	5.0	5.9	6.5
Sesa Goa	SESA.BO	2	2,470	INR	154.5	189.0	22%	5.9	4.6	4.5	0.9	0.6	0.6		4.6	4.3	2.0	2.6	2.6	25.8	32.1	39.6		12.3	11.3
Tata Steel	TISC.BO	1	6,115	INR	342.4	508.0	48%	42.3	12.6	9.5	1.0	0.7	0.7	7.6	5.9	5.6	2.1	2.8	3.4	(0.9)	5.0	5.5	3.8	5.4	5.9
Korea																									
Dongkuk Steel Mill	001230.KS	3H	721	KRW	12,650	12,000	(5%)	(9.3)	nm	(10.4)	0.3	0.3	0.3	17.5	11.4	10.8	5.5	5.9	5.9	(27.5)	9.0	(0.8)	(0.4)	1.2	1.3
Hyundai Steel	004020.KS	2	6,695	KRW	85,100	91,000	7%	9.9	9.9	9.4	0.8	0.7	0.6	8.8	8.5	6.4	0.6	0.6	0.6	(8.4)	(14.1)	17.1	3.9	4.0	5.4
POSCO	005490.KS	2	28,423	KRW	353,500	380,000	7%	9.5	8.7	8.2	0.7	0.6	0.6	7.2	6.6	5.9	2.9	2.8	2.8	5.3	4.3	3.7	4.1	5.2	5.7
Others																									
China Steel	2002.TW	1	14,186	TWD	27.55	29.60	7%	89.5	43.3	32.3	1.5	1.4	1.4	17.1	12.4	10.1	0.7	1.4	1.9	(1.1)	1.7	0.9	1.5	2.8	3.6
Gloria Material Technology	5009.TWO	1	337	TWD	23.45	29.00	24%	11.5	9.4	8.6	1.4	1.3	1.1	8.3	7.3	6.5	1.7	2.1	2.3	1.3	(2.0)	(3.1)	7.5	8.3	8.6
Eastern Europe, South Africa and Latin America																									
Severstal	CHMFq.L	1	10,256	USD	11.21	16.00	43%	10.9	15.3	12.7	1.4	1.1	1.1	6.8	7.0	6.8	2.3	1.6	2.0	1.8	1.2	2.6	9.5	8.2	8.0
Cia. Siderurgica Nacional	CSNA3.SA	3	7,363	BRL	10.00	10.00	0%	nm	13.8	10.9	2.5	1.7	1.4	7.0	6.3	5.7	6.9	3.4	2.4	(15.4)	1.6	4.3	13.1	10.0	10.5
Erdemir	EREGL.IS	2	3,986	TRY	2.32	2.39	3%	17.8	11.5	9.0	1.1	0.9	0.9	10.6	7.7	6.4	4.0	3.1	2.6	13.2	3.1	4.1	4.6	7.3	8.6
Ezzsteel	ESRS.CA	1H	802	EGP	9.95	13.50	36%	17.4	5.5	4.7	1.1	0.9	0.8	5.4	3.8	3.2	1.6	5.7	6.7	13.7	32.6	50.0	10.2	15.3	16.7
Evraz Group	EVRE.L	1	6,093	GBP	2.73	3.69	35%	nm	(18.0)	(19.7)	1.1	1.1	1.2	6.3	7.7	8.5	0.0	0.0	0.0	2.3	(2.3)	1.1	3.1	2.2	1.7
Gerdau	GGBR4.SA	2	13,706	BRL	16.45	20.00	22%	19.6	14.7	10.8	1.1	0.9	0.9	9.8	7.9	6.6	1.6	2.0	2.8	3.2	1.3	4.5	5.4	5.5	6.8
Ezz Dekheila	IRAX.CA	1H	956	EGP	481.9	625.0	30%	6.4	5.2	4.6	1.7	1.5	1.3	3.2	2.7	2.3	9.5	11.7	13.1	20.5	25.1	25.7	17.1	20.1	22.3
Kumba Iron Ore Ltd	KIOJ.J	3	20,281	ZAR	568.3	470.0	(17%)	15.0	12.5	12.8	12.2	10.1	9.4	7.7	6.8	6.9	5.6	7.4	7.2	6.8	9.5	9.4	59.1	61.0	55.1
MMK	MAGNq.L	1	3,521	USD	4.16	12.00	189%	43.8	9.7	8.0	0.4	0.4	0.4	5.0	3.9	3.4	0.2	6.2	7.5	23.6	13.4	15.4	2.5	3.8	4.3
