

RioTinto

Rio Tinto (RIO)

For the Gordan Spellman Portfolio

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Final Report

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Executive Summary:

Rio Tinto (RIO): **Recommending a Buy (270)**

Current stock price (12/7/21): \$64.14

Proposed Transaction

- **Buy** 270 shares of RIO
- **Sell** 30 shares of EMR

	TTM	2020	2019	2018
P/E	5.56	10.08	10.06	11.86
ROE	23.72%	20.04%	15.41%	27.95%
EPS	11.58	6.43	4.30	8.44

Reasons for Recommendation

Rio Tinto is different from other stocks in the fund, as a basic materials and cyclical stock. They have produced a strong balance sheet with low debt and pay dividends regularly. In addition, the Spellman Fund does not have any Basic Materials holdings and Rio Tinto is not strongly correlated with most of the portfolio. This would make it a great addition to the fund.

Company Overview

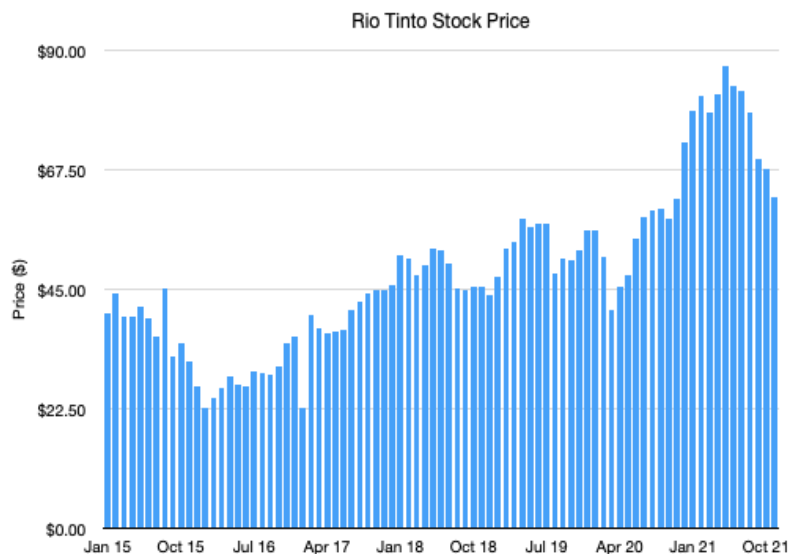
The metal and mining company, Rio Tinto, is the second largest in its field. They are located in 35 countries, with headquarters in London. Mines, smelters, refineries and research and development allow them to produce products essential for human needs and progress. They are leaders in iron ore and aluminum in the mining industry.

Revenue Streams

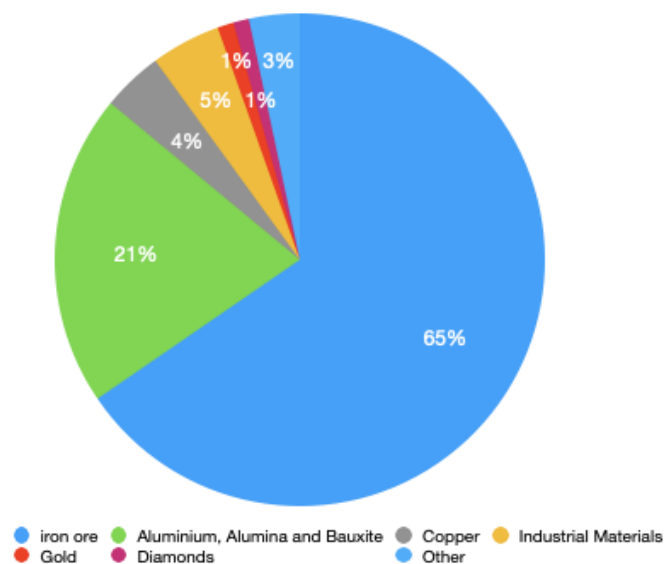
- The commodities the company mines are Iron Ore, Aluminum, Alumina, Bauxite, Copper, Gold, Diamonds, Industrial Materials, and other commodities.
- The top commodities that drive revenue are Iron (65%) and Aluminum, Alumina, and Bauxite (21%).

Key Drivers

1. **China:** With a quick recovery after the pandemic, China has continued to contribute a large amount of revenue for Rio Tinto. Their GDP growth has been promising this year



2020 Revenue Streams



at 8 percent. As China plans to host the Olympics, they have cut back their domestic mining production to have cleaner air. Their growth is based upon GDP, tonnage and price predominant commodities.

2. **All other Countries:** As the rest of the world begins to recover from the pandemic, as we have seen China do, their production will pick up as well.
 - Mine Expansions: Oyu Tolgoi mine is still in development, while Gudai-Darri and Amrun mines are currently operational. These expansions will allow Rio Tinto to be able to supply what is in demand.

Board Makeup

- Chairman of the Board: Simon Thompson (appointed in 2014)
 - Consists of 11 individuals
 - 9 outsiders
 - 4 women

Strengths

- Strong Balance Sheet, with low debt and high dividend yield
- Strong distribution networks with their own railways and ports

Weaknesses

- Environmental issues with indigenous people and wildlife
- Commodity price fluctuations

Opportunities

- Infrastructure bill
 - China was said to be the first country to come out of the pandemic, as the rest of the world begins to as well their revenues will rise. With more and more politicians calling for more green energy, this bill allows for more funding to be allocated towards decarbonization and more renewable energy within better infrastructure.
- With increasing ESG efforts, the company will open new doors to current and prospective customers.
 - Being a mining company, Rio Tinto is investing a lot in decarbonization, improving diversity, and mining practices.

Threats

- Changing commodity price
 - With iron ore making up 65 percent of total revenue in 2020, the price can have an influence on the outcome of Rio Tinto
- Government Regulation
 - With increasing concerns about climate change, taxes and regulations are stricter on mining companies, decreasing their impact on the planet.
- Natural Disasters
 - Natural disasters such as flooding hinder the company's production results.

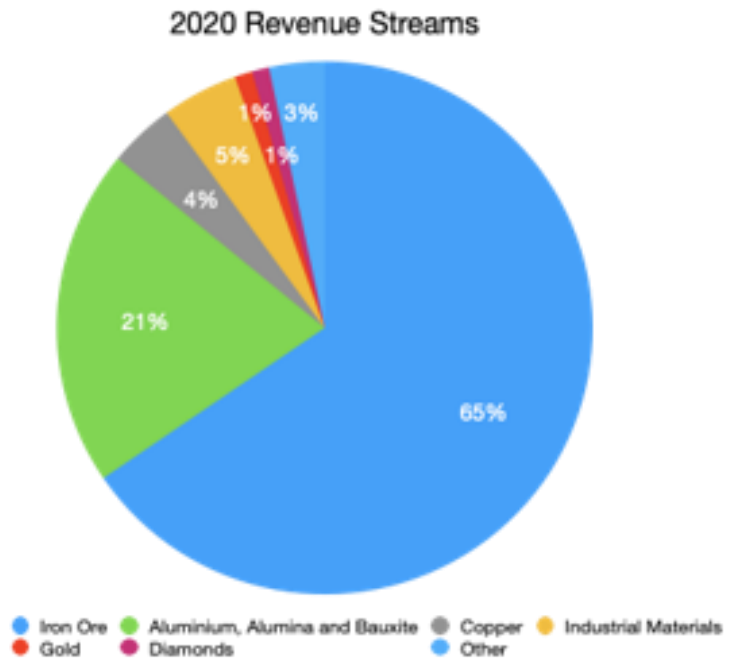
Company Background

Rio Tinto is a metals and mining corporation, with the sole purpose of providing the materials needed for everyday life. They are the second largest metals and mining corporation, founded in 1873 after the purchase of a mining complex on the Rio Tinto in Huelva, Spain. They own and operate underground and open pit mines, refineries, mills, smelters, and power stations. Along with their own ports, ships and railways provide customers with their products. Rio Tinto also runs data centers, labs for research and development, and uses top of the line technology with artificial intelligence. They work to ensure that the land they are working on is rebuilt or repurposed to invest in the local communities in the area. They are located in 35 countries with their headquarters in London, United Kingdom, and Melbourne, Australia, making them an international company in the basic materials sector.

