

17 July 2017

METALS & MINING



Flashnote

Marketing Communication (Connected Research)

# Metal Tiger<sup>#</sup>

BBG Ticker: MTR LN

Price: 1.975p

Mkt Cap: £19.1m

**BUY**

## Thailand PEA Update

### Updated CPR Confirms Thailand Potential

**Metal Tiger (MTR LN)<sup>#</sup>** has released an updated CPR on its brownfield lead zinc silver project in Thailand which confirms the positive economic potential. Our analysis results in a 7% increase in our estimate of the project NPV on a 100% basis to US\$47m at a 10% discount rate. The updated PEA completed by SRK has resulted in a larger resource in terms of contained metal and a significant increase in confidence with 90% now in the Indicated category. The greater understanding and confidence in the new geological model has prompted an additional focus on selective mining which should support margins over the project LoM. LoM capital costs have risen from US\$37m to US\$50m largely due to additional mining fleet requirements, in part, as a result of a greater focus on selective mining. However, as a brownfield project, the capital costs remain well below those of greenfield peers and we expect strong cash flow generation over the 14 year LoM.

### Botswana Progress

In partnership with **MOD Resources (MOD AU)**, MTR has continued to make strong progress on the T3 copper project on the Kalahari copper belt in Botswana. Strong infill drilling results through the year have confirmed the viability of the pit design proposed in the scoping study. Further drilling results are expected in the near term and the results to date indicate that the planned resource update, due in August 2017, is likely to result in a larger resource with increased confidence.

Additional exploration work, including an Airborne Electro Magnetic Survey, is also ongoing at the peripheral satellite deposits to T3 and we reiterate that we view the T3 Scoping Study as a base case for significant further growth.

### Attractive Valuation

With a current market cap of £19m we believe that MTR receives little credit for its core projects in Botswana and Thailand, which based on our analysis have risked attributable NAV's of £26m and £14m respectively. The progress in recent months including strong drilling results in Botswana and the updated CPR for the Thai project further derisk the projects and underpin our confidence in their potential.

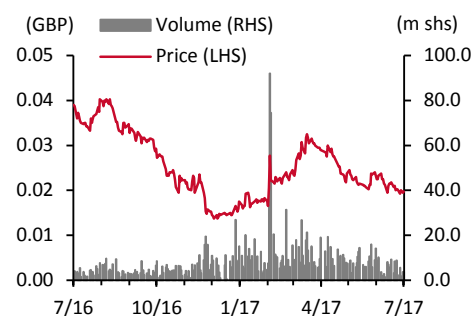
### Recommendation and Target Price

**Our analysis produces a target price of 4.57p/sh and we reiterate our Buy recommendation.**

#### Company Description

Metal Tiger is diversified commodity company with operations primarily in Thailand and Botswana.

#### One Year Price Performance



Price % chg	1mn	3mn	12mn
	-12.2%	-31.9%	-49.4%

SOURCE: FactSet, as of 14 2017 close.

Market:	LSE AIM
Target Price:	4.57p/sh
Shares in issue	968m
Free float:	76%
Net cash (Dec 2016):	£1.38m
Enterprise value:	£20.48m

#### Major shareholders

Hargreaves Lansdown AM	16.88%
Exploration Capital Partners	10.33%
Toronto Dominion Bank	7.37%

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<sup>#</sup>VSA Capital acts as Corporate Adviser to Metal Tiger.

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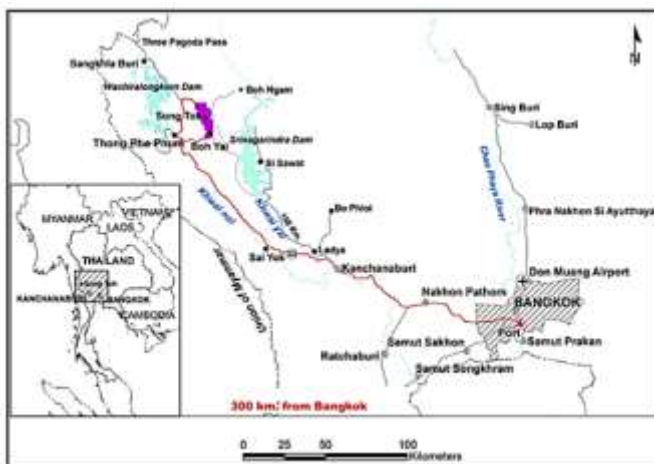
# Updated PEA Confirms Thailand Potential

**Metal Tiger (MTR LN)** has announced the highlights from its updated PEA on its Thai lead, zinc, silver project which despite some significant changes to assumptions confirms the potential for restarting the mine which was closed in 2002 due to weak metal pricing. Based on a 10% discount rate our analysis produces an NPV of US\$47m versus our prior estimate of US\$44m on a 100% basis. Currently, we believe that MTR receives little credit for the fair value of its core projects in Botswana and Thailand where significant progress has been made in 2016 and 2017. The recent announcements in both projects confirm our views that both have the potential to deliver strong economic returns underpinned by a positive fundamental backdrop in respective commodity markets. With a current market capitalisation of £19m we believe that there is significant upside for MTR based on its current asset portfolio and whilst development risk still remains the current market discount is excessive, in our view.

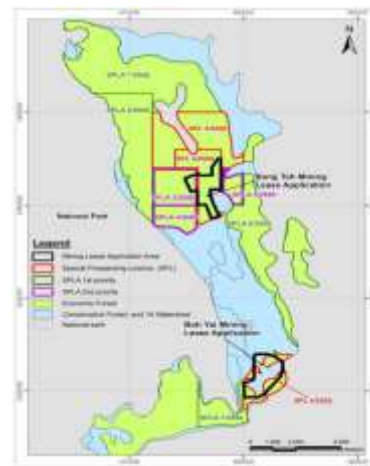
## Potential for Strong Cash Flows Confirmed

In February 2016, MTR exercised an option to acquire 90% of **South East Asia Exploration and Mining Thailand (SEAM)** with the remaining 10% held by a local Thai operating company. A total of US\$500k was paid in cash and shares to exercise the option in February 2016. SEAM held a number of exploration licenses across Thailand for gold, antimony, copper, silver, lead and zinc as well as a JV covering two brownfield underground silver-lead-zinc mines, Boh Yai and Song Toh, in Western Thailand which form a single asset and were closed in 2002 due to price weakness, having previously operated since 1978. The company is now known as **KEMCO** and post the announced restructuring and spin out will have an effective interest of 78% in the JV. In 2013 ACA Howe completed a PEA which formed the basis of our prior assumptions; however, this has been updated by SRK Consulting to reflect current market conditions as well as the significant work that has been undertaken to improve the availability of historical data. This therefore results in an enhanced understanding of the local geology and its economic potential and greater confidence in the positive conclusions of the updated study.

