LISBON SCHOOL OF ECONOMICS & MANAGEMENT
UNIVERSIDADE DE LISBOA

MASTER OF SCIENCE IN
FINANCE

MASTERS FINAL WORK
PROJECT

EQUITY RESEARCH:
BHP BILLITON LTD

PEDRO FILIPE HENRIQUES CAIRES

OCTOBER 2018

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SUPERVISOR:
VICTOR MAURÍLIO SILVA BARROS

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Abstract

This work aims to present a company valuation on BHP Billiton Ltd elaborated with ISEG's Finance Master Work Project. This Equity Research follows the format recommended by the CFA Institute (Pinto, Henry, Robinson & Stowe, 2010)

We choose BHP Billiton Ltd because of its market presence, and the fact that is recovering from a major accident in one of their subsidiaries. The author also had a previous interest in the industry.

The equity research is issued considering all the publicly available information on the company as of October 29th, 2018. We use the Discounted Cash Flows method to achieve our final target price.

The assumptions considered in the valuation result from a careful analysis of the company's data, industry main drivers and future market prospects. Our final recommendation stands for HOLD, with a price target of $50.39/sh and an upside potential of 11.26%, with medium risk.

Our recommendation is supported by BHP's expected higher production of commodities which is offset by the market performance in the next years. It is expected a slowdown in the prices of the commodities, from iron ore to coal. Even though, copper and oil are expected to modestly increase, its impact it is not significant given the company's business structure.

A slowdown in the main importer of all commodities is expected – China. This country is moving from a consumption economy to a services economy, impacting the market for commodities. An overall decrease in the consumption of raw materials is expected by this country.

JEL classification: G10; G32; G34.

Keywords: Equity Research; Valuation; Mergers & Acquisitions; BHP Billiton Ltd; Mining Industry, China

Resumo

Este trabalho pretende apresentar uma avaliação da empresa BHP Billiton Ltd, elaborado de acorde com o Projeto de Trabalho Final de Mestrado em Finanças no ISEG. Esta avaliação segue o formato recomendado pelo CFA Institute (Pinto, Henry, Robinson & Stowe, 2010)

A escolha da BHP Billiton Ltd foi feita devido à sua presença no mercado e ao fato de estar a recuperar de um grande acidente numa das suas subsidiárias. O autor já tinha interesse anterior na indústria.

Esta avaliação é emitida considerando toda a informação publicamente disponível a 29 de outubro de 2018. A principal metodologia usada utilizada para aferir o preço-alvo é através dos Fluxos de Caixa Descontados (DCF)

Na avaliação consideramos várias premissas que resultaram de uma análise cuidada dos dados históricos da empresa. A recomendação é de MANTER, com um preço-alvo de $50.39 por ação e uma potencial valorização de 11.26%.

A nossa recomendação é suportada por uma superior produção esperada das matérias primas da BHP, o que é contrastado por uma menor performance do mercado nos anos vindouros. É esperada uma desaceleração nos preços das matérias-primas, desde o minério de ferro até ao carvão. Apesar da modesta subida dos preços do cobre e do petróleo, o impacto destas subidas não é muito significativo na performance da empresa devido à sua estrutura de negócio.

Um decrescimento do maior importador de matérias-primas é esperado nos próximos anos – China. A economia deste país está a se mover de uma economia de consumo, para uma economia de serviços, o que impacta significativamente o mercado. Uma redução generalizada no consumo de matérias-primas é esperada neste país.

Classificação JEL: G10; G32; G34.

Palavras-Chave: Equity Research; Avaliação de Empresas; Fusões e Aquisições; BHP Billiton Ltd; Indústria Mineira, China

Acknowledgements

This project represents of an important stage of my life, filled with much effort, dedication and hard work. However, none of this would be possible without the support of all the people that are close to me and my hear: my family, girlfriend, professors and friends.

To my late grandfather Luís. For all the strength that he gave in my childhood and for transmitting that strength through my grandmother, Nazaré after passing away.

To my dad José, my mom Dalila, my sister Sofia and my girlfriend Joana, for the unconditional support, encouragement and valuable insights throughout my life that made me achieve all my personal and professional goals.

To my colleagues and friends, for the friendship and good moments along this journey.

And last but not least, to my supervisor, Victor Barros, for the guidance, patience and valuable insights that pushed myself to always do better and for the long hours spent discussing and improving this project.

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BHP Billiton

HOLD

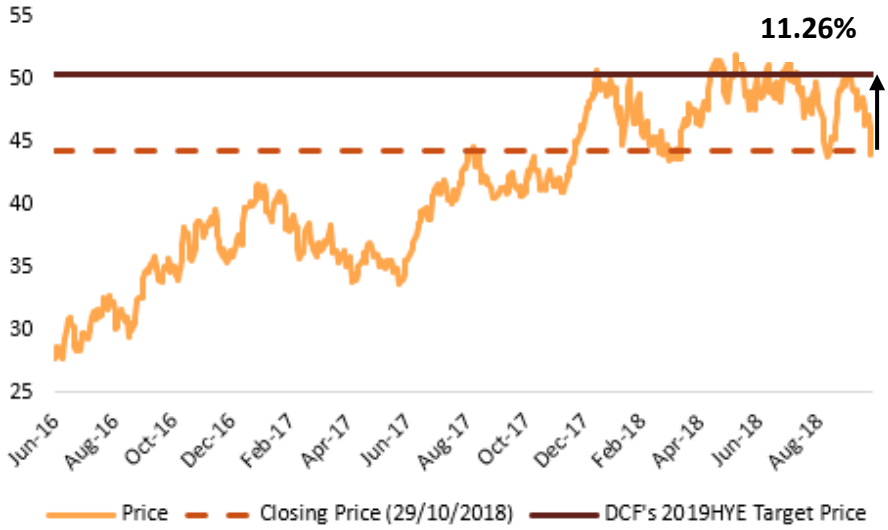
Medium Risk
October 2019

New York Stock Exchange

1. Research Snapshot

(2019HYE Price Target of **$50.39/sh**; **11.26%** Upside Potential; Medium Risk; Final Recommendation: **HOLD**)

Figure 1 – Share Price



Source: Reuters, The Author

Our final recommendation for BHP Billiton Ltd stands for HOLD with a 2019HYE target price of $50.39 and an upside potential of 11.26% in comparison with last closing price on October 29th, 2018, although with medium risk.

The target price is computed using the DCF approach as the main model. To corroborate this recommendation, we used to other methodologies – the DDM and the market approach.

Even though we expect an overall increase in BHP's production, a general stagnation of the commodity markets will influence the company's revenues. A decrease in the company's main source of revenue (iron ore) is expected throughout the following years at a CAGR of -0.93%. In addition, a generalized stagnation is expected on the biggest market in the world for commodities – China. BHP is a mature company that we expect to remain in the market for long years having stable earnings, improving its efficiency in mining and exploration of new sources of income, but the commodities market is expected to slowdown and significantly affect the company's overall performance.

EBIT is expected to decrease by $2.2Bn from 2019HYE to 2020HYE due to impacts on the Onshore US sale of assets. We anticipate an overall growth in the company's production due to ongoing projects for maintenance and exploration. However, this is expected to yield less cash compared to other years. Revenue should increase, but it remains stable throughout our valuation period due to a slowdown in the commodities market, mainly driven by China's expected GDP slowdown. BHP operates in a mature market with high barriers to entry, intense competition and low profit margins and the company wants to improve its market positions by investing in new projects and products.

Table 1 – Analysts Risk Assessment

Low	Medium	High

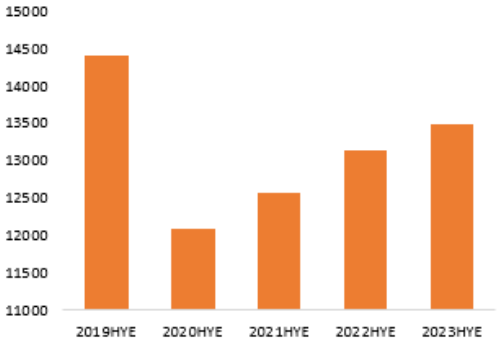
Source: The Author

Table 2 – Market Profile

Closing Price ($/sh)	44,29
52-week High	52,62
52-week Low	40,58
Market Capitalization (Bn $)	128,84
Volume (million)	2,32

Source: Thomson Reuters

Figure 2 – EBIT estimations



Source: The Author, Company Data

Table 3 – BHP Sensitivity Analysis

Change in Payout Ratio				
45%	50%	55%	60%	65%
38,36	41,03	43,69	46,36	49,03
-12,95%	-6,61%	-1,13%	3,68%	7,92%

Source: The Author, Company Data

Table 4 – Valuation Output

Valuation	Price Target	Upside Potential
DCF	50,39	11,26%
DCF*	47,03	5,08%
DDM	41,03	-6,61%
Multiples (Avg)	45,66	2,47%

Source: The Author, Company Data
*DCF considering all the cash from the disposal of assets was distributed

2. Business Description

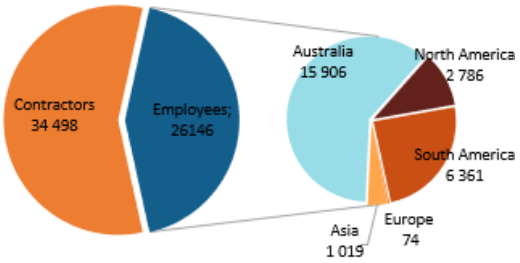
BHP Billiton **(BHP)** was created in 2001 after the merger of BHP and Billiton. Together, they form a Dual Listed Company with BHP being traded in Australia and Billiton in The United Kingdom. Billiton has its origins in the Netherlands around 1860 and BHP began its operations in 1885, meaning that BHP Billiton has over 130 years of history. The headquarters of the company are in Melbourne, Australia and the company had in 2017YE more than sixty thousand employees and contractors all around the world. In addition, BHP Billiton is the World's biggest mining company by market capitalization with over US$90 billion in 2017. BHP Billiton is quoted in 5 different markets: The London Stock Exchange, the New York Stock Exchange (as BHP and as BBL) (2 quotes because it was traded before the merger in 2001 by both companies on this market), the Australian Stock Exchange and the Johannesburg Stock Exchange.

BHP Billiton Limited is one of the world's leading resources company with 420 subsidiaries and equity investments. The Company engages in the production of various commodities, including iron ore, metallurgical coal, copper and uranium, and its segments include Copper, Iron Ore, Petroleum and Coal.

The **Iron Ore** segment is the main source of revenue for the company, totaling 38.20% of revenues with over 230Mt produced in 2017YE. In addition, EBITDA margin was 62.07% and the segment contributed 44.72% to the company's overall EBITDA. The Key drivers of this segment were the higher pig iron production in China and a preference for higher grade materials which increased iron ore prices. Seaborne supply also increased mainly from Brazil and Australia and a supply response was observed in price-sensitive origins, especially India. However, the market is under pressure in the short-term due to high inventory levels in China and the supply growth from both seaborne and domestic suppliers. In the medium, to long-term, it is expected that the committed projects will ramp-up production and a further flattening of the cost curve.

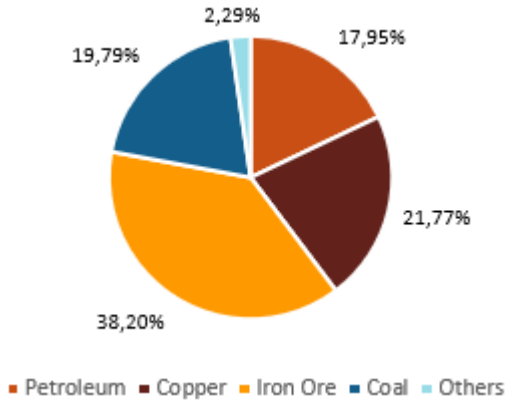
The **Copper** segment is responsible for 21.77% of company revenues and includes the mining of copper, silver, lead, zinc, gold, uranium and molybdenum. Moreover, this segment had an EBITDA margin of 42.53%, contributing 17.47% to the overall EBITDA. The Key drivers of profitability in this segment were stronger Chinese demand and increased mine disruption. In the short-term, it is expected that increased scrap availability and higher production due to ongoing projects will be adequate to cover growth in demand. In the long run, demand growth is expected to be solid with China transitioning to a consumption-based economy and emerging countries increasing demand.

Figure 3 – Employees and Contractors 2018YE



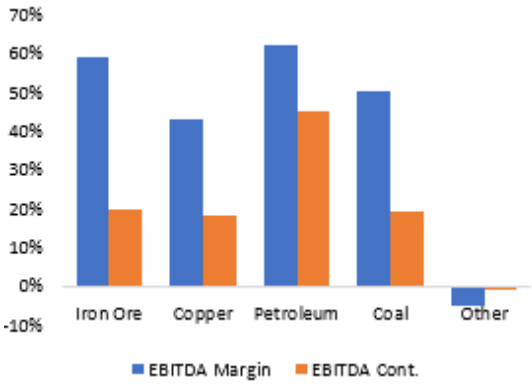
Source: Company Data

Figure 4 – BHP Segment Revenue 2018YE



Source: Company Data

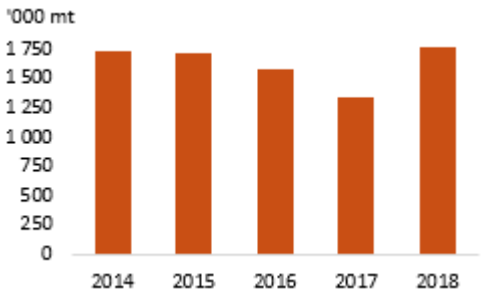
Figure 5 – EBITDA Margin and Contribution 2017 YE



Source: Company Data

The **Coal** segment accounts for 19.79% of the revenues and it engages in mining of metallurgical coal and thermal (energy) coal. Coal comprises 18.64% of the company's EBITDA with a segment EBITDA of 49.93%. Key drivers on metallurgical coal were the constraints in Chinese supply and seaborne demand which increase its price. Although the price increased, it was followed by a decrease due to supply constraints easing. At the end of the year 2017, natural disasters increased prices and they are expected to return to marginal cost levels in the short run. In the long run, the outlook is uncertain because of China's coal supply reform policy, but the emerging economies are expected to support seaborne metallurgical coal. In what concerns energy coal, its drivers are the Chinese seaborne robust growth demand and in the long run, India and South East Asian demand is expected to grow modestly, offsetting weaknesses in OECD countries.

Figure 6 – Total copper production



Source: Company Data

The **Petroleum** segment represents 17.95% of the Company's revenue and it is engaged in the exploration, development, and production of oil and gas. This segment EBITDA is 59.12% and it contributes with 20.02% to the company's overall EBITDA.

The Company extracts and processes minerals, oil and gas from its production operations located primarily in Australia and the Americas. The company's businesses include Minerals Australia, Minerals Americas, Petroleum and Marketing. The Company manages product distribution through its global logistics chain, including freight and pipeline transportation. Its businesses include Minerals Australia, Minerals Americas, Petroleum and Marketing.

In the Future, we expect that one of the company's lowest mined commodity to become more prominent, lithium. Due to its durability, to the fact that is used for batteries, amongst others, its demand will increase, and the company might find a different source of revenue. This is also one of the reasons why we maintain a recommendation of HOLD. It is uncertain whether this market will growth to a point where it becomes significant in the company's portfolio, even managing to substitute one of the other segments (for instance, petroleum), however it is due to the projected higher production on the other segments and to the exploration and ambition of new projects that we maintain our recommendation.

Company Strategies

Cost efficiencies – Focused on further gains: Since FY2012 BHP has reduced unit costs by 40%. To increase productivity the company aims to increase the connectivity across the assets and commodities along with a simple portfolio and standardized systems.

Latent Capacities – Attractive returns, limited risk: The company is aiming to get more production or replace it, with the existent infrastructures at a lower cost, through optimizing opportunities existent in the mines, rigs, ports, rails and processing facilities.

Major projects – Timed for value and returns: Implement and develop the "Mad Dog Phase 2" project which has the potential of production of 140 thousand gross barrels of crude oil per day. To further increase production of copper (which has been decreasing and the capacity of

current mines is decreasing), the company wants to implement the "Spence Growth Option" project which is expected to have 185ktpa of incremental copper production in concentrate with the first production scheduled for 2021. At last, BHP is continuing to investigate the feasibility of one of the best undeveloped potash resources in the world through the "Jansen Potash" project in the province of Saskatchewan, Canada

Exploration – Positive results reduce the risk for future wells: Finding new deposits of oil and copper through targeted exploration, because the production of these commodities is decreasing and its demand is forecasted to increase. There were recent positive drilling results in the US Gulf of Mexico for oil and in the Caribbean for Trion.

Technology – Improves safety, lowers cost and unlocks resource: Continuity of the development and introduction of innovative technologies to increase efficiency and to improve safety. For instance, the diversified portfolio that the company has, allows the use of the same/adapted technology in different areas of business.

Shareholder Structure

BHP Billiton Limited shareholder structure is divided into two main of investors, the corporate/institutional investors which hold 71% of BHP Billiton Ltd shares and private investors holding 29% of the company. The management team holds 739 566 shares as of 30 June 2017 of the company, which corresponds to around 0.2% of the total shares of the company. This means that the shares management holds do not compromise governance.

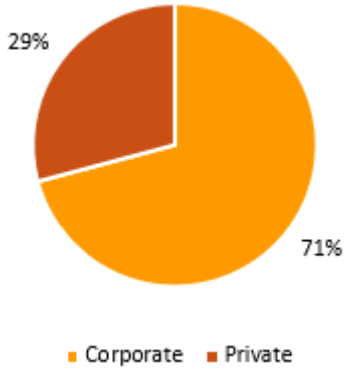
BHP Billiton Limited has one substantial shareholder that holds 5.42% of the shares of the company. A list of the twenty major shareholders is listed below.

Table 5 – Shareholders Ownership

BHP Billiton Limited	# of shares	# of shares
1. Blackrock	174 118 799	5,42%
2. Vanguard Group	705 805 984	3,29%
3. Dimensional Fund Advisers LP	53 453 354	1,66%
4. Government Pensio Investment Fund Japan	23 809 165	0,74%
5. State Street Corporation	23 408 100	0,73%
6. AMP Ltd	19 806 784	0,62%
7. Norges Bank	19 554 030	0,61%
8. Schroders PLC	15 981 417	0,50%
9. FIL Ltd	15 920 988	0,50%
10. Advance Asset Management Ltd	14 584 755	0,45%
11. Australian Foundation Investment Company	13 990 941	0,44%
12. State of California	13 786 623	0,43%
13. TIAA-CREF	9 866 500	0,31%
14. Flexshares Trust	9 818 078	0,31%
15. National Australia Bank Ltd	9 675 647	0,30%
16. FMR LLC	9 328 742	0,29%
17. Westpac Banking Corporation	8 973 751	0,28%
18. Blackrock Pensions Ltd	8 440 507	0,26%
19. Argo Investments Ltd	8 428 904	0,26%
20. Invesco Ltd	8 375 684	0,26%

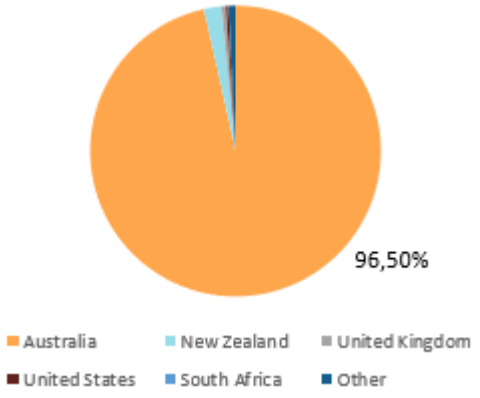
Source: Company Data

Figure 7 – Shareholder Type



Source: Company Data & Bloomberg

Figure 8 – Geographical Distribution of Shareholders



Source: Company Data

3. Management and Corporate Governance

The company follows an Anglo-American governance model composed by a Board of Directors in which the members of it constitute the four main committees: Risk & Audit Committee, Remuneration Committee, Nomination & Governance Committee and Sustainability Committee.

BoD (Board of Directors): The BoD is composed by 9 directors plus the appointment of Terry Bowen and John Mogford to the Board effective 1 October 2017, meaning that the Board will have 11 members. The non-executive member Directors are independent of management. **(see Appendix)**

Risk & Audit Committee: Consists of 4 directors and the Chairman is Lindsay Maxstead. She is responsible for the oversight and monitorization of financial reports, external and internal auditing.

Remuneration Committee: Consists of 4 directors whose Chairman is Carolyn Hewson and it oversees and monitors remuneration policy.

