

Take-home examination

- Shipping Finance -

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Bachelor of Business Administration - Shipping Management

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Problem 1 -

a) In this case, the firm does not have any debt meaning that the WACC equals the return of assets if the firm is unlevered.

The formula for WACC is as follows:

$$WACC = [0 \times (1 - 0) \times \frac{0}{\$120,000,000}] + [18\% \times \frac{\$120,000,000}{\$120,000,000}] = 0.18$$

And the formula for EVA is:

$$EVA = NOPAT - ((TA - CL) \times WACC)$$

Where:

- NOPAT = Net Op. profit after taxes
- TA = Total Assets
- CL = Current Liabilities
- WACC = Weighted Average Cost of Capital

Therefore:

$$EVA = \$25,000,000 - ((\$120,000,000 - 0) \times 0.18 = \$3,400,000$$

b) The Economic Value Added, is basically the value from the income to the company after it has paid to its investors and possible debt holders. EVA measures how well the company performs not only based on the income, but how much is left to the company from the income as the added value. Here, as the company does not have any debt, they do not have to pay any cost on debt, and also, the tax is 0% so it does not need to be taken into account in the calculation. As the required return by the shareholders is 18%, and the assumed investment is \$120,000,000, the company has to have a net operating income above \$21,600,000 in order to create value for the company. As from this case we can see, the NOPAT is \$25,000,000 therefore the economic added value to the company is \$3,400,000, which is good news to the management. In the case where EVA were to be negative, this would mean that the company is unable to return what is required by shareholders from the annual income and this could lead to the company taking money from their cash reserves thus harming liquidity. In such a case, the company's value will obviously decrease.

c) Equation for ROA is:

$$Return\ on\ assets = \frac{net\ operating\ profit}{total\ assets}$$

Therefore:

$$\text{Return on assets} = \frac{25,000,000}{120,000,000} = 20.83\%$$

d)
$$NPV = \text{Investment} + PV(\text{Cash Flows})$$

As the company is in business forever, meaning the cash flow is perpetual, with zero growth, the Present Value (PV) of the cash flows follow the equation:

$$PV(\text{Cash Flow}) = \frac{CF_1}{r}$$

By plugging the numbers into the PV formula we get:

$$PV(\text{Cash Flows}) = \frac{\$25,000,000}{0.18} \approx \$138,888,889$$

From here, we get:

$$NPV = -\$120,000,000 + \frac{\$25,000,000}{0.18} \approx \$18,888,889$$

e) Economic value added measures how much is left from the income after costs of capital have been deducted and paid to the debtors and investors. The company's EVA is positive \$3,400,000, which is a great sign as it is able to generate more value to the company after paying to its shareholders, as they do not have any debtors. Generally speaking, return on assets means how effectively a company is using its assets to generate cash. Whereas, NPV takes into consideration the initial investments of assets and the cash flows that the assets generate throughout the time, discounted with the rate of return. Management uses these metrics for different purposes. For example, to decide whether or not a project is worthy to invest in NPV could be a good measure. If investors want to measure how the company has been converting its assets to cash then ROA is a good way to measure the healthiness of the firm. Since a shipping company can only rely on its assets to generate cash, poor ROA ratio can indicate possible bankruptcy, or at least an economic downturn.

Problem 2 -

a) Aquanor ASA has an outstanding debt with a book value of \$75,000,000. Since the Debt is trading at 90% of the book value, the market value of the debt equals to:

$$MV \text{ of Debt} = \$75,000,000 \times 90\% = \$67,500,000$$

The firm currently has 2,500,000 outstanding shares traded at \$42.00. Thus, the value of the equity would be:

$$Equity = 2,500,000 \times \$42 = \$105,000,000$$

Therefore the debt to equity ratio is:

$$\frac{\$67,500,000}{\$105,000,000} = 0.64$$

b) The company's Weighted Average Cost of Capital can be calculated by using the following formula:

$$WACC = [r_D \times (1 - T_C) \times \frac{D}{V}] + [r_E \times \frac{E}{V}]$$

Where:

- r_E = required rate of return on equity or cost of levered equity.
- r_D = cost of debt, required rate of return on borrowings
- D/V = Debt to value ratio. Debt over the firm's value.
- E/V = Equity to value ratio. Equity over the firm's value.
- T_C = corporate tax rate

Hence, the return on debt is 9%, the corporate tax equals 35%, Return on equity equals 18%. The Debt to value ratio would be the market value of the company's debt over the value of the firm.

$$\frac{\$67,500,000.00}{\$105,000,000.00 + \$67,500,000} = 0.39$$

The equity to value ratio calculated by the company's equity over the value of the firm:

$$\frac{\$105,000,000.00}{\$105,000,000.00 + \$67,500,000} = 0.61$$

By inserting the numbers into the WACC formula we obtain:

$$WACC = [0.09 \times (1 - 0.35) \times 0.39] + [0.18 \times 0.61] \approx 0.1325 = 13.25\%$$

c) By using the formula:

$$WACC = [r_D \times (1 - T_C) \times \frac{D}{V}] + [r_E \times \frac{E}{V}]$$

We get the following:

$$WACC = [0.09 \times (1 - 0.35) \times \frac{0}{105,000,000}] + [0.18 \times \frac{105,000,000}{105,000,000}] = 0.18 = 18\%$$

d) As we know, WACC stands for Weighted Average Cost of Capital. In part b), we are supposed to calculate the WACC, when the company's capital structure includes both, equity and debt. The formula can be found above.

When the company is financed by equity and debt, the debt increases the rate of return, also known as, cost of capital. This is due to the fact that the company has more capital to invest, but the additional capital's (debt) cost (r_D) is less than the required return on equity (r_E). By investing the additional capital returns the same amount as equity, but the cost is less, so the difference will be held by the company and therefore increase the value. In this case, we are taking the tax in the calculations as well. The tax rate of 35% will decrease the WACC, as the tax shield can be deducted and therefore saved by the company.

If the company switches their capital structure into all-equity finance, c), then the Weighted Average Cost of Capital is equal to the expected rate of return, 18%. To explain this further, why it is equal to the expected rate of return, we have to take a look at the WACC formula. When the company is all-equity financed, debt-to-value ratio becomes zero, and therefore, the first part:

$$(r_D \times (1 - T_C) \times \frac{D}{V})$$

is equal to zero as it is multiplied by zero. Then the equity-to-value ratio becomes equal to one, as the whole company is financed by equity. As the expected rate of return is 18%, then:

$$(r_E \times \frac{E}{V})$$

Will equal to 18%, due to the fact that equity-to-value ratio is one.

Problem 3 -

The company Bittco made a rights issue at €10 a share of one new share for every five shares held. Before the issue there were 20 million shares outstanding and the share price was €12.

a) The total amount of money raised can be calculated by multiplying the issue price with the number of new shares issued. As the company currently has 20,000,000 share outstanding, and rights issue is one new share for every five existing shares, then we get:

$$\text{New Shares} = \frac{20,000,000}{5} = 4,000,000$$

As the new shares are issued at 10€ per share, the money raised is:

$$\text{Money raised} = 10€ \times 4,000,000 = 40,000,000€$$

Therefore, Company Bittco raised **40,000,000€**.

b) Share price after issue, derived from the formula:

$$\text{Ex-right price} = \frac{(\text{total outstanding shares} \times \text{rights on price} + \text{new shares issued} \times \text{issue price})}{(\text{old shares outstanding} + \text{issued shares})}$$

By using this equation we get the ex-right price as follows:

$$\text{Ex-right price} = \frac{(20,000,000 \times 12€ + 4,000,000 \times 10€)}{24,000,000} = 11.67€$$

$$\text{c) Value of right} = \frac{(\text{rights on price}) - (\text{issue price})}{(N + 1)}$$

By using this equation we get the value of right as follows:

$$\text{Value of right} = \frac{(12 - 10)}{(5 + 1)} = €0,33$$

d) Issuing rights is an alternative way for companies to raise more capital. When issuing rights, the company gives an option for existing shareholders to buy new shares usually with a price under the current market price. The need for the capital can be for multiple purposes, but usually when a company raises capital through rights issue it is either to finance a new project, clear debt, or to avoid taking out a loan. On top of the previous points, sometimes issuing rights can be seen as ‘rewarding’ current shareholders. This is due to the fact that the issue price is often below the current market value of the share, and therefore, it creates an arbitrage opportunity for the shareholder as he or she is able to sell the right before the issue or sell the share right after it has been issued.

