



---

# Teekay Offshore (TOO)

---

INVESTMENT REVIEW

APRIL, 2018

MASSIF CAPITAL, LLC | New York, NY

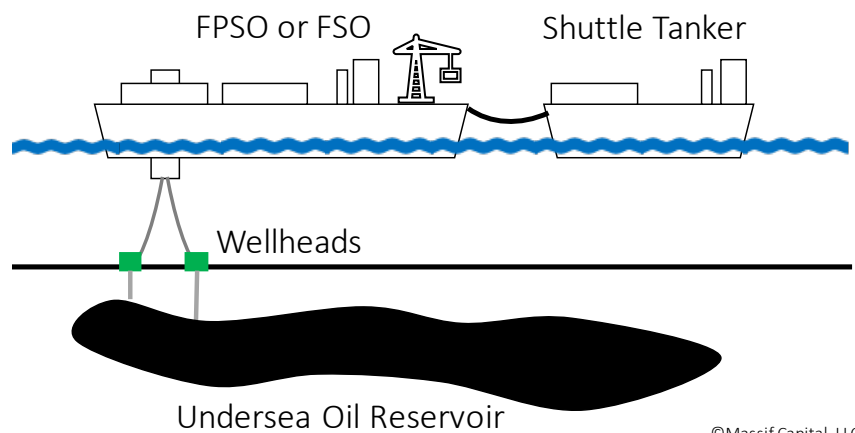
**Disclaimer:** As of the publication date of this report, Massif Capital, LLC and its affiliates (collectively, "Massif Capital"), maintain a long position in Teekay Offshore. Massif Capital stands to realize gains in the event the price of the stock increases. Following publication, Massif Capital may transact in the securities of the Company. All expressions of opinion are subject to change without notice, and the Authors do not undertake to update this report or any information herein. Please read our full legal disclaimer at the end of this report.

**Investment Thesis:** Teekay Offshore (TOO) provides essential marine infrastructure to the offshore oil industry. The company has a significant existing contract backlog, worth approximately \$15 per share, control of roughly 50% of global shuttle tanker fleet, and a newly recapitalized balance sheet. TOO currently trades at a significant discount to its intrinsic value in part because the market has failed recognize that TOO's business model is sound, even if capital allocation decisions made by the previous management team were not. A continued negative outlook for the offshore oil industry is also likely weighing on the stock. TOO has an intrinsic value north of \$6.00 share, a minimum margin of safety of 57.6%.

**Business Description:** TOO is marine service provider focused on shuttle tanker services, floating production, storage and offloading services and towage for the offshore Oil and Natural Gas industry.

TOO has an industry leading position in the shuttle tanker market with roughly half the global shuttle tanker fleet. In addition, TOO has been the leading independent operator of Floating Storage and Offloading (FSO) and Floating Production Storage and Offloading (FPSO) vessels for more than a decade and maintains an attractive niche business in towing, mooring, installation and decommissioning of ultra-large and ultra-heavy floating objects (principally oil and natural gas drilling rigs).

*Shuttle Tankers:* Shuttle Tankers are specialized ships designed to transport oil from offshore oil fields to onshore refineries. Shuttle tankers differ from conventional oil tankers in that they are outfitted with dynamic position (DP) systems, which are computer controlled systems that maintain the vessels position and heading in open water. Shuttle tankers are also equipped with cargo loading and unloading systems appropriate for open water transfer of oil. The combination of DP systems and specialized loading and unloading systems means that shuttle tankers are inappropriate for traditional tanker work and that conventional tankers are incapable of shuttle tanker work without a significant retrofitting.



*FSO & FPSO:* Once offshore in deep-water, harsh environments, or infrastructure lite locations, the storage and production of oil from offshore wells becomes complex. Not only is the environment often challenging but the engineering complications typically mean that a simple extension of shallow water infrastructure, such as undersea pipelines, is not

feasible. In response engineers have developed several types of offshore platforms that can be moored in place and receive oil from multiple subsea wells. FSO and FPSO are two of the more common approaches. FSO and FPSO are typically custom-built vessels or converted crude oil tankers that have been designed with specialized mooring systems, storage tanks and loading and unloading systems appropriate for intake of oil from wells and offloading of oil to shuttle tankers.