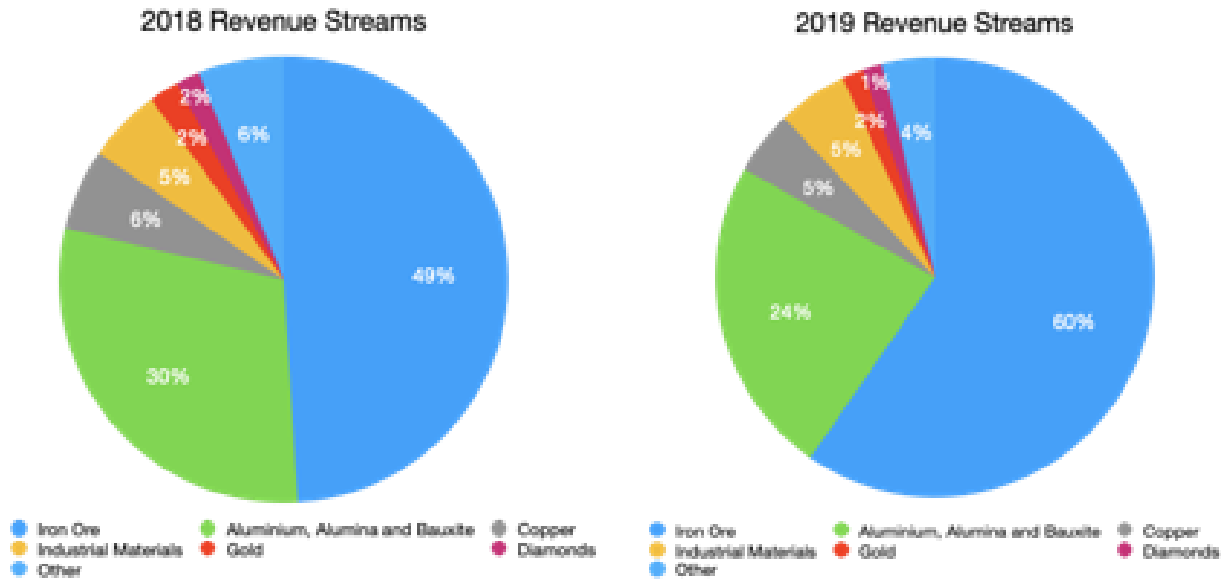
Revenue Breakdown

Rio Tinto provides multiple products to its consumers, including:

- Iron ore
- Copper
- Aluminum
- Gold
- Diamonds
- Industrial Materials



Iron is their largest revenue producing commodity, making up 65 percent in 2020. Iron ore has continued to grow over the past few years, with its revenue totaling 29 billion in 2020. Their second largest revenue stream is aluminum, including alumina and bauxite. With iron ore continuing to grow as a revenue stream, its market price is influential in Rio Tinto's overall performance.



(Rio Tinto 2021 Annual Report)

Corporate Governance

Executive Committee

- Jakob Stausholm joined Rio Tinto in 2018 as the executive director and chief financial officer and became the chief executive in January 2021. He is focused on maximizing their cash flows and high growth investments, while creating a safe and efficient operation.
- The rest of the executive committee is made up of 11 highly qualified people, including specific chief executives for copper, iron ore, minerals, and aluminum.

Board Of Directors

- The current chairman of the board for Rio Tinto is Simon Thompson, who has years of experience on different boards of mining companies.
- The board is made up of 11 people
 - 4 women
 - 9 independents

ESG

- Rio Tinto is working on many investment projects to bring their operations up to better environmental standards.
 - They are doing so to future-proof their assets to be great ten and even twenty years down the line. Rio Tinto should be rated neutral in ESG. While their operation requires digging and drilling into their earth, they are determined to do so in a more environmentally friendly way.
- Their goal is to decrease carbon emissions by 50% by 2030. They are planning to invest 7.5 billion dollars in order to reach their goal.
 - This covers a multiple step scope, starting with renewable energy for their operations. Machines that must run at all hours are being changed over to renewable energy as soon as possible, especially smelters.
- ELYSIS is a company that has developed a new revolutionary way to make aluminum and is working with Rio Tinto. This collaboration is one of the next big steps in decreasing their carbon emissions created by aluminum mining and refining. Alcoa, Rio Tinto, the Government of Canada and the Government of Quebec provided a combined investment of \$228 million to create ELYSIS.
- Some of the risks in ESG for a mining corporation include environmental safety restrictions and disputes with indigenous groups. The current chairman of the board, Simon Thompson, took full responsibility for the destruction of a sacred indigenous site in Australia. Because of this, he will not be up for reelection.
- Rio Tinto is also investing in research projects dealing with endangered species and their habitats as well to prevent the extinction of animals, such as chimpanzees, due to destruction of their habitats to then be used in mining. (2020 Earnings Call)

Key Strengths & Weaknesses

Rio Tinto has created strong distribution networks, with suppliers and dealers, allowing them to have a reliable distribution network to reach a magnitude of markets as they are located in six continents.

- The relationships they have built with suppliers and dealers has been motivated by their zero-emission initiative by 2050. They ensure that their values are in line with those they work with to bring their products to the markets and eventually to consumers. As eco-friendly operations have begun to play a huge role in companies' ability to succeed, Rio Tinto is proud to say they no longer extract fossil fuels.

Rio Tinto's innovation has placed them at some of the top positions in their industry, due to their sustainability, technology, and performance in new markets.

- They have gone through acquisitions and mergers, specifically with tech companies, creating a collaborative effect to produce their smart mines and artificial intelligence. Their automated operation has created a safer, more efficient, and a more environmentally friendly business.
- The increases in efficiency have led to lower costs and less driver error. Their automated trucks alone reduced associated costs by 15%. Their advancements in technology have given way to automation. In 2020 Rio Tinto reported free cash flows of 9.4 billion dollars. Allowing them to provide their shareholders with cash in return and continue to invest in themselves to provide long term advancements.

Rio Tinto has proven to have a strong balance sheet, allowing them to be able to pay off debts and provide for their shareholders.

- A balance sheet shows the health of a company and their ability to survive economic downturns. Many companies did not pay dividends amidst the pandemic. Rio Tinto's strong balance sheet allowed them to continue to do so during what seemed to be the economies darkest.
- Rio Tinto has very low debt compared to its competitors. Most of the debt they do have is long term. The strong balance sheet shows that the debt they do have can be paid.
- Dividends per share in 2020 was 309.00 cents per share. Rio Tinto pays a standard dividend, and then depending on their performance, may pay an extra dividend as well. In 2020 Rio was able to declare 9 billion in dividends.