Problem 4 -

a) Overview - Nordic American Tankers Limited

Nordic American Tankers Ltd. (“NAT”) is a tanker company founded in 1995. Today, they operate with a homogenous fleet consisting of 23 interchangeable Suezmax crude oil tankers, all built after 2000, with an average age of 11.7 year (March, 2020). Three years ago, in 2018, NAT sold 10 of their vessels, in order to

keep the current fleet modern. Their fleet is well insured against many different possible risks, which is great from the investors perspective, as the burden of loss in the case of an accident will not fall on them.

Employment of the NAT fleet is mainly focused in the spot market, but one of their vessels is operating under a charter contract. As spot market contracts are usually only based on a single voyage, this can be a risky strategy for the business due to the fact that they do not have multiple long term contracts. However, as the crude oil spot rates change from time to time, without long term charter contracts, the business avoids the market volatility risk as now they can charge whatever the market rate at the spot is. The break-even level per vessel per day is just shy of \$18,000, which is quite low. This is attractive from the shareholder's perspective as the break-even risk is low in a quite highly competitive market.

Overview - DHT Holdings Inc.

DHT Holdings Inc. ("DHT") is a tanker company founded in 2005. They have a 100% ownership over their fleet, which consists of 28 VLCC carriers. Their fleet is basically homogenous, except in size. Their vessel size range is from 200,000 to 320,000 dwt. The vessels operate in Spot and Time-Charter market, and as of today, the Spot/TC ratio is 50/50. This is a pretty good strategy to diversify off charter and spot market risks, as the vessels operating in the spot market will bring in revenue based on today's market prices, whereas the vessels operating in TC contracts will have a long-term secure cash flow.

The fleet is well insured, which is good from the shareholders perspective, however, the company says that in the case that insurance premiums increase, they may not be able to cover the costs and have a reasonable coverage for the fleet.

Valuation

When valuing the companies, there are multiple variables to take into consideration. The main aspects to take a look at are the fleets, NAV, equity and debt, ROSI, EPS, and future cash flows. Other variables are, but are not limited to, market fluctuations and economic forecasts, and risks associated with shipping.

NAT has a fleet that consists of 23 Suezmax oil tankers. The average age is 11.7 years, so the fleet has quite a long term horizon before it is fully scrapped when considering 20 year life time. Based on the information provided by the company, their fleet's fair value in the market as of 31.12.2019 was \$900,000,000. DHT's charter free fleet value based on the information provided is \$1,793,000,000 for the 27 vessels. Today, they have 28 vessels, so the value is even higher.

Net Asset Value for NAT after 2019 was \$595,424,000. This gives an NATPS equal to \$4.04. DHT's NAV after 2019 was \$932,450,000 and NATPS \$6.35.

Return on Shipping Investment for NAT has been negative at least for the past three years. It has been developing towards positive numbers as it has been increasing from -31% in 2017 to -2% in 2019, and therefore we would like to believe that ROSI will be positive in the near future. For DHT ROSI has been strongly positive for the past years, as it was 34% in 2017, 26% in 2018, and 17% in 2019.

As the MM Proposition 1 under MM II states that the levered company is valued as much as the unlevered plus the tax of the debt, ($V_L = V_U + T_C \times D$), we have to take a look at the equity and debt when thinking about company valuation. NAT's equity and debt is \$595,424,000 and \$375,364,000, respectively. Therefore, as the tax rate is 0.69% (based on the income tax expense in 2019), the value would be \$598,014,012. DHT's equity and debt were \$932,449,000 and \$750,586,000, respectively. As the tax rate is 0.18% (based on the income tax expense in 2019), we get the valuation of \$933,781,124.

As the Earnings Per Share (EPS) for DHT is \$0.50 and NAT -\$0.07, we could say that the investors require a return of 6.06% and -1.43%. Therefore, by using a forecast of future cash flows, we could calculate the value of the company based on cash flows. However, we can only make predictions of the future Cash Flows and also the required return by investors is based on EPS, which is not accurate enough as the share price changes every day. When looking at the 2019 net operating incomes for both companies, we get the following numbers. For NAT the net operating income was \$31,971,000 and Net Loss was -\$10,352,000. DHT had a net operating income of \$138,867,000 and Net Profit of \$73,680,000.

Economic conditions for the shipping market are currently pretty unstable, as the COVID-19 has been spreading around. Therefore, predicting the market conditions and future cash flows for the companies is difficult.

Similarities in NAT and DHT

NAT and DHT are direct competitors to each other as they compete in the international tanker market. Both have a homogenous fleet (Suezmax for NAT and VLCC for DHT) consisting of crude oil carriers, with an average age of around 10 years. Financial structures of the companies are pretty much alike, except DHT is more valuable due to having a larger fleet and larger portion of debt. Financial structures will be covered more in depth later. Other similarities in the companies are the operational locations (Bermuda and Marshall Island mainly), and risks associated with the market they are in.

b) NAT and DHT are both operating in the tanker market and their main cargo is oil products. As we know, the tanker market is cyclical, extremely volatile, and even small political or operational, unexpected circumstances can change the spot rates immediately. The players operating in the market also face many environmental risks as the products can cause unremarkable damages to the global environment. Below we have taken a look at the risks mentioned in the book, and commented how both companies have considered these risks in their annual reports. (See Appendix 1. for the risks that DHT and NAT included in their annual reports).

1. **Market risk.** Shipping markets face cyclical revenues and prices as discussed in Part 2 of this book. Cycles vary unpredictably in length and severity, which affects a company's ability to meet obligations and the value of collateral. What is the position in the cycle and its future development?
 - a. Market risk is something that both of the companies talk about. The volatility in the rates is unforeseeable, and therefore creates a risk that can quickly change the sign of the cash flow. (DHT Risks: 5: a., b., c., NAT Risks 1: a., b., c., d., e., f., g., i., j.) Especially during times like these, it is necessary for the company to have excess cash to comply with if the market fluctuations seem to move in the negative direction.
2. **Operating risk.** Technical problems can lead to off-hire, reduced earnings, repairs and poor reputation with charterers. Failure to comply with regulations relating to safety and pollution can result in port state detention and problems with classification societies, insurance, pools and conferences.
 - a. NAT and DHT, both see the operating risk as one of the main risks they have to face. (DHT Risks 4: f., g.; 5: d., e.; NAT Risks 1: h., n.) Operating risks can be risks that the companies could prepare for by having alternative options to replace the risk factor, but of course they want to believe that the risk potential is minimal and therefore we don't believe that the extra cost associated with preparing for the risk is something that the companies want to pay.
3. **Counterparty risk.** Are charterers creditworthy and is the full charter status of the vessel known? For example, a vessel may have been sub-chartered several times.
 - a. Counterparty risk is something that both companies do not touch much on. However, they say that due to the inherent operational risk in the market, the charterers might default on the payments.

(DHT Risks 5: n.; NAT Risks 3: d.)

