Investing in Twenty-First Century Shipping: Perennial Constraints, Risks and Great Expectations

1. Introduction. Investing In Ships Revisited

The extraordinary twists and turns of the world economy since the start of the twenty-first century could not be more revealing or instructive of the inner workings of shipping investment. Shipping economics exist as a separate branch of economics for two reasons: the one is the cyclicality of the shipping markets; the other is the idiosyncratic nature of shipping investment. The two are inextricably linked: Investing in ships could be classified as an astute, a brave or an irrational decision depending on the state and the prospects of the shipping markets which rarely – if ever – fulfil the promises they seem to give. Yet the first decade of the current century unfolded as if this latter element of uncertainty had been removed as investors proceeded euphorically into taking the world fleet well over the one billion dwt mark.[1] However, by the end of 2008 any doubts whether the "endemic tendency to over-invest", as astutely described by the late B.N. Metaxas,[2] stills holds in shipping had dissolved as freight rate lows - not seen since the dry-bulk crisis of the 1980s – succeeded the records the market had kept breaking since 2003. Late 2008 developments were not, however, the result of investors' *great expectations*. As the first decade of the new century is drawing to a close pending massive future deliveries have yet to hit the market in order to be measured against future demand which remains an unknown quantity, literally. Nevertheless, the prospect of supply developments coinciding with an eventually protracted world trade recession have revived investors' worst basic fears while painfully inviting a return to well-known basics of shipping economics.

Less than a year from September 2008 – and about a quarter of a century later from the early 1980s – a familiar picture has formed: dearth of orders, death of shipyards, creation of equity funds to target distress sales of second-hand vessels as companies winding-down leave wound-up creditors with few options than to foreclose. Looking at this last cycle of shipping investment there are few better expressions to describe the way events have been unfolding than "*Plus ça change plus c'est la même chose*".[3] Despite main mechanisms and results remaining the same, the picture in shipping investment has changed also: firstly in the way physical and paper assets intertwine in what can be considered anymore as commonly managed shipping-based portfolios; second, in the way changes in the transactional setting in shipping resulted in aggravating risks or even adding new to the "standard" one of market cyclicality. All types of risk were highlighted most powerfully in the light of the manifestation of the "credit crunch" as a full-blown "credit crash" in late 2008, upsetting markets along with theoretical dogmas considered until then not only academically definitive but also final.[4]

This chapter focuses on traditional investment in physical shipping assets. The main text begins with familiarising the reader with the idiosyncrasies of shipping investment in the second section. Section 3 analyses the operational constraints that bulk and liner companies face when deciding to

invest in either new or second hand-vessels. Section 4 discusses the difficult balancing act of weighing anticipated vessel endurance, cost differences and delivery lags in the investment decision; section 5 focuses on asset play on the basis of the experience from the last major shipping crisis with references to the period before and after the September 2008 financial crisis. The penultimate section 6 of the chapter reviews the setting for shipping investment in the twenty-first century while the summary in section 7 concludes by pointing to research themes that this decade's developments bring to the fore.

2. Market Cyclicality and Investment in Commercial Vessels

Market cycles are common in competitive markets; fully competitive markets are, however, rather uncommon in the modern economy. As discussed earlier in this volume, while price fluctuations of fixed assets can be assessed in other markets, there is little comparison with the volatility asset prices in shipping have shown.[5] The parallel effect of recessional factors on the shipping, shipbuilding and – usually – scrapping markets[6] create an absolute impasse for investors who often found themselves with very substantial amounts of tied-up capital and practically little or no alternative use for assets often valued at no more than an insignificant fraction of their acquisition price. Equally, as developments related to cancellations following the 2008 financial crisis reminded, precipitated adjustments of previous investment decisions are achievable, often at a price that cash-poor market conditions may justify as entirely necessary, but can hardly qualify as totally ideal.

2.1 Investing in the different shipping segments

While volatility of asset prices can vary between individual shipping markets,[7] due to differences in the market structure of traditional and specialised bulk shipping markets,[8] it remains a common feature of all bulk shipping segments which make-up the majority of the world tonnage. Liner shipping is not exempt from asset price volatility either; while liner shipping idiosyncrasies may dictate a different approach with regard to investment, recent policy and market developments have increased risk for investors in container vessels as well.

As far as the bulk markets are concerned, volatility of both the freight markets and of asset prices should be considered as the key factors which should – or at least common sense would require so – weigh heavily on all decisions regarding investment in merchant vessels. In practice, an ex post analysis of investment decisions reveals that despite volumes of literature and a series of investment disasters there is still little practical understanding of the nature of the bulk shipping markets and of their idiosyncrasies. In this sense, the repetitive nature of shipping over-investment remains a conundrum especially when considering industry returns,[9] pointing to either *lack* of *investment memory* or simply to the competitive nature of most shipping markets, or to a combination of both. The history of world shipping is fraught with examples of crises that can be blamed on excessive ordering more than they can be blamed on any other factor.[10] When the competitive behaviour of investors is taken into account in the context of the competitive nature of most of the industry, the textbook ignorance of individual investors regarding the impact of their own investment decisions is put in context. What is, however, definitely intriguing is that patterns of over-ordering can be easily traced in this century even in markets where "speculative" investment (i.e. investment with no guaranteed demand) was previously unknown. This has been the case of Liquefied Natural Gas (LNG) carriers,[11] since around the millennium, as the segment was evolving from a "hybrid"[12] *quasi-market* to its current – *more or less* competitive than other shipping markets[13] – structure. Regardless,

however, of how different in nature the different bulk shipping segments can be, the inherent risks investors face are more or less common; they only differ in terms of the particular weight they can potentially hold in each individual market. Although the risks discussed below apply mostly to bulk shipping, it should be noted that the liner sector – shielded to a degree from excessively violent fluctuations until lately – remained exposed throughout its modern existence to the potential risks of large sunk costs and of technological obsolescence. In one of these synchronicities that abound in shipping, the manifestation of the financial crisis coincided with the end of the exemption of shipping conferences from European competition regulation; this was about a decade after US trades had seen the power of conferences weakened through the practical implications[14] of OSRA 1998. Both regulatory changes increased the exposure of liner shipping to trade volatility; shortly after September 2008, the latter led to rate levels associated usually with bulk segments, smoothing in its wake differences between bulk and liner shipping investment risks.

