Measuring the contribution of the maritime industry to Malaysia’s economy

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Abstract

Malaysia is a country that depends heavily on the sea to facilitate much of its trade and economic growth. Despite the undoubted importance of maritime-related activities to Malaysia’s economy, there lacks a reliable, current and easily accessible empirical valuation of the industry’s worth and contribution to the nation’s economy. This study attempts to address this gap by offering a quantitative and qualitative measurement of Malaysia’s maritime industry and its contribution to the nation’s economy. It uses information and data available from credible open sources such as the Bank Negara Malaysia, Department of Statistics Malaysia and maritime industry sources. The study offers a definition of the maritime industry in the maritime context and emphasizes the importance of defining the scope of the industry before undertaking efforts to measure its economic worth. It stresses that the contribution of the maritime industry should also be seen beyond this figure but also its contribution to other indirect and multiplier effects, and its linkages to other industries and infrastructures. Having highlighted these, the study argues in favour of establishing a database to enable policymakers, industry players, investors and scholars to assess the worth and economic contribution of the industry. Such database can be helpful to identify trends in the maritime industry that can lead to opportunities, improvement and optimal allocation of resources and sustained policy support that can take Malaysia’s maritime industry to greater heights and enhance its contribution to the nation’s economy.

Keywords: Malaysia, maritime industry, data, database
Executive summary

Being a country surrounded by seas, Malaysia is highly dependent on the seas to generate economic activities. 95% of our international trade is carried by seaborne transport and our ports are key gateways to this trade. All of our hydrocarbon resources come from offshore sites and oil and gas provide a major source of revenue to the country. The seas also provide fishery resource and generate a host of supporting economic activities such as port operations, marine tourism, shipbuilding / ship repairing, ship management, logistics, financing, trade facilitation and many others that generate income, employment, investment and tremendous multiplier effects to the nation’s economy.

Given its importance to the nation’s socio-economic well-being, it is crucial that the maritime industry gets continuous support from the Government to help it develop in an orderly manner. The Government has already extended all kinds of support to this industry, for example through putting in place policies such as the Cabotage Policy and load entering at Port Klang, designating the shipbuilding / ship repairing sector as a strategic sector, extending financial assistance to shipowners in the form of Shipping Fund, and providing Federal funds to dredge port harbors.

Given that the maritime industry is one that requires huge capital expenditure, astute planning and strong state support to flourish, nothing short of a full commitment by the Government is required to enable Malaysia to optimally harness its potential as a maritime nation and for the maritime industry to enhance its contribution to the nation’s economy. However, the paucity of reliable, current and easily accessible empirical valuation of the industry has hampered efforts to measure its worth and contribution to the nation’s economy.

This study highlights the need to have reliable, current set of data in the maritime industry to be able to come up with an authoritative measurement of its economic value and contribution to the nation’s economy. In this regard, the study emphasizes the need to identify the economic contribution of the maritime industry to further underscore its importance to the Government. By being able to emphasize to the Government key figures such as the revenue generated by the industry, its contribution to the Growth Domestic Product (GDP), the number of jobs it creates and amount of investment it draws, policymakers would be prompted to introduce more incentives to players in the sector and investors will be drawn to the sector on account of its growth potential and commercial attraction.

With such figures available, the Government may even be convinced to designate the maritime industry as a National Key Economic Area as an acknowledgment of its importance to the nation’s economy. This will in turn lead to more favorable policies, greater investment, stronger support and sustained push by the Government to further develop the industry, enhance its contribution to the GDP and make Malaysia a truly world-class maritime nation.

The study quotes a study carried out by Sea Resource Management Sdn Bhd in 2008 that based on 2008 data, it is estimated that the contribution of four major activities in the maritime industry – namely maritime transport, fisheries and aquaculture; offshore oil and gas and renewable energy; and marine and coastal tourism - to Malaysia’s GDP was 22%. It also quoted an input-output study conducted by MIMA and Universiti Pertanian Malaysia published in 1997 that put
the Malaysian maritime sector’s value of production in 1990 at RM32 bil. or 13% of the national total. The study emphasizes the need for these works to be updated to better reflect the contribution of the maritime industry – which encompasses an array of economic activities not covered in the two estimates - to the nation’s economy.

The study recommends the following:

i) **Agreeing on a definition of what constitutes the ‘maritime industry’**. This is crucial first step towards efforts to collect and compile data and statistics on the industry. It would be ideal if a singular definition of the industry can be established and agreed upon by all the stakeholders.

ii) **Ascertaining the full impacts of the maritime industry to Malaysia’s economy**. In this regard, it is important to obtain both the quantitative and qualitative impacts of the industry to the economy encompassing direct, indirect, induced and multiplier impacts.

iii) **Doing a stock-take of what data is available and not available in the maritime industry**. By listing the data available and the ‘known unknowns’, the task of determining what data needs to be acquired can be made easier.

iv) **Establishing a database of Malaysia’s maritime industry**. Having identified the available data (and their sources) and the data gaps in the industry, the task of constructing a database for the maritime industry will become easier. Such a database should be easily accessible, regularly updated, accurate and have user-friendly features to benefit the stakeholders in the maritime industry.

v) **Setting up a satellite account for the maritime industry**. The idea behind establishing such an account is to ‘separate’ and distinguish the maritime economic activities industry from key national figures. Such a satellite account has been set up for the tourism industry, a major revenue earner for Malaysia, which contains various statistics on the industry such as expenditure for outbound and inbound tourism, production accounts and employment.

The study concludes that having undisputable empirical evidence of the worth and economic contribution of the maritime industry will add more credibility to the known fact that the maritime industry is pivotal to Malaysia’s economy. It stresses that Malaysia needs astute planning, optimal resource allocation and good policies to face current and future issues and challenges in the maritime industry and to ensure it retains and enhances its competitiveness as a maritime nation. Having comprehensive, precise and current data on the maritime industry will convince the Government to give it the necessary policy push and support, and will affirm the importance of industry to the nation’s economy.
1. Introduction

The sea is vital to Malaysia’s economic wellbeing and national interests. An estimated 95% of its trade (by volume) is carried through seaborne means.\(^1\) Activities related to the carriage of cargos such as shipping and port operations, including a wide range of supporting activities; offshore oil and gas exploration and production; and marine tourism provide the pillars to the nation’s economic growth and prosperity. In addition, its marine living resources provide a key source of protein for its population and generate economic activities such as fisheries, mariculture and seafood processing. In addition, the defence of Malaysia’s maritime zones is key to its national security and strategic interests.

Despite the sea’s undoubted importance to Malaysia’s economy, there lacks a national master plan to develop the sector in a strategic, sustained and comprehensive basis over the long term. One of the reasons for this is the lack of credible and authoritative measurement of the economic worth and value of the maritime sector and its contribution to the economy. The lack of authoritative estimate of the value and worth of the maritime industry to the nation’s economy has to an extent contributed to the industry being under-appreciated by policymakers.\(^2\)

This, to a large extent, can be attributed to the paucity of latest, user-friendly and easily accessible statistics on the sector. For some maritime-related activities such as maritime financing, legal services and maritime education and training, national data on revenue generated is simply not available. This poses a constraint on any effort aimed at quantifying the economic performance or contribution of the sector in the national economy, and hence impedes efforts to develop the sector in a comprehensive and sustained manner.

A study attempting to measure Malaysia’s maritime economy was conducted in 1995 by MIMA and Universiti Pertanian Malaysia. The study provided the first approximation of the economic contribution of the sector, stating that the maritime industry’s value of production in 1990 was RM32 bil. which constituted 13% of the total.\(^3\) With the passing of time, the maritime industry has enlarged its scope of activities and has contributed greatly to the nation’s economy. As such, there is a need to do a follow-up study to assess the worth and contribution of the industry to the economy that will reflect its economic importance to Malaysia.

1.1 Problem statement

There is a dearth of reliable and authoritative data and information on the worth of the Malaysian maritime industry and its contribution to the economy. To a large extent, this can be attributed to the lack of comprehensive, specific and timely statistics and data on various economic activities that use the sea as intermediary or are generated from marine resources. This poses an impediment to efforts to quantify the value of the maritime industry, which could be helpful to the industry’s stakeholders.

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\(^2\) This was the common opinion heard during the Seminar on Assessing the Contribution of the Maritime Industry to Malaysia’s Economy organized by MIMA at its premise on 23 July 2012.