Nominations & Governance Committee: It is constituted by 4 directors and its Chairman is the same as the Chairman of the BoD, Ken MacKenzie. The committee oversees and monitors renewal and succession planning.

Sustainability Committee: Composed 3 directors whose Chairman is Malcom Brinded and it is responsible for the oversight and monitorization of material HSEC matters.

External Auditor: The company has KPMG as the main external auditor, but the company is going to appoint EY to votes in the next Annual General Meeting. (see Appendix)

Table 6 – BHP Board of Directors

Board of Directors	Function
Ken MacKenzie	Chairman
Andrew MacKenzie	Chief Executive Officer
Malcom Brinded	Director
Malcom Broomhead	Director
Anita Frew	Director
Carolyn Hewson	Director
Lindsay Maxsted	Director
Wayne Murdy	Director
Shriti Vadera	Senior Director

Source: Company Data

Table 7 – Executive leadership team

Executive Leadership Team	Function
Andrew MacKenzie	Chief Executive Officer
Arnoud Balhuizen	President Marketing and Supply
Peter Beaven	Chief Financial Officer
Geoff Healy	Chief External Affairs Officer
Mike Henry	President Operations, Minerals Australia
Diane Jurgens	Chief Technology Officer
Daniel Malchuk	President Operations, Minerals America
Steve Pastor	President Operations, Petroleum
Laura Tyler	Chief of Staff, Head of Geoscience
Athalie Williams	Chief People Officer

Source: Company Data

Social Responsibility

BHP Billiton Limited operates around the globe and it has a direct impact on the landscape and environment of development areas. Because of that, after the exploration of the land, the company focus on a combination of rehabilitation, ongoing management or on a transition to an alternative use when consulted with the local community.

After the Samarco dam failure on 5 November 2015, the company created the Fundação Renova which is implementing programs to restore the environment and rebuild the communities affected by the disaster. The Fundação Renova is relocating and rebuilding communities, consulting with the affected community members. The relocation process involves the identification and acquisition of land, design, and planning the urban development. In addition, compensation and financial assistance are being given to all communities affected by the dam failure, either directly or indirectly.

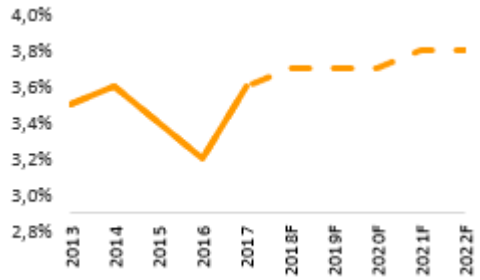
In our opinion, BHP follows a strong corporate governance model. The company ensures that shareholders have an important role in the direction it should follow. They have several fundamental rights such as the appointment and removal of directors and the auditors as mentioned above. They also have the right to reject or approve the annual business report. In addition, the fact that all the directors on the board are independent

4. Industry Overview and Competitive Position

World Economic Outlook

The Global Economic outlook is favorable. A recovery of the economic outlook is underway due to better investment, trade rates and the generally improved confidence in the markets. For the upcoming years, a growth is expected between 3.5% and 4%. Global growth is expected to be sustained in the next years. Although China is decelerating its growth, there are other countries which are having increasingly higher development and growth, especially the Emerging and Developing Economies (EMDEs) mainly due to an increase in commodity imports. Nevertheless, there are some risks related to financial stress, increased protectionism, and rising geopolitical tensions. The development of EMDEs should drive the demand for industrial metals, energy, and fertilizers.

Figure 9 – World GDP Growth



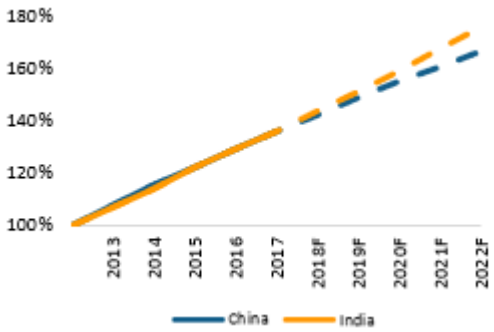
Source: IMF

China & India Outlook

Growth in China achieved 6.8% of GDP growth in 2017 and it is expected to continue to slow down even for values below 6% in 2022F, which are values not seen since 1990. China's economy performed better than expected in 2017 due to a higher than expected recovery of exports, the continued fiscal support and the effect of reforms as well as a minimum positive contribution from net trade. In addition, China increased commodity imports, enforced production and consolidated foreign demand. Despite this positive side, Chinese growth is expected to be 6.5% in 2018 and to have an average of 6.3% in the following 2 years. Long-term fundamental drivers of potential growth are expected to slow progressively as the working age population falls and the capital stock matures. Finally, the economic structure is expected to continue to shift from industry to services and growth drivers will shift to consumption from investment and exports. The latter structural change will probably induce a less volatile underlying growth rhythm in the long run. China is the largest manufacturing and exporting economy in the world and the second largest in imports, so the performance of this country is a significant factor in the global economic system. We expect an overall stagnation in the commodities market, with its values of supply and demand trending to stabilization and even to an expected decrease in the coming years (10-20 years) as China's economy shift from a commodities economy to a services economy.

In India, economic growth is projected to strengthen to above 7% with energy and metals demand rising at a similar pace. A gradual recovery due to the impact of the roll-out of Goods and Services Tax (GST) is expected. In the longer run, the GST will create a single market by boosting corporate investment, productivity, and growth with the reduction of the cost of capital equipment. In addition, real estate regulation and demonetisation of high denomination bills has been encouraging and India's short-term outlook is solid, driven by consumer demand.

Figure 10 – China and India GDP Growth



Source: IMF

Figure 11 – Contribution to growth in China

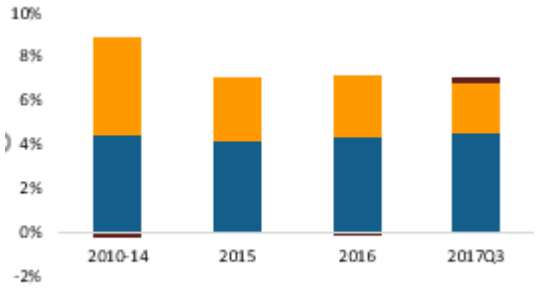
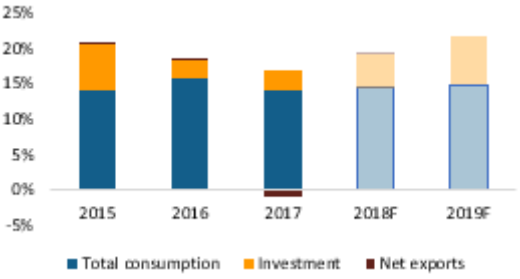


Figure 12 – Contribution to growth in India

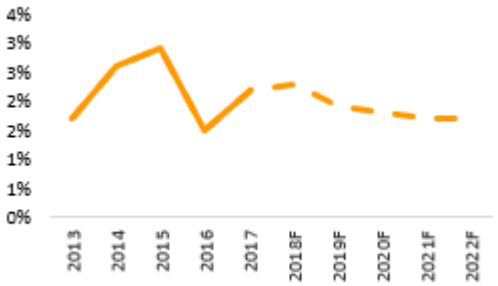


Source: India National Bureau of Statistics, OPEC

United States Outlook

Growth in the United States picked up to 2.2% in 2017 supported by the strengthening of the private investment. There is a continuation in private consumption increase and even though real income gains are modest, wage growth is moderate and the personal ratings rate fell further than expected. The medium-term outlook for the US is uncertain due to a slowdown in the automotive and housing sectors despite the spending and consumer confidence being strong, which may affect demand. Progress on growth-enhancing infrastructure spending and tax reform has been slow and monetary conditions are expected to be even more restrict. Projected protectionism policies would cut consumer purchasing power and productivity growth. U.S. growth is expected to reach 2.3% in 2018 and then it will tend to moderate and remain below 2% yearly.

Figure 13 – United States GDP Growth



Source: IMF

Australia Outlook

The economy will continue its growth at a robust pace. Business investment outside the housing and mining sectors will pick up, with exports boosted as new resource-sector capacity comes on stream. The increase in the strength of the labor market and household incomes is going to sustain private consumption and inflation and wages will pick up gradually. Australia's central bank projects to start raising the policy rate in late 2018 and the expectations of this move, together with macro-prudential measures, are helping the cool the housing market. The fiscal position is strong and the government is committed to gradually close the budget deficit. The government has prudential macro measures in place to contain risks associated with potential large house price corrections.

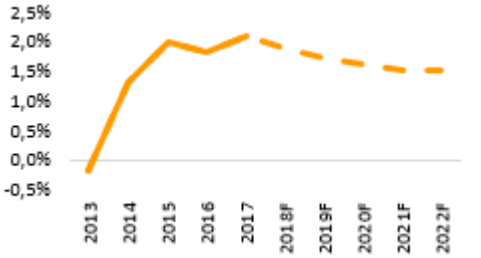
Figure 14 – Australia GDP Growth

Source: IMF

Eurozone Outlook

Europe's short-term outlook has improved, with most countries in the region now experiencing growth in domestic demand. With inflation remaining below target the target 2%, the ECB is expected to keep interest rates low and unchanged during the following year, but to gradually scale back asset purchases. While financial fragilities remain, downside risks have been reduced. In the northern regions, which are more internationally competitive, lower saving rates would boost growth and help to rebalance demand within the eurozone. In the southern part of Europe and to prevent longer run stagnation, microeconomic reform is required.

Figure 15 – Euro Zone GDP Growth



Source: IMF

Commodity Industries

The mining sector, as well as the commodities market has deep correlations with the world infrastructure, framework, and growth. The growth a country has is due to its ability to improve and develop its systems and infrastructure. As part of this, commodities are essential to this growth as they affect the Housing, Military and Manufacturing sectors of the country's economy. Nevertheless, it is important to have a deep understanding of each of them to understand and to know their supply and demand drivers as well as their price drivers.

Figure 16 – Inflation Rate Euro Zone

Source: IMF

Iron Ore Segment

To be considered iron ore, the concentration of iron must range between 48.2% and 72.4%, which means that it needs to be highly concentrated to be economically viable, even though it is the fourth most abundant element in the world. In 2017 and in the previous years, China was the main driver of iron ore demand, reaching 67.8% of world market demand in that year. 98% of world mined iron ore is used in the production of Steel which is a major component used in infrastructures, property, automobile, machines and weapons industries.

China is restricting environment regulation on mining operations to improve air quality and as such, the supply for steel is decreasing. Steel demand is highly correlated with GDP, unemployment and interest rates, which directly affects the economy to a higher demand for high concentration iron ore is expected. The main drivers of iron ore price are steel demand, Chinese demand, world supply, steel scrap supplies, and input prices.

Steel scrap supplies are a substitute on the production of steel from mined iron ore. This means that a drop of 58% was registered between 2013 and 2015 from an average of 135.89 US$/mt to 57.2US$/mt on a CAGR of -35.12%. The iron ore price is expected to remain between 40US$/mt and 60US$/mt for the next 5 years.

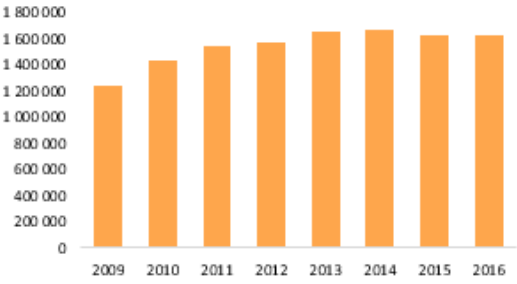
There is an overall negative expected outlook for the iron ore market as suggested by a steadier worldwide demand in the last years mostly driven by a negative outlook in China manufacturing market. Even though there is still a positive 2,12% CAGR for Crude Steel production when we consider the period from 2007-2016, the last 3 years present a decreasing CAGR of -0,83%. When we look at China's GDP, the absolute values of the combination of Housing, Mining and Manufacturing has been decreasing in the past years at a CAGR of -4,70%, also visible from its decrease as a percentage of GDP from 47% in 2013 and 2014 to 43% in 2016.

The market for iron ore has four main companies that are price makers for this commodity, amongst them, BHP. The barriers to the entry of new competitors in this market are high but a rise in the price of the commodity can attract new players into the market, mainly due to the exploration of new projects with lower production costs, decreasing the power of the big four (BHP, VALE, FMG, and RIO). This market has a very important characteristic: Low degree of product differentiation regarding the concentration of Fe in the ore. The highest the concentration, the higher the premium that is paid because of its higher productivity when manufacturing steel which is the main use of iron ore. Although there is a higher market for premium ores, there is a substitution effect in inferior concentration ores, if the price pays off.

Figure 17 – Iron Ore Prices

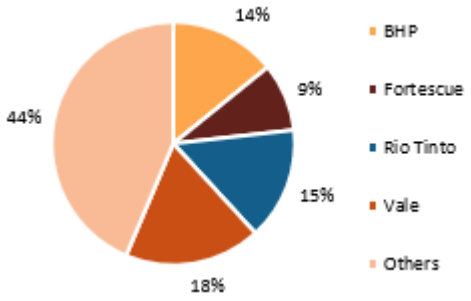
Source: Bloomberg

Figure 18 – Production of Crude Steel ('000 mt)



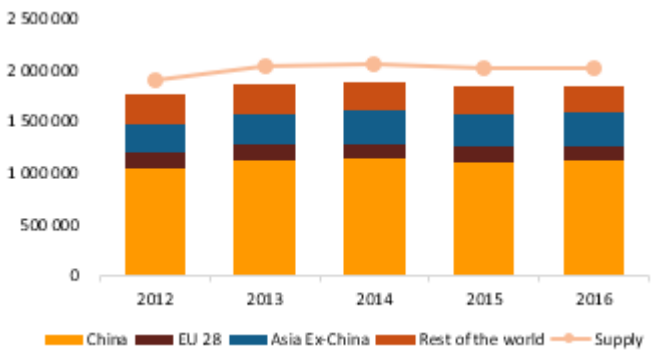
Source: Bloomberg

Figure 19 – Iron Ore Market Share 2017



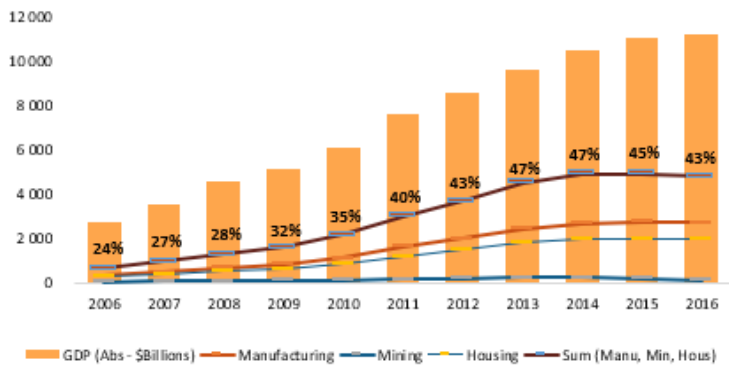
Source: Bloomberg

Figure 21 –World Demand vs Supply ('000 mt)



Source: Bloomberg

Figure 20 – Manufacturing, Mining and Housing as a % of DGP - China



Source: Bloomberg

The perception of the slowdown of China's economy reflects on the demand for iron ore having a CAGR of -0.13% in the last 3 years, reflecting a turn in the industry. The Supply, on the other hand, is expected to decrease while high-cost producers leave the market, by the end of 2022F mainly by the ramp-up of recent low-cost exploration projects in Brazil and Australia. For 2017 the 62%-concentrated Iron Ore contract with delivery in had a yearly average price of US$ 68,45, reaching US$ 57.00 by 2018F and US$ 50.80 at the end of the decade. For the beginning of the following decade, prices are expected to reach US$ 51.70.

Figure 22 – Copper Prices ($/mt)

Source: Bloomberg

Copper Segment

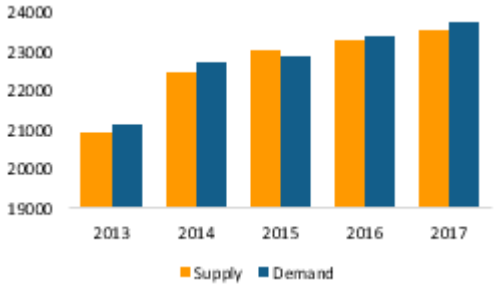
Copper is one of the most widely used metals found in the world. It can be obtained through mines and its supply comes directly from it and from scrapped and reutilized copper products. Both supply and demand followed an upward movement this last years with a CAGR of approximately 2.9% (Figure 23). Most of the copper demand derives from 5 main industries: building and equipment accounting 30% (Figure 24) each, Infrastructure accounting for 15%, Transportation for 13% and the Industrial sector accounting for 12%.

The main drivers of copper price are the emerging markets because infrastructure represents such an important part of demand, being China and India the main consumers of this commodity (Figure 25). In addition, the US Housing Market uses copper in everything they produce, therefore, factors that affect US housing demand like mortgage rates, US GDP and demographics play a key role in the copper industry. Moreover, supply disruptions like political or environmental issues have a big impact in copper prices since a large portion of copper is produced in South America which is known by the nationalization of the mining industry, meaning that the local governments have a big influence in the commodity price. Finally, the substitution effect can lead to lower demand, for instance, aluminum can be used instead of copper for certain and specific products.

The copper prices have been falling up until 2016 to 4868US$/mt (Figure 22). In 2017 there was a small rise in price to 6,050US$/mt and it is expected to continue its rising at a modest CAGR of 1.13%.

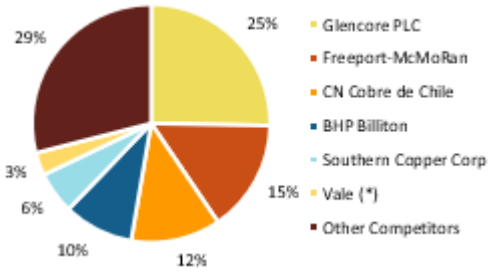
BHP Billiton represents 10% of total copper production in the world being the fifth major producer of this commodity. This means that BHP production and performance directly affects the market and its stability (Figure 24)

Figure 23 – Copper Demand and Supply ('000 mt)



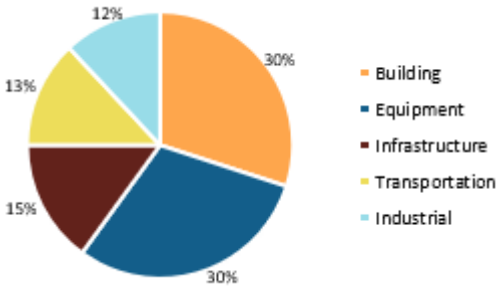
Source: Bloomberg

Figure 24 – Copper Market Share



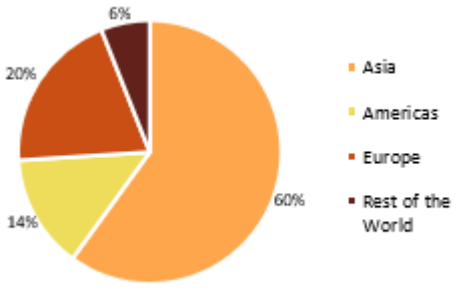
Source: Bloomberg

Figure 26 – Copper Demand by Sector



Source: BP Statistical Review of World Energy

Figure 25 – Copper Demand by Region



Source: BP Statistical Review of World Energy

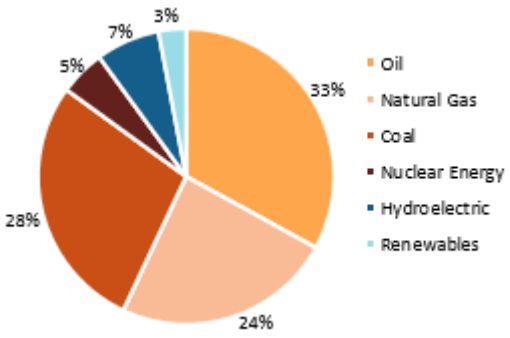
Coal Segment

Coal has been one of the most used energy sources throughout history and still nowadays accounts for 28% of energy consumption worldwide. Coal can be divided into two main categories: Thermal and Coke Coal. The one needed for the steel industry (the majority of BHP's sales) is coke or metallurgical coal because it is more refined and purer. Coal has four main uses: Power generation, Steel Industry, Miscellaneous industries such as aluminum refineries or paper manufacturers and Specialty products like filters or resins. China is the main consumer of Coal being responsible for 51% of the commodity consumption (Figure 27). After China, Asia Ex-China accounts for 23% of the consumption with Europe only accounting for 12% of the total. The downfall of the supply and demand over the last years is due to China's policies about the environment and green production processes (Figure 28).

