FOSTER STOCKBROKING

EQUITY RESEARCH

Materials

1st June 2018

Jupiter Mines Ltd (JMS.ASX)

Tshipi manganese mine – long life, ample cash flow

Event:

- **We initiate formal research coverage on Jupiter Mines Limited (JMS).**

Investment Highlights:

- **Jupiter owns a 49.9% interest in the Tshipi Borwa (Tshipi) mine, South Africa's largest manganese (Mn) mine, via the Tshipi e Ntle JV.** The balance of Tshipi is held by OM Holdings and Ntsimbintle Mining**,** the latter satisfying the mine's Black Economic Empowerment (BEE).
- **Long-life, high-grade mine.** Tshipi is located in the rich Kalahari Manganese Field (KMF) which has produced Mn for over 75 years**.** It contains 464Mt JORC Resources at 33.0% Mn, including JORC Reserves of 88Mt at 36.3% Mn, implying a mine life of about 25 years based on Reserves, assuming 3.3Mtpa production.
- **Conventional mining, simple processing.** Mining at Tshipi is truck and shovel with processing by crush and screen to chiefly produce 36.5% Mn lump and 35.5% Mn fines. Production and sales were a record 3.6Mt and 3.3Mt in FY18a.
- **Fast rail load out allows Tshipi to exceed allocated shipments.** The major competitive advantage of Tshipi is its rapid rail load out, which includes an 8km rail loop that can load trains in under 4 hours vs 12-13 hours of peers. This allows Tshipi to exceed its rail allocation, as it quickly fills spare capacity vs other mines.
- **Low cost producer with further cost savings.** We estimate Tshipi lies in the 2nd lowest cost quartile and that FY18 FOB & CIF cash costs were US$2.09 and $2.67/dmtu. Tshipi has achieved cost savings by shipping more ore on rail (less on road). Further savings include in-pit backfilling, grid power, higher rail allocation, and plant optimization which will counter impact of RSA inflation**.**
- **Exceptional Board.** JMS Chairman is Brian Gilbertson, who has extensive experience in South African mining including manganese, and formerly BHP Billiton CEO. CEO is Mr Priyank Thapliyal who has been involved since Tshipi's inception and in the listing of Vedanta on the LSE.
- **Negligible change expected from revised Mining Charter.** The proposed revised RSA Mining Charter is expected to be finalised in June 2018. A key proposal is increase of BEE to 30%. However Tshipi already well exceeds this (37%).

Earnings and Valuation:

- **JMS equity accounts its Tshipi interest and we forecast JMS to report underlying of NPAT of A$143M for FY19e and A$75M for FY20e.** We forecast 37% Mn RSA prices of US$5.59/dmtu and US$4.26/dmtu in FY19e and FY20e. Our forecast FY19e production of 3.3Mt) and FOB cash costs of US$2.23/dmtu are in-line with company guidance of 3.3Mt and US$2.20/dmtu.
- **We derive a valuation of JMS of $0.64/share predominantly by DCF (NPV_{10}).** This value is within the range of that derived from using comparative peer PE and EBITDA multiples ($0.51-$0.79/share).

Recommendation:

- **We initiate coverage on JMS with a Buy recommendation and 12-month price target of $0.64/share based on our valuation.**
- **Catalysts for the share price include continued generation of earnings; receipt of Tshipi distributions; and payment of dividends or buyback by JMS.**

Recommendation	**Buy**
Previous	n/a
Risk	High
Price Target	**$ 0.640**
Previous	n/a
Share price (A$)	**$ 0.350**
ASX code	JMS
52 week low-high	0.325-0.43
Valuation risked (A$/share)	**$ 0.640**
Methodology	DCF
Capital structure	
Shares on Issue (M)	1,948
Market cap (A$M)	682
Net cash (debt) attributable (A$M)	36
EV (A$M)	646

Y/end Feb (A$M)	**FY18a**	**FY19e**	**FY20e**	**FY21e**
Sales	0	0	0	0
EBITDA adj.	101.2	147.2	76.4	76.9
NPAT reported	92.2	143.0	74.9	75.4
NPAT adj	**95.3**	**143.0**	**74.9**	**75.4**
EPS adj. $	**0.04**	**0.08**	**0.04**	**0.05**
PE x	**7.9**	**4.4**	**7.9**	**7.6**
EV/EBITDA x	6.0	4.1	7.9	7.9
Dist'n decl. $/share	0.05	0.05	0.04	0.03
Yield %	14%	14%	10%	9%

Board	
Brian Gilbertson	Non-Executive Chairman
Priyank Thapliyal	CEO and Execuitve Director
Paul Murray	Non-Executive Director
Andrew Bell	Non-Executive Director
Sungwoon Yoon	Non-Executive Director

Substantial shareholders	
Stichting Penioenfunds ABP	14.8%
Investec Bank	13.4%
Pallinghurst Steel feed (Dutch) BV	7.5%
POSCO Australia GP Pty Ltd	6.9%
HJM Jupiter LP	5.0%

Analyst: Mark Fichera +612 9993 8162
mark.fichera@fostock.com.au

The analyst does not own JMS securities.
Foster Stockbroking and associated entities (excluding Cranport Pty Ltd) own 10,949,091 JMS shares.
Cranport Pty Ltd owns 10,800,000 JMS shares.

Foster Stockbroking was Co-Manager to the $240M IPO of 600M JMS shares at $0.40 in April 2018. Foster Stockbroking received fees for this service, including a discretionary fee. Refer to prospectus for details.

Jupiter Mines Ltd

Full Year Ended 28/29 February

Profit and Loss A$M -	2018a	2019e	2020e	2021e
Sales	-0.4	0.0	0.0	0.0
Other revenue	10.5	13.1	9.8	10.0
Operating Costs	2.9	4.4	4.4	4.4
Share of JV profits (Tshipi)	94.0	138.5	71.0	71.4
Underlying EBITDA	101.2	147.2	76.4	76.9
D&A	0.0	0.0	0.0	0.0
Underlying EBIT	101.7	147.2	76.4	76.9
Net Interest exp / (income)	-0.2	-1.7	-2.2	-2.3
Profit before tax adj	101.8	148.9	78.6	79.2
Tax exp / (benefit) adj	6.5	5.9	3.7	3.8
Underlying NPAT	**95.3**	**143.0**	**74.9**	**75.4**
Non-recurring gain/(loss)	-3.1	0.0	0.0	0.0
Reported NPAT	**92.2**	**143.0**	**74.9**	**75.4**
Underlying EPS diluted ($)	**0.044**	**0.080**	**0.044**	**0.046**

Cashflow A$M	2018a	2019e	2020e	2021e
Underlying EBITDA	101.2	147.2	76.4	76.9
Equity accounting	-94.0	-138.5	-71.0	-71.4
Change in WC	-9.8	0.0	0.0	0.0
Tax paid	0.0	-5.9	-3.7	-3.8
Net interest	0.2	1.7	2.2	2.3
Other	-5.3	0.0	0.0	0.0
Operating Cashflow	**-7.8**	**4.5**	**3.9**	**4.1**
PPE	0.0	0.0	0.0	0.0
Exploration	-0.9	-0.6	-0.6	-0.6
Investments	3.1	0.0	0.0	0.0
Investing Cashflow	**2.2**	**-0.6**	**-0.6**	**-0.6**
Equity issue	0.0	0.0	0.0	0.0
Loan repayment	52.5	0.0	0.0	0.0
Debt repayments/proceeds	0.0	0.0	0.0	0.0
Distributions received	27.7	128.0	68.8	69.2
Share buyback	-102.4	-49.2	-35.2	-24.8
Dividends paid	0.0	-46.9	-35.2	-24.8
Financing Cashflow	**-22.2**	**31.8**	**-1.7**	**19.7**
Net Cashflow	**-27.8**	**35.7**	**1.7**	**23.2**

Balance Sheet A$M	2018a	2019e	2020e	2021e
Cash	76.5	112.3	114.0	137.1
Receivables	45.9	45.9	45.9	45.9
PPE	0.0	0.0	0.0	0.0
Capitalised exploration	8.7	8.7	8.7	8.7
Investments	385.3	395.8	397.9	400.0
Other	1.4	1.4	35.0	35.0
Total Assets	**517.8**	**565.0**	**601.4**	**626.7**
Accounts payable	49.0	49.0	49.0	49.0
Provisions	0.0	0.4	0.4	0.4
Debt	0.0	0.0	0.0	0.0
Other	2.6	2.6	34.6	34.0
Total Liabilities	**51.6**	**52.0**	**84.0**	**83.4**
Reserves and capital	434.1	384.9	349.6	324.9
Retained earnings	32.0	128.1	167.8	218.5
Total Equity	**466.2**	**513.0**	**517.4**	**543.3**

Source: Foster Stockbroking estimates.

