

Chapter 14

Ship Leasing

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Abstract In its most general definition “leasing” is a process by which one party obtains the use of a fixed asset for which it must pay a series of contractual periodic rentals to the owner of the fixed asset. The party obtaining the use of the asset is called the lessee, whereas the party providing the use of the asset is called the lessor. In this chapter, the focus is on the longer term ship leasing market, which is in fact an alternative finance market for the industry. The motivation for entering into a leasing transaction could be based on any single or combination of factors including cash management, funding diversification, cost, accounting and technological obsolescence risk mitigation. Compared to ship operators, the risk-return profile of the leasing business is more attractive and lessors can usually achieve higher financial leverage in debt markets that can drive returns on equity (ROEs) to attractive levels. Ship leasing transactions can be structured in several forms and each has its advantages and disadvantages. This is also discussed in the text in greater details. In pricing lease transactions, lessors typically focus on target project returns, equity returns and cash yield. The assumed residual value of the asset at lease maturity will have a significant impact on pricing. Lessors face three broad risks credit, asset and financial which need to be addressed appropriately through a disciplined risk management approach. The recent financial and shipping crises have posed significant challenges for the industry. Bank lenders have become highly selective in grading fresh credit and high profile defaults of companies, such as Sanko, Korea Line, Berlian Laju Tanker, Armada and Britannia Bulk, as well as complex restructurings of Torm, CSAV and CMA CGM, have shed light into the risk of off-balance sheet obligations. Significant developments to ship leasing are the proposed changes to lease accounting rules. If implemented, “lease buying

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behavior” is likely to change since obligations that were heretofore treated off-balance sheet will henceforth be capitalized onto the balance sheet.

14.1 Overview

14.1.1 General Leasing Definition

In its most general definition “leasing” is a process by which one party obtains the use of a fixed asset for which it must pay a series of contractual periodic rentals to the owner of the fixed asset. The party obtaining the use of the asset is called the lessee, whereas the party providing the use of the asset is called the lessor.

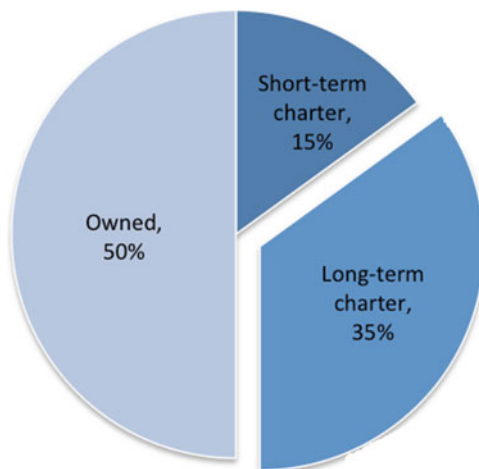
14.1.2 Ship Leasing Definition

If one applies the above definition to shipping then any type of vessel charter agreement, regardless of type and term, is in fact a ship leasing transaction. At its most extreme, even a ship-owner trading his vessels in the spot market is a lessor, although he would never use that terminology. The lines are further blurred because many shipping companies charter vessels in as well as out. Hence, these companies are both lessor and lessee at the same time, and sometimes even in relation to the same asset. The latter, known as a sub-lease, is a transaction where the asset is re-leased by the original lessee to a third party, and the lease agreement between the two original parties remains in effect (as defined in Financial Accounting Standards, FAS 13).

Just consider the dry bulk market boom prior to the financial crisis. During that period, vessels were chartered and sub-chartered many times as the market kept rising. Every sublet involved a party taking the role of lessee and lessor at the same time, obviously with the expectation of earning a spread between charter-in and -out cost.

However, for the purposes of this book, we shall focus on the longer term ship leasing market, which is in fact an alternative finance market for the industry. Hence, the question is what the approximate lease term is with which opportunistic market-related chartering activity ends and more strategic finance-related leasing activity starts. Clearly there is no generally accepted rule for such dividing line. Based on many discussions with industry participants over the years the author believes that any chartering activity for a term of at least 5 years is of a strategic finance-related nature and therefore can be considered a substitute for a vessel purchase or ownership. Hence, this book will equate long term chartering activity for terms of 5 years or longer to the ship leasing definition.

Fig. 14.1 Financing mix for container lines



14.1.3 Ship Leasing Market Size

There is no publicly available data that can reliably estimate the size of the ship leasing market because there is no consensus of what leasing constitutes in the shipping industry (see discussion above).

Of all shipping sectors, the most promising one for which to attempt estimating the ship leasing market size is the container vessel sector. We know from public disclosures of larger container lines that they charter about 40–60 % of their shipping capacity, with the balance being owned by them. Interestingly, this so called lease penetration ratio of 40–60 % is about the same for the commercial aviation industry. The chartered capacity by container lines includes vessels typically smaller ones—on shorter term charters (less than 5 years in duration). Whilst there are more ships on shorter term charters, the longer term charters of the larger ships are more important for the container liner industry in capacity terms. Hence, if we arbitrarily assume that 70 % of the chartered tonnage capacity is on long-term charters, then we would come to the following financing mix for container lines assuming an overall lease penetration rate of 50 %, see Fig. 14.1 (Garfield 2012, p. 3).

Whilst there is reasonably reliable data available for the container ship sector this is not the case for the two large commodity shipping sectors of dry bulk and tanker. However, it is safe to assume that the lease penetration rate for dry bulk and tanker is significantly lower than for the container sector. The main reason for this lower lease penetration rate is that dry bulk and tanker shipping companies have historically derived a significant portion of their investment return from the timely purchase and sale of the vessel itself, whereas container lines earn their return from operating a network, somewhat similar to the airline industry. One of the disadvantages of leasing in that context is that the leasing structure always entails a restriction in asset disposal flexibility, hence impeding the return potential for the operator through a timely asset sale.

