SHIP OF FOOLS OR PASSAGE TO PROFIT? – THE VALUE IMPLICATIONS OF M&A IN THE INTERNATIONAL SHIPPING INDUSTRY

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Abstract

The globalization of markets during the past decades has led to an increasing international division of labor which demands a higher capacity in carriage of freight among the involved regions. The outcome of this is inter alia a continuously growing demand for international maritime transport. At present, approximately 90% of the globally traded goods are transacted by seaway. Unsurprisingly, it has resulted in significant structural changes in the international shipping industry. These changes were attended by Mergers and Acquisitions (M&A).

Using the event study methodology, we examine the success of the worldwide M&A activities in the shipping industry during the period of 1980 – 2007. We analyze the value effects of these acquisitions from a shareholder value perspective. Despite generally positive underlying data of the world economy and numerous beneficial arguments from initiators of consolidation activity in the transportation sector, the results indicate that M&A transactions in the maritime transportation sector have resulted in an overall loss of shareholder value within the period of examination.

Keywords: M&A, acquisitions, shipping industry, maritime transportation sector, Shareholder Value, event study

JEL-Classification: G14, G34, L22, L91

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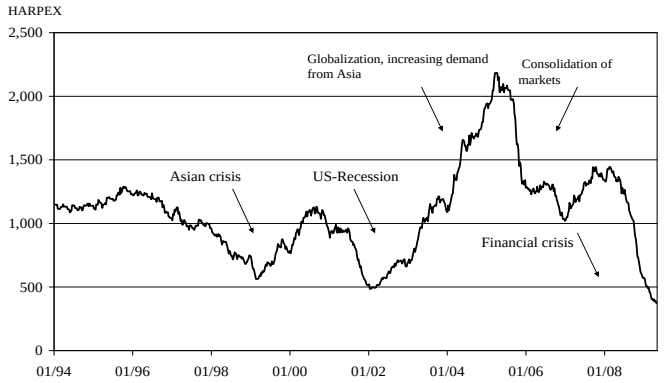
Problem

Nowadays, globalization is one of the most discussed phenomena in the context of global economic developments. It encourages an increase in the international division of labor, which increasingly requires transportation among the greater area of Europe, North and South America, as well as Asia. Raw materials, semi-finished and finished goods have to cover increasing distances therefore enhancing the demand for services in the maritime traffic. Today, approximately 90% of the globally traded goods are transacted by seaway[1]. Although international trade with goods and services has recently undergone heavy losses, global trade is expected to benefit from high growth rates in the medium term[2].

Figure 1 Harper Petersen Charter Rate Index (HARPEX);
[Source: Harper Peterson & Co., May 2009]



1 Cf. International Maritime Organization (2009), p. 7.

2 Leading international economic research institutes expect a recovery in the medium term, cf. inter alia International Monetary Fund (2009), p. 1.

Using the example of cargo rates in the container shipping industry, it is evident that the maritime industry has always been subject to fluctuations and cycles (see figure 1). The growing international competitive pressure, combined with high capital intensity and traditionally strong dependencies on volatility of the global economic condition, has resulted in an intensified impact on margins and continuously rising financial risks for the maritime industry in recent years.[1] Most notably, major global shipping companies have responded to these challenges with cooperations such as traditional conferences or alliances, an extension of containerization, and larger-sized ships.[2] Although larger-sized ships contribute to economies of scale, and hence reduce the costs per unit,[3] they demand soaring investments. Furthermore, the use of larger ships may result in an increasing demand for efficiency since expenditures, such as fixed costs, fuel costs and administrative expenses are generating substantial pressure for the shipping companies to succeed. Contrary to this are irregular runs of cash flows, excess capacity in times of recession, as well as problems with utilizing the capacity of large liners. Hence, various shipping companies are forced to enhance their competitive position by founding strategic alliances, trusts and Mergers & Acquisitions (M&A).[4]

Accordingly, numerous and partial major M&A transactions have emerged in recent years.[5] These trends towards convergence have also affected other fields among the maritime industry. Alternating interdependencies between shipping companies, harbor industries, as well as connected interior logistics, result in a distinct M&A culture within the entire maritime industry. Parameters such as market power, logistics trends and the so-called 'door-to-door' philosophy play a decisive role and are most relevant.[6] Despite the current depression, this development is not expected to stop. It is even assumed that the present skeptical way of thinking may eventually lead to an attractive market entry and take-over for market participants with a medium and long-term focus. M&A are therefore considered to expedite the consolidation of the logistic sector.[7]

This exploratory examination focuses on the evaluation of M&A activities in the international shipping industry. This segment should be analyzed separately. ,Firstly, mergers in the logistic sector are de facto generating a positive surplus for all shareholders, as identified by one of the few empirical studies that address M&A with regard to logistics. Secondly, major shipping companies are often subject to concerns by critics that are seeing a conflict between national interests and the take-over of domestic shipping companies by foreign investors. Possible resultant regulations are expected to generate negative impact on the success of mergers. The following literature review emphasizes the rudimentary academic analysis of this sector. Since the consolidation is expected to progress, capital market participants may

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1 Cf. Notteboom (2004), p. 87f.

