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Sabah's External Trade: Trade Changes Impact, the Strategic Role & Features of Port Transhipment Hub

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Abstract

Seaport is an important gateway for the international and domestic movement of goods for a country. International trade via sea contributes significantly to global trade. Maritime nation like Malaysia and state like Sabah are not exception. Due to its strategic location and other factors Malaysia is listed in the top 5 economies in the Liner Shipping Connectivity Index, according to Review of Maritime Transport 2024. Most merchandise trading activities between Malaysia and foreign countries are via sea channel. In the context of Sabah, the volume of trade are reported to exceed RM100 billion. In terms of trade openness, the volume of trade is greater than the state GDP. In Sabah, there are several sea ports that support trading activities in the eastern and western part of the state. They play important role in accommodating the need to export and import products within Malaysia and with the rest of the world. Moving forward, to increase Sabah's volume of trade, it is imperative that the strategic role and facilities to be improved overtime. In addition, the role of direct investment is crucial. This work attempts to study and highlight the strategic role and features of an ideal port transhipment hub around the world. Inputs from various stakeholders are being gathered to support recommendations proposed for future ports or present port expansion.

Keyword: Port, Port Transhipment Hub, Ideal Features of Port Transhipment Hub, Trade, Direct Investment

Introduction

Malaysia is considered a small with an open economy. International trade plays an important role in supporting local economic activities and in selling Malaysian goods to the international market. Malaysia's openness index recorded to be more than 100 percent which indicates that the amount of export and import involving Malaysia is greater than the value of gross domestic product (GDP) of Malaysia.

In similar fashion, Sabah shares similar features. Sabah's total trade is greater than Sabah's GDP. Since the formation of Malaysia, Sabah's economy is becoming more diversified. The types of products being exported has become more diversed and data indicated that the

top exporting products of Sabah has changed significantly in the past 60 years. During the early years of independence most products came from first sector economy.

Before Malaysia was formed in 1963, Sabah had established trade with many countries. In 1962, Sabah exported its products to more than 30 countries with Japan, Philippines, Singapore, China, United Kingdom and Australia as its main export destinations. In terms of import, Sabah imported merchandise products from more than 40 countries, with the UK, China, the United States, Indonesia, Japan, Singapore and Thailand as its main source in 1962 (refer Table 1 in R. Idris (2015)). Table 1 and 2 shows Sabah's exports and imports respectively, by mode of transport for selected channels.

Table 1
Sabah's exports by mode of transport for selected channels (RM '000), 2019-2023

MODE OF TRANSPORT	***EXPORTS***				
	2019	**2020**	**2021**	**2022**	**2023**
TOTAL	**49,192,094**	**41,336,571**	**55,664,568**	**77,094,504**	**62,785,649**
BY SEA	**48,311,868**	**40,641,081**	**54,929,402**	**76,433,102**	**61,891,213**
W.P. LABUAN	9,906,196	6,999,595	7,610,746	10,930,927	8,913,491
ASIAN SUPPLY BASE	1,349,891	1,035,869	745,382	1,003,404	1,520,311
TELUK SEPANGAR	20,001,502	14,029,237	20,777,463	32,809,958	28,095,654
KOTA KINABALU	411,813	350,854	526,129	326,662	286,893
TAWAU	1,198,572	998,971	1,329,874	1,533,356	1,405,575
SANDAKAN	5,680,541	6,442,315	9,126,874	10,158,869	7,980,193
LAHAD DATU	8,477,857	9,567,413	12,693,995	16,201,403	11,654,212
KUDAT	18,127	9,948	9,211	14,841	5,987
SIPITANG	1,266,831	1,206,034	2,108,529	3,452,990	2,026,638
SINDUMIN	4	-	-	-	-
MENUMBOK	-	-	1	28	1,045
OTHER STATIONS	533	844	1,198	663	1,214
BY AIR	**792,273**	**639,624**	**684,353**	**599,978**	**820,760**
W.P. LABUAN	219,191	177,598	206,794	221,438	240,323
TAWAU	87,934	58,357	83,680	63,460	117,647
SANDAKAN	56,910	28,871	21,171	26,670	29,194
LAHAD DATU	-	-	-	-	
KOTA KINABALU	428,238	374,799	372,708	288,410	433,596
BY ROAD	**87,953**	**55,866**	**50,813**	**61,425**	**73,677**
OTHER ROAD STATIONS	87,953	55,866	50,813	61,425	73,677

