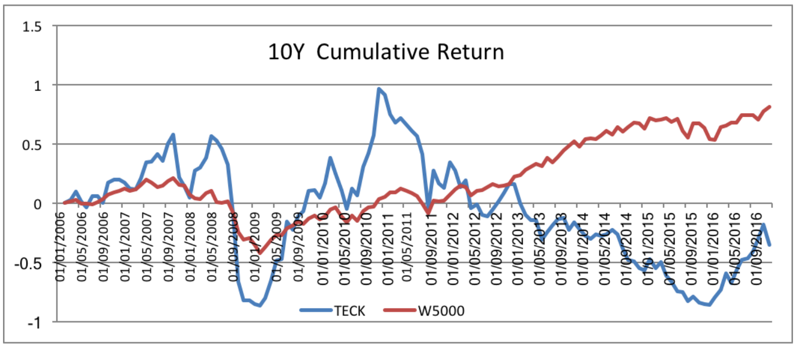
Company Report

Teck Resources

Recommendation: BUY

Upside potential: 37-49%

Yale SCHOOL OF MANAGEMENT



Date May 11, 2017

Services Performed By:

Syrine Jouini
syrine.jouini@ucdconnect.ie

Xiao Wang
xiao.wang1@ucdconnect.ie

UCD Michael Smurfit Graduate Business School

Based on the valuation for Teck Resources from its financial situation, economic and industrial expectations, we estimate a price per share of C$33.98, which implies an upside of 37% compared to the current share price of C$24.80.

Bullish Commodity price forecasts. Driven by positive macro-economic factors, we expect steelmaking coal, zinc, copper and oil price to increase in 2017 compared with 2016.

Positive production growth. Production of steelmaking coal will slightly increase from 2018 until 2021 with a target production of 28 million tonnes. Quebrada Blanca 2 project's commercial production is expected to happen in the end of 2021, to reach 300,000 tonnes of copper produced within the following years. The pipeline of oil sand project will have its first production in 2017.

Impressive revenues outlook. Copper revenues are expected to increase derived from a higher copper price and slightly higher copper production due to the operation of Quebrada Blanca 2. Energy segment will achieve its first revenue in 2017. The projection period has a +8.8% CAGR on the period 2017 -2021 vs -3% on the period 2012 to 2016. Revenues are expected to keep growing to C$14.17 billion in 2021.

Fort Hills spending near to its end, QB2 project could be launched soon. The remaining capex on Fort Hills is expected to be C$805 million, with C$640 million to be spent in 2017, Teck is already on good track as they spent C$203 in the first quarter. First oil production is expected at the end of 2017 with a ramp up to 90% of nameplate capacity by the end of 2018. As spending on Fort Hills are nearest to the end, the Quebrada Blanca 2 project could be approved during the first half of 2018 with construction beginning in mid-2018.

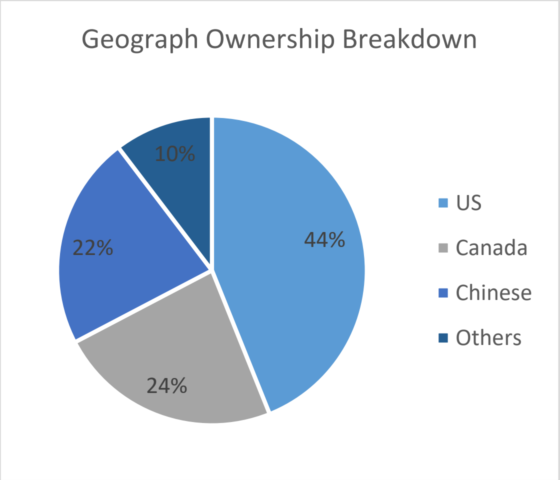
Debt reduction continued. After reducing its debt by C$1.3 billion in 2016, Teck Resources Teck repurchased C$1.5 billion (US$1 billion) of its notes outstanding in March 2017, reducing its current balance to US$5.1 billion just above its US$5 billion target. We are confident about Teck ability to achieve its goal of reducing its debt to less than US$ 5 billion as we estimate the company will generate C$1.3 billion in FCF this year.

Company Summary

Teck Resources	
Share Fair Price (C$)	33.98
Share Market Price (C$)	24.80
Shares outstanding (M)	568.3
Upside	37%
52-Week High	35.69
52-Week Low	11.79
Price Target End Date	31st Dec. 2017

Company overview

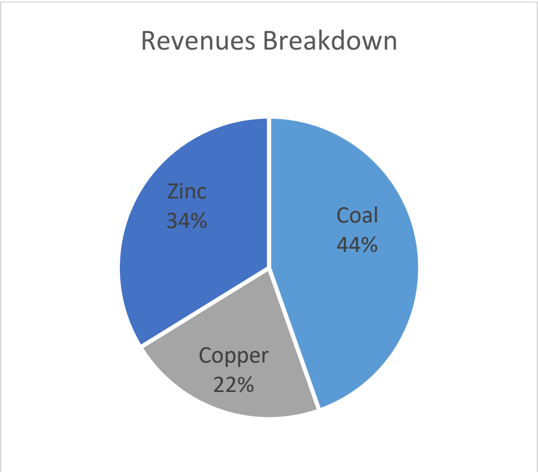
Teck Resources (TECK) is a diversified resource company which mainly focus on steelmaking coal, copper and zinc with the 2016 percentage of revenue 44.6%, 21.6% and 33.8% respectively. Founded in 1906 and headquartered in Vancouver. TECK is mostly owned by U.S investors (43.92%), followed by Canadian (23.4%), Chinese (22.33%) and others. Teck Resources owns or have interests in 12 operating mines, one large metallurgical complex, and several major development projects in Canada, the United States, Chile and Peru. It’s the world’s second-largest seaborne exporter of steelmaking coal and also the world’s third-largest producer of mined zinc and a significant copper producer.



Graph 1: Geography Ownership Breakdown

Revenue

TECK generates revenues from the production of steelmaking coal, copper and zinc. TECK is the second largest seaborne steelmaking coal (coking coal) exporter, a significant producer of copper and the world’s third largest producer of zinc. Any changes to the commodities’ prices could affect TECK’s profitability.



Graph 2: Revenues Breakdown

Commodities Prices

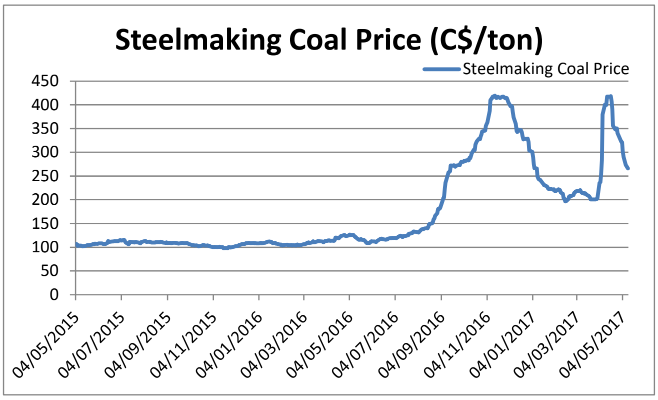
Our assumption on the commodity prices are a combination of initial prices, forward prices based on the futures market, external factors and peers' guidance.

Steelmaking Coal price:

Steelmaking coal which can also be called coking coal and metallurgical coal has premium quality for making coke and eventually will be used in steel producing instead of burning for heat.

