Ship Finance Update: An Analysis of the Petrofin Top 40

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Prepared by: Maarten Biermans & Tobias Holl

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Summary

The maritime industry is under pressure to adopt greener practices, leading to increased demand for capital to finance the decarbonization of the sector. The Petrofin Global Index of Ship Finance is a widely recognized benchmark that tracks lending practices and trends in the market of ship finance. This white paper examines the Petrofin data on the top 40 ship lending portfolios from 2015 to 2021 to explore the shifts in the financing of the shipping sector. The Petrofin data shows a reduction in the overall size of shipping portfolios for the top 40 banks in recent years, accompanied by a trend towards more uniform distribution. Additionally, the analysis presented in this paper reveals a decrease in the proportion of shipping portfolios relative to total assets held by these banks. Even where the shipping portfolios increased this did not translate into shipping becoming more important for the bank rather it was an increase that more less followed the overall increase of the bank's assets.

1. Introduction

The maritime industry is currently under increasing pressure to transition towards greener practices.[1] This transition demands the influx of large amounts of capital in an already capital-intensive industry. At the same time less money is made available to the sector compared to a couple of years ago. In addition, the recent turmoil in the banking sector will also have its own impact on shipping finance. With the acquisition of Credit Suisse, UBS also acquired one of the larger loan portfolios in ship finance. In short there are multiple reasons for taking a closer look at the world of bank finance for the shipping industry. A natural point of departure is the Petrofin Index of Global Ship Finance.

Since many years the annual publication of the Petrofin Index of Global Ship Finance is widely recognized as the key benchmark that tracks the lending practices and trends in ship financing. The index is published by Petrofin Research, which is a maritime market intelligence and consulting firm headed by Mr. Ted Petropoulos. Apart from the Index of Global Ship Finance the company also publishes the annual Petrofin Index for Greek Ship Finance.[2]

The latest publication of the index (Petrofin Research, 2022) constituted the 14th instalment of the overview of the bank loan portfolios to global shipping as of 31st of December, 2021. Since then, the Russian invasion of Ukraine and all of the consequences linked to this (e.g. higher energy prices, sanctions, economic downturn etc.) have had significant impacts for the shipping industry at large. In short, when looking at the numbers of 2021 it is best to remember that that the world has changed considerably and that this will have influenced the sector's ability to access finance through bank loans.

At the time when the need for more capital is prevalent it thus becomes of greater importance to know what is happening on the bank loan front and where – if not from banks – the much-needed capital for decarbonization will be coming from? This paper utilizes the data collected and published by Petrofin Research and enriches it with other financial data to obtain a better understanding of what is happening under the hood of global bank loan portfolios for the shipping industry.

The remainder of this paper is structured as follows. The next section takes a close look at the work done by Petrofin Research. It also contains a description of the dataset used for the analysis provided in section 3. This section also contains the analysis of the relative importance of shipping loans compared to overall bank assets. The final section contains a brief summary of the main findings as well as some recommendations for further research.

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[1] In 2018 the IMO has set targets for the reduction of GHG emissions. One of these targets has been to reduce the total annual GHG emissions from international shipping by at least 50 percent by 2050. More recently the EU announced that will surpass these targets by introducing more stringent ones that will ultimately lead to a reduction in emissions by 80% in 2050. See European Commission (2023); see also Biermans & Önal (2022) and Biermans & van der Klip (2023)

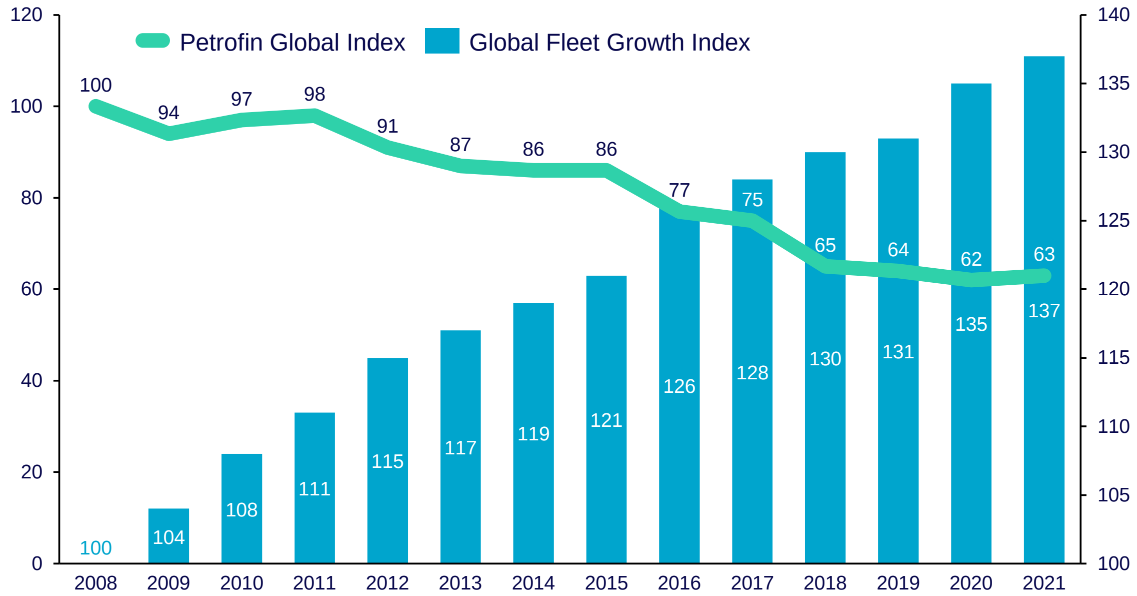
[2] See www.petrofin.gr/company-profile/