Source: Department of Statistics (2024)

Table 2
Sabah's imports by mode of transport for selected channels (RM '000), 2019-2023

MODE OF TRANSPORT	***IMPORTS***				
	2019	**2020**	**2021**	**2022**	**2023**
TOTAL	**35,342,494**	**38,090,126**	**31,570,250**	**40,925,044**	**42,157,233**
BY SEA	**32,698,337**	**35,699,005**	**28,425,128**	**37,718,400**	**38,182,585**
W.P. LABUAN	3,828,945	13,961,350	2,548,692	4,468,297	4,369,763
ASIAN SUPPLY BASE	335,827	260,998	220,506	522,785	251,969
TELUK SEPANGAR	14,400,162	12,133,779	14,343,015	22,067,437	23,332,149
KOTA KINABALU	6,890,741	3,035,913	4,192,987	1,589,653	1,814,430
TAWAU	3,509,159	3,053,431	3,571,459	4,834,779	4,613,313
SANDAKAN	2,285,232	2,192,149	2,269,723	2,621,649	2,767,711
LAHAD DATU	1,443,493	1,058,474	1,277,465	1,608,245	1,029,368
KUDAT	1,266	2,457	1,226	-	2,686
SIPITANG	3,512	452	-	5,195	448
SINDUMIN	-	-	-	-	-
MENUMBOK	-	2	56	359	747
OTHER STATIONS	-	-	-	-	-
BY AIR	**2,641,416**	**2,390,518**	**3,145,122**	**3,206,590**	**3,974,648**
W.P. LABUAN	1,057,073	902,098	791,744	919,958	1,313,308
TAWAU	78,551	55,700	99,532	142,266	219,585
SANDAKAN	75,639	39,624	25,956	72,567	86,322
LAHAD DATU	1,760	1,120	-	-	-
KOTA KINABALU	1,428,392	1,391,976	2,227,889	2,071,799	2,355,433
BY ROAD	**2,742**	**603**	**-**	**54**	**-**
OTHER ROAD STATIONS	2,742	603	-	54	-

Source: Department of Statistics (2024)

Table 1 and 2 depict that export and import via sea as the most important mode of transportation for Sabah's trade. This is followed by air and road, though the amount of trade via road is not that significant.

For the year 2023, Sabah's total export was recorded to be around RM62.78 billion with RM61.89 billion were reported to come from export via sea. For the same year, Sabah's

import via sea were recorded to be RM38.18 billion out of total import which was reported to be amounting RM42.15 billion. This indicates trade via sea is reported to be worth more than 90% of total import.

In table 1, it is clear that Sapangar port is the busiest port, handling export products via sea in terms of monetary value. This is followed by Lahad Datu port, Sandakan port, Tawau port and other smaller ports. For import via sea in 2023, table 2 depicts that Sapangar port was also the busiest port in Sabah, handling import of goods. This is followed by Tawau port, Sandakan port and other ports listed.

Looking into categories of trading products and partners in the past 62 years, changes have been significant. In 2010, Sabah was reported to have traded with more than 100 countries (Rafiq, 2015). Among the important trading partners of Sabah in 2023 include Peninsular Malaysia, China, Japan, Singapore, Thailand, the United States, Australia and some ASEAN and European Union member countries .

In over 60 years of observation, it is evident that Sabah's trade has grown by more than 500 times the trade value in 1962. Based on the data released by the Department of Statistics (2024), Sabah's export in 2023 was recorded to be RM62.78 billion while import amounting RM42.15 billion, making total trade to be RM104.9 billion. Table 3 and 4 show Sabah's export and import respectively with the rest of the world by port or channel which specify product categories at 1 digit code.