Robust demand: The seaborne coking coal market will remain tight in 2017 as Chinese imports stay close to 2016 levels, with demand sustained by the infrastructure plan of the Chinese Government. For the U.S., Federal, state, and local government spent $416 billion on infrastructure in 2014. The large amount of public infrastructure spending in 2014 went to highways ($165 billion), followed by water utilities and mass transit and rail which are all steel needed industry. Elsewhere, President Donald Trump's $1 trillion infrastructure proposal could slip to 2018 which will be implemented in the next 10 years, Senate Commerce, Science, and Transportation Committee Chairman John Thune (R-S.D.) said in 10th May (BI). The demand is robust in China and the U.S. and they account for more than 30% of global demand.

Tight supply: Cyclone Debbie which occurred in early 2017 had a negative impact on Australian supply which will tight the supply for this year. Bad weather and operating issues are the main influence factors for coal producing. For example, the rally in 2016, as you can see in graph 3, has been triggered in part by China's decision to limit coal mines operating days to 276 or fewer a year. In addition, recent heavy rains in the key mining province of Shanxi, have significantly reduced the number of available roads and damaged other transportation infrastructure. This situation will become better by 2018 as increased production from Australia to Mozambique enters the market which will help to gradually rebuild the supply and demand balance (BI).

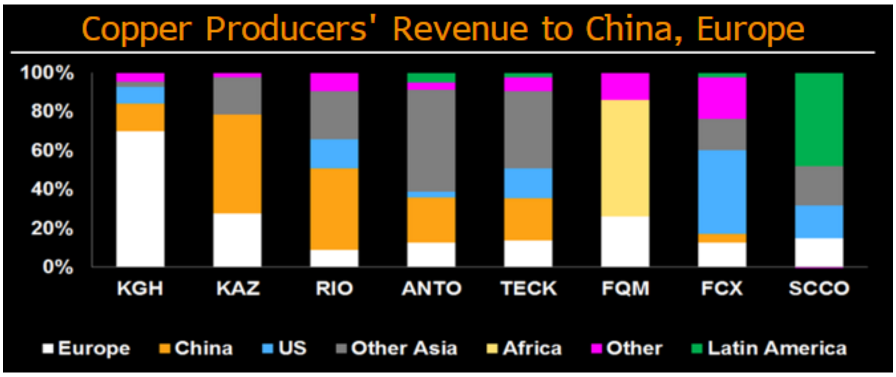


Graph 3: Steelmaking Coal Price

Therefore, we rely on the forward price in the futures market but have a bullish projection in 2017 with the higher price than steelmaking coal forward price due to the analysis above.

Copper Price:

Steady demand: continued development of the electrical-vehicle market, growth in grid building, conventional vehicle sales and overall construction in China helped to keep the demand of copper market at a stable level for the coming years. However, China may pose a short-term downside risks to copper demand because of the slowdown in their economy. This risk can be offset by the U.S. consumption driven by President Trump's infrastructure-spending plans which will be implementing over 10 years. You can see from the graph 2 that the revenue from the U.S. and China covered a significant 40% of the total revenue of Teck.



Source: Bloomberg Intelligence

Graph 4: Copper Producers' Revenues Geography Breakdown

Tight supply: Escondida, Grasberg and Cerro Verde which are the world's three largest copper mines, had disruptions in early 2017. Three of them represent nearly 11% of the global supply. This firstly will drive the copper price up in 2017 and will need time for the other main miners to return to the balance of demand and supply.

We took the average of the forward price and the company's prediction which is higher than the futures market. We are more bullish than the future market expectation of the copper price due to the combination of external factors discussed above. Our projection of copper price is shown in the table 1.

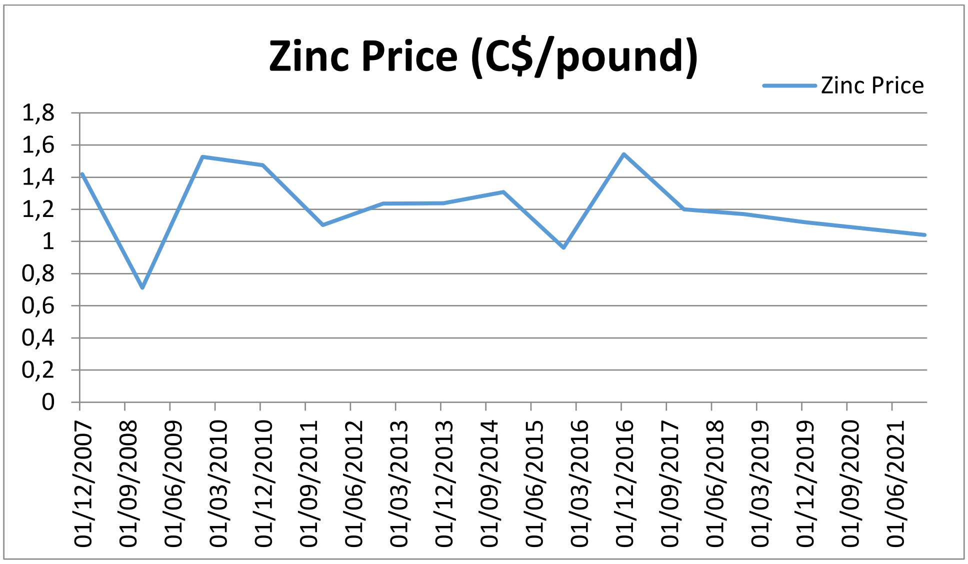
CAD$/pound	2017F	2018F	2019F	2020F	2021F
Copper Price	3.465	3.488	3.497	3.49	3.48

Table 1: Copper Price Forecasts

<u>Zinc Price:</u>

Zinc was the best-performing LME metal in 2016, reaching multi-year highs. We project the zinc price will go up in 2017 driven by supply-demand unbalance and return in the next 7 years as its cycle shown in the graph 5. We feel comfortable to take the forward price of zinc as it follows the historical trend of zinc price quite well and will return to the lower level in the future 5 years.

This matches the market condition which is the tightness supply at the moment (The depletion of world's largest zinc mines, the 500,000 metric tons Century mine and the 150,000 ton Lisheen mine hurt the supply. These two mines covered 11.4% of the total zinc production) and robust increase of demand (Continuous China and the U.S. demand based on infrastructure and the automotive sectors). The unbalance will deepen the deficits of zinc in 2017 and drive up the zinc price. However this unbalance will be mitigated in the long time. We didn't capture any significant information to deepen the unbalance after 2018 so that we assume that zinc price will drop from 2018 to 2021 with the mitigating deficit by increasing supply from zinc mines. Therefore, we used the forward price in the zinc futures market as it's shown in the table 2.



Graph 5: Zinc Price

CAD$/pound	2017F	2018F	2019F	2020F	2021F
Zinc Price	1.41	1.38	1.32	1.27	1.23

Table 2: Zinc Price Forecasts

<u>Oil price:</u>

We forecasted oil price based on oil futures market price provided by Bloomberg Intelligence.

C$/barrel	2017F	2018F	2019F	2020F	2021F
Oil Price	66.36	67.23	66.62	66.85	68.40

Table 3: Oil Price Forecasts

Production

<u>Steelmaking Coal Production</u>

Steelmaking coal is the main source of revenue of Teck resources with six operating mines producing steelmaking coal: Elkview, Fording River, Greenhills, Coal Mountain, Line Creek and Cardinal River. In 2016, TECK produced 27.6 million tonnes of steelmaking coal, with sales of 27 million tonnes. The majority of sales are to the Asia-Pacific region, with lesser amounts going to EU and the U.S. Company guidance is shown in the table 4.

Steelmaking Coal Guidance	2012	2013	2014	2015	2016
Guidance (million tonnes)	24.5-25.5	24-25	26-27	26.5-27.5	25-26
Actual (million tonnes)	24.65	25.62	26.70	25.30	27.60
Sales (million tonnes)	23.99	26.91	26	26	27
Realised	match	above	match	below	above

Source: Teck Resources 10-K

Table 4: Steelmaking Coal Production

In 2013, Teck produced 25.62 million tonnes (mt) of steelmaking coal, exceeding their target production range of 24 mt to 25 mt. This was due largely to the strong demand from the contract customers. This exception probably won't happen in the future since the commodities are mainly traded according to previously agreed contracts.