2 For these topics please see the relevant chapters in Stopford (1997).

3 Cf. Midoro et al. (2005), p. 96.

4 Cf. Stopford (1997), p. 348 et seq. as well as Midoro and Pitto (2000), p. 32 et seq.

5 AP Möller Maersk and P&O Nedlloyd became the world's largest shipping company since its fusion in 2005. While the top-20 chatters held a market share of approximately 39% in 1990, it increased up to 73% by 2006, see Containerisation International (2007), p. 9.

6 The offer of the complete transportation service from a single source is termed as 'door-to-door-service'. For further information on this as well as the importance the development of the consolidation of the maritime industry please see Midoro et al. (2005), p. 94, Araujo de Souza Junior et al. (2003), p. 404 et seqq., as well as Heaver et al. (2000), p. 366 et seqq.

7 Cf. Notteboom (2004), p. 87 et seqq.

wonder if M&A in the international shipping industry has generated positive shareholder value effects for the owners of the acquiring enterprises in the past.
The further analysis is structured as follows: Section 2 gives a review on the relevant literature, section 3 examines the data sample and methodology, section 4 presents the conclusions. The final section 5 summarizes the essential findings and gives an outlook on further research questions.

1 Literature Review

Although many empirical studies center on stock price reactions within the announcement window of mergers and acquisitions, only a few provide industrial-specific evidence. This review first presents some general overall results of non-industry-specific research. Secondly, possible sector specifications on wealth effects through M&A activities are examined.
Cross-industry analysis distinguishes between the effects on the object of purchase (targets), the acquirers and the hypothetical resultant joint entities. The vast majority of empirical research asserts that shareholder value for stockholders of the acquiring enterprises regresses (Lyroudi, Lazaridis and Subeniotis (1999), Kohers and Kohers (2000), Eckbo and Thorburn (2000)). In contrast, stockholders of targets are generally experiencing a considerable added value (Jensen and Ruback (1983), Jarrell, Brickley and Netter (1988), Bruner (2002), Eckbo and Thorburn (2000)). This results in a positive wealth effect for the hypothetical joint entities. However, this effect falls far short of the rise in the stock price of the acquired enterprises (Bruner (2002), Andrade, Mitchell and Stafford (2001)). This evidence, which can be considered as common knowledge already (Berk and DeMarzo (2007), p. 876), is in no case homogeneous, but consistently challenged by contrary time-, country- and industry-specific outcomes, thus showing extensive variance in the results.
Accordingly, the temporal steadiness of the empirical evidence is uncertain and has been under examination repeatedly, most recently by Flögel et al. study (2009). Andrade et al. (2001) also subdivide their sample period into time intervals of the 1970s, 1980s and 1990s. They do not determine any noteworthy difference among the results, indicating a temporal stability of the findings. Moeller et al. (2005) compare the value effects for the acquiring ventures within the storm of acquisitions in the 80s with the recent merger wave during the period from 1998 to 2001. They come to the conclusion that within the last storm, considerably more shareholder value on the part of the vendee has been destroyed than in the 1980s, as a consequence of a small number of major transactions (megamergers) with negative effects.
Despite the consistency of the empirical evidence in a temporal respect, a detailed analysis on further selection criteria is recommended, due to the variance of the present articles. Although the importance of M&A in the logistics industry has experienced a tremendous rise, hardly any research on the success of transactions from the shareholders' view has taken place. It has been asserted that regarding the findings of regional, as well as industry-specific studies, the shareholders of acquiring ventures often do not profit from M&A transactions in terms of positive stock price reactions.[8] Simultaneously, recent sectoral studies – e.g. by Mentz and Schiereck (2008) on the global automobile supply industry – document positive results, which demand the need of a consideration of the M&A transaction success in separate industries. Analogously, Darkow et al. (2008) state that M&A transactions in the past 16 years have been an appropriate instrument for the increase of shareholders' value in the logistics industry. On average, not only do shareholders of target firms benefit from an M&A-conditional and significant rise in the stock price of 14.8%, but also the owners of the acquir-

8 See e.g. Walker (2000) for US-American transactions and Campa und Hernando (2004) for European transactions.

ing ventures benefit with an abnormal stock price reaction of 1.8%. Hence, the logistics industry has been an overall attractive environment to generate value by M&A. For the interpretation of the evidence, Darkow et al. (2008) argued that the value effects do not appear unsurprising, given the still highly fragmented market as well as the extensive synergy potential.