**Location of Boh Yai and Song Toh**



**Location of License Areas**



*SOURCE: Company data, VSA Capital Research.*

The updated PEA indicates that the fundamentals of the project remain unchanged in that as a brownfield project the mining risk, processing risk, capital spending and construction time are likely to be significantly lower than greenfield peers whilst low cash costs and significant by product revenues indicate the potential for strong free cash flow generation. The processing facility which is based at Song Toh is in good condition, based on our site visit and SRK’s report, and could be restored to working order rapidly and at limited expense, albeit at a higher cost than the 2013 PEA. The project is still planned as a “hub spoke” type operation with the Boh Yai and Song Toh deposits separated by around 14km. Furthermore, since no additional drilling or metallurgical work has as yet been completed the expected mine life remains at 14 years with production of both lead and zinc concentrates.

## PEA Highlights

	Original PEA 2012	SRK PEA 2017	VSA Estimates, 2017
Post-Tax NPV (100% basis, 10% discount rate)	62	46	47
Initial Capital (US\$m)	16	38	38
LoM Capital (US\$m)	37	50	50
Plant Throughput Capacity (ktpa)	300	275	275
Total Operating Cost	33.71	45.30	38.96
Life of Mine	14 years	14 years	14 years
Life of Mine Zinc Metal, kt	69	79	79
Life of Mine Lead Metal, kt	89	115	114
Life of Mine Silver Metal, moz	6.3	6.1	6.1
Free Cash Flow LoM (US\$m)	137	119	124

**SOURCE:** Company Data, VSA Capital Research.

The key differences between the 2013 PEA and the recent study are the changes to capital spending assumptions, improvement in potential silver recoveries and an increase in certainty and understanding of the geology, in part, represented by the significant increase in resources in the Indicated category rather than Inferred. Previously 44% of the total resource was Indicated while now 87% is in this higher confidence bracket, although we do note a slight reduction in the overall tonnage in the resource. Lower ore tonnage is, however, offset by an increase in grade which results in a higher contained metal content in lead, zinc and silver. This will benefit ore concentrator efficiency.

## Higher Grade, Higher Confidence Resource

Since ACA Howe completed the initial PEA in 2013, which was also primarily based on historical data, KEMCO have been working to improve their records as well as the availability and presentation of data. By reassessing the core, which is kept on site from the original drilling and creating more in depth and methodical catalogues of all the historical data KEMCO has increased the available data. This has enabled a more accurate, and enhanced understanding of the geology and depletion resulting in a modified, but likely more realistic geological model of the asset. The 3D geological modelling technique has focused on individual veins and utilising the existing detailed Metallgesellschaft geological cross sections to better understand structural controls as opposed to being developed around polygonal blocks based on drilling.

## JORC Resource, 2017

Boh Yai	Million Tonnes	Lead		Zinc		Silver	
		Grade, %	Contained, kt	Grade, %	Contained, t	Grade, g/t	Contained, moz
Indicated	2.9	3.7	107,300	4.5	130,500	68.4	6.4
Inferred	0.4	3.5	14,000	4.2	16,800	107.2	1.4
<b>Total</b>	<b>3.3</b>	<b>3.7</b>	<b>121,300</b>	<b>4.5</b>	<b>147,300</b>	<b>72.6</b>	<b>7.7</b>
<b>Song Toh</b>							
Indicated	1.1	5.1	56,100	0.8	8,800	60.1	2.1
Inferred	0.2	8.1	16,200	0.2	400	76.4	0.5
<b>Total</b>	<b>1.3</b>	<b>5.5</b>	<b>72,300</b>	<b>0.7</b>	<b>9,200</b>	<b>62.6</b>	<b>2.6</b>
<b>Total</b>	<b>4.6</b>	<b>4.2</b>	<b>193,600</b>	<b>3.4</b>	<b>156,500</b>	<b>70</b>	<b>10.3</b>

**SOURCE:** Company Data, VSA Capital Research.

The updated resource by SRK demonstrates broadly similar results and we note that while the overall tonnage has decreased slightly more importantly for the project economics grades and contained metal have increased. By the far the most important conclusion, however, is that close to 90% of the resource is now in the higher confidence category making economic assumptions more robust.

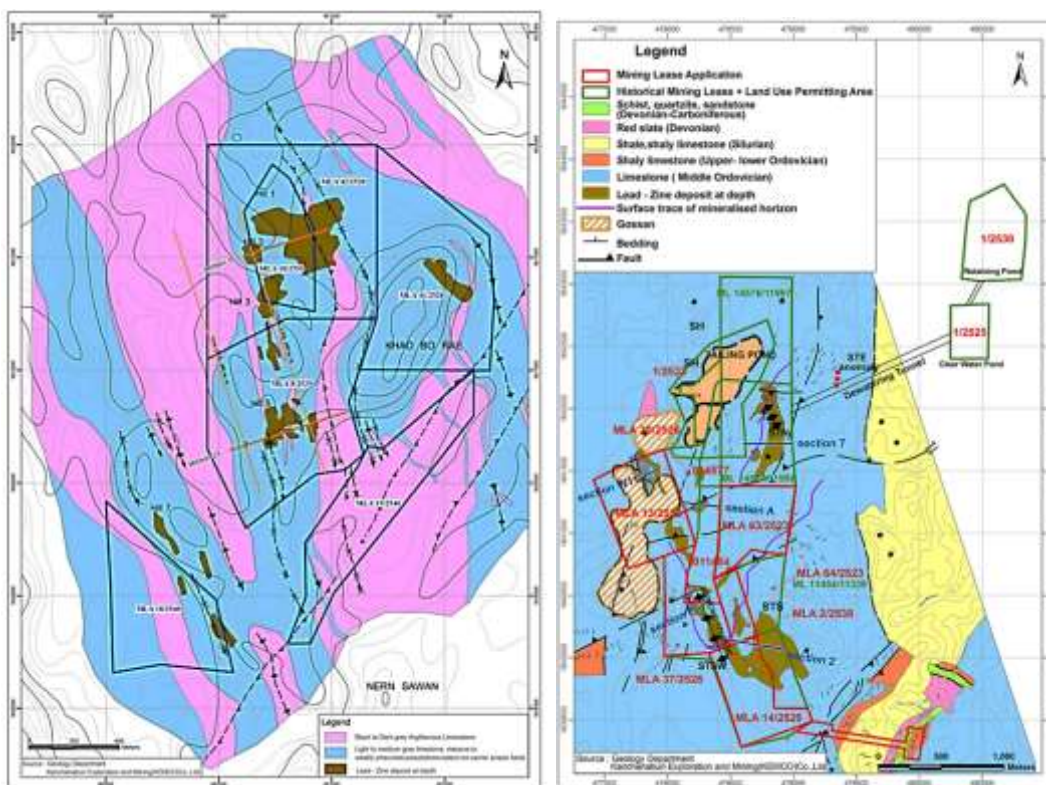
### Initial Mineral Resource, Boh Yai & Song Toh, 2012

	Lead			Zinc		Silver	
	Tonnes	Grade, %	Contained, kt	Grade, %	Contained, kt	Grade, g/t	Contained, moz
Indicated	2.5	3.1	78.5	3.0	76.1	75.24	6.0
Inferred	2.0	2.9	57.6	2.9	56.7	48.89	3.01
<b>Total</b>	<b>4.5</b>	<b>3.0</b>	<b>136.0</b>	<b>3.0</b>	<b>133.1</b>	<b>63.96</b>	<b>9.11</b>

SOURCE: Company data, VSA Capital Research.