**Why an Opportunity Exists:** TOO is an interesting opportunity for investors now due to a confluence of macro-economic events and management decisions that brought the company to the brink of bankruptcy in 2017.

*Company History:* TOO was originally part of the Teekay shipping conglomerate founded by Norwegian entrepreneur Torben Karlshøj in 1973. Over the years the company grew and diversified into all aspects of the maritime oil supply chain save for direct exploration and production. By 2004 the company was looking to build on its past success in a way that its current access to bank financing could not accommodate. As a result, management made the decision to spin-out several niche businesses into publicly traded master limited partnerships (MLP). TOO was the third spin-off after Teekay LNG and Teekay Tankers.

As with most MLP's the parent company, and owner of partnerships General Partner, earned management fees, dividends from their limited partnership interest and incentive distribution rights (IDRs). With this structure Teekay Corporation generated a significant return from all three spin-offs. Unfortunately for investors in the original Teekay Offshore, the IDRs were a particularly rich source of return for Teekay Corporation. Management at the old TOO was not only inappropriately compensated but the drive to increase distributable cash flow, along with a high-flying oil market, created an operating context in which aggressive, and in the end unsustainable, commitments to growth projects were made.

Under the leadership of Peter Evensen since the initial public offering, the old TOO was a near perfect example of how not to allocate capital intelligently. Mr. Evensen and his team invested very little in the business between 2006 and 2010, a total of just \$179 million, despite ample free cash flow and a solid balance sheet. Starting in 2011, and commensurate with peak oil prices, the management team not only spent relatively freely but also made significant future spending commitments. The backdrop to all of this was the predictable MLP management drive to increase the limited partnership distribution, which when combined with the spending commitments and IDRs left the company with little financial flexibility in the wake of a significant fall in the price of oil.

Come 2017, the old TOO found itself in possession of an attractive long-term cash flowing shuttle, FPSO, FSO business, but also a significantly encumbered balance sheet. Recognizing the value of the existing fleet, Brookfield Business Partners, a 2016 spin-off from Brookfield Asset Management, acquired a 60% stake in the in Teekay Offshore LP and a 49% stake in Teekay Offshore GP. As part of the Brookfield Transaction not only was the board and management team overhauled but \$640 million in capital was injected into TOO. That cash was used to repurchase select outstanding preferred shares, retire debt maturing in 2018 and fully finance the growth pipeline.

To date the market does not appear to recognize either the recapitalization of the balance sheet by Brookfield or that the TOO business model is fundamentally sound. TOO is currently trading 10% below the price that Brookfield bought into the company at, and 60% below the 52-week high, which occurred in April of 2017 prior to the Brookfield transaction.

*Offshore Oil – Overlooked and Unloved:* In addition to a highly compelling valuation, TOO is likely to be the beneficiary of generally positive environment for oil and natural gas going forward. The positive operating environment going forward stems from what we consider to be a foreseeable failure of unconventional oil and natural gas to succeed overseas and a failure of conventional oil and natural gas finds to keep up with demand. As a result, the world is currently faced with a situation in which oil and

natural gas supply will be decreased, while demand, in the worst-case scenario, will remain at least steady (primarily due to emerging markets) for many years to come.

The market has not yet acknowledged this positive outlook for Oil and Natural Gas companies as most participants are too close/invested in fracking companies to ask important questions such as: What happens if the success of U.S. frackers cannot be replicated overseas? What happens if the qualities (depth, pressure, organic content, etc) of U.S. Shales that make them so productive are unique, or put another way what if the characteristics of overseas shales are not conducive to fracking? The US fracking industry is productive, even if it is not necessarily a strong real return industry, but cannot single handedly meet growing global oil demand.

*On Shale and Fracking:* As far as we can tell, very little work has been done attempting to answer the questions above. Most analysts appear to assume that the export of fracking technology is easily accomplished, even though there has been little to no overseas fracking success to date. Unlike most, Leigh Goehring and Adam Rozenecwajg of Goehring and Rozenecwajg Associates (GRA) have done extensive work on many of the questions presented above, and the results are not encouraging. Utilizing the EIA's "Technically Recoverable Shale Oil and Shale Gas Resources" study published in 2015, GRA carried out an in-depth geological study and ranking of the 160 global oil-bearing shale formations that occur outside the US.