4. **Competitive risk.** Shipping companies operate in a competitive environment which may affect their financial performance. Does the company have any protection from predatory competition or over-investment?
 - a. Both companies touch on the Competitive risk. They understand that any over supply, ageing of the vessels, and change of location in the market for tankers will affect the prices. As the tanker market is highly competitive, in case of excess supply of tankers or shortage of demand, they have to find a way to generate cash from other operations. (DHT Risks 4: e.; 5: b., c.; NAT Risks 1: b., g.)
5. **Diversification risk.** Market segments have different cycles, customers and ship types (see Chapter 12). Diversification reduces risk if the sector cycles are not highly correlated and specialisation increases it (the ‘portfolio effect’).
 - a. Diversification is a huge risk for both companies. They understand it and mention it multiple times. Both of the companies are heavily focused in the tanker market and their fleets only consist of tanker vessels. This is a huge risk, as they rely only on the demand of oil/gas shipping. Also, as both of them are focusing quite a lot in the spot market, a diversification into the charter market would be a smart move. DHT is already 50% in the time charter market, so they have diversified in that sense. On top of just having tankers, both of the companies have only one type of ship, NAT operating with Suezmax and DHT operating with VLCCs. They could diversify to different sizes, so in the case where the large tanker market faces over supply, the smaller tankers could cover parts of the loss by having access to the routes that the Suezmax and VLCC are not fit to enter. (DHT Risks 1: e.; 5: a., c.; 10; NAT Risks 1: c., d., f., g., x.; 2: d.)
6. **Operating and voyage cost risk.** How sensitive is the business model to cost changes (e.g. fast ships use a lot of fuel)? Fuel costs, crew costs, port costs, repair costs and insurance can all change.
 - a. Both companies have taken the operating and voyage cost risk into consideration, and are well aware of them. (DHT Risks 4: a., f.; 5: h.; NAT Risks 1: b., i., n.; 2: g.; 3: d., e., f.)
7. **Ship size and age risk.** Is the fleet age profile balanced and how well equipped is the company to manage it? New ships carry a high capital cost,

and are vulnerable to changes in capital costs. In contrast, old ships face lower capital costs and are vulnerable to operating, repair and regulatory costs.

- a. Both companies have a relatively good position when it comes to the ages of the ships. Their average age is quite low if compared to the industry standard of scrapping age of 20 years. (See comments below on NAT and DHT ship ages). As their ships' average age is around the 10-year mark, we could say that the repair and operational costs also average out to the mid range. When it comes to the sizes of the ships, these companies are operating large ships, which allows them to enjoy economies of scale. However, as they are large ships, they will not be able to enter all ports. (DHT Risks 5: a., k.; 8.; NAT Risks 1: d.; 2. e.)

According to the 2019 annual report, NAT sold 10 vessels in 2018 to keep the fleet modern. The average age of the fleet was 11.7 years, according to the 2019 annual report. When referring to the website, NAT has signed two new buildings, and their current fleet's average age is 13 years old. The fleet deadweight ton averages around 157mt and total deadweight with 23 vessels is around 3622mt

Whereas DHT's current fleet was averaging around 8.4 years according to the 2019 annual report, which indicates low riskiness since the average year of industry scrap is 20 years. DHT's fleet size consists of 26 vessels and the average age of the fleet is younger compared to NAT. The average size of the vessels is 309mt which is double in comparison NAT. The sum of DHT's fleet is 8,662mt.

Concluding NAT and DHT fleet, we can say that DHT faces less risks than NAT because they have younger feet which involve less operational costs such as maintenance and fuel consumption. On the positive side, NAT's newbuildings will refresh their fleet and reduce the risk of ageing of the fleet.

8. **Financial structure.** How vulnerable is the company's financial structure (e.g. debt must be serviced regardless of market circumstances)? New fleet has a high break even point, old fleet is vulnerable to repair costs.
 - a. As stated above, in the vessel age risk, it was mentioned that the average age of fleet for both companies is around 10 years. This is pretty good, as the vessel repair and financial costs average out then as well. Also, most of the vessels in the companies fleets are

fully owned by the companies. The financial structure of the companies is fairly stable as the Debt-to-Equity ratios are 0.73 for NAT and 0.96 for DHT. Both have a good amount of liquid assets in case that cash reserves and current cash flows would not be able to cover the debts. Both companies are aware of the financial risks and mention it many times in the annual reports. (DHT Risks 3.; 5: k.; NAT Risks 1: l.; 2: e., f., g., i.; 3: a., b., c.)

9. **Workout risk.** How easy would the company be to deal with in the event of a default? This involves the relationship with management and the difficulty of repossessing and operating assets depending on the type and age of ships, flag, etc.
 - a. Workout risk has been taken into consideration by both companies, as they operate mostly from Bermuda and Marshall Island, and their vessels operate under multiple flags. This is a severe risk, as it is a complicated matter due to the flags of the ships. As in Bermuda and Marshall Island, there are no clear laws or regulations regarding insolvency or bankruptcy, so it would be pretty difficult to solve the situation and hedge the risk without excess costs. (DHT Risks 6: f.; NAT Risks 4: c.)
10. **Management risk.** How does performance compare with peer groups and how vulnerable is the company in terms of succession and depth of the management team?
 - a. When it comes to DHT, according to their website, their management has a great experience of 20-45 years in the shipping industry. NAT, we cannot say much as they did not have information about their management. Both companies are, however, aware of the management risk. They list risks associated with management in their annual reports. (DHT Risks 4: d.; 6: g.; NAT Risks 2: b., i.)
11. **Environmental risk.** Pollution liability is a major risk and for private companies the corporate veil can be pierced, but not public shipping companies. Cargo, geography and insurance are all important.
 - a. According to the industry risks for DHT, it was mentioned in the annual report that the company must be in compliance with environmental laws or regulations or it may adversely affect the business but it was claimed that they cannot assure that they will be adequately insured against all risks if insurance premiums increase. If their insurance coverage is insufficient to make them whole in the event of a casualty such as an oil spill (as DHT is in the oil tanker industry), the insurers may refuse to pay certain specific

claims. This could lead to a significant loss or liability that DHT would be responsible for as the insurance would not cover the claim. If this were to occur, the company may be facing a drastic situation where their cash flow and results of operations could be seriously affected.

Although NAT have arranged insurance to cover certain environmental risks, and risk of environmental damages and impacts, there can be no assurance that such insurance will be sufficient to cover all such risks or that any claims will not have a material adverse effect on their business, results of operations, cash flows and financial condition, and ability to pay dividends. NAT is being pressured by regulating authorities, investors or other market participants to change or reduce environment-harming procedures such as ballast water discharge or procurement of low sulphur fuel and these incur considerable costs for the company.

(DHT Risks 5; m., o.; NAT Risks 1; p., q., r., s., u.)

The 10 most important ones are all of them minus 3. Counterparty Risk as there are 11 in total

c) Capital structure indicates the amount of debt and equity that the company has been utilising at the end of 2019 fiscal year. By looking at both companies' balance sheets we can see that the NAT had a total equity of \$595,424 million and \$435,479 million debt.

Balance Sheet of NAT Shipping, (Numbers are in '000)

Total Assets: 1,030,903	Equity: 595,424 Debt: 435,479 Total Equity + Debt: 1,030,903
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Balance Sheet of DHT Tankers, (Numbers are in '000)

Total Assets: 1,827,218	Equity: 932,449 Debt: 894,768 Total Equity + Debt: 1,827,218
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	DHT	NAT
D/E	0.9595	0.7313
D/V	0.4896	0.4224
E/V	0.5103	0.5775

The companies' ratios are deviated only to a smaller extent. Although DHT has a higher debt to equity ratio meaning the company is financed more of debt than equity than NAT.

According to the debt to equity calculations, both firms have a D/E lower than 1 which is usually considered relatively safe, although DHT is closer. It is important to take into account that when a company has a low D/E ratio (close to zero), this often means that the business has not relied on borrowing money in order to finance operations. In some cases, investors are less likely to invest in a company with a low D/E ratio because they are not achieving the potential value or profit it could reach by borrowing and increasing operations.

We can also mention that both companies are established in Bermuda which benefits from a zero percent corporate tax. Although this will increase net profit for DHT and NAT, most shipping companies nowadays are established in tax havens for the same reason, thus it will not create a unique competitive advantage for DHT and NAT.

Although, in general, high debt is not considered unsafe among shipping companies. Whether the company is able to pay back their debt, that is a good indicator for investors. Cash debt coverage is a metric that can be used to evaluate that. It is the measurement of the company's capability to pay back their debt through only their Operating Cash Flow.

Cash Debt Coverage (CDC)

$$\frac{\text{Operating Cash flow}}{\text{Total liabilities}} = \text{Cash debt coverage}$$

Thus NAT's Cash Debt Coverage is:

$$\frac{31,971}{435,479} = 0.07341$$

DHT's Cash Debt Coverage:

$$\frac{138,867}{894,768} = 0.1552$$

In short, the higher the better. If a company can reach 1/1 Cash debt coverage it means that the company is operating under perfect conditions to refinance its debt whereas a poor ratio could indicate potential bankruptcy. Both DHT and NAT have low CDC ratios meaning the companies are struggling to pay their debtors. (NAT's CDC ratio is even lower than DHT's by half).

