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MARINE INFRASTRUCTURE

An Attractive Asset Class that Delivers

Tony Foster, Marine Capital

As infrastructure investors begin to cast their nets wider in the search for high-yielding and diversifying assets, marine infrastructure is one area which offers many characteristics that will appeal to institutional investors. Inter alia it:

1. Offers attractive risk/return profiles
2. Provides diversification through low correlation to other asset classes/GDP growth
3. Is a large, investible market with a permanent requirement for capital
4. Is attractively priced (current timing is opportune) and
5. Is not weighed down by competing institutional capital

The marine infrastructure universe

The marine asset market is large—valued at US\$1-US\$2trn—and is made up of a wide range of assets that form essential components of world trade and the global economy. Most are generic; there are some 55,000 cargo-carrying ships that together transport over 85% of goods traded world-wide. However, non-conventional assets, such as floating regasification terminals for liquefied natural gas (LNG) imports, are playing an expanding role within the marine asset universe.

In this article, we define investment in marine infrastructure as the purchase and long-term charter (typically 5 to 15 years) of ships and other floating structures that require marine expertise for their

operation. The infrastructure-like nature of these assets—providing long-term contracted cash flows from high-quality end-users (counterparties), on a take-or-pay basis—fits the requirements of institutional investors seeking high-yielding, asset-backed income generation.

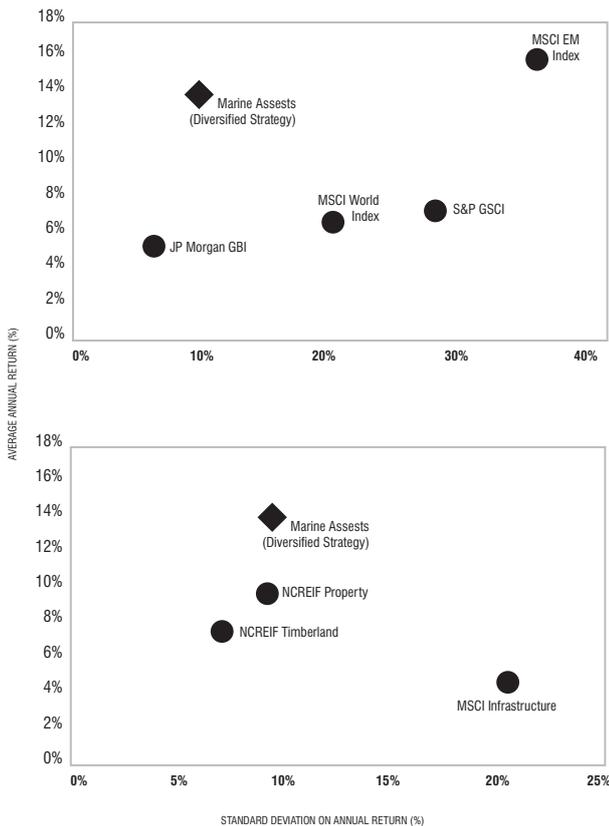
Although the marine asset markets have a reputation for high volatility, this can be hugely misleading. Just as in most other asset classes, there is a wide range of risk profiles depending on the investment strategy chosen. It is not necessary to adopt a high-risk strategy to generate attractive yields and returns. Using data compiled from a marine assets study spanning 15+ years as an estimate of returns, it can be seen that a long-term, diversified marine asset strategy is attractive when compared with other major traditional and alternative/real asset classes (Figure 1).

Diversification through investment in marine assets

Returns in a diversified, long-term marine asset strategy exhibit low correlation to all major asset classes (Figure 2) thereby providing great diversification benefits within a portfolio. Perhaps surprisingly, returns are also lowly correlated to global GDP (Figure 3). This is largely because the market is driven by its own supply and demand fundamentals and is not subject to the same distortions which can affect financial markets. Global GDP growth, although an important

factor in determining the demand for marine assets, is just one part of the equation. It is the balance of demand for the assets, and their associated availability (supply) which drives marine/shipping markets and hence returns.

Figure 1. Marine asset diversified strategy risk/return profile: performance against other asset classes & real assets



Source: Sources: Marine Capital, Bloomberg. Time period covers January 1999-December 2014 (marine assets return data has three-year lag due to long-term nature of deals modelled)

Figure 2. Marine asset diversified strategy returns exhibit low correlation against other asset classes

	Marine Assets	MSCI World	MSC EM	JP Morgan GBI	S&P GSCI
Marine Assets	1.00	0.12	0.16	0.08	0.14
MSCI World		1.00	0.85	0.23	0.38
MSCI EM			1.00	0.22	0.43
JP Morgan GBI				1.00	0.20
S&P GSCI					1.00

Sources: Marine Capital, Bloomberg. Time period covers January 1999-December 2014 (marine assets return data has three-year lag due to long-term nature of deals modelled).