In 2015, Teck produced 25.3 million tonnes (mt) of steelmaking coal, missing their target production range of 26.5 mt to 27.5 mt. This was due to the company's decision to implement staggered three-week shutdowns of the coal operations to align the productions and inventories with market conditions.

In 2016, the production of 27.6 mt was up 2.3 mt from 2015, exceeding the 2016 target range of 25 mt to 26 mt due to that Elkview and Line Creek operations achieved new production records.

Although the market analysis above showed that the worldwide supply of steelmaking coal will decrease due to the bad weather in Australia. We believe that our company will take it as an opportunity to gain profit. TECK has been the best performer in its global coal peer group in the past year (BI) so we think that TECK will not decrease its performance in the coal market but keep the same producing level or even slightly higher. We believe that there will be no exceptions happening in the future so we forecast the steelmaking coal as the upper bound of the company guidance.

million tonnes	2017F	2018F	2019F	2020F	2021F
Steelmaking Coal Target Production	27.5	28	28	28	28

Table 5: Steelmaking Coal Production Forecasts

Copper Production

Copper covered 21.58% of Teck resources' 2016 revenue with four operating mines producing copper: Highland Valley Copper, Antamina, Quebrada Blanca (Quebrada Blanca Phase 2 is under developing and will have its first production in the latter half of 2021) and Carmen De Andacollo. The majority of sales are to the Asia-Pacific region, with lesser amounts going primarily to EU and the U.S. This segment has two more projects which are NuevaUnion and Galore Greek Project. Both of them are in the very early stage of mine life and won't affect our projection period.

Copper Guidance	2012	2013	2014	2015	2016
Guidance (000's tonnes)	350-375	340-360	320-340	340-360	305-320
Actual (000's tonnes)	373	364	333	358	324
Sales (000's tonnes)	372	362	338	357	325
Realised	match	above	match	match	above

Source: Teck Resources 10-K

Table 6: Copper Production

In 2016, Teck produced 324 thousand tonnes of copper, exceeding their target production range of 305 thousand tonnes to 320 thousand tonnes of copper. When comparing the production in 2015 with the production in 2016, it fell 9% due to the depletion of Duck Pond. The actual copper production in 2016 exceeded the target. This is due to Antamina which entered a phase with high zinc grades.

In 2013, Teck produced 364 thousand tonnes of copper, exceeding their target production by 340 to 360 thousand tonnes of copper due to the record production from completion of Antamina mine expansion in 2012 and the progressed mill modernization project at Highland Valley Copper.

We forecast the copper production based on company guidance because it's quite accurate in historical years. The lower production forecast in 2017 is primarily due to continued lower mine grades at Highland Valley Copper and further planned production declines at Quebrada Blanca as it approaches the end of its life. The Quebrada Blanca will still have production but lower than the production in 2016 in the next three years. Then it will be exhausted in the end of 2019. After Quebrada Blanca is gone, we believe missing production will be offset by increasing the production in

Carmen de Andacollo which has the potential to extend the production by planned throughput improvement in the mill. The Quebrada Blanca phase 2 will have commercial production scheduled in the end of 2021 as scheduled by TECK. However, we think TECK will achieve the commercial production mainly in 2022 as the company behaved for Pend Orielle (According to the 2014 annual report, TECK said pend orielle will achieve the full production in the next year but it only reached their goal until 2016). Therefore, we keep the production in 2021 the same as the production in 2020. Our projection is as following:

000's tonnes	2017F	2018F	2019F	2020F	2021F
Copper Target Production	280	285	285	290	290

Table 7: Copper Production Forecasts

Zinc Production

Zinc covered 21.58% of Teck resources' 2016 revenue with three operating mines producing zinc: Red Dog, Pend Oreille and Trail Operations.

Zinc Guidance	2012	2013	2014	2015	2016
Guidance (000's tonnes)	860-900	840-880	835-875	915-955	920-965
Actual (000's tonnes)	882	913	937	965	974
Sales (000's tonnes)	865	872	934	1014	989
Realised	match	above	above	above	above

Source: Teck Resources 10-K

Table 8: Zinc Production

In 2016, TECK produced 974 thousand tonnes, exceeding the target production by 920 to 965 thousand tonnes of zinc due to that Trail Operations had a record production. For 2013, 2014 and 2015, the actual production exceeded the target production because of the same reason.

The Pend Oreille will face depletion in the end of 2019. Similarly, as what happened for the copper segment, we believe that the company will offset the missing zinc production by increasing the production in other zinc mines.

We used company guidance to forecast the zinc production. The reason of the decreasing production in 2017 compared with 2016 is the lower guidance of Red Dog production. Red Dog production has fluctuated in the past four years. We believe the production of Red Dog in 2017 will decrease because of the historical trend and the low mine grade. TECK plans to extend the mining quality of Red Dog by increasing the mill output rate to help offset the future zinc grade declines in the long run instead of our projection period.

The reason of the continuous decreasing production in 2018 is that Pend Oreille will be exhausted in 2019 gradually without add-on investment. The reason of slightly increasing production in 2019 is mainly due to the fluctuation in Red Dog production.

Zinc (000's tonnes)	2012	2013	2014	2015	2016
Red Dog Production	529	551	596	567	583
Red Dog Sales	510	504	594	613	600
Pend Oreille Production	-	-	-	31	34
Pend Oreille Sales	-	-	-	31	34
Trail Operations Production	284	290	277	307	312
Trail Operations Sales	287	294	277	308	312

Source: Teck Resources 10-K

Table 9: Zinc Sales and Production by mine

000's tonnes	2017F	2018F	2019F	2020F	2021F
Zinc Target Production	894	869	873	873	873

Table 10: Zinc Production Forecasts

Pipeline: Energy Production

Teck Resources is creating an energy business with the development of Canadian oil sands mining projects including Frontier and Fort Hills operations in Canada. Frontier Energy Project is still at its early stage and won't have commercial production in our projection period so we will only discuss the Fort Hills Project.

Construction of the Fort Hills oil sands project has surpassed 83% completion as reported in TECK's 2017 Q1 report. There are three units in this project. The production from the first unit is expected by the fourth quarter of 2017. The other two units are scheduled to be completed and commissioned in the early 2018. The production is expected to reach 90% of its capacity. After 2018, we assume that the production of this new oil sand project will remain constant. Our everyday projection for oil is shown below:

Barrels	2017F	2018F	2019F	2020F	2021F
Oil Target Production	55800	167400	167400	167400	167400

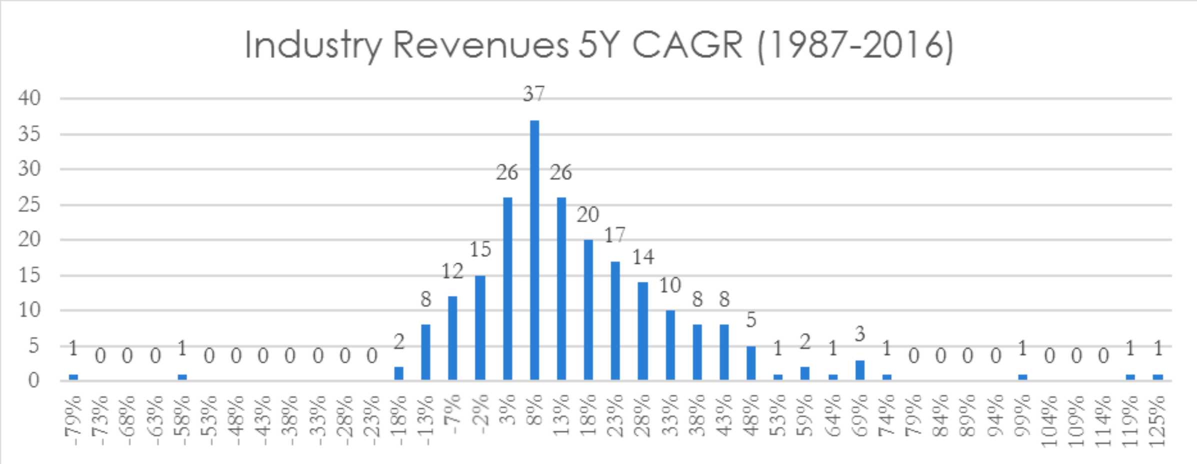
Table 11: Oil Production Forecasts

Based on the historical trend, we assume that TECK will sell the same amount of product as their production. The following table is our final forecast about revenue.