If NAT is not able to keep up with their earnings, the likelihood of bankruptcy shall increase over time. In regard to capital structure, one can suggest for NAT to

not take on more debt in the upcoming future. Only in case if the market is rapidly expanding and there is a need for new buildings and so forth, otherwise it would not be a worthy investment. DHT is in a better position in terms of CDC, although it is still below the ideal figure. In order to fully assess the capital structure, we should also look at the company's WACC (Appendix 2.). According to WACC, we can see that NAT is doing significantly poorer than DHT, so it should be a warning for investors and as we stated above.

When looking at capital structure, an optimal structure could be defined as the right balance between equity and debt which in turn gives us the lowest WACC for the company as the lower the cost of capital, the higher the present value of the future cash flow discounted by the WACC will be.

Since DHT owns 100% of their fleet, the constraints of taking debt is not as limited.

NAT should not take on more debt as the ratios are not very positive and instead should focus on getting a better cash position to increase their liquidity as a more stable capital structure will attract more investors in the long run.

d) We know that from M&M proposition I with no taxes that, in a perfect world the value of an unlevered firm equals to the value of the levered firm.

$$V_U = V_L$$

We also know that the company has multiple ways to raise capital, to finance its operations. Issuing new shares, taking on a loan or issuing bonds so investors can invest in the company's debt, lastly reinvesting their profits to its operations.

DHT Have issued 3,165 million bonds issued in year 2019

DHT have issued 47,724,395 shares in year 2019

NAT Have not issued any bonds during year 2019

NAT issued 5,260,968 of shares and raised \$17.9 million.

Net Asset Value Per Share gives us information about the underlying assets in the number of outstanding shares not considering the liabilities.

$$\text{Net Asset Value Per Share} = \frac{\text{Net Asset Value}}{\text{Number of outstanding shares}}$$

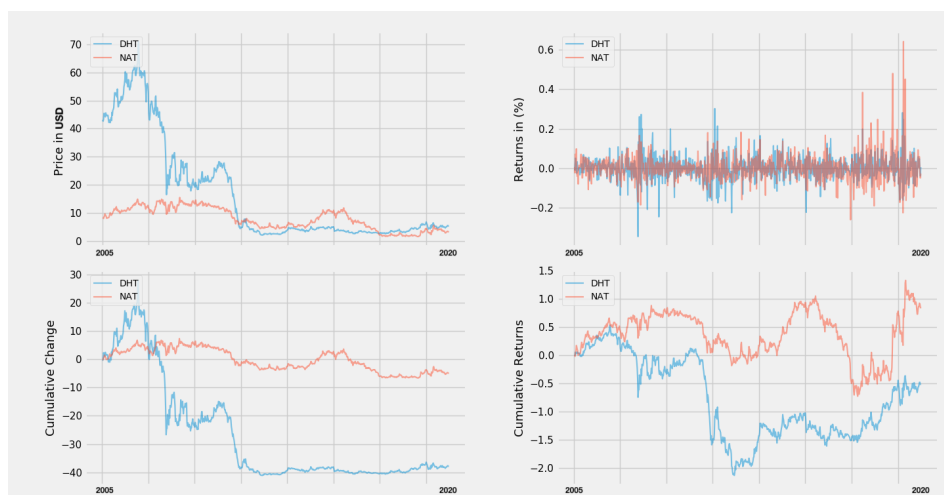
NAT	2018	2019
Total Assets	1,071,111,000	1,030,903,000
Total Liabilities	469,080,000	435,479,000
NAV	602,031,000	595,424,000
Shares outstanding	141,969,666	147,230,634
NAVPS	4.240560797	4.044158364
DHT	2018	2019
Total Assets	1,863,856,000	1,827,218,000
Total Liabilities	1,002,188,000	894,768,000
NAV	861,668,000	932,450,000
Shares outstanding	142,700,046	146,819,401
NAVPS	6.038316203	6.350999893

Therefore, for DHT the net Asset value is: \$ 932.450 million

Whereas, calculating the Net Asset Value for NAT is: \$595.525 million

We have analysed NAT's and DHT's share price and volatility. By looking at the graphs we see that in terms of share price NAT has been more stable than NHT. The cumulative change is significantly less. Meaning, DHT throughout the years holds more value to the shareholders, whereas, DHT's share price has dropped notably at the point of recession. This can be explained by the overall downturn of the economy. In spite, the share price of NAT has been less affected by the downturn. Before 2020 the Share price of both companies have reached the lowest point.

Factors that could constitute volatility is sudden change in chartering (spot and time) and hire rates, issuance of shares or debts, not mentioning the petroleum industry and overall global market cycles. Based on the M&M theory we can say that in regards of the firm's volatility it does not really matter under perfect markets how the company is financed, since other factors have higher weight on the shipping industry.



<< Maximum Sharpe Ratio Portfolio Allocation >>

- Annualised Return : 5.56% -
- Annualised Volatility : 50.42% -

Allocations of weight [sum 100] :
DHT : 0.0 / NAT : 100.0 /

<< Minimum Volatility Portfolio Allocation >>

- Annualised Return : 0.16% -
- Annualised Volatility : 41.62% -

Allocations of weight [sum 100] :
DHT : 60.16 / NAT : 39.84 /

Individual Stock Returns and Volatility

DHT => Geometric : -13.92%, Expected : -3.41%, Volatility : 45.69%
NAT => Geometric : -6.35%, Expected : 5.56%, Volatility : 50.38%

e) Companies are facing more and more pressure in terms of their ESG policies. Certain investors, investment funds or lenders are increasingly focused on ESG practices and in recent years have increased the importance of the impact and social cost of their investments. Increasing focus on ESG may affect access to capital, as investors and lenders may decide to allocate capital in other matters that may not generate more revenue. Unfortunately, companies which do not adapt to or comply with investor, lender or other industry shareholder expectations and standards are perceived to be companies that do not respond appropriately to the growing concern for ESG issues. No matter if it is a legal requirement or not, a company may suffer from damage to their reputation and thus affect their financial condition, and/or stock price due to the bad publicity.

More specifically, DHT and NAT may be pressured by investors or lenders who are increasingly focused on climate change, reducing the carbon footprint or simply promoting sustainability. As a result, DHT and NAT may be required to implement stricter ESG standards so that existing and future investors and lenders remain invested with the company and hopefully make further investments. In the worst case scenario, if DHT and NAT do not meet those standards, the companies' abilities to do business may be seriously affected. The main downside of meeting ESG standards is that they will incur additional costs and require more resources to monitor and comply with the ESG requirements which in turn could affect the financial condition of the companies' or simply limit more important investments such as the purchase of a new building to further increase shipping revenue.

Examples of ways DHT and NAT comply with ESG:

1. Purchasing vessels built in shipyards with high reputation (e.g. comply with all regulations and use environmentally friendly materials such as with the use of anti-fouling paint).
2. Safety of human life, meaning providing high quality training, equipment and procedures to ensure that every voyage is safe.
3. Meet applicable shore side and international waters environmental regulations and other requirements such as the flag administrations, port states and international conventions.
4. Take part in the development and implement programs/certifications (ISO for example) that encourage continuous improvement of environmental management and pollution.
5. Demolition and recycling of ships in accordance with BIMCO Recyclecon terms.
6. Establishing a strong code of business conduct and ethics but also antitrust, competition and fair-dealing policy.

f) We analysed the two companies' dividend payments and we can conclude that it is highly correlated with market cycles. Between the period of 2002 and 2009(Appendix 3.) there was an economic boom and the shipping industry became more profitable. Hence, companies could afford to compensate their shareholders at a higher level.

NAT

Regarding NAT's website, the company's main goal is to maximise the quarterly dividends to its shareholders but it is important for them to maintain a sufficient cash reserve in order to finance its liabilities. NAT has paid a \$0.1 dividend in the year of 2019. Additionally, in 2020 the company increased its dividend payment by 1.45% which is counter cyclical to the coronavirus outbreak.

