

Ship-Breaking in Pakistan

-an overview for industry potential
& challenges



Manzil Pakistan is a national non-profit think tank dedicated to developing and advocating public policy that contributes to the development of Pakistan. Our aim is to shape Pakistan to a country where policies on decisions of national interest are driven by non-partisan strategic thinking and implemented through consensus in the best interest of the people of Pakistan.

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Table of Contents

Introduction and Background	1
Performance of Ship Breaking Sector vis-à-vis World.....	2
Pakistan Shipbreaking Industry at a glance	5
Economic Contribution of Ship-Breaking	7
Import Substitution &/or Foreign Exchange Net-inflow	7
Issues to the Shipbreaking Industry	12
Labour Issues and Lack of Legislation	12
Union Issues	12
Efforts By Unions and other organisation.....	12
Environmental Concerns	12
Challenges and Threats	13
Conclusion & Recommendations	14
ANNEXURE.....	15

List of Tables

Table 1 Top-5 Shipbreaking Countries (Number of Ships).....	2
Table 2 Top-5 Shipbreaking Countries (Gross Tonnage).....	3
Table 3 Reusable material factor	8
Table 4 Rollable Material in GT and MT after Discounting "Reusable Material" from proportions given in Shipbreaking Rules.....	10
Table 5 Number of ships dismantled by type of vessel	15
Table 6 Quantity of ship (in GT) dismantled by type of ship.....	15
Table 7 Number of ships dismantled (variation in data set)	15
Table 8 Reusable Material (in GT)	16
Table 9 Value of Scrap (Shipbreaking) per MT	16
Table 10 Value of Scrap (Import of Iron and Steel) per MT	16
Table 11 Comparison of per MT value of scraps	17

Introduction and Background

Ship breaking is the process of dismantling ships and selling their parts. Ships that have lived their operational lives and are not economically viable any longer, are sent for ship breaking. Ship breakers at ship breaking yards dismantle the entire ship. After dismantling, the recovery is in the form of scrap, which has some monetary value. These recovered items and / or scrap is sold, reused in the domestic market or is exported. Major items obtained from ship breaking are metals (mainly iron and steel)¹, glass, wood, furnishings, and plumbing etc. Shipbreaking is considered as a very labour intensive yet an equally dangerous job. There are few international conventions that provide guidelines for safe shipbreaking and also there are many national and non-governmental institutes that keep an eye on shipbreaking industry for its human and environmental safety compliance.

Pakistan, India and Bangladesh are three Asian countries that together constitute 66% (CY: 2022) of world's shipbreaking industry. Previously China was also considered industry leader but slowly it has phased out itself from shipbreaking and now only is in the business for country flag-ships and / or under Chinese ownership. On the other hand, Turkey is developing itself to be competitive in the market and have seen increase in market share over the years. Generally, control of shipbreaking industry by Asian countries is attributed to their natural coastal belts and availability of cheap labour with negligible legal compliance.

Pakistan's shipbreaking yard at Gadani is the world's third largest ship breaking yard. The yard consists of 132 ship-breaking plots placed across a 10 km long beachfront at Gadani. In 80s, Gadani was the largest ship-breaking yard in the world, with greater than 30,000 direct employees. However, competition from newer facilities in Alang, India and Chittagong, Bangladesh resulted in an important reduction in output, with Gadani presently producing less than one fifth of the scrap it produced in the 1980s.²

As mentioned in media reports 18-20 percent of the country's iron needs is fulfilled by scrap re-rolling.³ In FY22 higher ship imports reflected an uptick in demand for scraps from the steel industry, given more than 16.3 percent YoY growth in domestic steel production. Also, in FY22, ferrous scrap imports were roughly US\$2.31 billion (FY21: US\$1.86 billion).⁴

This research document is purposely developed to assist policy makers in understanding the prospects of the industry as it plays an important role not only in terms of domestic economic activities, generating employment but also has potential to support in reducing the import burden of the country. The document also highlights the issues faced by the industry / sector and future challenges, which need to be incorporated in policy making for the industry / sector.

¹ Special Procedures for Ship Breaking Industry Rules, 1997 (Rule 8 sub-Rule (3))

² <http://www.pakistaneconomist.com/2018/07/16/shipbreaking-review-pakistan-against-its-neighbors/>

³ <https://fp.brecorder.com/2019/01/20190125442212/>

⁴ State Bank of Pakistan Annual Report 2021-22

Performance of Ship Breaking Sector vis-à-vis World⁵

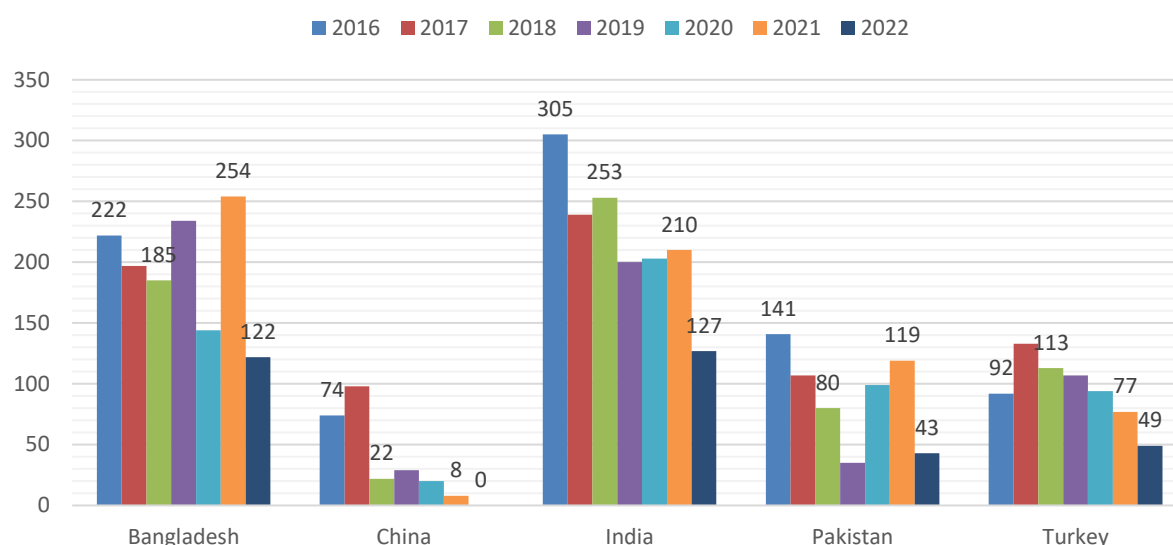
Shipbreaking industry over the years is mainly concentrated in Asia and particularly in South-Asia where around 76.98% (in 2022) of world's ships are demolished. Since 2012 there is significant decrease in number of ships dismantled (from 1243 in 2012 to 443 in 2022) yet share of top 5 ship-breaking countries is high but reduced in relation to historical comparisons. Data-trends show that India, with few exceptions, is always leading the chart for number of ships demolished.