2. The Petrofin Ship Finance Research

The figure below, showing both the development of the Petrofin Global Index and the Global Fleet Growth Index has become a fixture in the annual review of the state of the shipping industry. On the one hand it describes the development of the size of the aggregate 40 largest shipping loan portfolios while on the other hand, it illustrates the evolution of the global fleet size in terms of the number of vessels.

Currently there have been 14 instalments of the Petrofin Global Index, starting with data over the year 2008. The underlying data are the 40 largest shipping loan portfolios from banks across the globe. The Global Fleet Growth Index shows the change in the number of vessels based on the Clarkson's World Fleet Register. An increase in the index indicates growth, while a decrease indicates decline in both cases.

Figure 1 The Petrofin Global Index and the indexed growth of the global fleet (2008-2021)



Source: Petrofin Research (2022, note that the fleet data is derived from Clarkson's World Fleet Register)

When reviewing the data for the last couple of years (Figure 1) it becomes clear that the size of the top 40 shipping loan portfolios has experienced a significant decrease between 2008 and 2021. During this period the index dropped by more than a third, with a slight upward tick observed from 2020 to 2021, the first increase of the index since 2011.

Over the same period, the Global Fleet Growth Index showed an increase (!) of more than one-third. Some caution needs to be taken into account when drawing conclusions from the data as the fleet index is built on the number of vessels, meaning that an increase can also be brought about by more but smaller (i.e. less costly) vessels. Additionally, the lifespan of the fleet may have increased, which would also reduce the need for new capital investment over time.

At the same time, the counter-movement is so significant that it does support the observation that the shipping sector is being financed through alternative sources of funding not included in the Petrofin index, with the authors themselves formulating it thus: "The growth of the global fleet continues to be funded from non-banking sources, such as leasing, alternative lending, private equity from funds and investors" (Petrofin Research, 2022, p.3)

Petrofin's Global Top 40

As stated above, the basis of the Petrofin Global Index is the data on the 40 largest shipping loan portfolios with banks (SP for short). The composition of this group tends to change over time as some portfolios increase and others decrease. This paper focuses on the data from 2015 onwards. During this period, a total of 54 banks were at some point included in the Top 40 SP.

Table 1 below categorizes the banks based on the number of observations in the dataset. The table indicates that 29 banks were part of the Top 40 for each year during the period 2015-2021. Additionally, eight banks were included in the Top 40 only once during the same period.

Table 1 Observations in Petrofin's Top 40 SP (2015-2021)

	Number of Banks
7 observations	29
6 observations	2
5 observations	6
4 observations	4
3 observations	4
2 observations	1
1 observation	8
Total	**54**

Source: PROW Capital analysis based on Petrofin Research (multiple years)

The observation that 29 banks were part of the top 40 throughout the observed period suggests that these 29 banks have a considerable presence in the shipping finance industry and may warrant further analysis in future research. For now, it can be stated that most the analysis provided in the next section is based on the aggregate data of the Top 40 thereby bypassing the possible impacts of changes in its composition.