The main drivers of coal prices are emerging market demand like electricity consumption in developing countries, the substitution effect because as technologies improve, cost competitive substitutes for coal may emerge. Moreover, there are environmental concerns relating to the footprint emitted by coal and innovative technologies may affect prices. Finally, transportation costs are also the main driver of coal price because these costs can exceed the coal price at the mine.

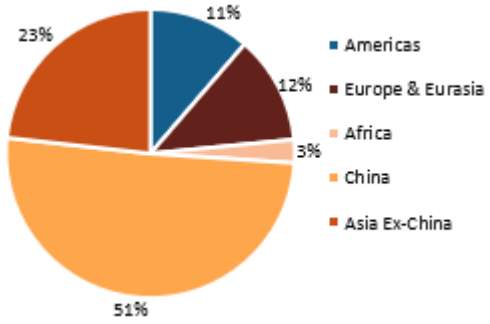
The market for coal is extremely hard to quantify in terms of market share because every major country has its own production and consumption of the commodity due to the fact it is readily more available. Some sources place BHP amongst the five major producers of this commodity but it extremely difficult to assess the accuracy of this information. The reason behind this lack of accuracy is because companies controlled by the governments and private companies can have higher production in this commodity than public companies. As it can be seen in Figure 30, the US is the country with the highest reserves of coal with 22.1%, with China right after it with 21.4%. Russia, Australia, and India fill up the top 5 of countries with the highest proven reserves of coal with 14.1%, 12.7% and 8.3% respectively. As it can be seen, the high-consumer commodities countries are in this list, which means its imports of this commodity are more scarce than other commodities in which the countries are not as abundant in reserves as coal.

Figure 27 – Energy Consumption 2017



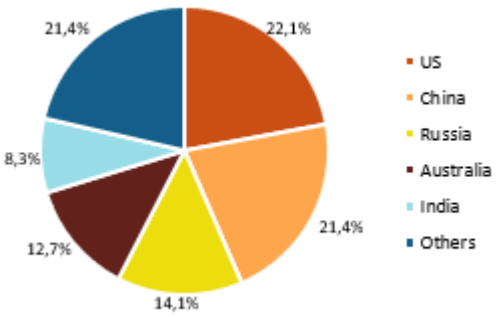
Source: BP Statistical Review of World Energy

Figure 28 – Coal Consumption



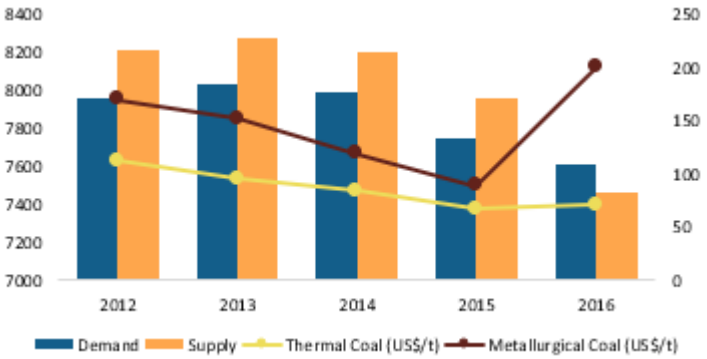
Source: BP Statistical Review of World Energy

Figure 30 – Proven Reserves of Coal



Source: BP Statistical Review of World Energy

Figure 29 – Demand, Supply and Prices of Coal



Source: BP Statistical Review of World Energy

Petroleum Segment

Oil

Petroleum is the worlds most used commodity. It creates fuel for cars, trains and other motorized vehicles, but this is only less than half of the use that oil has. In fact, less than half of a barrel is consumed for fuel and the rest of it is used to make consumer goods such as computers and synthetic textiles. There are many types of oil and the differences amongst are in density and Sulphur content (Table 4).

The distinct types of it are West Texas Intermediate (WTI), Brent Crude Oil, Dubai Crude, OPEC Reference Basket, Bonny Light and Urals. Each is different in its characteristics making them particularly valuable for certain specific industries.

In Figure 32 can be seen a selection of oil prices. The positive correlation is evident because oil is known as a "fungible" commodity which means that specific grades of oil are identical for oil trade purposes, and the downward path has an average CAGR of -20.27%. The main drivers of oil prices are supply and demand and the facility that exists in the movement of oil limits the influence of one or another producer in the global market. In addition, new types of oil are emerging pressing down the oil prices however, the extraction costs of the former mean these oils are only competitive in a lower supply and therefore higher price environment. Finally, higher expected demand is expected due to the increasing world population, increased energy consumption in developing countries and growth in the petrochemical, aviation and road transportation. In what concerns supply and demand, it is possible to verify that supply is always higher than demand at a CAGR of 1.69% and 1.58% respectively Figure 31).

Oil consumption (Figure 32) in 2017 is characterized by a strong consumption of Asia Pacific with 34.8% and North America with 24.7%. However, the highest consumption country is, in fact, the US with 20.6% of total consumption followed by China with 12.%.

In Figure 34 can be seen the barrel cost breakdown by gross taxes, capital spending, production costs and Administrative and transportation costs as of the 9th of April 2018 per country. This shows us that the U.K. has the lowest profit per barrel at $23.9, with Saudi Arabia being the leader in profit per barrel with over $59.

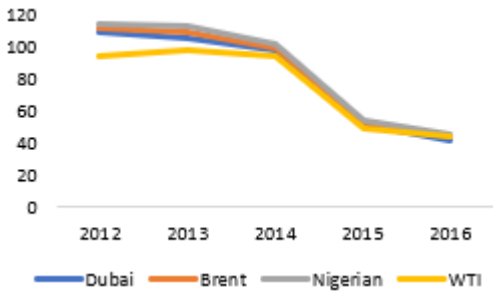
BHP operates more than half of the operations it maintains in oil. The other percentage comes mainly from British Petroleum. In what concerns the position of the company in the market, BHP is a price taker which is quite different from all the previous segments. Even though the company does not affect directly the market, it has direct relations with one of the most powerful companies in the world (BP) and proof of that comes from ownership in some explorations of BP and the latter operating some that BHP has interest on.

Table 8 – Oil Density and Sulphur content by Region

Oil	Density	Sulphur content
WTI	Light	Low
Brent	Light	Medium
Dubai	Heavy	High
OPEC	Medium	-
Bonny	Light	Low/Medium
Urals	Heavy	-

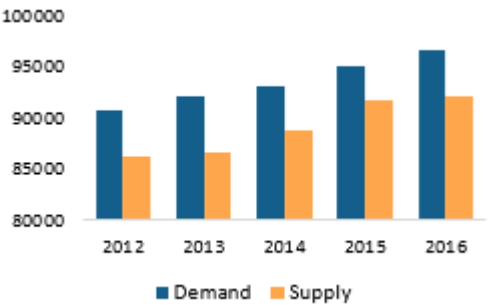
Source: BP Statistical Review of World Energy, OPEC

Figure 32 –Oil prices ($/barrel)



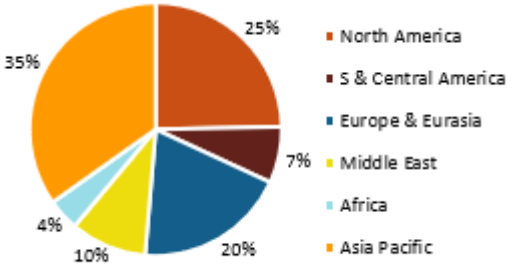
Source: Bloomberg

Figure 31 – Supply and Demand of Oil ('000 barrels)



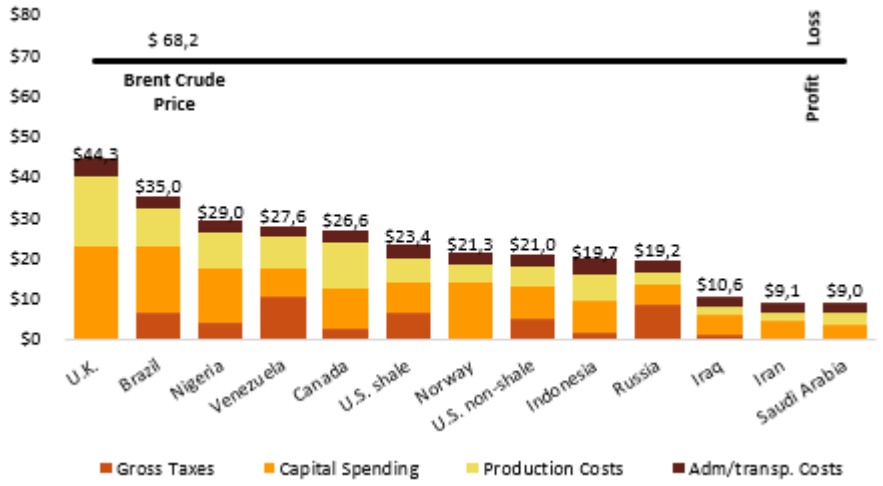
Source: BP Statistical Review of World Energy, OPEC

Figure 33 – Oil Consumption 2017



Source: BP Statistical Review of World Energy, OPEC

Figure 35 - Cost of a barrel of Oil as of April 9th, 2018



Source: Wall Street Journal

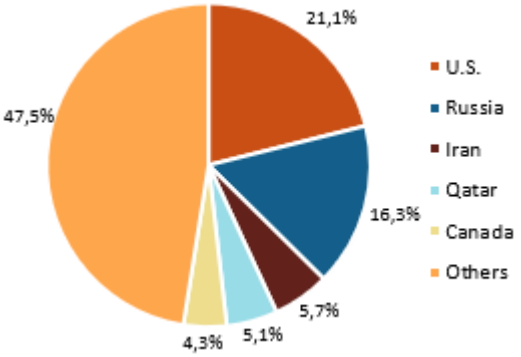
Natural Gas

Natural gas is mainly composed of methane which is created like oil and is usually found with oil, so it is natural that a company that sells oil also does business in natural gas. Although readily more available than oil, natural gas still has its niches in specific areas of the world, mainly in 3 countries (Iran, Russia, and Qatar) which hold almost 50% of the world's reserves (Figure 35). Even though the U.S. is not the country with the highest reserves, it is the country with more production of natural gas (Figure 36). The fact that the U.S. reserves do not look promising for the future, it may imply the fact that they might be preparing to import more natural gas, further increasing the demand for the commodity. Demand and Supply for this commodity have been increasing at a steady CAGR of around 1.5% for the last 5 years and the prospects for its continuation of growth are good (Figure 37).

The main drivers for the price of this commodity are its production, for instance, in periods of high production in the U.S., the prices for gas decreased and in periods with lower production, the prices increased significantly. The weather is another crucial driver of natural gas because hurricanes and storms can have an impact on its production having direct implications on the price. Another driver is the economic growth because if the economy grows, then the industrial and the commercial sectors will grow, implying greater consumption of the commodity, thus affecting its price. The supplies in storage can also affect the price since in periods of low demand, the stored gas is enough to satisfy the demand and it absorbs the production, preventing the prices from falling too far. At last, the threat of substitutes is a driver because it competes directly with other main sources of energy from renewables to fossil fuels.

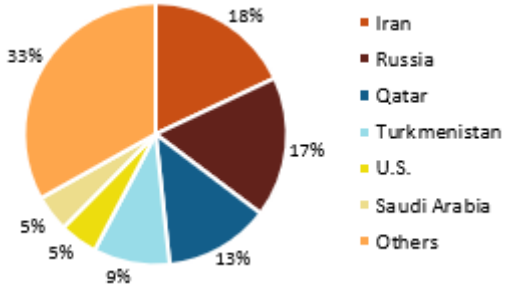
In competitive positioning, natural gas is like oil. The company is a price taker, but it has strong relations with one of the biggest in the market (BP). This comes from the fact that usually gas is found in the layer of rock above oil, which means that the same wells that extract oil, extract gas resulting on the same relations with BP than in oil.

Figure 34 – Production of Gas



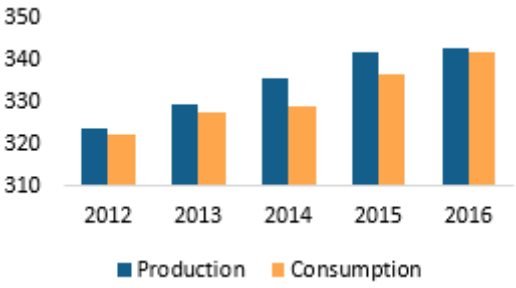
Source: BP Statistical Review of World Energy, OPEC

Figure 36 – Proven Gas Reserves



Source: BP Statistical Review of World Energy, OPEC

Figure 37 – Demand and Supply of Gas

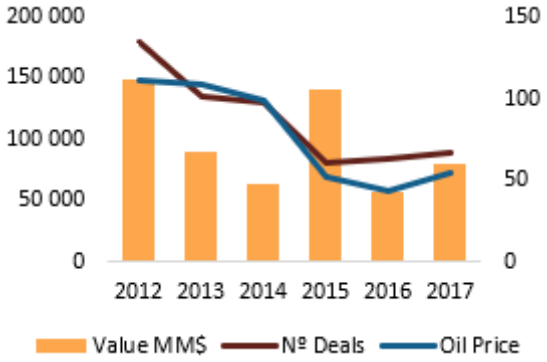


Source: BP Statistical Review of World Energy, OPEC

M&A Activity in the Petroleum industry

At it can be seen in Figure 38, oil price is positively correlated with the M&A existent and the volatility on it has a negative impact on the latter activity. This can be an indicator when trying to foresee the oil price. If there is a crescendo in the M&A deals this can indicate a surge in the oil price and vice-versa.

Figure 38 – M&A Activity in the Petroleum Industry



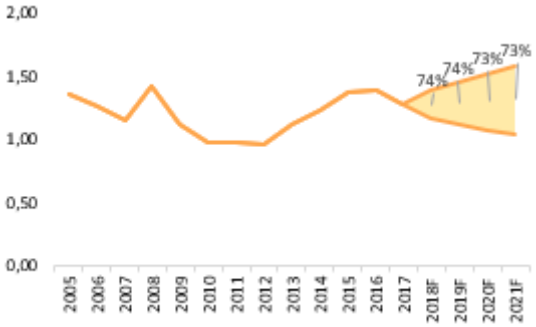
Source: Bloomberg

Exchange rates

BHP is highly exposed to exchange rates since it affects purchases, sales, COGS, Freight rates and Debt. Costs of locally sourced equipment and operating costs are influenced by fluctuation in this 2 specific exchange rates USD/AUD and USD/CLP. Most of the company sales are in USD, so a surplus in this currency is maintained to try to provide some reduction in the relative exposure to this foreign exchange.

Looking in depth to the 2 main currencies the company works with, the USD/AUD (Figure 39) is much more stable than USD/CLP (Figure 40), due to government issues in Chile and both economies growth. The USD/AUD has been stable throughout the last 13 years with estimates for this exchange to be between the last year's numbers, around 1.0~2 AUD to buy 1 USD. However, a disparity in volatility can be seen when one looks at the exchange rate between USD/CLP. The company is much more exposed to this currency than to AUD, with the CLP estimates ranging between 500~750 CLP to buy 1 USD in 2021F.

Figure 39 – Interest Rate USD/AUD



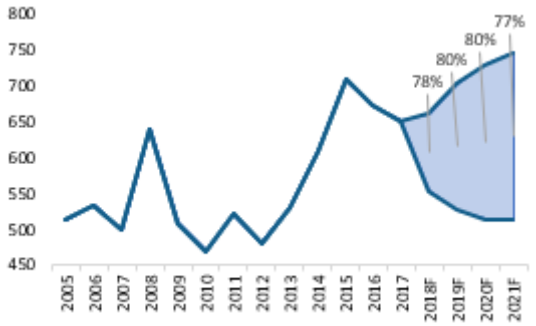
Source: Bloomberg

Freight rates

Geographically, Australia is more distant from Europe than China, making the freight rates for the latter far cheaper than for Europe with an average difference of 6$/mt. As it can be seen in Figure 41, freight rates can evidently change the price paid by the importing country depending on its location. China buyers pay far fewer freight rates than European buyers. This can lead Europe to buy the commodities, for instance, in Brazil where the freight rates are minor than from Australia.

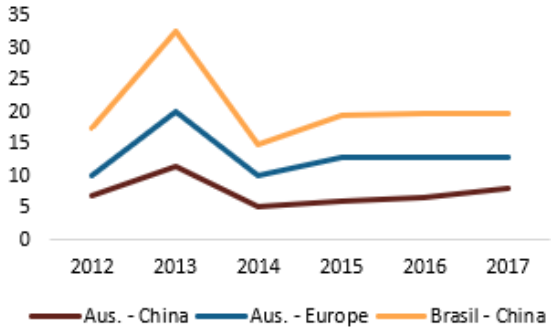
In what concerns oil, the company mainly sell this commodity and gas directly to the country where it produces (the U.S. and Australia), resulting in the freight rates either being sunk costs (pipelines) or simply non-existent, where the buyer goes to the source to get its goods.

Figure 40 – Interest Rate USD/CLP



Source: Bloomberg

Figure 41 – Freight Rates in the main routes



Source: Bloomberg

Porter 5 forces

The threat of new entrants is also low due to high barriers of entry, as the industry is very capital intensive and cost-competitive. Time is needed for exploration and building up the know-how for a cost-efficient production.

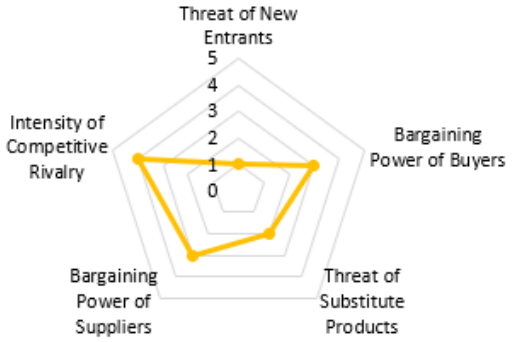
The bargaining power of suppliers is medium. Freight rates and oil prices have been declining because of increasing supply and price wars in recent years, even though both industries have big players that can influence the prices.

The bargaining power of buyers is low to medium. The steel industry has a few major players which are mainly located in China and if they arrange some deals, they can influence the price of the commodities.

The threat of substitute products is low to medium with new supply coming from lower quality iron ore (pig iron) and from scrap.

The industry itself has a medium to high intensity of competitive rivalry with the biggest players always searching for ways to reduce costs, to have higher outputs and to gain market share.

Figure 42 – Porter 5 forces



Source: The Author

Table 9 – SWOT Analysis

Strengths	Weaknesses
Strong market position	Intervention of governments in operations
Strong financial performance	Past accidents
Diversified sources of revenue	Corporate communication
Internationally known	Trading in volatile markets
Social responsibility program	
Big employees base	
Opportunities	**Threats**
Possibility of acquiring new companies	Reduction of exports in some countries
Expansion of operations	Intense competition
Contracts with other global companies	Costs
Innovations in marketing	Political threats

Source: The Author

5. Investment Summary

The final recommendation for BHP Billiton stands for HOLD. This recommendation derives from our target price of $50.39/sh for 2019HYE with a low to medium risk assessment and an upside potential of 11.26% from October 29th, 2018.

The exposure to markets with high growth potential (especially China and India) is going to drive BHP's revenues for the upcoming years. Demand is expected to remain at its current growth value with a slight decline in China, yet not affecting the company due to positive prospects in the Indian market. The sale of the onshore US assets increased the company's Cash and cash equivalents because it is cash sale and BHP did not clarify plans for the excess cash.

It is expected that BHP returns to 2015FY profits, before the Samarco dam failure, at the beginning of the next financial year. We expect a net income of $7.5 bn by 2019HYE, although adjusting to $7.0bn by 2023HYE as a consequence of expected commodity prices instability. The expected synergies and investment in maintenance is expected to increase EBITDA margins for the forecast period. These synergies result in a higher EBITDA in 2023HYE of $22,73bn +3.4% than in 2019HYE $21,99bn. The EBITDA margin is expected to increase +164bps from 2018FY to 35.44% 2019HYE, decreasing right after that due to commodities price instability and a slight decrease in the same.

Valuation methods

Our final price target of $50.39/sh was computed using the Discounted Cash Flow (DCF) method through the Free Cash Flow to the Firm (FCFF. However, we still used two other methodologies: Dividend Discount Model and the Multiples Valuation.