Financial Metrics	2018a	2019e	2020e	2021e
EPS growth %	123%	79%	-44%	4%
Gearing (ND/ND+E)	-20%	-28%	-28%	-34%
Interest Cover (EBIT/net int)	nm	nm	nm	m
Average ROE %	20%	29%	15%	14%
Average ROA %	20%	27%	13%	13%
Wtd ave share diluted (M)	2,148	1,799	1,696	1,640
Distribution decl. per share ($)	0.05	0.05	0.04	0.03
Yield %	14%	14%	10%	9%

Sales and earnings multiples	2018a	2019e	2020e	2021e
P/E x	7.9	4.4	7.9	7.6
EV/EBITDA x	6.0	4.1	7.9	7.9

Company Valuation		
Segment	**A$M**	**A$/share**
Tshipi (49.9%)	1,134	$ 0.58
Marketing	76	$ 0.04
Iron Ore	27	$ 0.01
Corporate	-32	-$ 0.02
Net cash - Tshipi attributable	10	$ 0.01
Net cash - JMS	26	$ 0.01
Equity	**1,240**	**$ 0.64**

Assumptions	2018a	2019e	2020e	2021e
Mn 44% China, CIF, US$/dmtu	6.14	6.18	5.17	5.18
Mn 37% RSA, FOB, US$/dmtu	5.16	5.69	4.26	4.27
JMS Mn realised, FOB, US$/dmtu	4.52	5.48	4.11	4.12
A$:US$	0.77	0.76	0.75	0.74
Rand:US$	13.08	12.92	13.78	14.46
Mn ore shipments:				
36.5% lump	2.69	2.81	2.81	2.81
35.5% fines	0.52	0.50	0.50	0.50
Low grade 33%	0.13	0.00	0.00	0.00
Total Mn ore shipments Mt	3.34	3.30	3.30	3.30
Cash costs US$/dmtu, FOB	2.09	2.23	2.01	2.01
Cash costs US$/dmtu, CIF	2.55	2.82	2.63	2.66

JORC Resources and Reserves Mn		
Tshipi	**Ore Mt**	**Mn grade %**
Total Reserves	**86**	**36.3%**
Measured	103	34.1%
Indicated	120	33.5%
Inferred	237	32.5%
Total Resource	**460**	**33.1%**
Mt Ida & Mt Mason	**Ore Mt**	**Fe grade %**
Total Resource	**1852**	**36.8%**

Capital structure	
Ordinary shares	1,948.3
Fully diluted equity	**1,948.3**

Major shareholders	%
Stichting Penioenfunds ABP	14.8%
Investec Bank Ltd	13.4%
Pallinghurst Steel Feed (Dutch) BV	7.5%
POSCO australia GP Pty Ltd	6.9%
HJM Jupiter LP	5.0%

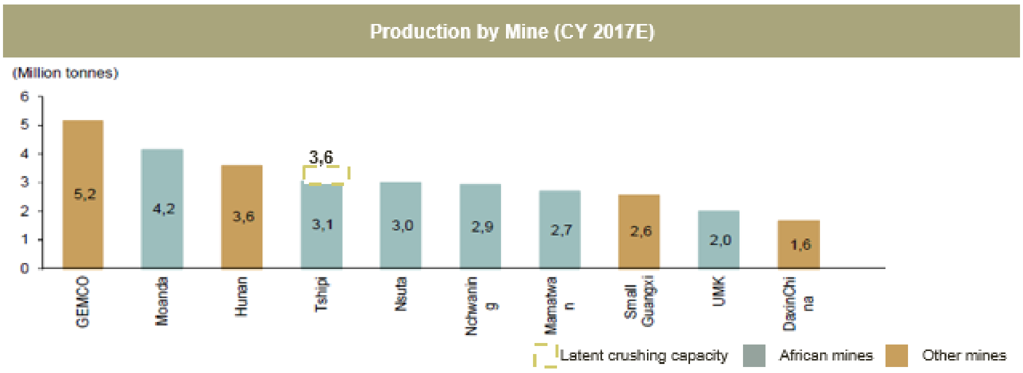
JUPITER MINES LTD

Owner of Tshipi, one of the world's largest manganese mines

- Jupiter Mines Ltd (JMS) is a Perth, Western Australia, headquartered company that initially listed on the ASX in 2004 with a portfolio of base metal, gold, manganese and iron ore projects in WA at exploration stage. In 2010, the company acquired the Tshipi Borwa (Tshipi) manganese project in South Africa. Jupiter delisted from the ASX in 2014 due to the resources equity market downturn and belief that the true value of Jupiter was not reflect by the market.

- Since delisting, Tshipi was developed and constructed on budget and the mine commenced production in 2012. It has now become one of the world's longest-life and top five global producing manganese mines and the largest in South Africa. The company re-listed on the ASX in April 2018 via a $240M selldown by major shareholders at $0.40/share. This allowed shareholders to realise a portion of their investment while also expanding the liquidity of the company.

Figure 1: Leading Global Manganese Mines



Source: Company.

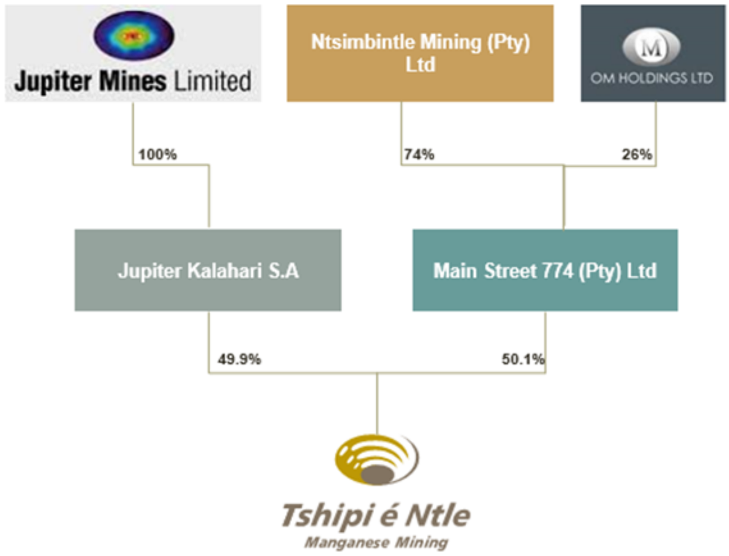
TSHIPI OWNERSHIP VIA TSHIPI E NTLE JV

49.9% interest in Tshipi manganese mine

- JMS owns 49.9% of Tshipi e Ntle Manganese Mining Pty Ltd (Tshipi e Ntle), a jointly controlled JV that directly owns the Tshipi mine. The balance of 50.1% ownership of Tshipi e Ntle is held by Main Street 774. The latter in turn is owned 26% by OM Holdings Ltd and 74% by Black Economic Empowerment (BEE) company Ntsimbintle Mining Pty Ltd (Ntsimbintle).

- Ntsimbintle was formed in 2003 and was awarded prospecting rights over portions of the Mamatwan permit over which the Tshipi mine is located. Thsipi e Ntle possesses a valid mining right for the Tshipi mine which expires in 2040, and can be renewed at end of the period.

Figure 2: Tshipi Ownership Structure



Source: Company.

- Tshipi e Ntle was incorporated in 2008. Jupiter and Main Street each have directors on the JV board, and a 75% vote is required for any major operational decisions such as dividends, disposals, acquisitions, or restructure. JMS directors on the Board include JMS Chairman Mr Brian Gilbertson and JMS CEO Mr Priyank Thapliyal.

LONG-LIFE AND HIGH-GRADE Mn RESOURCE IN ESTABLISHED BASIN

- Tshipi is located in the southern most tip of South Africa's Kalahari Manganese Field (KMF), the largest sedimentary manganese deposit in the world, in the Northern Cape province. The basin is approximately 400km^2 comprising 35km strike and 5-20km width, and estimated to contain 13bt of manganese resources at 20% to 48% Mn, or 77% of the world's economic Mn. The belt has been producing for over 75 years and hosts eight mining operations, of which only four are open pit, including Tshipi.
- Tshipi is located near major towns of Hotazel, Sishen, and Kathu. Given neighbouring manganese and iron ore mines and a long history of mining in the area, it has generally well established infrastructure and mining workforce.