14.2 Leasing Motivations

14.2.1 Lessee's Perspective

Why do companies generally and ship operators specifically enter into leasing transactions when presumably they could purchase or own the assets instead? The motivation for entering into a leasing transaction could be based on any single or combination of the below factors:

14.2.1.1 Cash Management

Especially for very capital intensive industries, such as shipping, cash management is the single most important motivator to enter into leasing transactions. Leasing effectively provides 100% financing for an asset. On the other hand, the mainstay ship finance tool, the first priority ship mortgage, has typically provided financing for 60–80% of a vessel's value. The balance would normally come from the operator's equity, which adds up to significant absolute investment amounts, especially in the context of multi-vessel newbuilding orders. Clearly the "incremental cash flow" value, which leasing provides, is greatest at times when conventional bank finance is constrained and limited to low leverage ratios on the asset's value.

14.2.1.2 Funding Diversification

The financially more sophisticated companies attribute value to funding diversification and consider leasing an integral part of that funding mix. In shipping this is most evident with the container liner companies. As we are witnessing right now during the financial crisis, bank funding sources can dry up very quickly and in such situations it is of great value to have access to different sources of capital, be it bank finance, capital markets or leasing.

14.2.1.3 Cost

Whether leasing is perceived to be cost competitive compared to ownership by a potential lessee, depends entirely on the comparison that is employed. In shipping there is still significant confusion over what the correct comparison is. If one compares the cost of a lease with the cost of debt finance, it is not a like for like exercise because it assumes that the cost of the operator's equity in the bank finance scenario is zero. The correct comparison is between the cost of the lease (IRR calculation taking into account the cost of the asset, rental stream and residual

value) and the weighted-average cost of capital (WACC)¹ of the lessee company. It is interesting to note that in shipping, the great majority of companies, particularly but not only private ones have either never considered their cost of equity or have simply determined it at a level that is not commensurate with the risks and cyclicity of the industry. As such, ship lessors are still facing a great challenge in winning the cost argument when marketing transactions.

14.2.1.4 Accounting

Historically, accounting treatment of leases has been a significant motivation to consider leasing as opposed to ownership. Below, we describe the differences between a capital and operating lease and the lease accounting requirements by a lessee and lessor.

For financial accounting purposes, a lease must be classified, at its inception, as a capital lease or an operating lease. The classification criteria differ under various lease accounting standards. In general, a lease is considered a finance lease if it transfers substantially all the risks and rewards incidental to ownership. All other leases are classified as operating leases.

Table 14.1 describes the capital lease criteria established under currently applicable main accounting regimes, U.S. Generally Accepted Accounting Principles (U.S. GAAP) and International Financial Reporting Standards (IFRS).

If a lease, at its inception, meets any one of the four criteria listed under U.S. GAAP (FAS 13), it should be classified as a capital lease; otherwise the lease is considered an operating lease. Additionally for lessors, two other criteria must be met in order for a lease to be classified as a capital lease.

Under IFRS, a lease will be classified as a capital lease if it exhibits one or more of the situations listed under IAS 17 para 10 and IAS 17 para 11. Otherwise, the lease is considered an operating lease.

If a lease is classified as a capital lease, the lessee records the lease payments as liability and leased property as an asset on its balance sheet. The lessor, on the other hand, recognizes lease rentals and the unguaranteed residual value as a receivable in the balance sheet. Over the lease term, rentals are apportioned between a reduction in the receivable and finance income.

For an operating lease, the vessel cost is capitalized in the lessor's balance sheet and lease rentals are recorded as income during the period they are earned. For the lessee, rental payment is recognized as an expense in the income statement over the lease term.

Under U.S. GAAP and IFRS, even long-term leases for ships (up to 12 years for newbuildings) if structured correctly qualify as operating leases for accounting purposes. In other words, the transaction can stay "off-balance sheet". Only the

¹WACC for a firm is calculated by weighting the cost of each source of funds by its proportion of the total market value of the firm.

Table 14.1 Capital lease criteria under U.S. GAAP and IFRS

U.S. GAAP (FAS 13)	IFRS (IAS 17)
1. The lease transfers ownership of the vessel to the lessee by the end of the lease term	
2. The lessee has the option to purchase the asset at a price which is sufficiently lower than the fair market value such that it is almost certain that the option will be exercised	
3. The lease term is $\geq 75\%$ of the estimated economic life of the asset	3. The lease term is for the major part of the economic life of the asset even if the title is not transferred
4. At inception of the lease, the present value of the minimum lease payments is $\geq 90\%$ of fair market value of the asset	4. At inception of the lease, the present value of the minimum lease payments amounts to at least substantially all of the fair value of the asset
Additional criteria for lessors:	
(a) Collectibility of the minimum lease payments is reasonably predictable	
(b) No important uncertainties surround the amount of unreimbursable costs yet to be incurred by the lessor under the lease	
	5. The assets are of a specialized nature such that only the lessee can use them without major modifications being made
	6. If the lessee is entitled to cancel the lease, the lessor's losses associated with the cancellation are borne by the lessee
	7. Gains or losses from fluctuations in the fair market value of the residual fall to the lessee
	8. The lessee has the ability to continue to lease for a secondary period at a rent that is substantially lower than market rent

annual rental payment is charged to the profit and loss account whereas the balance sheet will typically only contain a footnote disclosure setting out some detail of the future liabilities connected to the lease. To the superficial student of financial statements, the lessee company will appear less leveraged and likely more profitable than it actually is. More significantly, some loan agreements or bond indentures still exclude off-balance sheet obligations from their covenant test calculations. However, it is very important to note that experienced credit analysts will always capitalize off-balance sheet obligations back onto the balance sheet of the companies which they analyze, so as to get a true picture of risk and profitability. Financial covenants for new financings are today almost exclusively designed to take into account off-balance sheet obligations. But finally and most importantly U.S. GAAP and IFRS are working on the introduction of new lease accounting standards²), which will have a significant impact on “lease buying behaviour”. Under the proposed changes to the lease accounting rules, all lease obligations will be capitalized on the balance sheets of the companies by calculating the net present

²Refer to the IFRS website for more information: <http://www.ifrs.org/Current-Projects/IASB-Projects/Leases>.

value of the remaining contracted lease obligations. (Refer to Section 7 for more on the change in “buying behaviour”.)