So far, specific mergers in the maritime industry have been addressed in only one capital market oriented study. Panayides and Gong (2002) analyzed the reactions by the capital market on notifications of M&A in liner shipping from 1995 to 1997. After selection of the available transactions on the basis of diverse criteria, only two remain in the samples,[9] which yield statistically significant positive returns for the acquirers as well as for the target firm. These findings are consistent with the general indication for the logistics industry; however, a generalization of the results for the entire maritime industry is scarcely possible on the basis of the sample since general trends and developments for the entire industry are barely derivable. In fact, a major extension of the sample size as well as of the sample period is necessary in order to make a truly representative statement on the impact of M&A announcements in the shipping industry.

2 Data basis and methodology

The empirical analysis of the value creation potential of M&A transactions in the shipping industry from the shareholders view are carried out by using a capital market oriented event study, hence following an established approach and methodology. The further analysis first identifies the relevant events, and then carries out an evaluation for the capital market in terms of a calculation of abnormal returns. In a final step, these returns are reviewed with regard to potential explanatory parameters.

2.1 Identification of the relevant transactions

Using the data base Thomson One Banker, the relevant transactions are identified in order to compose the data set. The selection of mergers in the maritime industry is carried out on the basis of the Standard Industrial Classification Code[10] of the acquiring ventures in the period from January 1980 to July 2007. Initially, all codes that are classified as Major Group 44 'Water Transportation' are considered.[11] Since neither the cruise ship nor the harbor industry is addressed in this research, companies of these industries are excluded. This also applies for 'Marinas'. Companies with SIC Codes 4412 and 4424 are also included in the data set. Non classified companies in 4449 and 4499 are verified regarding their field of activity and, if appropriate, they are accordingly considered in the database.

In addition to the selection with the help of SIC Codes, all transactions are removed from the data selection, if the acquiring ventures do not meet the following criteria:

- The transaction is completed
- Majority-interest (Exceeding the 50%-border by the transaction)
- Stock quotation of the acquiring venture

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9 Panayides and Gong (2002) analyze the merger of P&O and Nedlloyd, as well as NOL and APL.

10 Standard Industrial Classification Code (SIC Code). Cf. SEC (2007); OSHA (2007).

11 The Major Group 44 'Water Transportation' contains a total of the following 11 SIC Codes: 4412 'Deep Sea Foreign Transportation of Freight', 4424 'Deep Sea Domestic Transportation of Freight', 4432 'Freight Transportation on the Great Lakes –St. Lawrence Seaway', 4449 'Water Transportation of Freight, not elsewhere classified', 4481 'Deep Sea Transportation of Passengers, except by Ferry', 4482 'Ferries', 4489 'Water Transportation of Passengers, not elsewhere classified', 4491 'Marine Cargo Handling', 4492 'Towing and Tugboat Services', 4493 'Marinas', 4499 'Water Transportation Services, not elsewhere classified'.

- No overlapping events [12]
- Sufficient trade/sufficient number of trading days prior to the notice of the transaction and within the time frame of the announcement

The sample includes a total of 213 transactions in the shipping field. The 213 quoted acquiring ventures are accompanied by merely 19 quoted target firms. Hence, the analysis is mainly focused on the generation of value for the shareholders of the acquiring ventures.

2.2 Calculation and evaluation of the cumulated abnormal returns

Calculating abnormal returns of an event study results from the differences of the actual observed returns and the theoretical expected returns without announced M&A transaction. The abnormal returns are examined within a precisely defined event frame around the time of notice of the event. The following formula applies:

(3.1) $$AR_{i,t} = R_{i,t} - E(R_{i,t})$$

with: $AR_{i,t}$ Abnormal return of share i at the time of t
$R_{i,t}$ Return of share i at the time of t
$E(R_{i,t})$ Expected return of share i at the time of t

The expected returns are determined by the market model. The following formula applies:

(3.2) $$E(R_{i,t}) = a_i + b_i \times R_{m,t} + \varepsilon_{i,t}$$

with: $R_{m,t}$ Return of market index at the time of t
$\varepsilon_{i,t}$ Interference term of the return of share i at the time of t