EBITDA and Net Operating Cash Flows to be main KPI's

We assume the main costs, between COGS and Selling, General and Administrative, as last 4 years average except when we realized the presence of synergies in the COGS. In the case of SG&A we saw an increase from 2018FY to 2019HYE (22.26% of revenues to 27.64% respectively), mainly because of reversals in 2018FY of an impairment of intangibles due to the disposal of Onshore US assets. We predict Net Operating Cash flows of $29.04bn in 2019HYE due to the cash retained from the disposal. Nevertheless, by 2023HYE it is expected the Net operating cash flows to stabilize at $17.95bn.

Debt

Debt is expected to be stable around 2018FY figures as the company already reached its target net debt levels (between $10,0bn and $15,0bn) and because the majority of the debt that BHP has is of long-term. The short-term debt is expected to slightly increase due to ongoing projects and the need to finance them. In the perpetual period, the company expects to maintain a stable leverage.

Investment Risks

BHP is subject to a variety of risks, from economic or market risks to operational or environmental risks and the investor should be aware of these risks. To assess these risks, we performed a sensibility analysis to give a better understanding of the most important factors that affect the final DCF valuation.

Table 10 -Valuation Summary

Valuation	Price Target	Upside Potential
DCF	50,39	11,26%
DCF*	47,03	5,08%
DDM	41,03	-6,61%
Multiples (Avg)	45,66	2,47%

Source: The Author, Company Data

Figure 43 – Forecasted EBITDA ($Bn)

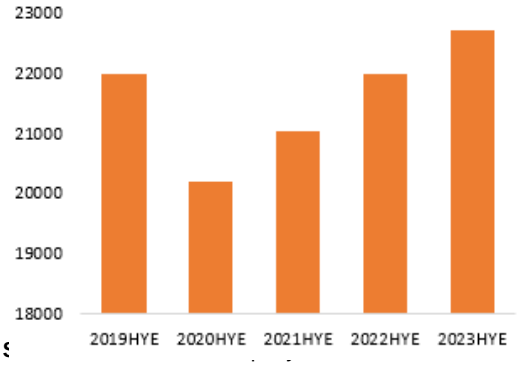
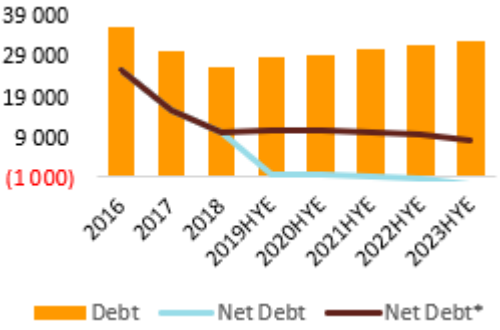


Figure 44 – Forecasted Debt and Net Debt ($Bn)



Source: The Author, Company Data
*Net Debt assuming that the cash received on the sale of Onshire US assets is fully distributed

6. Valuation

We use the FCFF as the main valuation methodology to estimate the fundamental value of BHP. This method of valuation was used because it was the one that gives us the best estimation of the future price of the company given that our objective was the focus on long-term value for the investors and stable leverage rations in the long-run. This also highlights the characteristics of the company, its opportunities, its threats and its business model overall. Nevertheless, we also computed two additional models, the Dividend Discount Model and the Market Multiples. Because of this, our valuation is very sensitive to several factors detailed below. The prices of all commodities were established throughout a series of researches. For some commodities we used the World Bank Forecasts, whilst for others it was used, for instance, KPMG's forecasts. For all however, it was taken into account the emergent stagnation of the Chinese market.

Revenues

To forecast revenues, we split the company into four main sources of revenues, being Iron Ore, Petroleum, Coal and Copper by EBITDA contribution as of 2018HYE.

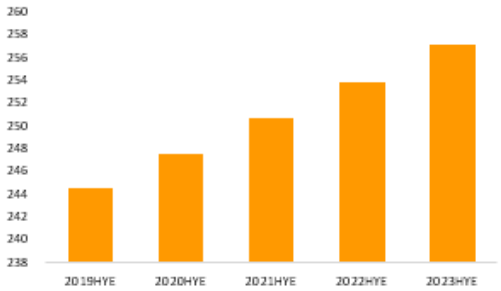
Iron Ore

For Iron Ore, we used a top-down approach due to the fact the company is a major player in this market accounting for 14% of the total production of this commodity when considering only public listed companies as of 2017 YE. As total Iron Ore produced worldwide is much higher, the total production by the company accounts only for 8.35% as of 2017 YE, being nonetheless the second highest producer of it falling only short to Vale SA. There is an overall optimism in this market and analysts and experts expect an annual growth of 1.2% on the production of the commodity. The company predicts of strength its efforts in growing in this market alongside with its successful negotiations with the Australian harbor responsible for the shipping of an additional 10 thousand tons of material to be exported. A stable demand, despite the evident slowdown of China's consumption which is offset by India's growth as a forecasted GDP growth of 5.8% and 8.2% respectively in five years suggests, we expected a modest growth in the market share of the company**.** With the forecasted plans, the demand and considering all the other factors we expected 244 dry metric tons of material to be sold in 2019HYE up to 257 dry metric tons by 2023HYE. We reserved a percentage for any extraordinary item that might occur from adverse weather conditions to strikes. We used the World Bank forecasted prices for all the commodities as they are already a consensus between analysts and experts in the commodity market. We predict the price of Iron Or to be 60$/dmt in 2019HYE down to 57.80$/dmt by 2023HYE.

Copper

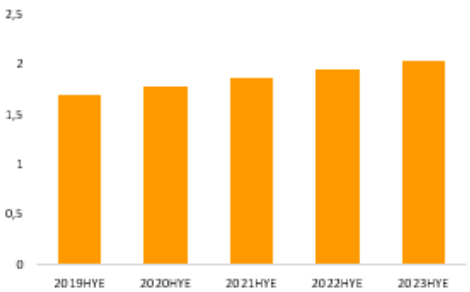
For Copper, we used the same approach as for Iron Ore. We used a top-down approach and adjusted the total market share of the company from a market only accounting for public companies to an overall market. India is expecting a huge growth in the consumption of this asset as it has already been seen in the last few years and as such and alongside with analysts and World Bank predictions we assume an overall growth in the production of Copper of 3.7% yearly, starting

Figure 45 – Iron Ore Forecasted production (mm tons)*



Source: The Author, Company Data
*Top-down Approach (Appendix 6)

Figure 46 – Copper Forecasted Production (mm tons)*



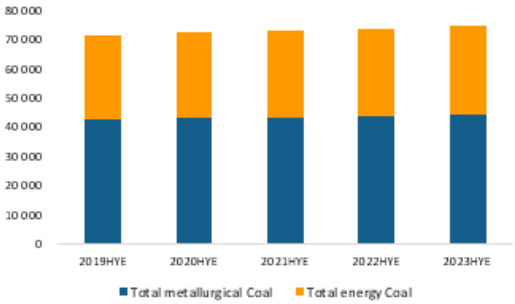
Source: The Author, Company Data
*Top-down Approach (Appendix 6)

in 2019. Given the above, the company is expected to produce around 1.618 million tons in 2019HYE up to 2.040 million tons in 2023HYE. A small percentage is reserved for extraordinary items (1% of total Copper sales) and the World Bank forecast prices used are from 6816$/mt to 6883$/mt in 2019HYE and 2023HYE respectively.

Coal

For Coal, we used a bottom-up approach due to the fact the company is no longer a major player in the world market for this commodity as it is for the above two. As coal is more abundant in the world, the countries that have it within their borders exploit it and use it. As such, the macro evaluation of the coal market is extremely difficult as the public companies do not give a clear image of the global market. Overall, we expect a recovery of the coal mines with the new exploration found in the Pilbara region as well as the permits accept by the Australian government to increase exploration and extraction of the mineral by BHP. In our valuation, we divided the coal in metallurgical and energy coal because they are used for different purposes and have different yields in the market. In our forecasts, we predict a growth of 1% annually in the period studied with the total coal sold returning close to 2016 values. As per the yields used, we also made the approach separately: for metallurgical coal we used the forecasted prices from KPMG report on 2017YE metallurgical coal, which returns a 2019HYE of 160$/mt and 130$/mt by the end of 2023. For energy coal, we used World Bank assumptions which are already adjusted for China's slowdown. Even though it is expected that India is going to offset the lack of demand from China we still expect a decrease in the price of energy coal from 75$/mt in 2019HYE to 63.50$/mt in 2023HYE.

Figure 47 – Coal Forecasted Production ('000 tons)*

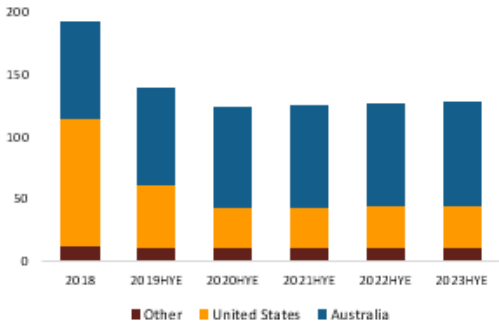


Source: The Author, Company Data
*Bottom-up Approach (Appendix 6)

Petroleum

For the last main commodity sold by BHP, we also used a bottom-up approach because the company is not a major player in this market, even though they own wells that are operated by BP (British Petroleum – a major player in this market) and vice-versa. In 2018FY the company announced a big Onshore US sale to BP to reduce their risk and to eliminate what was a bad investment at the time yielding year after year of losses because of high values of expenses related to these assets. In this segment, we divided the production in Crude Oil and concentrate, Natural Gas and Natural Gas Liquids (NGL). As the sell of the onshore assets has an impact on each of the explored products we did an extensive decomposition and forecast of each product by region accounting for the fact that the deal of the sale is done in October 2018 which means that the company still produces for the first fiscal quarter of 2019FY. Because of that, we reduced 75% of the expected loss in production in 2019HYE and the remaining 25% in 2020HYE. Overall, and accordingly with the company disclosures of proved reserves we expect an increase in the overall production as disclosed although given the sale of Onshore US assets the production will decline from 192.4 million Boe in 2018FY to 139.7 in 2019HYE, 123.3 in 2020HYE and by the end of 2023HYE we expect a total production of 128.6 million Boe for the total segment. As for expected prices in this segment, we expect an increase (CAGR 0.69%) in the period for Crude Oil and concentrate, a small increase in the forecasted prices for NGL (CAGR 2.34%) and for Natural Gas it is expected also a small increase (CAGR 4.23%). As the time passes, we expect an overall increase in the price of oil since it is a non-renewable commodity and its use and scarcity adjusts supply and demand daily. As it gets more scarce, we expect an increase in price.

Figure 48 – Petroleum Forecasted Production (mm boe)*



Source: The Author, Company Data
*Bottom-up Approach (Appendix 6)

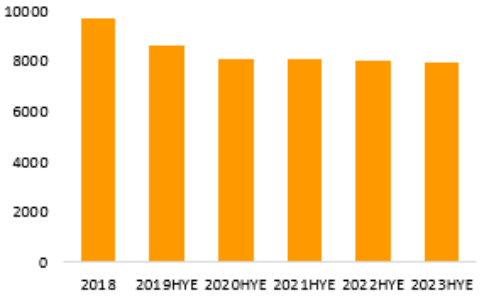
Overall, we expect an increase in revenues always adjusting for any slowdown in China's demand and for exceptional items that can occur every day, especially where the company has open pit mines.

Main Costs

To project the costs associated with the production of the commodities we looked at the company globally, because BHP Billiton does not disclose the costs by commodity. For that, we accounted for the impact on direct COGS of the sale of Onshore US assets and reduced this value by 2000M$ in 2019HYE and by 500M$ by 2020HYE due to the sale happening in October 2018. Nevertheless, we expect a decrease in the COGS due to higher expense accounted for maintenance in CAPEX, as it is predicted by the company. After analyzing the industry one can conclude that the company has an advantage in the costs compared with most of the companies in the market. COGS are expected to be 7641M$ by 2019HYE and to decrease to 6996M$ by 2023HYE. Other expenses are Selling, General and Administrative (Operating Expenses) where we account all the other expenses related to the sale of the product amongst others. In this case, we expect an increase in these expenses mainly due to external services from 11,224M$ in 2019HYE to 11,889M$ in 2023HYE because of completion of projects in which BHP Billiton is not the operator of the mine and must contract externally.

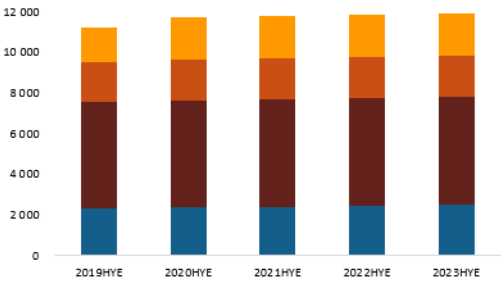
Furthermore, we expect freight and transportation to increase from 2,328M$ in 2019HYE to 2,471M$ by 2023HYE because of higher port authorization in Australia harbor and the expected increase in oil prices. In what concerns external services one can expect a decrease in the same not only due to the Onshore US assets sale but also to the company strategy to reduce its external dependency, however, this will still account for 12.78% of revenues at a level of 5,191M$ in 2019HYE and 12.91% of revenues by 2023HYE.

Figure 49 – Cost of Goods Sold ($Bn)



Source: The Author, Company Data

Figure 50 – Main Costs (Ex-COGS) ($Bn)

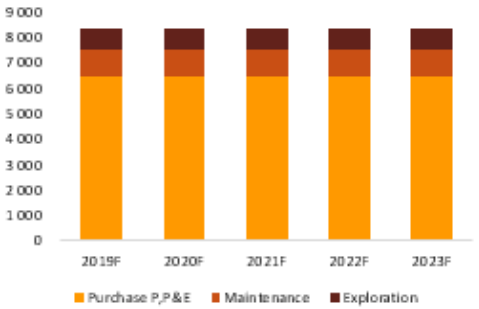


Source: The Author, Company Data

CAPEX, D&A, and Impairment

BHP Billiton plans for CAPEX are to be below $8,0M annually. As such and based on the company plans and projects to develop, we estimate that the company will have a CAPEX of $7,5M in 2019HYE, with an extra Expenditure for exploration of $0.9M in the forecasted period. This is due to the need for finishing ongoing projects and to increase efficiency in the already established mines and sites. In addition, from the $7,5M, we also reserved $1,0M annually of the above for maintenance of existing machinery to create synergies mainly in Australia.

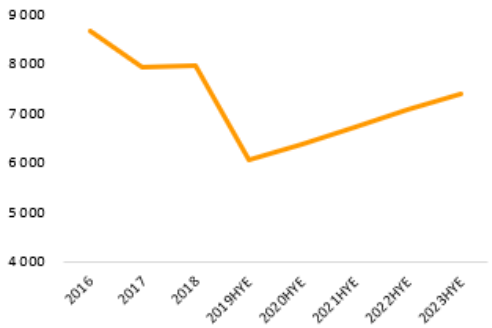
Figure 51 – Capex Breakdown



Source: The Author, Company Data

For D&A value, we used the same percentage as for D&A for Property, Plant, and Equipment for 2018FY. The combination of Capex with the percentage used to forecast D&A results in the decrease of the total amount of Net Book Value of Property, Plant, and Equipment. We do not expect any further permanent reduction in any of the company's Property, Plant and equipment, as such we made impairments as of 2018FY.

Figure 52 – Yearly D&A



Source: The Author, Company Data

Debt Strategy

As part of BHP's strategy for Debt, the company aims to keep net debt between $10 Billion and $15 Billion throughout its life. This is to maintain the creditor's confidence and the company rating in the main

credit agencies as well as to control the cyclicality of its operating cash flows. We expect a slight growth on debt from 2018FY up to 2023HYE (from 23.93% to 26.34% respectively of total assets) due to an increase in Capex mainly because of investment BHP expects to increase synergies. Refer to figure 44.

WACC Assumptions

For discounting the FCFF we used the WACC method. Our initial rate for 2019HYE is 5.74%, decreasing to 5.67% in 2023HYE. On terminal value, we assume that the company will have 70% of equity to 30% of the debt

For beta, it was done a correlation between the 200 biggest mining companies and the S&P 500 index. It was used 60 monthly observations throughout the last 5 years.

We used as risk-free rate 10-year government bond from Australia since the company is based there and we expect a terminal value of 1.50%. For BHP we used an industry risk premium because the company has a sensitivity to how the industry is operating even though, BHP is a major player in the market. For the cost of debt, we used the 10-year bonds the company has in the market that have a value of 3.25%.

Although we see a slight decrease in the weight of equity when compared with the weight of debt, one can expect an average 70% as the weight of equity and 30% respectively as the weight of debt for the terminal value. This is due to the fact that the company wants to invest heavily in maintenance and in finishing its pending projects, increasing consequently the Capex.

We reached a low WACC due to the considered low Market Risk Premium. Even though, the company is subject to high risk in the market, the company's portfolio diversity and its hedging strategies offset a more riskier market.

Table 11 – WACC Assumptions

Risk free rate (Rf)	1,50%
Industry risk premium (IRP)	0,98%
Market risk premium (MRP)	6,00%
Beta (β)	1,18
Cost of equity	7,79%
Cost of debt	3,25%
Marginal Tax Rate	34,00%
After-tax cost of debt	2,15%
Weight of equity	70,00%
Weight of debt	30,00%
WACC	5,87%

Source: The Author

Terminal Value Assumptions

Terminal value extremely impacts our valuation. Using the DCF approach the terminal value accounts for 80.52% of our enterprise value. As per the growth rate used we used an overview of the growth rate for the industry as well as some peers expected growth rates and adjusted for the fact that BHP Billiton is already a matured company a "cash cow" in the BCG matrix which means that has high and stable earnings with high and stable cash flows, high market share and relatively low market growth rate and company as whole. Therefore, the growth rate used is 1.50%. In the terminal period, it was used the net debt, however there is no consensus in the market on what is the most appropriate item to use.

Table 12 – Sensitivity Analysis to Changes in Payout Ratio

Change in Payout Ratio				
45%	50%	55%	60%	65%
38,36	41,03	43,69	46,36	49,03
-12,95%	-6,61%	-1,13%	3,68%	7,92%

Source: The Author

Dividend Discount Model

Another absolute valuation methodology was used: the Dividend Discount Model. This model was used to access BHP intrinsic value and compare it with our DCF final price.

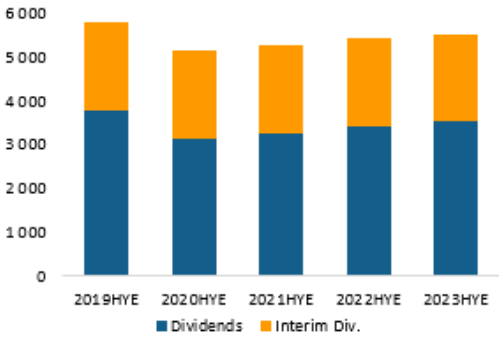
Using this approach we have a lower valuation of $41.03/sh with a downside potential of -6.61%.

BHP has a clear policy of paying dividends. This policy states that at least 50% of the net income is attributable to its shareholders. Therefore, dividends are linked to the company's earnings.

The company always pays an interim dividend which we expect to be $2bn every year due to the expected stability of BHP.

Historically, BHP always paid a dividend to its shareholders. Even when the company had negative EPS of $1.2/sh due to Samarco dam failure, the company distributed a dividend of $0.19/sh.

Figure 53 – Dividend and Interim Dividend ($Bn)



Source: The Author, Company Data

Multiples Valuation

A relative valuation was also made to compare BHP to its market peers. Using this approach, we reached a final target price of USD $45.66 (-9.86% than the DCF model), meaning the BHP is slightly overvalued related to its peers.

In our valuation using this method, we used three enterprise-value multiples: The EV/SALES, EV/EBITDA and EV/CFO. We selected these ratios because we wanted to focus on BHP performance when comparing with its peers on an operational level. We did not want to focus on the differences in capital structure.

However, due to the following reasons, we considered this the least reliable valuation model:

1. Multiples reflect how the market is developing which may disrupt negatively our valuation when the market in undervaluing comparable firms and vice-versa.
2. In any type of valuation, there is always some bias, there is always something which is not 100% real and with this type of valuation, the lack of transparency concerning the underlying assumptions makes it vulnerable to manipulation.
3. Nevertheless, several steps were taken to find the most suitable companies in the sector and because BHP is a leading company in the industry we found some companies that may have inconsistent valuations of value where important variables like cash flow potential, growth, risk or being in a different stage of the BCG Matrix were ignored.