GRA focused their efforts on six criteria essential for shale productivity: shale clay content, total organic content of shale, the thickness of the shale, oil in place per acre (a function of several geological factors), ultimate size of the shale, and depth of the shale. The result of this analysis was an index of global shales, that when compared to US Shales, suggest that 90% of global shales fail to achieve minimum economic feasibility.<sup>1</sup> The GRA study also suggests that, from the perspective of the measured variables, the US shales are not simply special but comprise most of the shales globally that can economically be developed.

The GRA study does highlight several shales outside the US that have significant potential (La Luna in Columbia, the Vaca Meurta in Argentina and the Bazhenov Shale in Russia) but the key take away is that the export of shale fracking overseas is likely to be harder and less productive than in the United States. Unfortunately, it is also likely that fracking in the United States is on the verge of becoming increasingly difficult as the clear majority of prime territory has already been tapped. As Mark Papa, the former CEO of EOG Resources and a key figure in original development of oil from shale industry recently stated:

"Many people ascribe the reason for this tepid [US oil production] growth to be cash flow or service company limitation, but I think its lack of remaining tier 1 geological quality drilling locations in two major oil shale plays of the three major oil shale plays, the Eagle for and Bakken. Even in a constructive oil price environment, I expect 2018 total US oil growth will be considerably less than the 1.2 million barrels per day to 1.4 million barrels per day that many people are predicting."

---

<sup>1</sup> For those interested in the details of what constituted minimum economic feasibility in the GRA study, research into US shales indicated the following minimum standards for the potential of economically feasible development of a shale: clay content of 30% or less, total organic content of 3% or greater, a net thickness of approximately 100 feet, oil in place of approximately 45,000 barrels per acre, absolute shale size of three million acres and have a depth of approximately 9.0 feet.

*On Conventional Oil and Natural Gas Finds:* On its own a decline in the growth of U.S. fracking, and a weak case for the exportability of the model overseas, might not lead to a positive environment for oil. When combined with the decline in conventional oil finds though, the supply picture over the next decade looks tight, suggesting a strong case for a rising price of oil.

According to Rysted Energy, conventional oil and gas discoveries reached an all-time low in 2017. Based on research by Goehring and Rozenzwaig Associates, since the start of the shale oil revolution, oil and gas E&P's have found only 110 billion barrels of conventional oil but the world has consumed a total of 360 billion barrels, creating a significant shortfall. Oil bears point to the growth of shale oil as evidence that the fall in conventional oil means nothing, as our discussion above of unconventional shale oil suggests though, the potential of shale to make up for the shortfall in reserve replacement via conventional finds is dubious at best.

The failure of the oil industry to find conventional replacements, and the likelihood that the shale revolution will not be as significant globally as it has been in the US means that offshore oil and natural gas remains not only an important source of global energy, but one of the few opportunities available to E&P's to find significant untapped oil and natural gas fields. Equally important to TOO is high likelihood of offshore growth coming from fields further away from shore and at deeper depths, necessitating either significant investments in fixed pipeline infrastructure (which is often an economic unfeasible proposition or impossible from an engineering perspective) or greater use of shuttle tankers, FSO and FPSO vessels.

**Financial Standing:** TOO generates 95% of revenue from its shuttle tanker and FSPO/FSO business segments. The remaining 5% of revenue is generated principally by the Towage segment and other miscellaneous offshore services. Over the last ten years the shuttle tanker segment has had flat revenue, steady year in and year out, while the FPSO segment has driven topline growth at the firm. Over the course of the last ten years revenue at the FPSO segment has grown at a CAGR of 17.2%. Going forward management is focused on continuing to expand the shuttle tanker and FPSO fleet and selective opportunistic expansion into related offshore services.