Table 3 indicates that petroleum, animal and vegetable oils, fats and waxes, chemicals and related products and manufactured goods are among top export products when sorted by port or channel. In this regard, Sapangar port, W.P Labuan port, Lahad Datu port, Sandakan port, Asian Supply Base, Tawau port and Sipitang Port are among the top listing ports in terms of handling in monetary value when listed or sorted by port or channel at 1 digit code.

Table 4 reveals that machinery and transport equipment, mineral fuels, lubricants & related materials, food and live animals, chemicals and related products, manufactured goods, beverages and tobacco are listed in the top import products at 1 digit code.

Table 3
Sabah and Labuan's top export by port/channel in 2019 at 1 digit code

PRODUCT DESCRIPTIONS	CHANNEL	DESTINATION	VALUE (RM) 2019
MINERAL FUELS, LUBRICANTS AND RELATED MATERIALS	TELUK SEPANGAR	MALAYSIA, PENINSULA	7,811,456,527
MINERAL FUELS, LUBRICANTS AND RELATED MATERIALS	TELUK SEPANGAR	AUSTRALIA	4,382,590,471
MINERAL FUELS, LUBRICANTS AND RELATED MATERIALS	W.P. LABUAN	INDIA	2,930,569,834
MINERAL FUELS, LUBRICANTS AND RELATED MATERIALS	TELUK SEPANGAR	SINGAPORE, REP. OF	2,878,516,125
ANIMAL AND VEGETABLE OILS, FATS AND WAXES	LAHAD DATU	CHINA	2,127,041,223
MINERAL FUELS, LUBRICANTS AND RELATED MATERIALS	W.P. LABUAN	MALAYSIA, PENINSULA	1,711,968,677
MINERAL FUELS, LUBRICANTS AND RELATED MATERIALS	W.P. LABUAN	THAILAND	1,207,625,122
MINERAL FUELS, LUBRICANTS AND RELATED MATERIALS	TELUK SEPANGAR	INDIA	888,156,453
MINERAL FUELS, LUBRICANTS AND RELATED MATERIALS	TELUK SEPANGAR	THAILAND	849,591,095
ANIMAL AND VEGETABLE OILS, FATS AND WAXES	SANDAKAN	CHINA	712,559,631
ANIMAL AND VEGETABLE OILS, FATS AND WAXES	LAHAD DATU	INDIA	707,243,912
ANIMAL AND VEGETABLE OILS, FATS AND WAXES	SANDAKAN	UNITED STATES	699,140,597
ANIMAL AND VEGETABLE OILS, FATS AND WAXES	LAHAD DATU	PHILIPPINES	651,783,980
ANIMAL AND VEGETABLE OILS, FATS AND WAXES	SANDAKAN	NETHERLANDS	616,265,054
MINERAL FUELS, LUBRICANTS AND RELATED MATERIALS	TELUK SEPANGAR	PHILIPPINES	605,146,946
CHEMICALS AND RELATED PRODUCTS, N.E.S.	W.P. LABUAN	CHINA	521,848,214
ANIMAL AND VEGETABLE OILS, FATS AND WAXES	SANDAKAN	VIETNAM	518,467,504
ANIMAL AND VEGETABLE OILS, FATS AND WAXES	LAHAD DATU	PAKISTAN	489,765,724
ANIMAL AND VEGETABLE OILS, FATS AND WAXES	LAHAD DATU	TAIWAN	468,379,698
MACHINERY AND TRANSPORT EQUIPMENT	ASIAN S.BASE	MALAYSIA, SARAWAK	456,161,922
MANUFACTURED GOODS CLASSIFIED BY MATERIAL	W.P. LABUAN	KOREA, REP. OF	452,065,298
ANIMAL AND VEGETABLE OILS, FATS AND WAXES	LAHAD DATU	NETHERLANDS	451,895,667
ANIMAL AND VEGETABLE OILS, FATS AND WAXES	LAHAD DATU	MALAYSIA, PENINSULA	449,391,044
CHEMICALS AND RELATED PRODUCTS, N.E.S.	W.P. LABUAN	INDONESIA, REP. OF	447,280,287
ANIMAL AND VEGETABLE OILS, FATS AND WAXES	LAHAD DATU	VIETNAM	445,243,005
MINERAL FUELS, LUBRICANTS AND RELATED MATERIALS	W.P. LABUAN	NEW ZEALAND	431,972,201