Ship Breaking By Country (Top Five)								
Ships Demolished (Data in Number of Ships)								
Calendar Years / Country	Bangladesh	China	India	Pakistan	Turkey	Total Top 5	Total World	Top 5 Share
2012	230	209	495	124	153	1211	1243	97.40%
2013	193	311	347	105	220	1176	1209	97.30%
2014	222	163	309	110	157	961	1023	93.90%
2015	195	158	194	81	100	728	761	95.70%
2016	222	74	305	141	92	834	859	97.10%
2017	197	98	239	107	133	774	831	93.10%
2018	185	22	253	80	113	653	744	87.80%
2019	234	29	200	35	107	605	674	89.76%
2020	144	20	203	99	94	560	630	88.89%
2021	254	8	210	119	77	668	763	87.55%
2022	122	0	127	43	49	341	443	76.98%

Table 1 Top-5 Shipbreaking Countries (Number of Ships)

⁵ Data used in this section is compiled using annual lists of demolished ships published by NGO Shipbreaking Platform. <https://www.shipbreakingplatform.org/resources/annual-lists/> (Accessed on Feb 10, 2023)

Ship Breaking By Country (Top Five) Ships Demolished (Data in Number of Ships)



Source: NGO Shipbreaking Platform Annual Lists;
Data in in Calendar Years

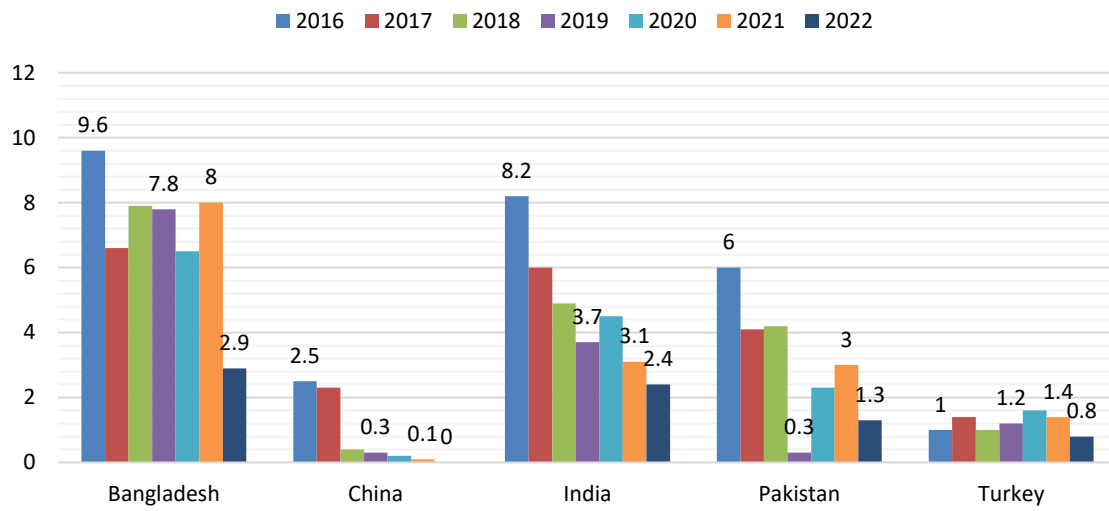
Note: Numbers are only for the selected years

In terms of Gross Tonnage (GT) same top-5 countries have hold on nearly whole of the market, with Bangladesh having majority share (36.7% in 2022). Also, it can be observed through trends that China was slowly moving out of ship breaking industry where in 2018 it only dismantled 22 ships for total of 0.4 million GT of scrap. The number kept decreasing until the country did not dismantle even a single ship in the year 2022.

Ship Breaking by Country (Top Five) Ships Demolished (Data in Million Gross Tonnage)								
Calendar Years / Country	Bangladesh	China	India	Pakistan	Turkey	Total Top 5	Total World	Top 5 Share
2014	6.8	4.1	4.5	3.7	1.1	20.3	20.4	99.50%
2015	6.8	4.1	4.5	3.7	1.1	20.3	20.4	99.50%
2016	9.6	2.5	8.2	6	1	27.4	27.4	99.80%
2017	6.6	2.3	6	4.1	1.4	20.3	20.7	98.10%
2018	7.9	0.4	4.9	4.2	1	18.5	18.9	97.70%
2019	7.8	0.3	3.7	0.3	1.2	13.3	13.5	98.20%
2020	6.5	0.2	4.5	2.3	1.6	15.1	15.4	98.06%
2021	8.0	0.1	3.1	3.0	1.4	15.6	16.0	97.50%
2022	2.9	-	2.4	1.3	0.8	7.4	7.9	92.32%

Table 2 Top-5 Shipbreaking Countries (Gross Tonnage)

Ship Breaking By Country (Top Five) Ships Demolished (Data in Million Gross Tonnage)