Figure 3. Marine asset diversified strategy returns also exhibit low correlation against GDP growth

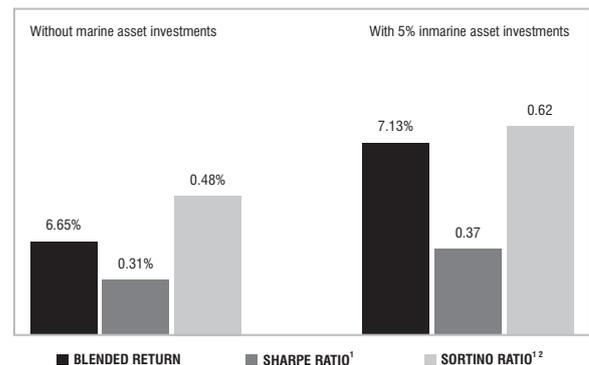
	World GDP	China GDP	US GDP
Marine Assets	0.10	0.09	0.35

Sources: Marine Capital, Bloomberg. Time period covers January 1999-December 2014 (marine assets return data has three-year lag due to long-term nature of deals modelled).

Impact of marine asset investments on a typical portfolio

Marine asset investments can be seen to provide risk-adjusted return benefits, even within an already well-diversified portfolio with allocations to several other alternative assets classes. Given the similarities in the characteristics of marine asset and core plus infrastructure investments, in Figure 4 we have shown a partial re-allocation from infrastructure to marine asset investments and the corresponding positive change in portfolio return and risk. An increase in the Sortino ratio from 0.48 to 0.62 is a strong argument for the inclusion of marine assets in the portfolio.

Figure 4. A diversified portfolio with and without marine asset investments



Notes:

- (1) Risk-free rate of return: 3%
- (2) Minimum acceptable return: 0%

Other investment characteristics

In addition to the two key elements of returns and diversification, the marine assets market also has a number of other characteristics which are appealing to institutional investors.

Easy deployment of capital

The market is highly transactional (unlike many other alternative asset classes where deploying significant amounts of capital can be difficult and time-consuming), and the industry has a permanent requirement for capital. It is also not beset by the weight of institutional capital competing for deals as can be the case in more 'accepted' markets.

A proviso is required here: relationships matter. Counterparties such as charterers (asset lessees) and banks prefer to deal with industry professionals who know how to operate the assets, rather than

financial assets managers with no operational expertise. Detailed industry knowledge is not only essential for a successful investment outcome, but also a significant barrier to entry.

Liquidity

Liquidity is not usually a feature associated with real assets but as the generic nature of most marine assets allows for easy price-discovery, there is an established, active market for second-hand assets, driven by an extensive broker community. In the dry bulk ship market, for example, liquidity is double that of Australian residential real estate (Source: Australian Bureau of Statistics).

Minimal political/jurisdiction risk

These are risks which are often present in many infrastructure investments but are minimal in the marine assets market as vessels are free to trade throughout the world and other floating assets (such as floating terminals) can often be redeployed relatively easily. While increased protectionism affects all economies and also the marine industry, every nation is dependent on trade.

Return generation from marine assets

There are two components to return generation when it comes to the ownership and operation of marine assets:

1. The income (earnings) generated from chartering the assets
2. The net capital returned from any sale of the asset

In reality, the two are closely linked as the second-hand value of the asset is tied to its future earnings potential. In the case of relatively modern assets which are **not** chartered on long-term contracts, the value of the asset and short-term charter rates are co-integrated, i.e. if the short-term markets are strong, vessels operating within them will be ascribed high valuations and vice versa. Despite their depreciating nature, marine assets can increase in value (sometimes very significantly) if the demand for them exceeds supply.

In the case of assets which are chartered on long-term contracts, it is the earnings over the lifetime of the charter that will be key in determining the value of the asset. For example, a ship with a contract spanning its entire useful life would be valued entirely based on the discounted cash flows the employment provides, plus some residual equal to the scrap value of the underlying steel.

The relative contribution from each component (income versus asset price) depends on the type of investment strategy that is chosen.