Billion C$	2017F	2018F	2019F	2020F	2021F
Revenue	11.55	13.24	14.35	14.22	14.17
Growth Rate	24.2%	14.6%	8.3%	-0.9%	-0.4%

Table 12: Teck Resources Revenues Forecasts

The next five years revenues CAGR is of 8.8%. We tested the reasonability of our assumptions by analysing the observation frequency of the 5Y CAGR across 30 years' historical revenues CAGR from the main companies with the Industry. The following companies were considered: Glencore PLC, Rio Tinto PLC, BHP Billiton Ltd, Vale SA, Anglo American PLC, Freeport-McMoRan Inc, Corp Nacional del Cobre de Chile, Teck Resources Ltd, KGHM Polska Miedz SA, Southern Copper Corp, Antofagasta PLC and First Quantum Minerals Ltd. These competitors represent more than 75% of the total industry revenues. We build a distribution based on the frequency of the observations. The most frequent observed CAGR is about 8% which support the reasonability of our predicted revenues CAGR.

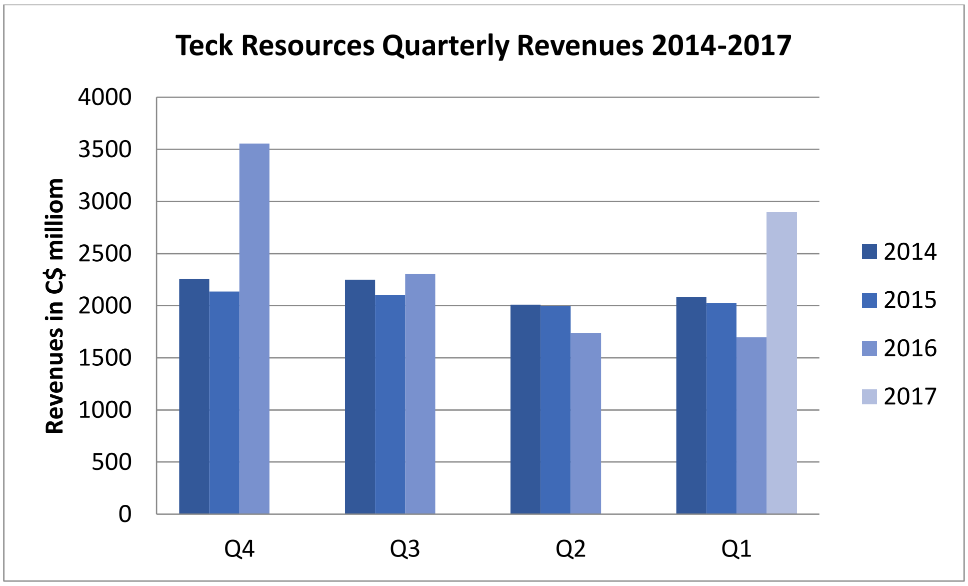


Graph 6: Industry CAGR distribution

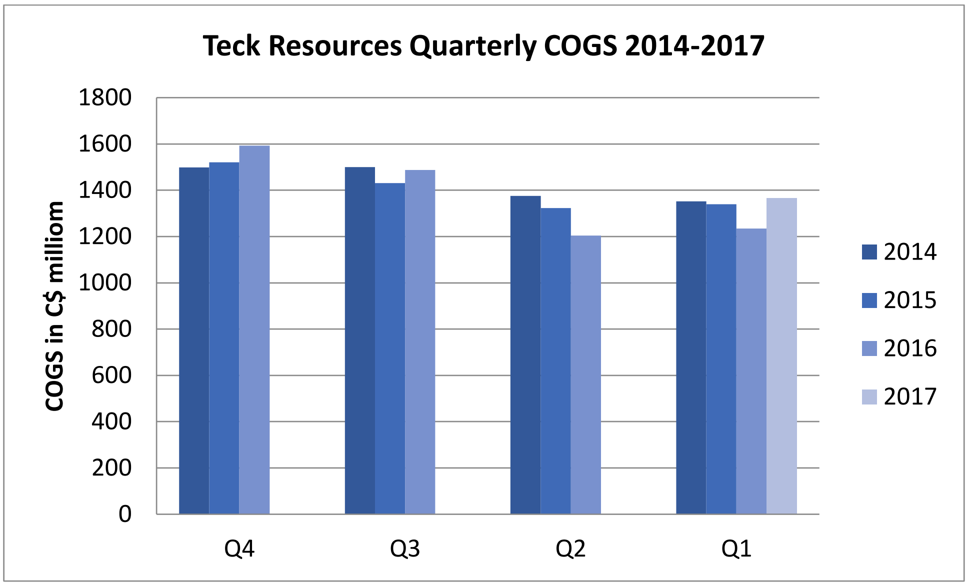
Costs

Cost of Sales

Cost of sales are mainly dictated by the production volumes, by the costs of labour, energy, raw material purchases, concentrate purchases, distribution costs, maintenance and repair supplies, royalties' fees and exchange rates. From 2012 to 2016 the average cost of sales was of 62.3% of revenues. When looking at the cost of sales proportion of revenues in the quarterly reports, we noticed a drop of the proportion in the third quarter of 2016 reaching 45% of revenues. This proportion was maintained at 47% during the first quarter of 2017. This change is due to two coordinated effects, on the one hand the increase of revenues compared with the trend over the last three years and on the other hand, it resulted from an effective cost reduction program that maintained cost of sales stable when revenues increased.



Graph 7: Teck Resources Quarterly Revenues



Graph 8: Teck Resources Quarterly cost of sales

Teck Resources implemented a cost reduction program over the last few year mainly focused on reducing the impact of lower production on the cash unit cost, improving productivity and improving maintenance and supply management. In 2016, the effect of this cost reduction program was offset by a stronger US dollar and its effects on costs at Teck foreign operations. The company is expected to continue its cost reduction initiatives over the next five years.

In 2017, during the first quarter, the 47% cost of sales proportion of revenues was achieved despite increased spending for contractors and repair parts for the Steelmaking coal business, increased diesel costs by 40%, lower copper production and less striping costs being capitalized for the zinc business unit. As a consequence, we are confident about Teck ability to reduce costs even when facing a challenging environment. As a result, we forecast the cost of sales of the three main business units, Steelmaking Coal, Copper and Zinc to stay stable over the next five years at C$5.7 billion equal to the average level of the last five years. We adjusted this level to the Energy business which will be effective from the end of 2017. When looking at Teck Resources partners in the development of the Fort Hills project, namely Suncor Energy and Total E&P Canada Limited, we observed an average costs of sales proportion of 45% over the last five years. We estimate that this rate is reasonable to forecast Teck Resources costs generated by the Energy business sales. Thus, we expect that costs of sales increase within the next five years will be mainly due to the Energy business development.