460Mt of JORC Resource and 86Mt Reserves of 36.3% Mn

- The KMF is dominated by the Hotazel geological formation which comprises three sedimentary manganese layers interbedded with banded iron formation. The best developed layer and most laterally continuous is the lower manganese orebody, with thickness of 45m in the southeast - near Tshipi - and 5-8m at the northwestern limit of the KMF. It is this which constitutes the bulk of the Tshipi Resource.
- Tshipi comprises 460Mt of JORC Resources at 33.1% Mn, including Reserves of 86Mt at 36.3%. All Resources are within depth of 365m and open-pittable at a Mn price US$4/dmtu according to a study by VBKOM. The original mine plan contemplates a mine life of 29 years at 3.0Mtpa based on Reserves. If all other Resources convert to Reserves, this would mean Measured and

Indicated Resources could support a mine life of 68 years and total Resources a life of >100 years.

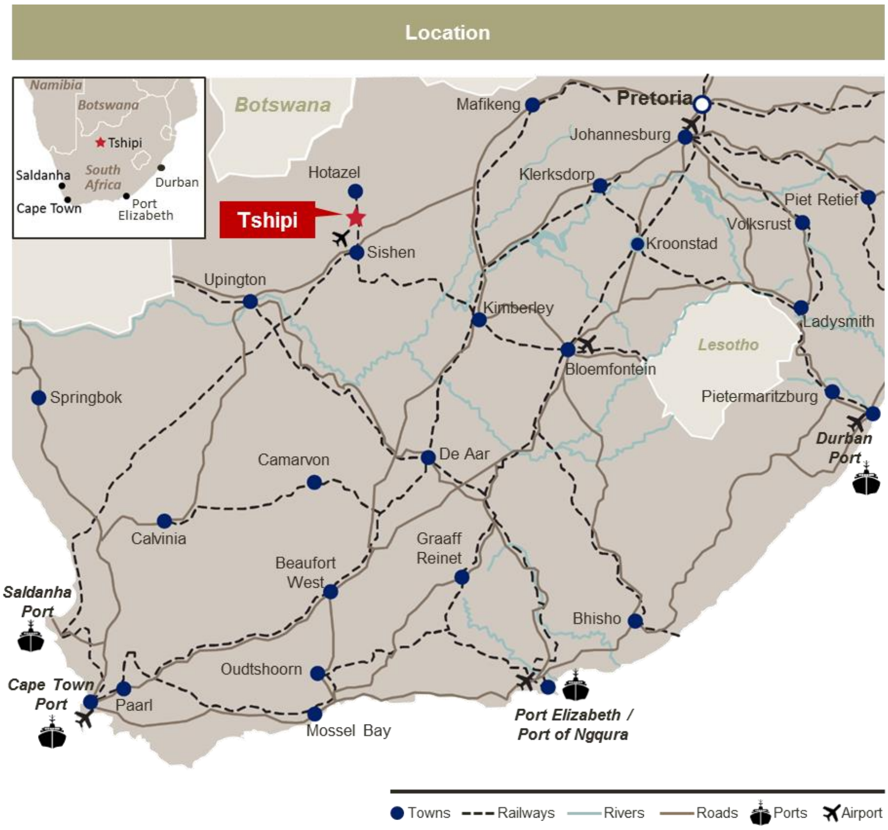
- Tshipi's orebody dips down to the northwest and is 37.5m thick on average, with thickness increasing to the north. It is divided into six subzones, with the underlying three zones (N, C, M) averaging 19.5m thickness with 37.5% Mn and the overlying other three zones (X, Y, Z) comprising lower grade 31% Mn. Only the N, C, M, and Z zones are included in Reserves, with the balance in Resources. The upper lower grade Y and Z zones are stockpiled separately when mined and can be blended with higher grade ore or sold separately as low grade product from time to time depending on market conditions.

Figure 3: Tshipi Reserves and Resources

Category	Ore (Mt)	Mn grade %
Total Reserves	**86**	**36.3%**
Measured	103	34.1%
Indicated	120	33.5%
Inferred	237	32.5%
Total Resource	**460**	**33.1%**

Source: Company. SAMREC 2016; JORC 2012. April 2018. 100% basis.

Figure 4: Tshipi Location



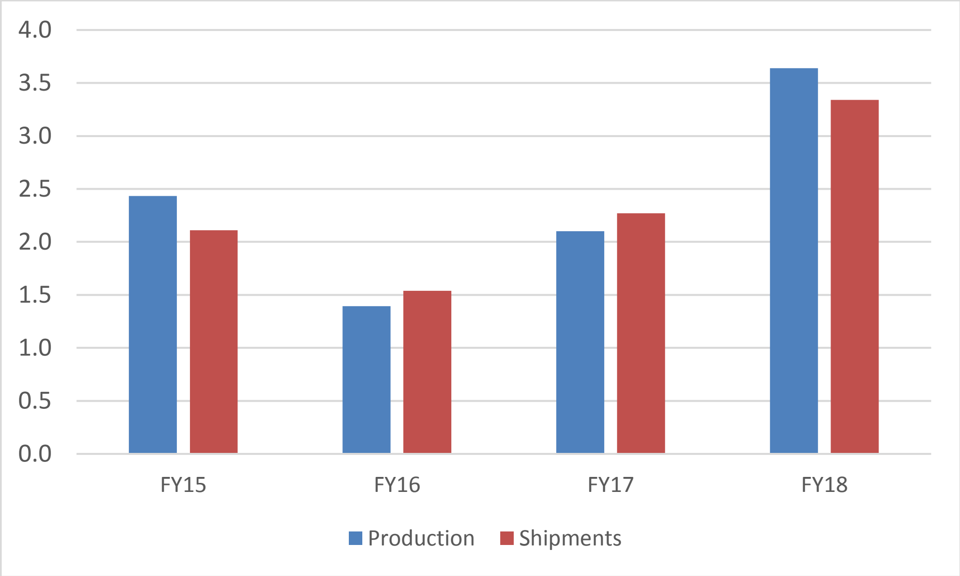
Source: Company.

CONVENTIONAL OPEN PIT MINING & SIMPLE PROCESSING

3.3Mtpa production rate, 3.6Mtpa production capacity

- Tshipi is currently producing at run rate of 3.3Mtpa, well above the original mine plan of 3.0Mtpa. Mining is conventional by drill and blast, truck and shovel open pit and undertaken by the mining contractor Aveng Moolans. Life of mine strip ratio is 10.4:1 (BCM:BCM) and is fairly consistent over life of mine. While the orebody does dip down as it is progressively mined northwards, the thickness also increases. The open pit is currently at 110m depth.

Figure 5: Tshipi Mn Ore Production and Sales (Mt, 100%)

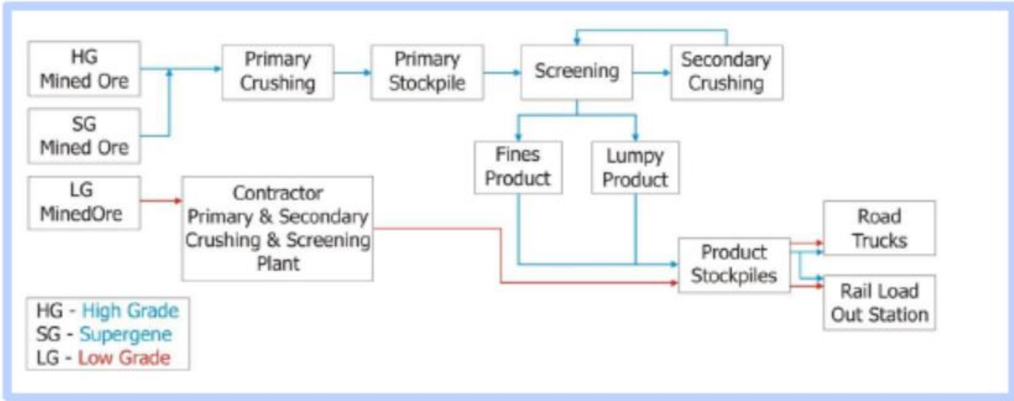


Source: Company.

- Processing is simple comprising primary and secondary crushing and screening to produce lump and fines, and is undertaken by a contractor. Design is such that fines are limited to only 15% of total product. Processing capacity is 3.6Mtpa and as the pit extends northwards there is scope to achieve this production, subject to export rail capacity. The company is flexible to scale production between 3.0 and 3.6Mtpa over the life of mine. The potential to further increase production exists. For example, adding a mobile crush/screen circuit can increase processing capacity further to 5Mtpa.