The balance sheet of TOO is relatively strong following the injection of \$610 million in fresh capital from Brookfield in late 2017. Not only did the capital injection allow TOO to fully fund growth projects that will produce more than \$200 million in annual cash flow from vessel operations but it also allowed for expensive preferred shares to be retired (all at a discount to par) producing a total cash savings of approximately \$28 million a year. Also as part of the general balance sheet restructuring multiple revolving credit lines associated with the shuttle tanker fleet were consolidated into a single, larger revolver with a lower interest rate and longer life and Norwegian Kroner denominated bonds were repaid with proceeds from a newly issued 5-year \$250 million-dollar unsecured bond.

Post Brookfield the debt plus preferred to equity ratio dropped from 3.05x in 2016 to 2.08x in 2017. It is also worth noting that as part of the restructuring all existing and new build shuttle tankers were consolidated into a wholly owned but separate entity called Teekay Shuttle Tankers LLC, the shuttle tanker revolver and the newly issued \$250 million-dollar unsecured bond are part of Teekay Shuttle Tankers LLC.

#### **Valuation:**

*Endurance:* When assessing the value of a company we look for a quality we call endurance, which we think of as a business model and management decision making geared towards the productive long-term

survival of the firm. In the case of TOO, the business model, which is built on the long-term contracts, almost exclusively more than ten years in length for shuttle tankers, FSO and FPSO units, which together account for 95% of TOO revenue, suggests a long-term sustainable business with predictable cash flows. In addition to the business model, endurance requires a management team that is geared towards sustainable growth. The management team in charge of the old TOO in the period from 2012 to 2015 was not focused on endurance, they were focused on growth. The difference is subtle but important, growth that puts the life of the company at risk is not value-added growth, its simply gambling. The current management team has not yet had an opportunity to fully demonstrate it capital allocation acumen but will operate under the careful supervision of a reconstituted board with an impressive track record.

*Scarcity:* In addition of endurance a business model must have an element of scarcity if it is to generate value. By this we mean that a business model must not only address a specific need of a specific customer but must also require an intertemporal allocation of capital in a difficult to duplicate fashion. In short, highly fungible capital (a dollar earned by TOO is the same as a dollar earned by anyone else) must be funneled into irreplaceable or difficult to duplicate assets on the balance sheet. TOO is an interesting asset because it has high level of scarcity arising from three sources: contracts, relationships and assets.

TOO contracts are long-term and difficult for competitors to replicate. The reason for this is that TOO has one of the longest track records of operating shuttle tankers in many of its operating geographies and thus has a reputation built over many years that international oil companies can bank on. The result of this is strong relationships and trust between TOO and customers.

There is also scarcity of the assets on the balance sheet. On the shuttle tanker side of things, the global shuttle tanker fleet is comprised of only 81 tankers, of which TOO controls 34 tankers with a further five vessels under construction (as of February 2017 there were only 6 newbuild shuttle tankers under construction globally according to Fearnley Consultants). TOO does not control the market for FSO's or FPSO's in the same way it does the shuttle tanker market but FSOs and FPSOs are vessels for which construction has significant time and capital barriers, creating a degree of scarcity. Furthermore, FSO and FPSO vessels are often purpose fit for specific offshore fields, creating significant transaction cost that must be paid if charters decide to switch FSO or FPSO providers/operators.

*Independence:* Prior to Brookfield joining TOO as majority owner, TOO had no independence, understood here as a company having the financial ability to determine its own fate and pursue its preferred strategy unencumbered by the restrictions of creditors or liabilities. In the wake of the Brookfield recapitalization, TOO has significantly more independence, not only has the balance sheet been simplified and growth project capital expenditures fully financed, but debt maturities have been extended at reduced interest rates. The firm is by no means debt free, but the injection of \$640 million in capital by Brookfield and Teekay Corporation has significantly altered the long-term outlook.

*Quantitative Valuation:* The valuation of the New TOO appears complex at first due to the many moving pieces over the last few years. The reality is that the many moving pieces, chief among them the new growth projects and the Brookfield recapitalization obscure a more straightforward situation than it appears. Our measurement of estimated intrinsic value is based on a combination of approaches: a price to sales ratio approached that utilizes the current contract backlog, a probability weighted intrinsic value (PWIV) estimate based on multiple Discounted Cash Flow (DCF) scenarios and Discounted Earnings plus Tangible Book Value (DETBV) scenarios, and a relative valuation based on TOO's principal shuttle tanker competitor KNOP.