Investment strategies in marine assets

There are a number of approaches to marine asset investments which span the risk/return range. At one end of the spectrum are investment strategies which are exposed to market risk (changes in charter rates and ship prices) and aim to generate high returns through the cyclicity exhibited in the short-term markets of the generic sectors. In such cases, the investor will seek to purchase assets which are cheap relative to historical market levels. Charter rates will also be at low at these points in the cycle. The investor is therefore anticipating a rise in the market which will result in both higher earnings and higher values. Keeping charters relatively short in duration exposes the investment to volatility in both the level of earnings and asset values and allows the investor to take full advantage of the expected improvement in market conditions.

Figure 5. Market risk spectrum & corresponding investment styles

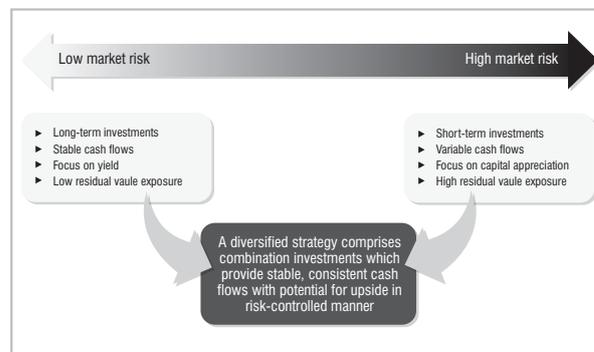
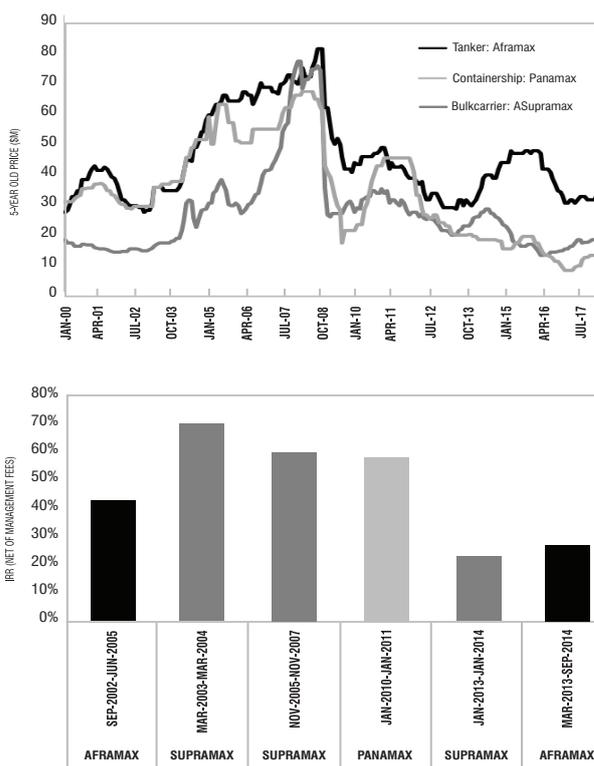


Figure 6. Unlevered returns on short-term investments in cyclical marine sectors



Source: Marine Capital, Clarkson Research Services

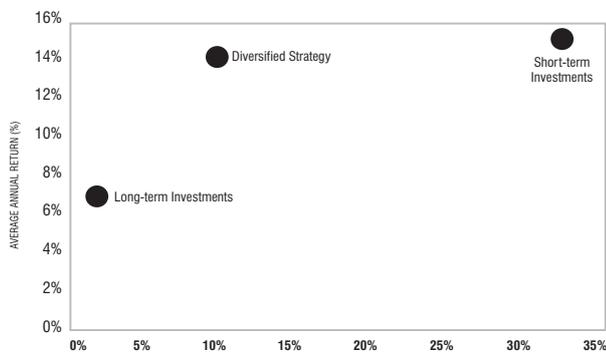
These types of investments are likely to have been the dominant experience of institutional investors in the marine space, as they have typically been those chosen by return-driven private equity managers who have dipped a toe in the market. A number of these propositions will have come undone for all sorts of reasons: poor choice of assets, over-leverage, poor market timing and punitive/

opaque fees being the key ones. Timing of market entry (and exit) and appropriate active management of these strategies are critically important. Such investments can be highly successful (Figure 6) but as exposure to market volatility is key to generating these types of returns, there is little or no safety net.

While the above type of strategy has garnered the most publicity, at the other end of the spectrum there exist investments which are infrastructure-like in nature. These typically involve high-value assets which are chartered to creditworthy counterparties on long-term contracts which enable significant, if not full, depreciation of the asset over the initial charter contract. Such assets tend to be in sectors where the long-term demand for the underlying cargo is robust and the counterparties have strategic reasons for securing availability of the asset over a long period of time (e.g. the LNG sector). In these types of strategies, there is very limited exposure to market volatility and the key consideration is the credit quality of the counterparty.