- Tshipi's power is supplied by diesel generators, independent of the national Eskom grid which can be unpredictable and sometimes power constrained. The generators will remain in service as a backup if any cheaper power is eventually taken from Eskom. Water usage is relatively low given simple processing and sourced from on-site and a third party.

Figure 6: Tshipi Processing Circuit

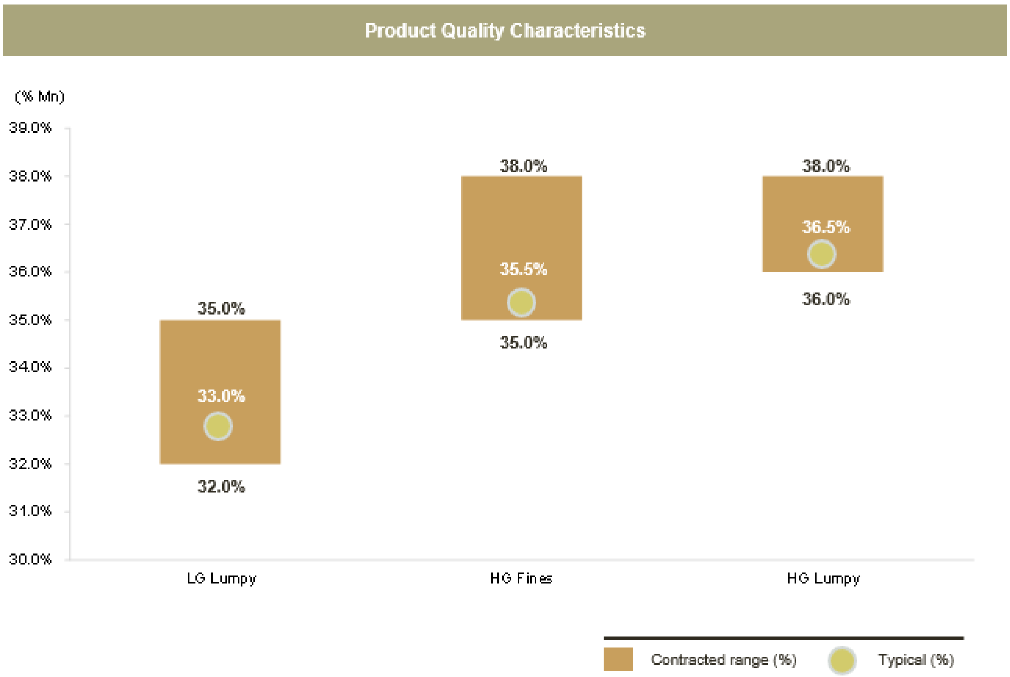


Source: Company.

HIGH GRADE LUMP AND FINES PRODUCTS

- Tshipi typically produces high grade 36.5% Mn lump (+6-75mm) and high grade 35.5% Mn fines (-6mm) in an approximate 85%:15% split. Low grade lump ore (33%) is also mined from the upper zones that lie above the high grade layer, and is stockpiled separately. The low grade stockpiles are sometimes processed and sold when market demand is buoyant and provides upside to Tshipi's earnings, or can be blended with high grade ore to maintain consistent product grade. Recovery of Mn product ore from run of mine is about 91%.

Figure 7: Tshipi Products



Source: Company.

RAPID RAIL LOAD-OUT A KEY COMPETITIVE ADVANTAGE

- Tshipi has its own dedicated rail load-out (RLO) facility – an 8km rail loop connecting Tshipi's rail siding with the state-owned Transnet's rail line, from which it connects to the major South African export ports, also managed by Transnet. RLO capacity is 5Mtpa and can adapt to any future increase in mine production.
- The RLO can accommodate two 208 wagon trains, with each train up to 2.2km in length. A 104 wagon train can carry approximate 6,500 t of product, or 63t per wagon, and can load such a train in three to six hours vs Transnet contract terms of 12 hours, and 12-13 hours for peers in the Kalahari basin.

RLO has allowed Tshipi to exceed allocated tonnage

- Tshipi transports Mn to ports via a manganese export capacity allocation (MECA II) contract with Transnet. The MECA II allocation contract runs to 2023 and allows for 2.1Mt of ore to be transported by rail. Tshipi has budgeted a 91% strike rate, i.e. 1.8Mtpa (91% of 2.1Mtpa) to be railed. An additional 0.3Mta can also be railed to Durban.
- Tshipi's fast load out and high production rate means that when other mines struggle to meet allocation or spare capacity becomes available, Transnet will seek out Tshipi tonnes as it can fill spare capacity the quickest, resulting in shipments above contracted volumes. Consequently Tshipi has a track record of exceeding its allocated tonnage: in FY17a it railed 1.89Mt and in FY18 it railed 2.31Mt vs allocations of 1.8Mt and 2.1Mt. Tshipi transported 68% of product by rail in FY18.

More rail means lower unit costs

- Product in excess of allocated rail tonnage is hauled by trucks. Given a plentiful supply of transport companies, agreements with road transport are ad hoc. However more railed product means less is hauled by road and lower costs, with every 100kt railed and off the road saving ZAR23M in costs. The 280kt Durban allocation will save ZAR68M p.a.

Export capability through four ports

- In FY17 Tshipi became the first Mn producer to export from all the RSA Mn terminals across the four ports, as well as being first Mn producer to ship 7 vessels in one month. Its main export port by tonnes shipped is Port Elizabeth. Tshipi's allocation contract with Transnet was recently increased to 2.1Mtpa from 1.8Mtpa in FY18.

Figure 8: Tshipi Export Ports

Port	Distance from Tshipi km	Note
Port Elizabeth	1,000	Tshipi's main port. 3 terminals. Largest exporter of Mn.
Saldanha	900	Africa's largest exporter of iron ore.
Durban	1,200	Two terminals.
Cape Town	1,100	Multipurpose terminal handles commodities.

Source: Company.

JMS MARKETING

- JMS markets and sells its own share (49.9%) of Tshipi product, earning a 3% marketing fee on a commission basis as an agent. This appears on its accounts as other income. Tshipi exports about 80% of product to China, with the balance mostly to Norway, France, Middle East, Malaysia, and India.

SOCIAL, ENVIRONMENT, AND LABOUR

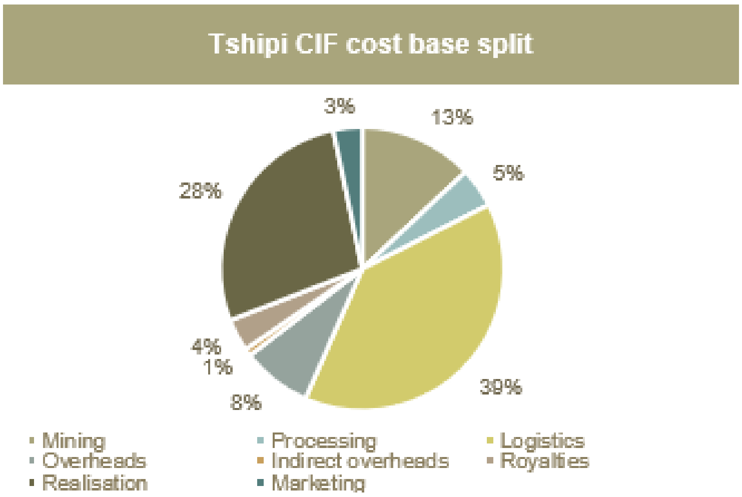
- Tshipi has an approved and complying Social and Labour Plan, including contributing to local projects such as medical clinics, water infrastructure, teacher development, and financial support for training.
- During the downturn in manganese prices in 2015, Tshipi implemented a restructuring process which carefully complied with the DMR and Department of Labour notifications, and engaged with employees and trade unions in-line with the Labour Relations Act. Wages are negotiated as multi-year agreements. 600 contractors and 200 employees are on site.
- Thsipi's current Environmental Management Program (EMP) requires that concurrent backfilling take place. Tshipi is seeking amendment to allow for partial backfilling only given that:
    - Complete backfilling is not financially feasible;
    - Tshipi may examine underground mining at end of Reserves, or continue to open pit mine. Completely backfilling would make remaining resources uneconomic and unnecessarily sterilised; and
    - The land surrounding Tshipi has low value as agricultural land and low environmental impact.
- We expect the EMP to be modified to accommodate partial backfilling.