Table 13 – BHP Peers

Company	Private/State Owned	Business Structure	Intern. Diver.	PEER?
Rio Tinto Ltd	✓	✓	✓	YES
Glencore PLC	✓	✗	✓	NO
Vale S.A.	✓	✓	✓	YES
Anglo American PLC	✓	✓	✓	YES
Teck Resources LTD	✓	✗	✓	NO
Vedanta Limited	✓	✓	✗	NO
Mansfield Oil	✗	✗	✗	NO
Freeport-Mcmoran Ltd	✓	✓	✓	YES
Barrick Gold Corporation	✓	✗	✗	NO
Fortescue Metals Group	✓	✗	✓	NO
Sumitomo Metal Mining	✓	✗	✗	NO

Source: The Author

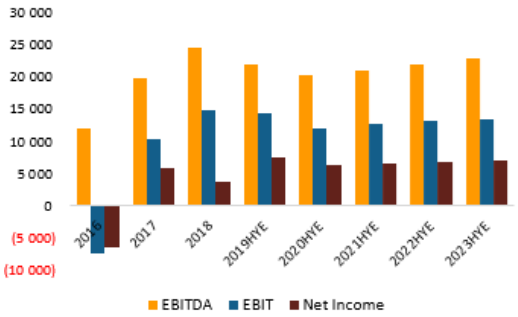
7. Financial Analysis

Profit & Loss

In 2016FY we can see the effects of the Samarco dam failure in Brazil. A joint venture with VALE S.A. that had a huge catastrophe on November 5th, 2015 when a tailings dam failed and ruptured causing death and destruction in his path to the ocean. This led to a Net Income in that year of -6,385M$ which is the only negative net income in the last years. This had a huge impact on the communities, on the people that live there and on both companies that operated the company (BHP and VALE). This made the stock price fall to AUD$14.35 in the Australian stock exchange, a minimum in the past 15 years. The company recovered in the following year, however, BHP is still coping with the aftermaths of the disaster. Nevertheless, each year the company provisions a certain amount of cash for this subject., decreasing each year its value. Weaker commodity prices in the years following 2019HYE are going to push revenues down, even though it is expected a generalized increase in the production of most of the commodities except oil, due to the Onshore US sale of assets. However, we still expect a positive CAGR of 0.45% from 2019HYE to 2023HYE, but when considering 2018FY, the CAGR is -0.50%. Net income is expected to have a significant increase from 2018FY to 2019HYE from 3,705M$ to 7,545M$ mainly due to synergies between mines especially in Australia that reduce the COGS and the General costs. Consequently, Net profit margins are expected to return to 2017FY levels of around 18.50%, being 15.58% in 2019HYE and slightly increasing to 17.02% by 2023HYE.

Total COGS are expected to have a decrease of the value that used to be from the Onshore US assets in 2019HYE and in 2020HYE. By 2023HYE we expect COGS to be 19.29% of Revenues compared with the 22.85% of Revenues in 2018FY.

Figure 54 – EBITDA, EBIT and Net Income Evolution

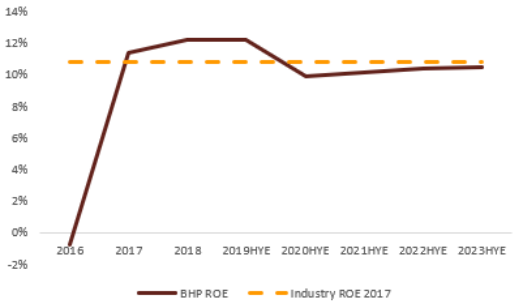


Source: The Author

DuPont Analysis

BHP is expected to remain relatively stable in what concerns ROE and ROA as the forecasted increase in net income will be accompanied by an increase in Equity.

Figure 55 – Industry and BHP's Return on Equity



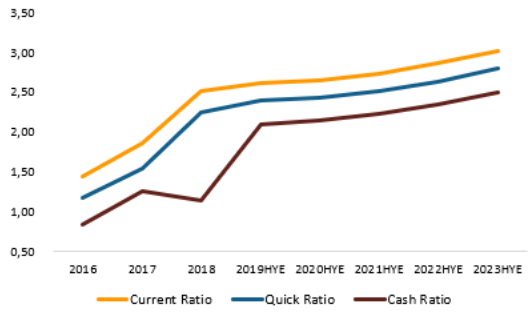
Source: The Author, Thomson Reuters

Liquidity Ratios and Leverage

BHP's liquidity ratios are estimated to have a generalized increase on a YoY basis between 2019HYE and 2023HYE (Current ratio is 2.62 and 3.02 respectively and quick ratio is 2.39 rising to 2.80 by 2023HYE). In addition, EBITDA interest coverage ratio is high in 2018FY (34.67) and in 2019HYE (26.69) falls due to Onshore US assets sell. Afterward, it will return to its usual values of around 22, being 22.84 in 2023HYE, which means that every year the company proves that is able to pay back its financial obligations.

Debt to equity ratio increases due to the restructuring of the debt that was needed, the increase in debt to finish ongoing projects.

Figure 56 – BHP's Current, Quick and Cash Ratios



Dividends payments

We expect a stable DPS paid to investors over the valuation period. In 2016, EPS and DPS were negative given the impact of the dam failure in Samarco. With the combination of strong cash flows and positive net results, we do not anticipate a change in the company's policy of payout. Moreover, the company has a politic of paying to its shareholders at least 50% of its net income and we base our assumptions in that politic.

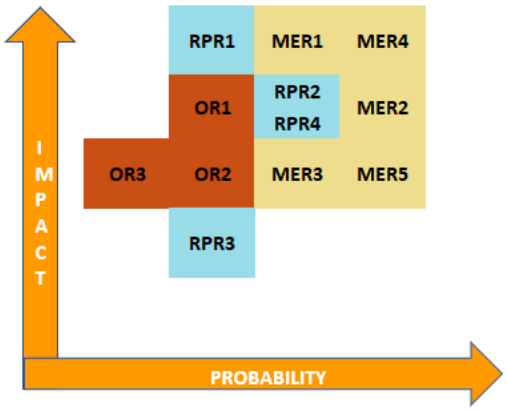
8. Investment Risks

Market and Economic Risks

Chinese demand Slowdown (MER1)

One of the major investment risks is the failing of the Chinese demand. China has become the major source of revenue for commodities companies in the last decades and it is responsible for around 50% of the company revenues. A slowing in China's economy could result in lower demand and prices for the products BHP produces and sells. The company appoints to this risk through its portfolio diversification in terms of geographies, commodities, currencies, assets, and liabilities.

Figure 57 – BHP Risk Matrix



Commodities prices (MER2)

BHP must consider the commodity cycle as a risk, which means that supply and demand fluctuations directly affect its prices, which in turn affect the company earnings. The uncertainty and the impact of it in developed countries specifically, may affect directly the future demand and supply for commodities. For this, the company tries to get long-term contracts and trading relationships whilst trying to spread its portfolio as wide as possible to diversify the risk as much as it can.

The concentration of the industry (MER3)

BHP operates in an industry that is subject to local production and competition and it is based mostly on price. Moreover, the company can also face competition from local producers that affect the price of the commodity being explored whether it is in Australia or in Chile, for instance. This may affect supply in the area, which in turn affects price and reduces profitability margins.

Exchange Risk (MER4)

BHP is exposed to a wide variety of currencies due to its globality of operations. As a result, we should always consider the interest rate risk that the company has. Even though the company already hedges substantially against the main currencies, there are three that can affect the most in what the operations concerns (USD, AUS, CLP). By hedging, as it does already, BHP tries to minimize the risk that can arise from fluctuations in these exchanges.

Interest Rate Risk (MER5)

Given the fact that around 80% of BHP's liabilities are in EUR and in USD, one should consider the fluctuations that these may have in the company's financial results. It is known that the company tries to mitigate this risk by entering Interest Rate Swaps, as these reduce the risk of fluctuation in a certain interest rate.

Regulatory and Political Risks

Political Instability (RPR1)

One of the main risks of the company is the political risk. The industry the company operates in is very regulated and because of that the political and the legal risk, as well as the terrorism, civil war, and strikes on the part of the workers are amongst the main risks. This instability that may arise from the governments can negatively impact BHP because of the probability of restrictions to currency movements and the probability of shrinking the productivity and the shipping of the commodities produced in such countries.

Environmental Regulation (RPR2)

Compliance with environmental regulations is nowadays a business when compared to the previous years. BHP tries to always be

compliant with the rules and legislation on the country it operates, trying to be as much socially responsible as it can and avoiding fines or any embargoes. In addition, BHP makes financial provisions for site rehabilitation and operational closure and it is aware of the risks the employees face when mining and does its best to minimize these to the population that lives in the mining sites or nearby. There is also an ambiental risk involved. If the company does not mine sustainably, it will damage the ecosystems where it extracts the raw materials.

Regulation and Competition (RPR3)

The company invests in its compliance with the legislation and laws. Nevertheless, it always important to stress out that any non-compliance or any fault in complying with the law can lead to fines and major restructurings of processes. This would be very costly for BHP and could lead to divestments and changes in business practices.

Samarco legal procedures (RPR4)

Samarco legal process is still developing within the Brazilian justice. BHP predicts the payment of additional fines due to environmental and personal prejudices. This can significantly impact the company financial results as it has been the case in 2016FY and 2017FY. However, the company provisions every year a substantial amount for this exceptional case.

Operational Risks

Depletion (OR1)

In what concerns Australia production, we do not foresee any significant impact of depletion as the proven reserves are more than enough for the next coming years and after that. This is not the case for the Chilean production or the US offshore production. There is a significant risk of depletion and for that reason BHP, invests in Exploration of new, more profitable areas to mine and to improve business and profitability.

Adverse and unexpected weather (OR2)

The company extracts most of its commodities in open mines. This means that they are exposed to adverse weather conditions like hurricanes and extreme rain (mostly in Australia). We saw that this affects directly the daily production due to reports of production stagnation when adverse weather conditions are verified in the mining areas. BHP tries to reduce this risk by paying extraordinary hours when it is not possible to extract the iron ore or another commodity during “normal” schedules, however this is uncontrollable by the company.

Availability of Raw Materials (OR3)

In what Australian production concerns, the only limitation is the one imposed by the government or alternatively by the harbor that is in charge of shipping the produced material (increase this year the authorization on iron ore from 280mt to 290mt of authorized exported product).Besides Australia, the company keeps on investing in alternative mining sites and alternative ways to be more profitable from them.

Risks to price Target

We perform a sensitivity analysis to access the impact of several investment risks on BHP final price target. We performed this analysis to the risks that can affect significantly the key components of the DCF valuation model, for instance, the Terminal Growth Rate, WACC, Market Risk Premium and Beta.

as well as other main drivers for LHN business – Target Synergies, Sales Growth and Energy and Raw Materials Expenses. We also study the impact of the Discount Rate over Sales that we apply in the DCF valuation.

As we can see in table **20,** BHP is sensitive to changes in terminal value and WACC as the price of the shares value can drop by -19.98% ($40.37/sh) or rise by 42.84% ($72.06/sh) in the worst and best case scenario, respectively. Although terminal value represents 80.52% of total BHP's enterprise value, changes in WACC produce higher volatility in prices. This is important since variations can be caused by changes in risk-free rates that are at low levels – Ceteris Paribus.

Table 14 – Sensitivity Analysis. Terminal Growth Rate and WACC

Change in WACC	Change in Terminal Growth Rate						
	0,75%	1,00%	1,25%	1,50%	1,75%	2,00%	2,25%
5,20%	**50,44**	**52,97**	**55,82**	**59,05**	**62,76**	**67,04**	**72,06**
	-0,01%	5,00%	10,66%	17,07%	24,42%	32,91%	42,84%
5,40%	**48,39**	**50,69**	**53,26**	**56,17**	**59,47**	**63,26**	**67,66**
	-4,07%	0,49%	5,59%	11,35%	17,90%	25,42%	34,12%
5,60%	**46,52**	**48,61**	**50,95**	**53,57**	**56,53**	**59,91**	**63,78**
	-7,79%	-3,63%	1,00%	6,20%	12,07%	18,76%	26,45%
5,87%	**44,22**	**46,08**	**48,14**	**50,44**	**53,02**	**55,93**	**59,24**
	-12,34%	-8,65%	-4,56%	0,00%	5,11%	10,88%	17,45%
6,00%	**43,20**	**44,96**	**46,91**	**49,07**	**51,49**	**54,21**	**57,29**
	-14,36%	-10,86%	-7,00%	-2,72%	2,08%	7,47%	13,58%
6,20%	**41,73**	**43,35**	**45,14**	**47,12**	**49,31**	**51,77**	**54,54**
	-17,27%	-14,06%	-10,52%	-6,60%	-2,24%	2,64%	8,13%
6,40%	**40,37**	**41,86**	**43,51**	**45,32**	**47,33**	**49,56**	**52,06**
	-19,98%	-17,01%	-13,75%	-10,16%	-6,18%	-1,75%	3,21%

Source: The Author
Note: The percentages refer to the price changes

In Table **21**, we perform a sensitivity analysis to BHP's beta and MRP. In the below, the Market Risk Premium impacts the company final share price but with a limited amount (-11.6% and 15.6%). However, changes in LHN's beta produce higher price ranges, from $62.4/sh (23.8%) to $41.6/sh (-17.6%). Changes in the company's policy regarding its leverage ratios could impact negatively its share price – Ceteris Paribus.

Table 15 – Sensitivity Analysis: Market Risk Premium and Beta

Change in Beta	Change in Market Risk Premium						
	5,25%	5,50%	5,75%	6,00%	6,25%	6,50%	6,75%
0,90	**71,75**	**68,32**	**65,22**	**62,40**	**59,82**	**57,46**	**55,29**
	42,38%	35,58%	29,42%	23,82%	18,71%	14,03%	9,73%
1,00	**66,22**	**63,00**	**60,10**	**57,46**	**55,06**	**52,87**	**50,85**
	31,40%	25,02%	19,26%	14,03%	9,27%	4,91%	0,91%
1,10	**61,51**	**58,49**	**55,76**	**53,29**	**51,05**	**48,99**	**47,11**
	22,07%	16,06%	10,65%	5,75%	1,30%	-2,77%	-6,51%
1,18	**58,23**	**55,34**	**52,74**	**50,39**	**48,26**	**46,31**	**44,52**
	15,55%	9,82%	4,66%	0,00%	-4,24%	-8,10%	-11,64%
1,30	**53,94**	**51,24**	**48,82**	**46,63**	**44,64**	**42,83**	**41,18**
	7,04%	1,69%	-3,13%	-7,47%	-11,41%	-15,00%	-18,29%
1,40	**50,85**	**48,29**	**46,00**	**43,93**	**42,05**	**40,34**	**38,78**
	0,91%	-4,17%	-8,72%	-12,83%	-16,56%	-19,94%	-23,04%
1,50	**48,12**	**45,69**	**43,51**	**41,55**	**39,77**	**38,15**	**36,68**
	-4,51%	-9,34%	-13,66%	-17,56%	-21,08%	-24,29%	-27,21%

Source: The Author
Note: The percentages refer to the price changes

Appendices

Appendix 1: Statement of Financial Position

	2016	2017	2018	2019HYE	2020HYE	2021HYE	2022HYE	2023HYE
Period End Date	30-06-2016	30-06-2017	30-06-2018	30-06-2019	30-06-2020	30-06-2021	30-06-2022	30-06-2023
Assets ($ Millions)								
Cash and Cash Equivalents	10 319	14 153	15 813	28 720	29 508	30 931	32 883	35 455
Total Receivables, Net	3 722	3 031	3 202	3 117	3 159	3 138	3 149	3 143
Total Inventory	3 411	3 673	3 764	3 751	3 579	3 661	3 750	3 819
Assets held for sale	0	0	11 939	0	0	0	0	0
Other Current Assets, Total	262	199	412	412	412	412	412	412
Total Current Assets	17 714	21 056	35 130	36 000	36 659	38 142	40 194	42 829
Property/Plant/Equipment	83 975	80 497	67 182	68 642	69 764	70 549	70 996	71 106
Intangibles, Net	4 119	3 968	778	778	778	778	778	778
Long Term Investments	5 255	3 729	3 472	3 601	3 601	3 601	3 601	3 601
Trade and other receivables	867	803	180	180	180	180	180	180
Inventories	764	1 095	1 141	1 118	1 118	1 118	1 118	1 118
Other Long Term Assets, Total	6 259	5 858	4 110	4 968	5 137	5 312	5 492	5 685
Total Non Current Assets	101 239	95 950	76 863	79 286	80 578	81 537	82 165	82 467
Total Assets	118 953	117 006	111 993	115 286	117 236	119 679	122 359	125 296
LIABILITIES ($ Millions)								
Accounts Payable	5 389	5 551	5 977	5 444	5 444	5 444	5 444	5 444
Accrued Expenses and Provisions	988	1 062	2 025	2 025	2 025	2 025	2 025	2 025
Interest bearing liabilities	4 653	1 241	2 736	2 912	2 991	3 096	3 215	3 340
Other Current liabilities, Total	1 310	3 512	3 251	3 376	3 366	3 371	3 375	3 376
Total Current Liabilities	12 340	11 366	13 989	13 757	13 826	13 936	14 058	14 185
Interest bearing liabilities	31 768	29 233	24 069	26 211	26 918	27 866	28 937	30 063
Deferred Income Tax	4 324	3 765	3 472	3 619	3 619	3 619	3 619	3 619
Provisions	8 381	8 445	8 223	8 418	8 032	8 216	8 416	8 570
Deferred income	278	360	337	320	320	320	320	320
Other financial liabilities	1 791	1 111	1 233	1 211	1 252	1 294	1 338	1 385
Total Non-Current Liabilities	46 542	42 914	37 334	39 778	40 140	41 315	42 630	43 957
Total Liabilities	58 882	54 280	51 323	53 535	53 965	55 251	56 688	58 143
Shareholders Equity ($ Thousands)								
Share Capital - BHP Billiton Limited	1 186	1 186	1 186	1 186	1 186	1 186	1 186	1 186
Share Capital - BHP Billiton Plc	1 057	1 057	1 057	1 057	1 057	1 057	1 057	1 057
Treasury Shares	(33)	(3)	(5)	(5)	(5)	(5)	(5)	(5)
Reserves	2 538	2 400	2 290	2 290	2 290	2 290	2 290	2 290
Retained Earnings (Accumulated Deficit)	49 542	52 618	51 064	51 697	53 217	54 374	55 617	57 100
Earnings (Net Income - Dividends)	--	--	--	1 773	1 124	1 259	1 420	1 518
Other retained earnings	--	--	--	49 925	52 093	53 114	54 198	55 581
Total equity attributable to BHP shareholders	54 290	57 258	55 592	56 225	57 745	58 902	60 145	61 628
Minority Interest	5 781	5 468	5 078	5 526	5 526	5 526	5 526	5 526
Total Equity	60 071	62 726	60 670	61 751	63 271	64 428	65 671	67 154
Total Liabilities & Shareholders' Equity	118 953	117 006	111 993	115 286	117 237	119 679	122 359	125 296