2.2 Different markets – common risks

2.2.1 Uncertainty taken to the extreme

The first and foremost risk investors face when committing their money to bulk shipping comes from market volatility. Most markets tend to present fluctuations more in terms of volume of sales than in terms of price levels. Bulk fleets which constitute the bulk of the world's tonnage[15] as well, are as a rule affected by both vessel unemployment and rapidly declining prices at times of ever-returning shipping recessions which can appear with or without any – mostly unheeded by investors – warning. Liner owners have been finding increasingly that their predicament is not dissimilar. The quick reversal of shipping market conditions in the second half of 2008 has been in itself a "crash" course in what S. Kaplan and B.J. Garrick defined in 1981 as the "set of triplets" related to risk:[16] the specific "*scenario*" was in the minds of very few at the time the bulk of – bulk and liner – orders had been placed; it was considered of low "*likelihood*" in the context of ever-growing confidence in infallible markets, but eventually the sheer force of the painfully felt "*consequence*" finally showed the range of magnitude that should have been attributed to the risk taken. While common investment appraisal techniques had traditionally not served shipping, even more modern approaches could well prove of limited use in investment planning in such extraordinary circumstances.

2.2.2 Problematic fitting of common investment appraisal techniques

The risk of reduced sales or asset inactivity can be deemed common for shipping and all other markets. However, the prospect of freight levels continuously fluctuating not only adds to the real risk of investment, it also renders attempts for calculating this risk accurately rather ineffective. Indeed, most common investment appraisal techniques require some degree of assumed stability of prices or a predictable path of price changes and a reasonable chance of assets being fully employed when the investment starts yielding. In the case of bulk ships, common investment appraisal techniques can prove highly misleading and their role should be limited to that of a guide about what the investment would cost and what would be the expected return.[17] More sophisticated approaches need to take into account long-term factors which are not always visible to outsiders to the industry. Unless investors and lenders alike are well versed in shipping market volatility incorporating it into any effort to appraise returns,[18] only chance can reconcile predictions to results.

2.2.3 Large sunk costs

High volatility of freight rates and asset price volatility combine to create the perfect nightmare for the potential investor especially when resale values and alternative uses of the vessel themselves are considered. As already underlined, the scrap market usually shifts in parallel with the markets for shipping services and the markets for ships; this has been most evident over the crisis of the 1970s and the 1980s. That results in a barrier to exit which is difficult to surmount by a resale of the vessel for storage or other uses.[19] It is perhaps better that too many investors go ahead with their plans ignoring the worst-case scenario or shipping would have become a market suffering from chronic under-investment: taking into account how few alternative uses and potential resale opportunities there are in a crisis should normally make the bravest of investors fret when considering the potential market depreciation of their assets. While there are few sunk costs of another nature for bulk shipping companies, liner companies face an additional sunk cost as they tend to invest heavily in offices, agency networks and, eventually, terminals as well. The relative stability of liner shipping business compared to the degree of volatility of bulk shipping markets and the nature of liner competition in the past moderated the exposure to sunk costs by limiting not their potential magnitude in absolute terms but the likelihood of the related scenario. However, adverse trade developments following the recent downturn, coupled by the impressive growth of the container fleet and the termination of the EU conference exemption, have changed the picture so drastically as to allow what has been recorded as “zero”[20] rates to be observed in main routes.

2.2.4 Technological obsolescence

Ships not only become obsolete by wear and tear; they can also become obsolete through the introduction of a new type of vessel which would be deemed superior in terms of quality of service or indeed in terms of cost for providing shipping services. The product life cycle, as introduced by Dean many decades ago,[21] finds application both in terms of types of tonnage as well as in terms of type of service.[22] Although rarely taken into account[23], technological obsolescence can reverse estimates of investment returns and shorten the economic life of a vessel dramatically. Developments in recent years in both specialised bulk shipping markets, such as reefers, and in liner shipping, which had provided in the 1960s the prominent example of the replacement of conventional general cargo ships by cellular ones, require that the impact of what could be termed broadly technological obsolescence – incorporating the aspect of size – and ensuing commercial obsolescence are taken into account. In bulk shipping, the fading-out of an entire segment of specialised bulk tonnage[24] proved inevitable as technology and economies of scale combined to allow the cost-competitive carriage of cargo under controlled temperatures in suitable containers by liner operators. In the liner sector, unless smaller markets develop at a pace sufficient to absorb lower-capacity vessels removed from the main routes as carriers take advantage of economies of scale (or ironically unless trade declines to take vessel-capacity requirements to past levels), previous container vessel generations are extremely vulnerable[25] as new larger ones add to competitors’ fleets. These examples from both liner and bulk shipping show a degree of commonality in terms of the risks investors are faced with in both markets; however, it is not necessarily so in terms of constraints under which investment decisions are taken in bulk and liner shipping although in the latter case the distinction between investor-operator and investor in tonnage alone becomes critical.