The mineralisation, which is comparable to Mississippi Valley type lead-zinc mineralisation, occurs in three forms within limestone and limestone-slate; as banded ore, high grade lenses and disseminated ore. The banded ore appears as narrow veins which vary greatly over short distances in both thickness and grade. The high grade lenses have combined base metal grades of up to 50% and can be as much as 20m long by 5m thickness. Meanwhile the disseminated ore typically appears as lateral extensions of the banded ore or between the ore bands and combined base metal grades are up to as high as 5%.

### License Application Areas; Boh Yai (Left) and Song Toh (right)



SOURCE: Company data, VSA Capital Research.

Historic mining was largely conducted at Song Toh, however, the current resource is heavily weighted towards Boh Yai. Previously the indicated resources supported mining for nine years with the remaining five years from inferred, however, now the entire 14 year mine life can be supported from the higher confidence Indicated category resource.

There has been no exploration drilling at either mine for at least 15 years and due to time constraints further historical data still remains to be validated and could be included in the resource in the future. This indicates that the resource could be enhanced and expanded potentially improving the economics via additional mine life via expansion of the existing resource. Further additional drilling may not be carried out until the grant of mining leases. We therefore stress that we believe that the PEA is very much a base case in terms of mine life and output potential which could benefit significantly from further exploration work.

Furthermore, outside of the areas under application for Mining Licenses MTR has a 90% interest in eight Special Purpose License Applications for the area surrounding Boh Yai and Song Toh, covering some 50km<sup>2</sup>. Historic exploration of this area has been limited and MTR intends to explore this area to try to identify further potential mineralisation.

## Capital Expenditure and Strong Cash Flows

The previous PEA indicated initial capital of US\$16m with total LoM capital of US\$37m whilst the updated SRK study indicates US\$37.7m in upfront capital and LoM capital of US\$50.3m. The implication therefore is that while there has been some escalation and conservative adjustments to the original estimates, the primary change is front loading of the capex. This does of course negatively harm the NPV all things unchanged; however, we believe that this impact is more than offset by the significant improvement in silver payability and an increase in metal sold as well as the greater emphasis on selective mining techniques which should reduce dilution. With no change to our silver forecast the impact is an additional US\$47m in revenue over the LoM based on our analysis.

The areas of capital spending which have gone up are primarily the mining fleet, processing plant closure costs, TSF and surrounding infrastructure including the mining camp. Additional capital has been set aside for the mining fleet due to the greater focus on selective mining, necessitating additional equipment, however, this should mean reduced dilution once production commences. Regarding the processing plant, prior capex assumptions of US\$105k assumed that almost all the existing machinery would be utilised, however, SRK have determined that although in good condition it would be on balance beneficial to purchase new floatation cells and an ore sorter to improve recoveries and support operating margins. However, at US\$2m for the processing plant SRK indicate that this is around 10% of the cost of a greenfield project, further underpinning the attractive low capital cost of this project. We also highlight that there is a 15% contingency included. Additionally, savings may be possible due to currency as all capital costs are assumed in US dollars and savings may be possible if purchased in Baht.

### Initial Capital Comparison, US\$'000

	ACA Howe, 2013	SRK, 2017
Feasibility & Permitting	600	750
Owners	-	250
Plant Refurbishment	105	2,000
Water Treatment Plant	4,000	4,850
TSF	3,960	3,460
Infrastructure	1,240	4,315
Mining	6,095	22,077
<b>Total</b>	<b>16,000</b>	<b>37,702</b>

*SOURCE: Company Data, VSA Capital Research.*

The updated PEA underlines the fact that the project has the potential to deliver strong cash flows and despite the front loading of capital spending compared to the prior PEA we still anticipate a discounted payback period of c.3 years. From the first year of production onwards we anticipate average annual free cash flow of US\$10.3m over the 14 year life of mine demonstrating the strong economic potential of the project.

## Diversified Commodity Exposure

A lead concentrate may be produced from the ore from all of the various deposits whilst a zinc concentrate may also be produced from the ore extracted at Boh Yai. The lead concentrate is likely to have a contained metal content of between 69-75% lead whilst the zinc concentrate is likely to have a metal content of 58% zinc, up from 54% previously. According to the PEA, zinc may not be extracted from the lead concentrate and vice versa. Average annual production of contained payable lead is expected to be around 7.8ktpa while average contained zinc production is likely to be around 4.8ktpa. However, the lower grade of the zinc concentrate does reduce the sensitivity of the project to changes



zinc prices. The concentrates may be produced concurrently or separately depending on feedstock. We would view any improvements in metallurgy favourably during the feasibility study process.

Since the original PEA was conducted there have been material changes in commodity prices, notably zinc prices have risen sharply up 60% during 2016 and have averaged US\$2,705/t during 2017 YTD. Lead prices are also up strongly, although in both cases part of the rally was driven by optimism for US economic growth and as expectations have been pared back, prices have eased from multi year highs. That said given the differing factors affecting precious and industrial metal prices we believe that this diversified commodity basket offers investors a more stable by-product pricing outlook which should support robust margins over the life of mine, particularly as underlying fundamentals are robust, in our view.

### Improved Silver Contribution & Recoveries

Silver is a key by-product with an average of 381kozpa in payable metal produced over the 14 year life of mine. The original PEA from 2012 indicated that the payability the silver contained in the concentrate would be heavily penalised with a US\$10/oz discount. Although no new metallurgical testwork has been carried out, unlike in the previous study SRK has utilised historical operating data to determine potential recoveries and metal payability. Consequently, SRK anticipate that silver payability from the lead concentrate would be 95% and 70% from the zinc concentrate, which in dollar terms based on a US\$20/oz silver price, indicates a discount of just US\$1/oz and US\$6/oz respectively. Utilising the historic data is, in our view, a robust approach and gives us confidence that the updated assumptions which have a significant and positive impact of US\$17.4m, all else unchanged, on the project NPV. Aside from the changes to metallurgical assumptions, recoveries are largely unchanged. However, given that SRK are recommending that the flotation circuit is replaced this should have a positive impact on recoveries, or rather greater confidence that the potential recoveries can be fully achieved.

### Existing Equipment

The brownfield nature of the project and the existing infrastructure and equipment play a large role in determining the attractive economics of the project. Underground workings exist at both Boh Yai and Song Toh although in order to reach the Song Toh Camp Zone a new access ramp will need to be built. The processing facility at Song Toh has a process route which includes conventional crushing, rod and ball mill grinding and a flotation plant. Having visited the site recently we believe that much of the grinding, conveying, and storage equipment may be refurbished relatively simply whilst other equipment including crushing, flotation circuits and electrical equipment requires greater expenditure. There is also the potential for adding new ore sorting technology at the front end of the plant to reduce dilution and improve recoveries. The SRK study indicates throughput capacity of 275ktpa could be achieved which is in line with the historical operating capacity, this is slightly lower than the 300ktpa anticipated by ACA Howe although results in a smoother production profile over the LoM.