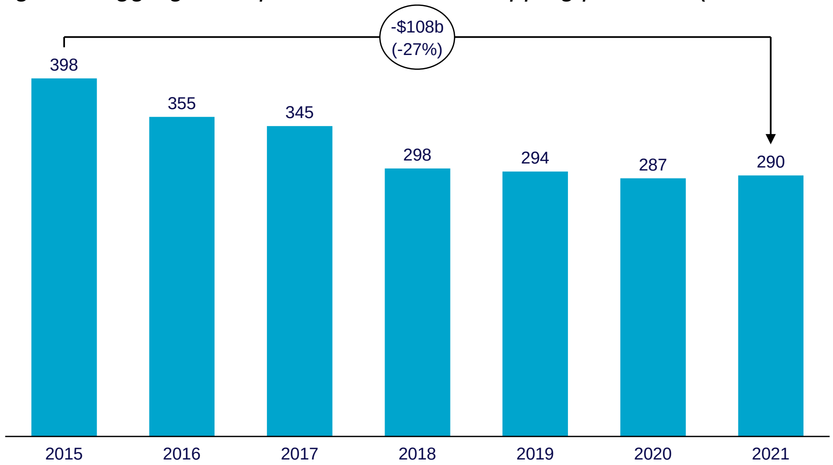
There are however two instances wherein the analysis requires observations from both the beginning as well as the end of the observed period. In those cases, the uneven distribution of bank appearances across the time period raises the possibility of sampling bias, which should be carefully considered in the interpretation of the results. Further analysis may be necessary to understand the potential impact of these variations on the overall findings.

While this analysis cannot determine the exact significance of the Top 40 in relation to overall ship loans provided by banks, it assumes that the Top 40's development reflects the ship lending practices of banks in general. However, further research is required to support or refute this assumption.

3. Analysis of Top 40

During the observed period the aggregate size of the top 40 decreased from USD 398 billion to USD 290 billion, as shown more clearly in Figure 2. This figure indicates a significant drop of $108 billion, or 27%, between 2015 to 2021. The figure also shows that there were two years wherein the drop was more than in other years, namely in 2016 when the overall size decreased by USD 43 billion and again in 2018 when the decrease was USD 17 billion.

Figure 2 Aggregate Top 40 Global Bank Shipping portfolios ($bn, 2015-2021)



Source: PROW Capital analysis based on Petrofin Research (multiple years)

In Table 2 below the focus is on the underlying 'summary' statistics for the Petrofin Top 40 dataset. Of notable significance is the apparent decrease in the mean from 2015 to 2021. Whereas the average shipping loan portfolio stood at USD 9.9 billion USD this has decreased to USD 7.3 billion in 2021. Concurrently, the median also exhibits a downward trend, albeit after a steep decline in 2016 at a comparatively sluggish pace. This suggests that the shipping portfolios in the Petrofin Top 40 dataset are becoming more uniformly distributed. This is also supported when looking at the minimum and maximum size of the portfolios. Whereas the minimum size remained more or less stable (with some fluctuations) the maximum portfolio size shows a decrease of nearly USD 5 billion. Overall, these developments align with the observations on the diminishing portfolio size of former highly invested players.

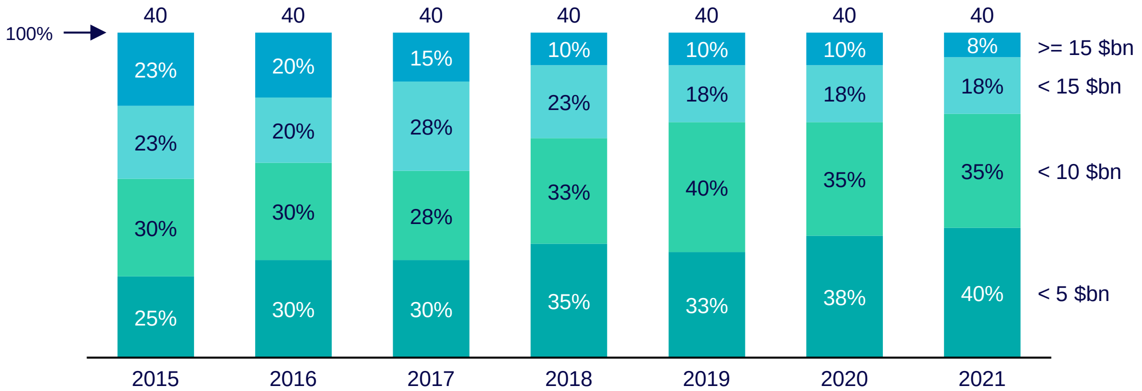
Table 2 Summary statistics of Petrofin's Top 40 SP (2015-2021)

	Mean	Median	Min	Max
2015	9.9	8.5	2.1	24.7
2016	8.9	6.7	1.8	21.0
2017	8.6	6.8	2.0	17.5
2018	7.5	6.2	2.0	17.5
2019	7.4	6.1	2.1	18.0
2020	7.2	6.0	1.5	21.5
2021	7.3	6.0	2.0	19.8
Change direction ('15-'21)	↓	↓	↔	↓

Source: PROW Capital analysis based on Petrofin (multiple years)

There are various ways in which the changes of the composition of the Top 40 can be reviewed, and one of these is to look at the size of the portfolios. Table 2 already showed that over the last couple of years the largest portfolio in the Top 40 has steadily decreased between 2015 and 2021. In figure 3 below all banks have been categorized based on the size of their portfolios, utilizing four categories.