3. Operational Constraints of Bulk and Liner Acquisitions

Examining investment attitudes automatically leads to discussing the particular constraints operating companies face when proceeding to vessel acquisitions. The question of company motives for investing seems *prima facie* naive; a blanket statement on profit maximisation would seem to provide the rule. However, as business goals[26] can deviate from this axiom so can investment motives. In the case of shipping this will be largely dependant on the nature of the shipping company. Although a small minority today, state enterprises had been a force to be reckoned with[27] in the not too distant past and for some, at the time, the potential source of threats to free competition in shipping which has yet to materialise. State companies, however, are likely to have different motives than the typical shipping company of private ownership when considering investment. By the same token, the profit maximisation rule is unlikely to apply to integrated shipping divisions of non-shipping companies; the most known example of companies of the latter type historically is that of shipping divisions or subsidiaries[28] of large oil companies.[29] In the case of state companies the motive for an investment decision might be the balance of payments, national security, including securing supply chains, or eventually that of national prestige;[30] all result equally in particular constraints under which investment decisions have to be taken. If investment would for instance be decided to align to the growth of national trades, new investment could be a multiple of what competitive advantage and ship values would dictate, assuming that cash-flow and capital availability do not come into play in the case of state companies. Table 1 summarises the different positions of each main type of shipping company *vis-á-vis* the potential special constraints under which they consider new investment in tonnage in addition to habitual business ones associated with investment decisions.

Table 1: Investment/divestment constraints in shipping[31]

Company type	**Constraints**
Bulk	insignifi cant in most cases
Liner	frequency constraints, cooperation constraints, route constraints
Non-commercial: state-owned or integrated	share of own transport as defi ned/desired by parent company or state policy

3.1 Investing in bulk shipping: no holds barred

The most significant differences in terms of investment constraints exist between liner and bulk shipping companies (assuming both are under private ownership). Bulk shipping companies, unlike liner companies, are usually exempt of limitations when programming investment or divestment in ships and hence determining company size. In most cases a bulk shipping company will invest (or divest) in whatever type or size of bulk vessel it considers profitable on the basis of the state and the prospects of the freight and ship markets. A bulk shipping company mainly active in the dry bulk sector may invest in tanker vessels also or even completely shift from the dry to the liquid bulk market if the prospects of the tanker market look more promising or vice-versa.[32] By the same token, a bulk company can choose to diversify by investing into more than one bulk shipping segment including specialised shipping markets. Investment/ divestment flexibility may be affected mainly due to governance or regulation issues pertaining to specific company structures such as listed companies. However, when it comes to the specialised bulk shipping segments absolute investment freedom might in reality prove a little more relative: specialised vessel types, such as Liquefied Petroleum Gas carriers (LPGs), Liquefied Natural Gas carriers (LNGs) or chemical carriers, still

require a significant degree of know-how and experience to consider entry into these markets as automatic or barrier free. The role of bulk shipping pools[33] in the specialised shipping markets and of other companies open to manage outside tonnage alongside their own or eventually act as managers only,[34] has nevertheless preserved the right of shipowners to enter with minimum investment even in specialised shipping segments; shipping pools had been found, however, to be a constraint for owners when it comes to divestment affecting asset-play opportunities.[35]

3.2 Investing in liner tonnage: operational and cooperation constraints

Liner shipping companies are without doubt under more constraints when considering their investment policy not only by comparison to bulk shipping companies but also by comparison to a large number of industries. These constraints relate not only to the specific characteristics of the routes these companies serve, but also to the cooperation agreements liner companies usually have; very few, usually among the top two or three largest, have historically survived successfully without resorting to what has been described as strategic or operational alliances of various forms.[36] Pools and consortia – the latter evolving over the last 15 years into global alliances – have dominated the supply of liner shipping services;[37] these forms of cooperation between container carriers allowed to combine capacity to serve trade routes which became increasingly demanding in terms of capacity and frequency. Operational cooperation normally requires that operational capacity adjustments – and hence investment decisions – are planned from a common perspective otherwise under-utilisation of capacity and problems in network planning, or equipment incompatibity lurk. It is possible that a combination of these constraints together with the eagerness of outside investors[38] to invest in the container market has led to an – increasing over recent years – part of tonnage being drawn from the container charter market.[39] The nature of the liner business itself, which is the provision of regular advertised and – increasingly over the globalisation era – frequent sailings of containerships, precludes drastic capacity reductions or service withdrawals through massive asset-play motivated divestment due to loss of goodwill,[40] cyclical downturns notwithstanding. In this regard the combination of co-operation agreements together with the existence of a pool of container tonnage available in the container charter market has added to the flexibility of liner shipping companies which would otherwise remain much more restricted than their bulk counterparts in terms of freedom in investment and divestment decisions.

4. Newbuilding Vs Second-Hand Vessels: Balancing Delivery Lags With Vessel Endurance

Both bulk and liner companies, are faced with a number of alternative choices when they decide to proceed with new investment. Although often a fraction of such levels, deep-sea going vessel values, especially of newbuildings, have been on average in the order of tens of millions of dollars in the past decades. The globalisation of the shipbuilding industry and the expansion of capacity have resulted in multiplying choices for placing orders but equally in dividing prices by a factor analogous to the observed successive waves of shipbuilding capacity coming into the market.[41]

Despite, however, the relatively easy access to shipping investment through the enlargement of the circle of shipbuilding competitors, aggressive competition[42] and abundant finance in the post-war period, the role of fixed cost remains critical for shipping competitiveness. In this regard, the choice

between investing in a newbuilding or in a second-hand vessel must take into account *market prospects for both the freight and* – the closely related – *ship markets, current price levels* as well as *price differences* between new and old tonnage.