While there are multiple strengths that Rio Tinto has going for them, like any other company, they are not without their faults. For example, RIO is struggling from the toll that the pandemic has taken on them. Some problems from the pandemic include:

- Many projects were put on hold thus slowing down the demand for a lot of basic materials.
- Now with post pandemic recovery, demand is increasing to higher than normal and in return having a negative impact on pricing as well as making it difficult to keep up with supply.
- The volatility in the commodity market has metal prices increasing. In turn this is resulting in declining RIO stocks prices.

Despite the decline in stock prices they will increase once more as things progress. These weaknesses above will pass as the market recovers from the pandemic. One weakness that is not a result of Covid is the company's debt.

- Rio Tinto's financial situation may appear risky to investors who are not well researched. This would be from investors looking solely at their debt.
- While nearly all companies possess some sort of debt, Rio Tinto's net debt is currently standing at \$0.7 billion.
- 95% of their debt is long term.

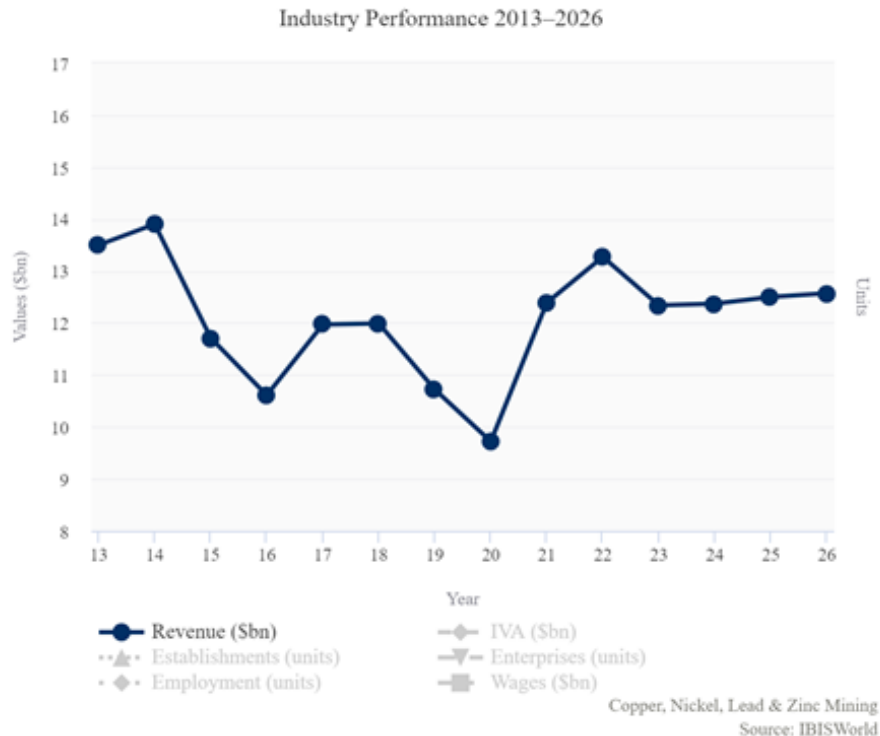
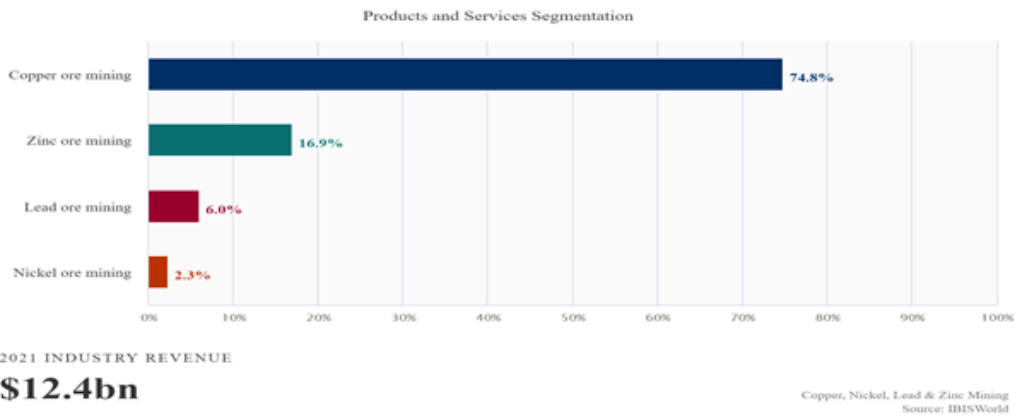
With such high standing debt, it is certainly a concern for many investors that may scare them away. While it may seem like a lot of debt, with the proper research, it is clear that this debt is actually an asset to the company. A majority of Rio Tinto's debt is long-term debt. This is a good thing. It means that RIO has greater flexibility, as well as more resources to fund other capital needs or endeavors.

Their debt may appear to be less concerning when their debt-to-equity ratio of 0.28 is taken into consideration. When compared to their competitors, RIO has actually accumulated less debt. This means that, in comparison, they have more room for debt that could be put towards further growth opportunities. Company risks, such as supply chain disruptions and investment risk, can also be considered a weakness. But, like any other company, risk is to be expected. Like all

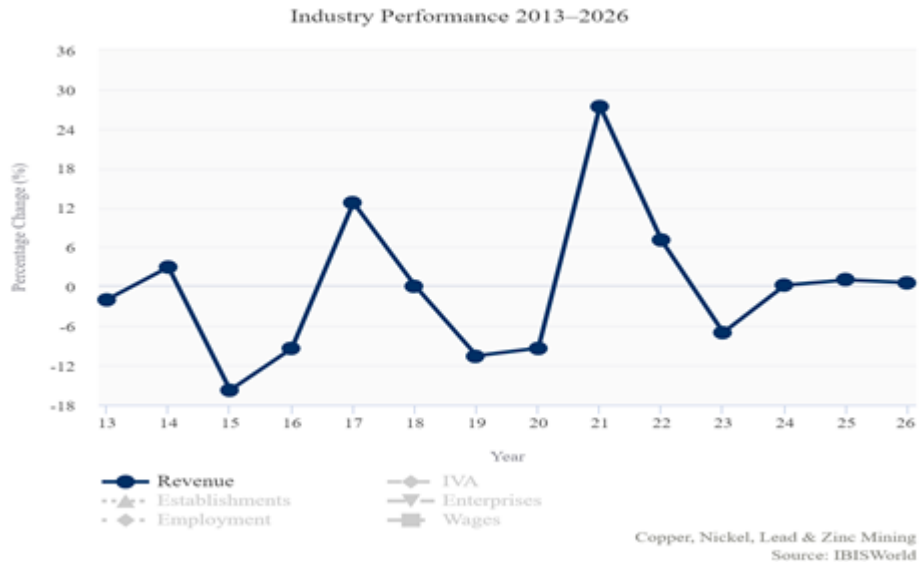
business, Rio Tinto has their faults, but they also have a variety of promising strengths. (RIO 2020 Annual Results: Balance Sheet)

Industry Summary

The copper, nickel, lead, and zinc mining Industry is composed of companies that mine metal-bearing ores. The companies can sell them raw or as concentrates after grinding, crushing, and concentrating. The primary activities and products of this industry are copper ore, lead ore, and zinc ore mining and beneficiating. Other activities consist of recovering copper concentrates and researching/developing mine sites.