Although, the company mentions in the 2019 annual report that any decrease in shipments of crude oil may adversely affect the firm's financial performance. Undoubtedly, it is explained by the fact that the company specialises in oil tankers thus any effect of the petroleum industry would influence the company's profitability and consequently the dividend payments as well. According to the annual report the overall volatility of the market can significantly affect future dividend payments.

The goal of NAT's dividend policy is to encourage shareholders to reinvest their paid out dividends into additional shares or purchase the company's common stocks. This is actually a good way of long term value creation since share price has not been fluctuating that much. Investors want capital gain or good dividend payments, preferably both. Nevertheless, through this process the money flows back to the company and is able to finance additional projects.

Total amount of Dividends that NAT has paid out to its shareholders in year 2019: 14.3million.

DHT

The dividends paid related to the four quarters of 2019 amounted to \$0.08, \$0.02, \$0.05 and \$0.32 per share of common stock, respectively. Throughout the first three quarters DHT Shipping distributed lower amounts of dividend per share when compared to the last quarter.

We assume that a reason for this would be risk reduction for cash flow as although companies have a forecasted revenue for the year, it is unsure that they will meet those forecasts. At the end of the year, DHT will have their final yearly shipping revenue and therefore be able to distribute dividend according to the revenue without compromising future cash flow when there is a higher level of uncertainty such as in the second quarter for example.

There is a possibility that DHT Shipping may not pay dividends in the future. This is because the Board of Directors (BoD) may decide to establish a reserve to repay indebtedness when the maturity dates approach in the case that they are no longer able to generate sufficient cash flow from their operating activities. If the BoD goes ahead with such a reserve, the amount of cash available for dividend payments would decrease. On top of that, DHT Shipping is subject to Marshall Island law which prohibits the payment of dividends other than from surplus and while a company is considered insolvent by the payment of such dividends. In our analysis, we also observed that DHT did not pay any dividend in Q2, Q3 and Q4 of 2009 after the credit crunch meaning that the company could seriously consider not paying out dividends again.

Capital allocation policy with minimum 60% of ordinary net income being returned to shareholders. Although shipping risks do not have a direct impact on dividend, they indirectly affect the dividend policy of DHT Shipping. An example that can illustrate this is the pricing of petroleum. If petroleum costs rise, this means that DHT Shipping's operating expenses will be higher than predicted. When this occurs, the company will be facing lower profitability and thus indirectly impacting the amount of dividend that DHT can give out to shareholders.

As observed in Figure (Appendix 3.), market cycles are highly correlated with dividend payments of both companies. Dividends per share have been increasing but at a decreasing rate and investors can expect stagnation throughout the upcoming years. This can be explained by the long term effect of the SARS-CoV-2 and the overall global shift to sustainable energy sources from fossil fuels, and the ever changing regulations of CO_x / SO_x emissions.

Total amount of Dividends that DHT has paid out to its shareholders in year 2019: 47million

g) The first figure that we can use in order to evaluate the companies is earnings per share (EPS). EPS can be calculated by dividing net income by shares outstanding and in short will tell us the amount of net income that is allocated to each share for the period. According to our analysis, DHT has an EPS of \$0.5018 which is low (6.06% in relation to share price) but still positive unlike NAT's EPS which is at \$-0.0703. From an investor's point of view, the higher the better as EPS would indicate greater value because investors would be willing to invest more into a firm's shares if they believe that the company has higher profits compared to the share price.

We have also calculated cash debt coverage (CDC) in order to determine how well each company is doing in terms of paying back their debts. DHT and NAT have CDCs of 0.1552 and 0.07341 respectively. Since we have calculated the CDC and P/E ratio (Appendix 4.) for the year 2020, and both metrics are unfavourable under the current situations, we can conclude that investors could find better opportunities on the market.

Price to earnings ratio is the ratio of the share price to the EPS of the share. This is a common way for investors to determine over and undervalued stocks. Below 15 is considered to be healthy, but it is very common that this is not the case. A P/E ratio of above 30 will be considered overvalued.

It is also important to mention that both companies have been able to increase revenue in 2020 compared to 2019 (NAT: -10,352 to 50,033 and DHT: 73,680 to 266,281) while decreasing their voyage expenses (NAT: 141,770 to 121,089 and DHT: 187,500 to 140,564) which is a good performance sign.

DHT: 27.67% increase in net profit from 2019 to 2020.

NAT: 583.32% increase in net profit from 2019 to 2020.

For the last three consecutive years, NAT has been suffering a net income loss and although the company is still in business. Modernisation of the fleet is a good indicator to keep their vessels future proof and comply with regulations. This way they modernise their fleet and reduce their operational costs, as newer vessels are cheaper to run, which could attract even more customers and by doing so strengthen their cash flow. On top of that, according to our Scenario Analysis (Appendix 5) from the 2019 income statement, if NAT was to strengthen their voyage revenue, they would end up with a positive net profit. According to our analysis, we could recommend buying or holding NAT's shares as the prospective net income and overall future of the company looks positive and expecting

economic upturn. DHT Shipping has also been facing irregularities in their net income. Throughout the last three years, DHT has only faced a loss in 2018 but otherwise saw profits in 2017 and 2019. In 2019, DHT Shipping's net income was at its highest at \$73,680,000 which is a far more attractive figure than NAT's consecutive losses. As DHT has been able to generate a positive net income in 2019, we believe, due to the future prospective economic conditions mentioned above, that DHT is able to increase their voyage revenue even more. The result can be seen from the Scenario Analysis (Appendix 6), which indicates that 10% increase in voyage revenue, other things constant, would result in a net income before tax of \$127,000,000. Therefore, we believe that DHT would be also an attractive investment opportunity for investors and we would recommend buying or holding their shares.

REFERENCES

TEXTBOOKS

Maritime Economics 3rd Edition (Martin Stopford)

Principles of Corporate Finance 12th Edition (Brealey, Myers, Allen)

INTERNET ARTICLES

Net Asset Value Per Share

<https://corporatefinanceinstitute.com/resources/knowledge/finance/net-asset-value-per-share-navps/>

Debt to Equity ratio

<https://www.investopedia.com/ask/answers/062714/what-formula-calculating-debttoequity-ratio.asp>

APPENDIX

APPENDIX 1:

Risks from DHT Annual Report:

1. MARKET RISK:

- a. Interest rate risk
- b. Foreign currency risk

2. CREDIT RISK

3. LIQUIDITY RISK

4. RISKS RELATING TO OUR COMPANY

- a. A renewed contraction or worsening of the global credit markets and the resulting volatility in the financial markets could have a material adverse impact on credit availability, world oil demand and demand for our vessels, which could adversely affect our results of operations, financial condition and cash flows, and could cause the market price of our common stock to decline.
- b. We may enter into new building agreements that subject us to certain risks, and the failure of our counterparties to meet their obligations thereunder could cause us to suffer losses or otherwise adversely affect our business.
- c. We may not pay dividends in the future.
- d. We may have difficulty managing growth.
- e. We may not be able to re-charter or employ our vessels profitably.
- f. Under the ship management agreements for our vessels, our operating costs could materially increase.
- g. When a tanker changes ownership or technical management, it may lose customer approvals.
- h. Certain adverse U.S. federal income tax consequences could arise for U.S. stockholders.
- i. Our operating income could fail to qualify for an exemption from U.S. federal income taxation, which will reduce our cash flow
- j. We may be subject to taxation in Norway, which could have a material adverse effect on our results of operations and would subject dividends paid by us to Norwegian withholding taxes.
- k. Recently enacted economic substance laws of the Marshall Islands, the Cayman Islands and Bermuda may adversely impact our business, financial condition or results of operations.
- l. A cyberattack could lead to a material disruption of our IT systems and the loss of business information, which may hinder our ability to conduct our business effectively and may result in lost revenues and additional costs.