4.1 Know thy market: New-orders vs second-hand acquisitions

Acquiring vessels is perhaps the major pillar of company strategy in an industry environment that is characterised by cyclicality of both income and asset values especially when the exit barriers already discussed are taken into account. The realisation by many firms of the importance of investment decisions in this context is perhaps at the origin of the popularity of second-hand acquisitions of vessels. Otherwise, taking into account the existence of abundant finance and – for most of the post-war period – of attractive prices, grants or of a combination of all of the above, it would seem surprising that second-hand vessels would be an investment option at all. Investing in secondhand tonnage implies not only a shorter economic life of the vessel but also assuming the risk of hidden defaults that can eventually still remain undetectable despite strict checks before the purchase of the vessel.

The reasons for the popularity of second-hand acquisitions are in essence two-fold: (a) when investing in a second-hand ship the shipping company faces a much lower capital cost[43] compared to the alternative of a newbuilding; and (b) the waiting time for the actual delivery of the ship is minimal compared to the "normal" 1.5 to two years in the case of new orders. Normality is, however, the exception in a competitive market entirely open and extremely vulnerable to the influence of a multitude of exogenous factors. The quick reversal of market conditions due to the oil shock of 1973 is in that sense a classic example which shows how investment in newbuildings can prove riskier than investment in second-hand vessels. During the first half of the 1970s the expected delivery lag for orders placed at the time was often much longer than the 18–24 month usual range.[44] As the case of the 1970s proved, lags can be catastrophic if vessels are to be delivered so late that they cannot catch even a glimpse of the short booms which characterise shipping;[45] investors placing orders in the final years of the latest peak were painfully reminded so. Delays guarantee that delivery will come after – or sometimes long after – the relatively brief period of prosperity has degenerated into a lengthy recession if not into a full-blown depression as the case was for many segments in the crisis of the 1970s and the 1980s.

In view of these remarks, it could seem that opting for readily available second-hand vessels while freight rates are still climbing is more effective. At least the market seems to share such a view as price differentials between new-buildings and second-hand vessels tend to narrow – or even reverse – as shipbuilding availability tightens;[46] the repeat of this phenomenon in the twenty-first century has a long history in modern shipping as data for the first post-World War II years suggest.[47] Yet, as the most important disadvantage of a second-hand acquisition is the – normally – much shorter economic life of the ship, narrowing price differentials between new and second-hand tonnage during market booms are a strong indication that shipping investors obey to laws particular to this industry and often to this industry alone: while the short duration of shipping booms is perhaps the only certainty one can have about bulk shipping markets, even cash-tight companies risk their liquidity betting on excessively priced second-hand vessels at the peak of the market. The multitude of arrests and foreclosures at the downturn of markets serve as ex-post evidence that rationality of expectations or

just plain rationality[48] has found its way into the academic books but not in investment behaviour in shipping.

5. Investment Strategies, Risk and Asset Play: a Twenty-First Century Perspective

The frequent and very ample fluctuations of second-hand ship prices which follow in general the fluctuations in the freight rates – albeit not necessarily so in the very short-run – create the *opportunity (not the certainty)* of large profits from speculation on ships, a strategy/activity called *asset play.* Asset play has indeed compensated for lacklustre margin profits in shipping. It has, however, overshadowed the advantages of astutely timed investment in ships without – necessarily – the *ex-ante* intention to further sell them but simply the acquisition of additional tonnage or fleet renewal at low(er) prices. While investment strategies are associated often with asset play, if not with asset play alone, there is scope for a company to formulate a general strategy of acquisitions regardless of whether the intention is to use ships for trade or trade them *per se* as sheer commodities.

5.1 Limiting risk: a shipping averse investment strategy

Risk aversion and shipping investment are not necessarily antonyms but they would hardly be classified as synonyms either.[49] However, had most market participants been following a strategy with a view to avoiding risk entirely, supply of shipping services would have been considerably tighter[50] as the only real guarantee from cash-flow pressures and company vulnerability in cyclical markets would be to finance purchases entirely by equity. Although not necessarily a net profit maximisation strategy, as traditional loan finance may be more advantageous especially at times of high inflation, it is definitely the most conservative approach. The use of some debt finance need not necessarily put companies at bankruptcy risk as long as their cash-flow situation is healthy and projections and decisions are balanced and guided respectively by the knowledge of market cyclicality. Excesses in all directions – including expectations[51] – seem, however, to characterise all aspects of shipping investment increasing risk but also creating market opportunities as prices falter.

Acquisition prices do not have to be ridiculously low to allow for a competitive fixed-cost, although this has been recorded in the past as well. To be competitive in terms of capital cost companies have essentially to acquire vessels at significantly lower prices than the prices competitors had to pay for their own tonnage often just by waiting or speeding up investment decisions by only a few months. The investment strategy of a firm becomes thus a relative one and a continuous effort to take advantage of significant asset price shifts over time periods which may represent only a tiny fraction of the entire life expectancy of the vessel. As operating costs for similar vessels are easily adjustable – variations which cannot be effectively hedged stemming essentially from manning costs – market survival and success can easily be shown to depend to a very large extent on fixed cost (i.e. essentially capital cost in bulk shipping and hence on investment strategies).