14.2.1.5 Technological Obsolescence Risk Mitigation

In industries with a fast rate of technological change many companies prefer leasing to owning as they are concerned that the fixed assets might become outdated before the end of their anticipated useful economic lives. Leasing provides the option to allay the residual risk of these assets to a third party. In shipping, this is not a strong motivation to enter into a leasing transaction as technological change in the industry is only gradual and the premature obsolescence risk is therefore relatively small.

14.2.2 Lessor’s Perspective

The following are the main factors that lessors consider as they conduct their business:

1. **Attractive Risk/Return Profile:**

In many cyclical and capital-intensive businesses the risk-return profile of leasing companies is more attractive than that of the operators. The most prominent example in that respect is the relative financial success of aircraft leasing companies over several business cycles, which have far outperformed the airlines. The main advantage of the leasing business is that it typically has a diversified fixed revenue backlog and therefore is only via the credit risk of its customers—indirectly exposed to the cyclical nature of the industry it serves. Even in the current shipping crisis we can observe that the few transparent ship leasing businesses are all financially outperforming the operators.

2. **Capacity for Significant Financial Leverage:**

In view of the more secure revenue base, leasing companies are typically able to achieve higher financial leverage in the debt markets than most operators. That can drive returns on equity (ROEs) to attractive levels.

3. **Residual Value Speculation:**

Some lessors hope or expect to derive significant “extra-return” through residual value realizations. The lessor’s estimate of residual value naturally has a very significant impact on the lease pricing process (see discussion below).

4. **Tax Benefits:**

Tax benefits have historically played a very significant role for the leasing business. For most lessors in most jurisdictions, debt finance costs and equipment depreciation are tax deductible items. In some jurisdictions, accelerated tax depreciations have been permitted or even encouraged (to boost investment) resulting in significant tax losses in the early years of a lease. These same tax losses could then be offset against accounting income from other operations,

hence lowering the near term tax burden of the lessor group. Over the years, these tax benefits have lured many institutions into the leasing business, although their core business had no connection whatsoever with the industry the leasing business was serving. In shipping, the most prominent tax leasing market was the UK in the years 2002–2004. Since then, the tax leasing business in shipping has almost vanished as tax authorities in the UK and elsewhere have clarified that to claim the significant tax benefits associated with the leasing activity, the lessor has to be “substantially at risk”. In other words, the lessor has to assume significant residual risk in the transaction to claim the tax benefits. Bank lessors, especially those in the UK, have left the field as concerns over ownership connected liability, residual value and remarketing exposure, as well as the need to shrink balance sheets in light of the Basel III regulations, have taken center stage. On the other hand, the specialist ship lessors have all been established in low tax or no-tax jurisdictions and have no use for tax depreciation benefits. Shipping is unique in this aspect, as most lessors and operators are only marginally taxed on their profits.

14.3 Ship Lease Contract and Structure

14.3.1 *Time Charter*

Fundamentally, ship leasing activities can be either based on a bareboat charter or a time charter contract. Time charters, which might also be called full service leases or to use an aviation term wet leases,³ are significantly more widespread than bareboat charters. Under a time charter the lessor provides the lessee the vessel “ready to trade” and all that is left for the lessee to decide is the direction of the vessel. Hence, the lessor provides for the operation of the vessel, including crewing, maintenance, insurance, docking etc. From the lessor’s perspective the advantage of a time charter is the full operational control over the vessel which is particularly significant in a customer default scenario allowing the lessor to redeploy the vessel without having first to repossess it (as under the bareboat charter). This has to be weighed against the operational and technical performance risk that the lessor carries under such transactions. The lessor has priced into the lease structure the estimated vessel operating expenses. If the actual operating expenses overrun, there is no contractual basis for demanding a higher lease rate from the lessee. Hence, the return of the lessor might become negatively impacted. This is particularly significant in the case of very long term time charters (10 years or more) as it has been historically difficult to accurately determine operating cost inflation over such long time periods and

³A wet lease as defined in Title 14 (Aeronautics and Space) of the Code of Federal Regulations (14 CFR) is any leasing arrangement whereby a person agrees to provide an entire aircraft and at least one crewmember.

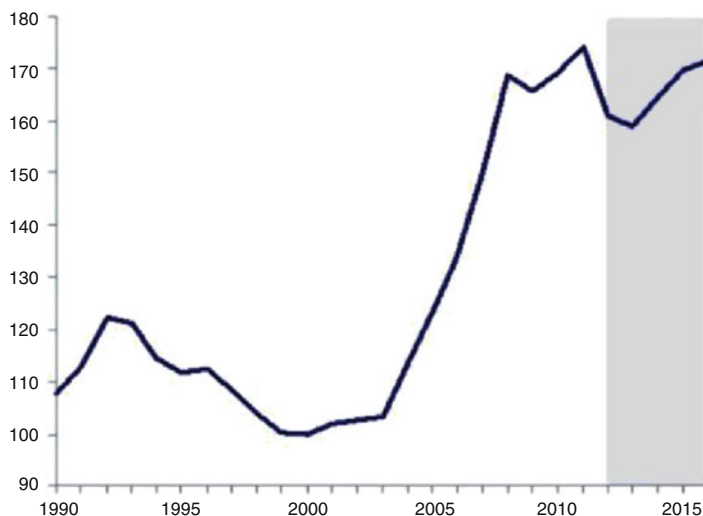


Fig. 14.2 Total operating costs

there are many cases of lessors having become “squeezed” especially in the years 2006–2008 when operating costs increased sharply as shown in Fig. 14.2 (Drewry Maritime Research 2012, p. 2).