5. RISKS RELATING TO OUR INDUSTRY

- a. Vessel values and charter rates are volatile. Significant decreases in values or rates could adversely affect our financial condition and results of operations.
- b. The highly cyclical nature of the tanker industry may lead to volatile changes in charter rates from time to time, which may adversely affect our earnings.
- c. An oversupply of new vessels may adversely affect charter rates and vessel values.
- d. Terrorist attacks, international hostilities, and the emergence of a global public health threat or pandemic crisis can affect the tanker industry, which could adversely affect our business.
- e. Acts of piracy on ocean-going vessels could adversely affect our business and results of operations.
- f. Our vessels may call on ports located in countries that are subject to restrictions imposed by the governments of the U.S., the United Nations (the “UN”) or the European Union (the “EU”), which could negatively affect the trading price of our shares of common stock.
- g. Failure to comply with the U.S. Foreign Corrupt Practices Act and other anti-bribery legislation in other jurisdictions could result in fines, criminal penalties, contract terminations and an adverse effect on our business.
- h. Political decisions may affect our vessels’ trading patterns and could adversely affect our business and operation results.
- i. Adverse conditions and disruptions in European economies could have a material adverse effect on our business.
- j. The value of our vessels may be depressed in the event that we sell a vessel.
- k. Vessel values may be depressed at a time when our subsidiaries are required to make a repayment under the secured credit facilities or when the secured credit facilities mature, which could adversely affect our liquidity and our ability to refinance the secured credit facilities.
- l. We operate in the highly competitive international tanker market, which could affect our financial position.
- m. Compliance with environmental laws or regulations may adversely affect our business.
- n. The shipping industry has inherent operational risks, which could impair the ability of charterers to make payments to us.
- o. Our insurance coverage may be insufficient to make us whole in the event of a casualty to a vessel or other catastrophic event, or fail to cover all of the inherent operational risks associated with the tanker industry.
- p. Maritime claimants could arrest our tankers, which could interrupt charterers’ or our cash flow.
- q. Governments could requisition our vessels during a period of war or emergency without adequate compensation.

6. RISKS RELATING TO OUR CAPITAL STOCK

- a. The market price of our common stock may be unpredictable and volatile.
- b. Future sales of our common stock could cause the market price of our common stock to decline.
- c. We have shares of common stock that are available for resale.
- d. Conversion of our convertible senior notes may dilute the ownership interest of existing stockholders.
- e. Holders of our convertible senior notes may have to pay tax with respect to distributions on our capital stock that they do not receive.
- f. We are incorporated in the Marshall Islands, which does not have a well-developed body of corporate law, a bankruptcy act or an insolvency act.
- g. Our amended and restated bylaws restrict stockholders from bringing certain legal action against our officers and directors.

- h. The anti-takeover provisions in our amended and restated bylaws and certain provisions in our convertible senior notes may discourage a change of control.
- 7. RISK OF LOSS AND INSURANCE
- 8. INSPECTION BY A CLASSIFICATION SOCIETY
- 9. ENVIRONMENTAL REGULATION
 - a. International Maritime Organisation
 - b. U.S. Requirements
 - c. Greenhouse Gas Regulation
 - d. European Union Tanker Restrictions
- 10. VESSEL SECURITY REGULATIONS
- 11. LEGAL PROCEEDINGS

Risks from NAT Annual Report:

- 1. INDUSTRY SPECIFIC RISK FACTORS
 - a. If the tanker industry, which historically has been cyclical and volatile, is depressed in the future, our revenues, earnings and available cash flow may decrease.
 - b. Any decrease in shipments of crude oil may adversely affect our financial performance.
 - c. We are dependent on spot charters and any decrease in spot charter rates in the future may adversely affect our earnings and our ability to pay dividends.
 - d. The international oil tanker industry has experienced volatile charter rates and vessel values and there can be no assurance that these charter rates and vessel values will not decrease in the near future.
 - e. Our results of operations are subject to seasonal fluctuations, which may adversely affect our financial condition.
 - f. Declines in charter rates and other market deterioration could cause us to incur impairment charges.
 - g. An over-supply of tanker capacity may lead to reductions in charter rates, vessel values, and profitability.
 - h. Acts of piracy on ocean-going vessels could adversely affect our business.
 - i. Volatile economic conditions throughout the world, political instability, terrorist attacks, international hostilities and global public health threats could have an adverse impact on our business, operations and financial results.
 - j. Outbreaks of epidemic and pandemic diseases and governmental responses thereto could adversely affect our business
 - k. The U.K.'s withdrawal from the European Union may have a negative effect on global economic conditions, financial markets and our business.
 - l. The current state of the global financial markets and current economic conditions may adversely impact our results of operation, financial condition, cash flows and ability to obtain financing or refinance our existing and future credit facilities on acceptable terms, which may negatively impact our business.
 - m. We rely on our information systems to conduct our business, and failure to protect these systems against security breaches could adversely affect our business and results of operations. Additionally, if these systems fail or become unavailable for any significant period of time, our business could be harmed.
 - n. Changes in the price of fuel may adversely affect our profits.
 - o. We are subject to laws and regulations which can adversely affect our business, results of operations, cash flows and financial condition, and our ability to pay dividends.

- p. Regulations relating to ballast water discharge may adversely affect our revenues and profitability
- q. Increasing scrutiny and changing expectations from investors, lenders and other market participants with respect to our Environmental, Social and Governance (“ESG”) policies may impose additional costs on us or expose us to additional risks.
- r. Climate change and greenhouse gas restrictions may adversely impact our operations and markets
- s. The IMO 2020 regulations may cause us to incur substantial costs and to procure low sulphur fuel oil directly on the wholesale market for storage at sea and onward consumption on our vessels.
- t. If we fail to comply with international safety regulations, we may be subject to increased liability, which may adversely affect our insurance coverage and may result in a denial of access to, or detention in, certain ports.
- u. Developments in safety and environmental requirements relating to the recycling of vessels may result in escalated and unexpected costs.
- v. The value of our vessels may fluctuate and any decrease in the value of our vessels could result in a lower price of our common shares.
- w. Technological innovation and quality and efficiency requirements from our customers could reduce our charter hire income and the value of our vessels.
- x. We operate our vessels worldwide and as a result, our vessels are exposed to international risks which may reduce revenue or increase expenses.
- y. The smuggling of drugs or other contraband onto our vessels may lead to governmental claims against us
- z. From time to time, our vessels call on ports located in countries or territories that are subject to restrictions, sanctions or embargoes imposed by the U.S. government, the European Union, the United Nations or other governments, it could lead to monetary fines or penalties and adversely affect our reputation and the market for our common stock and its trading price.

2. COMPANY SPECIFIC RISK FACTORS

- a. We operate in a cyclical and volatile industry and cannot guarantee that we will continue to make cash distributions.
- b. A decision of our Board of Directors and the laws of Bermuda may prevent the declaration and payment of dividends.
- c. We have antitakeover protections which could prevent a change in our control.
- d. If we do not identify suitable tankers for acquisition or successfully integrate any acquired tankers, we may not be able to grow or to effectively manage our growth.
- e. If we purchase and operate second hand vessels, we will be exposed to increased operating costs which could adversely affect our earnings and, as our fleet ages, the risks associated with older vessels could adversely affect our ability to obtain profitable charters.
- f. If we do not set aside funds and are unable to borrow or raise funds for vessel replacement, at the end of a vessels’ useful life our revenue will decline, which would adversely affect our business, results of operations, financial condition and ability to pay dividends.
- g. An increase in operating costs would decrease earnings and dividends per share.
- h. If we are unable to operate our vessels profitably, we may be unsuccessful in competing in the highly competitive international tanker market, which would negatively affect our financial condition and our ability to expand our business.
- i. Ineffective internal controls could impact the Company’s business and financial results.