SG&A and R&D

Teck Resources invest into research and development in order to develop their proprietary CESL hydrometallurgical technology as well as environmental technology improvements at their operations. We estimated stable SG&A and R&D expenses at 1.3% and 0.3% of revenues over the next five years. These rates meet with the average proportion of revenues observed over the last five years.

Other operating expenses

Teck Resources other operating expenses were of C$542 million in 2016 representing 5.8% of revenues. Over the last five years, other operating expenses represented on average 3.6% of revenues, except for 2015 with 48.9%. In 2015, Teck Resources reported C$4042 million of other operating expenses due to C$3631 million of assets impairments. Due to the economic conditions in 2015, Teck Resources lowered their expectations for commodity prices in both the short and long term and performed a detailed review of impairment indicators across all of their operations and assets. We projected the other operating expenses at 3.8% as a proportion of revenues. This rate is equal to the average proportion of revenues over the last five years when excluding 2015 exceptional assets impairment expense.

Depreciation and Amortization

As a mining company, Teck Resources is constantly investing into Property Plant and Equipment. This account is composed of land, buildings, plant and equipment, mine properties and mine development, exploration and evaluation, capitalized production stripping costs and construction in-progress. The company increased its PPE by 4% on average over the last five years. We expect Teck Resources to keep this growth rate for the next five years. From 2012 to 2016, Depreciation and Amortization costs were on average of 4.6% of PPE. We kept this rate for the next five years. We estimated an increased depreciation expense in line with the higher step up at Quebrada Blanca with a shortened mine life.

Capital Expenditures

Teck Resources spent C$1.9 billion in capital expenditures in 2016. Based on the primary products Teck produces and their development projects, capital expenditures can be broken down into five segments, steelmaking coal, copper, zinc, energy and corporate.

In support of Teck Energy business unit development strategy, Teck invested C$1 billion in new mine development with C$987 million corresponding to 20% of spending on the Fort Hills oil sands project and $18 million on the Frontier oil sands project.

The company spent C$348 million in the Steelmaking Coal business unit composed of capitalized stripping costs with C$277 million, major enhancement expenditures to increase production capacity with $33 million and of $38 million of sustaining capital.

Teck invested C$339 million in the copper business unit composed of C$156 million of capitalized stripping costs, $61 million of sustaining capital corresponding to 20% of spending at Antamina, and $68 million for the Quebrada Blanca Phase 2 project new mine development.

Teck spent C$190 million in the zinc business unit mainly into sustaining capital with $85 million at Trail Operations and $46 million at Red Dog Operations.

Teck Resources 2016 capital expenditures reflect the company's strategy focus on the Energy business unit development representing on average 25% of capital expenditures over the last three years with a significant investment into new mine development. We also noticed the changing nature of steelmaking coal business capital expenditures reflecting the maturity of the business. The company investment activity is expected to remain focused on developing Fort Hills and Frontier oil sands project as well as the Quebrada Blanca 2 project in the coming years.

The company is anticipated to spend C$1.6 billion for capital expenditures before capitalized stripping costs in 2017, essentially investing into new mine development. The remaining capex on Fort Hills is expected to be C$805 million, with C$640 million to be spent in 2017, Teck is already on good track as they spent C$203 in the first quarter. In addition, we expect C$26 million spending for permitting activities on the Frontier oil sands project. First oil production is expected at the end of

2017 with a ramp up to 90% of nameplate capacity by the end of 2018. As spending on Fort Hills are nearest to the end, the Quebrada Blanca 2 project could be approved during the first half of 2018 with construction beginning in mid-2018. The company is anticipated to spend C$200 million for QB2 in 2017. The estimated capital expenditures for Quebrada Blanca Phase 2 project is of US$4.7 billion, with Teck's share (76.5% interest) being US$4.0 billion or C$5.3 billion assuming a USD/CAD exchange rate of 0.75. Additionally, Teck is expected to spend C$620 million in capitalized stripping in 2017, mainly into Steelmaking coal operations.

To forecast capital expenditures over the next five years, we took into account Fort Hills near completion and QB2 future investments. We projected QB2 capital expenditures from 2018 according to the completion rates observed from Fort Hills project development after construction decision. Teck Resources initially budgeted C$2.94 billion for Fort Hills development over a four-year period (2014-2017). Based on the expected remaining capital to spend for this project, the company undervalued the expenses by 15% and recorded a C$222 impairment charge in 2016 fourth quarter resulting from an increase in the development costs for the project.

In million C$

Year	Fort Hills	% completion
2014	616	18%
2015	966	29%
2016	987	29%
2017E	640	19%
2018E	165	5%
Total	**3374**	**100%**

Table 13: Fort Hills Capital Expenditures

We expect capex to slightly increase in 2018, year during which QB2 project investment will offset the decline of the Fort Hills investments. QB2 project is expected to need 1.8x times capital expenditures as Fort Hills, thus, we anticipate a higher capex for 2019 and 2020. In 2021, we expect capex to decrease and return to its average level over the last five years of C$2.3 billion.

In million C$

Year	QB2	Excess capex over Y-1	Estimated Capex	Notes
2017E	200		2200	Before QB2 construction decision
2018E	931	91	2291	
2019E	1460	438	2729	
2020E	1492	32	2761	
2021E	967	-525	2236	
2022E	249			
Total	**5300**			

Table 14: Capital Expenditures Forecasts

Debt

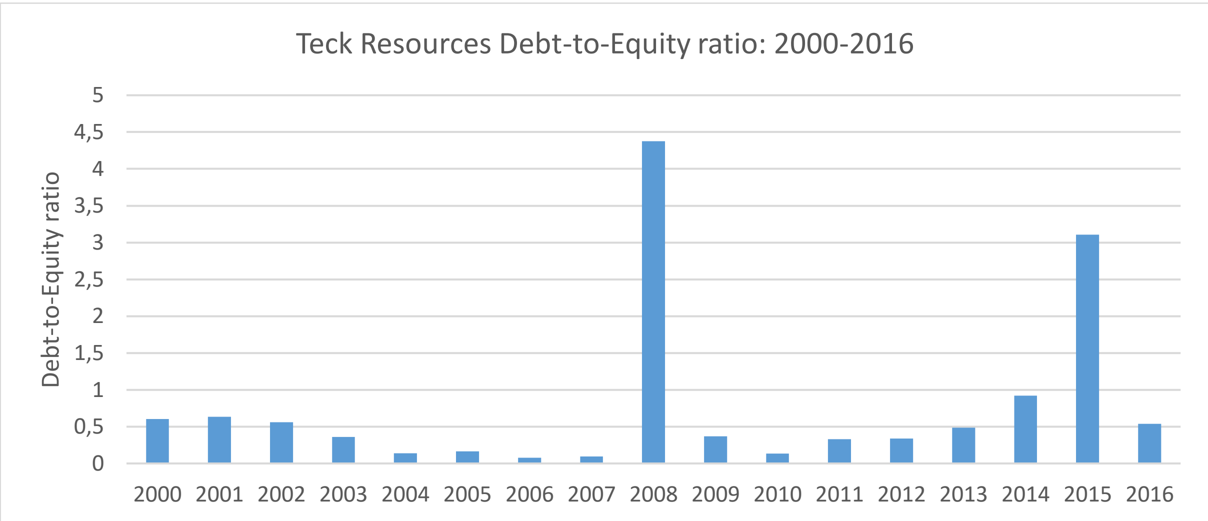
As of December 2016, Teck Resources' had C$8.3 billion (US$6.2 billion) of outstanding debt, C$1.3 billion less than in 2015. Teck Resources had two revolving credit facilities in the amounts of US$3 billion available until July 2020 and US$1.2 billion which maturity was extended from June 2017 to June 2019. The amended US$1.2 billion facility includes restrictions regarding the amount of secured debt and guaranteed debt that Teck may issue, requiring a debt to debt-plus-equity ratio below 50%.