*Contact Backlog:* At the current time the TOO has a contract backlog worth approximately \$6.5 billion excluding contract extension options. That revenue will be earned over a weighted average contract life of 4 years and works out to a contracted revenue backlog of \$15.69 a share or \$3.9 a share per year for the next four years. Assuming a 12% discount the present value of the backlog is \$5.0 billion. Given the backlog and the and the ten-year historical P/S ratio of 1.2, **the implied value of TOO is \$4.7. A margin of safety of 46.0%.**

*PWIV:* Our PWIV estimate is based on a combination of discounted cash flow and discount earnings models (we utilize our forecasted GAAP earnings) that are tied to a base case scenario (with an explicitly forecasted ten-year period and a 12% discount rate and no terminal growth) and several additional scenarios that assume less optimal outcome than our base case, which is itself not a best outcome scenario. In the case of TOO our scenarios are as follows:

*Base Case:* The base case financial scenario assumes revenue growth of 14.57% in 2018, 3.8% in 2019 and 1.12% in 2020. The revenue growth is based on managements expected cash flow from vessel operations growth (CFVO) attributable to growth projects coming online between 2018 and 2020. We assume a slower ramp up of new projects than management is projecting. We also assume that FX and interest rate swaps continue to be money losing endeavors for the company. Capital Expenditures are assumed to revert to the 10-year average of 23.5% of revenue and base depreciation on the stated useful life of vessels (25 Years) with no salvage value. The DCF and DETBV analysis produces the following valuation on the base case:

- DCF IV Estimate: \$4.1
- DETBV IV Estimate: \$7.8

*Scenario 1:* Scenario 1 assumes no revenue growth during the explicitly forecasted ten-year period (FY 2017 Revenue of \$1.1 billion assumed annual for the next ten years), followed by 2% growth in the terminal phase. Capital expenditures in Scenario 1 are assumed to be the 10-year average plus 25%.

- DCF IV Estimate: \$2.5
- DETBV IV Estimate: \$6.9

*Scenario 2:* Scenario 2 is only applied to the DCF model and assumes base model revenue growth, the more aggressive Capital Expenditure assumptions from Scenario 2 and a terminal growth assumption of 1%.

- DCF IV Estimate: \$4.56

*Blended PWIV:* Our Blended PWIV estimate applies a 50% weighting to the probability weighted outcomes from the DETBV and DCF scenarios. The DETBV applies a 50% weighting to each scenario and the DCF applies a 50% weighting to the base case and a 25% weighting to scenario 1 and scenario 2. **The resulting blended PWIV Estimate is \$5.6 per share, a margin of safety of 54%.**

*Comparable and Sum-of-Parts Valuation:* TOO's primary competitor in the shuttle tanker business is a firm called KNOT Offshore Partners. KNOT operates a fleet of fifteen shuttle tankers (less than half the

number owned and operated by TOO), but does not engage in the FSO/FPSO businesses that TOO does. Nevertheless, it is well worth looking at. The company has been conservatively and effectively run since formation in 2013 and provides a glimpse of what a well-run shuttle tanker business can look like.

	FY2017	FY2016	FY2015	FY2014	FY2013	Avg.
<b>Shuttle Tanker Gross Margin</b>						
TOO	52.0%	54.8%	57.0%	51.4%	45.8%	52.2%
KNOP.K	78.7%	82.2%	82.2%	78.8%	80.5%	80.5%
<b>Shuttle Tanker EBIT Margin</b>						
TOO	12.8%	25.8%	15.7%	24.2%	4.7%	16.6%
KNOP.K	43.5%	47.3%	48.0%	44.6%	40.8%	44.8%
<b>Operating ROA</b>						
TOO	3.9%	7.9%	4.9%	7.2%	1.3%	5.0%
KNOP.K	5.3%	6.4%	6.1%	4.7%	4.5%	5.4%