5.2 Fixed cost and investment strategy: still the essence of competitiveness

Shipping competitiveness is a complex issue related to market structures. However, in both liner and bulk shipping markets capital cost is, as a rule, the single most important element of total cost, while investment strategies can make or break companies as the impact of investment related paid-out costs determines the resilience of companies in times of crises.[52] Fixed cost influences company

competitiveness through (a) differences in acquisition prices of either new buildings or second-hand vessels; (b) differences in the way capital is raised; and (c) differences in the terms of finance of vessel acquisitions.[53] Minimising fixed cost provides a significant advance on competitors in the main bulk markets where cost leadership is still the main viable option, without taking into account the idiosyncrasies of some very specialised shipping segments or those of liner shipping where quality of service and product differentiation may have a role to play in company strategy.

Shipping has always been perceived as capital intensive and automation and the downsizing of manning requirements have contributed little in changing this; on the contrary, the labour to capital ratio seems to have declined in the post-war period.[54] However, past progress towards automation combined with quality concerns have removed the focus from the prospect of the ever-more automated ship. Hence, as there are few margins for minimising the cost of main inputs such as bunkers or stores,[55] the efforts for achieving an overall low cost cannot but concentrate on what constitutes on average half of the total cost of shipping services[56] (i.e. capital cost).

Minimising acquisition costs should not be mistaken as pointing necessarily to the purchase of second-hand tonnage. As Figures 1 and 2 show there can occasionally be

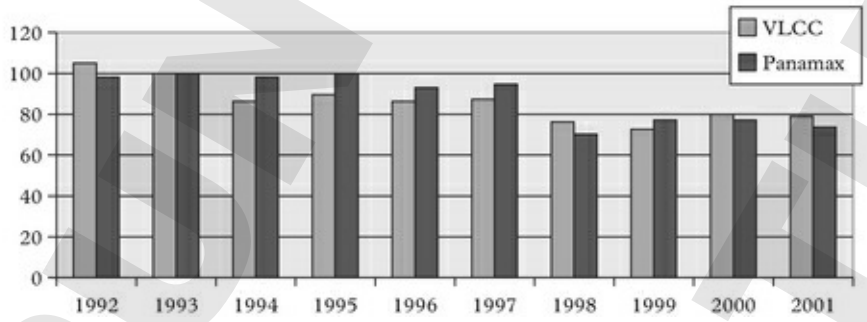

Figure 1: Indicative development of shipbuilding prices, 1993–2001 *Index: 1993=100*
Note: 2001 = Mid-year prices. The graph is based on a 1993=100 index calculated from data in Clarkson Research, *World Shipyard Monitor*, and Clarkson Research, *Shipping Review and Outlook*, various dates.

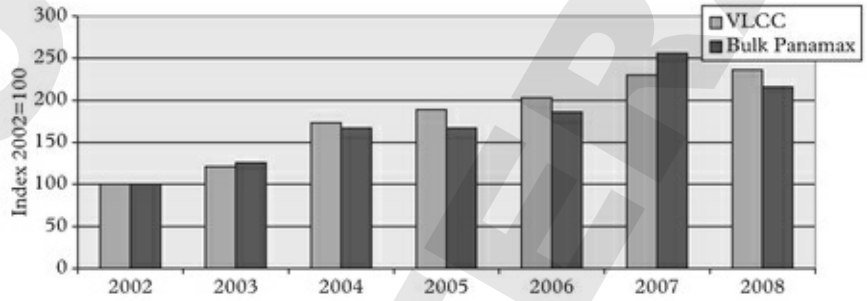

Figure 2: Index of shipbuilding prices, 2002–2008
Note: The 2002 based index is calculated from data in Clarkson Research, *World Shipyard Monitor*, and *Shipping Intelligence Weekly*, various dates.

significant differences in new vessel prices over relatively short periods of time which can be translated into the difference between a low, but positive, profit margin and a limited, yet definitely negative, loss if the total cost is considered.

Tankers ordered at the very high 1992 price levels for example (cf. Figure 1) reached the market in the morose tanker markets of the mid-1990s, while orders placed at the low prices of 1998 took advantage of the millennium boom in tankers. As many twenty-first century shipping investors in bulk carriers found out ex-post and at their expense, for instance, a shorter than 12-month delay would have

resulted in millions saved between 2007 and 2008 (cf. Figure 2); in the latter case of course a timely cancellation might had proved a few months later the only corrective action for cash-poor companies.

Timing of all types of shipping investment decisions is indeed of essence; while investors' expectations may well prove quite elastic in the sense of Zannetos, [57] budgets may not. Distress sales – which are the ones to give rise to substantial asset play opportunities along the evolution of the shipping cycle as analytically discussed by Stopford[58] – can be considered as a function of a number of variables such as – or similar to – the ones discussed by Grammenos, Nomikos and Papapostolou for high-yield bond defaults.[59] In the context of sales, the larger the variance in liquidity positions of individual investors as defined mainly by outstanding acquisition costs to be paid out, gearing levels and cash reserves, which depend in turn mainly on actual vs predicted rates/revenue differentials, the larger the potential asset-play gains for the liquid ones.