3. RISKS RELATED TO OUR INDEBTEDNESS

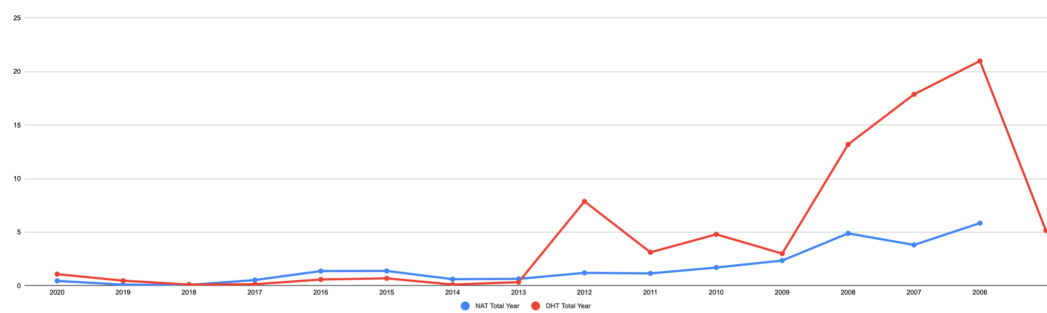
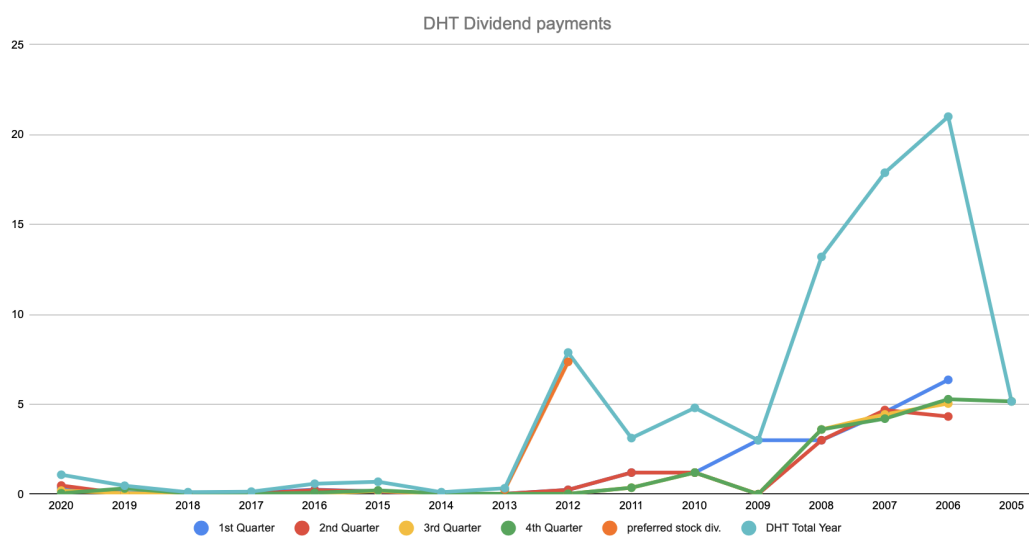
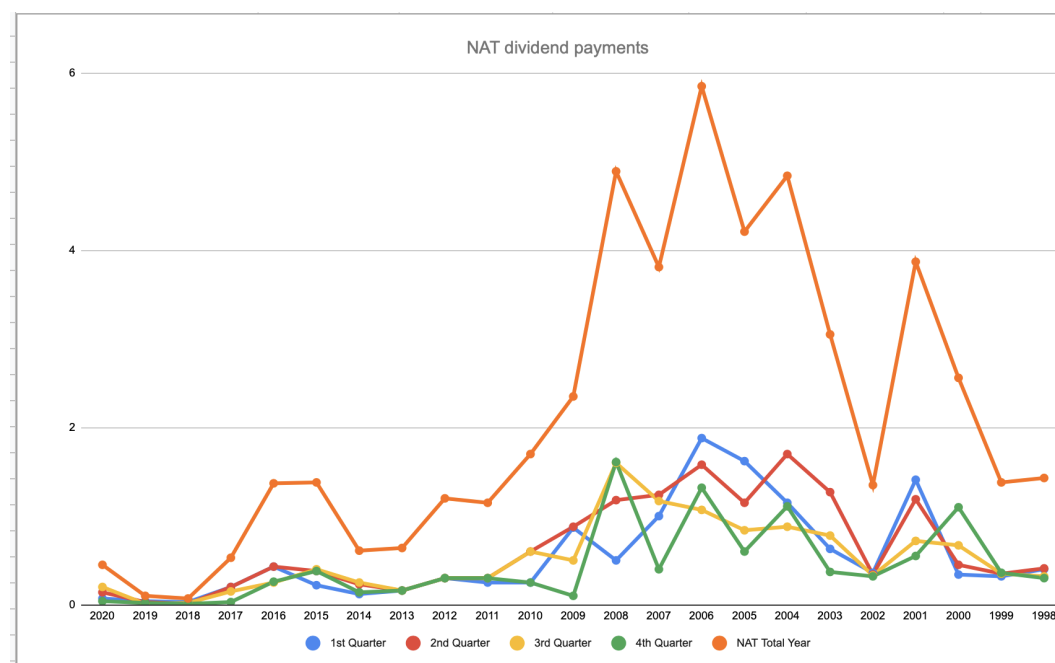
- a. Servicing our debt limits funds available for other purposes and if we cannot service our debt, we may lose our vessels.
 - b. Our 2019 Senior Secured Credit Facility and our financing arrangement with Ocean Yield ASA, or Ocean Yield, contains restrictive covenants which limit our liquidity and corporate activities, which could negatively affect our growth, cause our financial performance to suffer and limit our ability to pay dividends.
 - c. Volatility of LIBOR and potential changes of the use of LIBOR as a benchmark could affect our profitability, earnings and cash flow.
 - d. We are subject to certain risks with respect to our counterparties on contracts, and failure of such counterparties to meet their obligations could cause us to suffer losses or negatively impact our results of operations and cash flows.
 - e. Our insurance may not be adequate to cover our losses that may result from our operations due to the inherent operational risks of the tanker industry.
 - f. The operation of tankers involves certain unique operational risks.
 - g. Because some of our expenses are incurred in foreign currencies, we are exposed to exchange rate fluctuations, which could negatively affect our results of operations.
 - h. We may have to pay tax on United States source income, which would reduce our earnings.
 - i. If the United States Internal Revenue Service were to treat us as a “passive foreign investment company,” that could have adverse tax consequences for United States shareholders.
 - j. We may become subject to taxation in Bermuda which would negatively affect our results.
 - k. As a Bermuda exempted company incorporated under Bermuda law with subsidiaries in another offshore jurisdiction, our operations may be subject to economic substance requirements.
- 4. RISKS RELATING TO INVESTING IN OUR COMMON SHARES**
- a. Our share price may continue to be highly volatile, which could lead to a loss of all or part of a shareholder’s investment.
 - b. Because we are a foreign corporation, you may not have the same rights that a shareholder in a U.S. corporation may have.
 - c. We are incorporated in Bermuda and it may not be possible for our investors to enforce U.S. judgments against us.

APPENDIX 2.

WACC calculation c, capital structure

	DHT	NAT
D/E	0.9595	0.7313
D/V	0.4896	0.4224
E/V	0.5103	0.5775
WACC	4.00535%	8.88012%

APPENDIX 3.



APPENDIX 4.

P/E ratio Calculation

$$\frac{\text{Share price}}{\text{Earnings per share}} = \text{Price per earnings}$$

DHT EPS = 0.001710

DHT Share price on Dec 2020: \$5.89

DHT P/E 3,464 (over valued)