COSTS - LOWEST 2nd QUARTILE PRODUCER

US$2.09/dmtu FOB or US$2.67/dmtu CIF costs in FY18

- Using 2018 CRU data, we estimate Tshipi is a 2nd lowest cost quartile producer, based on Tshipi reporting cash costs of US$2.09/dmtu FOB for FY18 and also on a CIF basis, which we estimate cash costs to be US$2.67/dmtu. A breakdown of costs is shown in Figure 9, with the main components being logistics (transport and port charges) and realisation (selling, freight, insurance charges).

Figure 9: Tshipi Costs Breakdown



Source: Company.

Cost savings targeted of US$0.14-$0.19/dmtu

- In FY2018 Tshipi achieved approximately US$0.14/dmtu, or ZAR196M of cost savings, which included installation of permanent secondary crushing and screening plant, rail allocation to Durban, and exceeding allocated rail tonnage. Tshipi is targeting a further ZAR206-279M in savings p.a. or approximately US$0.14-$0.19/dmtu over the next few years, assuming US:ZAR of 13.5. These include:
    - **In-pit backfilling.** This will generate savings from not having to truck waste to dumps lying 1.6km and >3.5km from the pit. This will become more marked as the mine more moves north.
    - **Plant optimisation**. This will comprise construction of a conveyor to connect the secondary crushing and screening plant to the product stockpile, which will lower processing cost by eliminating double handling of material.
    - **Eskom power.** Eskom power infrastructure expansion may allow Tshipi to connect to grid, lowering Tshipi's energy cost. Existing diesel generators would be retained as backup. Targeted for FY20e.
    - **Higher rail allocation**. This would lower transport costs, with less ore hauled on road and more on rail which is cheaper. Generally, Transnet has been increasing allocation to the Mn industry over the past five years.

FOB costs of $2.20/dmtu targeted for FY19e

- Tshipi is targeting fob cost of US$2.20/dmtu for FY19e, and our forecast is broadly in-line (US$2.23). On a CIF basis we estimate costs to be US$2.82/dmtu.

Figure 10: Tshipi Costs Savings Achieved and Targeted

Cost savings achieved CY2017	**Savings p.a. ZAR M**	**Capex required ZAR M**	**Achieved**
Permanent secondary crush plant	73	45	Jan 2018
280kt Durban allocation	55	Nil	2017
Extra 300kt allocation from MECA	68	Nil	2017
Total	**196**	**45**	**2017-Jan 2018**
Further savings targeted:	Savings ZARM pa	Capex ZARM	Target date
In-pit backfilling	71	Nil	2029
Plant optimisation	46	85	2021
Eskom power	16	60	2020
Rail allocation	73-146	Nil	n/a
Total targeted	**206-279**	**145**	

Source: Company; Foster stockbroking estimates.

CONSOLIDATION OPPORTUNITIES IN BASIN

Synergies with neighbouring mines especially Mamatwan

- Tshipi is adjacent to, and a direct extension, of Samancor's (JV between S32, Anglo American, and BEE partners including Ntsimbintle Mining) Mamatwan open pit mine which has been in operation for over 50 years. Given both mines comprise the same orebody, there are compelling factors to unite the two, including sharing of port and rail infrastructure and mining synergies.
- Currently an 18m barrier pillar – which extends to a depth of approximately 200m - separates the two mines. In 2017, the DMR approved a joint application by the companies to extract the 9m wide surface boundary pillar on either side of their mining rights boundary, as well as future boundary pillars as the mines both move northwards along strike. JMS expects to commence waste stripping of the pillar in FY19e.
- There are eight other Mn mines in the Kalahari Manganese Field within 7km of Tshipi which offer synergies in infrastructure, marketing, and logistics. These include more diverse Mn product marketed under one umbrella; lower number of stockpiles; optimisation of mining and processing; and greater rail allocation opportunity.

SOUTH AFRICAN REGULATORY REGIME

- South Africa royalties on commodities range from 0.5% to 7% and the corporate tax rate is 28%. The BEE interest requirement for mines is 26%, which Tshipi well exceeds (37%). Mr Cyril Ramaphosa was appointed the President of Republic of South Africa in February 2018, replacing Mr Jacob Zuma. This has been generally viewed as a major positive for both South Africa generally, and for the mining industry given the pro-investment views of Mr Ramaphosa.
- Inflation in South Africa has ranged between 2% and 8% over the past few years, and is targeted by the Reserve Bank to be between 3% and 6% over the short term.

Proposed revised Mining Charter

- In June 2017, the South African Minster of Mineral Resources published a revised BEE charter for the industry. It included a number of changes, the most significant being an increase in the BEE ownership interest required from 26% to 30% for existing mining rights holders, and to 50%

for applicants for new rights. This was subject to a court application by the South African Chamber of Mines and eventually set aside by agreement between the Minister and the Chamber pending a review. The revised Charter is now expected to be finalised in June 2018.

We envisage negligible impact for JMS and Tshipi e Ntle

- We envisage negligible impact for both JMS and Tshipi e Ntle from the new Charter. Most significantly, the current level of BEE ownership of Tshipi of 37% more than satisfies the increase in the minimum requirement proposed under the new Charter (30%).

MANGANESE DEMAND & SUPPLY

Key steelmaking ingredient without substitute

- 90% of Mn is used in steelmaking, with no satisfactory substitute for it as a hardening alloy element and de-oxidant in steel to remove sulphur (which can cause steel to crack). By hardening steel, Mn improves strength and wear resistance to abrasion. Mn can be used directly, or indirectly, by converting it to ferromanganese or silicomanganese alloys. High grade Mn (>35%) or semi-carbonate Mn, such as that from Tshipi, is mostly desired by steelmakers, as it contains lower silica, produces less slag, and requires less energy and reductants to smelt.

Battery upside from electric vehicles

- The balance of demand is mostly for dry cell battery use, in the form of electrolytic manganese oxide (MnO_2) in dry cell batteries such as nickel-metal hydride and lithium-ion batteries. This includes for laptops, smartphones, electric vehicles, and solar panels. Other uses include alloying element in copper and aluminium, plant fertilisers, animal feeds, and pigments. The future potential uptake of electric vehicles provides some element upside in demand from this market in the future. Overall the electrolytic MnO_2 market is forecast to grow at a 7% CAGR to 2025 (*source: Grand View Research*).

China supply environmentally restricted and very low grade

- China, with over 50% of the world's steel production, is a net importer pf medium to high grade Mn ore, with most domestic ore low grade and from small mines, which are under pressure from economic conditions and environment regulations. As higher grade ores become scarcer in China – the majority of reserves being in the low 20s% grade - there more demand is for medium grade ores (30% to 43%).
- 2017 world manganese production was 57Mt, of which South Africa accounted for 30% and was the premier seaborne supplier. We estimate Tshipi itself accounted for 6% of production Some of the major Mn producing mines such as Mamatwan and Groote Eylandt have lives of only 16 and 7 years based on their Reserves.

MANGANESE PRICE FORECASTS

We forecast long-term price US$4.33/dmtu for 37% Mn FOB Port Elizabeth

- Mn is not exchange traded but established by negotiation between sellers and buyers and often referenced from trade journals such as *Metal Bulletin* which report port sales. Two major benchmark indices quoted are 44% Mn ore CIF Tianjin (China), 36-39% Mn CIF Tianjin, and 37% Mn FOB Port Elizabeth.

- Historically there has been a difference in price per dmtu between 44% CIF and 36-39% CIF China, which has ranged from between nil to US$1.00/dmtu. Various reasons account for the fluctuation, including difference in value-in-use, demand-supply for the different ores, and blending requirements. Additionally, fines of same grade typically attract a discount to lump.

- In buoyant market conditions we believe that Tshipi can sell Mn in a three month forward window. At other times it may reference quoted traded prices such those in *Metal Bulletin.*

- Our commodity forecasts – which are in-line with consensus - are shown in Figure 11. Of the Mn prices forecast, the most relevant for Tshipi is the 37% FOB Port Elizabeth price, given it ships similar grade product from this port. We forecast a long-term Mn 37% FOB nominal price of US$4.33/dmtu. We believe this price is equivalent to the 85th percentile of the cost curve, when adjusted to 44% CIF China.

- We assume a US$0.50/dmtu long-term discount for 36-39% ore to 44% ore.

- We assume freight RSA to China to be US$15/t long-term, or US$0.41/dmtu.