ANIMAL AND VEGETABLE OILS, FATS AND WAXES	LAHAD DATU	JAPAN	425,569,421
ANIMAL AND VEGETABLE OILS, FATS AND WAXES	LAHAD DATU	SPAIN	421,368,339
ANIMAL AND VEGETABLE OILS, FATS AND WAXES	SANDAKAN	PHILIPPINES	406,383,582
MANUFACTURED GOODS CLASSIFIED BY MATERIAL	ASIAN S. BASE	MALAYSIA, SARAWAK	369,133,068
ANIMAL AND VEGETABLE OILS, FATS AND WAXES	SANDAKAN	KOREA, REP. OF	340,416,256
MINERAL FUELS, LUBRICANTS AND RELATED MATERIALS	TELUK SEPANGAR	NEW ZEALAND	340,408,441
ANIMAL AND VEGETABLE OILS, FATS AND WAXES	SANDAKAN	ITALY	338,431,984
MINERAL FUELS, LUBRICANTS AND RELATED MATERIALS	TELUK SEPANGAR	KOREA, REP. OF	326,536,547
ANIMAL AND VEGETABLE OILS, FATS AND WAXES	SANDAKAN	MALAYSIA, PENINSULA	317,131,098
ANIMAL AND VEGETABLE OILS, FATS AND WAXES	SANDAKAN	JAPAN	261,765,399
CHEMICALS AND RELATED PRODUCTS, N.E.S.	W.P. LABUAN	SINGAPORE, REP. OF	257,005,227
MACHINERY AND TRANSPORT EQUIPMENT	KOTA KINABALU	MALAYSIA, PENINSULA	243,441,321
CHEMICALS AND RELATED PRODUCTS, N.E.S.	LAHAD DATU	NETHERLANDS	241,560,946
CHEMICALS AND RELATED PRODUCTS, N.E.S.	SIPITANG	AUSTRALIA	223,682,690
CHEMICALS AND RELATED PRODUCTS, N.E.S.	ASIAN S. BASE	MALAYSIA, SARAWAK	209,109,115
MINERAL FUELS, LUBRICANTS AND RELATED MATERIALS	TELUK SEPANGAR	CHINA	199,287,199
CHEMICALS AND RELATED PRODUCTS, N.E.S.	W.P. LABUAN	THAILAND	191,892,857
ANIMAL AND VEGETABLE OILS, FATS AND WAXES	LAHAD DATU	TURKEY	186,058,132
ANIMAL AND VEGETABLE OILS, FATS AND WAXES	LAHAD DATU	SINGAPORE, REP. OF	176,554,827
MANUFACTURED GOODS CLASSIFIED BY MATERIAL	TAWAU	JAPAN	168,486,248
MINERAL FUELS, LUBRICANTS AND RELATED MATERIALS	TELUK SEPANGAR	INDONESIA, REP. OF	167,330,494
CHEMICALS AND RELATED PRODUCTS, N.E.S.	SIPITANG	PHILIPPINES	161,054,116
MANUFACTURED GOODS CLASSIFIED BY MATERIAL	W.P. LABUAN	CHINA	158,301,868
CHEMICALS AND RELATED PRODUCTS, N.E.S.	LAHAD DATU	INDONESIA, REP. OF	151,983,895

Source: Department of Statistics (2024)