Also, under the time charter the lessor provides for certain performance warranties in relation to the ship’s abilities, such as cargo carrying capacity as well as speed and consumption. Should the vessel not be able to perform in line with these warranties for whatever reason, then the lessee might lodge performance claims against the lessor or declare the vessel off-hire ceasing the payment of charter hire. The long term time charter as contractual basis for a lease has proved to be particularly popular in the container liner industry as the liner companies have been very content to focus on their “network challenges” whilst the lessors were charged with running the ships and solving ship operational challenges, including sourcing for increasingly difficult to find ship officers. The time charter is typically documented on generally accepted industry form contracts such as New York Produce Exchange—for dry bulk vessels, Bovertime—for containerships or ShellTime—for tankers (Tiberias Management Consultants 2009).

14.3.2 Bareboat Charter

The alternative ship lease contract to the time charter is the bareboat charter. Under the bareboat charter the lessee is fully responsible for the operation of the vessel. The aviation equivalent is the dry lease which is by far the dominant leasing contract in aviation leasing. The advantages and disadvantages of this contract from the lessor’s

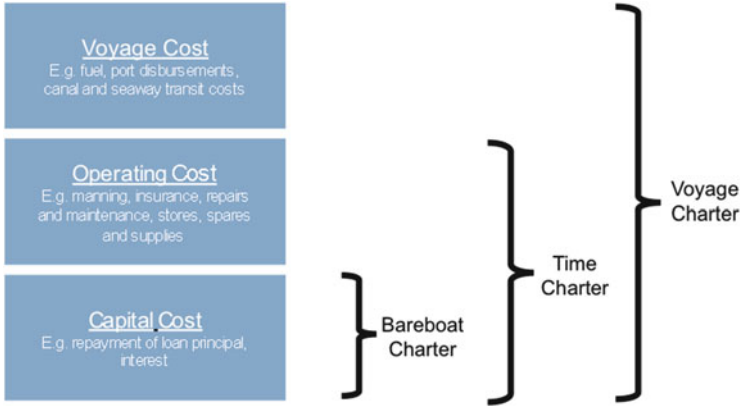


Fig. 14.3 Various costs associated to a ship-owner under different types of charters

perspective are the mirror image of those under the time charter. Under the bareboat charter the lessor does not carry the operational cost and vessel performance risk, resulting in a more predictable and stable cash flow. However, in the case of a customer default the lessor has to first secure repossession of the vessel. This could be time consuming depending on the maritime jurisdictions that are involved. Also, a customer default oftentimes goes hand in hand with a vessel that has not been maintained to an appropriate standard, such that the lessor upon repossession could face significant maintenance capital expenditures to get the vessel back into a “lease-ready” status. The bareboat charter has proven to be the lease contract of choice for the tanker industry as it is important for tanker operators to have control over the vessel because this is the service that they sell to their customers: the oil companies and traders. The background to this is that the tanker industry is facing the highest environmental and regulatory scrutiny within shipping, hence outsourcing ship operations to a lessor via a long term time charter is not an option for many operators. The industry accepted contract form for bareboat charters is the Barecon (see also Fig. 14.3).

14.3.3 “Hell and High Water” Bareboat Charter

The “hell and high water” contract is a sub-form of the Bareboat Charter and generally a higher contractual standard from the lessor’s perspective than the standard bareboat charter. The concept literally applied says: *Come hell and/or high water the lessee has to pay*. This contract has emanated from the tax leasing industry where non-industry lessors wanted to make it contractually clear beyond any doubt that they do not carry any operational risks. The aim is twofold: To remove the lessor from any liability risk connected to the ownership of the vessel and to

ensure the highest predictability of rental stream for the lessor. There is no standard industry form for “hell and high water” contracts. Lessors use either proprietary lease documentation, which is built around the “hell and high water” concept, or they insert an expansive “hell and high water” clause into the Barecon contract. A comparative analysis of some risks and parameters highlighting the differences between leasing and Barecon are available in Table 14.2.

14.3.4 Tax Leasing

Tax based leasing in shipping has so far been based on “hell and high water” bareboat charter contracts. The main contractual difference between a tax and non-tax lease is the inclusion or absence of a very onerous (on the lessee) tax indemnity provision. In a typical tax lease under the tax indemnity provision, the lessee indemnifies the lessor for any tax changes during the term of the lease which might negatively impact the after-tax return of the lessor. In other words, during the lease term the lessee guarantees the lessor an after-tax return. One reason why UK tax leases are no longer in such demand from lessees is that lessees have realized that over the years the lower lease rates (as a result of the high tax depreciation the lessor enjoys) at inception might come at a cost later when the tax law changes and the lessor makes use of the tax indemnity provision. It has been costly for lessees to unwind some aggressive tax lease structures upon the implementation of changes in tax law.