5.3 Asset play: still "the bulk" of bulk shipping profits?

Asset play is often put forward as the only justification for investors having kept investing in markets with such low and precarious profitability.[60] The expectation of profits

Table 2: Indicative returns of sale and purchase

Ship Type	Transactional Vessel Age	Bought	Sold	Annualised Return
VLCC	9 (10)	11/85	3/86	330%
VLCC	10 (10)	7/86	10/86	164%
SUEZMAX	10 (10)	7/85	10/85	105%
SUEZMAX	15 (15)	9/87	11/87	187%
HANDYSIZE BC	15 (18)	12/86	9/89	102%
HANDYSIZE BC	10 (12)	10/86	10/88	122%
HANDYSIZE BC	15 (18)	9/86	11/89	132%

Notes: VLCC=Very Large Crude carrier, SUEZMAX=Tanker ship 100,000–200,000 dwt BC=Bulk carrier. HANDYSIZE denotes here vessels between 20,000 and 35,000 dwt. Figures in brackets indicate approximate age at time of sale.
Source: Adapted from the 2002 edition to include only high returns in tankers and bulk carriers. On the basis of data and calculations in Theotokas, J. (1997): "Greek-Owned Shipping Companies of Piraeus: Organisational and Managerial Methods, 1970–1990", PhD thesis, University of Piraeus, Table 6.4, p. 328.

as high as the ones in Table 2 had constituted an evidently strong enough incentive for betting on a future market reversal. Indeed, before the "dot.com" bubble at the turn of the century there were few legal possibilities for such rates of return especially when trading non-innovative assets.

Exceptional returns from asset play (or the achievement of a significantly lower fixed cost in relation to competitors) have been based on investing against the tide or what has been called "anticyclical investment strategy"[61] especially during major crises[62] both before[63] and after World War II,[64] as was the case in the early 1980s. Even less turbulent markets provide opportunities to minimise fixed-cost or achieve substantial capital gains: price differences for a 10-year-old Panamax between their lowest 1994 levels and the autumn of 1995 highs could be of the order of 25% easily providing for a total cost differential of over 10% and allowing non-negligible asset-play profits. Shipping companies *with the necessary liquidity* – possibly as a result of similar successful moves in the past or as a result of refraining from investment during market booms – or *able to secure funds under terms that enable them to wait for the revival of the markets*, have often exercised *anticyclical investment strategies*. In a sense, successful investment strategies are self-sustained as astute moves in the past allow the build-up of sufficient cash reserves to be invested in when the next opportunity

arises; conversely, unsuccessful asset players, along with all types of shipping investors overextending during booms, carry the disadvantage of both reduced liquidity and ability to raise credit at times of crises. Banks have been traditionally reluctant not only to lend in such cases but some refuse to even get involved in shipping when the market is depressed, thus narrowing the circle of potential sources for raising capital. Banks tend to return to the shipping business along with profits and prosperity,[65] but by then, the real opportunities for large profits through the Sale and Purchase of vessels have lapsed; the experience of late 2008 has hardly helped in inducing any changes in this regard. Stock markets are equally rather unlikely candidates for providing the necessary funds for such investment in periods of crises and of high uncertainty so, unless astute entrepreneurs manage to convince investors to contribute equity capital,[66] asset play remains largely a self-financed and indeed historically self-sustained activity.

5.4 Asset play: risks and attitudes

Such bold Sale and Purchase (S&P) strategies as described in the previous sub-section and illustrated by Table 2 are of a high risk as there is no time pattern for defining the point at which the market situation will turn, thus providing opportunities for materialising S&P profits. "Intuition", often provided as a basis for such moves in S&P, is a rather poor basis for decisions of this type. The level of ship prices compared to the level of scrap prices[67] seems a "safer" market signal for triggering purchases provided, of course, there is sufficient liquidity. Still, there are no guarantees about the relative success of such a move as the time horizon of the – always much awaited – revival of the markets remains uncertain under the influence of a multitude of factors often exogenous to the shipping markets.

The term asset play is also used by researchers to describe activities related to buying and selling of newbuilding contracts or even of newbuilding options; returns from such activities seem to have been quite impressive in the past with purchase and sale of such contracts taking place within relatively short periods of time.[68] The market path which can generate profits following the placement of a contract is one of a weak market reversing or of an accelerated freight rate hike generating expectations and additional demand for prompt deliveries, both scenarios resulting in significantly higher newbuilding prices. Due to the necessary lags between orders and vessel delivery, this type of asset play could *eventually* prove less risky if the order has been placed in poor markets: if the market has hit low levels the reversal is likely to occur some time in the mid-term future when the order should normally have been transformed into a delivery or an imminent one. Conversely, distress sales of tonnage on order by financially frustrated owners or yards during recessions may be targeted by liquid buyers – with the caveats discussed above – especially if their strategy is one of tonnage renewal at lower prices more than an asset-play one.

However, whatever form asset play activity takes, the most significant danger associated with it is the absence of any guarantees on the time or path for market reversals; as the 1980s proved, market lows can be one more trough further down into a deepening depression. Liquidity and equity finance prove in this way the only guarantees, regardless of whether the vessel is intended for further operation or for further trading as an asset, while patience and flexibility emerge as the major attributes of the ideal asset-player player whether this would be an individual investor or a fund; in both cases, eventual lay-up costs until the market reverses have to be taken into account in the

investment decision.

Although speculation on ships bought during periods of low vessel prices is an extremely risky investment move, it should be reminded that the risk when investing – in either new buildings or second-hand tonnage – in a booming market can definitely be – and usually proves – higher;[69] such timing requires that freight rates are further sustained for a lengthy period of time at high levels. The far right column of Figure 3 shows clearly the investment spike which – with hindsight – a number of recent investors in new tonnage would have liked to have avoided especially if they had been financing deals through banks (many of the latter having experienced in the meantime similar difficulties to their clientele's) or through any type of debt non-convertible to equity. The absence of any time path for market turns[70] and the short duration in principle of shipping booms often condemn a large proportion of vessels acquired in similar periods