**Flotation Cells at Song Toh, 2016**



**Mine Entrance at Boh Yai, 2012**



**SOURCE:** Company data, VSA Capital Research.

In addition to the processing facility, the site is already connected to the power grid with power lines running from Boh Yai to Song Toh. A tailings facility already exists, although this will require upgrading to support additional material from the mining restart and meet environmental requirements. Given Government focus and regional sensitivity of environmental issues, KEMCO is keen to demonstrate robust plans for protecting the local environment.

### Strong Margin and Cash Flow Potential

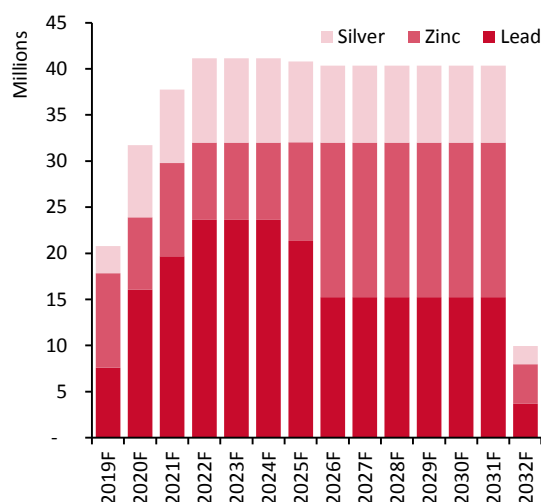
As well as the low capital requirements, the project offers strong margins and free cash flow potential. This largely arises from the significant contribution from zinc and silver credits. Indeed, our estimates of cash costs over the life of mine of US\$1,205/t before by-product credits are robust on a stand-alone basis; however, with by-product credits included the cash costs are negative over the life of mine. Consequently we anticipate EBITDA margins of above 60% over the life of mine and strong free cash flow generation of up to US\$13mpa also.

The carbonate succession in which the orebodies are hosted is folded along NNW axes that dip steeply east resulting in a series of asymmetrical anticlines with steep or overturned western limbs which dip at between 75-90° and shallow eastern limbs dipping between 25-40°. The mineralisation is heavily deformed and there is wide variation in thickness and grade across the resource. It is therefore necessary to adopt multiple mining techniques for the different styles of mineralisation. The PEA anticipates the same mining methods to be used as in 2002. Both Boh Yai and Song Toh contain steeply and shallow dipping features and a combination of methods will be applied to both.

The shallow dipping and thicker areas will be mined via room and pillar mining leaving pillars of low grade ore where possible. A scooptram will be used to remove rock before being trucked out of the mine although in steeper areas electric scrapers will be used to pull rock down the slope. For the steeply dipping zones, which typically demonstrate stronger faulting and weaker continuity, miners will use handheld pneumatic drills to drill blast holes which will latterly be backfilled before continuing to the next sub level. The previous operators experienced significant irregularity in the mineralisation, particularly at Song Toh, precluding long hole drilling and making close grade control imperative to prevent undue dilution. These mining methods are relatively high cost which explains the cash cost figure before by-product credits. The contribution of revenues from each of the three metal streams was significant, however, and we stress the important contribution of each to the project’s economics.

The original PEA projected lead revenues of US\$154m of LoM, zinc revenues of US\$94m and silver revenues of US\$131m. Given that zinc prices have risen 33% and silver prices have fallen 47% since the start of 2013 the contribution of revenues has changed by 43% and -27% respectively to US\$134m and US\$96m, based on our analysis. However, we anticipate that improved silver payability should largely offset the impact of lower prices and the overall contribution of by-product credits remains crucial and is a key determinant of the projects free cash flow potential.

#### LoM Production, kt



SOURCE: Company data, VSA Capital Research.

#### LoM Free Cash Flow, US\$m



SOURCE: Company data, VSA Capital Research.

## Work Programme and Licensing: New Thai Minerals Act

In Q3 2016, MTR and KEMCO commenced its permitting process led by a team of Thai nationals based in Bangkok, who have extensive local mining and successful permitting experience. MTR has applied for Mining License applications relating to the historical mining areas of Boh Yai and Song Toh as well as for Special Prospecting Licenses over the surrounding areas.

Given the significance of the tourism industry in Thailand and the large areas of land designated as national parks, there are vested interests which have made obtaining mining permits challenging in recent years, and no new permits have been issued in the last ten years. Gold miners have suffered, in particular, with the only operating gold mine Chatree closed in May 2016. The mine, which is owned 48% by local company **Akara Resources** and 52% by **Kingsgate Gold (KCN AU)**, faced challenges owing to the environmental impact on the local community despite the companies' claims that it had not had an adverse impact and had adhered to global standards. This example has weakened investor sentiment towards Thailand. However, in December 2016 a new Minerals Act was passed. It received royal approval in March 2017 and will become effective in August 2017.

The Act consolidates a number of separate pieces of legislation and the primary changes include greater involvement for local authorities and the creation of a dedicated Minerals Committee. Given KEMCO's strong local relationships and the local communities understanding of mining operations given the prior operations we believe this is a welcome change. Mines will be divided into three categories based on a variety of factors including size, environmental impact, area of mining, mine type and mining methodologies. As an underground mine, this project will fall under category three meaning it needs to be approved by the Minerals Committee. Since under the previous Act, the project would also have required central government approval, there is little practical change and with strong local relationships the company is well placed to achieve a Mining License. What the new Act does provide is clarity that the Government intends to support mining and that the Kingsgate case is an example with a specific set of underlying factors.

We believe that after the incident with KCN the Minerals Act with its greater focus on environmental issues recognises how Thailand has changed over the past forty years since the original Act was passed and the new competing interests which exist. However, we believe that this is a positive step and may hail a more constructive era for the industry in Thailand. With an experienced local team leading this process MTR and KEMCO are well positioned to obtain full permitting.

Given the environmental concerns, much of Thailand forests have been categorised according to current land management status. The Song Toh areas under Mining License application come under the Economic Forest category. The Boh Yai areas are a combination of Economic Forest and 1A Watershed. 1A Watershed refers to areas required to have permanent forest cover due to steep slopes or a high susceptibility to soil erosion. However, the exception is for those areas of historical mining. This is of course the case for Boh Yai and given the fact that the mine is underground and the processing facilities already exist at Song Toh we believe that the impact on forest cover should be minimised, strengthening the case for approval of a permit.

In depth hydrology studies are ongoing alongside an Environmental Impact Assessment. The limestone karst typical of South East Asia is permeable and consequently it is particularly important to be aware of the issues relating to ground water and waste water impacts. MTR plan to recycle all waste water from the Tailings Storage Facility which already reduces any potential impact. Also as a consequence, the underground workings which have been on care and maintenance will require dewatering, particularly at Song Toh.