	2016	2017	2018	2019HYE	2020HYE	2021HYE	2022HYE	2023HYE
Period End Date	30-06-2016	30-06-2017	30-06-2018	30-06-2019	30-06-2020	30-06-2021	30-06-2022	30-06-2023
Assets ($ Millions)								
Cash and Cash Equivalents	8,67%	12,10%	14,12%	24,91%	25,17%	25,85%	26,87%	28,30%
Total Receivables, Net	3,13%	2,59%	2,86%	2,70%	2,69%	2,62%	2,57%	2,51%
Total Inventory	2,87%	3,14%	3,36%	3,25%	3,05%	3,06%	3,06%	3,05%
Assets held for sale	0,00%	0,00%	10,66%	0,00%	0,00%	0,00%	0,00%	0,00%
Other Current Assets, Total	0,22%	0,17%	0,37%	0,36%	0,35%	0,34%	0,34%	0,33%
Total Current Assets	14,89%	18,00%	31,37%	31,23%	31,27%	31,87%	32,85%	34,18%
Property/Plant/Equipment	70,60%	68,80%	59,99%	59,54%	59,51%	58,95%	58,02%	56,75%
Intangibles, Net	3,46%	3,39%	0,69%	0,67%	0,66%	0,65%	0,64%	0,62%
Long Term Investments	4,42%	3,19%	3,10%	3,12%	3,07%	3,01%	2,94%	2,87%
Trade and other receivables	0,73%	0,69%	0,16%	0,16%	0,15%	0,15%	0,15%	0,14%
Inventories	0,64%	0,94%	1,02%	0,97%	0,95%	0,93%	0,91%	0,89%
Other Long Term Assets, Total	5,26%	5,01%	3,67%	4,31%	4,38%	4,44%	4,49%	4,54%
Total Non Current Assets	85,11%	82,00%	68,63%	68,77%	68,73%	68,13%	67,15%	65,82%
Total Assets	100,00%	100,00%	100,00%	100,00%	100,00%	100,00%	100,00%	100,00%
LIABILITIES ($ Millions)								
Accounts Payable	4,53%	4,74%	5,34%	4,72%	4,64%	4,55%	4,45%	4,34%
Accrued Expenses and Provisions	0,83%	0,91%	1,81%	1,76%	1,73%	1,69%	1,65%	1,62%
Interest bearing liabilities	3,91%	1,06%	2,44%	2,53%	2,55%	2,59%	2,63%	2,67%
Other Current liabilities, Total	1,10%	3,00%	2,90%	2,93%	2,87%	2,82%	2,76%	2,69%
Total Current Liabilities	10,37%	9,71%	12,49%	11,93%	11,79%	11,64%	11,49%	11,32%
Interest bearing liabilities	26,71%	24,98%	21,49%	22,74%	22,96%	23,28%	23,65%	23,99%
Deferred Income Tax	3,64%	3,22%	3,10%	3,14%	3,09%	3,02%	2,96%	2,89%
Provisions	7,05%	7,22%	7,34%	7,30%	6,85%	6,86%	6,88%	6,84%
Deferred income	0,23%	0,31%	0,30%	0,28%	0,27%	0,27%	0,26%	0,26%
Other financial liabilities	1,51%	0,95%	1,10%	1,05%	1,07%	1,08%	1,09%	1,11%
Total Non-Current Liabilities	39,13%	36,68%	33,34%	34,50%	34,24%	34,52%	34,84%	35,08%
Total Liabilities	49,50%	46,39%	45,83%	46,44%	46,03%	46,17%	46,33%	46,40%
Shareholders Equity ($ Thousands)								
Share Capital - BHP Billiton Limited	1,00%	1,01%	1,06%	1,03%	1,01%	0,99%	0,97%	0,95%
Share Capital - BHP Billiton Plc	0,89%	0,90%	0,94%	0,92%	0,90%	0,88%	0,86%	0,84%
Treasury Shares	-0,03%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%
Reserves	2,13%	2,05%	2,04%	1,99%	1,95%	1,91%	1,87%	1,83%
Retained Earnings (Accumulated Deficit)	41,65%	44,97%	45,60%	44,84%	45,39%	45,43%	45,45%	45,57%
Earnings (Net Income - Dividends)	--	--	--	1,54%	0,96%	1,05%	1,16%	1,21%
Other retained earnings	--	--	--	43,30%	44,43%	44,38%	44,29%	44,36%
Total equity attributable to BHP shareholde	45,64%	48,94%	49,64%	48,77%	49,26%	49,22%	49,15%	49,19%
Minority Interest	4,86%	4,67%	4,53%	4,79%	4,71%	4,62%	4,52%	4,41%
Total Equity	50,50%	53,61%	54,17%	53,56%	53,97%	53,83%	53,67%	53,60%
Total Liabilities & Shareholders' Equity	100,00%	100,00%	100,00%	100,00%	100,00%	100,00%	100,00%	100,00%

Appendix 2: Income Statement

	2016	2017	2018	2019HYE	2020HYE	2021HYE	2022HYE	2023HYE
Period End Date	30-06-2016	30-06-2017	30-06-2018	30-06-2019	30-06-2020	30-06-2021	30-06-2022	30-06-2023
Revenue	30 912	38 285	42 394	40 611	38 749	39 637	40 603	41 347
Iron Ore	10 538	14 624	14 810	14 522	13 479	13 871	14 295	14 710
Copper	8 249	8 335	13 287	11 436	12 008	12 606	13 236	13 898
Total Coal	4 518	7 578	8 889	8 918	8 076	7 927	7 992	7 617
Metallurgical Coal	–	–	–	6 754	6 182	6 028	6 088	5 710
Energy Coal	–	–	–	2 165	1 895	1 899	1 903	1 907
Total petroleum products	6 894	6 872	5 408	5 734	5 186	5 233	5 080	5 122
Production associated costs	9 072	8 107	9 689	8 641	8 097	8 057	8 017	7 976
Gross profit	21 840	30 178	32 705	31 970	30 652	31 580	32 587	33 370
Other Operating Income	430	377	1 244	1 244	1 244	1 244	1 244	1 244
Other Operating Income	417	736	1 332	1 332	1 332	1 332	1 332	1 332
Inter-segment adjustment	13	(359)	(88)	(88)	(88)	(88)	(88)	(88)
Operating Expenses	10 233	10 554	9 438	11 224	11 709	11 779	11 838	11 889
EBITDA	12 037	19 789	24 511	21 990	20 186	21 045	21 993	22 726
Depreciation and Amortization	8 661	7 931	7 942	6 040	6 378	6 715	7 053	7 390
Interest expense, Net	711	875	707	824	952	966	981	995
Interest on Bank Loans, Overdrafts and all other borrowings	971	1 131	1 168	1 285	1 413	1 427	1 442	1 456
Interest Capitalized	(123)	(113)	(139)	(139)	(139)	(139)	(139)	(139)
Interest Income	(137)	(143)	(322)	(322)	(322)	(322)	(322)	(322)
Foreign Exchange gains/(losses)	(177)	80	74	74	74	74	74	74
Income/(loss) from Afiliates	(346)	(444)	(660)	(660)	(660)	(660)	(660)	(660)
Pre tax income/(loss) adjusted	2 851	11 107	15 891	15 712	13 442	13 950	14 546	14 926
Abnormal Losses/(Gains)	10 110	785	1 140	1 321	1 348	1 376	1 404	1 435
Asset Write-Downs	7 587	348	651	500	500	500	500	500
Impairment of Intangible Assets	16	33	2 353	33	33	33	33	33
Other Abnormal Items	2 506	763	(1 874)	788	815	843	871	902
EBIT	(7 259)	10 322	14 751	14 391	12 094	12 574	13 141	13 491
Total Taxation (expense)/benefit	(1 052)	4 100	7 007	5 573	4 792	4 955	5 148	5 267
Income tax (expense)/benefit	(1 297)	3 933	6 879	4 893	4 112	4 275	4 468	4 587
Royalty-related taxation (net of income tax benefit)	245	167	128	680	680	680	680	680
Net Income After Taxes	(6 207)	6 222	7 744	8 818	7 302	7 619	7 993	8 224
Minority Interest	(178)	(332)	(1 118)	(1 273)	(1 054)	(1 100)	(1 154)	(1 187)
Net Income Before Extra. Items	(6 385)	5 890	6 626	7 545	6 248	6 519	6 839	7 037
Discontinued Operations	0	0	(2 921)	0	0	0	0	0
Net Income attributable to shareholders	(6 385)	5 890	3 705	7 545	6 248	6 519	6 839	7 037

	2016	2017	2018	2019HYE	2020HYE	2021HYE	2022HYE	2023HYE
Period End Date	30-06-2016	30-06-2017	30-06-2018	30-06-2019	30-06-2020	30-06-2021	30-06-2022	30-06-2023
Revenue	100,00%	100,00%	100,00%	100,00%	100,00%	100,00%	100,00%	100,00%
Iron Ore	34,09%	38,20%	34,93%	35,76%	34,78%	34,99%	35,21%	35,58%
Copper	26,69%	21,77%	31,34%	28,16%	30,99%	31,80%	32,60%	33,61%
Total Coal	14,62%	19,79%	20,97%	21,96%	20,84%	20,00%	19,68%	18,42%
Metallurgical Coal	--	--	--	16,63%	15,95%	15,21%	14,99%	13,81%
Energy Coal	--	--	--	5,33%	4,89%	4,79%	4,69%	4,61%
Total petroleum products	22,30%	17,95%	12,76%	14,12%	13,38%	13,20%	12,51%	12,39%
Production associated costs	29,35%	21,18%	22,85%	21,28%	20,90%	20,33%	19,74%	19,29%
Gross profit	70,65%	78,82%	77,15%	78,72%	79,10%	79,67%	80,26%	80,71%
Other Operating Income	1,39%	0,98%	2,93%	3,06%	3,21%	3,14%	3,06%	3,01%
Other Operating Income	1,35%	1,92%	3,14%	3,28%	3,44%	3,36%	3,28%	3,22%
Inter-segment adjustment	0,04%	-0,94%	-0,21%	-0,22%	-0,23%	-0,22%	-0,22%	-0,21%
Operating Expenses	33,10%	27,57%	22,26%	27,64%	30,22%	29,72%	29,15%	28,75%
EBITDA	38,94%	51,69%	57,82%	54,15%	52,09%	53,10%	54,17%	54,96%
Depreciation and Amortization	28,02%	20,72%	18,73%	14,87%	16,46%	16,94%	17,37%	17,87%
Interest expense, Net	2,30%	2,29%	1,67%	2,03%	2,46%	2,44%	2,42%	2,41%
Interest on Bank Loans, Overdrafts and all other	3,14%	2,95%	2,76%	3,16%	3,65%	3,60%	3,55%	3,52%
Interest Capitalized	-0,40%	-0,30%	-0,33%	-0,34%	-0,36%	-0,35%	-0,34%	-0,34%
Interest Income	-0,44%	-0,37%	-0,76%	-0,79%	-0,83%	-0,81%	-0,79%	-0,78%
Foreign Exchange gains/(losses)	-0,57%	0,21%	0,17%	0,18%	0,19%	0,19%	0,18%	0,18%
Income/(loss) from Afiliates	-1,12%	-1,16%	-1,56%	-1,63%	-1,70%	-1,67%	-1,63%	-1,60%
Pre tax income/(loss) adjusted	9,22%	29,01%	37,48%	38,69%	34,69%	35,19%	35,82%	36,10%
Abnormal Losses/(Gains)	32,71%	2,05%	2,69%	3,25%	3,48%	3,47%	3,46%	3,47%
Asset Write-Downs	24,54%	0,91%	1,54%	1,23%	1,29%	1,26%	1,23%	1,21%
Impairment of Intangible Assets	0,05%	0,09%	5,55%	0,08%	0,09%	0,08%	0,08%	0,08%
Other Abnormal Items	8,11%	1,99%	-4,42%	1,94%	2,10%	2,13%	2,15%	2,18%
EBIT	-23,48%	26,96%	34,79%	35,44%	31,21%	31,72%	32,36%	32,63%
Total Taxation (expense)/benefit	-3,40%	10,71%	16,53%	13,72%	12,37%	12,50%	12,68%	12,74%
Income tax (expense)/benefit	-4,20%	10,27%	16,23%	12,05%	10,61%	10,79%	11,00%	11,09%
Royalty-related taxation (net of income tax bene	0,79%	0,44%	0,30%	1,67%	1,75%	1,72%	1,67%	1,64%
Net Income After Taxes	-20,08%	16,25%	18,27%	21,71%	18,84%	19,22%	19,69%	19,89%
Minority Interest	-0,58%	-0,87%	-2,64%	-3,13%	-2,72%	-2,78%	-2,84%	-2,87%
Net Income Before Extra. Items	-20,66%	15,38%	15,63%	18,58%	16,12%	16,45%	16,84%	17,02%
Discontinued Operations	0,00%	0,00%	-6,89%	0,00%	0,00%	0,00%	0,00%	0,00%
Net Income attributable to shareholders	-20,66%	15,38%	8,74%	18,58%	16,12%	16,45%	16,84%	17,02%

Appendix 3: Cash Flow Statement

	2016	2017	2018	2019HYE	2020HYE	2021HYE	2022HYE	2023HYE
Period End Date	30-06-2016	30-06-2017	30-06-2018	30-06-2019	30-06-2020	30-06-2021	30-06-2022	30-06-2023
Cash Flow-Operating Activities ($ Millions)								
EBIT	(7 259)	10 322	14 751	14 391	12 094	12 574	13 141	13 491
Adjusted Depreciation/Depletion	8 661	6 184	6 288	4 746	5 011	5 276	5 542	5 807
Non-Cash Items	11 854	4 476	6 232	13 154	2 354	2 354	2 354	2 354
Unusual Items	9 855	538	333	10 800	0	0	0	0
Other	1 251	2 793	4 801	2 354	2 354	2 354	2 354	2 354
Changes in Working Capital	207	(241)	(118)	133	(198)	(50)	(22)	(64)
Other Operating Cash Flow	(2 046)	(2 736)	(4 488)	(3 382)	(3 271)	(3 587)	(3 807)	(3 635)
Cash from Operating Activities	11 417	18 005	22 665	29 042	15 990	16 567	17 207	17 953
Cash Flow-Investing Activities ($ Millions)								
Capital Expenditures	(6 459)	(4 663)	(5 853)	(8 352)	(8 352)	(8 352)	(8 352)	(8 352)
Purchase of Fixed Assets/P,P&E	(5 707)	(3 697)	(4 979)	(7 500)	(7 500)	(7 500)	(7 500)	(7 500)
Exploration Expenditure	(752)	(966)	(874)	(852)	(852)	(852)	(852)	(852)
Other Investing Cash Flow Items, Total	382	1 759	1 106	1 039	1 039	1 039	1 039	1 039
Net investing cash flows	(6 077)	(2 904)	(4 747)	(7 313)	(7 313)	(7 313)	(7 313)	(7 313)
Cash Flow-Financing Activities ($ Millions)								
Proceeds/(Repayment) of interest bearing liabilities	4 451	(5 543)	(3 660)	(2 800)	(2 517)	(2 323)	(2 273)	(2 301)
Total dividends paid	(4 217)	(3 502)	(6 802)	(5 773)	(5 124)	(5 259)	(5 420)	(5 518)
Other financing cash flows	50	(88)	(429)	(249)	(249)	(249)	(249)	(249)
Net financing cash flows	284	(9 133)	(10 891)	(8 821)	(7 889)	(7 831)	(7 941)	(8 068)
Net Change in Cash	3 663	3 832	1 705	12 907	788	1 423	1 952	2 572
Net Cash - Beginning Balance	6 613	10 276	14 108	15 813	28 720	29 508	30 931	32 883
Net Cash - Ending Balance	10 276	14 108	15 813	28 720	29 508	30 931	32 883	35 455

Appendix 4: Key Financial Ratios

	Unit	Industry Median	2016	2017	2018	2019HYE	2020HYE	2021HYE	2022HYE	2023HYE
Profitability Ratios										
Gross Margin	%	44,60%	68,90%	78,00%	77,80%	78,72%	79,10%	79,67%	80,26%	80,71%
EBITDA Margin	%	26,70%	38,70%	52,00%	51,10%	54,15%	52,09%	53,10%	54,17%	54,96%
Operating Margin	%	16,60%	9,80%	34,70%	36,70%	38,69%	34,69%	35,19%	35,82%	36,10%
EBIT Margin	%	13,10%	6,30%	30,80%	33,80%	35,44%	31,21%	31,72%	32,36%	32,63%
Net Profit Margin	%	11,50%	-1,10%	18,50%	23,10%	18,58%	16,12%	16,45%	16,84%	17,02%
DuPont/Earning Power										
Asset Turnover	times	0,50	0,23	0,31	0,38	0,36	0,33	0,33	0,34	0,33
x Pretax Margin	%	13,10%	6,30%	30,80%	33,80%	12,66%	10,40%	10,61%	10,86%	10,90%
Pretax ROA	%	7,60%	1,50%	9,40%	12,90%	13,20%	11,13%	11,31%	11,54%	11,56%
x Leverage (Assets/Equity)	times	1,81	2,19	2,04	2,01	0,25	0,21	0,21	0,22	0,22
Pretax ROE	%	13,10%	3,00%	20,00%	26,10%	23,31%	19,11%	19,52%	20,01%	20,09%
ROE	%	10,80%	-0,80%	11,40%	12,15%	12,22%	9,87%	10,12%	10,41%	10,48%
Liquidity Ratios										
Quick Ratio	times	1,00	1,16	1,53	2,24	2,39	2,42	2,51	2,64	2,80
Current Ratio	times	1,59	1,44	1,85	2,51	2,62	2,65	2,74	2,86	3,02
Cash Ratio	times	–	0,84	1,25	1,13	2,09	2,13	2,22	2,34	2,50
Times Interest Earned	times	7,10	5,70	12,40	15,60	17,47	12,70	13,01	13,40	13,56
Efficiency Ratios										
Receivables Turnover	times	13,19	8,50	12,13	13,00	13,03	12,27	12,63	12,90	13,15
Days sales outstanding (DSO)	Days	18,95	30,10	19,79	18,88	19,19	20,38	19,79	19,39	19,01
Inventory turnover	times	14,68	8,03	10,81	11,40	10,81	10,57	10,95	10,96	10,93
Days inventory outstanding (DIO)	Days	17,03	31,15	23,13	21,93	23,13	23,65	22,83	22,82	22,88
Payables turnover	times	13,48	1,74	1,52	1,63	1,58	1,49	1,48	1,47	1,47
Days payable outstanding (DPO)	Days	18,55	69,79	74,37	78,12	68,51	68,71	68,61	68,54	68,50
Operating cycle (Days)	Days	54,53	131,04	117,29	118,93	110,82	112,74	111,23	110,74	110,39
Cash Conversion Cycle	Days	17,43	-8,54	-31,44	-37,31	-26,19	-24,68	-25,98	-26,34	-26,62
Fixed asset turnover	times	–	0,37	0,48	0,63	0,59	0,56	0,56	0,57	0,58
Total asset turnover	times	0,40	0,26	0,32	0,37	0,36	0,33	0,33	0,34	0,33
Capital Structure										
Total Assets to Equity	times	1,81	2,19	2,04	2,01	1,87	1,85	1,86	1,86	1,87
Total Debt to Equity	times	0,16	0,67	0,53	0,48	0,54	0,55	0,56	0,57	0,57
Total Debt to Capital	times	–	0,38	0,33	0,31	0,32	0,32	0,32	0,33	0,33
EBITDA interest coverage ratio	times	–	16,93	22,62	34,67	26,69	21,20	21,78	22,43	22,84
EBIT interest coverage ratio	times	–	-10,21	11,80	20,86	17,47	12,70	13,01	13,40	13,56
Long-term Debt to Equity	times	–	0,53	0,47	0,40	0,42	0,43	0,43	0,44	0,45
Long-term Debt to Capital	times	–	0,35	0,32	0,28	0,30	0,30	0,30	0,31	0,31
Long-term Debt to Assets	times	–	0,27	0,25	0,21	0,23	0,23	0,23	0,24	0,24

Appendix 5: Forecasting Assumptions

General	Units	2019F	2020F	2021F	2022F	2023F	Assumptions
Inflation	%	3,30%	3,40%	3,40%	3,40%	3,50%	Based on IMF forecasts for region: Emerging and Developing Asia
Income Statement							
Revenues							Detailed in the appendix below
Iron Ore							
Shipments/Production	%	99,00%	99,00%	99,00%	99,00%	99,00%	In the last few years, the company has been selling all its reserves and it currently has a strategy of selling everything that is produced.
Price/Yield	$/dmt	60,00	55,00	55,90	56,90	57,80	World bank Assumptions
Copper							
Shipments/Production	%	99,00%	99,00%	99,00%	99,00%	99,00%	In the last few years, the company has been selling all its reserves and it currently has a strategy of selling everything that is produced.
Price/Yield	$/mt	6816,00	6833,00	6849,00	6866,00	6883,00	World bank Assumptions
Coal							
Shipments/Production	%	99,00%	99,00%	99,00%	99,00%	99,00%	In the last few years, the company has been selling all its reserves and it currently has a strategy of selling everything that is produced.
Price/Yield metallurgical	$/mt	160,00	145,00	140,00	140,00	130,00	Metallurgical coal prices - KPMG forecasts for the period forecasted
Price/Yield Australia	$/mt	75,00	65,00	64,50	64,00	63,50	World bank Assumptions - energy coal
Crude oil and concentrate							
Shipments/Production	%	99,00%	99,00%	99,00%	99,00%	99,00%	In the last few years, the company has been selling all its reserves and it currently has a strategy of selling everything that is produced.
Price/Yield Avg	$/bbl	65,00	65,40	65,90	66,30	66,80	World bank Assumptions
NGL							
Shipments/Production	%	99,00%	99,00%	99,00%	99,00%	99,00%	In the last few years, the company has been selling all its reserves and it currently has a strategy of selling everything that is produced.
Price/Yield	$/mmbtu	3,10	3,17	3,25	3,32	3,40	World bank Assumptions
Natural Gas							
Price/Yield	$/mmbtu	6,10	6,40	6,70	6,90	7,20	According with Ener Intelligence data forecasts
Shipments/Production	%	99,00%	99,00%	99,00%	99,00%	99,00%	In the last few years the company has been selling all its reserves and it currently has a strategy of selling everything that is produced.