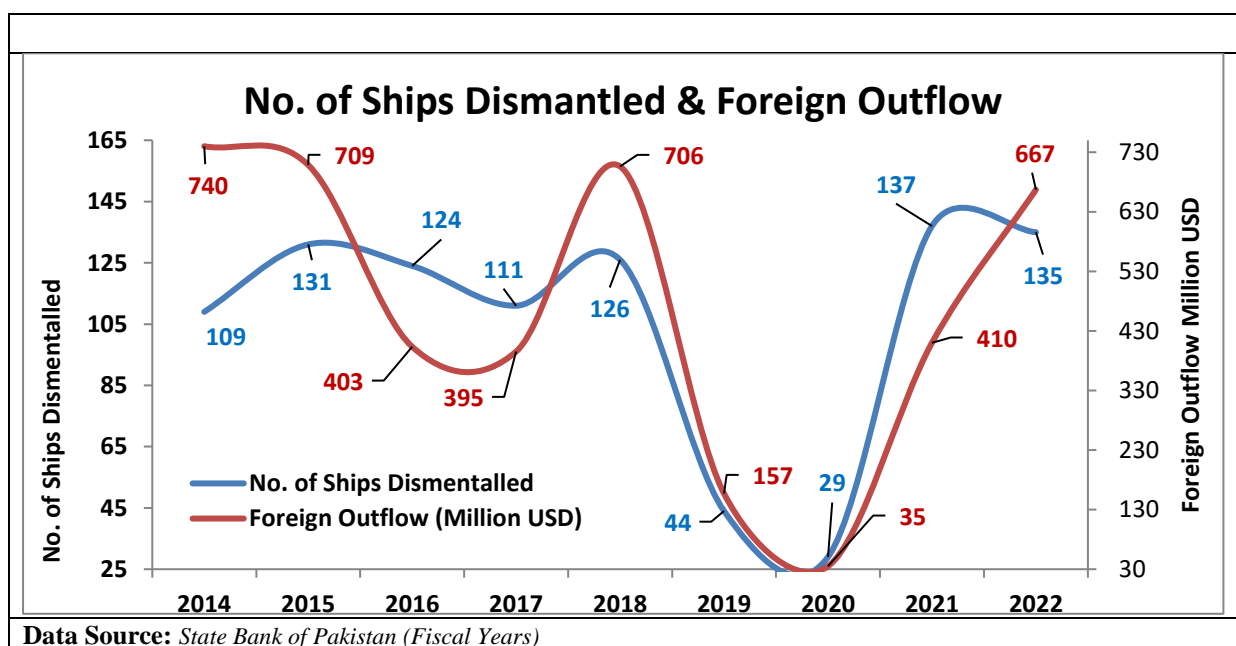


Source: NGO Shipbreaking Platform Annual Lists;
Data in in Calendar Years

Note: Numbers are only for the selected years

Pakistan Shipbreaking Industry at a glance

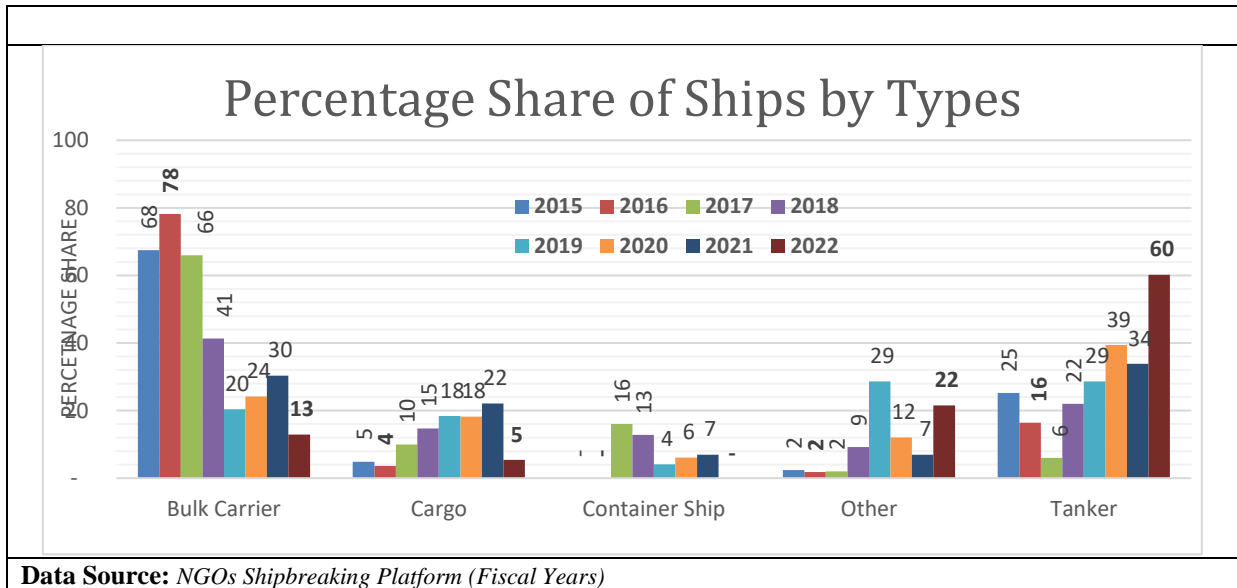
Pakistan has been importing ships for the purpose of breaking and dismantling for many decades. During the last five years, the dismantling of ships at global level in number registered over 375 per year. However, in Pakistan on average dismantling or breaking stood at 75 ships per year. Pakistan’s foreign outflow for importing ships for shipbreaking ranges from USD 395 million to USD 667 million. The figure below exhibits the number of ships imported for ship breaking and their values in terms of Million USD. It must be noted that the year 2019-20 was affected by COVID-19 pandemic, thus, the numbers pertaining to the said year show a steep decline. The year 2019-2020 should be treated as an exception to the rest of the trend.