Figure 11: Mn Price and Currency Forecasts

Y/end February	Unit	FY18a	FY19e	FY20e	FY21e	LT
Mn 44% China CIF	US$/dmtu	6.14	6.18	5.17	5.18	5.24
Mn 36%-39% China CIF	US$/dmtu	5.64	5.68	4.67	4.68	4.74
Mn 37% Port Elizabeth FOB	US$/dmtu	5.16	5.69	4.26	4.27	4.33
RSA-China CIF	US$/t	15.0	15.0	15.0	15.0	15.0
RSA-China CIF	US$/dmtu	0.41	0.41	0.41	0.41	0.41
A$	US$	0.77	0.76	0.75	0.74	0.74
Rand (ZAR)	US$	13.08	12.92	13.78	14.46	15.16

Source: Foster Stockbroking estimates. LT is nominal. Mn prices shown are for lump.

EARNINGS FORECASTS

Tshipi e Ntle

We forecast production and costs in-line with company guidance

- JMS has to date only guided on costs and production for Tshipi in FY19e. Our forecast assumptions for Tshipi are shown in Figure 12. We forecast stable production and shipments at a run rate of 3.3Mtpa product ore which is as per company guidance. We assume product comprises 2.8Mt of lump and 0.5Mt fines. We forecasts costs in FY19e of US$2.23/dmtu FOB, in-line with JMS guidance (US$2.20). Costs are up on FY18a mostly because of higher royalty rate due to the higher Mn price. From FY20e we see costs returning to FY18e levels as the royalty rate and Mn price declines. We estimate cost saving initiatives by Tshipi e Ntle to offset the impact of inflation on costs over the next few years.

Figure 12: Tshipi e Ntle Assumptions

Y/e end Feb	Unit	FY18a	FY19e	FY20e	FY21e	LT
Mn 37% FOB RSA lump	US$/dmtu	5.16	5.69	4.26	4.27	4.33
A$	US$	0.77	0.76	0.75	0.74	0.74
Rand	US$	13.08	12.92	13.78	14.46	15.16
Mn Tshipi realised price (A)	US$/dmtu	4.64	5.49	4.11	4.12	4.18
Shipments:						
36.5% Mn lump	Mt	2.7	2.8	2.8	2.8	2.8
35.5% Mn fines	Mt	0.5	0.5	0.5	0.5	0.5
33.0% Mn lump	Mt	0.1	0.0	0.0	0.0	0.0
Total Shipments	Mt	3.3	3.3	3.3	3.3	3.3
Cash costs FOB	US$/dmtu	2.09	2.23	2.01	2.01	2.02
Cash costs CIF (B)	US$/dmtu	2.67	2.82	2.63	2.66	2.70
Realised margin (A-B)	US$/dmtu	1.96	2.66	1.48	1.46	1.47

Source: Company; Tshipi e Ntle; Foster Stockbroking estimates.

- Our forecast earnings for Tshipi e Ntle are shown in Figure 13 and have been converted into A$ (Tshipi e Ntle reports in Rand). We forecast NPAT to increase in FY19e to A$278 from A$190M in FY18, chiefly on higher Mn prices.

Figure 13: Tshipi e Ntle Profit & Loss (A$M)

y/end Feb	FY18a	FY19e	FY20e	FY21e
Sales	706	878	657	668
Other income	0	0	0	0
Total revenue	706	878	657	668
Operating costs*	399	452	420	430
EBITDA*	306	426	237	237
Depr & Amort	41	42	42	42
EBIT	264	385	196	196
Net interest expense	-6	-1	-1	-3
PBT	270	386	197	199
Tax	80	108	55	56
NPAT underlying	**190**	**278**	**142**	**143**

Source: Company; Tshipi e Ntle; Foster Stockbroking estimates.
**Includes amortisation of deferred stripping.*

Figure 14: Tshipi e Ntle Balance Sheet (A$M)

Y/end Feb	FY18a	FY19e	FY20e	FY21e
Cash	33	74	137	193
Inventories	32	37	54	56
Receivables	89	74	54	111
PPE	187	152	113	70
Deferred strip	29	34	32	21
Mineral rights	19	18	17	15
Other	3	3	3	3
Assets	**391**	**391**	**410**	**479**
Payables	38	38	35	35
Deferred tax	54	49	56	54
Rehab provision	3	5	4	4
Other	0	0	26	102
Liabilities	**96**	**91**	**120**	**195**
Equity	**295**	**300**	**290**	**284**

Source: Company; Tshipi e Ntle; Foster Stockbroking estimates.

Most of earnings returned as distributions – 93% payout ratio over past two years

- Tshipi e Ntle returns cash to its shareholders by paying distributions out of cash flow. It has averaged a payout ratio of 93% over the past two financial years (FY17 and FY18). JMS accounts for 49.9% of this distribution. The return of high level of cash highlights the low capex requirements of the mine.
- We assume a 93% payout ratio by Tshipi e Ntle going forward in our forecasts, which we estimate leaves more than sufficient cash after capex (Figure 15).

Figure 15: Tshipi e Ntle Cash Flow (A$M)

Y/end Feb	FY18a/e	FY19e	FY20e	FY21e
EBITDA	307	420	237	237
Chng in WC	-76	-2	13	-1
Net interest	6	1	1	3
Tax	-80	-106	-55	-55
Amort of deferred strip	19	19	18	18
Other	-25	0	0	0
Operating cash flow	**140**	**332**	**215**	**202**
Capex	-11	-14	-10	-2
Other	0	0	0	0
Investing cash flow	**-11**	**-14**	**-10**	**-2**
Distributions	-157	-265	-138	-139
Other	0	0	0	0
Financing cash flow	**-157**	**-265**	**-138**	**-139**
Net cash flow	**-28**	**53**	**67**	**61**

Source: Company; Tshipi e Ntle; Foster Stockbroking estimates.

JMS - Equity accounting of Tshipi earnings

- JMS equity accounts for its 49.9% share of profit from Tshipi e Ntle in its financial statements. We show the profit as a share of JV profits above the EBITDA line but below revenue and operating costs in Figure 16.
- JMS's earnings and costs outside the Tshipi JV are mostly its marketing fees earned for selling Tshipi ore – shown in the Other Revenue line - as well as corporate and marketing costs (Operating costs line).

Higher Tshipi earnings and Mn pricing to drive FY19e earnings

- As expected, JMS's earnings are driven predominantly by Tshipi. We forecast NPAT to increase to A$143M in FY19e vs A$95M in FY18, on the back of higher Tshipi earnings from higher Mn realised prices.

Figure 16: JMS Profit & Loss (A$M)

Y/end Feb	2018a	2019e	2020e	2021e
Sales	-0.4	0.0	0.0	0.0
Other revenue (incl Marketing)	10.5	13.1	9.8	10.0
Operating Costs	2.9	4.4	4.4	4.4
Share of JV profits (Tshipi e Ntle)	94.0	138.5	71.0	71.4
Underlying EBITDA	**101.2**	**147.2**	**76.4**	**76.9**
D&A	0.0	0.0	0.0	0.0
Underlying EBIT	101.7	147.2	76.4	76.9
Net Interest expense(income)	-0.2	-1.7	-2.2	-2.3
Profit before tax adj	101.8	148.9	78.6	79.2
Tax expense (benefit) adj	6.5	5.9	3.7	3.8
Underlying NPAT	**95.3**	**143.0**	**74.9**	**75.4**
Non-recurring gain/(loss)	-3.1	0.0	0.0	0.0
Reported NPAT	**92.2**	**143.0**	**74.9**	**75.4**
Underlying EPS diluted ($)	**0.044**	**0.080**	**0.044**	**0.046**

Source: Company; Foster Stockbroking estimates.

Cash received in form of distribution from Tshipi

- JMS receives cash in the form of distributions from Tship e Ntle. The company received $49M in FY17a (in form of repayment by Tshipi of a loan from JMS) and $80.2M in FY18a.

70% payout targeted

- JMS itself has retuned cash to shareholders via share buybacks and dividends. The company has stated it aims to return 70% of the cash it receives from Tshipi to JMS shareholders. We assume this ratio in our forecasts and also assume the cash will be returned in equal portion by buybacks and dividends.