## Royalty & Tax Regime

The corporate tax rate was reduced in Thailand from 30% to 20% in 2013 as a temporary measure although this has not yet been reversed and the consensus view is that 20% is likely to remain unchanged.

Royalty rates for metals are as follows:

- Silver: 10%
- Base Metals: A sliding scale up to a maximum of 15% which applies from US\$556/t for lead and US\$833/t for zinc.

# Botswana Update: MOD Resources JV

Following the publication of the Scoping Study in December 2016 MTR and **MOD Resources (MOD AU)** have made encouraging progress on the T3 copper project in Botswana. MTR secured £4.85m in funding, primarily from **Sprott Wealth** in March 2017 enabling them to support the continued rapid progression of the project. Drilling results have underpinned the planned parameters for the project and indicate the potential for an expanded resource to be announced in July 2017. At this stage it is too early to adjust our underlying assumptions; however, we do believe that the announced results provide greater confidence in the projections and an expanded resource would confirm our view that the scoping study presents a base case in terms of LoM production and mine life.

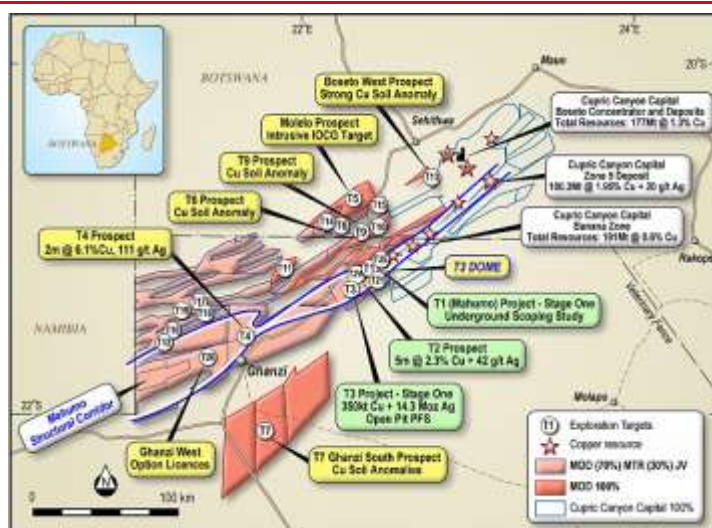
## Scoping Study Highlights

Scoping Study Highlights, VSA Capital Analysis	
Post-Tax NPV (100% basis, 8% discount rate), US\$m	183
Initial Capital, US\$m	135
Total, LoM Capital, US\$m	151
Life of Mine, Years	10
Average Copper Production, ktpa	20
Average Silver Production, kozpa	609
LoM Average Cash Cost Before By-Product Credits, US\$/t (US\$/lb)	3,195 (1.45)
LoM Average Cash Cost After By-Product Credits, US\$/t (US\$/lb)	2,620 (1.19)

**SOURCE:** Company data, VSA Capital Research.

Assay results from geotechnical drilling using wide diameter holes confirmed the initial pit design whilst wide intersections such as 46.6m at 2.1% Cu and 6g/t Ag may benefit the resource update due in August 2017. These wide holes are primarily to determine a greater understanding of rock strength and stability as well as to provide samples for metallurgical testing.

## Kalahari Copper Belt, T3 Dome, T20 Dome and Other Prospects



**SOURCE:** Company data, VSA Capital Research.

A resource update covering Zones 1 and 2 is due in July 2017 although further drilling is also due to take place on nearby anomalies at the same time. In August drilling will focus on Zone 3, below the current T3 resource while in Q3 2017 the company aims to complete metallurgical, mining and processing testwork for the PFS. We expect the update to result in a larger resource which in combination with the positive geotechnical drilling results should enable an expanded pit design and therefore potentially enhanced economics.

Key drill results for the new resource include 29.7m @ 1.1% Cu & 11g/t Ag from 145m, 19m @ 1.2% Cu and 14g/t Ag from 152m, 12m @ 1.6% Cu and 33g/t Ag from 165m and 24m @ 0.7% Cu and 17g/t Ag from 212m.

Given the prospectivity of the region, additional work has also been commenced on other targets within the area. An Aerial Electro Magnetic (AEM) survey has been commissioned to test the T3 Dome. The initial survey carried out at 40m altitude and with 200m spacing between flight lines will seek to establish whether this survey technique can detect the distinctive IP chargeability associated with the mineralised anomalies. Should this be the case it opens the way for identifying further possible targets.

Other regional exploration also covers the T20 target, c100km West of T3. Both are located within the same structural corridor and T20 surface sampling has indicated multiple anomalies. The T20 deposit, at which major magnetic anomalies have been identified, is interpreted to be underlain by shallow dipping sediments and soil sampling is currently underway in order to determine suitable drilling targets.

## Valuation

Our valuation is based on a blended methodology due to the varying nature of the stages of development of the metal projects and the structure of other investments. The early stage JVs in Spain and Tanzania are valued based on the value of the licenses which are closely tied to MTR's minimum spending requirements. The Thai assets are valued using a risked NPV approach based on the 2017 SRK CPR. Botswana is valued using a risked NPV approach based on the recently released scoping study. Our NPV for T3 is adjusted upwards modestly as the discounting is rolled forward one year from US\$170m to US\$183m.

**Our sum of the parts valuation for Metal Tiger is 4.57p/sh, implying 132% upside.**

### Valuation Summary

Division	Division NAV, £'000	Share, %	Attributable NAV, £'000	P/NAV	Fair Equity Value, £'000
Thailand JV	35,343	78%	27,532	0.5	13,766
Botswana JV	139,325	30%	41,797	0.6	25,078
Book Value, Investments					4,067
<b>Total NAV, £mn</b>					<b>42,911</b>
Minority Interest					26
Consolidated Net Debt					(1,384)
<b>Total Equity Value</b>					<b>44,269</b>
# of shares					968
Current price, GBP/share					1.98
<b>12-mo Target Price, GBP/share</b>					<b>4.57</b>
<b>Upside</b>					<b>132%</b>

*SOURCE: Company data, VSA Capital Research.*

For Thailand we use a discount rate of 10% given that there is additional country risk following successful demonstrations that have hindered the mining industry in recent years, we also apply a P/NAV multiple of 0.5x. For Botswana which has a strong reputation as a business friendly investment destination we apply a discount rate of 8% and apply a risk factor P/NAV multiple of 0.6x.

We have applied the current spot rate of GBPUSD of 0.76.

Currently, we believe that MTR receives little credit for the fair value of its core projects in Botswana and Thailand although we expect investor perception to change over the coming months as MTR focuses on the development of these assets. Indeed, with a current market capitalisation of £19m we believe that there is significant upside for MTR based on its current asset portfolio, particularly given a backdrop of robust fundamentals for the commodities for which it has primary exposure.