Figure 3 Aggregate Top 40 Global Bank Shipping portfolios ($bn, 2015-2021)

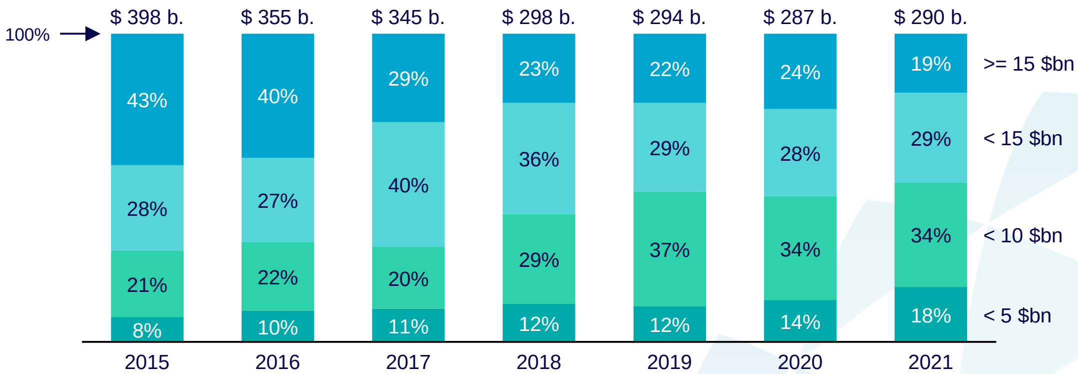


Source: PROW Capital analysis based on Petrofin Research (multiple years)

Figure 3 provides a clear view of the trend towards more uniformly distributed shipping portfolios. A comparison between 2015 and 2021 reveals that initially, 23% of the banks included in the Top 40 held shipping portfolios valued at or over USD 15 billion, while in 2021, this number had decreased to only 8%. In other words, in 2021 only three institutions held portfolios of equal or more than USD 15 billion. Conversely, in 2015, 25% (or ten institutions) of the Top 40 held portfolios worth less than $5 billion, which grew to 40% in 2021.

In figure 4 below the same analysis is done but this time it is not the distribution of the institutions but rather the distribution of the aggregate portfolio. Again, the division is based on four categories denoting size.

Figure 4 Breakdown top 40 Global Bank Shipping portfolios based on portfolio size



Source: PROW Capital analysis based on Petrofin Research (multiple years)

The figure shows that the distribution of the total Top 40 shipping loan portfolio has also become more uniformly distributed. Whereas in 2015, 43% of the USD 398 billion in shipping loans was held in portfolios that were equal or larger than USD 15 billion, in 2021 this share had decreased to only 19%. These results show that the distribution of portfolios and total capital is becoming more uniformly distributed, and institutions are more often now found to operate smaller loan portfolios in the Petrofin ship financing index.

Individual Growth Rates

One of the conclusions that can be drawn from the analysis presented above is that, although there is an overarching trend on the aggregate level, significant differences exist between the individual institutions. Figure 5 depicts key figures of the Petrofin top 40 by the end of 2021. The horizontal axis shows the overall size of the portfolio in billions of USD. The vertical axis depicts the individual Compound Annual Growth Rate (CAGR) of a portfolio for the period 2015 to 2021.

As discussed earlier the composition of the Petrofin Top 40 changed over time. The top left corner represents the banks that were included in 2015 but were dropped from the Top 40 by 2021. On the top right corner shows those institutions that were included in the 2021 Top 40 ranking but were not so back in 2015. Further research is necessary to examine the motivation behind players dropping out and new entries in the shipping industry. However, it has been noted in a 2021 Petrofin report that many new entries into the industry have originated from Asia. According to their findings for 2021, the Asian and Australian banks collectively exhibited growth in their portfolios, whereas the European and US banks collectively demonstrated a decline in their portfolios (Petrofin, 2021). This trend may indicate a shift in ship finance towards Asia, both in terms of bank-related and leasing-related activities, at the expense of Europe and the United States.

The main figure shows the change and current size of their shipping loan portfolios for the banks that have been included in **both** 2015 and 2021. The width of each column indicates the size of the shipping portfolio in 2021, and the upward or downward direction of the bar signifies the positive or negative change direction of the portfolio, respectively.

The graph shows that BNP Paribas, one of the largest players in the Top 40, increased their portfolio size by 7% annually compared to their 2015 portfolio size. In contrast, the loan portfolio of the Bank of China, another major player, was reduced by 5% per year between 2015 and 2021. The fact that most of the observations are to be found below the horizontal axis is testament to the decline of the overall size of the loan portfolios. At the same time, it also becomes clear that where portfolios have increased it has mainly been among the relatively larger players, whereas relatively smaller players have decreased their ship financing activities.