As the table above suggests, there is significant opportunity to improve the shuttle tanker operations of TOO, not only can margins be improved but asset utilization as well. At the current time KNOP trades at a price to sales ratio of 2.81x, this implies if TOO can get its house in order that the shuttle tanker business could be priced by the market at \$3.67 a share or 60% more than the market is currently pricing the entire company at. If the remaining businesses (FSO, FPSO and Towage) trade at the historical P/S ratio of 1.2x, the market implied price for TOO is **\$5.37 or 110% more than the current market price.**

*Distributable Cashflow:* For a partnership, distributable cashflow is clearly another important metric to consider. At the current time, TOO management is guiding towards Q1-2018 distributable cashflow of around \$40 million. Our analysis suggests this guidance, when applied to the year, produces distributable cashflow that is a little high, about \$0.10 a share more than our estimates. We are currently expecting LP annual distributions of roughly \$0.30 a share. A yield on the current price of 13%. If managements estimates are accurate and the cost structure and revenue of the business established in Q1 holds for the year, managements Q1 guidance is indicating distributable cashflow of around \$0.40 a year, a yield of around 17.4%.

Although pipeline MLPs are only comparable to TOO in the most general sense, both traditional pipelines and TOO provide oil companies with essential infrastructure to get their oil to market, it is worth noting that the Alps Alerian MLP ETF currently trades with a unit distribution yield of approximately 9% and that direct competitor KNOP trades with a unit distribution yield of 10%. Assuming our estimate of distributable cash flow of \$0.30 a share, and a rerating that keeps TOO trading in line with peer distributions, TOO should trade between \$3.00 a share and \$3.33.

*Valuation Summary:* Based on multiple quantitative approaches to valuation, combined with an enduring business model, that addresses a real economic need of the offshore oil industry and the strengthened balance sheet, a valuation of between \$5 and \$7 a share within the next two to three years appears reasonable.



**Risks to Thesis:**

*Oil Markets:* Despite our positive outlook, and a revenue streams insulated from direct commodity price exposure, another significant downturn in oil prices, or a settling of the price below \$50 a barrel would make growth for TOO increasingly difficult. Although existing shuttle tanker and FPSO/FSO contracts and operations are largely insulated from exposure to direct commodity prices, new projects that require TOO services are dependent on oil prices that sufficiently incentivizes international oil companies to drill offshore.

*Chartering Risks:* One of the primary risks for TOO is the potential that a shuttle tanker, FSO or FPSO vessel contract is either not extended via options or the company is incapable of finding a new charter for a vessel with a recently ended charter. At the current time, TOO has very little in the way of Shuttle Tanker charter risk, all new builds on order are chartered and the working fleet has an average remaining contract term, excluding extension options, of 4.5 years for time charters and bareboat charters and 2.3 years for vessels with contracts of affreightment.

It is important to note that the global shuttle tanker market is extremely tight. There have been no speculative new builds in the last few years and there are few if any unchartered shuttle tankers globally. At the current time the primary shuttle tanker markets (North Seas Fields and Offshore Brazil Fields) are expected to increase production going forward. Petrobras alone has roughly 17 offshore projects coming online by 2022. Based on expected new production coming online in both the North Sea and Brazil by 2022, Fearnleys, an offshore shipping consultancy, expects global demand for more than 100 shuttle tankers, the current global fleet has 81 shuttle tankers.

The re-charter risk for FPSO and FSO vessels is more complex and the primary source of TOO re-charter risk. Currently TOO has three FPSO vessels with contracts that are ending in 2018 and 2019. The *Voyageur Spirit*, which is operating in the North Sea, is contracted through April 2018, management is nearing completion of a contract extension through April of 2019. The *Ostras* FPSO is currently under contract with Petrobras through April of this year with a potential two-month extension, after which it will be off contract and need to be re-chartered. Given the age of the hull, originally built in 1981, and the original conversion to an FPSO, 2008, it is not clear how easy it will be for management to find a charter for this vessel.

All FSO's in the TOO fleet are currently operating under contracts that are either more than 2 years in length or have multiple 1-year contract extension options.