\(^3\) See Abdul Rahman, A. A. et al (1997). The maritime economy of Malaysia. Kuala Lumpur : MIMA. 53. However, RM13 bil. or 5% of this figure was attributable to the petroleum industry, petroleum products and coal.
1.2 Objectives

The objectives of this study are as follows:

- To quantify the proportionate share of the maritime sector and its interrelationship with the rest of the economy
- To elucidate the economic implications of the sector to national growth and development stemming from its structural interdependence
- To provide to the Government useful information on the prevailing and prospective role of the maritime sector

1.3 Significance of the study

This study is carried out based on the prompting of MIMA’s stakeholders who see the need to come up with a figure or a set of figures – for example in terms of percentage of contribution to the GDP, revenues generated and number of jobs provided - to ascertain the contribution of the maritime industry to Malaysia’s economy. Such authoritative figure will be useful for stakeholders in the industry to support their effort in requesting for assistance and incentives, to prompt the Government to allocate more resources and provide more support to the industry and to support efforts to attract investors and financing to the industry.

The findings of this study will provide information on the economic viability and potential for returns of the maritime industry and the sub-sectors within it. Such information will undoubtedly be useful in developing a picture of the economic worth of the industry and in efforts to come up with a comprehensive policy to develop the nation’s maritime industry.

1.4 Methodology

The methodology involved in this study include:

i) Data collection from primary and secondary sources

ii) Literature review on works carried out to assess the economic worth and contribution of the maritime industry and various activities within the industry.

iii) Interviews with officials from the government agencies, academicians, and other stakeholders of the maritime industry.

iv) Information obtained from a Seminar on Assessing the Contribution of the Maritime Industry to Malaysia’s Economy organized by MIMA at its premise on 23 July 2012.
1.5 Limitation

It is beyond the scope and short duration of this study to come up with a full-scale and comprehensive assessment of the worth and economic contribution of the maritime industry. These and the lack of detailed and recent statistics and data did not enable the author to come up with an ultimate number indicating the value (in Ringgit Malaysia terms) of the maritime industry and its contribution (in percentage terms) to Malaysia’s economy. However, it is hoped that its findings and deliberations will be able to provide valuable leads for other researchers and pave the way for more in-depth exploration on the subject.

2. The importance of the sea and the maritime industry to Malaysia

Malaysia is essentially a maritime nation. Its sea area, by virtue of an extended Exclusive Economic Zone, is larger than its land mass. Even on the map, Malaysia’s unique maritime feature and extensive coastlines stand out. Not many countries in the world can boast having two land areas separated by the sea in the way Peninsular Malaysia is separated from Sabah and Sarawak. Malaysia’s history and progress have been profoundly shaped by the seas surrounding it and they continue to have tremendous influence on its socio-economic and strategic interests.

The economic importance of the sea to Malaysia lies in the activities that are generated using the sea as an intermediary and the living and non-living resources above and on the seas and under the seabed. The nation lies in the middle of two of the world’s busiest and most strategic shipping and seaborne energy trade routes, namely the Straits of Malacca and the South China Sea. The sea provides connectivity to Malaysia’s trade-dependent economy with its markets and trading partners, hence important to the nation’s economic development. Today, an estimated 95% of Malaysia’s trade (by volume) is carried in whole or in part by seaborne transport. On this score alone, the importance of the sea as a key facilitator of trade cannot be understated in the context of the nation’s socio-economic development.

The oil and gas and energy sector is mainstay of the nation’s economy and contributed 20% to the national GDP. The riches of its offshore oil and gas sites have made Malaysia a centre for deepwater exploration and production in South East Asia. According to US Energy Information Administration, Malaysia holds the third largest crude oil reserves in the Asia Pacific region with 4 bil. barrels of proven oil reserves and has the world’s 10th largest gas reserves with 83 tril. cubic feet of proven reserves, almost all of which are located offshore. Also to underscore the importance of the oil and gas industry to the nation, and therefore its maritime resources, there would be a shortfall of 1% of the national budget should Petronas pay RM2 bil. less dividends to

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4 While there is no authoritative definition of a ‘maritime nation’ in the literature, a maritime nation, in the context of this study, is defined as a nation which is surrounded by or borders the sea which is influential in shaping the socio-economic landscape of the nation. Such a nation optimally harnesses its maritime features and resources to generate economic activities, which contribute significantly to its economy, and to attract investment.


the Government, as pictured by its Chairman in April 2011. The national oil company paid 16.2% of the total dividends of RM185.12 bil. paid to the Government in 2011. Including, royalties and taxes. Petronas paid RM65.5 bil. or 35.5% of the Government’s total revenue in the same year.

The fisheries sector is also an important economic sector by way of its 16% contribution to the nation’s GDP in 2010. In the same year, the fisheries sector contributed RM1.47 bil. or 2.8% to the gross output of the agricultural sector and employed 11,508 people. It is also a key source of foreign exchange and provides an important source of protein supply for the population.

The shipbuilding and ship repair sector is a key contributor to the nation's economy, generating RM7.05 bil. of revenues in 2011 and employing 20,000 people. Ten projects approved in Malaysia related to shipbuilding, ship repairing and related engineering works attracted RM5.978 bil. in that same year. The sector was estimated to be worth RM8 bil. to RM10 bil. in the next five years. It was expected to generate 20,000 employment opportunities by 2020.

In addition to these, the sea also provides transportation, recreation and livelihood to the people, and generates revenue from tourism. Major cities, economic activities and population areas take place near coastal areas. Key installations such as power plants, refineries, regassification terminal, storage tanks, shipyards and naval bases are also located along coastal areas.

The importance of the sea to Malaysia's economy is reflected in several impressive achievements related to the maritime realm. The country can boast having two world-class container ports in Port Klang and Port of Tanjung Pelepas which rank among the world’s top twenty ports by way of throughput handled. Malaysia also has the largest LNG export terminal in Bintulu Port and the largest palm oil port in Johor Port. These and other ports act as gateways to Malaysia’s trade. In the shipping sector, Malaysia has also recorded impressive achievements. It was ranked 20th among the world’s top countries with the largest owned fleets of merchant vessels as of 1 January 2012, with 14.4 mil. DWT (deadweight tonnage) of vessels of 1,000 GT (gross tonnage) and above and contributing 1.04% to the world’s total merchant shipping

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9 Ibid.
10 Ibid.
13 Keynote address by Dato’ Sri Mustapa Mohamed, Minister of International Trade and Industry Malaysia (MITI) during the 2nd National Marine Industries Forum (2NMIF) in Kuala Lumpur on 2 October 2012.
16 Containerisation International ranked Port Klang and PTP 13th and 18th respectively in its list of busiest container ports by volumes handled in 2011. Port Klang handled 9.6 mil. TEU while PTP handled 7.5 mil. TE in 2011.
tonnage. MISC, a global brand name in shipping line, is one of the world’s leading operators of LNG and Aframax tankers.

Huge amount of investment – public and private funds alike - has been poured into the maritime industry to develop ports, passenger terminals, landing facilities, shipyards, shipping companies and supporting infrastructures such as roads, free zones, warehouses and the like. These infrastructures have triggered enormous positive multiplier effects to the economy, helping businesses and industries to flourish, providing employment to many and spurring socio-economic development to their localities and immediate surroundings.

3. Defining the ‘maritime industry’

The attempt to quantify the economic worth of the maritime industry must begin with defining what is ‘maritime industry’ to begin with. There lacks an authoritative definition of this term which, in the assessment of the author, partly contributes to the paucity of dependable information and statistics on economic activities within the maritime realm.

Following feedback from and consultation with stakeholders, and based on the author’s own assessment, the following definition for the term ‘maritime industry’ in the Malaysian context is proposed:

An industry featuring activities that uses the maritime realm – which includes the seabed, sea and airspace above the sea - as an intermediary and generate employment, revenue, investment and positive multiplier socio-economic impacts for the nation. Such activities include manufacturing, services and the extraction of living and non-living resources.

The maritime industry – encompassing a wide range of economic activities in sectors such as cargo transportation and handling; shipbuilding/repairing; fishery; tourism; naval defence; offshore oil and gas; and support services - is crucial to Malaysia’s economic well-being. This is not surprising considering Malaysia is a nation that is surrounded by seas and is highly dependent on trade to power its economic growth. When one considers that an estimated 95% of this trade is carried by ships and almost all of the country’s oil and gas resources – two key sources of revenue - come from offshore, one would not hesitate to say the maritime industry is a pillar of the country’s economy.