Table 4
Sabah and Labuan's top import by port/channel in 2019 at 1 digit code

DESCRIPTIONS	CHANNEL	CTRYNAME	VALUE (RM) 2019
MACHINERY AND TRANSPORT EQUIPMENT	KOTA KINABALU	KOREA, REP. OF	3,188,834,279
MACHINERY AND TRANSPORT EQUIPMENT	KOTA KINABALU	MALAYSIA, PENINSULA	2,888,357,040
MACHINERY AND TRANSPORT EQUIPMENT	TELUK SEPANGAR	MALAYSIA, PENINSULA	1,932,183,656
MINERAL FUELS, LUBRICANTS & RELATED MATERIALS	TELUK SEPANGAR	SINGAPORE, REP. OF	1,528,708,601
FOOD AND LIVE ANIMALS	TELUK SEPANGAR	MALAYSIA, PENINSULA	1,519,709,542
MINERAL FUELS, LUBRICANTS AND RELATED MATERIALS	TELUK SEPANGAR	MALAYSIA, PENINSULA	1,471,129,771
MANUFACTURED GOODS CLASSIFIED BY MATERIAL	TELUK SEPANGAR	MALAYSIA, PENINSULA	1,138,173,371
MISCELLANEOUS MANUFACTURED ARTICLES	TELUK SEPANGAR	MALAYSIA, PENINSULA	1,082,855,291
CHEMICALS AND RELATED PRODUCTS, N.E.S.	TELUK SEPANGAR	MALAYSIA, PENINSULA	1,024,071,244
MINERAL FUELS, LUBRICANTS AND RELATED MATERIALS	TAWAU	MALAYSIA, PENINSULA	805,661,378
ANIMAL AND VEGETABLE OILS, FATS AND WAXES	LAHAD DATU	INDONESIA, REP. OF	640,616,404
CRUDE MATERIALS, INEDIBLE, EXCEPT FUELS	W.P. LABUAN	OMAN	581,763,266
FOOD AND LIVE ANIMALS	TAWAU	MALAYSIA, PENINSULA	542,791,059
MINERAL FUELS, LUBRICANTS AND RELATED MATERIALS	SANDAKAN	MALAYSIA, PENINSULA	535,174,805
MACHINERY AND TRANSPORT EQUIPMENT	W.P. LABUAN	MALAYSIA, PENINSULA	496,325,645
BEVERAGES AND TOBACCO	TELUK SEPANGAR	MALAYSIA, PENINSULA	490,837,793
MACHINERY AND TRANSPORT EQUIPMENT	W.P. LABUAN	UNITED STATES	483,848,739
MACHINERY AND TRANSPORT EQUIPMENT	TELUK SEPANGAR	CHINA	441,764,138
MINERAL FUELS, LUBRICANTS AND RELATED MATERIALS	W.P. LABUAN	MALAYSIA, PENINSULA	430,508,159
MACHINERY AND TRANSPORT EQUIPMENT	TAWAU	MALAYSIA, PENINSULA	413,984,862
MISCELLANEOUS MANUFACTURED ARTICLES	TELUK SEPANGAR	CHINA,	374,280,471

MANUFACTURED GOODS CLASSIFIED BY MATERIAL	TELUK SEPANGAR	CHINA	370,178,935
MANUFACTURED GOODS CLASSIFIED BY MATERIAL	TAWAU	MALAYSIA, PENINSULA	305,478,490
FOOD AND LIVE ANIMALS	KOTA KINABALU	ARGENTINA	284,726,283
MANUFACTURED GOODS CLASSIFIED BY MATERIAL	W.P. LABUAN	JAPAN	283,737,117
CHEMICALS AND RELATED PRODUCTS, N.E.S.	TAWAU	MALAYSIA, PENINSULA	262,024,320
FOOD AND LIVE ANIMALS	SANDAKAN	MALAYSIA, PENINSULA	252,698,640
MACHINERY AND TRANSPORT EQUIPMENT	KOTA KINABALU	CHINA	250,184,309
MACHINERY AND TRANSPORT EQUIPMENT	SANDAKAN	MALAYSIA, PENINSULA	247,695,596
MANUFACTURED GOODS CLASSIFIED BY MATERIAL	KOTA KINABALU	MALAYSIA, PENINSULA	244,838,077
CHEMICALS AND RELATED PRODUCTS, N.E.S.	TELUK SEPANGAR	SINGAPORE, REP. OF	243,889,762
MISCELLANEOUS MANUFACTURED ARTICLES	KOTA KINABALU	MALAYSIA, PENINSULA	243,299,819
MANUFACTURED GOODS CLASSIFIED BY MATERIAL	SANDAKAN	MALAYSIA, PENINSULA	213,778,463
MISCELLANEOUS MANUFACTURED ARTICLES	TAWAU	MALAYSIA, PENINSULA	206,330,827
MACHINERY AND TRANSPORT EQUIPMENT	KOTA KINABALU	THAILAND	205,844,333
FOOD AND LIVE ANIMALS	TELUK SEPANGAR	CHINA	196,133,976
MANUFACTURED GOODS CLASSIFIED BY MATERIAL	W.P. LABUAN	MALAYSIA, PENINSULA	196,037,547
MANUFACTURED GOODS CLASSIFIED BY MATERIAL	TELUK SEPANGAR	VIETNAM	187,069,300
MACHINERY AND TRANSPORT EQUIPMENT	W.P. LABUAN	SINGAPORE, REP. OF	183,676,738
MANUFACTURED GOODS CLASSIFIED BY MATERIAL	W.P. LABUAN	UNITED STATES	161,616,323
MISCELLANEOUS MANUFACTURED ARTICLES	W.P. LABUAN	UNITED STATES	156,903,017
CHEMICALS AND RELATED PRODUCTS, N.E.S.	SANDAKAN	MALAYSIA, PENINSULA	147,655,063
CHEMICALS AND RELATED PRODUCTS, N.E.S.	KOTA KINABALU	MALAYSIA, PENINSULA	143,624,838
MISCELLANEOUS MANUFACTURED ARTICLES	SANDAKAN	MALAYSIA, PENINSULA	140,127,554