## Risks

- **Commodity Prices.** The company is primarily exposed to base and precious metals markets and unexpected changes to commodity prices are likely to affect our valuation.
- **Political Risk.** Changes to the political regime and mining code in operating jurisdictions would potentially alter the risk profile.
- **Development Risk.** The potential for delays and operating issues are an inherent industry risk, this may include delays in receiving financing or hold ups to the completion of development milestones such as permitting. This is the biggest risk to the company at the present time.
- **Financing Risk.** Access to financing has been challenging for natural resources companies recently owing to volatility in commodity markets.

# Financial Model Summary

## Commodity Price Assumptions

The medium to long term fundamentals for the copper and zinc markets remain strong, in our view. Whilst the outlook for lead has improved the fundamentals are not as compelling as other base metal markets. Despite strong performance across base metals in Q4 2016 this was not carried through Q1 2017 as prices begun to correct. This has largely been due to a reappraisal of the Trump trade based more on optimism than expectation and as no major legislation has been ratified by the new administration industrial metal prices have eased while precious metals have rallied as inflation expectations have eased. That said, the underlying drivers of global demand remain stable and whilst the recent correction will affect market sentiment, it should be seen in the context of a recalibration of expectations from supercharged demand growth to a more normalised and sustainable rate.

### VSA Commodity Price Forecasts, US\$/t

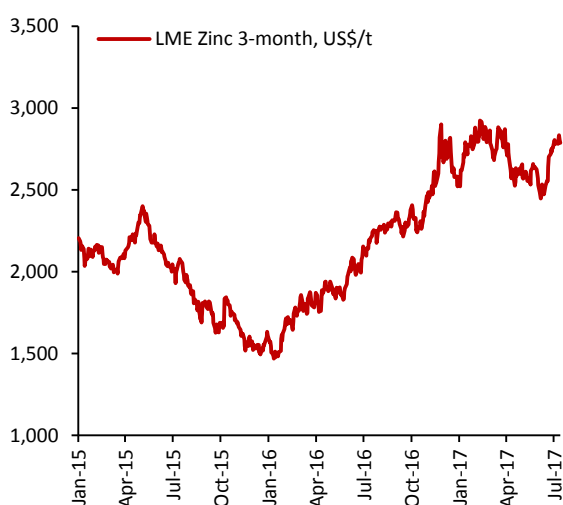
	2013A	2014A	2015A	2016A	2017F	2018F	2019F	2020F	2021F	LT
Zinc (Old)	1,940	2,168	1,916	2,101	2,400	2,600	2,750	2,650	2,550	2,500
Zinc (New)	1,940	2,168	1,916	2,101	2,600	2,675	2,750	2,650	2,500	2,500
Lead (Old)	2,156	2,111	1,795	1,875	1,900	2,050	2,150	2,200	2,100	2,100
Lead (New)	2,156	2,111	1,795	1,875	2,175	2,225	2,250	2,200	2,150	2,100
Copper (Old)	7,350	6,825	5,496	4,872	5,500	5,750	6,250	6,750	6,500	6,500
Copper (New)	7,350	6,825	5,496	4,872	5,800	5,950	6,250	6,750	6,500	6,500

SOURCE: Bloomberg, VSA Capital Research.

## Zinc Outlook

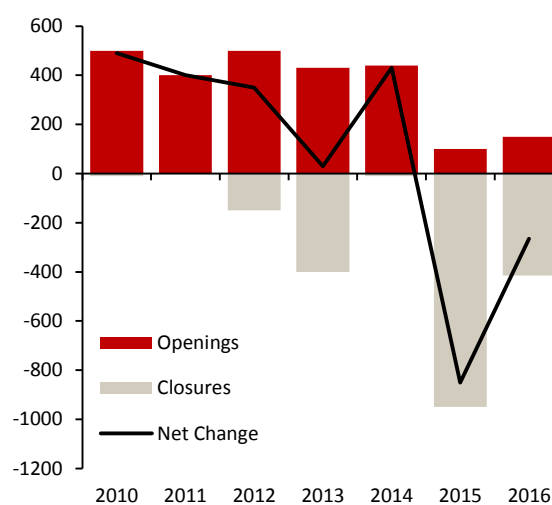
2016 experienced a significant reduction in zinc output, 5.6% YoY, with a net reduction in capacity of around 800ktpa as mines such as Lisheen came to the end of their economic lives whilst others were shuttered due to weak pricing at the start of the year. Despite demand growth of around 0.6% in 2016 this has resulted in a structural deficit which prompted a sharp rally in prices, up 26% YTD. This rally was boosted by Trump's election based on his plans to increase infrastructure spending. The rally has, however, faltered as the challenges of getting a major infrastructure spending programme passed mount, however, due to the tight supply backdrop prices have recovered to close to February 2017 highs. With the zinc market likely to remain in deficit over the medium term we expect further support for higher prices.

### Zinc Price, LME US\$/t



SOURCE: Bloomberg, VSA Capital Research.

### World Zinc Mine Capacity Changes, kt

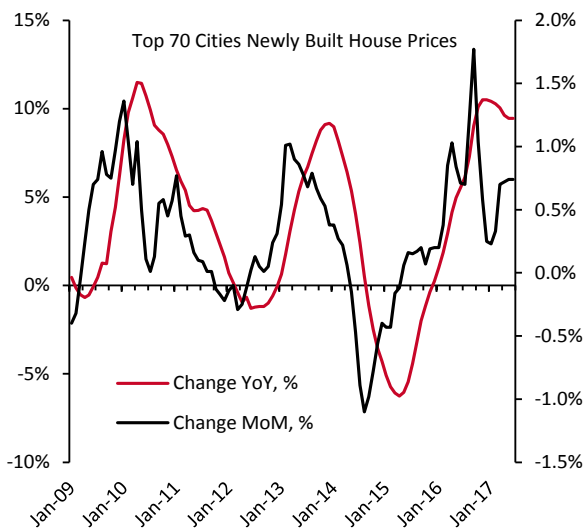


SOURCE: ILZSG, VSA Capital Research.



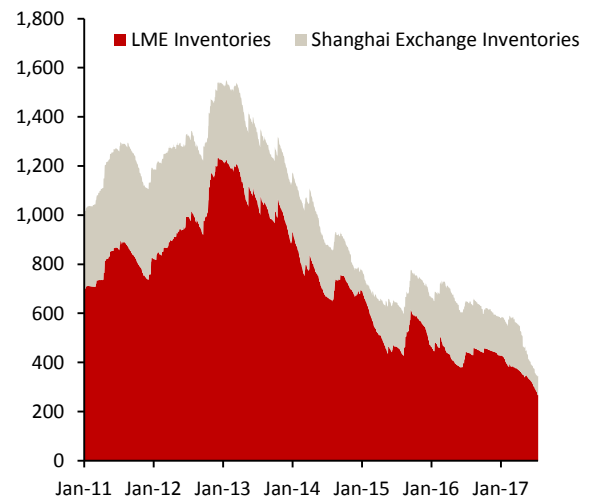
In 2017 mined production in India by **Vedanta (VED LN)** alone is expected to increase by around 250kt up from 985kt globally in 2016. Meanwhile, **Glencore (GLEN LN)** having announced a cut of 500kt through 2016 reduced production by just 350kt to 1.1mnt. Consequently supply ex-China is likely to bounce back somewhat in 2017 from a base which was higher than had been anticipated due to GLEN's limited curtailment indeed, production from traditional producers such as Peru is likely to increase by around 9% YoY (113kt) while minor producers are also ramping up production such as Eritrea (+69kt). As in the case of the lead market there is potential for mine closures in China due to environmental reasons although the ILZSG anticipates that Chinese zinc production will increase in 2017. We do, however expect that over the medium term polluting and inefficient mines in China will be shuttered. Overall, global production is expected to rebound by 6.5% in 2017 to around 13.7mnt.