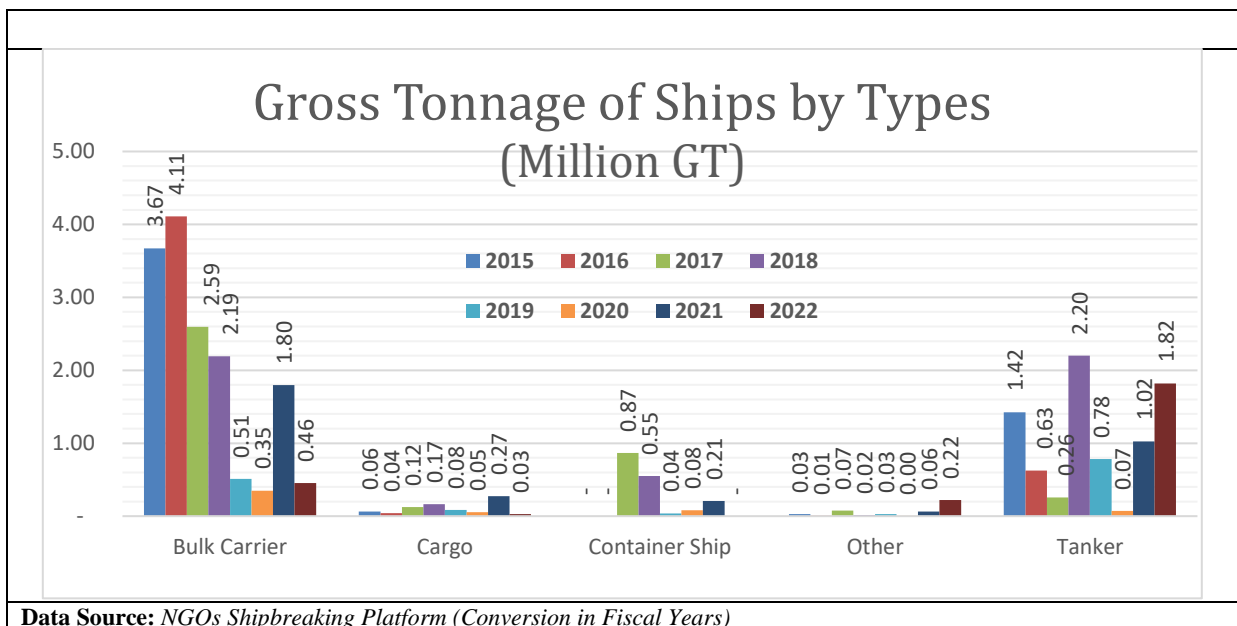
As per the data of NGOs shipbreaking platform⁶, there are some variations in number of ships imported vis-à-vis data reported by State Bank of Pakistan. Database maintained by NGO Shipbreaking Platform also provides gross tonnage of ships that were dismantled by Pakistan; this information is not available in State Bank of Pakistan (SBP)’s data. Also, NGOs ship breaking provides the data by type of ships, which is also not provided by any domestic data sources and statistical bureau. Conversely, SBP’s data set provides USD valuation of import commodity which is not available in NGO’s platform data. The other limitation in NGOs platform data is the uniformity of database which is changed from the year 2013, so the useful data is from 2015 onwards for any analysis and estimation.

⁶ The NGO Shipbreaking Platform is a global coalition of organisations working to reverse the environmental harm and human rights abuses caused by current shipbreaking practices and to ensure the safe and environmentally sound dismantling of end-of-life ships worldwide.

Over the reported years by NGOs platform database, Pakistan largely dismantled bulk carrier ships accounting for more than two-third of the total ships dismantled during the period from 2015-2017, whereas during 2022 this share has drastically reduced to mere 13 percent. Share of tanker ship in ship breaking accounted for 22 percent in the year 2018 which grew to a mammoth 60 percent. Dismantling of cargo ships also witnessed a steep fall from 15 percent in 2018 to 5 percent in 2022. Containerships which stood at 13 percent in 2018, fell to nothing while other type of ships grew from 9 percent in 2018 to 22 percent in 2022. Following graph exhibits the share (percentage term) of different types of ships dismantled during the last eight years.



NGOs platform database is also used to analyse the gross tonnage of ships dismantled in Pakistan’s shipbreaking yard. The following graphs exhibit the gross tonnage of ships by their types.



Economic Contribution of Ship-Breaking

As explained earlier, shipbreaking industry across the globe contributes to economy in terms of generating employment and increasing domestic economic activities. The latter also contributes to provide input material to domestic industries. There are several items / products / reusable materials acquired during the process of dismantling / breaking of ships.

Scrap steel is major output and reusable material acquired during the process of shipbreaking having significant economic value. The scrap steel acquired from the ship breaking industry is used as major raw material for the steel re-rolling mills of Pakistan. The steel re-rolling mills source their raw material from the domestic markets and also import the same due to shortage in the domestic market. Pakistan is the fourth largest steel scrap importing country in the world according to the figures released by the Bureau of International Recycling (BIR). Pakistan imported 4.3 million tonnes of scrap steel in 2019, behind only Turkey, India and South Korea.⁷ The UK was the largest exporter of steel scrap in 2020 in the formerly European Union, according to the Bureau of International Recycling (BIR) and Pakistan is the second largest buyer of UK origin steel scrap.⁸

Thus, the scrap steel from the shipbreaking not only serves domestic re-rolling steel mills, but also indirectly and invisibly regulates import of other scraps and raw materials. Thus, the sector has important contributions in terms of saving foreign exchange. Given the relative impact of shipbreaking on scrap imports it is important to realise the opportunity and need for it to be incorporated in public policy as an attempt to decrease import bill.

Import Substitution &/or Foreign Exchange Net-inflow

The following analysis is made to understand the potential contribution for saving foreign exchange by the shipbreaking industry. Attempt is made to assess value of steel scrap acquired from ship-breaking.

The document estimates the foreign value of steel scrap acquired during the dismantling / shipbreaking process and the contribution in terms of import substitution of steel scrap. Steel scrap import is measured in terms of Metric Tonnes (MT), so it is important to estimate and quantify the steel scrap acquired during the dismantling / shipbreaking process in terms of MT. Unfortunately, no such statistical institution records the amount of steel scrap derived from dismantling / ship-breaking.

The first step is count the type of reusable material (see **Table 12** in Annexure for different types of reusable materials) that can be acquired during the process of dismantling / ship breaking. As already discussed earlier, scrap steel is the major component accounting for more than 90 percent of the reusable materials acquired during the process.

⁷ Fastmarkets

⁸ TDAP Annual Report 2022

Before proceeding to apply the share of steel scrap component, the first step is to understand reusable ‘Material Factor’ by type of ships. Material Factor provides a percentage range in which reusable material can be acquired from a ship. This reusable material factor can be helpful for both policy makers and stake holders who want to assess the actual output of local ship breaking yards. Material Factor % for different types of ships is given in Table 3.