MANUFACTURED GOODS CLASSIFIED BY MATERIAL	KOTA KINABALU	CHINA	134,270,515
CHEMICALS AND RELATED PRODUCTS, N.E.S.	LAHAD DATU	CANADA	131,342,887
BEVERAGES AND TOBACCO	TAWAU	MALAYSIA, PENINSULA	127,262,891
MACHINERY AND TRANSPORT EQUIPMENT	TELUK SEPANGAR	THAILAND	125,231,514
FOOD AND LIVE ANIMALS	TELUK SEPANGAR	INDONESIA, REP. OF	114,879,005
FOOD AND LIVE ANIMALS	TELUK SEPANGAR	INDIA	112,854,120

Source: Department of Statistics (2024)

In supporting trading activities, seaport is an important gateway for the international and domestic movement of goods for a country. International trade via sea contributes significantly to global trade. Maritime nation like Malaysia and state like Sabah are not exception. Situated strategically facing South China Sea and located within BIMP-EAGA region, huge potential benefits can be harnessed via international trade.

In this regard, most merchandise trading activities between Malaysia and foreign countries are via sea channel. In the context of Sabah, the volume of trade is reported to exceed RM100 billion annually. In terms of trade openness, the volume of trade is greater than the state GDP. In Sabah, there are several sea ports that support trading activities in the eastern and western part of the state. They play important role in accommodating the need to export and import products within Malaysia and with the rest of the world.

Having discussed the above, how strategic is Malaysian ports from international perspective? According to Review of Maritime Transport 2024, Malaysia is listed in the top 5 economies in the Liner Shipping Connectivity Index (UNCTAD, 2024). Malaysia is ahead of the Netherlands, the United States and Belgium among others.

In Sabah, there are several active ports that support and facilitate movement of goods and people. The ports are Sapangar Bay Container Port, Tawau Port, Sandakan Port, Lahad Datu Port, Kunak Port, Sapangar Bay Oil Terminal and Kota Kinabalu Port. Those ports are important gateways for the Brunei Darussalam-Indonesia-Malaysia-Philippines East ASEAN Growth Area (BIMP-EAGA) as Sabah. Figure 1 depicts the location of the eight ports mentioned and the cargo types handled by the respective ports.

Figure 1. Ports in Sabah
Source: Sabah Ports Sdn. Bhd.'s website (2025)

Figure 1 depicts that among others, Sapangar Bay Container Port, Tawau Port, Sandakan Port and Lahad Datu Port are the ports handling containers. There are also ports that handle people movement such as accommodating passenger ferry or cruise such as Lahad Datu Port, Sandakan Port and Kota Kinabalu Port. In general, all these ports have played significant role in supporting goods and people movement as well as other strategic needs of the state.

This study attempts to study and highlight the strategic role and features of an ideal port transhipment hub around the world. Inputs from various stakeholders are being gathered to support recommendations proposed for future ports or present port expansion. To understand the importance of ports to the economy, the study attempts to estimate the effect of decline in international trade on the economy of Sabah.