Using an Ordinary-Least-Square-Regression, the parameters a_i, b_i and ε_i are determined by the returns of the estimated period.[13] Cable and Holland (2000) considered this regression method as particularly suitable for event studies, since it implies a normal distribution of the expected returns from at least 60 observation points. The market return is approximated using the respective national sector index[14]. The announcement of the transaction of the capital market is expected to be evaluated correctly and to be priced into the stock quotation immediately. The calculation of the returns considers all rate changes and pay-offs, e.g. dividends, by the so- called 'Total Return to Shareholders'[15]. The estimated period equates to 250 trading days prior the event period (Strong (1992)). Shorter intervals within the event study, such as [-1;+1], ensure a comparability of the results with other trans-industrial event studies. Longer intervals guarantee that anticipation effects as well as delayed reactions are also listed. The evaluation of capital market reactions takes place in different subsamples in which abnormal returns (AR) per study day are aggregated correspondingly by arithmetic mean $\overline{AR_t}$ (Henderson (1990)). The cumulative abnormal returns (CAR) are calculated by addition of the abnormal returns of all days defined by event frames.

(3.3) $$CAR_{t1;t2} = \sum_{t=t1}^{t2} \overline{AR_t}$$

with: $CAR_{[t1;t2]}$ Cumulative abnormal returns of the sample within the observation period $[t_1; t_2]$

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12 Enterprises with interferences of event frames caused by several transactions have been excluded from the sample.

13 The interference term considers that the market return as single descriptive parameter in the model does not generally explain the return of the share perfectly.

14 The respective sector indices have been taken from 'DataStream' by Thomson Financial.

15 The 'Total Return to Shareholders' for the individual transactions within the time frame of 251 days prior up to 20 days after the transactions have been taken from the data base 'Datastream' by Thomson Financial.

The analyses of several samples are subject to parametric as well as non-parametric significance tests. In view of the informational value, non-parametric significance tests do not imply assumptions on the allocation of the sample. Hence, non-parametric tests are of particular relevance for small samples, in order to validate the results of parametric tests. The significance of abnormal returns is identified using a test statistic, hereinafter referred to as BMP-test, by Boehmer, Musumeci and Poulsen (1991). Conventional t-tests are vulnerable to distortions by variance changes of share returns in series of the examined events.
The averaged abnormal returns within the estimated period were tested for normality with the help of a Kolmogorov-Smirnov-test. The null hypothesis of the normality at a level of significance of 5% cannot be rejected for both acquirers and targets (z-value for acquirers 0.555; targets 0.680). Arithmetic mean difference tests are primarily carried out when testing for significance of the differences between two samples. Furthermore, the Wilcoxon-Signed-Rank-Test tests the frequency distribution of paired samples. The Wilcoxon-Rank-Sum-Test proves whether two independent samples come from the same population.

3 Research results

3.1 Descriptive statistics of the data set

A first data interpretation on the regional provenance of the transaction partners documents the global focus of the quoted companies in the maritime traffic. The buy side of nearly half of the worldwide M&A transactions (46.0%) in the shipping industry is located in Europe. Table 1 shows that 32.4% of the acquirers are from Asia and 19.7% from America. Transnational external transactions amount to a much higher percentage than national consolidations with approximately 52%. The global intercontinental focus of the consolidation in the industry becomes apparent after itemization of the transnational transactions. Virtually every third acquisition of transnational European transactions (29.8%) is accompanied by a purchase of a target from a different continent. This rate amounts to 40.7% in Asia and even 100% in the USA. The following table 1 summarizes the geographical distribution of the 213 shipping companies in the sample.

	Europe	**Asia**	**America**	**Africa**	**Total**
Horizontal	43	33	18	2	96
Vertical	19	14	9	1	43
Lateral	36	22	15	1	74
Total	**98**	**69**	**42**	**4**	**213**
thereof: Transnational	47	27	14	1	89
Domestic	51	42	28	3	124

Table 1 Number of transactions, geographical differentiation;

Table 1 further shows the structure of the acquisition tendencies along the value-added chain within the research period. The structure of the acquisitions appears similar in the different considered regions. Distinctive geographical differences of M&A strategies are not recognized. The data set includes a total of 45.1% horizontal, 20.2% vertical and 34.8% lateral transactions. Figure 2 illustrates the annualized distribution of the 213 transactions with a simultaneous differentiation along the value added chain.