Type of Ship	Reusable Material Factor (%)	
	Min.	Max.
Cargo	0.67	0.78
Bulk Carrier	0.94	0.98
Tanker	0.95	0.97
Container	0.8	0.87
Other	0.25	0.8

Table 3 Reusable material factor¹

Using quantity of ship from **Table 2** and Material Factor from **Table 3**, we calculated approximate reusable quantity per type of ship (see annex **Table 8**). Based on the reusable material factor (a)⁹ estimated on average around 96 percent during the period from 2015-2018. However, in the latter two years, there is decline in reusable material extraction to 94 percent vis-à-vis 97 and 98 percent in 2015 and 2016, respectively. The decline is largely attributed to reduction in shipbreaking of bulk carrier which is has high recovery reusable factor.

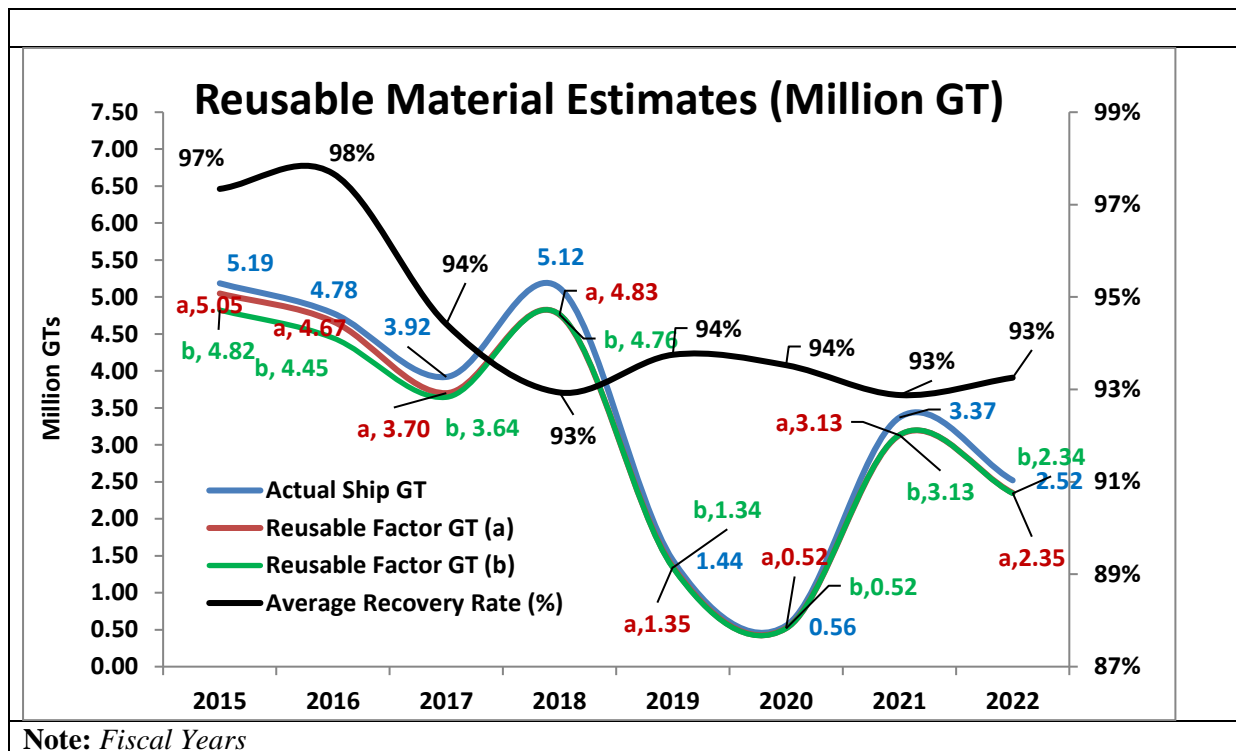
Another assumption of reusable factor (b)¹⁰ is mentioned in a country’s document ‘Special Procedures for Ship Breaking Industry Rules, 1997 (Rule 8 sub-Rule (3)) as below

(3) Subject to the maximum aggregated wastage upto seven per cent, [.....]

⁹ Based on research study published in 2018 (Calculation of Yearly Output of Reusable Materials of Ship Recycling Industry in Bangladesh)

¹⁰ Another estimates of reusable material factor

Based on the two-assumption identified, the overall recovery estimates during the period 2015-2018 are exhibited in the figure below.



The analysis further extended to the calculation of steel scrap from the reusable material factor (a & b, both). The proportion of scrap and other reusable materials are obtained on the basis of following rules.

‘Special Procedures for Ship Breaking Industry Rules, 1997 (Rule 8 sub-Rule (3)):

(3) Subject to the maximum aggregated wastage upto seven per cent, the following shall normally be percentage or proportion of scrap and other products obtained from the breaking of oil tankers, bulkers, cargo ships, drilling ships, war ships, passenger ships and cattle carriers, namely:-

- (i) ship plate and profiles of ½” thickness and above..... 40%
- (ii) ship plate and profiles of 3/8” thickness and above but below ½” 20%
- (iii) second quality re-rollable scrap of short lengths..... 15%
- (iv) small irregular pieces and re-meltable scrap..... 15%
- (v) cast iron, pipes or cast steel 7.5%
- (vi) non-ferrous metals..... 0.5%
- (vii) stores or machinery 2.0%;