Figure 5 CAGR of Top 40 Global Bank Shipping portfolios between 2015 and 2021 and the size of the portfolio as of end 2021

Exited the Top 40 by 2021
(last year in parentheses)

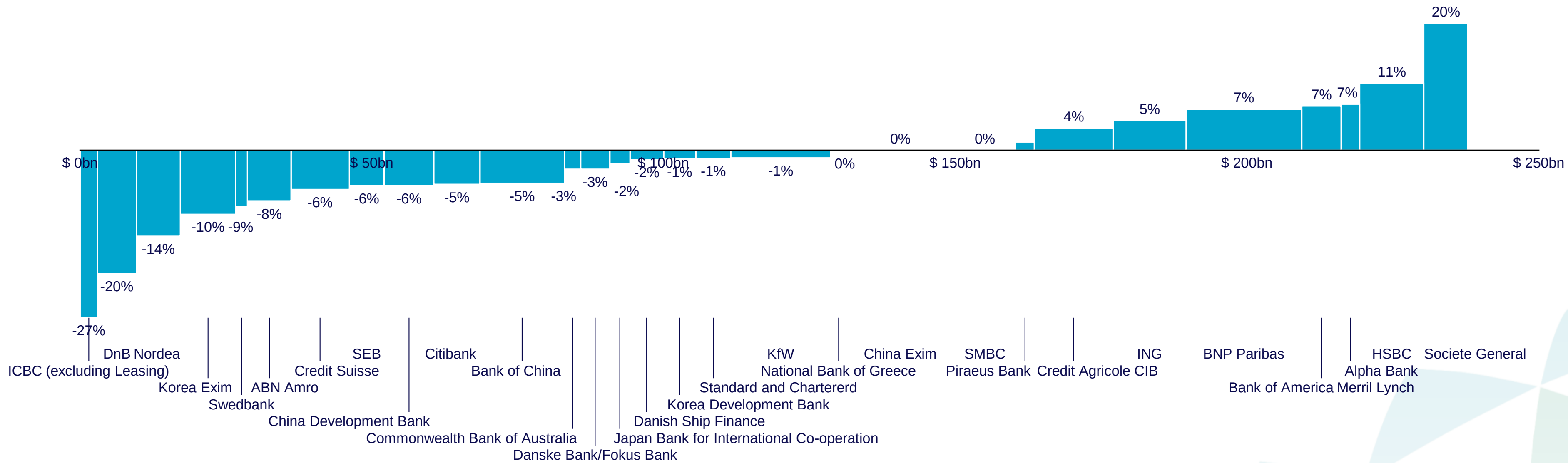
- Bremer Landesbank (2016)
- BTMU (2017)
- Commerzbank (2015)
- DBS (2020)
- Deutsche Bank (2018)
- DVB (2019)
- HSH Nordbank (Core Bank) (2017)
- Nord LB (2019)
- RBS (2015)
- Santander (2020)
- Unicredit (2020)

- $101.8bn

Entered the Top 40 by 2021
(first year in parentheses)

- CIC (2016)
- Eurobank (2019)
- Hamburg Commercial Bank (2018)
- Hiroshima Bank (2018)
- Iyo Bank (2017)
- JP Morgan (2016)
- Mitzuho Marubeni Leasing Corp. (2021)
- National Bank of Australia (2021)
- SUMI Trust (2017)

+ $38.2bn



Source: PROW Capital analysis based on Petrofin (multiple years)

Credit Suisse

On March 19, 2023, it was announced that UBS would acquire Credit Suisse after the Swiss central bank employed emergency measures to expedite the deal. Credit Suisse (CS) had recently faced significant financial challenges. As reported in its annual report, the Swiss bank showed losses of over 11.45 billion USD, further warning of potential losses in 2023. These difficulties were compounded by the collapse of Silicon Valley Bank, causing turmoil in the banking industry. Despite receiving an 81 billion USD lifeline from the Swiss central bank, CS was unable to assuage the concerns of panicked shareholders and customers leading to the takeover by UBS.

As becomes clear from figure 5, the shipping loan portfolio of CS was still substantial in 2021 even though it had decreased by 6% per year over the period 2015 – 2021. The fact that such a major provider of loans to the shipping industry warrants a closer look at what was happening with the loan portfolio over the last couple of years. The results hereof are included in the table below.