Teck's B1/BB nonguaranteed senior notes rank among the best performers in the high yield basic-materials sector in 2017, outperforming Bloomberg's evaluated pricing service, BVAL's BB basic-materials yield curve. In March 2017, Teck repurchased C$1.5 billion (US$1 billion) of its notes outstanding, reducing its current balance to US$5.1 billion just above its US$5 billion target. Teck's yield curve has tightened by an average 74 bps across the curve in 2017. The company's leverage of 1.5x is below the median of 3.5x for BB rated peers, based on a comparison with global medians of industrial companies and utilities.

Management remains committed to returning to an investment grade credit rating. The current debt portfolio has an average coupon of 5.7% and a weighted average term to maturity of 15 years. The current debt to debt-plus-equity rate is of 27%. We are confident about Teck ability to achieve its goal of reducing its debt to less than US$ 5 billion as we estimate the company will generate C$1.3 billion in FCF this year.

Adjusted present value

Teck Resources Debt-to-Equity ratio was unstable over the last ten years with significant jumps in 2008 and in 2015.



Graph 9: Teck Resources Debt-to-Equity ratio

In 2008, the Debt-to-Equity ratio jumped to 4.38, due to a significant change in Teck debt position which increased from C$1.5 billion in 2007 to C$12.9 billion by the end of 2008. This significant increase was due to the issuance of C$11.2 billion (US$9.3 billion) debt to partially finance the acquisition of the Fording assets in October 2008. The acquisition financing included a US$5.8 billion 364-day bridge facility due October 29, 2009 and a US$4 billion three year amortizing term loan facility repayable in 11 equal quarterly instalments starting in April 2009. Consequently, the stock price dropped by 65% from C$28.5 to C$10 and the market capitalisation dropped from C$12.9 billion to C$4.6 billion.

In 2015, the Debt-to-Equity ratio jump followed the company credit rating deterioration which strongly impacted the company's share price. The stock was trading at C$15.88 at the end of 2014 and fell to C$5.34 by the end of 2015 following the downgrade of Teck credit rating.

Graph 10: Teck Resources share price

Standard & Poor's downgraded Teck three times from BBB in January 2015 to B+ in February 2016. Moody's downgraded four times the stock from Baa3 in March 2015 to B3 in February in 2016. The downgrade followed a negative commodities environment with weak commodities prices due to slower Chinese growth reducing the demand for a range of materials. Moody's downgraded Teck Resources as the agency feared a leverage over 7x by the end of 2017 and refinancing challenges for the company after 2018.

However, from May 2016, Moody's upgraded Teck Resources three times in a row. The company's credit ranking is currently a Ba2, updated on the 20th January 2017. The rating outlook has been changed from stable to positive. Standard & Poor's did the same updating the credit rating to BB rating in November 2016 with a stable outlook. The market believes in Teck resources materials products future performance and the company is expected to produce sufficient cash flows to reduce its debt.

Due to the variable Debt-to-Equity ratio over the last five years combined with Teck strategy to reduce the outstanding debt, we used the adjusted present value (APV) to estimate the present value of the cash flows. We first valued the company as if it was 100% equity financed and secondly, we valued the benefits of financing through debt.

Teck Resources Adjusted Present Value =

Present Value (All Equity Cash Flows) + Present Value (Debt Tax Shield)

To compute the company's value as an all equity firm, we used the following assumptions:

Tax rate: 30.2%

In 2016, the Canadian statutory tax rate increased to 26.10% due to an updated provincial allocation. This rate varied every year over the last five years within the range 25.15% to 26.12%. After adjustments to the different tax effects of the Teck operations and including the statutory tax rate variations we estimated an average tax rate of 30.2% over the last five years. We project this rate as stable over the next five years.

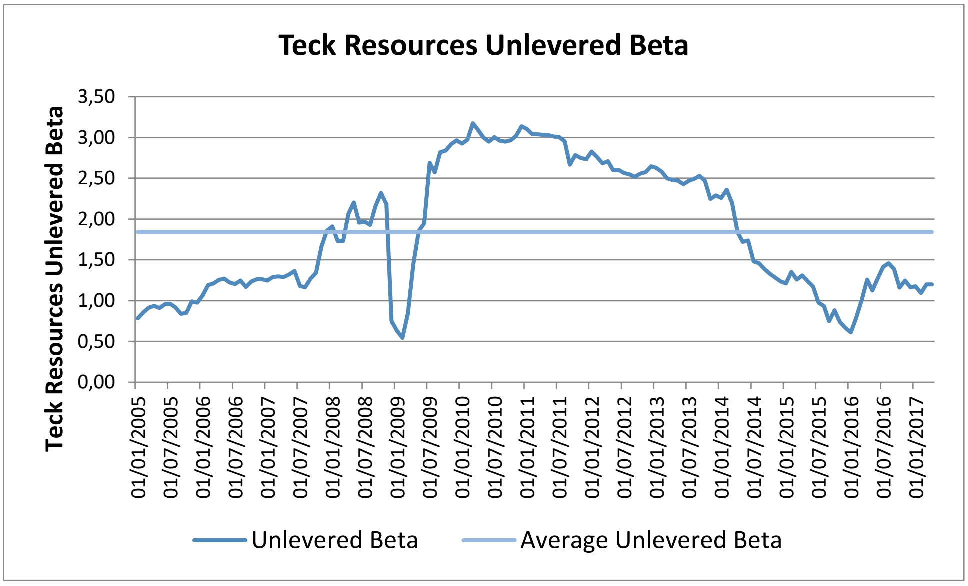
Cost of Equity: 11.5%

The cost of equity was calculated using the Capital Asset Pricing Model with a risk-free rate equal to the 10 years US Treasury rate of 2.28%, an equity risk premium of 5% based on market averages and an estimate of the unlevered beta as described below.

To compute Teck Resources levered beta, we regressed the monthly returns of the company against the excess returns of the Wilshire 5000 Total Market Index over the risk-free rate. We then used a 60-month rolling window over the period from 2000 to April 2017. The unlevered beta was computed using the following formula:

$$\beta_U = \frac{\beta_L}{(1 + (1 - T_C) * \frac{D}{E})} = 1.95$$

Due to the volatile Debt-to-Equity ratio over the period from 2000 to April 2017, we unlevered the rolling beta using Debt-to-Equity ratios based on the monthly debt and market capitalisation levels. As observed from the graph below, the unlevered beta was impacted by the stock price drop both in 2008 and 2015. Teck's unlevered beta varied over time around a mean of 1.84.



Graph 11: Teck Resources Unlevered Beta

We estimate a present value of the company considering Teck all equity financed equal to C$25.6 billion.

To compute the present value of the debt tax shield, we used the following assumptions:

We assumed an interest expense of 2.9% which is equal to the average cost of debt over the last five years. To compute the company terminal value, we used a terminal growth rate of 2% in line with the range of the historical inflation and the historical GDP growth rate (2% to 2.8%). Based on the average historical inflation for the location of each of Teck operations and long term government yield, Teck Resources computed an inflation rate of 2%. Following the same methodology, based on Teck operations location we computed an historical weighted average GDP growth rate of 2.8%.

We estimated the outstanding debt over the next five years based on the company's principal repayments schedule coupled with our positive outlook on the company's ability to reduce debt below their US$ 5 billion. We estimated the amount of outstanding debt, and computed the present value of the debt tax shield.