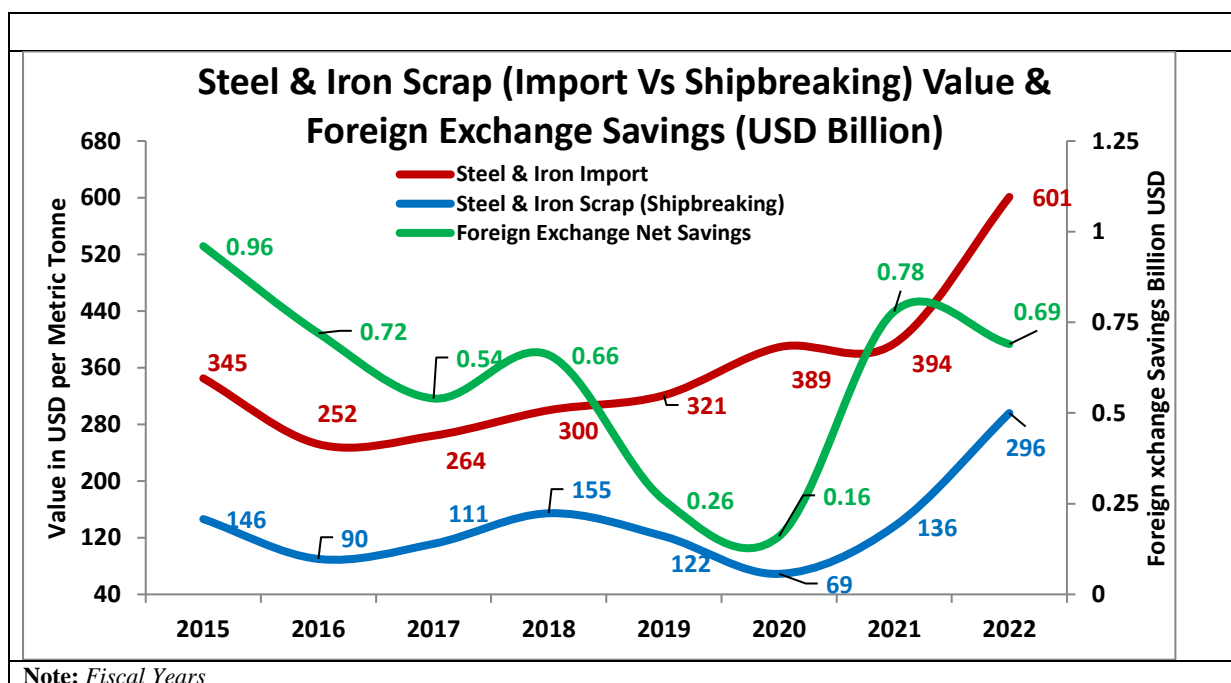
As per the Ship Breaking Industry Rules, 1997, the first five sub-items of Rule 8, sub-rule (3), mainly accounts for different types of steel scrap. The share of these different types of scrap stood at around 97.5 percent of the total reusable material factors. Based on this, the estimated quantity of steel scrap for the last four years is exhibited in the table (Table 4).

Financial Year	Reusable material (b) GT	Rollable Material as per rules in GT (c=b x 0.975)	Rollable Material as per rules in MT (d=c x 1.016)
2015	5.05	4.92	4.84
2016	4.67	4.55	4.48
2017	3.70	3.61	3.55
2018	4.76	4.64	4.57
2019	1.35	1.31	1.29
2020	0.52	0.50	0.50
2021	3.13	3.10	3.0
2022	2.35	2.29	2.25

Table 4 Rollable Material in GT and MT after Discounting "Reusable Material" from proportions given in Shipbreaking Rules

In our calculations to get value of scrap per metric ton (scrap obtained from ship breaking), import value of ships is used which has been provided by SBP. Note that the import value provided by SBP is based on greater number of ships as compared to number of ships and their relevant tonnage as derived in above table.

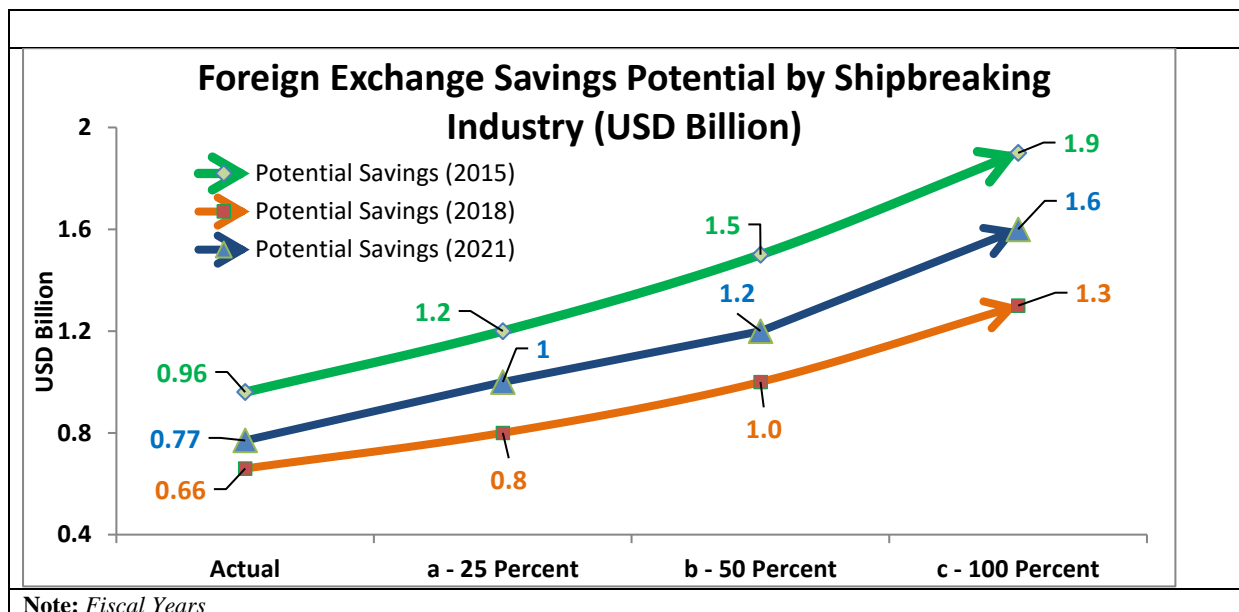
As described earlier imported scrap is another commodity which is used in steel re-rolling as raw material. Due to its high import value and impact on import bill, this has been calculated per MT ton value. This MT value is later used for comparison between two commodities and exhibited in the next figure.



In chart comparison as exhibited in Figure (See annex for details in **Table 11**) of import value of the two commodities clearly indicates that scrap obtained from shipbreaking industry is cheaper as compared to imported scrap. The difference in values is actually the savings in terms of foreign exchange outflow of the country in the absence of shipbreaking industry.