Table 3 The shipping loan portfolio of Credit Suisse ($bn, 2015-2021)

	$ bn	Y-o-Y Change	Rank	Y-o-Y Change	Share in total top 40
2015	14.7	-	10	-	3.7%
2016	14.0	-5.0%	10	0	3.9%
2017	12.7	-9.0%	13	3	3.7%
2018	12.3	-3.1%	8	-5	4.1%
2019	12.0	-2.4%	8	0	4.1%
2020	10.0	-16.7%	10	2	3.5%
2021	10.0	0.0%	10	0	3.4%

Source: PROW Capital analysis based on Petrofin (multiple years)

At the beginning of the period the loan portfolio of CS amounted to nearly USD 15 billion. By December 2021 this had already been reduced to USD 10 billion. The most important drop in the loan portfolio was in 2020 when the loan book decreased by more than 16% compared to the previous year. At the same time the overall share of CS in the total of the Top 40 shipping loan portfolio has only shown to decrease by a limited amount with the share of its portfolio in total Top 40 portfolio decreasing from 3.7% to 3.4%.

All in all, an important provider of debt has left the stage. It remains to be seen if and how UBS will pick this role going forward. UBS, with a shipping portfolio of around 200 million in May of 2022 was a relatively small player in the ship financing industry. BRS brokers noted in a new report that “UBS appears more conservative when it comes to shipping investments” (Chambers, 2023). Credit Suisse has long been one of the largest shipping banks in the industry which strongly contrast the position of UBS. This could prove to make lending availability for shipowners even scarcer. Giving all the other challenges by which, the sector is confronted this is likely to add to the woes than anything else. And that brings us to the last point of this paper, namely the changes in the importance of a shipping loans portfolio for the various institutions.

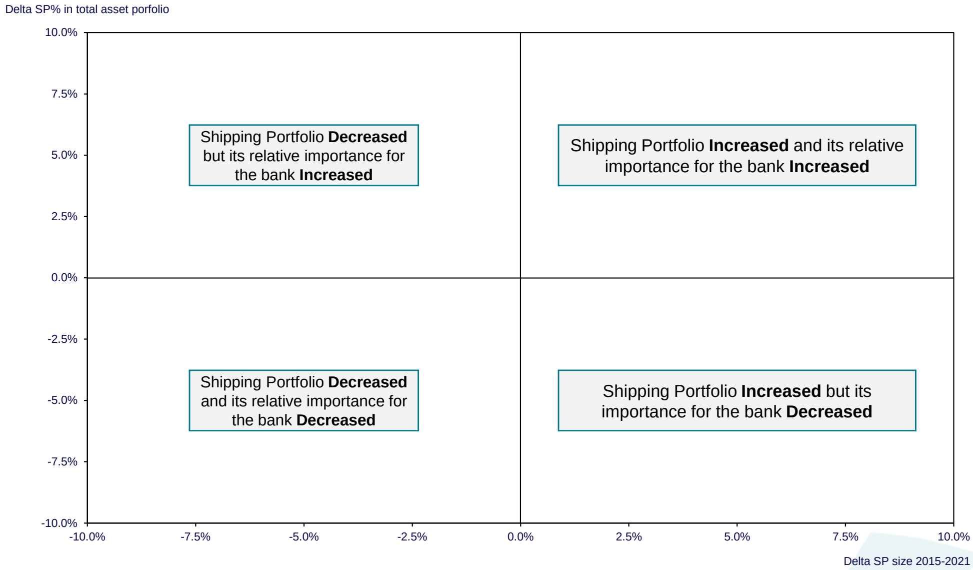
The relative importance of shipping portfolios

Although the mere fact that the total loan portfolio of the Top 40 has decreased is the most telling outcome of the work done by Petrofin Research, at the same time there is one aspect that also helps to better understand the dynamics of this particular part of the financial markets. In this last part of the paper the focus is thus not on the shipping loans as such but rather their relative importance to each respective financial institution.

In other to be able to do this analysis, the Petrofin Research data set was enriched by adding data on the total assets for each of the 29 banks for which there is loan data for the year 2015 as well as for the year 2021. This enables to do an analysis not merely on the changes in the shipping loan portfolio itself but also the changes in the relative importance of these portfolios in relation to the total assets of these institutions. In the figures below the outcome of this analysis are presented.

Figure 6 shows the basic idea outlining the possible outcomes basic on the matrix which is created by the two axes. The horizontal axis ("Delta SP size 2015-2021" presents the percentage change in an institution's shipping loan portfolio between the years 2015 and 2021 with a positive number indicating that the shipping portfolio has increased during this period. The vertical axis ("Delta SP% in total asset portfolio) shows the change in relative importance of the loan portfolio vis-à-vis the total assets of the institution. This number is derived by calculating the share of the Shipping Portfolio as percentage of the total assets in 2021 and subtracting the same for 2015; a positive number indicates that the importance of the shipping portfolio in total assets has increased.