Figure 2 reveals a wave-like trend in the consolidation figures over the years. The fluctuations follow the general M&A trends and show analogies to the global economic cycle, as well as the general development of the capital market.[16]

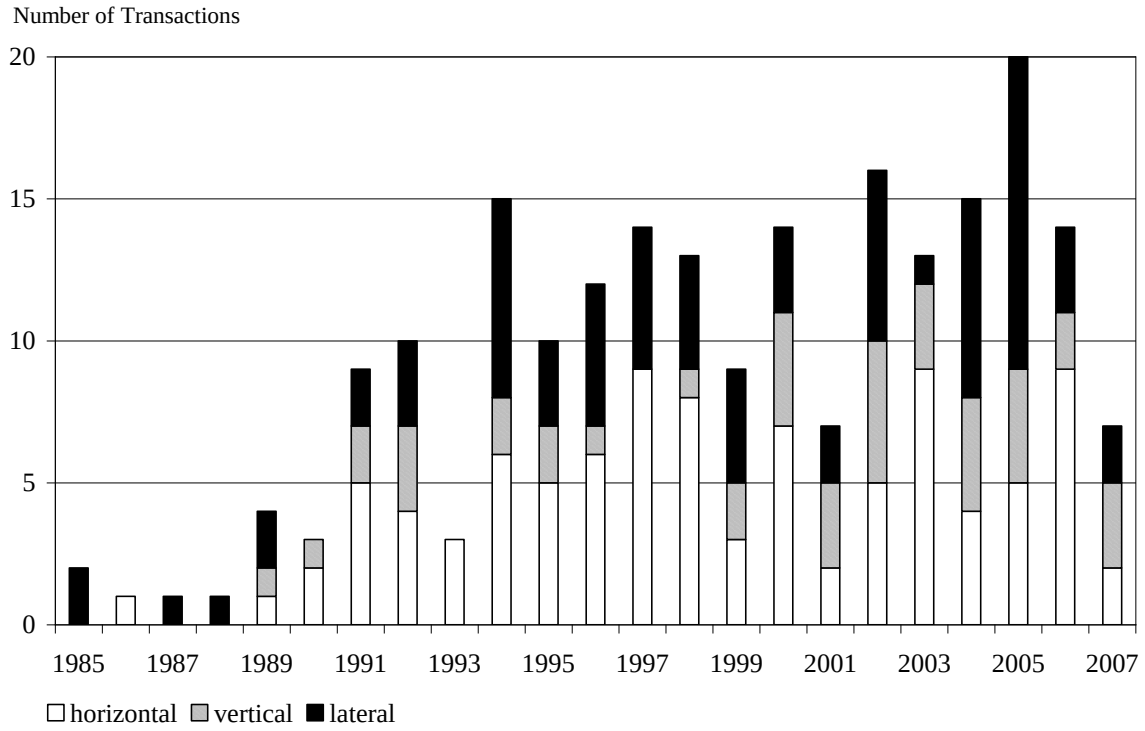

Figure 1 Number of transactions differentiated by strategic orientation;

While the percentage of the horizontal mergers ranges on a constant level, lateral mergers decline. Furthermore, vertical integrations increase constantly, particularly since the end of the 90s. The average percentage of trade associations as integrations within the transport chain amounted to 19% in the time interval between 1985 to 1998, compared to an average of 26% in the time interval between 1999 to 2007. These trends are accompanied by the aforementioned so-called door-to-door-philosophy that transport companies increasingly pursue. The decline of the lateral M&A indicates that shipping companies focus on their core tasks, hence adjusting their pattern of growth on the transport services.

3.2 General value effects at the M&A announcement

M&A transactions in the international shipping industry have been overall depressive for the acquiring companies, thus showing similar capital market reactions to what has been shown in other cross-industry studies. This evidence is contrary to the present general findings of the entire logistics field and will be analyzed for explanatory criteria later in this paper.
Despite the significant positive AR of 0.30% on the day of the event, CAR show an overall negative excess return of -1.39% up to t=20. Table 2 shows the cumulated returns for the selected event period.

16 A positive correlation emerges when comparing the final annual values at the end of the year of the MSCI World Index with the transaction development within the time period 1985 to 2007. Similar curve shapes verify the thesis that the number of enterprise transactions increases in cyclical upturns. For this please see the statements by Maule (1968), p. 99 et seqq. as well as Kleine and Rosenfeld (1987), p. 345.

Event period	CAR	t-value	
[-20;+20]	-1.39%	-1.25	
[-10;+10]	-0.62%	-0.78	
[-5;+5]	0.36%	0.62	
[-1;+1]	0.32%	1.07	
[0;+20]	-1.12%	-1.41	*

Table 2 CAR of the acquirers (N=213); * indicates the significance on the 10% level

The highly significant AR of 10.60% on the day of the M&A announcement causes an increase in the CAR of the targets upwards of 15%, which is constant until the end of the period under observation (see table 3).