14.3.5 Sale and Leaseback Transaction

A sale and leaseback transaction can be conducted both on a time charter or a bareboat charter basis. It is a transaction where an operator sells its own vessel to the lessor and then charters its back. The rationale for the lessee is described in Sect. 2.1 with the most important considerations being cash flow and accounting treatment. For the lessor this transaction structure has the following benefits (Fig. 14.4):

1. It allows the lessor to immediately generate revenue upon acquisition of the vessel. In contrast, lessors that place newbuilding orders have cash outlays to the shipyards typically over a 2–3 years period before the ships are delivered and any income can be generated.
2. In a sale and leaseback transaction the lessor has typically to make no representation (in the case of bareboat charters) as to the vessel’s specifications and performance, as the vessel was selected by the lessee in the first place and the lessee is more familiar with the ship than the lessor.

Table 14.2 Example of “hell and high water” lease vs. Barecon contract

	Example of “hell and high water” lease	Barecon contract
Risks and reward of ownership	– Mostly with the charterer	– Mostly with the owner
Lease duration	– Typically over a large portion of the useful life of the vessel	– Typically between 1–4 years, or more
Conditions precedent to performance by owner	– Extensive “loan agreement-style” list of conditions precedent	– Few, other than payment of any advance hire
Owner warranties	– No warranties. Vessel is delivered “as is where is” to charterer	Warranties of: <ul style="list-style-type: none"> – Sea worthiness – That vessel is in every respect ready in hull, machinery and equipment of service under charter – No latent defects at the time of delivery into charter
Charterer warranties	– Extensive warranties	– Limited warranties
Obligation to pay hire	<ul style="list-style-type: none"> – Obligation to pay hire is absolute and unconditional throughout the charter period – Obligation to pay charter is “hell and high water” 	Payment of hire stops: <ul style="list-style-type: none"> – If vessel is lost or missing – If vessel is damaged – Any on-hire survey by Owner – Compulsory acquisition
Indemnities	– Extensive indemnities (e.g. tax indemnities, tax gross up, to Owner and related parties against all losses and liabilities arising or asserted in relation to the vessel before or after lease period)	– Limited indemnities indemnity to Owner for loss, damage, expense incurred by Owner arising out of or in relation to the operation of the vessel and against charterer liens
Insurances	<ul style="list-style-type: none"> – Charterer typically to maintain all insurances – Extensive insurance covenants 	<ul style="list-style-type: none"> – Depends on duration of charter. Owner maintains insurances in short-term charters while charterer maintains insurance for longer-term charters – Insurances to be “satisfactory to the owner”
Corporate covenants	– Extensive “loan agreement-style” corporate covenants	– Limited or none

(continued)

Table 14.2 (continued)

	Example of “hell and high water” lease	Barecon contract
Requisition for hire	– Charterer’s obligations will continue (including obligation to pay hire) until the end of a pre-agreed period (typically 90 days) whereupon an “Event of Loss” occurs	– Charterer’s obligations (including obligation to pay hire) continues until the end of the charter term
Compulsory acquisition	– Charterer takes compulsory acquisition risk	– Owner takes compulsory acquisition risk
Charter termination events	– Extensive “loan agreement-style” termination events	– Limited termination events, relating to operational and payment issues
Effect of termination event	– Owner may withdraw vessel from charter and repossess the vessel	– Owner may withdraw vessel from charter and repossess the vessel

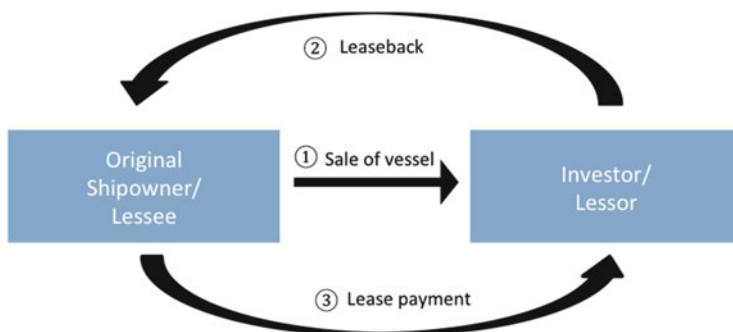


Fig. 14.4 Sale and leaseback transaction

The disadvantage for the lessor is that lease pricing becomes more transparent as the lessee knows the vessel acquisition cost of the lessor. Generally, sale and leaseback transactions have more of a “financing” rather than a “charter” character.

14.3.6 Optionality and Flexibility Features

As mentioned above, one of the greatest obstacles to a higher penetration rate for leasing in shipping is the limited asset disposal flexibility for the lessee as compared to outright ownership. Shipping is probably the only transportation industry where the timely acquisition and sale of a fixed asset makes up such a significant proportion of the total return the operator derives over an investment cycle. In other transportation sectors, the fixed assets are simply a basis to deliver a service. In shipping they are an important element of speculation themselves, and

as important or more important than the shipping service that they are used for. As such, lessees have been pushing very hard over the years to include greater flexibility via such contract features as early buyout options during the lease term, purchase options at lease maturity and multiple lease extension options. During the liquidity boom when lessors were competing with each other, as well as other forms of financing, lessors were mostly willing to give away that flexibility “for free” just to secure the business. However, lessors have increasingly realized that this excessive optionality results in an asymmetric distribution of risk and reward between lessee and lessor. In other words, during a cyclical downturn for shipping it is likely that none of the options will be exercised and the lessor has to bear very high contract default risk in view of the industry’s weak credit profile. During a cyclical upturn the most attractive option will be exercised by the lessee depriving the lessor of some or all of the return upside in the asset.

14.4 Lease Pricing

In pricing lease transactions, lessors will typically focus on target project returns, equity returns and cash yield. In the return calculations, the assumed residual value of the asset at lease maturity has a significant impact and as such is deserving of separate discussion.