Mechel	MTLN	3	2,631	USD	5.49	6.20	13%	(5.0)	(13.0)	12.7	0.7	0.6	0.5	18.1	10.4	6.9	0.0	0.0	0.0	5.9	3.0	0.8	(0.5)	2.4	5.3
NLMK	NLMKq.L	3	13,365	USD	19.19	20.00	4%	16.7	15.3	20.7	1.1	1.0	1.0	8.6	9.4	10.6	1.2	1.6	1.4	0.3	0.9	0.4	5.3	5.2	3.8
TMK	TRMKq.L	1	3,217	USD	14.91	19.30	29%	11.1	10.1	9.1	1.7	1.5	1.3	7.1	6.6	6.0	2.6	3.4	3.4	15.0	6.1	12.4	9.2	9.3	10.2
Ternium	TX.N	2	4,038	USD	20.14	26.00	29%	33.2	6.2	5.7	0.9	0.7	0.6	4.3	3.5	3.2	3.2	3.3	5.1	(42.0)	4.9	7.7	3.8	8.3	8.7
Usiminas	USIM5.SA	2	5,142	BRL	9.80	10.00	2%	nm	nm	16.4	0.8	0.5	0.4	20.7	8.6	6.4	0.7	1.0	0.1	10.4	(6.7)	3.7	(0.1)	2.3	3.0
North America																									
AK Steel Holding Corporation	AKS.N	3H	510	USD	3.75	3.10	(17%)	(7.9)	nm	18.5	(1.2)	(1.0)	(1.1)	14.9	11.5	9.8	2.2	0.0	0.0	(62.3)	(31.1)	(48.7)	0.2	4.9	6.2
Allegheny Technologies Incorporated	ATLN	1	3,270	USD	30.47	39.00	28%	20.2	16.9	9.2	1.3	1.3	1.1	9.8	9.1	5.8	2.4	2.4	2.4	1.5	(7.9)	7.6	4.8	5.1	8.1
Avalon Rare Metals	AVL.TO	1H	120	CAD	1.19	4.50	278%	(12.3)	(9.0)	(8.7)	1.3	1.1	1.0	(8.1)	(7.6)	(8.1)	0.0	0.0	0.0	(22.5)	(26.5)	(24.5)	(17.6)	(14.5)	(12.5)
Commercial Metals Co	CMC.N	1	1,900	USD	16.31	18.00	10%	15.5	11.8	8.6	1.3	1.3	1.2	6.9	6.0	5.0	3.2	2.9	2.9	7.9	5.1	9.3	11.2	10.2	11.8
Carpenter Technology Corp	CRS.N	2	2,489	USD	47.23	54.00	14%	17.4	13.5	11.1	2.3	1.9	1.6	10.1	7.8	6.5	1.4	1.5	1.5	(1.4)	(2.5)	1.9	8.8	9.3	10.3
Nucor Corporation	NUEN	1	14,310	USD	45.05	52.00	15%	24.4	17.4	12.5	1.8	1.8	1.7	9.4	7.6	5.9	3.4	3.3	3.3	7.3	2.2	8.8	7.3	9.8	12.7
Steel Dynamics Inc	STLD.O	1	3,361	USD	15.27	17.00	11%	17.8	14.5	10.2	1.3	1.3	1.3	7.9	6.7	5.2	2.9	2.6	2.6	6.7	10.1	8.7	6.8	7.8	10.1
United States Steel Corporation	X.N	2H	3,007	USD	20.84	25.00	20%	22.1	27.8	14.9	1.0	0.8	0.7	6.1	6.1	5.0	0.8	1.0	1.0	15.5	(5.5)	6.7	3.3	2.6	3.4
Citigroup - Global Sectors (USD \$)																									
Metals & Mining			1,379,463					15.4	12.6	10.4	1.5	1.3	1.2	7.3	6.3	5.4	3.1	2.8	3.0	(0.4)	2.9	6.6	14.5	13.0	13.7
Steel			371,768					19.4	12.6	10.2	1.1	0.9	0.9	7.5	6.4	5.6	3.5	2.9	2.9	1.4	2.0	5.8	10.3	10.0	10.5
Building Materials			308,372					20.7	16.8	13.3	1.5	1.5	1.4	9.3	8.5	7.3	2.1	2.1	2.3	2.2	3.4	6.2	10.8	11.8	12.6

Appendix A-1

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