The most pressing charter risk is clearly in the FPSO segment. It is difficult to determine the potential revenue impact because contract details are not readily available. From our vantage point the worst-case scenario would be a failure to re-charter or extended all the FPSO's which results in flat revenue going forward, in short no benefit from new projects coming online late last year or this year. If we assume that is the case we still believe that TOO is worth \$4.00+ a share based on our forward looking cashflow analysis. This scenario is roughly equivalent to Scenario 1 described above but with Capital Expenditures reverting to the 10-year average not the 10-year average plus 25%.

## Legal Disclaimer

As of the publication date of this report, Massif Capital, LLC and its affiliates (collectively "Massif Capital") has a long position in the stock of Teekay Offshore. Massif Capital stands to realize gains in the event the price of the stock increases. Following publication of the report, the Massif Capital may transact in the securities of any company covered or discussed herein. All content in this report represent the opinions of Massif Capital. Massif Capital has obtained all information herein from sources they believe to be accurate and reliable. However, such information is presented "as is," without warranty of any kind – whether express or implied. Massif Capital makes no representation, express or implied, as to the accuracy, timeliness, or completeness of any such information or with regard to the results obtained from its use. All expressions of opinion are subject to change without notice, and Massif Capital does not undertake to update or supplement this report or any information contained herein. This report is not an investment recommendation and is only a discussion of Massif Capital's opinions.

This document is for informational purposes only and it is not intended as an official confirmation of any transaction. All market prices, data and other information are not warranted as to completeness or accuracy and are subject to change without notice. The information included in this document is based upon selected public market data and reflects prevailing conditions and Massif Capital's views as of this date, all of which are accordingly subject to change. Massif Capital's opinions and estimates constitute a best efforts judgment and should be regarded as indicative, preliminary and for illustrative purposes only.

Any investment involves substantial risks, including, but not limited to, pricing volatility, inadequate liquidity, and the potential complete loss of principal. This report's estimated fundamental value only represents a best effort estimate of the potential fundamental valuation of a specific security, and is not expressed as, or implied as, assessments of the quality of a security, a summary of past performance, or an actionable investment strategy for an investor.

This document does not in any way constitute an offer or solicitation of an offer to buy or sell any investment, security, or commodity discussed herein or of any of the affiliates of the Massif Capital. Also, this document does not in any way constitute an offer or solicitation of an offer to buy or sell any security in any jurisdiction in which such an offer would be unlawful under the securities laws of such jurisdiction. To the best of Massif Capital's abilities and beliefs, all information contained herein is accurate and reliable.

Massif Capital reserve the rights for their affiliates, officers, and employees to hold cash or derivative positions in any company discussed in this document at any time. As of the original publication date of this document, investors should assume that Massif Capital has a position in one or more of the companies discussed and has positions in financial derivatives that reference the security and stand to potentially realize gains in the event that the market valuation of the company's common equity is lower or higher than prior to the original publication date depending on if we are short or long as noted above in this disclosure and on the cover page of this report. Massif Capital, officers, and individuals shall have no obligation to inform any investor or viewer of this report about their historical, current, and future trading activities. In addition, Massif Capital may benefit from any change in the valuation of any other companies, securities, or commodities discussed in this document. Analysts who prepared this report are compensated based upon (among other factors) the overall profitability of Massif Capital's operations. The compensation structure for Massif Capital analysts is generally a derivative of their effectiveness in generating and communicating new investment ideas and the performance of recommended strategies for the Massif Capital. This could represent a potential conflict of interest in the statements and opinions of Massif Capital documents.

The information contained in this document may include, or incorporate by reference, forward-looking statements, which would include any statements that are not statements of historical fact. Any or all the Massif Capital's forward-looking assumptions, expectations, projections, intentions or beliefs about future events may turn out to be wrong. These forward-looking statements can be affected by inaccurate assumptions or by known or unknown risks, uncertainties and other factors, most of which are beyond Massif Capital's control. Investors should conduct independent due diligence, with assistance from professional financial, legal and tax experts, on all securities, companies, and commodities discussed in this document and develop a stand-alone judgment of the relevant markets prior to making any investment decision.