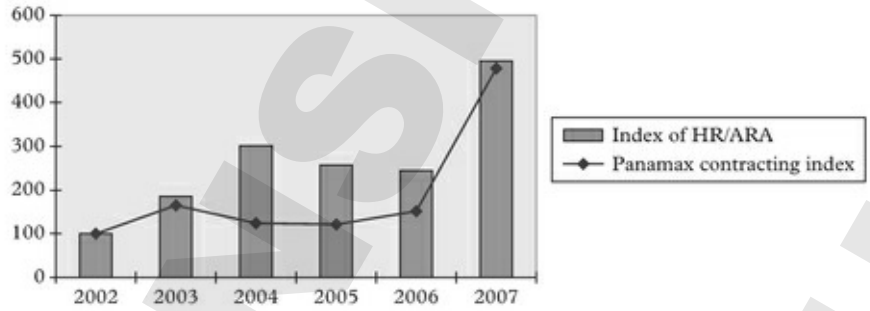

Figure 3: Freight rate development and new contracting 2002–2007 in Panamax bulk carriers
Note: On the basis of an index 2002=100 of HRds/ARA coal freight rates in $ per tonne and yearly new contracting. Calculated from data in Clarkson Research, *World Shipyard Monitor*, December 2008 and *Shipping Review and Outlook*, Spring 2008.

to a chronic financial underperformance or even to an early death through emergency scrapping under the pressure of cash-flow problems. Despite the extraordinary relative length of the 2003 to 2008 euphoric phase, recent developments reminded that the risk of moving into a booming market is perhaps the only obvious one and should be much better assessed as a move of this type requires long periods of prosperity. Through the market's own "endemic tendency to over-invest" or through an exogenous shock (or any unfortunate combination) prosperity is bound to be cut short in shipping. The Reksten case in the early 1970s[71] constitutes a typical example in this regard; the recent downturn has yet to provide its full range of victims for exemplary ones to emerge.

5.5 Asset play: a " game" with winners and losers

The review of S&P activity over the period of the crisis of the 1970s and the 1980s in shipping has proved that there are significant differences in investment attitudes. This dilutes efforts to make blanket assumptions on the nature of investors' expectations. Research in the previous decade[72] has pointed out that there had been marked differences in both investment attitudes and in exposure to asset play between leading traditional shipping communities during the last major crisis but also among members of the same shipowning community. Although associated with the increased resilience of many Greek companies, the econometric investigation of the observed anticyclical investment pattern – within limitations due to the nature of the available data – resulted in showing that although there was a trend among this shipping community to invest against the tide, the trend was not uniform and definitely not a national exclusivity either. Some of the most astute moves in the S&P market such as the purchases of VLCCs at below their scrap price were made by Norwegian

owners[73] pointing that although investment behaviour can be cultivated, propagated or exemplified within a shipping community, talent in shipping investment knows no boundaries and is not a geographically defined exclusive privilege. Most attitudes, including varying investment patterns, are dictated by objective constraints. Norwegian owners traditionally invested in new buildings while Greek owners, had built a reputation in the past for successfully managing older fleets. At a time when depression settled fast in the markets following the first oil shock in 1973, the former found themselves with young – and expensively acquired – vessels with high demands in cash flow for their repayment. As fleet age data indicate or rather reveal,[74] Greek owners could afford to be more resilient as their older tonnage was by comparison far less burdened with fixed-cost obligations since it was either bought second-hand or had been largely depreciated already, or both.

However, as the face of shipping has undergone major changes in the past few years, so has the age structure of major fleets especially as tankers went into a phase of "compulsory renewal".[75] Similarly, the latest boom seems to have been unprecedented in uprooting in its wake successful investment strategies which had apparently survived at least well into the third year of the last boom among close-knit communities of shipping investors.[76] However, while the change in fleet fundamentals may have diluted discernable investment patterns, it has not diminished the importance of investment timing. On the contrary, as average tonnage age for most main competitors declined – and with the extension of the economic life of vessels not being a viable option anymore,[77] at least for tankers – the fate of national fleets and individual companies may depend henceforth (even more than in the past) on small differences in investment timing.

Table 3: Indicative potential differences in acquisition costs in dollars of max. five year-old vessels Mid 2008–Early 2009

Ship type	Absolute difference	% change
VLCC	48 million	32%
PANAMAX BC	58 million	68%

Note:

Figures rounded to the closest million. Source: Calculated on vessel price data of weekly published Baltic Sale & Purchase assessments as reported in Clarkson Research, *Shipping Intelligence Weekly*, 30 May, 2008 and 16 January, 2009 issues.

In second-hand transactions, differences of the order of tens of millions of dollars (or even impressively more)[78] for vessels of similar type, size and age over just a few months continue to point to the all-important potential fixed-cost differences and the analogous importance of the timing of investment in all types of physical shipping assets. While the more limited acceleration of orders before 2007, (cf. Figure 3 supra.), seemed to have had relatively staved off the "endemic tendency to over-invest", developments since then only confirmed it; otherwise, the level of price differentials in Table 3 would not be justified. Assessing how new investment soared well into the boom period and how it subsequently shrank a few months later to a single digit share of 2008 levels[79] pessimists would despair in repetition. Optimists would continue to monitor transactions, be these of new or second-hand vessels, and especially distress sales with a view to including them one day into examples of successful anticyclical investment; *or not*.

6. Investing in an Environment of Increased Uncertainty

Despite the survival of main mechanisms related to market and investment/divestment cyclicality, world shipping is not what it used to be anymore. Changes involve commercial, regulatory and technical aspects, often intertwined in pairs; these have hardly removed uncertainty; on the contrary. In a number of markets, the product cycle of tonnage categories and designs has accelerated, increasing the risk of future technological obsolescence. This was brought about either through competition increasing from *outside* the segment – such as in the case of the successful container threat to bulk reefer shipping – or from within, as in the case of the now fully fledged and less "esoteric" nowadays LNG market where on-board liquefaction of the boil-off gas and, more importantly, regasification of the cargo, as in LNG RVs, are making inroads.