Figure 17: JMS Cash Flow (A$M)

Y/end Feb	2018a	2019e	2020e	2021e
Underlying EBITDA	101.2	147.2	76.4	76.9
Equity accounting (Tshipi)	-94.0	-138.5	-71.0	-71.4
Change in WC	-9.8	0.0	0.0	0.0
Tax paid	0.0	-5.9	-3.7	-3.8
Net interest	0.2	1.7	2.2	2.3
Other	-5.3	0.0	0.0	0.0
Operating Cashflow	**-7.8**	**4.5**	**3.9**	**4.1**
PPE	0.0	0.0	0.0	0.0
Exploration	-0.9	-0.6	-0.6	-0.6
Investments	3.1	0.0	0.0	0.0
Investing Cashflow	**2.2**	**-0.6**	**-0.6**	**-0.6**
Equity issue	0.0	0.0	0.0	0.0
Loan repayment	52.5	0.0	0.0	0.0
Debt repayments/proceeds	0.0	0.0	0.0	0.0
Distributions received (Tshipi)	27.7	128.0	68.8	69.2
Share buyback	-102.4	-49.2	-35.2	-24.8
Dividends paid	0.0	-46.9	-35.2	-24.8
Financing Cashflow	**-22.2**	**31.8**	**-1.7**	**19.7**
Net Cashflow	**-27.8**	**35.7**	**1.7**	**23.2**

Source: Company; Foster Stockbroking estimates.

Debt free balance sheet with $25M cash post recent buyback

- JMS is debt free and ended FY18a with cash of A$76.6M. We estimate JMS's pro-forma cash post the $51.1M buyback completed in March 2018 is $25.5M. JMS's 49.9% interest in Tshipi appears as an Investment on the balance sheet.

Figure 18: JMS Balance Sheet (A$M)

Y/end Feb	2018a	2019e	2020e	2021e
Cash	76.5	112.3	114.0	137.1
Receivables	45.9	45.9	45.9	45.9
PPE	0.0	0.0	0.0	0.0
Capitalised exploration	8.7	8.7	8.7	8.7
Investments	385.3	395.8	397.9	400.0
Other	1.4	1.4	35.0	35.0
Total Assets	**517.8**	**565.0**	**601.4**	**626.7**
Accounts payable	49.0	49.0	49.0	49.0
Provisions	0.0	0.4	0.4	0.4
Debt	0.0	0.0	0.0	0.0
Other	2.6	2.6	34.6	34.0
Total Liabilities	**51.6**	**52.0**	**84.0**	**83.4**
Reserves and capital	434.1	384.9	349.6	324.8
Retained earnings	32.0	128.1	168.0	218.0
Total Equity	**466.2**	**513.0**	**517.4**	**543.3**

Source: Company; Foster Stockbroking estimates.

IRON ORE – CENTRAL YILGARN IRON PROJECT

Western Australia iron ore on care and maintenance

- JMS owns 100% of the Central Yilgarn Iron Project (CYIP) comprising Mt Mason DSO hematite (JORC Resource of 5.9Mt at 60.1% Fe) and Mt Ida Magnetite (JORC Resource of 1.85bt at 29.5% Fe). The projects are only 5km apart, located in south Western Australia, north -west of Kalgoorlie and nearby the Koolyanobbing iron ore mine. A feasability study was completed in 2012 on Mt Mason and one also began on Mt Ida.
- JMS put the Mt Ida and Mt Mason projects on care and maintenance in 2012 and 2014, given that market conditions were not supportive of developing the projects. Only minimum expenditure requirements are being met to maintain the tenements. We believe that JMS will bide its time on the CYIP until a major turnaround occurs in iron ore.

Figure 19: CYIP JORC Resources

CYIP	Mt Mason Ore Mt	Fe %	Mt Ida Ore Mt	Fe %
Measured	4.8	60.3%	0	na
Indicated	1.1	59.4%	1,062	38.5%
inferred	0.3	58.4%	784	34.3%
Total	**6.2**	**60.1%**	**1,846**	**36.7%**

Source: Company.

JMS VALUATION - $0.64/SHARE, OR $1,242M.

- We derive a valuation of $0.64/share for JMS, or A$1,242M, predominantly by employing a DCF, applying a 10% WACC to nominal cashflows from Tshipi and then accounting for JMS's 49.9% share.

- Besides our commodity and production assumptions (Figure 11), other major assumptions include all Reserves mined at a 3.3Mtpa product ore rate with 85% lump:15% fines; mining of Measured and Indicated Resources applying a 25% discount; and mining of Inferred applying a 50% discount. We assume inflation of 5% p.a. until FY21e and 2% thereafter. For iron ore we have applied a discounted EV/Resource contained Fe multiple based on peers.

Figure 20: JMS DCF Valuation A$M

Segment	A$M	$/share
Tshipi (49.9%)	1,137	$0.58
Marketing	76	$0.04
Iron Ore	27	$0.01
Corporate	-32	-$0.02
Net cash - Tshipi attributable	9	$0.00
Net cash - JMS	26	$0.01
Equity	**1,242**	**$0.64**
Shares M	1948	

Source: Foster Stockbroking estimates.

P/E and EV/EBITDA multiples imply valuation range $0.51-$0.79/share

- We have also used most of the global listed resources companies which produce manganese to derive valuation comparisons. We have adjusted their earnings to February 2019 in line with the JMS reporting period. We determined the average multiple and then applied it to our forecast of JMS's NPAT and Tshipi's EBITDA.

Figure 21: Y/end February 2019 adjusted earnings and multiples for Mn companies

Company	Mn % of revenue	Currency	EBITDA M	NPAT M	Mkt Cap M	PE x	EV/ EBITDA x
Anglo American	3%	GBP	8,680	3,180	22,996	7.2	3.1
Assore	30%	Rand	Na	3,397	41,381	12.2	Na
Eramet	48%	EUR	1,044	309	4,017	13.0	4.1
Minera Autlan*	57%	US$	103	32	256	7.9	2.8
MOIL	90%	Rupee	6,910	4,993	50.749	10.2	4.2
S32	7%	A$	2,4452	1,216	18,987	15.6	7.0
Africa Rainbow Minerals	31%	Rand	Na	2,716	23,482	8.6	Na
Vale	1%	US$	54,490	24,616	264,789	10.8	6.0
					Average:	**10.7x**	**4.5x**
JMS NPAT/ Tshipi EBITDA (49.9%)						143.0	212.7
JMS equity A$M						1,530	993
JMS equity A$/share						**$0.79**	**$0.51**

*Source: Bloomberg; Foster Stockbroking estimates. *Includes Ferro Mn alloys.*

- Using average P/E and EV/EBITDA multiples of 10.7x and 4.5x on Jupiter's FY19e NPAT and Tshipi's EBITDA, implies an equity valuation of $992M to $1,510M, or $0.51/share to $0.79/share. Our DCF valuation fits within this range.

VALUATION & EARNINGS SENSITIVITIES

US$1.00/dmtu change in Mn increases valuation by $0.31/share and NPAT by A$50M

Figure 22 shows a matrix sensitivity of JMS valuation to variation in Mn price and the Rand, and Figure 23 sensitivity of NPAT. Each US$1.00/dmtu change in Mn increases valuation by $0.31/share and NPAT by A$50M.

Figure 22: Sensitivity of JMS Valuation ($/share) to Mn price and Rand

		Mn price US$/dmtu 37% FOB:				
		3.00	**4.00**	**5.00**	**6.00**	**7.00**
	10.00	-$0.08	$0.23	$0.54	$0.85	$1.16
Rand : US$	**12.00**	$0.06	$0.37	$0.68	$0.99	$1.30
	14.00	$0.16	$0.47	$0.78	$1.09	$1.40
	16.00	$0.23	$0.54	$0.85	$1.16	$1.47

Source: Foster Stockbroking estimates.

Figure 23: Sensitivity of Jupiter NPAT to Mn price and Rand

Commodity	Chg in NPAT A$M
Chng in Mn ±US$1.00/dmtu	±50
Chng in Rand +1.00/US$	±8

Source: Foster Stockbroking estimates

SHARE CAPITAL

- JMS has a clean capital structure with only ordinary shares on issue (1,948M). Substantial shareholders are shown in Figure 23.

Figure 24: Substantial Shareholders at April 2018

Shareholder	Holding
Stichting Pensioenfonds ABP	14.8%
Investec Bank Ltd	13.4%
Pallinghurst Steel Feed (Dutch) BV	7.5%
POSCO Australia GP Pty Ltd	6.9%
HJM Jupiter LP	5.0%

Source: Company.

- 597.6M of the shares are subject to voluntary escrow by the major shareholders Pallinghurst, POSCO, EMG Jupiter, HJM Jupiter, and FRK Jupiter.

RECOMMENDATION – BUY, 12-MONTH PRICE TARGET $0.64/SHARE

- We initiate coverage on JMS with a Buy recommendation and 12-month price target of $0.64/share based on our DCF valuation, and supported by peer multiples.
- Catalysts for the share price include continued generation of earnings; receipt of Tshipi distributions; and payment of dividends to shareholders and/or share buyback by JMS.