### China House prices



SOURCE: Bloomberg, VSA Capital Research.

### Zinc Inventories Falling



Although supply is expected to rebound in 2017, demand is expected to remain strong primarily driven by China. We anticipate global demand growth of 3% YoY in 2017 and 2% over the longer term. Whilst house price growth has begun to slow and the market may well have passed its peak in this cycle, housing starts and construction are late cycle drivers of demand. Although the Trump reflation trade prompted prices to rise across commodity markets we have previously stated that we expect that any major infrastructure programme is likely to face significant opposition and is likely to be scaled back before it passes, thereby resulting in a more modest global growth outlook.

Overall we expect the deficit of approximately 230kt in 2016 to widen to 250kt in 2017 as despite supply rebounding demand growth remains strong. Further highlighting the current deficit is the inventory destocking which is ongoing, with global inventories at around 345kt down 41% YTD. However, over the medium term supply further supply growth is likely to be offset by more stringent environmental regulation in China resulting in the closure of smaller inefficient mines. We therefore believe that the fundamental for the zinc market remain attractive and expect prices to remain supported.

### Lead Outlook

Lead prices have remained in a broad range of US\$1,580-2,500/t since 2012 although prices broke out briefly in 2016 following a 160kt reduction in Australian mined output. Demand increased by around 3% YoY in 2016 according to the ILZSG and we expect further growth of around 2% YoY in 2017 to around 11.3mnt. Beyond this we anticipate demand to steadily reduce to a growth rate of 1%pa. Traditional lead-zinc batteries account for 70% of annual lead demand and whilst they currently remain the dominant technology we expect a steady erosion of market share of the medium to long term with hybrid technology increasingly adopted as opposed to pure electric vehicles.

The supply picture is more complicated, however, as in 2016 additional refining capacity came online in Korea but was not utilised due to the reduction in mined supply. With mine production due to increase by 3% YoY in 2017 this will enable this refining to be utilised meaning few downstream bottlenecks to supply growth. Overall this is likely to result

in a broadly balanced market over the short to medium term and support for prices. However, with tightening environmental regulation in China there is a significant risk to supply with potential for closures as operating practices are improved and environmentally damaging operations are halted.

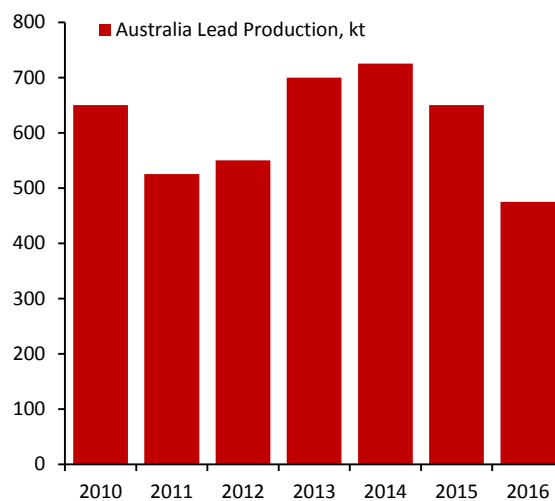
Although global inventories have risen in recent months, particularly in China to around 242kt they remain close to multi year lows of 190kt from January 2016. Indeed, in January 2011 they were closer to 450kt and with the market likely to be finely balanced we expect the drawdown to continue.

### Lead Price, LME US\$/t



SOURCE: Bloomberg, VSA Capital Research.

### Australia Mined Lead Output



SOURCE: ILZSG, VSA Capital Research

Whilst the rise of lithium batteries has gained great traction in the past two years, and the rate of growth in this market is impressive it is important to put this into a broader context. Despite the pace of sales of electric vehicles more than doubling in the past two years they still make up less than 1% of the global automobile market meaning lead-zinc continues to be the dominant technology. Over the medium to long term this position is likely to be eroded due to the improving technology which underpins new battery types, however, with the lead market at around 11mnpta and lithium at less than 200ktpa there is still a gulf of difference between the two markets and the challenges of increasing lithium supply quickly are likely to reduce the pace of market penetration.

There is, however, a significant price upside risk from supply-side disruption. Indeed, one of the drivers behind the demand growth for EV's in China is improving air quality and more stringent environmental regulation. The environmental crackdown is likely to result in mine closures across China, particularly smaller scale operations. Indeed, in August 2016 the authorities temporarily closed 26 lead-zinc mines in China. Given that China contributes around 50% of global mined lead production we believe that the impact of these rising environmental standards could have a significant impact on the market fundamentals driving prices higher. This would leave a void which would, in particular, provide opportunities to operators in South East Asia who could rapidly fill the gap.

## Key Macro Assumptions

In line with emerging market currencies globally, the Thai Baht has depreciated versus the dollar in recent years. Despite a recovery in early 2016, the election of Donald Trump as President of the US has resulting in significant dollar strength as expectations of rising inflation and interest rates have become widespread. Consequently, since the PEA was conducted in 2012 when spot USDTHB was between 29-31.5, a figure of 31 was used. SRK continued to use 31 in their assumptions. However, the spot rate has weakened averaging 35.2 in 2016 and we have used 35. Although IMF projections indicate further depreciation which would benefit MTR's project we have applied the more conservative spot rate.