Figure 6 The Growth and Decrease of the importance of the Shipping Portfolio

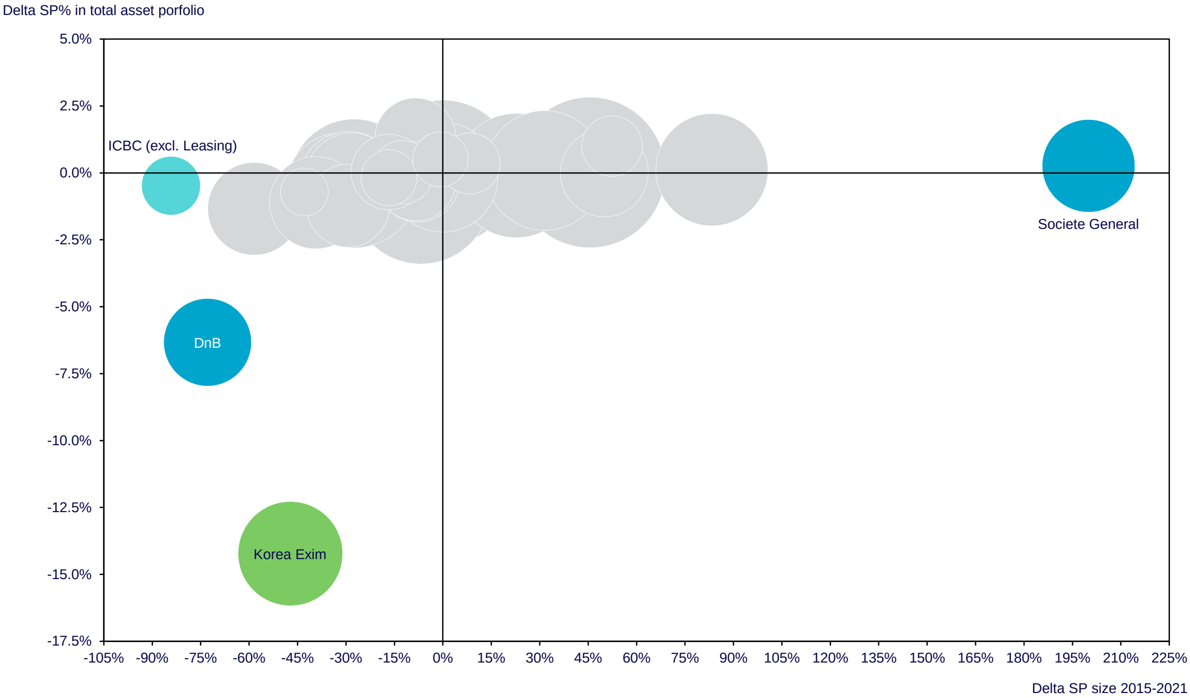


Source: PROW Capital

In the figure shown below, figure 7, the outcome of the analysis is depicted. What is striking is that there are a couple of outliers on both sides of the graph. The French bank Société Generale has had a substantial increase of its shipping loan portfolio and its increase was matched by the increase of its total assets. The latter means that the relative importance of shipping for the bank did not decrease and more or less stayed the same. The biggest outlier is the Asian bank Korea Exim which saw a contraction of its shipping finance activities which also led to a deterioration of the relative importance of shipping compared to the development of its overall assets. A similar story can be found when looking at DnB.

In the case of ICBC the story is slightly different in that the decrease of the shipping portfolio has coincided with a decrease in its total assets which means that the decrease in relative importance of shipping was somewhat limited.