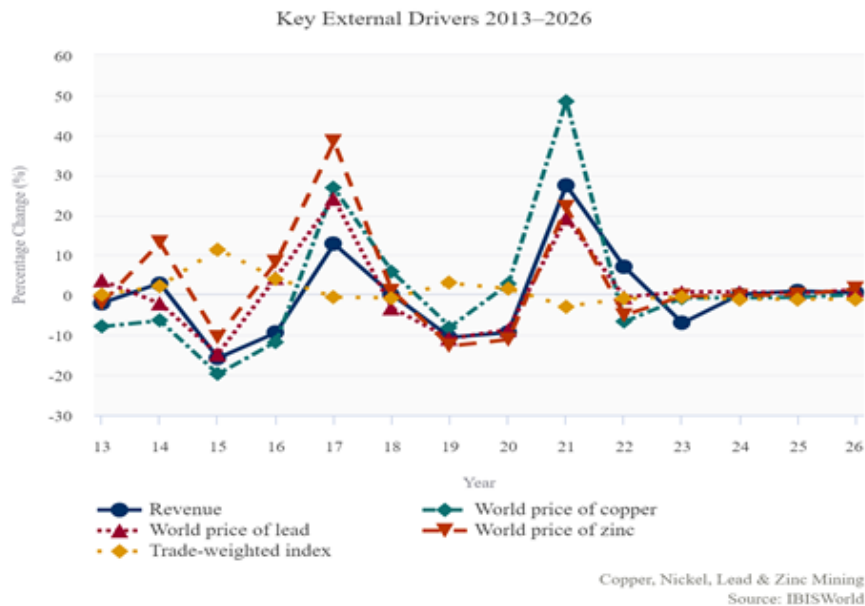


The industry has earned \$12.48 billion in revenue and revenues from 2016-2021 are growing 3.2%. Annual growth from 2021-2026 is expected to be 0.3%.



Key external drivers based on % 2016-2021 Annual Growth:

- 13.5% world price of copper
- 5.8% world price of zinc
- 3.1% world price of lead
- 0.1% trade weighted index

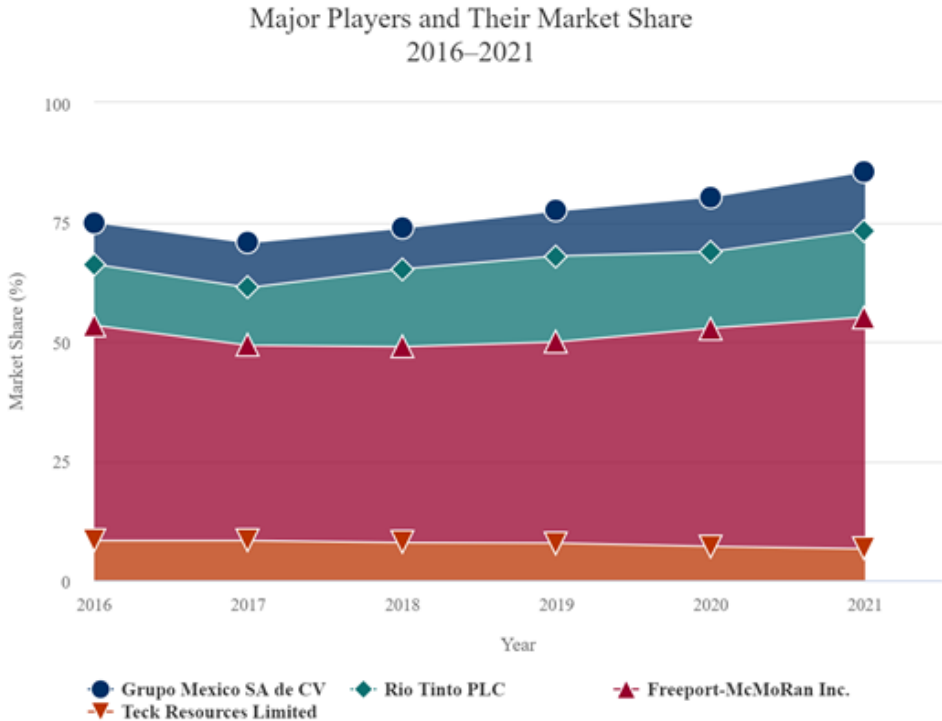


The industry has earned \$4.3 billion in profits where annual growth from 2016-2021 is 20%. The industry has a 35.5% profit margin where Annual growth from 2016-2021 is 18.3pp.

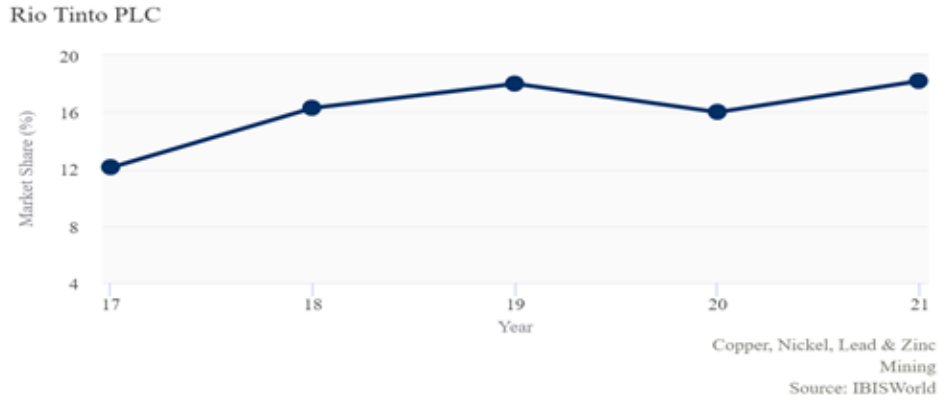
Key trends/Outlook:

Metal prices continue to have a profound impact on revenue and profits. Copper sales will continue to dominate the share of industry revenue, but it is expected that zinc and lead prices will stabilize, reducing its share. Next, rising automobile manufacturing activity is expected to be met by revitalized construction markets. The industry will continue to grow tremendously over the next five years to 2026 as the economy recovers from the COVID-19 pandemic. Another trend is that steel manufacturers represent the largest market for zinc for coating steel products. This shows a strong demand for basic materials going forward into the future. Lastly, international trade has been an extremely important facet for many industries within the mining sector. Export markets will remain an important source of revenue over the next five years, accounting for 45.1% of revenue in 2026.

Market Share Across the Industry:



Copper, Nickel, Lead & Zinc Mining in the US
Source: IBISWorld



Based on market share, the major competitors in the industry are FCX (48.5%), **Rio Tinto PLC (18.2%)**, Grupo México SA de CV (12.3%), Teck (6.6%), and Other (14.4%).