14.4.1 *Return on Asset/Return on Equity*

Most lessors will start by targeting a minimum return on asset (ROA) or lease IRR. This measure is extremely useful as it will set a minimum return for the project, independent of the lessor’s funding structure for the project. It can be misleading to talk about equity return targets without transparency on the underlying funding structure. In other words, a 20 % equity return for a project with 90 % leverage might be not sufficient compensation for the high financial risk, whereas that same return with 60 % leverage would be deemed extremely attractive. As a rule of thumb, most lessors will target ROAs ranging between 2–4 % premium over like term senior secured debt financings.

Table 14.3 can offers an example: the premium of 2–4 % over senior secured debt funding cost is the compensation for the 100 % financing offered in the lease project and the assumption of residual risk by the lessor.

Given that most lessors will operate with financial leverage of 60–80 % across their leasing portfolio, the above described ROA target will typically translate into ROE targets of 10–15 % per annum, depending on the prevailing cost of debt at the time.

Table 14.3 Targeted
ROA/IRR for 8-year lease

Eight-year US\$ swap rate	2.5 %
Senior secured debt credit margin	2.5 %
Like term senior secured debt funding cost	5 %
Targeted ROA/IRR for 8-year lease	7–9 %

In their return calculations, lessors will typically include all origination, closing and other transaction costs, but only very few lessors have a disciplined process to price in lessee specific credit costs.

14.4.2 Cash Yield

Another very important measure for lessors to analyze is the cash yield over the life of the lease. In simple terms, it is the annual bareboat charter (equivalent for time charters) income divided by the asset acquisition cost. Lessors that have a very low tolerance for residual risk will typically target very high cash yields (say as high as 15 % per annum) and might then provide the lessee with an attractive purchase option at lease maturity as compensation for the higher lease rentals during the lease term. Conversely, lessors that have significant faith in the residual upside of the asset might be satisfied with a more moderate cash yield (say as low as 10 % per annum) in the hope and expectation of an “extra-return” upon residual value realization.

14.4.3 Residual Value Impact on Pricing

Clearly the assumed residual value has a significant impact on return calculations in lease pricing. Most lessors will go to great length in estimating the future value of an asset, largely by studying historical value data from various industry sources, such as shipbrokers and risk management consultants. The greatest hedge against residual value volatility will always be a long lease term. The longer the lease term, the smaller the ex-post return impact of residual value variations. Here is an example to illustrate the point:

Consider a target IRR of 10 % for a \$45 million vessel on two different lease terms 7 and 12 years. The graph below illustrates the sensitivity on IRR to changes in residual value. It is clear from the gradient of the graphs that a longer lease term structure would mitigate downside asset residual risk (see Fig. 14.5).

What the last shipping boom and bust clearly illustrated is that the accounting depreciation method of most shipping companies 25 years straight-line down to scrap value is not appropriate for lessors. This very simple method completely ignores the period in the cycle a vessel is bought, and hence how cheap or expensive the vessel is. Also, the method does not take into account the concave residual

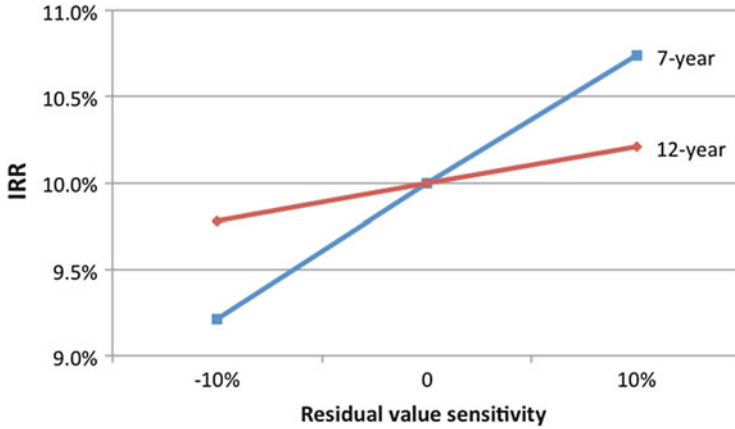


Fig. 14.5 Sensitivity on IRR to changes in residual value for 12- and 7-year lease term structures

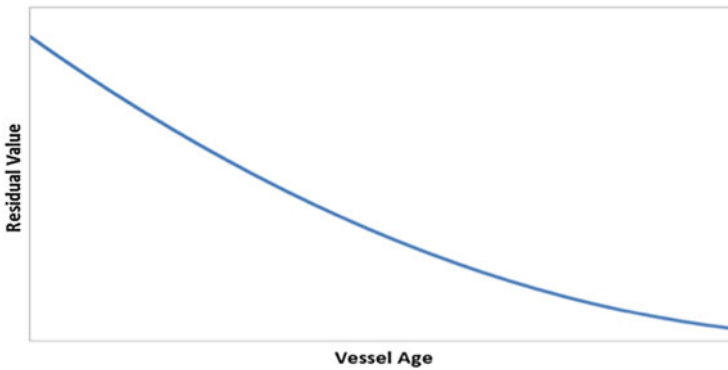


Fig. 14.6 Residual value against vessel age

value characteristics of most fixed assets including ships. In other words, everything else being equal, ships tend to use more of their value in the early years of their useful economic life before the value erosion moderates over the later years (see also Fig. 14.6).

14.5 Risk Management

Lessors face three broad risks credit, asset and financial which need to be addressed appropriately through a disciplined risk management approach.

14.5.1 Credit Risk

Credit risk, in this context, is the default risk by the customer during the lease term. Given that shipping is a highly cyclical and capital intensive industry with a largely sub-investment grade credit profile, professional credit analysis is of paramount importance. If validation for this thesis was needed then the recent high profile defaults by companies, such as Korea Line, Sanko Steamship, Britannia Bulk, Armada and Berlian Laju Tanker certainly provided it.