## Appendix 3: Financial Statements

### *Profit and Loss (GBP), December Year End*

	2016A	2015A	2014A	2013A
Commissions received	-	31,682	-	-
Gain on disposal of investments	296,280	1,149,465	94,570	29,875
Movement in fair value of investments held for trading	2,346,830	(729,058)	(611,750)	13,300
Share of post-tax losses of equity accounted associates	(21,077)	(8,771)	-	-
Share of post-tax losses of equity accounted joint ventures	(233,724)	(72,837)	-	-
Provision against cost of joint venture investments	(156,981)	(83,089)	-	-
Investment income	321	75	520	-
<b>Net gain on investments</b>	<b>2,231,649</b>	<b>287,467</b>	<b>706,840</b>	<b>16,575</b>
<b>Administrative expenses</b>	<b>3,238,114</b>	<b>886,551</b>	<b>597,676</b>	<b>169,966</b>
Bargain Purchase on Acquisition of Subsidiary	155,628			
<b>Operating Profit</b>	<b>850,837</b>	<b>599,084</b>	<b>109,164</b>	<b>186,541</b>
Finance costs	130,591	-	3,288	4,027
<b>Profit Before Tax</b>	<b>720,300</b>	<b>599,084</b>	<b>105,876</b>	<b>190,568</b>
Tax on (loss)/profit on ordinary activities	-	-	-	-
<b>Net Income</b>	<b>720,300</b>	<b>599,084</b>	<b>105,876</b>	<b>190,568</b>
<b>Earnings per Share</b>				
Basic (loss)/earnings per share	0.1p	0.2p	0.1p	0.3p
Fully diluted (loss)/earnings per share	0.1p	0.2p	0.1p	0.3p

*SOURCE: Company data, VSA Capital Research.*

### Balance Sheet (GBP), December Year End

	2016A	2015A	2014A	2013 A
<b>Non-Current Assets</b>				
Intangible Assets	26,693	-	-	-
Property, Plant and Equipment	46,271	-	-	-
Investment in associate	743,418	58,374	-	-
Investment in joint ventures	1,097,602	408,539	35,258	-
<b>Total Non-Current Assets</b>	<b>1,913,984</b>	<b>466,913</b>	<b>35,258</b>	-
<b>Current Assets</b>				
Investments held for trading	4,067,371	692,949	885,500	-
Trade and other receivables	705,508	104,136	23,352	236,116
Cash and cash equivalents	1,389,784	353,881	185,428	14,389
<b>Total Current Assets</b>	<b>6,162,663</b>	<b>1,150,966</b>	<b>1,094,280</b>	<b>250,505</b>
<b>Current Liabilities</b>				
Short term borrowings	48,375	-	-	60,000
Trade and other payables	439,012	92,633	98,609	136,489
<b>Total Current Liabilities</b>	<b>487,387</b>	<b>92,633</b>	<b>98,609</b>	<b>196,489</b>
<b>Equity</b>				
Share capital	77,466	650,330	637,905	619,058
Share premium account	1,274,650	4,428,907	3,700,918	2,893,565
Share based payment reserve	532,509	155,260	71,559	26,722
Warrant reserve	1,087,516	269,286	-	-
Translation Reserve	(67,592)	-	-	-
Retained losses	4,527,154	3,978,537	3,379,453	3,485,329
Equity Non-Controlling Interest	26,191	-	-	-
<b>Total Equity</b>	<b>7,457,894</b>	<b>1,525,246</b>	<b>1,030,929</b>	<b>54,016</b>

SOURCE: Company data, VSA Capital Research.

## Statement of Cash Flows (GBP), December Year End

	2016A	2015A	2014A	2013A
<b>Cash Flows From Operating Activities</b>				
(Loss)/profit before taxation	720,300	599,084	105,876	190,568
Profit on disposal of trading investments	296,280	1,149,465	94,570	16,575
Movement in fair value of investments	(2,346,830)	729,058	611,750	-
Share of post-tax losses of equity accounted associates	21,077	8,771	-	-
Share of post-tax losses of equity accounted joint ventures	233,724	72,837	-	-
Movement in provision against joint venture investment	156,981	83,089	-	-
Share based payment charge for year	475,740	83,701	44,837	17,424
Equity settled trading liabilities	331,544	-	-	-
Depreciation and Amortisation	6,528	-	-	-
Bargain Purchase on Acquisition	(155,628)	-	-	-
Net Acquired non-controlling interests on change of control	111,476	-	-	-
Impairment of other receivables	-	-	178,626	-
Finance income	130,912	75	520	-
Finance costs	54	-	3,288	4,027
Operating cash flow before working capital changes	(2,312,826)	771,168	374,213	152,542
(Increase)/decrease in trade and other receivables	(188,602)	80,784	34,138	45,771
(Decrease)/increase in trade and other payables	298,685	5,985	147	57,677
Unrealised foreign exchange	(31,897)	-	-	-
<b>Net cash outflow from operating activities</b>	<b>(2,234,640)</b>	<b>857,937</b>	<b>339,928</b>	<b>140,636</b>
<b>Cash Flows From Investing Activities</b>				
Proceeds from investment disposals	1,153,399	1,812,359	140,820	30,041
Purchase of intangible asset	25,668	-	-	-
Purchase of fixed assets	47,395	-	-	-
Purchase of investment in, and loans to, associates	669,228	67,136	-	-
Purchase of investment in, and loans to, joint ventures	948,452	529,207	35,258	-
Purchase of investments held for trading	1,1734,711	1,199,401	320,000	-
Finance income	528	75	520	-
Cash acquired with subsidiary undertakings	5,154	-	-	-
<b>Net cash inflow/(outflow) from investing activities</b>	<b>2,430,580</b>	<b>16,690</b>	<b>213,918</b>	<b>30,041</b>
<b>Cash Flows From Financing Activities</b>				
Proceeds from issue of shares	5,848,456	1,051,700	802,500	-
Share issue costs	148,163	42,000	60,300	-
Proceeds from short term loan	-	-	-	60,000
Repayment of loan	-	-	10,000	-
Interest paid	54	-	7,315	-
<b>Net cash inflow from financing activities</b>	<b>5,700,239</b>	<b>1,009,700</b>	<b>724,885</b>	<b>60,000</b>
<b>Net Increase in Cash and Cash Equivalents</b>	<b>1,035,019</b>	<b>168,453</b>	<b>171,039</b>	<b>50,595</b>
Cash and cash equivalents brought forward	353,881	185,428	14,389	64,984
Effect of exchange rate changes	884	-	-	-
<b>Cash and Cash Equivalents Carried Forward</b>	<b>1,389,784</b>	<b>353,881</b>	<b>185,428</b>	<b>14,389</b>

SOURCE: Company data, VSA Capital Research.



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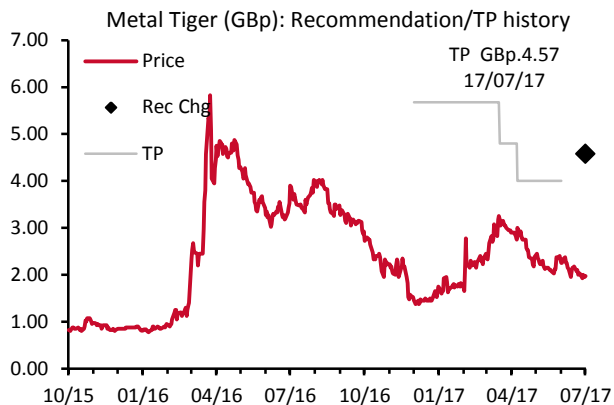
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### Recommendation and Target Price History



#### Valuation basis

Our valuation for MTR is based on a SOTP risked DCF analysis.

#### Risks to that valuation

Commodity prices, political risk, execution risk.

This recommendation was first published on 17 July 2017.

**SOURCE:** FactSet data, VSA Capital Research.