Figure 7 The Growth and Decrease of the importance of the Shipping Portfolio



Source: PROW Capital

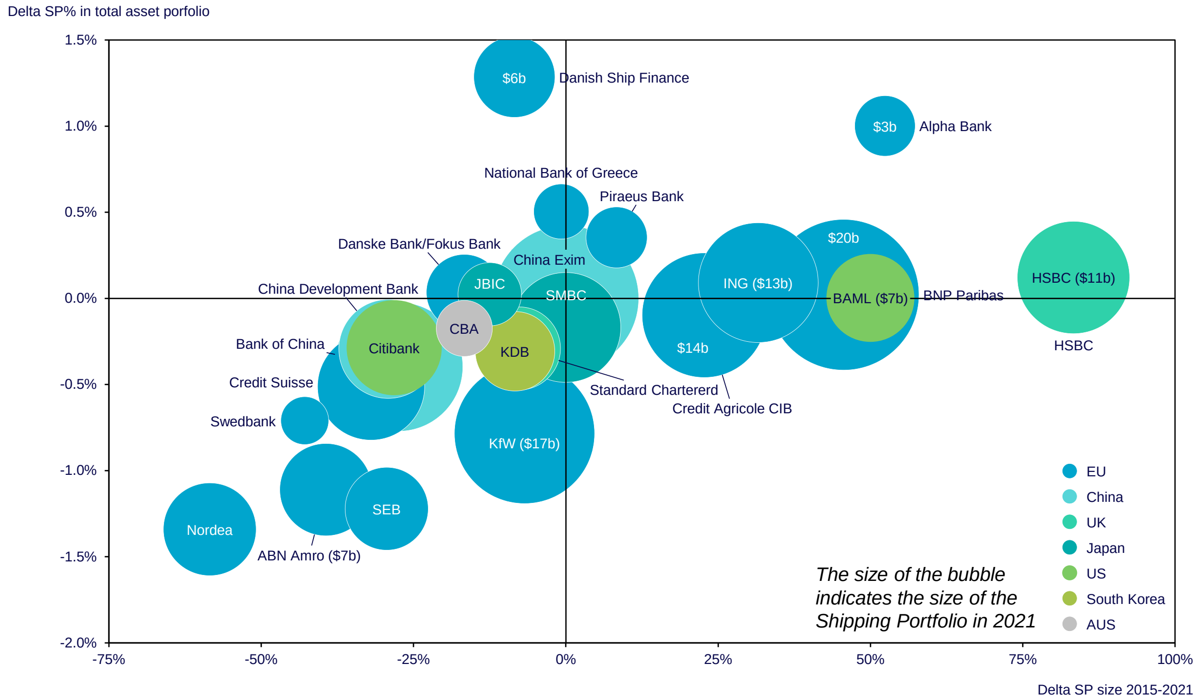
Figure 8 depicts the smaller section of what was shown in figure 7. Now it is clear that all sections of the matrix are populated. Starting with the top left corner it becomes clear that although the shipping loan portfolio of Danish Ship Finance is decreasing, its total assets decreased even more during the same period meaning that the relative importance of ship finance has in fact increased.

Moving to the top right quadrant, the Greece based Alpha Bank comes into focus as an institution where shipping loans increase during the period of 2015-2021 and even more so than the total assets of the bank. A similar observation albeit less explicit can be made for the Piraeus Bank.

What is striking of this analysis is that in most cases where the larger portfolios are concerned there was hardly an increase in the importance of shipping implying that the increased exposure to shipping coincided with the increase of the total assets of the various institutions. In the case of Credit Agricole, although the shipping loan portfolio increased, the overall increase in the bank's assets was greater, resulting in a decrease in the relative importance of shipping for the bank.

Most of the institutions reviewed here are to be found in the lower left quadrant where the decrease in the shipping loan portfolio led or coincided with a decline in the importance of shipping for the institutions.

Figure 8 The Growth and Decrease of the importance of the Shipping Portfolio (detail)



Source: PROW Capital

In summation, the findings of this analysis shows that financing shipping is becoming less important to most institutions covered by the Petrofin Research. Even were shipping loan portfolios increased this was overall not matched by an increase in the importance of shipping implying that the loan portfolio is merely following the overall development of the bank.

4. Summary & Conclusion

With more capital needed to finance the decarbonization of shipping it becomes even more important to have a good understanding of shipping finance. This paper examined the changes in the Petrofin data on shipping finance between the years 2015 and 2021. The data indicates a reduction in the overall size of shipping portfolios for the top 40 banks, accompanied by a trend towards more uniform distribution. By enriching the dataset with additional financial information it was also shown that even when shipping loan portfolios increased for individual banks included in the Petrofin Research Top 40 this was overall not matched by an increase in the importance of shipping suggesting that the loan portfolio is merely following the overall development of the bank.

Carefully extrapolating the results of these findings this paper can show that the ship financing is facing challenges that are currently partly being solved via diverse sources of capital such as leasing, alternative lending, and private equity. These alternative financing sources have an increasingly vital role in the shipping industry. Further research is needed to identify the exact size of this role. However, with the shipping asset portfolio for Petrofin Top 40 banks becoming less relevant, it has become increasingly important to understand the alternative financing sources.

Overall, the trends presented in this paper may have implications for the overall health and sustainability of the industry and should be closely monitored in future research. The apparent rise of smaller portfolios, warrants additional research on the financing changes within the shipping industry for players that fall outside the scope of the Top 40 Petrofin data. In addition the further research should be done on the exact significance of the Top 40 in relation to global ship financing to identify true effect of the findings presented in this paper.

5. Literature

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Colophon

The PROW Capital white papers aim to contribute to the debate on advancing the decarbonisation of the economy and furthering the integration of non-financial factors in the way companies operate. This white paper was prepared by Maarten Biermans (maarten.biermans@prow-capital.com) and Tobias Holl (both PROW Capital), March 2023, Amsterdam

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