Proper credit risk management stretches from the pre-transaction analysis, over appropriate deal documentation to post-transaction credit monitoring throughout the life of the lease. The credit risk is a function not only of the lessee's own credit metrics, but also the specific market risks of the sector it operates in. The credit review of the lessee is or should be no different from the work that any bank lender would perform. Particularly important is for the lessor to gain a full understanding of all the lessee's on and off-balance sheet obligations, including other leases (which might be classified as off-balance sheet) and derivative contracts (freight and bunker rates and foreign exchange rates). In addition, it is critical to evaluate if the potential lessee has newbuilding commitments and whether funding has been obtained for the orderbook and on what terms. The lessor can also employ various credit risk mitigation strategies by enhancing the transaction structure with additional security, such as assignment of specific cargo/sub-charter contracts or cash security deposits. A lessor should have a system which allows for quantification of the credit risk so that this risk can be appropriately reflected in the lease pricing process.

14.5.2 Asset Risk

Generally, a proper asset risk management strategy has to consider two alternative scenarios:

1. Lease runs to maturity and the asset is returned to the lessor

The lessor needs to conservatively estimate the residual value of the asset for lease pricing purposes. In doing so, it will take into account historical residual values for similar assets, expected technological changes (if any; currently fuel efficiency is very relevant), standardization level of the asset (the more specialized the asset the more cautious the lessor has to be in determining residual risk) and the asset age at lease maturity (the older the vessel at lease maturity the lower the residual value the lessor should assume).

2. Lease defaults

Whilst credit risk management is primarily concerned with the probability of default, asset risk management will consider the exposure at default. The exposure will differ over the life of the lease as the asset is amortized but having a solid understanding of the exposure curve is very important for proper risk assessment.

In addition, asset risk management revolves around the technical and operational management of the vessel (for vessels on time charter) or the periodic monitoring of the lessee's maintenance and operational standards through inspections of vessels and reports (for vessels on bareboat charter). Another important aspect is ensuring proper insurance coverage for the asset throughout the lease term.

14.5.3 Financial Risk

A lessor potentially faces three key financial risks: funding, interest rates and foreign exchange.

1. Funding Risk

Once a lessor has committed to an asset acquisition, it has to source for appropriate funding (in practice this process takes place concurrently with the asset acquisition). Most lessors will attempt to be as close as possible to being "match-funded". In other words, if a lessor leases a vessel for 10 years it would attempt to fund a portion of that acquisition cost with a 10-year term debt to be "match-funded". Given that banks increasingly have funding problems at the long end it has recently become very difficult to secure debt with terms longer than 7 years. Consequently, lessors might be facing a refinancing risk of the asset at the maturity of the debt term, since in this example the lease carries an "overhang term" of 3 years. Some lessors will try to roll over the risk to the lessee by including a lease re-pricing provision after 7 years, but that is typically difficult to achieve in a competitive market.

2. Interest Rate Risk

Most ship leases tend to be fixed rate level payments. Bank debt is almost exclusively provided on a floating rate basis. Hence unless hedged, lessors are facing very significant interest rate risk. For lessors, an interest rate hedging program is a key consideration. The most conservative lessors will simply hedge the interest rate risk for the entire lease period (provided they can obtain a "match-funded" debt term), enabling them to earn a constant spread in the transaction. Other lessors will see the interest rate curve potentially as an additional profit source and will therefore deliberately take on interest rate risk.

3. Foreign Exchange Risk

We have historically seen markets, particularly in Japan and Germany, where the currency in which some or all of the debt funding was denominated differed from the currency denomination of the lease. This introduces a significant foreign exchange risk into the leasing transaction. Again, most lessors will avoid such additional risk and try to be as best as possible "match-funded", but others have deliberately taken on the foreign exchange risk to become more competitive in the market. In many cases this aggressive stance has backfired.

14.6 Lessor Universe

We can segregate the shipleasing landscape along the following lines.

14.6.1 Specialists Versus Generalists

Specialist lessors are typically those which focus only on one sector of shipping. These lessors will in most cases conduct their business on a time charter basis as they feel that they have attained a certain operational expertise in managing vessels of a particular type. The lessors which conduct their business on a bareboat charter basis in most cases have no specific sector focus, as they are not required to operate the vessels. In a situation where the vessel is redelivered, these generalist lessors will typically outsource technical management to a professional third party.

14.6.2 Corporate Lessors Versus Project Leasing Structures

Corporate lessors are companies which fund individual transactions from one balance sheet and offer their debt funding providers recourse to a more diversified pool of assets and revenue streams. By contrast, the project leasing structures are dominated by lease arrangers that will fund transactions on an individual project basis, by raising equity and debt on a case by case basis. The dominant markets for these structures have historically been Germany, Norway and Korea.

14.6.3 Bank Lessors Versus Independent Lessors

During the height of the UK tax lease boom we saw many UK banks involved in the leasing market. However, as discussed above they have subsequently retreated from the market. That leaves today only two banks which are visibly active in shipleasing: Standard Chartered and DVB Bank. A list of lessors is provided in Table [14.4](#)

14.7 Latest Developments and Outlook

14.7.1 Proposed Lease Accounting Changes

The proposed lease accounting rules for lessees will have a profound impact on “lease buying behavior”. I believe that the appetite for leasing will continue to be