Event period	CAR	t-value	
[-20;+20]	13.05%	2.51	***
[-10;+10]	12.15%	3.27	***
[-5;+5]	13.26%	4.93	***
[-1;+1]	12.85%	9.15	***
[0;+20]	15.40%	4.15	***

Table 3 CAR of the target firms (N=19); *** indicates the significance for Alpha = 1%

M&A decisions have an influence on enterprise value, even in the field of the international shipping industry. While shareholders of the target firms realize high profits by merging, the capital market rates the M&A announcement of the acquiring companies overall as negative. It is to be noted that contrary to the evidence from other M&A studies, this reaction does not occur instantaneously. On the day of announcement acquiring companies are uprated with economically manageable but statistically significant 0.30%. This initial positive evaluation of the M&A success will be reversed within the following weeks due to negative growth. The significant CAR for t[0;20] documents a sustainable loss of more than 1% for the entire sample period after announcement. Hence, the announcement of merging leads to an elimination of shareholder value in the shipping sector.
Due to the overall high heterogeneity of the sample, the following detailed analysis of the essential characteristics of successful mergers concentrates on the interpretation of diverse samples and examines particularly the acquiring ventures.

3.3 Horizontal, vertical and lateral transactions

The interpretation of the market behavior in the context of M&A transactions along the value added chain indicates that, especially, horizontal mergers are negatively evaluated by the capital market. It has to be noted that this applies to such mergers which generally focus on the generations of economies of scope via cost synergies. The CAR of the few lateral mergers remains as insignificant as the CAR of vertical integrations. The horizontal mergers report a significant loss of 1.86% at t[0;20]. The remaining CAR are not significantly distinct from null, hence excluding further interpretations. The results for the chosen event frames are summarized in table 4.

Event period	Horizontal transactions			Vertical transactions			Lateral transactions		
	CAR	t-value		CAR	t-value		CAR	t-value	
[-20;+20]	-1.31%	-0.76		-0.44%	-0.19		-2.05%	-1.09	
[-10;+10]	-0.95%	-0.77		-0.32%	-0.20		-0.38%	-0.28	
[-5;+5]	-0.13%	-0.14		0.06%	0.05		1.16%	1.19	
[-1;+1]	0.31%	0.68		-0.06%	-0.10		0.56%	1.10	
[0;+20]	-1.86%	-1.52	*	0.65%	0.40		-1.19%	-0.88	

Table 4 CAR of the acquiring ventures during horizontal, vertical and lateral transactions; [*statistical significance on the 10% level]

3.4 Period-related analysis of horizontal M&A

The horizontal transactions were examined using two separate samples, in order to achieve specific conclusions on the consolidation-related growth within the shipping industry against the background of deregulatory procedures and impacts on the relevance of alliances.[17]

Event period	before 1999			as from 1999		
	CAR	t-value		CAR	t-value	
[-20;+20]	0.50%	0.18		-3.27%	-1.30	*
[-10;+10]	0.57%	0.29		-2.60%	-1.44	*
[-5;+5]	0.94%	0.65		-1.28%	-0.99	
[-1;+1]	0.19%	0.25		0.45%	0.66	
[0;+20]	-0.40%	-0.20		-3.44%	-1.91	**

Table 5 CAR of the acquiring ventures during horizontal integration; [*,**,*** statistical significance on the 10%, 5% and 1% level]

The two virtually commensurate samples contain 50 (before 1999) and 46 (as from 1999) transactions. While the CAR of the transactions before 1999 remained positive, M&A transactions as from 1999 are judged to be significantly negative. The data shown in table 5 documents this negative growth with some highly significant results within different periods.
Parola and Musso (2007) interpret the increasing concentration tendency in the shipping industry as a trend to move away from the alliance as a preferred form of cooperation.[18] Hence, M&A strategies are to be preferred to alliances due to a possible higher efficiency. The above introduced research results do not support this interpretation. Rather, they indicate that defensive strategies targeted for cost synergies do not generate shareholder value in a situation of increasing competition. This understanding should apply when M&A transactions occur as advancement or rather validation of already existing alliances. However, this aspect is subsequently uncontrollable due to unavailable data.

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[17] Due to two market influencing events, 1999 has been chosen as a separation line of the two time frames. The OSRA was enacted in 1998 and became effective in 1999. This deregulation measure has caused provable effects on promotion of competition (cf. FMC (2001)) by reducing the cooperation activities among the alliances. Furthermore, the fusion of Maersk and Sealand in 1999 has set an important example pro M&A and contra alliances.

[18] Cf. the statements on the instability of alliances by Midoro und Pitto (2000), p. 34. The regulatory decision OSRA alters the competitive position relevantly and causes ‘a highly unstable situation bringing confusion to the shipping market’. Cf. Wang (2006), p. 24. The increasing dimension of competitors (e.g. Maersk) enhances the consolidation impact, hence forms of cooperation such as alliances attract overall less interest.