This is underscored by the absence of a master plan to develop the maritime industry in a holistic and strategic manner. This is an anomaly for a country which depends heavily on the sea to for its socio-economic wellbeing. Although Malaysia has recorded many achievements in various areas of the maritime industry, it needs to strategize to take to the next level, amid growing competition from other nations to attract business and investment. Malaysia could certainly do with a long-term plan to develop the industry holistically, along the line of the strategic plan

19 Consultation with stakeholders was done during the ‘Seminar on Assessing the Contribution of the Maritime Industry to Malaysia’s Economy organized by MIMA on 23 July 2012 and during a stakeholder meeting to present the findings of this study on 20 December 2012.
introduced by Singapore to make the republic an International Maritime Center and South Korea’s ‘Ocean Korea 21’ strategy to turn its economy into a ‘Blue Economy’.

4. The need to measure the worth and economic contribution of the maritime industry

The adage ‘what is not measured is not done, managed or improved’ holds true in a complex and far-reaching industry like the maritime industry. Without measuring its economic value, the full worth of the maritime industry and its contribution to the economy would not be fully appreciated. As a result, the appropriate policy push could not be given and proper resources could not be allocated to effectively develop, manage and improve this vital industry.

Delivering empirical evidence in the form of an authoritative, credible ‘guesstimate’ of the value of the maritime industry and its contribution to Malaysia’s economy should be a matter of priority. Lack of data is not just a matter of not having the numbers; it could have considerable repercussion to the industry in the long term. The absence of a national maritime policy in Malaysia is one consequence of this. Although it must be pointed out that the Malaysian Government has extended much support to various maritime economic activities - for example by extending financial assistance to shipowners in the form of Shipping Fund, and providing Federal funds to dredge port harbors, promoting marine tourism aggressively and providing assistance to fishermen to increase fish landings – there is a feeling among industry players that more can be done to promote and develop the maritime industry to enhance its contribution to the economy and realize its full potential.

Without comprehensive, accurate data, there is no way to measure its economic value, and without a full understanding and appreciation of its contribution to the nation’s economy, appropriate policies cannot be developed to promote the maritime industry’s growth and take it to greater heights. As result, Malaysia will not be able to become a maritime nation par excellence and realize its full potential.

Having a set of reliable, current and user-friendly data on the maritime industry can be beneficial in many other ways. Other merits of identifying the worth and economic contribution of the maritime industry are:

i) Emphasizing to the Government the importance, worth and growth potential of the maritime industry. In order for the maritime sector to request for more support from the Government – for example in the form of fiscal and tax incentives – industry players must be able to convince the Government of the economic viability and potential for returns of the sector and the sub-sectors within it. Statistics such as the contribution of the maritime sector to the nation’s GDP, employment generated, investment in the sector

To be sure, Malaysia has put in place several policies and a strong institutional framework to develop its maritime industry. These include the policy to make Malaysia a maritime nation, the introduction of Cabotage Policy that reserves the carriage of domestic seaborne trade to local shipowners, and the designation of Port Klang as a National Load Center. MOT, through its Maritime Division, is the lead agency responsible to develop a modern, safe and competitive maritime industry, and can take some credit for Malaysia’s achievements in the port and shipping sectors. However, there is much room for improvement to make Malaysia a truly competitive maritime nation and to optimally harness its features, location, advantages and infrastructures to attain greater heights. Having a blueprint to develop the maritime industry in a systematic way would be a good start.
etc are unavailable. By having these statistics, more informed policy prescriptions can be developed, and this study aims to address this gap.

**ii)** *Underscoring its growth potential to attract investment.* A credible estimation of the worth of the maritime industry and its contribution to the nation’s economy will be helpful to guide investors to assess its value and potential. Attracting investment into the maritime industry is key given that the industry is capital intensive and that Malaysia, as a developing nation, depends on foreign direct investment (FDI) and expertise to develop this key industry. Statistics showing the economic worth and growth potential of the industry will help attract investors to the industry. They will be drawn to the industry on account of the indication provided by a set of figures which underline its growth potential and commercial attraction.

**iii)** *Helping to identify high-income activities within the maritime industry to help realize the goals of New Economic Model.* Another merit of having a realistic estimate of the economic significance of the maritime industry is to help position the industry to meet the goals of the New Economic Model (NEM). Being at the forefront of trade and a key generator of economic activities, the maritime industry should strive to move up the value chain and engage in activities such as naval architecture, maritime financing, consultancy, and legal and tax advisory that can generate high income. There are plenty of such activities in the industry that can and should be promoted, given their potential to enhance its contribution to the nation’s economy. With a reliable approximation of the industry’s actual and potential economic worth, appropriate incentives and strategy can be introduced to promote its development and growth to help realize the goals of NEM.

**iv)** *Making a case for the maritime industry to be designated as a National Key Economic Area.* Based on strong empirical evidences of the sector’s size, the Government may even decide to designate the maritime industry as a National Key Economic Area (NKEA) as an acknowledgment of its importance to the nation’s economy. This will in turn lead to more favorable policies, greater investment, stronger support and sustained push by the Government to further develop the industry, enhance its contribution to the GDP and make Malaysia a truly world-class maritime nation.

**v)** *Guiding policymakers and other stakeholders in allocating resources to develop the industry.* By knowing the economic worth of the maritime industry, the government can allocate the appropriate amount of resources to the industry to plan and develop it to attain greater heights and to be in harmony with other sectors such as financing, trade, infrastructures, human resources and transportation.

**vi)** *Helping to determine the manpower needs of the maritime industry.* Having reliable statistics on various economic activities related to the maritime realm will help to reveal the demand and supply of manpower situation. This in turn will be helpful in

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21 This ambitious economic blueprint aspires Malaysia to become a fully developed nation by 2020. This target requires a transformation of its economy, which entails among others shifting from focusing on producing low-end assembled products to generating value-adding, innovation driven economic activities that lead to higher income to elevate the nation’s per capita income to developed nation levels. All industrial sectors are expected to play their part to help realize this objective.
determining the actions that should be undertaken and the resources that should be allocated to match demand of workforce with supply.

viii) **Pinpointing areas in need of improvement.** Credible data will show what are the areas and aspects within certain sectors and sub-sectors of the maritime industry that are in need of upgrading and development. This will be helpful in guiding policymakers and industry players alike on what level of investment or funding that need to be allocated to address these areas that need improvement. Statistics can also lead to identifying areas in need of enhancement in productivity, efficiency, competitiveness and cost reduction. This will eventually lead to efforts, policies and incentives to address them.

ix) **Helping to build an understanding of the synergy, linkages and functionalities between the maritime industry and other industries and economic activities.** This is crucial in order to construct a ‘big picture view’ of the maritime industry and its relation with other economic activities and industries. It can also help policymakers and industry players understand the trends in the industry and identify the opportunities that can be reaped, and improve areas of weaknesses.

5. **Statistics related to the maritime industry**

It can be ascertained from a review of national data available in publications by Bank Negara Malaysia (BNM), Department of Statistics Malaysia (DOS), Economic Planning Unit (EPU) and Ministry of International Trade and Industry (MITI) that there are few specific statistics on the maritime industry. Among the key economic activities in the industry, only the oil and gas industry; marine fishery and aquaculture sector; and port operations have what can be described as easily accessible data. Other activities related to the maritime realm are not as easily available. The word ‘maritime’ is nowhere to be seen in key statistics, for example in those related to the performance of the services sector in which all modes of transport are ‘lumped’ together to make up the entry under ‘Transport’. However, these figures stand out in an industry in which statistics collection is not always a matter of priority to those who are involved in it. There is a dearth of comprehensive, periodically collected and reliable data such as:

- number of people employed in the industry
- tax revenues collected by the Government from companies in the maritime industry
- number, type and capacity of vessels built at local shipyards
- number of students enrolled in local maritime education and training institutes (MET)
- amount of financing disbursed to local shipowners, port operators, shipyards, MET and maritime support service providers
- contribution, size and worth of the maritime support services sector in activities such as maritime education and training, ship management and equipment manufacturing
- revenues generated from Malaysian companies and professionals providing maritime-related services abroad
- the worth of the naval defence sector
- the value of indirect and multiplier effects generated by the maritime industry
There are empirical data and statistics on various sub-sectors in the maritime industry - for example in the shipping, port and oil and gas sectors – that can be obtained from various sources. Certain data such as port throughput and the number, type and capacity of locally registered vessels are available and compiled in regular intervals. Take port throughput figures, for example: terminal operators report volumes of cargos handled to port authorities which in turn feed the figures to the Ministry of Transport Malaysia (MOT). These figures will eventually be compiled and released as the official figures indicating Malaysian ports’ performance. MITI has figures on value of investment approved for the shipbuilding/ship repairing sector.