Year	Previous Year Debt Level	Principal Repayments	Expected Debt Level
2016	8,343		
2017	8,343	1,480	6,863
2018	6,863	30	6,833
2019	6,833	111	6,722
2020	6,722		6,722
2021	6,722	469	6,253

Table 15: Teck Resources Debt Forecasts

We estimate a present value of the total tax shield equal to C$272.1 million.

APV results

We estimate a potential upside of 37%. Our implied share price is of C$33.98 versus a market price of C$24.80. The market consensus estimates project an upside of 51.4% with a 12 months target share price of C$37.54. Teck Resources last twelve months return was of 98.8%. We recommend a BUY.

Multiples Analysis

We computed the enterprise value based on comparable enterprise value multiples by analysing eight of Teck Resources peers, namely Anglo American Plc, Freeport-McMoRan Inc., First Quantum Minerals, Hudbay Minerals Inc., Lundin Mining Corporation, Rio Tinto Limited, Turquoise Hill Resources Ltd and Southern Copper Corporation.

Teck's peers EV/EBIT analysis shows that Teck Resources is currently trading at a 12.1x multiple while its peers median EV/EBIT is at 16.1x. Calculating Teck enterprise value using the EV/EBIT multiple results into an implied enterprise value of C$27.7 billion and an implied share price of C$37.34. Based on this approach, we estimate an upside potential of 51%.

We also calculated the enterprise value based on the comparable EV/Revenues and EV/EBITDA multiples. Teck Resources EV/EBITDA multiple is at 6.7x lower than its peers' median of 7.2x suggesting a potential upside of 13%. Teck EV/Revenues multiple is at 2.2x slightly BELOW its peers' median of 2.6x which results into a share price of C$31.64 and an estimated upside potential of 28%.

When analysing Enterprise Value multiples coupled with Price-to-Book and Price-to-Earnings multiples, we found that the market estimates Teck Resources as an undervalued company with a potential upside of 49%. The multiples analysis meets with our DCF valuation recommendation reflecting our analysis of the company as well as the positive developments Teck will benefit from in the near future. We recommend a BUY.

Company	**Currency**	**Share Price**	**Market Value**	**EV/Revenues**	**EV/EBITDA**	**EV/EBIT**	**P/B**	**P/E**
Anglo American Plc	GBp	46.54	22925	1.0	5.7	7.7	6.1	8.6
Freeport-McMoRan Inc.	USD	11.68	16899	2.1	6.9	16.1	1.8	N/M
First Quantum Minerals	CAD	12.25	8445	4.5	12.4	42.6	0.8	N/M
Hudbay Minearsl Inc.	CAD	7.53	1787	2.1	5.0	13.9	1.0	N/M
Lundin Mining Corporation	CAD	6.88	5000	2.7	6.0	16.1	1.4	N/M
Rio Tinto Limited	GBp	2990	55497	2.6	7.5	12.9	1.2	12.0
Southern Copper Corporation	CAD	13.43	1605	6.0	14.6	20.6	4.6	34.8
Turquoise Hill Resources Ltd.	CAD	3.62	7285	6.0	18.7	344.2	0.9	34.6
Average				3.4	9.6	59.3	2.2	22.5
Median				2.6	7.2	16.1	1.3	23.3
Teck Resources Limited	**CAD**	**24.80**	**14331**	**2.2**	**6.7**	**12.1**	**0.8**	**13.8**

Table 16: Teck Resources Peers Multiples

(C$ in millions)	**Revenues**	**EBITDA**	**EBIT**	**Equity Book Value**	**Earnings**
Teck Resources Limited	9300	3110	1725	17601	1725
Median Peers Multiples	2.6	7.2	16.1	1.3	23.3
Enterprise Value	24502	22457	27742	22809	40200
Less Total Debt	*6884*	*6884*	*6884*	*6884*	*6884*
Less Preferred Securities					
Less Non-controlling interest	*171*	*171*	*171*	*171*	*171*
Plus Cash and cash and equivalents	*536*	*536*	*536*	*536*	*536*
Implied Equity Value	17983	15938	21223	16290	33681
Outstanding shares	568	568	568	568	568
Implied Share Price	**31.64**	**28.05**	**37.34**	**28.67**	**59.27**
Current Market Price	24.80	24.80	24.80	24.80	24.80
Upside/Downside	**28%**	**13%**	**51%**	**16%**	**139%**

Average Upside/Downside	**49%**

Table 17: Teck Resources Multiples Implied Value

Key Risks to our Price Target

Commodities price sensitivity

We analysed the company's share price performance relative to commodity prices, coal, copper and zinc by computing the variance covariance of the historical company returns with the commodities prices changes. The commodity price beta measures the historic volatility of a security relative to a specific commodity benchmark over a certain period of time. A beta of 1 shows a perfect correlation. This analysis is useful to compare the riskiness of Teck Resources with its peers. We found that Teck Resources benefit from an advantageous diversified profile with low exposure to coal and copper prices but a high exposure to zinc prices compared zith its peers. Consequently, volatile zinc prices could impact either positively or negatively our estimated future earnings.

Coal

We analysed Adaro Energy, Anglo American, Cloud Peak Energy, BHP Billiton and Teck Resources sensitivity to coal price. Teck Resources had the second highest exposure to coal prices from 2nd of May 2013 to 11th of May 2017, with a beta of 0.05, a very low level right after Adaro Energy with 0.07x beta. BHP Billiton followed with (0.03x) then Anglo American (0.01x).

Copper

We analysed Antofagasta, First Quantum Minerals, Freeport-McMoRan, KGHM, Southern Copper Corporation and Teck Resources sensitivity to copper price. Copper accounts for 21.6% of Teck Resources 2016 revenues and the company expect an output growth rate of 9% in 2017. Teck

Resources had a low beta exposure of 0.1x on the period from January 2000 to the 11th May 2017. However, Teck Resources showed the same exposure as First Quantum Minerals for which copper represented 80% of revenues in 2016. Over the period KGMH showed the highest sensitivity with 0.3x beta. Antofagasta follows at a beta of 0.04x, then Freeport-McMoRan (0.03x) and Southern Copper Corporation (0.004x) which 78.5% of revenues are driven by copper.

Zinc

We analysed Boliden, Glencore, MMG Limited, Vedanta Resources and Teck Resources sensitivity to zinc price. Teck Resources had the second highest exposure to zinc prices from 18th of May 2011 to 11th of May 2017, with a beta of 0.77, right after Vedanta Resources with 0.80 beta. We chose this time period because of Glencore the world largest producer of the metal by volume in 2016 that is publicly traded only from May 2011. Glencore beta is of 0.73x. The rest of the competitors rank as following: Boliden (0.69x) and MMG Limited (0.42).

Exchange rate

Teck Resources operations are mainly based in Canada and costs denominated in Canadian dollars while most of its revenues are U.S. dollar-based. As a consequence, a strengthening of the Canadian dollar vs. the U.S. dollar could cause Teck's costs to exceed our expectations and put our future cash flows estimates at risk, while a stronger USD vs. the CAD could put upward pressure on our forecasts. Teck Resources share price sensitivity to the exchange rate USD/CAD is of -1.89x.

Weather

Red Dog's location (northwest Alaska) exposes the operation to serve weather and winter ice conditions, which can significantly affect zinc production and sales. Cyclone Debbie which occurred in early 2017 had a negative impact on Australian supply of steelmaking coal.