Growth Story

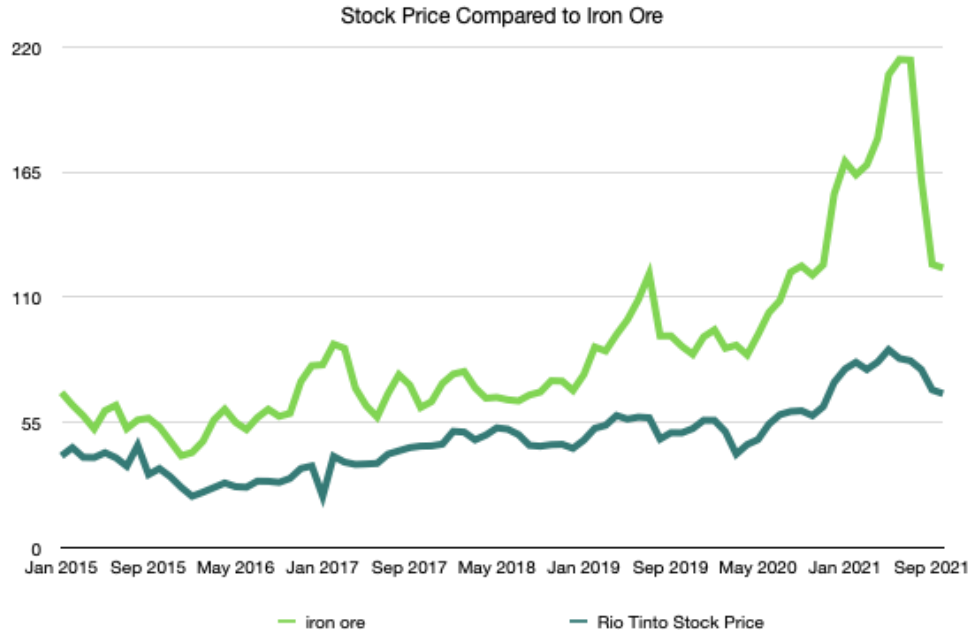
China makes up a large part of Rio Tinto's revenues. With China's expected economic growth as we transition to higher demands after the effects of the pandemic, we will see a large amount of growth in Rio Tinto's revenues. The growth from China is based on their GDP growth. Rio does expect this growth to plateau in the future, however China has continued to make up the majority of revenue over the past five years.

(Rio Tinto 2021 Annual Report)

Since China contributes a large amount to Rio Tinto's revenues, the stock price can be influenced by the changes in their economy. With iron ore also being one of the largest revenue streams, changes in



commodity prices can also influence the stock price. In the graph below, we can see that Rio Tinto's stock price is correlated with the price of iron ore --- the biggest commodity mined by the company.



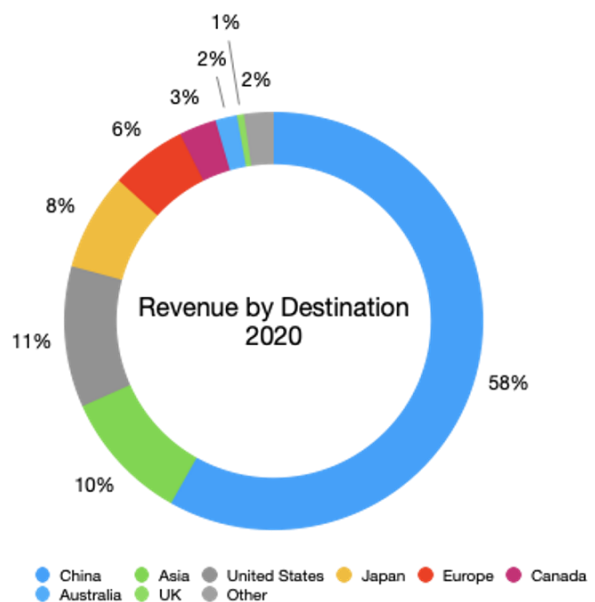
We can see the price of iron ore peak at the half year in 2021 mainly driven by the increase in iron are price. However, the price of iron ore is starting to decrease which will impact revenues and earnings for the second half of 2021.

(Trading Economics, Morningstar)

While China made up 58.1% of revenues in 2020, the other 41.9% still contribute to the growth of Rio Tinto. This leads to the second growth, made up of all other destinations:

- United States
- Japan
- Europe
- Canada

These destinations and a few others make up our second growth factor, ROW (rest of world) reopening. China was said to be the first to recover from the pandemic, as we can see in their revenue growth. With the rest of the world continuing to recover, production and the economy will as well.



This will increase the ROW revenues portion of Rio Tinto’s total revenue. China is cutting back on their domestic production and operations, in preparation of hosting the Olympics and wanting to have clean air. This contributes to the recent fluctuation in commodity price and GDP growth for China. From this year’s earning call, China’s growth within the corporation is expected to eventually plateau. With that, the assumption is made that China will remain at 60 percent of total revenue, and the ROW at 40 percent. The infrastructure bill that was recently passed is expected to spur the growth for ROW and it continues to reopen and pick up if China slows.

Revenue Projections --- Growth Rates

	2021	2022	2023	2024	2025
China-Tonnage	8.00%	5.60%	5.10%	4.60%	4.10%
ROW - Tonnage	6.00%	5.00%	4.50%	4.00%	3.50%
Iron Ore Price	-----	8%	8%	8%	8%
Aluminum Price	-----	5%	5%	5%	5%
Other Commodities	-----	5%	5%	5%	5%

(International Monetary Fund, Trading Economics)

The current growth rate of global GDP is 6 percent and China’s GDP growth rate is 8 percent. We expect to then see the growth stager off over the next few years. The tonnage from 2020 will then grow at the GDP rates above. To find total revenue for China and ROW will we use also use the commodity price projections. These projections are based off the growth of iron ore, aluminum and all other commodities prices over the last five years. We did not include the steep increase and then drop in iron ore price in the growth rate. For 2021 commodities price, we pulled their average price for the year, while also considering that at the half year, revenue was already totaling 33 billion dollars.

Iron Ore Baseline Segment

	2021	2022	2023	2024	2025
ROW (40%) - Tonnage	121,235	127,296	133,025	138,346	141,188
China (60%) - Tonnage	185,283	195,659	205,638	215,097	223,916
Price of Iron Ore	\$150.00	\$110.32	\$119.15	\$128.68	\$138.97
ROW-Revenue (millions)	\$18,185	\$14,043	\$15,849	\$17,802	\$19,899
China- Revenue (million)	\$27,792	\$21,585	\$24,501	\$27,678	\$31,118
Total Revenue (million)	\$45,977	\$35,629	\$40,351	\$45,481	\$51,018
Earnings (million)	\$17,011	\$13,182	\$14,929	\$16,827	\$18,876
Shares	1,618,000	1,610,000	1,600,000	1,590,000	1,580,000
EPS	\$10.15	\$8.19	\$9.33	\$10.58	\$11.95

(Annual Report: Rio Tinto PLC., 2020)

The calculations above are the breakdown of the iron ore segment of the baseline earnings per share projections and estimates.

- Tonnage is growing at GDP rates
- Iron ore prices are growing based on the historical rate
 - 2021 iron ore price is higher as we saw high price in the first half of the year
 - 2022 is growing based on the 2020 average price, which is why we see the decrease, returning to a more typical growth
- The earnings from each year are found using a profit margin of 37 percent
- The number of shares is based off Value Line's projections

Baseline EPS Breakdown

	2021	2022	2023	2024	2025
Iron Ore	\$10.51 (73%)	\$8.19 (66%)	\$9.33 (66%)	\$10.58 (67%)	\$11.95 (68%)
Aluminum	\$2.31 (16%)	\$2.52 (20%)	\$2.74 (20%)	\$2.96 (19%)	\$3.19 (18%)
Other Commodities	\$1.59 (11%)	\$1.78 (14%)	\$2.00 (14%)	\$2.24 (14%)	\$2.51 (14%)

Total EPS	\$14.42	\$12.49	\$14.07	\$15.78	\$17.64
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The aluminum and other commodities sections were calculated the same as the iron ore segment, using their respective growth rates. Iron ore continuously makes up almost seventy percent of total EPS. We see a decrease from 2021 to 2022 as the price of iron ore has fallen in the second half of 2021. We do not see this as a deterrent, as we expect the price to consistently grow from there on out.