Even in shipping, which facilitates much of the nation’s trade, the data available is not comprehensive enough to enable its worth to be valued and prospect to be assessed. Data on number and capacity of ships registered in Malaysia in a given year can be obtained from Marine Department Malaysia while data such as number of licenses issued for domestic shipping is compiled by the Domestic Shipping Licensing Board, MOT. However, data such as the value of trade carried by ships registered under the Malaysian flag, the revenues earned by local shipping companies and the amount invested for fleet expansion in a given year – is not readily available.

Credible data on the shipping sector comes from shipping associations. Malaysia Shipowners Association (MASA) has data on number and capacity of ships of its members. OSV Malaysia, the association of offshore support vessel (OSV) owners, showed that as at end of 2011, the association had 17 companies as members with a combined fleet strength of 198 vessels worth RM10 billion and its members generated a total revenue of RM15 billion in 2011 and provided employment to 12,000 people.22 It is hoped that such data will be regularly updated and expanded, and that other industry associations in Malaysia compile similar data on their respective activities.

The following are several data available from open sources which are shown to highlight the absence of specific data related to the maritime industry. In Table 1, five key contributors to the nation’s GDP (preliminary for 2011, forecast for 2012) are shown which reflect their size and importance. However, the maritime industry is not listed. If indeed it is as important and prominent as the others, it certainly would not be left out from such a key statistic.

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22 Personal communication with Capt Tasripin Masotee, President of OSV Malaysia on 23 July 2012.
Table 1
Malaysia’s real GDP by sector

<table>
<thead>
<tr>
<th>Sector</th>
<th>2011p</th>
<th>2012f</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Annual change (%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Agriculture</td>
<td>5.6</td>
<td>3.8</td>
</tr>
<tr>
<td>Mining &amp; quarrying</td>
<td>-5.7</td>
<td>0.6</td>
</tr>
<tr>
<td>Manufacturing</td>
<td>4.5</td>
<td>3.9</td>
</tr>
<tr>
<td>Construction</td>
<td>3.5</td>
<td>6.6</td>
</tr>
<tr>
<td>Services</td>
<td>6.8</td>
<td>5.1</td>
</tr>
<tr>
<td><strong>Real GDP</strong></td>
<td>5.1</td>
<td>4.0 – 5.0</td>
</tr>
</tbody>
</table>

*p*: Preliminary / f: Forecast

Source: Department of Statistics Malaysia & Bank Negara Malaysia

The same is seen in Table 2 which shows Malaysia’s services sector performance at constant 2000 prices. The highlighted part on ‘Transport and storage’ does not break down the figure into various modes of transport. The entry highlighted in blue, ‘Finance and insurance’ also reveals nothing about the portion of the maritime industry. Likewise, it would be helpful to have a breakdown of the ‘sea component’ part in the entry highlighted in pink, ‘Accommodation and restaurant’, to know immediately how much of this was contributed by beach and island resorts and eateries.
### Table 2

Malaysia’s services sector performance at constant 2000 prices

<table>
<thead>
<tr>
<th></th>
<th>2010</th>
<th>2011p</th>
<th>2010</th>
<th>2011p</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Annual change (%)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Services</td>
<td>6.8</td>
<td>6.8</td>
<td>57.7</td>
<td>58.6</td>
</tr>
<tr>
<td>Intermediate services</td>
<td>7.2</td>
<td>6.2</td>
<td>25.2</td>
<td>25.5</td>
</tr>
<tr>
<td>Finance and insurance</td>
<td>6.4</td>
<td>5.9</td>
<td>11.7</td>
<td>11.8</td>
</tr>
<tr>
<td>Real estate and business services</td>
<td>7.8</td>
<td>6.3</td>
<td>5.5</td>
<td>5.5</td>
</tr>
<tr>
<td><strong>Transport and storage</strong></td>
<td>6.9</td>
<td>5.3</td>
<td>3.8</td>
<td>3.8</td>
</tr>
<tr>
<td>Communication</td>
<td>8.5</td>
<td>7.6</td>
<td>4.2</td>
<td>4.3</td>
</tr>
<tr>
<td>Final services</td>
<td>6.5</td>
<td>7.3</td>
<td>32.4</td>
<td>33.1</td>
</tr>
<tr>
<td>Wholesale and retail trade</td>
<td>8.0</td>
<td>7.6</td>
<td>13.6</td>
<td>13.9</td>
</tr>
<tr>
<td>Accommodation and restaurant</td>
<td>5.0</td>
<td>5.2</td>
<td>2.4</td>
<td>2.4</td>
</tr>
<tr>
<td>Utilities</td>
<td>8.2</td>
<td>3.0</td>
<td>3.0</td>
<td>3.0</td>
</tr>
<tr>
<td>Government services</td>
<td>5.8</td>
<td>11.6</td>
<td>7.5</td>
<td>8.0</td>
</tr>
<tr>
<td>Other services</td>
<td>4.0</td>
<td>4.1</td>
<td>5.9</td>
<td>5.8</td>
</tr>
</tbody>
</table>

P: Preliminary (Note: Numbers may not necessarily add up due to rounding)

Source: Department of Statistics Malaysia

Table 3 provides another illustration of the absence of specific maritime data in key statistics. The table shows the performance of Malaysia’s manufacturing sector in 2010 and 2011. The part highlighted in yellow, ‘Transport and equipment’ does not show the maritime industry’s portion, hence the significance of Malaysia’s exports of vessels is lost. Likewise, the entry in blue, ‘Fabricated metal products’ also does not reveal the shipbuilding sector’s share.

---

23 Malaysia exported 3,216 units of ships, boats and floating structures worth RM2,195 bil. in 2010, according to the Department of Statistics Malaysia.
<table>
<thead>
<tr>
<th></th>
<th>2010</th>
<th>2011</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Value-added (RM million at 2000 prices)</td>
<td></td>
</tr>
<tr>
<td><strong>Overall Manufacturing Production</strong></td>
<td>11.4</td>
<td>4.5</td>
</tr>
<tr>
<td><strong>Export-Oriented industries</strong></td>
<td>11.1</td>
<td>4.7</td>
</tr>
<tr>
<td><strong>Electronics &amp; electrical products cluster, of which:</strong></td>
<td>9.7</td>
<td>3.4</td>
</tr>
<tr>
<td>Electronics</td>
<td>17.4</td>
<td>-3.6</td>
</tr>
<tr>
<td>Electrical products</td>
<td>3.1</td>
<td>-11.7</td>
</tr>
<tr>
<td><strong>Primary-related cluster, of which:</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Chemicals and chemical products</td>
<td>5.7</td>
<td>7.4</td>
</tr>
<tr>
<td>Petroleum products</td>
<td>11.5</td>
<td>8.8</td>
</tr>
<tr>
<td>Rubber products</td>
<td>-2.4</td>
<td>6.2</td>
</tr>
<tr>
<td>Off-estate processing</td>
<td>20.8</td>
<td>13.9</td>
</tr>
<tr>
<td><strong>Domestic-oriented industries</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Consumer-related cluster, of which:</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Transport equipment</td>
<td>18.9</td>
<td>17.6</td>
</tr>
<tr>
<td>Food, beverage &amp; tobacco products</td>
<td>15.0</td>
<td>23.8</td>
</tr>
<tr>
<td><strong>Construction-related cluster, of which:</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Construction-related products</td>
<td>13.4</td>
<td>2.6</td>
</tr>
<tr>
<td><strong>Exports</strong></td>
<td>12.6</td>
<td>3.4</td>
</tr>
</tbody>
</table>

1 Production data are based on the new Industrial Production Index (2005=100)

Source: Department of Statistics Malaysia
Another example is shown in Table 4 on Malaysia’s services and income accounts and Table 5 on NKS by types of economic activity and asset class in 2010. Table 4 and Table 5 contain information which is useful indicators of the importance of the entries to the economy and also their growth potential. Once again, the maritime components are not immediately known, as seen in the entries on ‘Transportation’ and ‘Transport equipment’ in those tables highlighted in yellow and blue respectively. Those wanting to get a quick preview of the value and potential of the maritime industry will not be able to do so by just sighting these two tables owing to the absence of the maritime components in the data presented.