Despite the deregulation efforts, alliances continue to exist and are obviously perceived as a strategic alternative for the generation of synergy effects. A possible cause for this may be additional costs and risks resulting from the merger of two enterprises that eventually compensate potential advantages. The increasingly larger and more extensive M&A transactions require a progressive and cost-intensive integration effort, while cooperation models generate lower synergies, but are more cost-efficient and controlled more easily.[19]

3.5 Geographic Divergences

Maritime transport is considered as a key element in trade among the worldwide economies. The presence of shipping companies in diverse countries is a necessary condition in order to compete. Hence, transnational mergers are an obvious consequence. Table 6 below differentiates between the CAR for national and transnational transactions. It is evident that transnational mergers show a predominant, statistically significant and negative CAR, revealing an abnormal return of -2.36% in the time of t[-20;20] for acquirers of foreign target firms. In contrast, the analysis of national M&A activities shows insignificant results.

Event period	**Transnational**			**National**		
	CAR	**t-value**		**CAR**	**t-value**	
[-20;+20]	-2.36%	-1.50	*	-0.69%	-0.43	
[-10;+10]	-2.40%	-2.13	**	0.65%	0.56	
[-5;+5]	0.27%	0.33		0.42%	0.50	
[-1;+1]	1.06%	2.48	***	-0.20%	-0.46	
[0;+20]	-2.17%	-1.92	**	-0.37%	-0.32	

Table 6 CAR of the acquirers, differentiation transnational/domestic; [*,**,***statistical significance on the 10%, 5% and 1% level]

The value loss of the shares during the entire event period indicates that transnational transactions apparently incure disadvantages and increased risks. Contrary to the assumptions of foreign direct investment theories, Goergen and Renneboog (2004) argue that the capital market underrates transnational transactions. Parameters such as cultural discrepancies, sundry legal frameworks and tax structures and insufficient information transparency cause increased integration and organizational costs. Hence, the advantages in competition and synergies resulting from the merging are presumably depleting.

The analysis has been extended to the continental origin of the acquiring ventures, in order to obtain further insights into the differences with regard to the regional structure of the transactions. The reactions on the M&A announcement in the continents of Europe (98 transactions), Asia (69 transactions), and America (42 transactions) are presented accordingly.[20] The CAR of the American acquirers constantly ranges within an insignificant radius. In contrast, European shareholders note highly significant 1.04% in t[-1;1] and even 1.40% in t[-5;5]. The strongest reaction within the 41 day period of the event is to be noted on the event day itself. The AR amounts to a significant value of 0.59%. The AR in t=1 amounts to least-wise significant 0.43%. This massive price movement slightly decreases in the following weeks and loses its statistical significance. However, the noted capital market reactions are

[19] '*Why pay an acquistion premium and endure the rigors of postmerger integration when you can get most of the upside by using alliances […]?'*. Cf. Ernst und Halevy (2000), p. 50 et seqq.

[20] The remaining 4 of the 213 transactions are apportioned to South Africa and have not been considered for continental analysis due to their marginal quantity.

interpreted as a sustainable indication for the ability of European shipping enterprises to generate share holder value. Table 7 summarizes the CAR for the respective categories.

Event period	America			Europe			Asia		
	CAR	t-value		CAR	t-value		CAR	t-value	
[-20;+20]	1.05%	0.46		-0.49%	-0.34		-3.81%	-1.69	**
[-10;+10]	-0.55%	-0.34		0.16%	0.15		-1.69%	-1.05	
[-5;+5]	0.22%	0.18		1.40%	1.86	**	-0.94%	-0.80	
[-1;+1]	0.70%	1.13		1.04%	2.66	***	0.71%	1.16	
[0;+20]	0.49%	0.30		0.75%	0.72		-4.61%	-2.85	***

Table 7 CAR of the acquiring ventures, continental differentiation; [Source: Own calculation]; [*,**,***statistical significance on the 10%, 5% and 1% level]

The most significant price reaction is to be noted among the Asiatic acquirers. Additionally, this price reaction is accompanied by a conspicuously strong downtrend leading to a loss of significant -3.81% within the aggregate event period. The results indicate the existence of regional differences between Europe, America (USA) and Asia. Asiatic acquirers are confronted with considerable losses in value. On the contrary, European acquirers experience a tendentiously positive revaluation. American acquirers report no significant announcement impact. Possible causes for the regional divergences may be cultural peculiarities, different legal frameworks or various structures and standards of the capital markets.
The Asiatic M&A market is considerably newer compared to the USA and Europe. Over the course of the past two decades, trade liberalization implied an opening of the Asiatic markets, hence leading to an access of foreign investments. Moreover, Anandan et al. (1998) conclude that local networks are major factors of success for the M&A business between enterprises in the Asiatic region. In contrast, M&A activities are regarded as an established management instrument in America and Europe since the beginning of the 20th century. Thus, they characterize many corporate developments.[21] Sophisticated capital market structures in the USA and Europe have contributed to these developments. Besides these structural influences, regional events also affect the prospect of success for M&A transactions, e.g. the financial crises in Asia in 1997.[22]