Mine Expansions:

A problem that Rio Tinto, and all other mining companies face, is that resources are limited. Existing mines face depleting resources and decreased production, thus decreasing revenues. The mine expansion projects are insurance that RIO will continue to be able to meet its demand. With the increase in demand, from the market recovering from the pandemic, resources are more important than ever. Therefore, Rio Tinto's mine expansion plans are so important.

Three current expansions include:

- Pilbara: Gudai-Darri
- Weipa: Amrun
- Oyu Tolgoi

The Gudai-Darri mine is an expansion on to the 16 Pilbara iron ore mines currently in operation. This mine is expected to be completed and at full production capacity by 2023. At full production, this mine will provide 43 million tonnes/year of iron ore. This is then added to the 333 million tonnes that RIO is currently producing. (Rio Tinto: Pilbara)

Another example is the Amrun mine. This project is an expansion of the Weipa bauxite mines in Australia. The Amrun mine was completed and fully operational by 2019, producing 22.8 million tonnes of bauxite a year. This project was started as a way to make up for the depleting resources from other Weipa mines. The Amrun mine is expected to not only make up for the loss of production in other mines but also increase production overall by 10 million tonnes/year. (Rio Tinto: Weipa)

Lastly, the Oyu Tolgoi mine is a copper mine that is currently still being developed. In 2020 it brought in 149.6 thousand tonnes of copper and expected to reach full production in 2028. At full production it is expected to produce 480,000 tonnes a year. By 2030, it is expected

to be the fourth largest copper mine in the world. However, Rio Tinto's share of this mine is only 34% and therefore RIO's share of the 2020 production is only 50.2 thousand tonnes.

Furthermore, at full production, Rio Tinto's share will be 20,400 tonnes/year of copper. (Rio Tinto: Oyu Tolgoi)

Tonnes of Materials Produced as a Part of the New Mine Expansion Projects

	2020	2021	2022	2023	2024	2025
Gudai-Darri (MT)	-	-	-	43	43	43
Amrun (MT)	22.8	22.8	22.8	22.8	22.8	22.8
Oyu Tolgoi (KT)	50.2	70.6	91.0	111.4	131.8	152.2

Thanks to the expansion projects, as well as others, RIO should be able to make up for depleting resources as well as keep up with increased demand from the market reopening.

Valuation

FCFF Intrinsic Value/Share	187.38
FCFE Intrinsic Value/Share	185.08
FCF Method Intrinsic Value Per Share	186.23
1-Year Target Price	\$87.75
Target Return	44.16%
Current Stock Price	\$63.98
P/E Method Price	\$76.81

(Annual Report: Rio Tinto PLC., 2020)

- With a current stock price of \$63.98, we would recommend buying the stock.
- With FCFF and FCFE being close to one another the average was not pulled one way or the other and came to a total of 186.23.
- Since the P/E is far closer to the current value of \$63.94, we decided to be a little more conservative and have our target price weighed more heavily on P/E.
 - We did a 90/10 weight distribution for this reason, thus giving us the resulting target price of \$87.75.

- We decided to put more into the P/E method since Rio Tinto has been trading above its P/E.
- We came up with our 2022 P/E estimate by assuming 2022 P/E will be between 6.00-7.00
 - We decided that P/E will be closer to 6.00 and would not expect a big increase for 2022.
- With Rio Tinto having a floating dividend that is paid twice a year with the potential for a special dividend depending on profitability and the commodity market, we used a dividend yield of 7% for baseline, 5% for pessimistic, and 10% for optimistic.
 - The target return for each scenario is 44.16%, 32.18%, and 57.79% respectively.
- We agree with Value line’s projections, we believe the numbers may vary some over the next few years, but the outlook still looks promising, as we expect.

Scenario Analysis

Scenario Analysis EPS Projections

	TTM	2021 (based on projected Q4)	2022	2023	2024	2025
Baseline	11.6	\$14.42	\$12.49	\$14.07	\$15.78	\$17.64
Low growth/Pessimistic	11.6	\$14.33	\$11.91	\$12.90	\$13.91	\$14.94
High growth/Optimistic	11.6	\$14.51	\$13.07	\$15.29	\$17.82	\$20.71

- In this chart, we project EPS to decrease for 2022 due to commodity prices falling. After 2022, we project that EPS will increase thereafter with a steady growth in prices.

Baseline EPS Growth Rates:

	2022 Growth Rate %	2023 Growth Rate %	2024 Growth Rate %	2025 Growth Rate %	Average Growth Rate Baseline %
2021 Growth Rate %	-13.38	12.65	12.15	11.79	29.49

Pessimistic EPS Growth Rates:

2021 Growth Rate %	2022 Growth Rate %	2023 Growth Rate %	2024 Growth Rate %	2025 Growth Rate %	Average Growth Rate Pessimistic %
122.86	-16.89	8.31	7.83	7.40	25.90

Optimistic EPS Growth Rates:

2021 Growth Rate %	2022 Growth Rate %	2023 Growth Rate %	2024 Growth Rate %	2025 Growth Rate %	Average Growth Rate Optimistic %
125.66	-9.92	16.99	16.55	16.22	33.10

Past Fiscal Years EPS Growth Rates

2016 Growth Rate %	2017 Growth Rate %	2018 Growth Rate %	2019 Growth Rate %	2020 Growth Rate %	Average Growth Rate 2016-2020 %
-635.42	90.66	61.84	-38.08	23.01	-99.60

(Macrotrends)

- 2018-2020 Average Growth Rate of 15.59% was used in computation of PEG TTM.

Scenario Analysis Valuation

Scenario	FCFF Valuation	FCFE Valuation	FCF Valuation (0.5FCFF + 0.5FCFE)	P/E Method	Combined Target Price
Baseline	187.38	185.08	186.23	76.81	\$87.75
Low Growth/Pessimistic	155.44	153.56	154.5	73.25	\$81.37
High Growth/Optimistic	223.51	220.77	222.14	80.38	\$94.56

- For our three scenarios, FCFF and FCFE are the intrinsic value per share that tells us what Rio Tinto's stock is worth.

- The FCF Valuation is the average of our FCFF and FCFE values that gives the average value that Rio Tinto’s stock is worth.
- The P/E Method is our 2022 P/E estimate of 6.15 multiplied by 2022 EPS of 12.49 for our three scenarios.
 - We compared this number to the FCF Valuation to see where the current price of Rio Tinto’s stock was closer to.
- Our Combined Target Price for the three scenarios is based on the 90 P/E and 10 FCF weights multiplied by our P/E Method number and FCF Valuation numbers.
 - These Target Prices tell us when to sell the stock when these stocks get to these prices.

Baseline Valuation

P/E Multiple Valuation	FCF Baseline Valuation	12-Month Target Price	Current Price	Target Return
76.81	186.23	\$87.75	\$63.98	44.16%

- Based on Baseline figures, the P/E Multiple Valuation figure is our 2022 P/E estimate of 6.15 multiplied by our 2022 EPS estimate of 12.49 to arrive at 76.81.
- FCF Baseline Valuation is the average of FCFF and FCFE that explains the average price the stock is worth based on intrinsic value per shares.
- \$87.75 is the 12-month target price where we would sell Rio Tinto’s stock once it hits this price under our baseline scenario.
- The current price of Rio Tinto’s stock is \$63.98 and based on our baseline analysis, our target return is 44.16%.