The average saving per MT during the last five years is amounted to USD 184 per MT (*max:* in 2022, USD 296; and *min:* in year 20119, USD 122)¹¹. The year 2019-20 is an exception to the trends on account of the pandemic. The overall savings during the last five years is highest in 2022 amounted to over 0.77 billion USD (Highest in 20150.96 billion USD). This also means that incase of *no* shipbreaking and the domestic industry requires to import the same scrap, additional foreign exchange outflow by 2x times will incur of the same amount (saving) at least. Thus, there is a need to increase shipbreaking for further reduction in country’s import bill which is the major focus of the current government. Following assumptions are used to understand the potentiality of the shipbreaking sector enhancement / increase:

- 1- If we increase scrap collection in shipbreaking by 25 percent, we will be saving USD ranging from, 0.8 billion USD minimum to a maximum of 1.2 billion USD, **or**
- 2- If we increase scrap collection in shipbreaking by 50 percent, we will be saving from USD 0.8 billion to USD 1.5 billion, **or**
- 3- If we double the shipbreaking, we will be saving from a minimum of USD 1.3 billion to a maximum of approx. USD 2.0 billion.



The Illustration of above scenarios and estimations not only intends to understand the potential contribution of shipbreaking industry but also provide alternate perspective for public policy decisions to improve fiscal deficit and ease off negative trade balance and balance of payments of Pakistan. All calculations above only provide estimates of “import value of scrap” which should not be taken as purchase/input price of scrap for re-rolling mills (or other users and beneficiaries).

¹¹ The year 2019-2020 is considered to be exception because of pandemic COVID-19, so excluded from the analysis.

Issues to the Shipbreaking Industry

Labour Issues and Lack of Legislation

The ship-breaking industry at Gadani, Balochistan has been declining due to labour rights exploitation by the employers, non-implementation on the internationally accepted labour standards and the criminal negligence of the government and its authorities. Oil tanker tragedy in Gadani, caused on November 1, 2016, in which 29 workers were killed, it is the clear indication of non-adherence of labour standards.¹²

In the beginning of 2017, five workers lost their lives in another explosion of a tanker. This led to a moratorium on the import of tankers for 2017 imposed by the government – yet the ban has been reportedly lifted in the spring of 2018, without concrete measures in place to prevent the reoccurrence of these tragedies.

As in India and Bangladesh, the yards in Gadani operate directly on the beach. Most of the shipbreaking workers in Gadani are migrant workers from the poorest regions of Pakistan.¹³

They do not get the facility of paid weekly holiday and double rate overtime, as their employment and wages are not regulated under any law.

Union Issues

There exists an Illegal Jammadari labour contract system where a Jammadar (the labour contractor) had made a fake labour union, it's been claimed that a single referendum had been conducted to elect the collective bargaining agent (CBA) since the past fifty years. Also reported is that the fake labour union collecting contributions from workers.¹⁴

Efforts by Unions and other organisations

Workers' bodies had already submitted a draft bill on ship breaking to get labour laws implemented in ship breaking sector. Seeing no progress, preparation is being done to file a petition in the Supreme Court (SC) consulting with the leading lawyer and ex-president of SC Bar Association, Justice (r) Rashid A Rizvi on the matter¹⁵

Environmental Concerns

The experts also mentioned that the country needs to strengthen safety and environmental standards for its ship breaking industry on the face of new rules being compiled through the European Commission for Asian ship-breaking industry to ensure compliance with its criterion by 2019.¹⁶

“Ship owners should be held accountable. They carelessly sell vessels to cash buyers that bring the ships to the Pakistani yards. The high profit margin is a clear indicator of destination: the higher the price, the worse the yard”, says Ingvild Jenssen, Director of NGO Shipbreaking Platform. “We are concerned over the political clout ship owners seem to enjoy:

¹² <https://nation.com.pk/16-Apr-2018/ship-breaking-industry-on-decline>

¹³ <https://safety4sea.com/the-problems-of-shipbreaking-in-pakistan/>

¹⁴ <https://dailytimes.com.pk/317519/thousands-of-ship-breaking-workers-suffering-due-to-govts-apathy/>

¹⁵ *ibid*

¹⁶ <http://www.pakistaneconomist.com/2018/07/16/shipbreaking-review-pakistan-against-its-neighbors/>

Greek owners alone are responsible for 1/3 of the ships that are currently beached in Gadani, yet Greece is pushing hard to undermine European laws aimed at improving practices globally.”¹⁷

Challenges and Threats

As much as the business is lucrative it is attracting international agencies to strengthen the laws and regulations related to shipbreaking. The regulations deal with every step involved in recycling of ships starting from buying of ship, its cutting process, labour safety and compensation, and environmental hazards.

South Asian countries for long have been admonished for their malpractices, and so is the case with Pakistan. However, amid competitions India and Turkey are taking steps to improve their processes. Indian ship breakers are taking initiatives to get ISO certifications and EU’s approval to get included in “Approved yards for ship breaking for EU-flagged ships”. All yards included on the list have to fulfil strict environmental and safety requirements set out in the EU regulation, thereby granting the yards exclusive access to the recycling of end-of-life ships flying the flags of European Union members. In its latest version, published in November 2020, the European List of ship recycling facilities currently contains 43 yards. 34 of the said yards are situated in Europe, 8 in Turkey and 1 yard in the USA. Several yards on the European List are also capable of recycling large vessels.¹⁸

When we tried to get pulse for apparent disinterest of Pakistani shipbreakers in getting standardized certifications and approvals it brought to light 3 pivotal administrative issues.

1- Uncertainty of lease

Shipbreakers get yards on “yearly lease” with no guarantee that they will get the same lease next year. In turn this discourages them to make any investment on the yards.

2- Provision of Basic Amenities

There is no proper infrastructure for provision of basic utilities, which makes yard operations difficult as well as expensive. Whereas unclean water and improper sanitization is causing fatal diseases among workers. There is dire need for government to pitch in and develop infrastructure for basic utilities. However as observed and there further verified that there exists an overlap in jurisdiction of government institutions as a result no one owns the responsibility for infrastructure development. Currently its Balochistan Development Authority (BDA) that oversee administration in Gadani, which itself is struggling due to shortage of funds and misplaced priorities.

¹⁷ <https://gcaptain.com/accidents-prompt-pakistani-officials-to-halt-ship-breaking-activities-at-gadani-yards/>

¹⁸ <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32020D1675&qid=1605170136460>

3- Statistics and Press

During our meeting with Chairman of Shipbreaker Association Pakistan, it was highlighted that there is near to no information about Pakistani shipping industry available, which gives all image building power in hands of international institutions, press and media. The observation is also supported by the case that member of shipbreaking association claims that many yards at Gadani are ISO compliant, but no such claim can be verified by media resources or reliable institution. Whereas, information about India and other countries' shipbreaking industry is easily available on internet.