3.6 Multivariate analysis

The previous part of the analyses examined the market trend of enterprises in the shipping industry in the course of M&A announcements for both the total sample and different subsamples. The following section aims at specifying the observed development of the aggregate value as well as the univariate characteristics. Based on a regression analysis, we examine a combined interpretation of all univariate-tested variables. This applies to the rear exclusion of the time period t[-5;5]. The preliminary consulted tests indicate no problems with regard to multi-collinearity. Table 8 shows the results of the regression analyses for the event frame t[-5;5].
The analyses support the previously presented findings:

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21 The American market shows the highest M&A volume as well as transaction figures in the last century. Cf. Gugler et al. (2003), p. 633. This documents the high empirical values on the part of investors and shareholders with regard to the transaction business.

22 Cf. Anandan et al. (1998), p. 65.

1. European transactions are evaluated as significantly more successful than Asiatic;
2. The transaction success declines significantly with the deregulation of the markets from 1999; and
3. Horizontal mergers are essential drivers for the overall identified losses of assets of the shipping enterprises, most notably since 1999

It is remarkable that the three above-mentioned conclusions lead to a loss of the importance for the explanation of the negative overall development of the transnational character of M&A transactions, as this variable remains constantly insignificant.

Nr.	**N**	**Rectified R2**	**Constant**									
		(F-value)	**(t-value)**	**Horizontal trans-actions**		**Vertical transa-ctions**	**Transn-ational Trans-actions**	**Period until 1999**		**America**	**Eur-ope**	
1	213	0.06%	-0.0014	-0.1400	*	-0.0474	-0.0082	0.1128	*	0.0550	0.1398	**
		(1.021)	-(0.109)	-(1.487)		-(0.604)	-(0.117)	(1.296)		(0.712)	(1.8)	
2	213	0.53%	-0.0018	-0.1410	*	-0.0491		0.1135	*	0.0553	0.1389	**
		(1.228)	-(0.146)	-(1.508)		-(0.637)		(1.311)		(0.718)	(1.801)	
3	213	0.82%	-0.0056	-0.1186	*			0.1134	*	0.0558	0.1406	**
		(1,437)	-(0.514)	-(1.371)				(1.312)		(0.725)	(1.826)	
4	213	1.04%	-0.0013	-0.1201	*			0.1131	*		0.1150	**
		(1.745)	-(0.143)	-(1.391)				(1.309)			(1.682)	
5	213	0.71%	-0.0014	-0.0510							0.1165	**
		(1.754)	-(0.156)	-(0.745)							(1.702)	
6	213	0.92%	-0.0053								0.1176	**
		(2.96)	-(0.696)								(1.721)	

Table 8 Results of the regression analysis for the time period t[-5;5];
[Source: Own calculation] *,** indicate the statistical significance for Alpha = 10% and 5% respectively

4 Summary and outlook

This research has analyzed the success of mergers and acquisitions in the international shipping industry from a capital market oriented view. The examination included 213 acquiring companies for the time period 1980 to 2007. The findings indicate that M&A transactions in this industry segment led to an overall loss of shareholder value in a period affected by globalization, deregulation and intensive competition. However, this general view is not based on an extensive homogenous data base. In fact, the data shows regional, temporal and direction-specific characteristics that appear rather consistent with the empirical evidence. Beneficial evaluations for European M&A transactions are repeatedly documented for the banking industry, but are rudimentarily defined when compared to the moderately regulated sector in

the USA. The European domestic market for services may have generated similar reactions for maritime traffic. However, this aspect does require further analysis.

Additionally, the slowdown of the designated M&A success since 1999 applies to the evidence of trans-industrial studies. It is clarified by increasingly demanding and complex acquisitions over an industry-consolidating M&A wave. The increasing transaction volumes and mega-mergers in the shipping industry indicate this trend. The particularly negative evaluation of horizontal-oriented M&A transactions is well-known, e.g. from transactions in the pharmaceutical and building industries. These transactions are characterized by a rather defensive character which is dimensioned for the generation of cost synergies. The international orientation of the shipping industry as a driver and profiteer of globalization is supported by the fact that, unlike most industries, trans-national M&A transactions are not evaluated as worse than national mergers.

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