Financial Analysis

Key Financial Information

Rio Tinto PLC Financials:

Year	EPS	P/E	P/B	ROE	ROA	Net Profit Margin	D/E	PEG
2018	8.44	11.86	2.29	27.95%	15.31%	34.36%	0.94	0.1
2019	4.30	10.06	2.56	15.41%	7.94%	16.15%	0.94	-2.4
2020	6.43	10.08	2.67	20.04%	10.68%	23.31%	0.88	0.07
Industry Average		16.08	2.09	13.03%	6.85%	14.10%	2.68	N/A

(Annual Report: Rio Tinto PLC., 2018-2020 & Telemet Orion Finance Lab)

Quarter	EPS	P/E	P/B	ROE	ROA	Net Profit Margin	D/E	PEG
Quarter 4 2019	2.40	10.06	2.37	8.58%	4.42%	17.29%	0.96	-2.4
Quarter 2 2020	2.05	10.08	1.92	7.60%	3.93%	17.15%	0.94	0.07
Quarter 4 2020	3.98	10.08	2.59	14.77%	6.62%	25.54%	0.94	0.07
Quarter 2 2021	7.60	5.59	2.34	23.72%	11.90%	37.21%	0.78	0.33
TTM	11.58	5.52	1.78	23.72%	11.90%	37.21%	0.78	0.35

(Annual Report: Rio Tinto PLC., 2019-2020)

- The average year-by-year earnings per share is 6.39.
- We can see a lower earnings per share in 2019 for both the fiscal year and the quarters, but earnings per share continues to increase each year/quarter.
 - It is expected to continue to grow with continued economic recovery.
- The average P/E ratio year-by-year is 10.67 which Rio Tinto is currently overvalued.
 - We believe that the P/E ratio will decrease as it did for 2019 and 2020 as time progresses.

- Rio Tinto shows a high P/B that has been increasing year-by-year.
 - Rio Tinto's high price to book tells us the stock is overvalued like the P/E ratio indicated.
 - We expect that the P/B ratio will be lower for 2021.
- For ROE and ROA, Rio Tinto has strong numbers.
 - Although ROE was high in 2018, we have seen ROE decrease into the 15%-20% range.
 - We expect that the ROE will be consistent within the 15%-20% range for 2021.
 - ROA is pretty strong even if it is not exceptional being lower in 2019.
 - It is expected that the company will have a higher ROA as time goes on with investing in future projects.
- Net Profit Margin has been high for the company and shows that the firm is healthy.
 - From 2018-2020, it has fluctuated a bit and is currently sitting with a high margin.
- The D/E ratio is very strong as the firm has little to no debt.
 - Between 2018-2019 the firm had high amounts of debt while 2020 saw a 6% decrease.
 - This is great for the company since they are easily paying off debt.
 - If there is future economic disruptions, Rio Tinto should not have a problem paying off debt.
- Rio Tinto has a low PEG ratio showing that the stock is undervalued in this sense.
 - In 2019, the stock had a negative PEG meaning that the company was losing money at that time or their expected earnings for the future were negative.
 - However, 2020 saw the lowest PEG ratio in the years analyzed.
 - PEG future growth is 0.19.
 - We believe that PEG will remain stable and remain low for 2021 and for future years.

Industry Financials:

S&P Sector	S151040-I
Last	196.92
Net%	-0.15%
Net	-0.3
Earn	8,751.56
Div	4.39
Yield	2.23
H360	257.39
L360	139.42
Nt Pct YTD	18.04
Nt Pct QTD	-0.15
Nt Pct MTD	-0.15
Nt Pct WTD	-0.11

(Telemet Orion Finance Lab)

A key takeaway when looking at industry data is based on the dividends and yields for all of the companies in the industry. The average dividend for all of the companies in the S&P sector is \$4.39 and the yield is 2.23%. Another thing to note is the sector earned \$8,751.56 making it a growing industry that investors should consider getting into to diversify.

Top Competitors Financial Ratios:

Competitor	Ticker	S&P Industry	P/E FY AVG	PEG	P/B	ROE	ROA	NPM	D/E
Freeport McMoRan Inc.	FCX-S	Metals & Mining	23.32	0.49	2.32	18.63	8.3	18.87	0.66
Newmont Corporation	NEM-S	Metals & Mining	16.73	0.79	1.8	11.99	6.99	22.9	0.25

(Telemet Orion Finance Lab)

- Rio Tinto's average P/E for the fiscal year was 10.67. This is way lower than its competitors.
- For ROE and ROA, Rio Tinto's TTM was 38.5 and 18.52 respectively for Quarter 4 2020 and Quarter 2 2021.

- Rio Tinto's Net Profit Margin TTM is 0.63. This is significantly lower than its competitors.
 - Although the competitors are being more efficient at converting sales to profits, we believe Rio Tinto will have a higher net profit margin in future years.
- P/B ratio for Rio Tinto was 2.67 for 2020 making the stock overvalued. Rio Tinto has a greater P/B ratio than its competitors.
 - As mentioned in another section, we believe that P/B will come down in future years with the consistent incline.
- The ratio of concern for Rio Tinto is its earnings per share growth percentage for three years.
 - Based on earnings per share numbers, Rio Tinto has experienced a -31.26% decrease in earnings per share from 2018.
 - Although we see this decrease with the company, we are fairly confident based on the earnings per share numbers from 2019-2020, that earnings per share will be higher in future years.
- Based solely on 2020 numbers (refer to Appendix), Rio Tinto has a strong current ratio of 1.8.
- Likewise, the company has a quick ratio of 1.26.
- Rio Tinto has a high financial leverage ratio where it is using mostly debt to finance its assets and operations.
 - With this being said, we have been seeing a sharp decrease in debt from 2018 and 2019 which is a good sign for the company going forward.
- The company has a price to cash flow ratio of 8.68 making it attractive to some investors.
 - Although this could be lower, Rio Tinto is doing a good job at managing its stock price relative to operating cash flow per share.
- The price to sales ratio is in a good spot between 1 and 2.
- Another area of struggle for the company based on 2020 data is asset turnover ratio.
 - Some of the struggles may be from production problems in recouping operations during the pandemic or management problems.
- Inventory Turnover is fairly strong for the company but could be better.
- Receivables Turnover has been strong blowing past the average of 12.44.

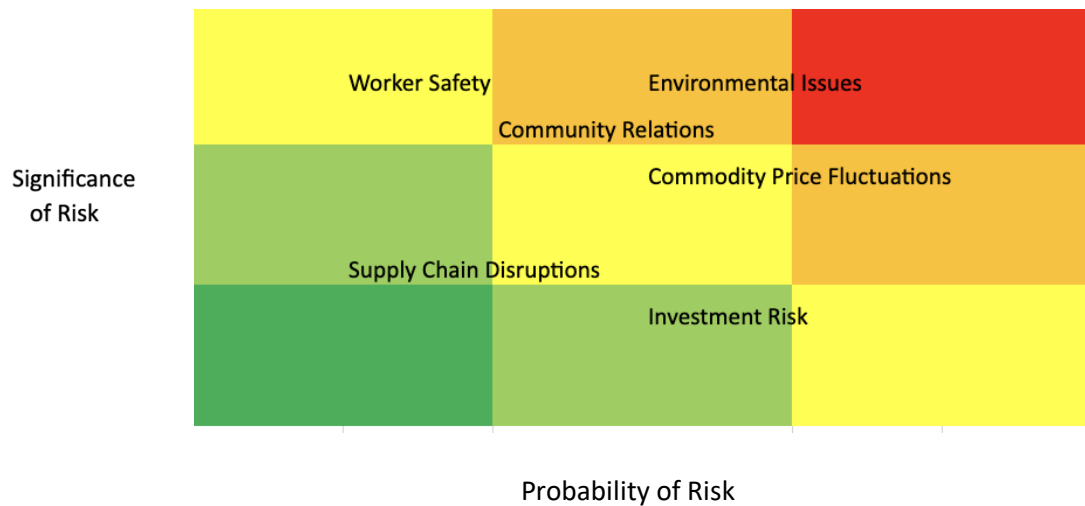
- Rio Tinto is doing well in collecting its receivables in a timely manner at 18.98 days.
- Rio Tinto has a high return on return on invested capital percentage making it efficient in using its capital to generate profits.
 - Compared to its cost of capital at 4.69%, Rio Tinto is doing an excellent job in this area.
- Lastly, the company has a high payout ratio where earnings are going to shareholders.
 - This can be bad for the company for future growth regarding projects and future.