Table 4

Services and income accounts

<table>
<thead>
<tr>
<th></th>
<th>2010</th>
<th>2011p</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>RM billion</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Net</td>
<td>+</td>
</tr>
<tr>
<td>Services Account</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Transportation</td>
<td>-23.2</td>
<td>14.8</td>
</tr>
<tr>
<td>Travel</td>
<td>33.3</td>
<td>55.9</td>
</tr>
<tr>
<td>Other services</td>
<td>-8.0</td>
<td>36.1</td>
</tr>
<tr>
<td>Government transaction n.i.e.</td>
<td>-0.5</td>
<td>0.3</td>
</tr>
<tr>
<td>Income Account</td>
<td>-26.5</td>
<td>52.0</td>
</tr>
<tr>
<td>Compensation of employees</td>
<td>-2.1</td>
<td>3.6</td>
</tr>
<tr>
<td>Investment income</td>
<td>-24.4</td>
<td>48.4</td>
</tr>
<tr>
<td>Direct investment</td>
<td>-30.8</td>
<td>28.7</td>
</tr>
<tr>
<td>Portfolio investment</td>
<td>-6.9</td>
<td>2.4</td>
</tr>
<tr>
<td>Other investment</td>
<td>13.2</td>
<td>17.4</td>
</tr>
</tbody>
</table>

n.i.e. Not included elsewhere / p Preliminary / Note: Numbers may not necessarily add up to rounding

Source: Department of Statistics Malaysia
New Capital Stock (NKS)\textsuperscript{24} by types of economic activity and asset class in 2010 at constant 2000 prices

<table>
<thead>
<tr>
<th>NKS (RM billion)</th>
<th>Agriculture</th>
<th>Mining</th>
<th>Manufacturing</th>
<th>Construction</th>
<th>Services</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Structures</td>
<td>7.1</td>
<td>14.3</td>
<td>65.2</td>
<td>4.2</td>
<td>566.8</td>
<td>657.5</td>
</tr>
<tr>
<td>Transport equipment</td>
<td>0.5</td>
<td>0.0</td>
<td>8.1</td>
<td>1.4</td>
<td>40.7</td>
<td>50.6</td>
</tr>
<tr>
<td>Machinery and equipment</td>
<td>1.0</td>
<td>27.8</td>
<td>115.9</td>
<td>1.8</td>
<td>49.4</td>
<td>195.9</td>
</tr>
<tr>
<td>Other assets</td>
<td>8.6</td>
<td>94.3</td>
<td>0.0</td>
<td>0.0</td>
<td>0.9</td>
<td>103.7</td>
</tr>
<tr>
<td>Total</td>
<td>17.2</td>
<td>136.4</td>
<td>189.1</td>
<td>7.4</td>
<td>657.7</td>
<td>1,007.8</td>
</tr>
</tbody>
</table>

Note: “Other assets” includes livestock, capital planting and mineral exploration activity. Numbers may not necessarily add up due to rounding.

Source: Department of Statistics Malaysia

Last but not least, Chart 1 and Chart 2 which show Malaysia’s major exports and imports in 2011 respectively also underline the non-recognition in key statistics of the importance of the maritime industry to the nation’s economy. The industry could easily be acknowledged as a major industry and warrant to be categorized in the nation’s exports and imports figures and other key economic indicators.

By specifying the industry’s portion in the exports statistics, one can quickly put into perspective its contribution to the economy in terms of its portion to the GDP. By mentioning the maritime industry in the imports statistics, one can immediately realize how much foreign exchange outflow that Malaysia incurs from its reliance on foreign-made equipment such as ships, machineries, equipment and systems, and on services such as marine insurance and financing which when combined have caused quite a dent in the nation’s Balance of Payments over the years.

\textsuperscript{24} The capital stock of a nation represents the total quantity of capital assets available for the production of goods and services. The size and growth of this capital stock are crucial on the production capabilities of the country’s economy.
Chart 1: Malaysia’s major exports, 2011

Source: Department of Statistics Malaysia
This is the argument behind establishing the economic worth of the maritime industry beyond mere qualitative pronouncements. One can make a stronger case for the industry to be promoted as aggressively as other mainstay revenue earners for the country such as manufacturing, finance and tourism is one can show a convincing and current set of empirical data of the industry. It would be ideal for Malaysia, as a maritime nation and one that depends so heavily on its sea to facilitate much of its trade and generate economic growth, employment and investment, to categorize the maritime industry as a key industry that can be mentioned along the likes of electrical/electronics, agricultural and manufacturing.

Admittedly, there is only so much that such statistics can show but if the maritime industry were to be taken seriously, it needs to be able to ‘show’ itself more prominently, especially in the form of empirical data. Reliable, updated data can be a useful tool with which the industry can ‘advertise’ itself and be as visible with other established industries and sectors in the economy.
To be fair, there are national statistics available from open sources which are specific to the maritime industry. They are mainly on mainstay areas such as fisheries, offshore oil and gas, and shipbuilding. Examples are shown in Table 6 on Malaysia’s imports and exports by commodity divisions (by value), Table 7 on Malaysia’s imports and exports by commodity groups (also by value), and Table 8 on Malaysia’s exports of major and selected commodities.

**Table 6 : Malaysia’s imports and exports by commodity divisions (RM’000)**

<table>
<thead>
<tr>
<th>COMMODITY DIVISION (based on Department of Statistics Malaysia codes)</th>
<th>EXPORTS FOB (free on board)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>DEC</td>
</tr>
<tr>
<td></td>
<td>2010</td>
</tr>
<tr>
<td>003 FISH, CRUSTACEANS AND MOLLUSCS, AND PREPARATIONS THEREOF</td>
<td>260,585</td>
</tr>
<tr>
<td>033 PETROLEUM, PETROLEUM PRODUCTS AND RELATED MATERIALS</td>
<td>5,498,479</td>
</tr>
<tr>
<td>034 GAS, NATURAL AND MANUFACTURED</td>
<td>3,800,648</td>
</tr>
<tr>
<td>079 OTHER TRANSPORT EQUIPMENT</td>
<td>294,476</td>
</tr>
</tbody>
</table>

*Source : Department of Statistics Malaysia*

**Table 7 : Malaysia’s imports and exports by commodity groups (RM’000)**

<table>
<thead>
<tr>
<th>COMMODITY GROUPS</th>
<th>EXPORTS FOB</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>DEC</td>
</tr>
<tr>
<td></td>
<td>2010</td>
</tr>
<tr>
<td>034 FISH, FRESH, CHILLED OR FROZEN</td>
<td>61,493</td>
</tr>
<tr>
<td>035 FISH, DRIED, SALTED OR IN BRINE; SMOKED FISH</td>
<td>1,979</td>
</tr>
<tr>
<td>036 CRUSTACEANS &amp; MOLLUSCS, FRESH, CHILLED, FROZEN, SALTED OR IN BRINE OR DRIED</td>
<td>170,342</td>
</tr>
<tr>
<td>037 FISH, CRUSTACEANS AND MOLLUSCS PREPARED OR PRESERVED, N.E.S</td>
<td>26,771</td>
</tr>
<tr>
<td>793 SHIPS, BOATS (INCLUDING HOVERCRAFT) AND FLOATING STRUCTURES</td>
<td>48,065</td>
</tr>
</tbody>
</table>

*Source : Department of Statistics Malaysia*
Table 8: Malaysia’s exports of major commodities – Average unit value and contribution

<table>
<thead>
<tr>
<th>TYPE OF COMMODITIES</th>
<th>JAN – DEC 2010</th>
<th>% OF TOTAL</th>
<th>JAN – DEC 2011</th>
<th>% OF TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>FOB UNIT VALUE</td>
<td></td>
<td>FOB UNIT VALUE</td>
<td></td>
</tr>
<tr>
<td>CRUDE PETROLEUM (RM PER TONNE)</td>
<td>1,879.0</td>
<td>4.8</td>
<td>2,557.2</td>
<td>4.6</td>
</tr>
<tr>
<td>PETROLEUM PRODUCTS (RM PER TONNE)</td>
<td>2,122.9</td>
<td>4.0</td>
<td>2,712.2</td>
<td>4.8</td>
</tr>
<tr>
<td>LIQUEFIED NATURAL GAS (RM PER TONNE)</td>
<td>1,687.8</td>
<td>6.1</td>
<td>2,010.7</td>
<td>7.2</td>
</tr>
<tr>
<td>MARINE PRODUCTS</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PRAWNS, FRESH, FROZEN (RM PER TONNE)</td>
<td>16,644.7</td>
<td>0.2</td>
<td>19,007.8</td>
<td>0.2</td>
</tr>
</tbody>
</table>

Source: Department of Statistics Malaysia

6. Findings and analysis

The key findings of this study are as follows:

i) Based on 2008 data, it is estimated that the contribution of four major activities in the maritime industry – namely maritime transport, fisheries and aquaculture; offshore oil and gas and renewable energy; and marine and coastal tourism - to Malaysia’s GDP was 22%. As sizeable as this contribution may appear, it does not tell the whole story of the true worth and economic contribution of the maritime industry. When one considers the range of activities in the maritime industry other than these four, one can easily imagine how big the entire industry’s contribution to the economy and its value is.

ii) There is a glaring deficiency of data on the economic worth, role and contribution of the maritime industry to Malaysia’s economy. Anyone looking for a set of comprehensive data or information about the Malaysian maritime industry would be hard-pressed. There is no one-stop source where data on the industry can be easily obtained. The lack of data poses a constraint to efforts to quantify the economic worth of the industry, and hampers its promotion and development.