Potential regulatory changes are now a factor to be discounted in every investment decision be that at varying rates, while the related focus on quality is increasing. Although attention has shifted away from ship registration, as flags of convenience have become now the most significant part of the world fleet,[80] other elements of competitiveness related to quality, such as the length of exploitation of vessels, have come to the fore. In today's shipping, the age of tonnage has become significant even for dry bulk carrier charterers, exceptions due to the "prompt ship" effect in extreme markets notwithstanding.[81] The age issue is directly related to investment strategies and especially asset play. Successful asset play requires a total length of the economic life of the vessel which should not only cover this of the shipping cycle but also allow to the ultimate buyer the chance, or at least the hope, for a further profitable exploitation of an asset acquired – by definition– at high prices. Investing in older vessels is now practically constrained by regulatory requirements as in the case of tankers; older tonnage has been equally subject to enhanced surveys and to structural modifications.[82] Although, the scope for minimising fixed-cost or even for asset-play has not disappeared, the continuing decline of the average age of the world fleet and new tonnage specifications coupled by the precipitated – since the millennium,[83] – banning of older designs in tankers have by definition limited asset-play possibilities to a smaller range of tonnage age. Past experience prevents assigning a probability of the direction of future regulatory developments and their impact on investment as the ones in this century have extended from changes in the operations management of ships – as those brought about shortly after 2001 by the ISPS 2002 – to the acceleration of the single-hull tankers' withdrawal. Regulatory goalposts impacting on trading opportunities have kept moving adding to the uncertainty of investment in a – *par excellence* – volatile environment.[84]

While shipping investment is regarded now, especially for larger investors, as the act of managing a portfolio of real and paper assets, (cf. Table 4), risk can be managed eventually better, but it cannot be eliminated. Whereas the only risk-free position is at the very left corner point of the lower left quadrant – the latter significantly denoted by zero (0) – including low exposures to either the paper or physical shipping markets of atypical/diversified[85] investors from outside the segment, there is no intended suggestion or compulsory assumption that risk increases as investors move clockwise into quadrants I to III in terms of commitment in physical and paper shipping markets. However, these two categories of shipping-related investment do not necessarily create perfect hedges[86] unless intentionally and skilfully designed for. Equally, the risk tolerance of typical shipping players will tend to insert some element of speculation into Quadrant II.[87] Offsetting returns from financial instruments notwithstanding, short to medium term strategies for investors in Quadrants I and II in an

environment of

Table 4:
A quadrant typology of shipping investment portfolio structures

Commitment in physical shipping assets

High

Traditional shipping investor **I**	**Modern type of shipping investor** **II**
Atypical/Diversified **0**	**Financial-type investors** **III**

Low High

Commitment in shipping – paper market

less than full fleet employment, remain focused on improving operating costs. Lack of employment is, however, among the usual "risks of the trade"; some others which have emerged or re-emerged in this decade, are not.[88]

Following the market collapse in September 2008, complex chains of sub-chartering activities, previously fuelled by spiralling rates and ever-growing *great expectations* for future gains equally collapsed. In chain-like sub-letting activities, failures of a middle or initial link can unleash domino effects. This was one more uncertainty added to phenomena whose extent had been hitherto marginal for post-war shipping business:

1. the significant disruption of "shipping as usual" in the first months of the financial crisis due to the letters of credit problem,[89] threatening supply chains;
2. the equally significant collapse of trust to chartering counterparties as some of the latter were collapsing themselves. The extraordinary circumstances rallied to increase charter default risks which research by Adland and Jia had already found to be dependent on the state of the freight market;[90]
3. the significant number of successful (and unsuccessful) piracy attacks. Although piracy is an insurable risk, unlike the investment one, the stress on the company's operations management – often over a prolonged period – is comparable to dealing with a major accident; diversion from financial management in turbulent times creates risks in itself.

As the resurgence of such an old phenomenon as piracy reminded even to the most optimistic investor, shipping is a most idiosyncratic industry, capable of leaping back and forth "in time"[91] and market phase as easily as it traverses meridians.

7. Summary and Conclusions

Investment strategies have been a core factor, if not the most critical one, for succeeding in shipping, especially in the volatile bulk shipping markets. Market cyclicality increases the risks for investors. The competitive nature, however, of most of bulk shipping means that there are few constraints in terms of investment and divestment. While the fundamental characteristics of shipping investment in terms of risks and attitudes in general have survived, uncertainty has further increased due to often interrelated changes in technical, commercial and regulatory aspects; this is not only in the bulk segments. Increasingly, volatility concerns investors in liner tonnage more than in the past; this is both through new, more competitive liner market regulation but also through the increased number of

outside investors targeting employment opportunities of container tonnage by carriers. Asset play, which is an extremely risky investment strategy but with potentially high payoffs, remains as an investment opportunity across shipping in volatile markets but with added caveats: these include sudden changes in specification requirements through regulation and potentially accelerating technological obsolescence; the latter is further supported by increased competition in liner and specialist segments. Recent experiences might prove enlightening in terms of research into triggers of distress sales and of the – eventually varying through market phases – attitudes and expectations of investors whose investment learning curves remain to be assessed. The largely underused, in shipping, tool of surveying expectations[92] can serve equally in that direction as experts have suggested in the past in the context of macroeconomics[93] from where researchers have often drawn hypotheses for testing in the, nevertheless still idiosyncratic, shipping markets.[94]