Risks

- Commodity Price Fluctuations
 - Since iron ore makes up over 50 percent of Rio Tinto's revenues, the price of ore effects the stock price. The price of iron ore is currently down which is attributed to why the stock price is also down.
- Supply Chain Disruptions
 - Rio is located in 35 countries and sell ships products all over the world. Delays in shipping can cost Rio Tinto and its customers. Rio does have its own trains and four independent shipping terminals managed as a single port system.
- Investment Risk
 - Rio Tinto is working on a multitude of projects. These projects pertain to technology, innovation, and environmental concerns. They are aware that not all projects can succeed, but that is a risk they are willing to take. Their strong balance sheet allows them to take this risk.
- Worker Safety
 - The mining industry has proven to be a dangerous one. Rio Tinto has been able to limit the risk its workers face by becoming more innovated. This innovation has led to automated trucks and other machinery and technology that allows workers to reduce their risk exposure. In 2020 there were zero fatalities.
- Environmental Issues
 - Mine operations are dependent on certain weather conditions. Hurricanes and simple rain can affect the productivity of mining operations. This also relates to

carbon emissions concerns and overall ability to become more environmentally friendly.

- Community Relations
 - Many of Rio Tinto’s mines are located in areas already inhabited by people, animals, and greenery. While years of research and development go into where to mine, many places can be uprooted in the process. Unstable relationships with the surrounding communities can and have led to governments stepping in.



Portfolio Fit

The Spellman fund currently has no holdings in basic materials. The S&P 500 recommends that 2.27 percent of the portfolio be contributed to basic materials. With the current stock price at \$63.98 we are recommending a buy of 270 shares. Since Rio Tinto is a cyclical stock, it must be examined differently than the growth stocks, which make up most of the portfolio. While Rio Tinto is not the fund’s typical buy, it has other upsides:

- A strong balance sheet
 - A balance sheet shows the health of a company and their ability to survive economic downturns. Many companies did not pay dividends amidst the pandemic. Rio Tinto's strong balance sheet allowed them to continue to do so during what seemed to be the economies darkest. It also can show that a company can pay off its debts.
- Good debt

- Rio Tinto has very low debt compared to its competitors. Most of which is long term. The strong balance sheet shows that the debt they do have can be paid.
- The stock pays dividends
 - Dividends per share in 2020 was 309.00 cents per share. Dividends declared to shareholders last year totaled 9 billion. Rio Tinto pays a standard dividend, and then depending on their performance, may pay an extra dividend as well.

Since Rio Tinto is a cyclical stock, continual growth is not likely. With the stock price currently down, it is a great time to buy. However, the price will fall again, and it must be determined when is best to sell the stock. This can be determined by a few different factors:

- When the economy starts to slow down
 - This could be based on global GDP growth, or even the growth of China alone as it has proven to be influential on the company's performance.
- When the stock hits its target price
 - When iron prices were at a high this year, Rio Tinto had a stock price high of \$93.17(yahoo finance), meaning it can get back to that price. The baseline target price can be used to indicate when it may be time to sell.
- When commodity prices fall
 - Since iron ore makes up over half of Rio Tinto's revenues, and it correlated with the stock price, it could indicate the possibility of a fall in stock price.

Correlation

We created a correlation matrix to better analyze the correlation between RIO and the stocks currently invested in within the Gordan Spellman portfolio. The correlation matrix was brought together using the last five years returns (see Appendix 1).

For RIO's highest correlation, you will find companies like Emerson Electric (EMR) and the Boeing Company to be most similar of those in the portfolio. This is likely because they are a manufacturing and aerospace company, both of which use raw materials which are produced from basic material companies like that of Rio Tinto. As for the other companies with high correlation, Disney (DIS), Booking Holdings (BKNG), and Prudential (PRU), the correlation is still great but not overly significant. The similarity could likely be a result of these companies

following similar stock price movements due to their tendency to follow cyclical company trends.

We can thus reduce our position in these stocks, as we do not have any holdings in Basic Materials, allowing for greater diversification. We would recommend reducing our shares in DIS, EMR, and BKNG seeing as these are highly correlated with RIO. These stocks also do not issue dividends. This makes RIO attractive since it has a higher dividend yield

For the good news, Rio Tinto is found to have low correlation with many of pre-existing stocks in the portfolio. In fact, the top five least correlated stocks have a correlation coefficient of less than 0.09. This is not a huge surprise seeing as we currently do not have any stocks in the portfolio that are in the same sector, basic materials. Those listed below in the least correlated are also defensive companies. In a recession these companies are not as affected seeing as they are necessities. For example, CVS pharmacies, energy companies and technology companies, like Google, will retain their business. For this reason, we plan to keep these stocks in the portfolio.

Top five portfolio stocks with most and least correlation to RIO are listed below:

Highest Correlation		Least Correlation	
Company	Correlation Coefficient	Company	Correlation Coefficient
Emerson Electric (EMR)	0.427	NextEra Energy (NEE)	0.043
Disney (DIS)	0.425	Procter & Gamble (PG)	0.065
The Boeing Company (BA)	0.413	American Tower Corporation (AMT)	0.075
Booking Holdings (BKNG)	0.379	CVS Health (CVS)	0.081
Prudential (PRU)	0.375	Google (GOOGL)	0.082

Overall, we calculated the average correlation for Rio Tinto to be 0.239. The average of all the other correlation coefficients in the portfolio is roughly 0.331, RIO's average would benefit the fund as it would reduce the overall risk. To be more precise, it would bring the overall portfolios average correlation coefficient down to 0.324.

Recommendation

We are recommending a strong buy of 270 shares of Rio Tinto. We also believe with RIO having a strong balance sheet, low debt, not being strongly correlated with most of the fund, and having a high dividend yield of 10.75%, this investment would be a great addition. We also recommend a sell of 30 shares of EMR because it has the highest correlation with the RIO and the current stock in the fund. To have enough cash to purchase the shares, we are also recommending a sell of 80 shares AAPL as it is grossly over weight based on the optimal portfolio

Appendix

Appendix 1: RIO vs GSP Correlation Matrix

Rio Tinto PLC Financial, Year 2020:

Fiscal Year	2020
Current Ratio	1.8
Quick Ratio	1.26
Financial Leverage	2.07
Price to Cash Flow	8.68
Price to Sales	1.9
Asset Turnover	0.48
Inventory Turnover	4.2
Receivables Turnover	19.23
Days Sales Outstanding	18.98
Return on Invested	
Capital %	17.51
Payout Ratio	86.7

NOTE: Appendix Financials are pulled from Morningstar Inc. based on fiscal year 2020.

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