25 This estimate was based on a study by Sea Resource Management Sdn Bhd, a Malaysian-based outfit which provides marine consultancy services to governments, inter-governmental organizations and the private sector. The study is not available in the public domain but it used data from official sources such as DOS and credible methodology and assumptions. It valued the contribution of those four major activities to Malaysia’s GDP in 2008 at 22% and worth an estimated RM148 bil and assumed that the GDP in 2008 was RM682.5 bil. Malaysia’s actual GDP at purchaser’s value in 2008 was RM530.68 bil. See EPU (2012). The Malaysian economy in figures, 2011. Available at <http://www.epu.gov.my/c/document_library/get_file?uuid=2a3fa385-4dfe-4183-a638-f94c18c5f694&group_id=34492> (retrieved on 2012, November 8).
iii) The worth and economic contribution of the maritime industry in Malaysia is underappreciated. From the literature reviewed, direct observations, analysis of available data and information, and interviews with stakeholders, it can be ascertained that the maritime industry encompasses a wide range of activities beyond the 'obvious' ones such as trade facilitation, shipbuilding/repairing, resource mining, fishery and tourism. When extended beyond the 'traditional' scope of these activities, one discovers a stunning range of other activities that support and facilitate those key activities. They include material sourcing, manufacturing, transporting, training/education, research, warehousing, distribution and management of human capital and the maritime supply chain. These activities may be carried out internally by those providers or outsourced to third parties. There is also a lack of understanding of the forward and backward linkages between the maritime industry and other industries and economic activities, which is manifested in the absence of a synergy in the planning and development of maritime infrastructures and activities with others.

iv) Key national economic figures do not have a breakdown of the maritime component. Statistics shown earlier show either single figures that do not reveal the maritime components of those figures (for example on 'Transportation') or figures on maritime economic activities which do not show a detailed account of other activities in the industry relevant to the statistics. This makes it difficult to immediately ascertain the worth of the maritime components related to the information presented.

v) Few, if any, follow-up studies, have been carried out to assess the maritime industry's contribution to Malaysia's economy. Apart from the study by Rahman, et al. (1997), which was not without its limitations and flaws, and the study by Sea Resource Management Sdn Bhd in 2008, there has been a paucity of serious and extensive work on this subject. This needs to be addressed by all stakeholders concerned, not just the research community/academia and statisticians. A concerted effort must be undertaken by all interested parties to address the paucity of data in the maritime industry by carrying out a complete assessment of the data situation and come up with an empirical assessment of the industry's economic worth.

vi) There lacks understanding and appreciation of the extensive impacts of the maritime industry to the economy. The major impacts of the industry are in terms of the revenues it generates in the form of tax to the government, the employment it creates, the investment it attracts and the trade, industries and business activities it facilitates. However, there are many more indirect impacts that the industry creates and generates, including spillover benefits and multiplier effects. The identification of these impacts will help develop better comprehension of the extent of the maritime industry across the nation's economy.

26 The authors acknowledged that the technique used in the study, namely the input-output method, and the model used was based on current flows and assumed fixed technological coefficient. The model also did not allow for substitutions among factors of production and other difficulties involved in the adoption of a static input-output framework as a basis for analyzing aspects of structural interdependence. See Rahman, A. et. al. (1997), 78.
7. **Stakeholders’ views**

The following are key points raised by the stakeholders consulted in the course of this study.\(^27\) Their views were helpful in helping to develop an understanding of the problem of lack of data in the maritime industry and the need to have it, and also in developing the recommendations of this study.

i) A glaring deficiency pertaining to the development and planning of the country’s maritime industry is the lack of appreciation among policymakers towards its economic worth and contribution. This, to a large extent, can be attributed to the paucity of data and statistical information that show the importance of the industry to the nation’s economy. At this juncture, complete, specific and current statistical data for many activities in the maritime industry is not available. This poses a severe constraint on any effort aimed at quantifying the economic performance or contribution of the sector in the national economy.

ii) It is well established that the contribution of the maritime industry to Malaysia’s economy is significant but the policy push and incentives provided to the industry thus far have not matched its importance. Understanding of the linkages between the industry and other economic sectors in the country is especially lacking. There is a need to develop a ‘big picture’ view of the components of the industry; the players involved in every sector of the industry; and their internal and external inter-relationships. Constructing such a picture will lead to a better appreciation of the extent, linkages and importance of the industry. This can help in making business and investment decisions and in prescribing the right policy push to promote and develop the industry.

iii) Efforts should be made to address the problem of lack of reliable, complete and relevant data in the maritime industry in order to project it better to policymakers by way of quantifying its economic value and contribution to the nation’s economy. This requires identifying what and how the data in the maritime industry should be collected, and how the data can and should be ‘packaged’ and used. When rightly collected, analyzed and interpreted, the data can reveal not only the worth of the various sub-sectors in the maritime industry but also the entire industry’s economic worth and contribution to the nation’s economy, its production structure and its linkages with other industries and economic activities.

iv) There are many value-adding activities in the maritime industry that can generate high income to the economy, in line with the aspiration of the New Economic Model to make Malaysia a fully developed nation by 2020. Such activities in sectors like shipping, port operations and ancillary support services such as marine insurance, financing, consultancy, legal and tax advisory, and maritime education and training, need to be pushed to the fore by way of providing strong institutional support and financial incentives to encourage investment and attract talents, from home and abroad, into the

\(^{27}\) The feedbacks were obtained from personal communication, Seminar on Assessing the Contribution of the Maritime Industry to Malaysia’s Economy organized by MIMA on 23 July 2012, and a stakeholder meeting also held at MIMA on 20 December 2012.
industry. There is a need to start capturing data on these services to know its economic value in terms of revenue generated, jobs created and investment generated.

v) The formation of a national level committee or agency featuring stakeholders of the maritime industry would lend a stronger voice and shape to efforts to promote and push the maritime industry to greater heights. Such an entity, preferably headed by a minister, could be the much-needed champion to lead efforts to take the industry forward and make Malaysia a globally competitive maritime nation. There could well be a case of establishing a Ministry of Maritime Affairs in Malaysia which can become the ‘champion’ to promote the maritime industry, in the way that South Korea and Japan, two of the world’s top maritime nations, have done. It is not a coincidence that they have achieved great success in activities such as shipbuilding and shipping, which can be attributed to having dedicated Ministries to plan and promote the development and growth of those sectors and their maritime industries in general.

vi) To underline the extensive linkages of the industry, and the opportunities Malaysia has missed out, take the example of the economic activities generated by a vessel calling at a port. Each time a vessel sails into the port, a wide range of activities takes place to facilitate its arrival, stay and departure. Shipping generates many supporting activities and shipowners depend on these activities to facilitate their operations and business. These activities, and more, need to be quantified in order to appreciate their worth and potential. What cannot be measured, cannot be managed.

vii) It is important for Malaysia to develop a maritime cluster to provide a wide range of shipping services to attract shipping lines, especially main line operators, to its ports. Such a cluster can feature a comprehensive range of support services to seaborne transport of cargos. The availability of such services is a key factor in pulling ships and cargos to ports. When combined, the supporting services, shipping and port operations generate tremendous economic benefit to the country, the way they do in international maritime centers like Singapore and Hong Kong. Such a cluster can only be developed with a set of solid numbers that can show the economic worth of the cargo transport and handling component of the maritime industry and its potential for growth, in order to attract industry players to set up operations and do business in the designated area for the maritime cluster. Without data, policymakers and relevant authorities would not be able to appreciate the potentially massive revenue that the maritime industry can generate to the economy and its tremendous prospect.

viii) There are several nations which have measured the value and economic worth of their maritime industries to a reliable degree of accuracy, such as Australia, South Korea and the United Kingdom. There is no need for anyone attempting to undertake the same exercise on Malaysia’s maritime industry to reinvent the wheel. It would be more practical to just use the methodologies and approaches used by those countries instead of trying to come up with a new approach to measure Malaysia’s maritime industry’s value and economic contribution to its economy. If need be, make certain adjustments to the measurement models used by established maritime nations to suit the local scenario. We cannot afford to delay coming up with a set of data for the industry on grounds that no suitable method has been found yet to measure its economic value. The longer we delay,
the more things will stay the same in the industry and we will not make much progress, not to mention of the potential opportunities lost.