DIRECTORS & MANAGEMENT

JMS – Directors & key management

- **Brian Gilbertson. Non-Executive Chairman.** *MSc, MBl.* Appointed 2010. Extensive experience in the global resources industry. Previous roles included MD of Rustenburg Platinum mines in the 1980s, Executive Chairman of Gencor in the 1990s, including responsibility for Impala Platinum Holdings, Samancor (world's largest producer of manganese and chrome ore and alloys), and for Trans-Natal Coal Corporation. In 1997, Gencor restructured its non-precious metals interest as Billiton plc, with Mr Gilbertson as Executive Chairman, and was involved in the merger of Gencor and Gold Fields of South Africa to form Gold Fields Ltd, for which he was Chairman.

- In 2001, Billiton merged with BHP, creating BHP Billiton, with Mr Gilbertson appointed its second CEO in 2002. In 2003, he led Vedanta Group and served as Chairman until 2004 and was involved in the merger of Russia's SUAL with RUSAL and Glencore' alumina assets. Mr Gilbertson established Pallinghurst during 2006 to develop resource opportunities. Mr Gilbertson was appointed JMS Acting CEO in May 2018 as an interim measure while CEO Priyank Thapliyal is recuperating following a medical condition.

- **Priyank Thapliyal. Executive Director and CEO.** *BTech, M Eng, MBA*. Appointed Non-Executive Director 2004 and CEO 2013**.** Mr Thapliyal has been involved since Tshipi's inception and is a founding partner of Pallinghurst Advisors. He joined Sterlite Industries in 2000 and was responsible for strategy that resulted in listing of Vedanta on the LSE. Formerly he was mining and metals investment banker with CIBCWM in Canada, and also was with Canadian resources company Falconbridge (since acquired by Xstrata, now Glencore). Mr Thapliyal is a qualified metallurgical engineer.

- **Paul Murray. Non-Executive Director.** *FFin CPA.* Appointed 2003**.** Has consulted to a number of ASX resource companies and responsible for listing of number ASX public companies.

- **Andrew Bell. Non-Executive Director.** *BA (Hons), MA, LLB (Hons).* Appointed 2008. Chairman of Red Rock Resources plc, listed on AIM. Experience includes a resources analyst in London in the 1970s, investment banking, and resource sectors in Asia since 1990s.

- **Sungwon Yoon. Non-Executive Director***. MBA***.** Appointed 2016**.** Mr Yoon is the MD of POSCO Australia Pty Ld. He joined POSCO in 1992 and has over 20 years' experience across steelmaking raw materials.

- **Melissa North. CFO and Company Secretary.** *BCom*. Joined JMS in 2012. Previous experience includes Chime Communications Group and Grant Thornton (now Crowe Horwath).

Tshipi e Ntle – Chairman & key management

- **Saki Macozoma. Chairman**. Non-Executive Chairman of Safika Holdings a major shareholder in Tshipi e Ntle. Was the first black MD of Transnet and has served as Chairman of Liberty Holdings, Stanlib, and formerly Deputy Chairman of Standard Bank and Volkswagen SA.

- **Ezekiel Lotlhare. CEO.** *BTechnology ChemEng; MBL***.** Appointed 2016. Began as metallurgist for Hotazel Manganese Mines in 1999, and since then experience includes production manager of Lonmin Platinum, plant manager Hotazel Manganese Mines; and Operations Manager for Tshipi.

- **Carel Malan. CFO**. *BCom (Hons).* Chartered accountant. Joined Tshipi 2012. Previous experience includes Ernst & Young.

RISKS

The following risks may negatively impact the valuation and earnings of Jupiter Mines:

- **Resource risk.** Errors can cause negative revision to resources and reserves, which can negatively impact size, quality, economic and valuations.
- **Sovereign risk**. Any change in government, legislation, mining codes and charters, or fiscal regimes of South Africa or Australia may impact the ownership or economics of Tshipi and Jupiter's valuation.
- **Commodity price risk.** Declines in manganese, ferromanganese, or steel prices may negatively impact the revenues and profitability of Tshipi and Jupiter Mines.
- **Partner risk.** Disagreement may arise between Jupiter and its joint venture partner over aspect or aspects of the joint venture such that it may lead to a negative impact on Tshipi's performance or undermine Jupiter's share of profitability from the JV.
- **Currency risk.** Jupiter's main asset Tshipi generates revenues from commodity priced in US$. Any rise in the Rand or A$ versus the US$ may reduce translational impact of US$ into Rand and A$.
- **Operating risk.** Problems may occur during the mining, processing, transporting and selling of manganese product ore that may negatively impact revenues, costs, and profit.
- **Economic risk.** Slowing economic growth globally, or in particular countries and regions (especially China and Asia) may reduce price and demand for Mn, negatively impact Jupiter's earnings.
- **Infrastructure risk.** Tshipi relies on rail and port provided and operated by third parties. Any change in agreements could impact ability to sell manganese and impact earnings.
- **Industrial risk.** Any disputes with its workforce or contractors may result in strikes and disruptions to sales, negatively impacting earnings.

FOSTER STOCKBROKING DIRECTORY

Name	Role	Phone	mail
Stuart Foster	Chief Executive Officer	+61 2 9993 8131	stuart.foster@fostock.com.au
Haris Khaliqi	Executive Director	+61 2 9993 8152	haris.khaliqi@fostock.com.au
Martin Carolan	Executive Director	+61 2 9993 8168	martin.carolan@fostock.com.au
Mark Fichera	Executive Director	+61 2 9993 8162	mark.fichera@fostock.com.au
Mark Hinsley	Executive Director	+61 2 9993 8166	mark.hinsley@fostock.com.au
James Gore	Dealing	+61 2 9993 8121	james.gore@fostock.com.au
Rob Telford	Corporate	+61 2 9993 8132	rob.telford@fostock.com.au
Matthew Chen	Research	+61 2 9993 8130	matthew.chen@fostock.com.au
George Mourtzouhos	Execution & Dealing	+61 2 9993 8136	george.mourtzouhos@fostock.com.au

Foster Stockbroking Pty Ltd
A.B.N. 15 088 747 148 AFSL No. 223687
Level 25, 52 Martin Place, Sydney, NSW 2000 Australia
General: +612 9993 8111 Equities: +612 9993 8100 Fax: +612 9993 8181
Email: contact@fostock.com.au
PARTICIPANT OF ASX GROUP

Foster Stockbroking recommendation ratings: Buy = return >10%; Hold = return between –10% and 10%; Sell = return <-10%. Speculative Buy = return > 50% for stock with very high risk. All other ratings are for stocks with low-to-high risk. Returns quoted are annual.

Foster Stockbroking and its directors, officers and employees or clients may have or had interests in the financial products referred to in this report and may make purchases or sales in those the financial products as principal or agent at any time and may affect transactions which may not be consistent with the opinions, conclusions or recommendations set out in this report. Foster Stockbroking and its Associates may earn brokerage, fees or other benefits from financial products referred to in this report. Furthermore, Foster Stockbroking may have or have had a relationship with or may provide or has provided investment banking, capital markets and/or other financial services to the relevant issuer or holder of those financial products.

For an overview of the research criteria and methodology adopted by Foster Stockbroking; the spread of research ratings; and disclosure of the cessation of particular stock coverage, refer to our website http://www.fostock.com.au.

Specific disclosure: The analyst does not own JMS securities at the time of this report. Diligent care has been taken care by the analyst to maintain honesty and fairness in writing the report and making the recommendation.

Specific disclosure: The analyst has received assistance from the company in preparing the report. This included review of the report for factual accuracy, and attending a company site visit in January 2018, for which JMS paid for the analysts' flights and part of the accommodation.

Specific disclosures: As of 31 May 2018, Foster Stockbroking and associated entities (excluding Cranport Pty Ltd) owned 10,949,091 JMS shares. Cranport Pty Ltd owns 10,800,000 JMS shares. The position may change at any time and without notice. Foster Stockbroking and its employees may from time to time own shares in JMS, and trade them in ways different from those discussed in research. Foster Stockbroking may also make a market in securities of JMS, including buying and selling securities on behalf of clients.

Specific disclosure: Foster Stockbroking acted as Co-Manager to the $240M IPO of 600M Jupiter Mines shares at $0.40/share in April 2018. Foster Stockbroking earned fees for the service, including a discretionary fee. Refer to prospectus for full details.

Review disclosure: The report was authored by the analyst named on the front page of the report and was reviewed and checked by Matthew Chen, Research Analyst.

Disclosure review. All the disclosures in the report have been reviewed and checked by Stuart Foster, CEO Foster Stockbroking.