Table 14.4 List of ship lessors

	Company name	Specialist/generalist	Type of charters	Company type	No. of vessels
U.S. listed companies/master limited partnerships (MLP)					
1	Costamare	Specialist—containership	Time charter	Public	58
2	Danaos	Specialist—containership	Time charter	Public	64
3	Global Ship Lease	Specialist—containership	Time charter	Public	17
4	Seaspan	Specialist—containership	Time charter	Public	72
5	Ship Finance International	Generalist	Time and bareboat charter	Public	67
6	Teekay LNG Partners	Specialist—LNG carriers	Time and bareboat charter	Public	43
7	Teekay Offshore Partners	Specialist—offshore support vessels	Time and bareboat charter	Public	58
German listed companies					
8	HCI Hammonia Shipping AG	Specialist—containership	Time and pool charter	Public	13
9	Marenave Schiffahrts AG	Generalist	Time charter	Public	13
Singapore listed business trusts					
10	First Ship Lease Trust	Generalist	Time and bareboat charter	Public	25
11	Rickmers Maritime	Specialist—containership	Time charter	Public	16
Bank affiliated lessors					
12	Standard Chartered Bank	Generalist	Bareboat charter	Bank affiliated	22
13	Bank of Communications Leasing	Generalist	Bareboat charter	Bank affiliated	N.A.
14	China Development Bank Leasing	Generalist	Bareboat charter	Bank affiliated	N.A.
15	CMB Financial Leasing	Generalist	Bareboat charter	Bank affiliated	N.A.
16	ICBC Financial Leasing	Generalist	Bareboat charter	Bank affiliated	N.A.
17	Minsheng Financial Leasing	Generalist	Bareboat charter	Bank affiliated	>130
Norwegian KS houses					
18	Cleaves Marine Finance	Generalist	Time and bareboat charter	Private	16
19	Fearnleys	Generalist	Time and bareboat charter	Private	40
20	Ness Risan & Partners	Generalist	Time and bareboat charter	Private	34

21	Pareto	Generalist	Time and bareboat charter	Private	86
22	Platou	Generalist	Time and bareboat charter	Private	100
	German KG houses				
23	Dr. Peters Group	Generalist	Time charter	Private	87
24	HCI Capital	Generalist	Time charter	Public	N.A.
25	König & Cie	Generalist	Time charter	Private	66
26	Lloyd Fonds AG	Generalist	Time charter	Public	N.A.
27	Nordcapital	Generalist	Time charter	Private	122
28	Salamon AG	Generalist	Time charter	Private	18
	Investment funds				
29	Borealis Maritime	Generalist	Time and bareboat charter (mainly bareboat charter)	Private	9
30	Cypress Leasing	Generalist	Time and bareboat charter (mainly bareboat charter)	Private	N.A.
31	DVB Bank	Generalist	Time and bareboat charter (mainly bareboat charter)	Public	70
32	HI Investment & Securities	Generalist	Time and bareboat charter (mainly bareboat charter)	Private	N.A.
33	Icon Capital	Generalist	Time and bareboat charter (mainly bareboat charter)	Private	N.A.
34	Korean Maritime Fund	Generalist	Time and bareboat charter (mainly bareboat charter)	Government-linked	50
35	Northern Shipping Funds	Generalist	Time and bareboat charter (mainly bareboat charter)	Private	N.A.
36	Sole Shipping	Generalist	Time and bareboat charter (mainly bareboat charter)	Private	5
37	Tufton Oceanic	Generalist	Time and bareboat charter (mainly bareboat charter)	Private	N.A.

strong in light of the operator's increasing need for funding diversification, but the new lease accounting rules will sharpen the focus on lease term. Since obligations which were heretofore treated off-balance sheet will henceforth be capitalized onto the balance sheet, CFOs of the operators will push lessors to accept shorter lease terms. In the past, operators wanted the lowest possible lease rate in conjunction with off-balance sheet treatment. This has mostly resulted in lease terms of 10–12 years, the maximum term allowed in most accounting conventions for ship leases to still be considered off-balance sheet. Since off-balance sheet treatment will no longer be an option, there will in the future be an inherent conflict between the chartering/leasing department of the operator, which will continue to push for the lowest possible lease rate and the finance department, which will try to minimize liabilities on the balance sheet. A shortening of lease terms results in more residual/asset risk for lessors which will need to be managed appropriately.

14.7.2 Impact of Debt Funding Constraints

Obtaining debt finance for any type of shipping borrower has become very challenging since the onset of the financial crisis in 2008. It has become very clear that lenders have become highly selective when it comes to grading fresh credit. Some of the key factors that lenders look for in a borrower today are:

1. Solid balance sheet ratios with good equity base
2. Diversified “crisis-resistant” cash flows
3. Full transparency and proactive management
4. Promising cross-selling opportunities
5. Borrower with access to alternative sources of capital (capital markets)
6. Borrower with conservative business philosophy

Generally and in principle, this development favors ship lessors as they have a more conservative business model than the operators. However, that applies only to the larger corporate lessors. The arrangers of project leasing structures are finding it extremely difficult to source debt funding today as there are hardly any banks left who are willing to extend plain vanilla project finance. I believe that this trend will persist and not unlike the aircraft leasing sector the large corporate lessors in shipping will over time gain the status of “premium borrowers” in the market.

14.7.3 Impact of High Profile Industry Defaults

The recent high profile defaults of companies, such as Sanko, Korea Line, Berlian Laju Tanker, Armada and Brittania Bulk, as well as complex restructurings of Torm, CSAV and CMA CGM, have made it very clear that credit risk is as important a consideration for lessors as it is for bank lenders. In addition, these failures have

shed light onto the risk of off-balance sheet obligations (particularly in the case of Sanko and Korea Line), an area that was previously neglected in the superficial credit analysis of most lessors. The new accounting rules will bring more clarity to this area. But generally, lessors that want to continue serving this market will have to improve their credit analysis skills not only to satisfy their shareholders but also their lenders. Since the number of lessors is likely to shrink given the debt funding constraints, it will mean that operators seeking lease finance will need to be as transparent with their lessors as they are with their bank lenders.

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