Production associated costs (growth)	%	(0,50%)	(0,50%)	(0,50%)	(0,50%)	(0,50%)	Company is decreasing its production costs through synergies and lower cost processes
Production associated costs with Onshore US assets		(1 000)	(500)	0	0	0	Costs associated with onshore assets are deducted from total costs associated with production. It is expected 2000M$ in 2019HYE and 500M$ in 2020HYE - Benefit for the company
Other operating income	%	0,00%	0,00%	0,00%	0,00%	0,00%	Equal to 2018 nominal value (growth)
Disposal of assets	%	0,00%	0,00%	0,00%	0,00%	0,00%	Equal to 2018 nominal value (growth)
Net Foreign exchange losses/(gains)	%	0,00%	0,00%	0,00%	0,00%	0,00%	Equal to 2018 nominal value (growth)
Freight and Transportation	%	1,50%	1,50%	1,50%	1,50%	1,50%	Higher due to higher port authorization capacity
External Services	%	(0,50%)	1,00%	0,80%	0,60%	0,40%	Expected to decrease until 2019F, and then increases because of project completion and non-operation of the same - slowly decreasing its increase
Other expenses	%	0,00%	0,00%	0,00%	0,00%	0,00%	Equal to 2018 nominal value (growth)
Government Royalties paid/payable	Units (M$)	2 000	2 000	2 000	2 000	2 000	Expected to remain stable throughout the years
Exceptional items - Samarco	Units (M$)	82	0	0	0	0	Expected to be the nominal value of 2017 until 2019F
Escondida industrial action	Units (M$)	300	0	0	0	0	Expected to be 0 in 2018F, but in 2019F there is a possibility of a major strike, because what cause the $M546 was a strike due to expiration on labor contracts
Impairment of Intangibles	Units (M$)	(33)	(33)	(33)	(33)	(33)	Equal to 2018 nominal value
Writedown of P,P&E	%	0,40%	0,40%	0,40%	0,40%	0,40%	Percentage of revenues
Impairments including non-exceptional impairments	%	0,50%	0,50%	0,50%	0,50%	0,50%	Percentage of revenues
Other depreciation	%	40,00%	40,00%	40,00%	40,00%	40,00%	Usually is affected to Escondida or Chile mining operations which means is related to other one time charges as a % of it.
Global adjusted effective tax rate	%	34,00%	34,00%	34,00%	34,00%	34,00%	According to company economic contribution report
Interest Capitalized	%	4,66%	5,13%	5,18%	5,23%	5,29%	Interest capitalized in 2018 at 4,24% (2017:3,25%; 2016: 2,61%). We see a clear tendency to rise in this value and it is expected by the company targets to stabilize around 5% with a modest increase going forward.
Growth in interest capitalized	%	10,00%	10,00%	1,00%	1,00%	1,00%	

Interest capitalized/income	%	0,00%	0,00%	0,00%	0,00%	0,00%	Equal to 2018 nominal value (growth)
Foreign Exchange gains/(losses)	%	0,00%	0,00%	0,00%	0,00%	0,00%	Equal to 2018 nominal value (growth)
Income/(loss) from affiliates	%	0,00%	0,00%	0,00%	0,00%	0,00%	Equal to 2018 nominal value (growth)
Asset Write-downs	Units (M$)	500	500	500	500	500	Equal to 2016 and 2017 average, 2015 and 2016 do not count because they would make this value biased due to the high values shown derived from Samarco damn failure
Impairment of intangible assets	Units (M$)	33	33	33	33	33	Expected to return to 2017 levels after the sale of onshore US assets
Other one time charges/non-operating	Units (M$)	788	815	843	871	902	Expected to return to 2017 levels after the exceptional items needed to be considered from Samarco (criminal charges, federal prosecution) and the sale of onshore assets adjusted to expected inflation
Minority interest	%	14,44%	14,44%	14,44%	14,44%	14,44%	Based on 2018 percentage nominal value
Discontinued operations	Units (M$)	0	0	0	0	0	There are no expected discontinued operations in the near future
Average number of shares outstanding	Units (M$)	5 323	5 323	5 323	5 323	5 323	The company is not planning on changing the number of shares outstanding

Balance Sheet	Units	2019F	2020F	2021F	2022F	2023F	Assumptions
Balance Sheet							
Current Assets							
Total Receivables, Net	Units (M$)	3 117	3 159	3 138	3 149	3 143	Average of the last 3 years, we do not include the year 2015, due to being biased because of Samarco dam failure that occurred that year
Total Inventory	%	9,24%	9,24%	9,24%	9,24%	9,24%	Average of the last 2 years in percentage of revenues. Did not count 2015 and 2016 years due to biased estimation coming from exceptional item - Samarco
Assets held for sale	Units (M$)	0	0	0	0	0	Equal to 2018 nominal value, 2019 value was due to onshore US assets
Other Current Assets, Total	Units (M$)	412	412	412	412	412	Equal to 2018 nominal value
Long-Term Assets							
Intangibles, Net	Units (M$)	778	778	778	778	778	Expected to remain stable throughout the years - equal to 2018 nominal value - The difference between 2017 and 2018 was due to the sale of onshore US assets - specifically impairments related to it (2339)
Long term investments	Units (M$)	3 601	3 601	3 601	3 601	3 601	Average of the last 2 years, excluding 2015 and 2016 due to Samarco exceptional item
Trade and other receivables	Units (M$)	180	180	180	180	180	Equal to 2018 nominal value, the high decrease in this parameter was due to the company strategy to reduce it as well as the sell of onshore US assets which the majority of this item came from
Inventories	Units (M$)	1 118	1 118	1 118	1 118	1 118	Average of the last 2 years, excluding 2015 and 2016 due to Samarco exceptional item
Other Long Term Assets, Total	Units (M$)	4 968	5 137	5 312	5 492	5 685	Equal to average of the last 4 years adjusted for expected inflation rate
Current Liabilities							
Accounts Payable	Units (M$)	5 444	5 444	5 444	5 444	5 444	Average of the last 4 years due to the fact that this item remains stable around the mean
Accrued Expenses and Provisions	Units (M$)	2 025	2 025	2 025	2 025	2 025	Equal to 2018 nominal value
Other Current Liabilities, Total	%	17,00%	17,00%	17,00%	17,00%	17,00%	Based on the last 2 years expenses relating to selling, general and administrative expenses and Cost of goods sold
Non-Current Liabilities							
Deferred Income Tax	Units(M$)	3 619	3 619	3 619	3 619	3 619	Equal to the average of the last 2 years and assumed to be constant in the absence of additional information
Provisions	%	20,73%	20,73%	20,73%	20,73%	20,73%	Based on the percentage of revenues of BHP from the historical last 2 years average

Deferred Income Tax	Units(M$)	320	320	320	320	320	Equal to the average of the last 4 years nominal values
Other financial liabilities	Units(M$)	1 211	1 252	1 294	1 338	1 385	Average of the last 2 year, due to biased value from exceptional item Samarco dam failure in 2015 and 2016 adjusted to expected inflation
Equity							
Share capital BHP Billiton Limited/Plc	%	0,00%	0,00%	0,00%	0,00%	0,00%	Equal to 2018 nominal value
Treasury Shares	%	0,00%	0,00%	0,00%	0,00%	0,00%	Equal to 2018 nominal value
Reserves	%	0,00%	0,00%	0,00%	0,00%	0,00%	Equal to 2018 nominal value
Minority Interest	Units(M$)	5 526	5 526	5 526	5 526	5 526	Based on the 4-year historical average
Capex							
Purchases of property plant, and equipment	Units(M$)	6 500	6 500	6 500	6 500	6 500	Due to ongoing projects, the company is expecting to have higher Capex than in previous years
Investments in maintenance		1 000	1 000	1 000	1 000	1 000	Expected to be stable throught the period at 1000M$ due to the repairs needed to pipelines and heavy equipment.
Exploration expenditure	Units(M$)	(852)	(852)	(852)	(852)	(852)	As it is stable in prior years, we assume this to be the average of the last 4 years
Property, Plant, and equipment							
At cost of acquisition	Units(M$)	134 228	141 728	149 228	156 728	164 228	2018 PP&E + Capex
D&A	Units(M$)	6 040	6 378	6 715	7 053	7 390	For depreciation, the company uses for Buildings, plant and equipment the straight-line method and for mineral rights, petroleum interests, capitalized exploration, evaluation and development expenditure the units of production method. The company, however, does not disclose this per item. As such the percentage of D&A over PP&E for 2018 is going to be applied in this item.
Accumulated depreciation/impairment	Units(M$)	65 586	71 964	78 679	85 732	93 122	
Net book Value	Units(M$)	68 642	69 764	70 549	70 996	71 106	
Dividends	%	50,00%	50,00%	50,00%	50,00%	50,00%	According to company strategy, they are going to have a payout ratio of at least 50% throughout the years
Interim Dividend	Units(M$)	2 000	2 000	2 000	2 000	2 000	The company usually distributes this interim dividend when it has a profitable year. This case we are going to assume 2000$M annually due to the fact the company is being profitable throughout

Cash Flow	Units	2019F	2020F	2021F	2022F	2023F	Assumptions
Adjusted Depreciation/Amortization	%	78,57%	78,57%	78,57%	78,57%	78,57%	This is adjusted for impairments, depletion and goodwill and it is an average of depreciation % for the last 2 years
Other non-cash items	Units(M$)	2 354	2 354	2 354	2 354	2 354	Based on the 4-year historical average
Other operating cash flows	Units(M$)	(3 382)	(3 271)	(3 587)	(3 807)	(3 635)	Based on the 4-year historical average adjusted to expected inflation rate
Other investing cash flows	Units(M$)	1 039	1 039	1 039	1 039	1 039	Based on the 4-year historical average
Other financing cash flows	Units(M$)	(249)	(249)	(249)	(249)	(249)	Based on the 4-year historical average
Debt/Loan Scheme M$							
Bank Loans	Units(M$)	1 405	773	425	234	129	
Notes and debentures	Units(M$)	22 832	22 250	21 651	21 032	20 389	
Others (leases, overdrafts…)	Units(M$)	886	886	886	886	886	Historical average of the last 4 years
New Loans	Units(M$)	2 000	2 000	2 000	2 000	2 000	In 2019HYE until 2023 HYE we expect annual new loans of 2000$M annually
Cumulative new loans	Units(M$)	2 000	4 000	6 000	8 000	10 000	
Total Short-term financial Liabilities	Units(M$)	2 912	2 991	3 096	3 215	3 340	Based on the company discrimination of debt due to payment and the fact that the company is trying to invest in long-term notes and debentures
Total Long-term financial Liabilities	Units(M$)	26 211	26 918	27 866	28 937	30 063	
Total Loans, Notes and others	Units(M$)	29 123	29 908	30 962	32 152	33 404	
Net finance costs							
Loans Payments	Units(M$)	1 150	632	348	191	105	
Notes and debentures (amortization)	Units(M$)	466	582	598	619	643	
Debt payments	Units(M$)	1 616	1 215	946	811	748	
Interest expense	Units(M$)	1 185	1 302	1 377	1 463	1 553	2018FY Rate of 4,25% applied in 2019HYE with a slight increase over the years due to expected interest rates in Australia.

Appendix 6: Sales and Costs Breakdown

Iron Ore	Top - down	2018	2019HYE	2020HYE	2021HYE	2022HYE	2023HYE	Assumptions
China	%	81,00%	80,00%	79,00%	78,00%	77,00%	76,00%	China slowdown of economy due to constraints in environmental policy
Developed Asia	%	16,00%	17,00%	18,00%	19,00%	20,00%	21,00%	Slowly the company will start to sell more to countries in developed Asia, specially India - strong expected growth around 6 to 7% in GDP and energy and metals demand
Other World	%	3,00%	3,00%	3,00%	3,00%	3,00%	3,00%	Expected to remain constant
Global Expected production	%	--	1,20%	1,20%	1,20%	1,20%	1,20%	Expected world growth for the period by minning weekly
Global Expected production	(million tons)	3 175	3 213	3 252	3 291	3 330	3 370	Including nacional production - includes non-public company production - Aggregate from countries national databases
Company share	%	8,35%	8,35%	8,36%	8,36%	8,37%	8,38%	Increase of 0,05% until 2022F. In 2023 expected to be 0,1% -
Company share	(million tons)	265	268	272	275	279	282	
Exceptional events	%	2,00%	1,00%	1,00%	1,00%	1,00%	1,00%	Unexpected maintenance in car dumper reliability issues / cyclones / unexpected wheather days
wmt -> dmt	%	92,00%	92,00%	92,00%	92,00%	92,00%	92,00%	Conversion from wmt to dmt - 8% decrease in moisture level
Company production	(million tons)	239	244	248	251	254	257	

Copper	Top - down	2018	2019HYE	2020HYE	2021HYE	2022HYE	2023HYE	Assumptions
Global expected production	%	--	3,70%	3,70%	3,70%	3,70%	3,70%	Expected to increase due to India significant increase in
Global expected production	(million tons)	22	23	23	24	25	26	
Company share	%	7,50%	7,58%	7,65%	7,73%	7,80%	7,88%	Expected to increase and then moderately increase due to production and exploration in Chile (makes up of 30% of global production) - India and China growth - (1% growth annually)
Company share	(million tons)	1,635	1,712	1,793	1,878	1,967	2,060	
Exceptional items (strikes in Chile, adverse wheather)	%	1,00%	1,00%	1,00%	1,00%	1,00%	1,00%	Exceptional events like strikes in Chile, wheather conditions
Company share	(million tons)	1,618	1,695	1,775	1,859	1,947	2,040	

Coal ('000 tonnes)	Bottom - up							
Metallurgical Coal	2017	2018	2019HYE	2020HYE	2021HYE	2022HYE	2023HYE	Assumptions
Blackwater, AUS	7 296	6 688	6 755	6 822	6 891	6 960	7 029	
Growth (%)			1,00%	1,00%	1,00%	1,00%	1,00%	Expected to slowly increase and stabilize due to higher capacity and port authorization capacity
Goonyella Riverside, AUS	7 355	7 961	8 041	8 121	8 202	8 284	8 367	
Growth (%)			1,00%	1,00%	1,00%	1,00%	1,00%	Overall expected increase in production of 1%
Peak Downs, AUS	6 055	6 350	6 414	6 478	6 542	6 608	6 674	Higher production due to already approved projects
Growth (%)			1,00%	1,00%	1,00%	1,00%	1,00%	
Saraji, AUS	4 734	5 053	5 104	5 155	5 206	5 258	5 311	
Growth (%)			1,00%	1,00%	1,00%	1,00%	1,00%	Overall expected increase in production of 1%
Gregory Joint Venture, AUS	discontinued							
Daunia, AUS	2 560	2 556	2 582	2 607	2 633	2 660	2 686	
Growth (%)			1,00%	1,00%	1,00%	1,00%	1,00%	Overall expected increase in production of 1%
Caval Ridge, AUS	3 458	4 285	4 328	4 371	4 415	4 459	4 504	
Growth (%)			1,00%	1,00%	1,00%	1,00%	1,00%	Overall expected increase in production of 1%
Total BHP Billiton Mitsubishi Alliance	31 458	32 893	33 222	33 554	33 890	34 229	34 571	
South Walker Creek, AUS	5 123	6 029	6 089	6 150	6 212	6 274	6 337	
Growth (%)			1,00%	1,00%	1,00%	1,00%	1,00%	Expect to be stable and modestly grow at 1% - new projects taken into consideration in Cerrejon
Poitrel, AUS	3 189	3 718	3 755	3 793	3 831	3 869	3 908	
Growth (%)			1,00%	1,00%	1,00%	1,00%	1,00%	Overall expected increase in production of 1%
Total BHP Billiton Mitsui Coal	8 312	9 747	9 844	9 943	10 042	10 143	10 244	
Total Queensland Coal	39 770	42 640	43 066	43 497	43 932	44 371	44 815	
IndoMet, Haju, Indonesia	129	Sold the share owned in October 2016						
Total metallurgical Coal	39 899	42 640	43 066	43 497	43 932	44 371	44 815	
Exceptional events (Whether, strikes, etc)			0	0	0	0	0	
Total metallurgical Coal	39 899	42 640	42 636	43 062	43 493	43 928	44 367	
Energy Coal								
Navajo, USA	451	discontinued						
San Juan, USA	discontinued							
Total New Mexico Coal	--	--	0	0	0	0	0	
New South Wales, AUS	18 176	18 541	18 726	18 914	19 103	19 294	19 487	
Growth (%)			1,00%	1,00%	1,00%	1,00%	1,00%	Overall expected increase in production of 1%
Cerrejón, COL	10 959	10 617	10 723	10 830	10 939	11 048	11 159	
Growth (%)			1,00%	1,00%	1,00%	1,00%	1,00%	Overall expected increase in production of 1%
Total Energy Coal	29 135	29 158	29 450	29 744	30 042	30 342	30 645	
Exceptional events (Whether, strikes, etc)			1,00%	1,00%	1,00%	1,00%	1,00%	
Total energy Coal		29 158	29 155	29 447	29 741	30 039	30 339	
Total Coal	69 034	71 798	71 791	72 509	73 234	73 966	74 706	

Petroleum								
Crude oil and concentrate	**2017**	**2018**	**2019HYE**	**2020HYE**	**2021HYE**	**2022HYE**	**2023HYE**	
Australia	18 658	16 545	16 545	16 628	16 711	16 794	16 878	
Growth			0,50%	0,50%	0,50%	0,50%	0,50%	In Australia production is expected to remain the same or increasing slowly ~ 0,5% per year
Total Australia	18 658	16 545	16 628	16 711	16 794	16 878	16 963	
United States	52 877	46 940	46 940	32 811	28 274	28 556	28 982	
Growth			1,00%	1,00%	1,00%	1,00%	1,00%	
Divestment in onshore assets			(14 598)	(4 866)				Divestment to occur after the 1st quarter of 2018 - this leads to 75% of the divestment occuring in 2019HYE and the remaining 25% in 2020HYE
Mad Dog Phase 2						140	140	In 2022F the Mad Dog 2 project is expected to be completed adding 140 000 barrels to the production annually
Total United States	52 877	46 940	32 811	28 274	28 556	28 982	29 412	
Other	4 850	4 616	4 639	4 662	4 686	4 709	4 733	Expected to increase consistently at a pace of 0,05%
Total crude oil and condens.	76 385	68 101	53 995	49 564	49 953	50 485	51 023	
Natural Gas								
Australia	345,7	325,0	325,0	331,5	338,1	344,9	351,8	
Growth			2%	2%	2%	2%	2%	Expected to grow at a steadier pace of 2%
Total Australia	345,7	325,0	331,5	338,1	344,9	351,8	358,8	
United States	285,3	268,0	268,0	74,1	9,5	9,5	9,6	
Divestment in onshore assets			(193,9)	(64,6)				Divestment to occur after the 1st quarter of 2018 - this leads to 75% of the divestment occuring in 2019HYE and the remaining 25% in 2020HYE
Growth						1,00%		Residual production from other wells (Gulf of Mexico) is expected to remain constant and only in 2022HYE to increase 1% due to Mad Dog 2
Total US	285,3	268,0	74,1	9,5	9,5	9,6	9,6	
Other	36,8	42,5	40,0	40,0	40,0	40,0	40,0	Equal to 2018 Nominal Value
Total Natural Gas	667,8	635,5	445,6	387,6	394,4	401,4	408,4	
Conversion factor to mmboe	0,1667	0,1667	0,1667	0,1667	0,1667	0,1667	0,1667	Conversion factor from billion cubic feet to million barrels of oil equivalent
Total Natural Gas	111,3	105,9	74,3	64,6	65,7	66,9	68,1	
Natural Gas Liquids								
Australia	7 423	6 955	6 955	7 059	7 165	7 273	7 382	
Growth			1,50%	1,50%	1,50%	1,50%	1,50%	Will grow at a steadier pace of 1,5% due to new supply, even though the demand will stay strong
Total Australia	7 423	6 955	7 059	7 165	7 273	7 382	7 493	
United States	13 152	11 285	11 285	4 136	1 754	1 763	1 781	
Divestment in onshore assets			(7 170)	(2 390)				Divestment to occur after the 1st quarter of 2018 - this leads to 75% of the divestment occuring in 2019HYE and the remaining 25% in 2020HYE
Growth			0,50%	0,50%	0,50%	1,00%	0,50%	Expected to remain stable at a moderate growth rate of 0,5% - due to synergies between wells and in 2022HYE na increase of 1% due to mad dog and returning to 0,5% afterwards
Total US	13 152	11 285	4 136	1 754	1 763	1 781	1 790	
Other	119	88	100	100	100	100	100	Constant at 100 000 barrels per year
Total NGL	20 694	18 328	11 295	9 020	9 136	9 262	9 382	
Conversion factor	5 799	5 799	5 799	5 799	5 799	5 799	5 799	Conversion factor from thousand barrels of oil equivalent to billion cubic feet
Total NGL	119 996 549	106 277 025	65 494 782	52 300 715	52 974 803	53 709 610	54 403 300	
Total prod. Petroleum products (millions boe)								
Australia	83,7	77,7	78,9	80,2	81,6	82,9	84,3	
United States	113,6	102,9	49,3	31,6	31,9	32,4	32,8	
Other	11,1	11,8	11,4	11,4	11,5	11,5	11,5	
Total production of petroleum products	208,4	192,4	139,7	123,3	124,9	126,7	128,6	