In reality, the best approach is a well-diversified one consisting of investments which span the risk/return spectrum, typically with a large allocation to lower risk investments which generate stable, consistent cash flows and a small allocation to higher-risk investments which provide an additional element to return generation (Figure 7).

Figure 7. Risk/return profiles of long & short-term marine asset investments vs that of a diversified strategy



Sources: Marine Capital. Time period covers January 1999–December 2014 (marine assets return data has three-year lag due to long-term nature of deals modelled).

Risk management

Nearly all investments carry some form of risk. In the below we summarise the key risks associated with investment in marine infrastructure as well as how these risks can be mitigated.

Minimising re-employment risk

Re-employment risk is a key factor which is usually at the top of investors' minds when considering real assets where the return is reliant on income generated by the 'lease' of the asset. In the marine industry, regardless of the type of asset or length of tenor, charter contracts tend to run back-to-back as sufficient notice is given prior to redelivery to arrange the next charter contract—or the extension of an existing one.

In the generic sectors of the market re-employment risk is mini-

mal given the commoditised nature of the assets. The same is true for non-generic assets where the long-term demand for the underlying cargo or service (and hence requirement for the assets) is clear. It is therefore not an issue of employment per se, but the rate at which the asset is employed in future which exercises the mind of the asset owner, and this may be higher or lower than the rate of the preceding contract.

In long-term contracts, the process of managing this risk starts not at the end of the charter contract but at the beginning. The initial contract would have been structured to provide for substantial amortisation of the asset's original cost and return of most, if not all, of the initially committed equity. The owner will then have an asset with a lower break-even requirement which enables him to offer very competitive rates to charterers. Any preference of charterers to commit only to longer-term charters with new ships is tempered by the availability of existing assets at potentially lower rates. In addition, in long-term charter contracts, a good working relationship between the asset owner and charterer also tends to generate discussions around extension of the original contract.

Mitigating residual value risk

Residual value risk is an area which is often misunderstood by non-industry professionals who perceive residual value exposure purely as a downside risk to capital values. However, as marine assets have the potential to increase in value substantially, taking residual value exposure (where appropriate) can represent an opportunity to generate significant upside in total returns.

The original purchase price of the asset is a key factor in assessing and mitigating this risk regardless of strategy, since, if the asset is bought at a relatively low price, it can be chartered on very favourable terms on an ongoing basis. In long-term investments, the other key to mitigating residual value risk is to ensure that earnings from the initial charter are sufficient to enable meaningful amortisation of the asset.

Technical/operational expertise is also vital—both to ensure that the right asset is purchased in the first place, and that ongoing operational diligence protects the value of asset during use.

Inflation risk: absent in index-linked charter contracts

There are a number of ways in which shipping investment offers an inflation hedge. In long-term charters, there is usually an inflation clause which indexes charter rates to increases in key operating cost components such as insurance and crew costs. Alternatively, where such indexation is not explicitly factored into contractual charter rates, it is taken into account in the modelling of long-term projects where inflation adjustments are built into fixed charter rates for the duration of the contract.

Managing operational risk

Marine assets will sustain physical wear & tear: in order to maintain the value of the asset, a high level of operational management is required. Direct control is key and an experienced, specialist asset manager will know when and how to spend money to ensure that returns are optimised and asset values protected. In addition, the marine industry is highly regulated by external agencies such as the International Maritime Organisation (IMO) and Port State Control, and there is a host of environmental, health and safety,

and labour convention requirements with which ship-owners and operators must comply. Comprehensive insurance cover is also required within the industry, and policies must be held to protect assets against physical damage, total loss and damage to third parties.

Why invest now?

Current timing looks to be particularly opportune to enter this market for a number of reasons:

Expanding investment opportunities

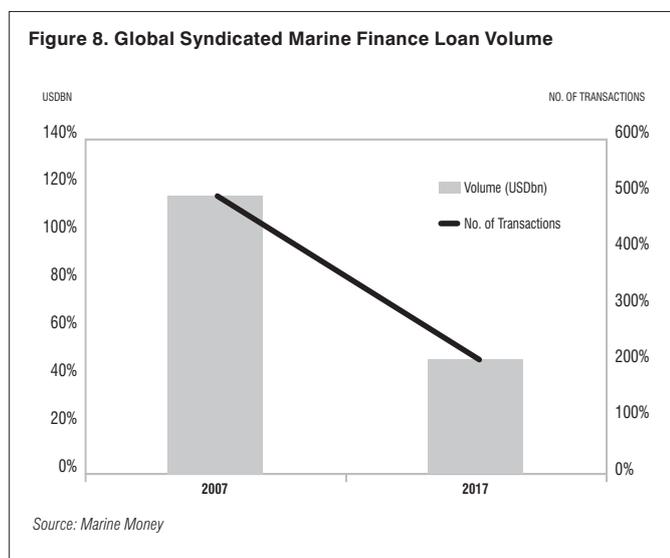
While marine markets have a permanent need for capital, good growth prospects in several sectors point to a growing requirement for funding. In sectors such as LNG, the expansion is exceptional: there is huge, growing demand for (expensive) floating infrastructure in the LNG delivery chain as the underlying commodity market expands quickly. Regulatory developments on emissions control are bringing further opportunities to invest in new ships of various types fitted with LNG propulsion systems, as major-end users adjust to ever-stricter environmental controls.

Supply constraints limiting fleet growth

There are helpful constraints on supply. Few of the world's shipyards are capable of constructing high-specification units like LNG carriers, and they need reasonably long lead-times. This points to a tightening market in the medium term. From a valuation perspective, this is also a very attractive time to be considering the market as asset prices in several sectors, and importantly also in the new-build market, are at multi-year low levels.

A lack of financing in both debt...

The market is suffering from a dearth of financing (Figure 8) and industry players are struggling to finance the new investment needed. The withdrawal of a number of European banks from the lending market for various reasons including capital weighting requirements, has limited the availability of debt financing by many of these traditional lending institutions to investments or projects which have secure cash flows with highly-rated counterparties.



Although other sources of debt finance are available (mostly from Asian banks or leasing companies, where the process may be less straightforward), the days of high leverage available to all are over, which in turn is keeping a lid on new orders in much of the market.

...and equity

Historically, the industry has looked to traditional ship-owners to provide the equity financing and ownership/management of marine assets (including assets such as floating terminals) given the high reliance on marine operational expertise. The latter is still a necessary requirement, but many traditional ship-owners are struggling to meet the equity needed for new projects, particularly in sectors such as LNG where the assets carry higher capital requirements and demand is increasing. Many traditional owners are reliant on public markets for raising capital but this type of funding is fickle in nature and, as many owners have discovered, not suited to the long-term capital requirements of the marine industry. This is now an ideal time for institutional investors (via specialist asset managers with operational expertise) to participate.

Summary

Marine assets are a core part of the fabric of the global economy and investments in them can provide investors with high yield potential and an attractive risk/return profile largely uncorrelated with GDP growth. It is surprising characteristics such as these, contrary to popular perception, which demonstrate why the market should be attractive to institutional investors. In an environment where large pools of capital already compete for investments in many alternative asset classes, marine assets provide a rare opportunity to deploy significant amounts of capital in an asset class relatively unburdened by weight of money and which has both the liquidity and flexibility to suit different risk/return profiles.

From a portfolio perspective the asset class's benefits have been illustrated herein with some quite simple analysis showing how a diversified portfolio could benefit from its inclusion. As is the case with many asset classes, an investor can choose the extent to which it is exposed to market volatility, as this is dependent on the investment strategy pursued. High-risk investments are in no way inevitable but are a choice which investors can elect not to make.

A post script on debt

In this article we have focused on equity investment, but investors can also look for debt opportunities. Indeed, many investors have been seduced by debt investment propositions in the industry, offering seemingly attractive yields: but a word of caution is required. Asset owners in the marine industry generally benefit from the availability of highly competitive debt financing, particularly when the assets in question are chartered to bankable counterparties. Only assets owners that are unable to access debt at industry levels (between LIBOR plus 150bps to 350bps) or who need high leverage due to lack of available equity, would look to (much) higher-cost (mezzanine) finance and so by definition, these owners are likely to represent high credit risks. In an industry where cash flows are so transparent, one might question the depth of opportunity in high-margin lending.

In recent years, there has also been considerable interest from hedge funds and credit fund managers in secondary debt oppor-

**The quote**

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tunities, given the highly publicised sale of loan books by several European banks. Once again, a word of caution: investors need to appreciate that the selling bank can sell the underlying assets (ships rather than loans) at the available market price. It is rarely ever the case that there is no market. The seller is therefore shifting enforcement risk onto (usually) an inexperienced buyer

for a perceived discount. Moreover, as the proposition is loan-to-own, the buyer has the ability to purchase equivalent assets (of better quality) in the open market from sellers whose assets are not distressed. It should not be a surprise that industry professionals have not been pursuing these perceived opportunities. **FS**