As much as yards are trying their best to be compliant to international standards and best practices, big shipping companies like Maersk also setting up their own internal compliance protocols in order to be in line with international standards. Maersk has drafted its Responsible Ship Recycling Standard (RSRS) according to which it checks "fitness" of shipyards for recycling of its ships.

Conclusion & Recommendations

Shipbreaking industry because of its low-cost output in the form of steel scrap is considered important for developing nations. Pakistan being one of the developing states should develop plan and policies to modernise and advance shipbreaking sector which will augment feasibility in other sectors. Many developmental and investment projects are in pipeline, for which economists have forecasted increase in demand of steel and iron. In this paper we compared the two resources from where steel re-rolling mills are procuring their raw materials and learned that scrap obtained from shipbreaking is twice (2x times) cheap as compared to direct scrap imports¹⁹.

It is also pertinent to mention that shipbreaking sector directly and indirectly provides employment to most underdeveloped/less-skilled people of the country, which in case of direct import of scrap reduces chances of employment. Employment is the second benefit that we can drive by promoting shipbreaking industry.

From recent global trends it is expected that trade will slows down due to trade war between US and China thus ship breaking activities will increase because older ships are not worth their costs.²⁰ **An opportunity for Pakistan to benefit from the situation and reduce the ballooned foreign import bill in an efficient and meaningful manner.**

¹⁹ Comparison is in import value of commodities, not in buying value for re-rolling mills.

²⁰ <https://www.brecorder.com/2018/10/10/444812/shipbreaking-sector-in-the-graveyard/>

ANNEXURE

	Number of ships dismantled by type of ship					
Financial Year	Bulk Carrier	Cargo	Container Ship	Other	Tanker	Total
2015	83	6	0	3	31	123
2016	86	4	0	2	18	110
2017	66	10	16	2	6	100
2018	45	16	14	10	24	109
2019	10	9	2	14	14	49
2020	8	6	2	4	13	33
2021	44	32	10	10	49	145
2022	12	5	0	20	56	93

Table 5 Number of ships dismantled by type of vessel

	Quantity of ship (in Million GT) dismantled by type of ship					
Financial Year	Bulk Carrier	Cargo	Container Ship	Other	Tanker	Total
2015	3.67	0.06	-	0.03	1.42	5.19
2016	4.11	0.04	-	0.01	0.63	4.78
2017	2.59	0.12	0.87	0.07	0.26	3.92
2018	2.19	0.17	0.55	0.02	2.20	5.12
2019	0.51	0.08	0.04	0.03	0.78	1.44
2020	0.35	0.05	0.08	0.00	0.07	0.56
2021	1.80	0.27	0.21	0.06	1.02	3.37
2022	0.46	0.03	-	0.22	1.82	2.53

Table 6 Quantity of ship (in GT) dismantled by type of ship

	Number of ships dismantled		
Financial Year	NGO Shipbreaking Platform (a)	State Bank of Pakistan / Pakistan Bureau of Statistics (b)	Variation (a-b)/b
2015	123	131	6%
2016	110	124	11%
2017	100	111	10%
2018	109	126	13%
2019	32	44	27%
2020	99	29	241%
2021	119	137	13%
2022	43	135	68%
Total	735	837	12%

Table 7 Number of ships dismantled (variation in data set)

In both data sets actual number of ships-dismantled is varying within the limit up to 13% (see annex Table 7) with exception for the year 2020 and 2022. Based on pessimistic approach we have used NGO's number (as it is lesser than SBP's number) for estimates in the document.

Financial Year	Reusable Material (in GT)					Reusable material-Total
	Bulk Carrier	Cargo	Container Ship	Other	Tanker	
2015	3,597,356	49,451	-	22,071	1,381,411	5,050,289
2016	4,025,827	32,118	-	5,395	606,327	4,669,667
2017	2,542,653	97,333	755,547	59,562	248,715	3,703,810
2018	2,036,657	153,563	511,388	15,063	2,046,722	4,763,394
2019	476,067	78,886	35,622	24,500	727,403	1,342,478
2020	325,239	48,828	74,539	3,634	65,321	517,560
2021	1,672,415	253,217	191,527	60,166	952,708	3,130,033
2022	423,471	27,466	-	207,016	1690,632	2,348,585

Table 8 Reusable Material (in GT)

Financial Year	Value of Scrap (Shipbreaking) per MT		
	Rollable Material as per rules (Million MT)	USD value for ship import (Million USD)	USD value per MT (Scrap from Ship breakage)
2015	4.92	708.5	146.3
2016	4.55	403.4	90.0
2017	3.61	395.4	111.2
2018	4.64	706.1	154.5
2019	1.31	156.5	121.5
2020	0.50	34.4	69.3
2021	3.10	409.6	136.4
2022	2.29	666.7	295.9

Table 9 Value of Scrap (Shipbreaking) per MT

Financial Year	Value of Scrap (Import of Iron and Steel) per MT		
	Quantity Million MT	USD value for scrap import (Million)	USD value per MT (Scrap Import)
2015	3.0	1,043.1	345
2016	4.3	1,087.6	252
2017	4.2	1,120.6	264
2018	5.3	1583.9	300
2019	4.5	1461.0	321
2020	3.9	1521.9	389
2021	4.7	1857.6	394
2022	3.8	2305.0	601

Table 10 Value of Scrap (Import of Iron and Steel) per MT

Financial Year	USD value per MT (Scrap from Shipbreakage) (a)	USD value per MT (Scrap Import) (b)	Difference in value USD (b-a)
2015	146	345	199
2016	90	252	162
2017	111	264	153
2018	155	300	145
2019	122	321	199
2020	69	389	320
2021	136	394	258
2022	296	601	305

Table 11 Comparison of per MT value of scraps

Different Types of Reusable Materials			
Steel & Iron	Sanitary Wares	Cabin Materials	Bunks
Glass	Insulators	Utensils	Refrigerators
Pipes & Fittings	Food Items	Crockery	
Furniture	Cosmetics	Removable Electrical Items	
Beds	Glass Ware	Electronic Appliances	

Table 12 Different Types of Reusable Materials