8. Conclusion

Despite the undoubted importance of the maritime industry to Malaysia’s economy, there is an absent of complete set of data of the industry and an authoritative valuation of its worth and contribution to the national economy. As a result of this, the central role that the industry plays in facilitating economic growth, its production structure, its uniqueness, its growth potential and its linkages with other economic sectors are underappreciated and not given due recognition and attention.

As a result of the lack of data and credible measurement of the economic value and contribution of the maritime industry, it has not been accorded the weightage and attention deserving of a strategic and critical industry. The absence of a national master plan or strategy to develop the industry in a systematic and holistic manner stands testimony to this. Although Malaysia has recorded many impressive achievements in the maritime industry such as in shipping and port operations, it could arguably achieve a lot more as a maritime nation by having such a plan or strategy. With a long-term plan in place, the local maritime industry could be given greater policy push and benefit from more incentives to promote its development and growth.

A maritime policy cannot be conceptualized without a set of data that can provide decisive empirical evidence of the industry’s worth. The absence of such data poses a severe constraint on any effort aimed at quantifying the economic performance or contribution of the sector in the national economy. Although Malaysia has done well to emerge as a maritime nation of some standing in areas such as port operations, shipping and offshore oil and gas, one would imagine it could certainly achieve a lot more with a more systematic and holistic approach in developing its maritime industry.

The lack of such data hampers efforts to come up with a credible figure of the value of the maritime industry and its contribution to the economy. Without such a data, policymakers would not be able to appreciate the extent, linkages and worth of the industry and could end up undervaluing it. This may lead to lack of attention to the industry and lack of push to introduce specific policies to develop and promote it. Without data and information on the maritime industry, investors may not not be able to instantly get a big picture view of the industry in terms of its worth, size and scope, and may not apppreciate its growth prospect.

The estimate by Sea Resource Management Sdn Bhd that four major activities in the maritime industry alone - namely maritime transport, fisheries and aquaculture; offshore oil and gas; and marine and coastal tourism – were valued at RM148 bil. contributed 22% to Malaysia’s GDP in 2008 requires to be updated and the work expanded. One would imagine the maritime industry’s contribution to the GDP and its value in Ringgit Malaysia are a lot higher, taking into account the growth in these four activities and the fact that there are many other activities in the maritime industry. In doing so, it helps to specifically define what ‘maritime industry’ as it helps to establish what to measure in the effort to quantify the industry’s economic worth.
Although Malaysia has done well to emerge as a maritime nation of some standing in areas such as port operations, shipping and offshore oil and gas, it could certainly achieve a lot more with a systematic and holistic approach in developing its maritime industry. Malaysia has done well to boost the growth and development of key activities in the maritime industry such as port operations, shipping, shipbuilding and offshore exploration and production. However, much more need to be done for Malaysia to take full advantage of its strategic location and optimally harness its maritime features and resources. Meticulous planning, huge investment, strong institutional support and undivided commitment must be in place for Malaysia to emerge as a truly world-class and globally competitive maritime nation.

Given its importance to the nation’s socio-economic well-being, it is crucial that the maritime industry gets continuous support from the Government to help it develop in an orderly manner. Knowing the worth of the maritime industry to the economy can assist in its long-term planning and lead to the introduction of specific policies and incentives, stronger institutional support and optimal provision of resources that can prop the industry to greater heights.

An undisputable empirical evidence of the worth and economic contribution of the maritime industry will add more credibility to the known fact that the maritime industry is pivotal to Malaysia’s economy. To face current and future issues and challenges, and to ensure Malaysia remains competitive as a maritime nation, require astute planning, optimal resource allocation and good policies. These can be attained with the help of comprehensive, precise and current data, which will affirm the importance of industry to the nation’s economy and will prove useful to policymakers, industry players, investors, researchers and other stakeholders of this vital industry.

9. Recommendations

The following recommendations are proposed to address the issue of lack of credible estimate of the value and contribution of the maritime industry to Malaysia’s economy and to ensure data is collected and made available for the use of stakeholders:

i) Agreement on a definition of what constitutes the ‘maritime industry’. This is crucial in the efforts to collect and compile data and statistics on the industry. It would be ideal to come up with a definition of the industry can be agreed upon by all the stakeholders.

To appreciate the need to define the maritime industry, take the merchant shipping sector. To the ‘untrained eye’, shipping is just about the carriage of cargos and provision of services, but there is a stunning wealth of activities behind it. They include brokerage, bunkering, cargo handling, classification, consultancy, crewing, education, engineering, designing, equipment manufacturing, financing, insurance, legal advisory, logistics, process/system design, regulatory, research, shipbuilding/repairing, security services, ship management, ship recycling, surveying, tax advisory and training, among many others. It would be ideal to be able to get figures on number of people employed and revenues generated in each of these activities to get the full picture of the economic worth of the shipping sector. In the same mould, it would also be helpful to obtain similar data
for other key activities in the maritime industry such as port operations, naval defence and supporting services.

To this end, it is hoped that the definition offered at the beginning of this paper can be helpful in facilitating the task of collecting data and building a database of the industry and perhaps the definition could be further refined.

ii) Ascertaining the full impacts of the maritime industry to Malaysia’s economy. In this regard, it is important to obtain both the quantitative and qualitative impacts of the industry to the economy encompassing the following:

- Direct impacts, namely in terms of job creation, revenue generation, economic contribution, investment pull, trade facilitation and resource extraction.

- Indirect impacts. These include creation of jobs in other sectors not directly related to the maritime industry (for example, shipbuilding has a positive impact to the steel, glass and plastic manufacturing sectors); and the development of infrastructures such as road, rail, industrial parks and inland (or ‘dry’) ports that can generate socio-economic benefits to the nation.

- Induced impacts. These entail spurring the demand for various goods, commodities and services by those who are employed directly in the maritime industry and also those who are indirectly employed by it.

- Multiplier effects, which generate supplementary benefits to the nation, not only in economic terms but also in other aspects. They include the acquisition, building and transfer of experience and knowledge among maritime industry scholars; promoting the development and growth of a wide range of supporting services that facilitate many economic activities in the maritime industry; eradicating poverty and creating high-income activities; enhancing Malaysia’s connectivity with international supply chains; enabling Malaysian producers to have greater access to markets, and safeguarding the nation’s maritime zones and borders.

The following model, adopted from a model developed by Oxford Economics for United Kingdom’s shipping sector, depicts the impacts discussed. Ascertaining their value helps one to come up with a reliable valuation of the worth of the maritime economy.
Diagram 1
Impacts generated by the maritime industry to Malaysia’s economy

Direct impacts
Creating jobs
Facilitating trade
Contributing to GDP
Generating investment
Making available resources such as fish, oil and gas

Indirect impacts
Creating jobs in supporting services
Fostering infrastructure development

Induced impacts
Creating demand for commodities, goods and services

Multiplier effects
Promoting accumulation/sharing of knowledge/experience
Facilitating the development of maritime support services
Eradicating poverty and generating high income for the citizens
Enhancing Malaysia’s connectivity with international supply chains
Enabling Malaysian producers to have greater market access
Safeguarding of strategic national interests

Source: Adopted from ‘The economic impact of the UK shipping industry’
(Oxford Economics, May 2011)

iii) Doing a stock-take of what data is available and not available in the maritime industry. By listing the data available and the ‘known unknowns’, the task of determining what data needs to be acquired can be made easier. It can also make it easier to identify which agencies/sources with which the data are available or from which can be obtained, and to determine who should collect the data. In addition, the appropriate valuation method or approach to the activities – such as export value, income generated, tax revenue, number of people employed - can be recommended to measure their economic worth.
In this regard, the matrix below that lists the activities in the maritime industry in Malaysia according to data availability (in various degree) may prove helpful:

**Table 9. Data availability in the Malaysian maritime industry**

<table>
<thead>
<tr>
<th>No.</th>
<th>Activity</th>
<th>Source of data (publicly available)</th>
<th>Data easily available</th>
<th>Data not available / not easily available</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Fishery and marine-based aquaculture</td>
<td>BNM, DOS, EPU, LKIM, MITI</td>
<td>Value of wild capture fisheries, volume of fish landing, export value of fisheries product, number of people employed, contribution to GDP.</td>
<td>Value of fishing boats and fish catching gears, value of indigenous and recreational fishing.</td>
</tr>
<tr>
<td>2</td>
<td>Offshore oil and gas</td>
<td>BNM, DOS, EPU, MITI, PEMANDU, Petronas</td>
<td>Proven reserves; production volume, export value of oil, gas and offshore structures; revenue paid by Petronas to Government; contribution to GDP, capital expenditure (actual and projected), investment attracted.</td>
<td>Number of people employed and salaries generated; revenue generated by companies involved in midstream and downstream activities and in providing support services.</td>
</tr>
<tr>
<td>3</td>
<td>Port operations</td>
<td>Terminal operating companies, DOS, port authorities</td>
<td>Throughput (volume handled), revenues earned by terminal operating companies.</td>
<td>Contribution to GDP, investment attracted; revenue earned by companies providing support services and equipment to port operations, number of people employed at port operating companies, port authorities and supporting companies and the salaries generated.</td>
</tr>
<tr>
<td>4</td>
<td>Maritime transport</td>
<td>Marine Department Malaysia, MASA, OSV Malaysia, Shipowners Association Malaysia (SAM)</td>
<td>Number of ships calling at local ports, shipping traffic volume in areas covered under traffic management system, number of ships and capacity of shipping association members, number of seafarers working onboard Malaysian registered ships.</td>
<td>Number of people employed and revenues generated by shipping companies and those providing supporting services, breakdown of revenue of shipping companies by type of service provided (i.e. sea-going and coastal services).</td>
</tr>
<tr>
<td>No.</td>
<td>Activity</td>
<td>Source of data (publicly available)</td>
<td>Data easily available</td>
<td>Data not available / not easily available</td>
</tr>
<tr>
<td>-----</td>
<td>----------------------------------------</td>
<td>-------------------------------------------------------------------------</td>
<td>----------------------------------------------------------------------------------------------------------------------</td>
<td>---------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>5</td>
<td>Marine tourism and recreation</td>
<td>Ministry of Tourism, industry associations</td>
<td>Number of tourist arrivals, value of tourist receipts, contribution to GDP, projected growth.</td>
<td>Amount spent on marine recreation (infrastructures, equipment and related services); number of people employed and revenue generated by marinas, aquariums and activities such as boating, sailing, snorkeling, scuba diving, game fishing</td>
</tr>
<tr>
<td>6</td>
<td>Shipbuilding/ repairing</td>
<td>MITI, Association of Marine Industries Malaysia (AMIM), Offshore Fabricators Association Malaysia (OSFAM)</td>
<td>Export value, number of people employed, growth potential, market share forecast.</td>
<td>Number of people employed, contribution to GDP, revenue of shipyards, breakdown of orderbook at yards and vessels built according to vessel type.</td>
</tr>
<tr>
<td>7</td>
<td>Naval defence</td>
<td>MINDEF, TLDM</td>
<td>Naval defence budget and expenditure, number of navy personnel, value of naval vessels built and cost of repair.</td>
<td>Number of people employed in activities supporting naval defence, contribution of companies providing support to naval defence to GDP.</td>
</tr>
<tr>
<td>8</td>
<td>Support services</td>
<td>Undetermined</td>
<td>Undetermined</td>
<td>Value of and income generated, number of people employed and contribution to GDP by companies providing a range of support services to the maritime industry such as consultancy, education/training, financing, legal advisory, management, tax advisory R&amp;D etc.</td>
</tr>
<tr>
<td>9</td>
<td>Resource extraction other than oil, gas and fishery</td>
<td>National Oceanography Directorate (NOD), MOSTI, Malaysian Biotech Corporation, the academia</td>
<td>Worth, amount invested, growth and contribution to GDP projections of biotech industry; value and prospect of generation of energy from ocean thermal energy conversion (OTEC).</td>
<td>Value of investment, revenue generated and number of people employed (actual and projected) in activities such as desalination of sea water, seabed mining, bio-prospecting.</td>
</tr>
</tbody>
</table>
### Table of Activities and Data Source

<table>
<thead>
<tr>
<th>No.</th>
<th>Activity</th>
<th>Source of data (publicly available)</th>
<th>Data easily available</th>
<th>Data not available / not easily available</th>
</tr>
</thead>
<tbody>
<tr>
<td>10</td>
<td>Marine scientific research (MSR)</td>
<td>NOD, MOSTI, the academia/research institutes.</td>
<td>Various MSR expeditions carried out in Malaysian waters and their results.</td>
<td>Potential commercial value of MSR undertaken in Malaysian waters, amount invested, number of people employed, revenue generated, resources needed.</td>
</tr>
<tr>
<td>11</td>
<td>Surveying, management, conservation and commercialization of marine heritage, environment and ecosystems</td>
<td>The academia/research institutes. private companies (i.e. Maritime Explorations (M) Sdn Bhd), Jabatan Muzium Malaysia, NGOs, Department of Environment</td>
<td>State of conservation and health of marine resources such as coral reefs, turtles, marine mammals; location of shipwrecks in Malaysian waters.</td>
<td>Value of marine ecosystems such as mangrove forest, non-living marine resources such as coral reefs, and salvaged archeological items; estimated number and value of shipwrecks in Malaysian waters; commercial potential of marine ecosystems, maritime heritage tourism and marine archeology; number of people employed in marine archeology, management and conservation.</td>
</tr>
</tbody>
</table>

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*iv) Establishing a database of Malaysia’s maritime industry.* Having identified the available data (and their sources) and the data gaps in the industry, the task of constructing a database for the maritime industry will become easier. Such a database should be easily accessible, regularly updated, accurate and have user-friendly features to benefit the stakeholders in the maritime industry. To this end, there has to be close collaboration among government agencies, industry players and the research community to facilitate the task of collecting data and realize the establishment of the database. In this regard, it is suggested that the Maritime Division of MOT spearhead the project and eventually become the lead agency and national focal point for the custodian, maintenance and upgrading of this database.

*v) Setting up a satellite account for the maritime industry.* The idea behind establishing such an account is to `separate’ and distinguish the maritime economic activities industry from key national figures. Such a satellite account has been set up for the tourism industry, a major revenue earner for Malaysia, which contains various statistics on the industry such as expenditure for outbound and inbound tourism, production accounts and employment.\(^{28}\) The satellite account will help in the construct of a ‘big picture view’ of

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\(^{28}\) See Department of Statistics Malaysia (2011). *Tourism satellite accounts, 2000-2010.*
the maritime industry and the changing levels and direct effect of maritime economic activities in Malaysia and will help shape policymaking in the industry, the way the satellite account for tourism has done. A set off industry-specific, standalone data will accentuate the industry’s worth and place in the economy and lend it more prominence.

10. Areas for further studies

Among areas related to this study that warrant further exploration are:

i) The backward and forward linkages between the maritime industry and other economic activities and infrastructures in Malaysia. This study can even be extended to determine the linkages on a larger scale, for example with individual countries (which are key trade partners to Malaysia) and the regional ASEAN economies.

ii) Identification of available data that is normally not seen in open sources but nonetheless useful in assessing the value and economic worth of the maritime industry and other economic activities that should be included in the definition of maritime industry.

iii) Assessment of the intangible worth of the maritime realm such as environment, culture, heritage and archaeology that can help enhance data collection in the maritime industry. This will enable more extensive data and information on the maritime realm to be collected and further enrich the data.

iv) Identification of the best method to collect data on the maritime industry and how to make it available to stakeholders, including foreign investors and scholars, in an accessible and user-friendly way. This can be done by first measuring and valuing on a sectoral basis. For example, the methods used by countries like Ireland and Australia in quantifying their marine tourism activities can be studied and then copied or adopted for Malaysia. The same goes with valuing other activities in the maritime industry and even marine resources, for example coral reefs.

v) Using available data on the maritime industry to project the demand for maritime-related products, services and infrastructures for particular sub-sectors, and within areas (for example states or regions within the country), the country and even larger areas such the South East Asian and Asia Pacific regions.
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- Department of Statistics Malaysia
- Malaysia Shipowners Association
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- Ministry of Transport Malaysia
- OSV Malaysia
- Pelorus Intelligence Technology Academy
- Portsworld
- Scholars from various research institutes and universities
- Shipowners Association Malaysia
References