Annexes

Historical period

	Historical Period					CAGR
	2012	2013	2014	2015	2016	('12-'16)
Sales	**$10,343.0**	**$9,382.0**	**$8,599.0**	**$8,259.0**	**$9,300.0**	-3%
% growth	*NA*	*(9.3%)*	*(8.3%)*	*(4.0%)*	*12.6%*	
COGS	5,836.0	5,723.0	5,720.0	5,614.0	5,519.0	
Gross Profit	**$4,507.0**	**$3,659.0**	**$2,879.0**	**$2,645.0**	**$3,781.0**	-4%
% margin	*43.6%*	*39.0%*	*33.5%*	*32.0%*	*40.7%*	
SG&A	137.0	129.0	119.0	108.0	99.0	
R&D	19.0	18.0	29.0	47.0	30.0	
Other Operating Expense	126.0	302.0	339.0	4,042.0	542.0	
EBITDA	**$4,225.0**	**$3,210.0**	**$2,392.0**	**($1,552.0)**	**$3,110.0**	-7%
% margin	*40.8%*	*34.2%*	*27.8%*	*(18.8%)*	*33.4%*	
Depreciation & Amortization	983.0	1,233.0	1,344.0	1,366.0	1,385.0	
EBIT	**$3,242.0**	**$1,977.0**	**$1,048.0**	**($2,918.0)**	**$1,725.0**	-15%
% margin	*31.3%*	*21.1%*	*12.2%*	*(35.3%)*	*18.5%*	
Taxes	767.0	633.0	342.0	(836.0)	587.0	
EBIAT	**$2,475.0**	**$1,344.0**	**$706.0**	**($2,082.0)**	**$1,138.0**	-18%
Plus: Depreciation & Amortization	983.0	1,233.0	1,344.0	1,366.0	1,385.0	
Less: Capital Expenditures	(2,432.0)	(2,602.0)	(2,213.0)	(2,244.0)	(1,893.0)	
Less: Increase in Net Working Capital		(1,049.0)	(2,148.0)	(528.0)	(517.0)	

Assumptions

Sales (% growth)	NA	(9.3%)	(8.3%)	(4.0%)	12.6%
COGS (% growth)	56.4%	61.0%	66.5%	68.0%	59.3%
SG&A (% sales)	1.3%	1.4%	1.4%	1.3%	1.1%
R&D (% sales)	0.2%	0.2%	0.3%	0.6%	0.3%
Other Operating Expense (% sales)	1.2%	3.2%	3.9%	48.9%	5.8%
Depreciation & Amortization (% sales)	9.5%	13.1%	15.6%	16.5%	14.9%
Capital Expenditures (% growth)	23.5%	27.7%	25.7%	27.2%	20.4%
Tax Rate	23.7%	32.0%	32.6%	28.6%	34.0%
Working Capital (% sales)					

Projected Period

	Projection Period					CAGR
	2017	2018	2019	2020	2021	('17 - '21)
Sales	**$11,554.3**	**$13,244.6**	**$14,349.9**	**$14,223.6**	**$14,170.2**	*8.8%*
% growth	*24.2%*	*14.6%*	*8.3%*	*(0.9%)*	*(0.4%)*	
COGS	5,833.1	6,900.9	7,500.1	7,507.2	7,550.6	
Gross Profit	**$5,721.2**	**$6,343.7**	**$6,849.8**	**$6,716.4**	**$6,619.6**	*11.9%*
% margin	*49.5%*	*47.9%*	*47.7%*	*47.2%*	*46.7%*	
SG&A	149.2	171.0	185.3	183.6	183.0	
R&D	37.1	42.5	46.0	45.6	45.5	
Other Operating Expense	443.3	508.2	550.6	545.7	543.7	
EBITDA	**$5,091.6**	**$5,622.0**	**$6,067.9**	**$5,941.3**	**$5,847.5**	*13.5%*
% margin	*44.1%*	*42.4%*	*42.3%*	*41.8%*	*41.3%*	
Depreciation & Amortization	1,610.9	1,846.5	2,000.6	1,983.0	1,975.6	
EBIT	**$3,480.8**	**$3,775.5**	**$4,067.3**	**$3,958.3**	**$3,871.9**	*17.6%*
% margin	*30.1%*	*28.5%*	*28.3%*	*27.8%*	*27.3%*	
Taxes	1,051.1	1,140.1	1,228.2	1,195.3	1,169.2	
EBIAT	**$2,429.7**	**$2,635.4**	**$2,839.1**	**$2,763.0**	**$2,702.7**	*18.9%*
Plus: Depreciation & Amortization	1,610.9	1,846.5	2,000.6	1,983.0	1,975.6	
Less: Capital Expenditures	(2,200.0)	(2,291.1)	(2,729.0)	(2,760.8)	(2,236.3)	
Less: Increase in Net Working Capital	(503.8)	(439.9)	(291.6)	36.3	17.0	
Unlevered Free Cash Flow	**$1,336.7**	**$1,750.8**	**$1,819.0**	**$2,021.6**	**$2,458.9**	

Assumptions

Sales (% growth)	24.2%	14.6%	8.3%	(0.9%)	(0.4%)
COGS (% growth)	5.7%	18.3%	8.7%	0.1%	0.6%
SG&A (% sales)	1.3%	1.3%	1.3%	1.3%	1.3%
R&D (% sales)	0.3%	0.3%	0.3%	0.3%	0.3%
Other Operating Expense (% sales)	3.8%	3.8%	3.8%	3.8%	3.8%
Depreciation & Amortization (% sales)	13.9%	13.9%	13.9%	13.9%	13.9%
Capital Expenditures (% growth)	16.2%	4.1%	19.1%	1.2%	(19.0%)
Tax Rate	30.2%	30.2%	30.2%	30.2%	30.2%
Working Capital (% sales)	26.5%	26.5%	26.5%	26.4%	26.4%

Implied Equity Value and Share Price

Implied Equity Value and Share Price	
Enterprise Value	$25,877.8
Less: Total Debt	(6,884.0)
Less: Preferred Securities	
Less: Noncontrolling Interest	(221.0)
Plus: Cash and Cash Equivalents	536.0
Implied Equity Value	**$19,308.8**
Number of outstanding shares	568.3
Implied Share Price	**$33.98**
Market Share Price	24.8
Upside/ Downside	**37%**

Sensitivity Analysis

Enterprise Value						
		Terminal Growth Rate				
		1.2%	1.6%	2.0%	2.4%	2.8%
Unlevered Beta	2.2	20,040	20,707	21,420	22,159	22,982
	2.0	21,791	22,584	23,436	24,331	25,328
	1.8	23,883	24,840	**25,878**	26,981	28,215
	1.6	26,425	27,604	28,894	30,286	31,852
	1.4	29,581	31,069	32,717	34,524	36,576

Implied Share Price						
		Terminal Growth Rate				
		1.2%	1.6%	2.0%	2.4%	2.8%
Unlevered Beta	2.2	23.7	24.9	26.1	27.4	28.9
	2.0	26.8	28.2	29.7	31.3	33.0
	1.8	30.5	32.2	**34.0**	35.9	38.1
	1.6	34.9	37.0	39.3	41.7	44.5
	1.4	40.5	43.1	46.0	49.2	52.8

APV calculation

APV Calculation	(C$ in millions)
PV (All equity)	
EBIT Y+1	3480.8
Tax rate	30.2%
After tax profit	**2,429.58**
Return on Assets	
Risk-free Rate	2.3%
Market Risk Premium	5.0%
Unlevered Beta	1.84
Return on Assets	**11.5%**
Terminal Growth rate	2.0%
PV (All equity)	**25,605.70**
PV of the debt tax shield	
Assets discount rate	8.3%
Terminal Growth rate	2.0%
Cost of Debt	2.9%
Tax rate	30.2%
Risk-free Rate	2.3%
PV of the debt tax shield	**272.1**
EV of Teck Resources	**25,877.77**

Reference

Bloomberg. (2017) *Bloomberg Professional*. [Online]. Available at: Subscription Service (Accessed: 01 May 2017).

IMPORTANT DISCLOSURE