NAT EPS = 0.00033

NAT Share price on Dec 2020: \$3.42

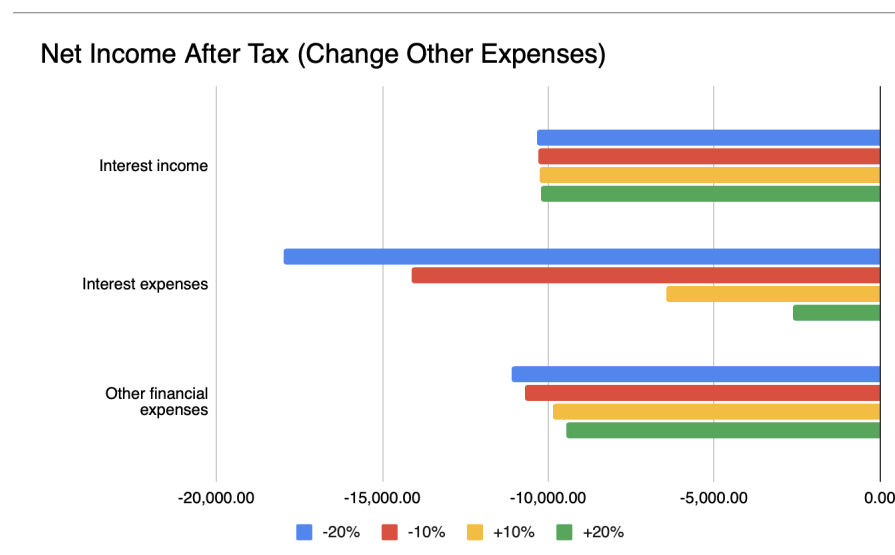
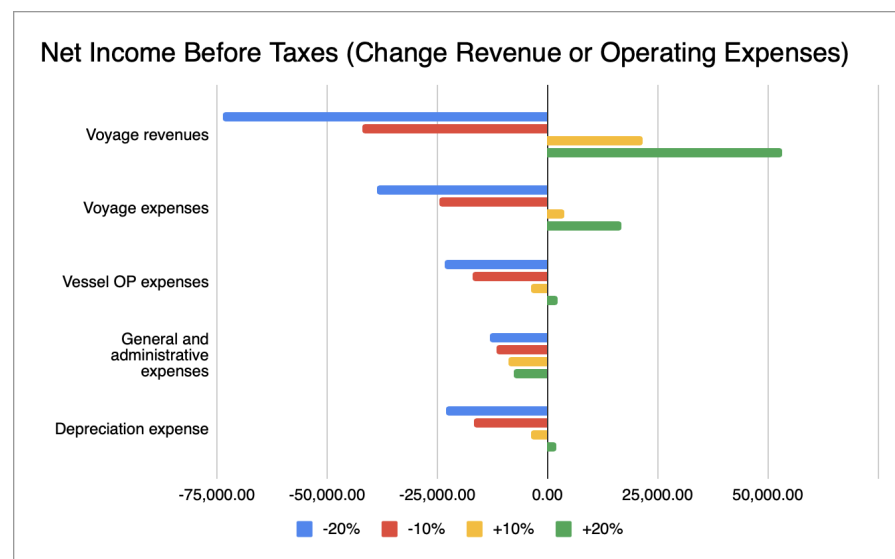
NAT P/E =10,352 (over valued)

APPENDIX 5.

Scenario Analysis:

NAT:

	Net Income Before Tax					Net Income Before Tax				
	-20%	-10%	Base case (2019)	10%	20%	-20%	-10%	Base case (2019)	10%	20%
Voyage revenues	253,776.00	285,498.00	317,220.00	348,942.00	380,664.00	-73,725.00	-42,003.00	-10,281.00	21,441.00	53,163.00
Voyage expenses	-170,124.00	-155,947.00	-141,770.00	-127,593.00	-114,833.70	-38,635.00	-24,458.00	-10,281.00	3,896.00	16,655.30
Vessel OP expenses	-79,239.60	-72,636.30	-66,033.00	-59,429.70	-53,486.73	-23,487.60	-16,884.30	-10,281.00	-3,677.70	2,265.27
General and administrative	-16,177.20	-14,829.10	-13,481.00	-12,132.90	-10,919.61	-12,977.20	-11,629.10	-10,281.00	-8,932.90	-7,719.61
Depreciation expense	-76,758.00	-70,361.50	-63,965.00	-57,568.50	-51,811.65	-23,074.00	-16,677.50	-10,281.00	-3,884.50	1,872.35
Net Operating Income	-88,522.80	-28,275.90	31,971.00	92,217.90	149,612.31	-	-	-	-	-
Interest income	238.40	268.20	298.00	327.80	357.60	-10,340.60	-10,310.80	-10,281.00	-10,251.20	-10,221.40
Interest expenses	-46,068.00	-42,229.00	-38,390.00	-34,551.00	-30,712.00	-17,959.00	-14,120.00	-10,281.00	-6,442.00	-2,603.00
Other financial expenses	-4,992.00	-4,576.00	-4,160.00	-3,744.00	-3,328.00	-11,113.00	-10,697.00	-10,281.00	-9,865.00	-9,449.00
Total other expenses	-50,702.40	-46,536.80	-42,252.00	-38,026.80	-33,801.60	-	-	-	-	-
Net income before income	-139,225.20	-74,812.70	-10,281.00	54,191.10	115,810.71	-	-	-	-	-



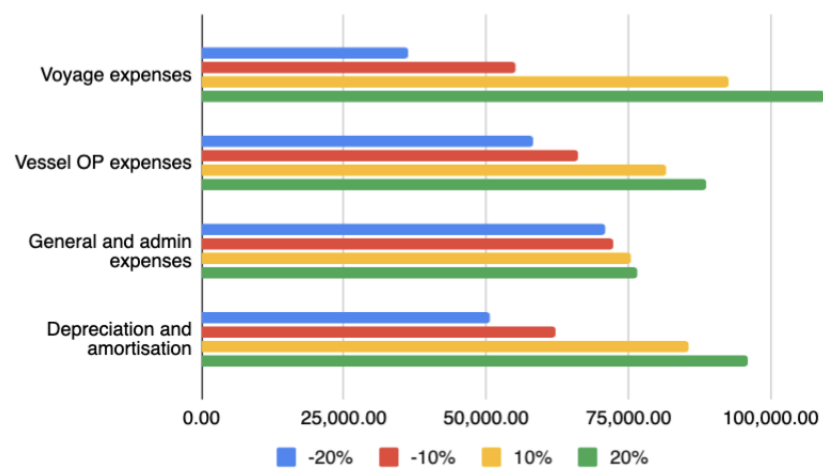
APPENDIX 6.

Scenario Analysis

DHT:

	Net Income Before Tax					Base case (2019)				
	-20%	-10%	Base case (2019)	10%	20%	-20%	-10%	Base case (2019)	10%	20%
Shipping revenues	428,054.40	481,561.20	535,068.00	588,574.80	642,081.60	-33,201.60	20,305.20	73,812.00	127,318.80	180,825.60
Voyage expenses	-225,000.00	-206,250.00	-187,500.00	-168,750.00	-151,875.00	36,312.00	55,062.00	73,812.00	92,562.00	109,437.00
Vessel OP expenses	-93,992.40	-86,159.70	-78,327.00	-70,494.30	-63,444.87	58,146.60	65,979.30	73,812.00	81,644.70	88,694.13
General and admin expenses	-17,746.80	-16,267.90	-14,789.00	-13,310.10	-11,979.09	70,854.20	72,333.10	73,812.00	75,290.90	76,621.91
Depreciation and amortisation	-138,700.80	-127,142.40	-115,584.00	-104,025.60	-93,623.04	50,695.20	62,253.60	73,812.00	85,370.40	95,772.96
	-47,385.60	45,741.20	138,868.00	231,994.80	321,159.60	-	-	-	-	-
Interest income	861.60	969.30	1,077.00	1,184.70	1,292.40	73,596.60	73,704.30	73,812.00	73,919.70	74,027.40
Interest expense	-66,398.40	-60,865.20	-55,332.00	-49,798.80	-44,265.60	62,745.60	68,278.80	73,812.00	79,345.20	84,878.40
Other financial expense	-2,148.00	-1,969.00	-1,790.00	-1,611.00	-1,432.00	73,454.00	73,633.00	73,812.00	73,991.00	74,170.00
Share of profit from associated companies	681.60	766.80	852.00	937.20	1,022.40	73,641.60	73,726.80	73,812.00	73,897.20	73,982.40
Fair value gain/loss on derivative financial liabilities	-11,835.60	-10,849.30	-9,863.00	-8,876.70	-7,890.40	71,839.40	72,825.70	73,812.00	74,798.30	75,784.60
Sum of other income and expenses	-78,838.80	-71,947.40	-65,056.00	-58,164.60	-51,273.20	-	-	-	-	-
	-126,224.40	-26,206.20	73,812.00	173,830.20	269,886.40	-	-	-	-	-

Net Income before Tax as Operating Income / Expenses are changed



Net Income before Tax as Other Income / Expenses are changed