	2016	2017	2018	2019HYE	2020HYE	2021HYE	2022HYE	2023HYE
Operating Expenses	10 233	10 554	9 438	11 224	11 709	11 779	11 838	11 889
Other expenses	17 907	11 399	12 164	12 004	12 091	12 169	12 236	12 294
Net Foreign exchange losses/(gains)	153	(103)	(93)	(93)	(93)	(93)	(93)	(93)
Expenses	17 754	11 502	12 257	12 097	12 184	12 262	12 329	12 387
Freight and Transportation	2 226	2 284	2 294	2 328	2 363	2 399	2 435	2 471
External Services	4 984	4 765	5 217	5 191	5 243	5 285	5 316	5 338
Net foreign exchange losses/(gains)	(153)	103	93	93	93	93	93	93
Government Royalties paid/payable	1 349	1 986	2 168	2 000	2 000	2 000	2 000	2 000
Exploration/Evaluation expenses incurred/expected	430	612	641	641	641	641	641	641
Net Impairments	7 394	193	333	333	333	333	333	333
Operating lease rentals	528	469	421	421	421	421	421	421
Other Operating expenses	996	1 090	1 090	1 090	1 090	1 090	1 090	1 090
Other one time charges	(70)	(464)	(55)	(382)	0	0	0	0
Cancellation of the Caroona project	0	164	0	0	0	0	0	0
Expenses excluding net finance costs (Samarco dam failu	(70)	(82)	(57)	(82)	0	0	0	0
Escondida Industrial action	0	(546)	0	(300)	0	0	0	0
Impairment of Intangibles	(17)	(33)	(2 353)	(33)	(33)	(33)	(33)	(33)
Write-down impairment of assets	(7 587)	(348)	(318)	(365)	(349)	(357)	(365)	(372)
Property, Plant & Equipment	(7 377)	(160)	(318)	(162)	(155)	(159)	(162)	(165)
Impairments including non-exceptional impairments	(210)	(188)	0	(203)	(194)	(198)	(203)	(207)
Other depreciation		212	0	0	0	0	0	0

Appendix 7: Discounted Cash Flow Assumptions

BHP's final share price was forecasted using the **Discounted Cash Flow Method (DCF)** as the main model. However, we also used two alternative measures which were the **Dividend Discounted Model (DDM)** and the **Relative Valuation**, based on multiples

Discounted Cash Flow Model: The fair market value of a business can be obtained by FCFF, being more regularly used than FCFE due to its non-requirements on the estimation of principal repayments and preferred dividend, making the model more suited.

FCFF represents the cash available to satisfy all investors holding claims to what the company has. The model assumes that the company can always get financing if it can generate sufficient future cash flows. FCFF can be computed as follows:

$$FCFF = EBIT * (1 - Tax\ Rate) + D\&A - Capex - \Delta NWC$$

Weighted Average Cost of Capital: This is the after-tax weighted average of returns expected by different classes of capital that the company uses (Equity and Debt) It is computed as follow;

$$WACC = K_e * \frac{E}{E+D} + K_d * \frac{D}{E+D} * (1 - Tax\ Rate)$$

Where:

Cost of Equity(Ke): Estimated using the Capital Asset Pricing Model (CAPM)

$$K_e = Rf + \beta * (Rm - Rf) + IRP$$

Risk-free Rate: We used Australian bonds to determine this value for BHP. It should reflect the theoretical return for an investor which invests in riskless assets.

Beta: It specifies if an investment is volatile than the market. We used a beta derived from the correlation between BHP and the 200 biggest companies in the industry.

Market Risk Premium: Reflects the incremental premium required by investors relative to a risk-free asset. We used Bloomberg conservative expectations on market risk premium.

Industry Risk Premium: IRP is the risk premium by which investors expect a future return of the industry. We used an average from the Valuation Handbook.

Cost of Debt: (Kd): Assumed to be the rate at which the 10-year bonds from the company are currently in the market.

Terminal Value: Aims to capture the value of the business beyond the projection period of the DCF analysis. This allows models to reflect returns that will occur so in the future that makes them hard to calculate.

Valuation Period: Our forecasts are from June 30th, 2019 to June 30th 2023.

Dividend Discount Model: When an investor buys a stock, the only cash-flow received from the firm are dividends. We used this model because historically, BHP has distributed every year constant dividends. We applied the following formula:

$$Value\ of\ share = \frac{D0 * (1 + gL)}{r - gL} + \frac{D0 * H * (gS - gL)}{r - gL}$$

Where:

D0: Dividend at time 0

gL and gS: Long-term and Short-term growth rate respectively

r: Rate of return expected by the investor

H: The half-life of the high growth period

Relative Valuation: In this method, we estimate the value of the company based on the value of other comparable firms or investments the we expect that will generate similar cash flows in the future. As the company is the biggest in the market, this model has some limitations. We used the valuation multiples based on enterprise value. The multiples we consider are EV to Sales, EBITDA and CFO. We performed a 4-step analysis for this.

Appendix 8: Discounted Cash Flow Analysis

WACC	2019F	2020F	2021F	2022F	2023F	Terminal
Risk free rate (Rf)	1,50%	1,50%	1,50%	1,50%	1,50%	1,50%
Industry risk premium (IRP)	0,98%	0,98%	0,98%	0,98%	0,98%	0,98%
Market risk premium (MRP)	6,00%	6,00%	6,00%	6,00%	6,00%	6,00%
Beta (β)	1,18	1,18	1,18	1,18	1,18	1,18
Cost of equity	7,79%	7,79%	7,79%	7,79%	7,79%	7,79%
Cost of debt	3,25%	3,25%	3,25%	3,25%	3,25%	3,25%
Marginal Tax Rate	34,00%	34,00%	34,00%	34,00%	34,00%	34,00%
After-tax cost of debt	2,15%	2,15%	2,15%	2,15%	2,15%	2,15%
Weight of equity	67,95%	67,90%	67,54%	67,13%	66,78%	70,00%
Weight of debt	32,05%	32,10%	32,46%	32,87%	33,22%	30,00%
WACC	5,74%	5,74%	5,72%	5,69%	5,67%	5,87%

Million USD	2019F	2020F	2021F	2022F	2023F	Terminal
EBIT (1-t)	9 498	7 982	8 299	8 673	8 904	8 904
D&A	6 040	6 378	6 715	7 053	7 390	7 390
Net increase in NWC	133	-198	-50	-22	-64	-64
CAPEX	8 352	8 352	8 352	8 352	8 352	8 352
FCFF	7 053	6 206	6 712	7 396	8 006	7 075
FCFF (t=0)	7 053	5 869	6 005	6 264	6 421	5 318

Enterprise Value	
Terminal Growth Rate	1,50%
Perpetuity WACC	5,87%
Terminal Value	164 143
PV of Terminal Value	130 633
NPV of FCFF	31 613
Enterprise Value	162 246
Net Debt 2019HYE	403
Equity value	161 843
# shares	3212
Stock price	50,39

Appendix 9: Dividend Discount Model Analysis

Dividend Discount Model		
Cost of equity (Ke)	7,79%	Equal to Ke used in DCF method.
Expected growth Rate (G1)	3,50%	Historical growth rate on dividends
Transition Stage (H)	4	We assume a 4-year transition stage
Stage Growth Period		
Cost of equity (Ke)	7,79%	Equal to Ke used in DCF method.
Growth Rate of economy (G2)	2,20%	We used the conservative proxy for economy GDP growth by IMF for 2022HYE.

Million USD	2019HYE	2020HYE	2021HYE	2022HYE	2023HYE
Net Income	7 545	6 248	6 519	6 839	7 037
Dividends	3 773	3 124	3 259	3 420	3 518
Cash Dividend	2 000	2 000	2 000	2 000	2 000
# shares	3 212	3 212	3 212	3 212	3 212
DPS	1,80	1,60	1,64	1,69	1,72
PV dividends	1,80	1,48	1,41	1,35	1,27
Terminal Price	33,72				
Sum PV dividends	7,31				
Target Price	**41,03**				

Appendix 10: Comparable Companies

1. **11 companies taken from the industry**. We only included companies that operated within the same sector as BHP due to the fact that they then to have a similar business structure.

Companies	Market Cap (Billion US$)
Rio Tinto Ltd	80,95
Glencore PLC	61,92
Vale S.A.	78,2
Anglo American PLC	29,21
Teck Resources LTD	10,94
Vedanta Limited	10,41
Mansfield Oil	--
Freeport-Mcmoran Ltd	16,66
Barrick Gold Corporation	15,12
Fortescue Metals Group	8,45
Sumitomo Metal Mining	8,6

2. **Exclude non-traded and state-owned companies**: We do not believe that any of these is a fair match to BHP as the company is publicly traded and private companies do not disclose the desirable information

Companies	Free-float	Investors	Peer?
Rio Tinto Ltd	99%	Private	YES
Glencore PLC	85%	Private	YES
Vale S.A.	24%	State Owned/Private	YES
Anglo American PLC	73%	Private	YES
Teck Resources LTD	99%	Private	YES
Vedanta Limited	51%	Private	YES
Mansfield Oil	--	Private	NO
Freeport-Mcmoran Ltd	99%	Private	YES
Barrick Gold Corporation	98%	Private	YES
Fortescue Metals Group	50%	Private	YES
Sumitomo Metal Mining	96%	Private	YES

3. **Similar Business Structure**. We excluded companies which did not have a diversified portfolio of sold commodities. As BHP is diversified and operates mainly in Iron Ore, Copper, Coal and Petroleum, we excluded companies that did not have as their main core the commodities described above.

Companies	Iron-Ore	Copper	Coal	Oil	Others	PEER?
Rio Tinto Ltd	43,2%	13,4%	19,9%	--	23,5%	YES
Glencore PLC	14,0%	16,4%	8,7%	0,1%	60,8%	NO
Vale S.A.	65,0%	4,0%	2,0%	--	29,0%	YES
Anglo American PLC	16,0%	14,3%	24,6%	--	45,1%	YES
Teck Resources LTD	--	21,6%	44,6%	--	33,8%	NO
Vedanta Limited	21,0%	48,6%	12,0%	2,0%	16,4%	YES
Freeport-Mcmoran Ltd	26,3%	12,5%	6,8%	10,4%	44,0%	YES
Barrick Gold Corporation	--	--	--	--	100,0%	NO
Fortescue Metals Group	98,7%	--	--	--	1,3%	NO
Sumitomo Metal Mining	--	69,1%	--	--	30,9%	NO

4. **International Diversification**. This criteria excludes companies that only sell locally or within a certain area of their location. As BHP sells internationally and it is exposed to higher risks, we exclude companies that do not take the risk of selling worldwide.

Companies	Asia-Pacific	Europe	Americas	Other	PEER?
Rio Tinto Ltd	70,4%	8,8%	17,7%	3,1%	YES
Vale S.A.	59,0%	16,0%	17,0%	8,0%	YES
Anglo American PLC	63,8%	17,7%	6,1%	12,4%	YES
Vedanta Limited	71,6%	--	--	28,4%	NO
Freeport-Mcmoran Ltd	32,1%	6,0%	42,3%	19,6%	YES

Summary:

Companies	PEER?
Rio Tinto Ltd	YES
Vale S.A.	YES
Anglo American PLC	YES
Freeport-Mcmoran Ltd	YES

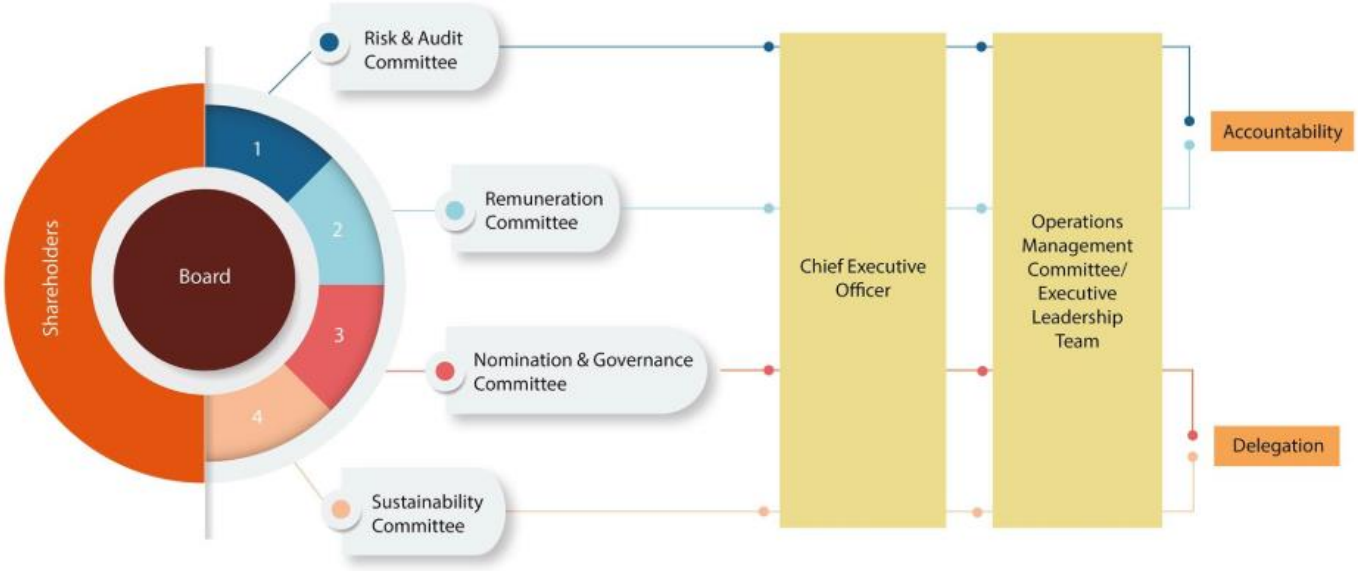
Valuation

Peers Multiples 2019HYE			
Multiple	EV/SALES	EV/EBITDA	EV/CFO
Rio Tinto Ltd	3,88	9,82	11,34
Vale S.A.	3,09	7,52	9,20
Anglo American PLC	2,12	5,62	8,15
Freeport-Mcmoran Ltd	1,98	4,83	9,89
1st Quartile	2,09	5,42	8,94
Median	2,61	6,57	9,55
Mean	2,77	6,95	9,65
3rd Quartile	3,29	8,10	10,25
BHP Multiples	4,00	7,38	8,89
% Dif using median	42,12%	11,59%	-7,06%
% Dif using mean	36,31%	6,01%	-8,10%
Average mean % Dif		11,41%	

Multiple Valuation			
Entreprise Value Multiple	EV/SALES	EV/EBITDA	EV/CFO
Multiple	2,77	6,95	9,65
Entreprise Value (Million USD)	112 391	152 779	175 944
Net Debt (Million USD)	403	403	403
Equity (Milltion USD)	111 988	152 376	175 542
Target Price	34,87	47,44	54,66
Average Target Price (USD)		**45,66**	

Appendix 11: Corporate Governance

Corporate Governance Model



Committees

Board of Directors	Function	Independent	Executive	Remuneration Base 2017	Held since
Ken MacKenzie	Chairman	Yes	Non-Executive	$ 138 000	September 2017
Andrew MacKenzie	Chief Executive	-	-	$ 1 700 000	May2013
Malcom Brinded	Director	Yes	Non-Executive	$ 229 000	April 2014
Malcom Broomhead	Director	Yes	Non-Executive	$ 209 000	March 2010
Anita Frew	Director	Yes	Non-Executive	$ 193 000	September 2015
Carolyn Hewson	Director	Yes	Non-Executive	$ 195 000	March 2010
Lindsay Maxsted	Director	Yes	Non-Executive	$ 209 000	March 2011
Wayne Murdy	Director	Yes	Non-Executive	$ 199 000	June 2009
Shriti Vadera	Senior Director	Yes	-	$ 236 000	January 2011

Risk and Audit Committe	Function	Independent	Held	Attendance to meetings
Lindsay Maxsted	Chairman	Yes	Whole period	12/12
Malcom Broomhead	Member	Yes	Whole period	12/12
Anita Frew	Member	Yes	Whole period	11/12*
Wayne Murdy	Member	Yes	Whole period	12/12

*Due to ill health, Anita Frew was unable to atend one meeting

Remuneration Committe	Function	Independent	Held	Attendance to meetings
Carolyn Hewson	Chairman	Yes	Whole period	5/5
Malcom Brinded	Member	Yes	Whole period	5/5
Pat Davies	Member	Yes	Until 06/04/2017	4/4
Wayne Murdy	Member	Yes	From 06/04/2017	1/1
Shriti Vadera	Member	Yes	Whole period	5/5

Nomination & Gov. Comm	Function	Independent	Held	Attendance to meetings
Ken MacKenzie	Chairman of the	Yes	Whole period	10/10
Carolyn Hewson	Member	Yes	Whole period	8/8
John Schubert	Member	Yes	Whole period	3/3
Shriti Vadera	Member	Yes	Whole period	10/10

Sustainability Committee	Function	Independent	Held	Attendance to meetings
John Schubert	Chairman	Yes	Until 17/11/2016	2/2
Malcom Brinded	Chairman	Yes	Whole period	4/4
Ken MacKenzie	Member	Yes	From 22/11/2016	3/3
Pat Davies	Member	Yes	Until 06/04/2017	3/3
Malcom Broomhead	Member	Yes	Whole period	4/4

Major Projects

Commodity	Country	Project	Expected capacity
Petroleum	Australia	To maintain LNG plant throughout from the North West Shelf operations.	To be assessed
Petroleum	United States	Mad Dog phase 2, extension of the existent in the Gulf of Mexico	140 000 barreal/year
Iron Ore	Australia	Expanding the mines to replace already existing that are getting fully explored	80 mt/year
Copper	Chile	Extension on the current mine.	95 mt/year

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IMF World Economic Outlook

KPMG Coal Price and FX market forecasts Outlook 2018

OECD Database

International Energy Agency – World Energy Outlook

World Bank Database
World Bureau of Metal Statistics Database
NYSE Corporate Governance Guide

Abbreviations

CapEx	Capital Expenditure
CDS	Country Default Swap
CFF	Cash Flow from Financing Activities
CFI	Cash Flow from Investing
CFO	Cash Flow from Operations
D&A	Depreciations & Amortizations
Bn	Billion
BoD	Board of Directors
CAPM	Capital Asset Pricing Model
CEO	Chief Executive Officer
CFO	Chief Financial Officer
HYE	Half Year End
CF	Cash Flow
EBITDA	Earnings Before Interest, Taxes, Depreciation and Amortization
EBIT	Earnings Before Interest and Taxes
F	Forecast
GDP	Growth Domestic Product
MRP	Market Risk Premium
IRP	Industry Risk Premium
OPEC	Organization of the Petroleum Exporting Countries
ROA	Return on Assets
ROE	Return on Equity
US	United States
Y	Year
YoY	Year over Year
Rf	Risk Free Rate
WACC	Weighted Average Cost of Capital
Mm	Millions
COGS	Cost of Goods Sold
DCF	Discounted Cash Flows
DDM	Dividend Discount Model
EV	Enterprise Value
FCFF	Free Cash Flow to the Firm
FCFE	Free Cash Flow to Equity
g	Growth Rate
Ke	Cost of Equity

Kd	Cost of Debt
NWC	Net Working Capital
YE	Year End
CAGR	Compound Annual Growth Rate
DMT	Dry metric tons