Literature Review

There are many studies related to seaports all over the world and in Malaysia specifically. Studies generally focus on various spectrum of ports such as related to performance efficiency, operational matters, issues, challenges, technology and other related matters on ports among others. This can be seen for example in the studies of Ferreira, D. C., Marques, R. C., and Pedro, M. I. (2018); Wai, D. (2008).

With regard to Sabah's port studies, there are some studies or reports found. There are studies on Sabah's trade or comparative advantage. This can be found for instance in the study or report by World Bank (1978); Idris R. (2015); Idris R. (2018); Idris R. et.al (2017); Ngui M.F.T (2019); Netherlands Enterprise Agency (2022).

However, most of the research does not attempt to study the importance of trade and the role of seaport to the economy. Based on the literature review, in sum, limited research are found that attempt to study ports in Sabah.

Methodology

This study attempts to highlight the importance of seaport being a port transhipment hub in the region and the criteria or characteristics of an efficient port transhipment hub. To highlight the importance of seaport being a port transhipment hub, stakeholders engagement such as carrying out interviews with stakeholders were conducted. Formal and informal observational visits to several ports in Sabah, Kalimantan, Indonesia and Philippines were also made. The author also had the opportunity to see and know more about the expansion history of Port of Rotterdam. Moreover, several documents, reports and studies are reviewed to understand the ideal features of port transhipment hub.

Besides, to understand its importance of seaport to Sabah's economy, the study simulates a situation which are define as situation when there is a decrease in export and import. Three scenarios are being proposed in the study which are:

SCENARIO 1: When export decreases by 5%
SCENARIO 2: When export and import decrease by 5% each
SCENARIO 3: When import decreases by 5%

The above scenarios are being tested, to estimate the impact of changes in export and import due to whatever situation that may happen on Sabah's growth.

In relation to this, an application is developed by the author to estimate the impact of decline in trade on economy. The study uses input-output economic with Leontief multipliers for Sabah Trade Impact Analysis. To do the estimation, several key variables are used and following formulas are used:

Primary Model: Wassily Leontief Input-Output (I-O) Model with Trade Extensions

Theoretical Foundation: Inter-industry transaction matrix analysis with export/import shock propagation

Core Equation: $X = (I - A)^{-1} \times F$, where X = total output, A = technical coefficients matrix, F = final demand

Trade Integration: Export increases treated as positive final demand shocks; import changes as supply-side adjustments

Output Impact: Δ Output = Net Trade Effect × Type I Multiplier × Regional Retention

Regional retention coefficient (RRC) used in this study is 0.75. RRC measures the proportion of economic activity that remains within Sabah's economy. A value of 0.75 indicates 75% of

economic impacts stay within the region. In this regard, it is also important to discuss briefly the term called economic leakage. Leakage rate refers to economic activity that leaks to other regions through imports, savings and other inter regional trade flows. In this study leakage rate is assumed to be 25%.

This study explores the features of several busy transhipment hubs in the region and other parts of the world, including a visit to the busiest port in Europe, Port of Rotterdam in the Netherlands. In addition, interviews were also conducted with several stakeholders in Sabah and neighbouring ports.

Findings/Results

Ports in Sabah play important role in supporting and facilitating trading activities where goods move in and out from the state of Sabah.

The followings are the estimated impact of decrease in export palm oil related products and import of manufacturing products on output growth of Sabah. Table 5 is a summary of the impact based on three scenarios mentioned earlier, assuming other factors remain constant.

Table 5

Summary of increase in palm oil export impact estimation

SCENARIO	Change in Export (in percentage)	Change in Import (in percentage)	Effect on Output Growth (in percentage)
1	+5%	No change	+4.04%
2	No change	+5%	-1.66%
3	+5%	+5%	+2.37%

Notes: - sign indicates reduction, + sign indicates increase change in percentage for poverty rate and unemployment rate refers to reduction in the said indicators based on baseline data

Assuming regional retention rate to be 0.75 and leakage rate to be 0.25 and other variables to be constant, based on scenario 1, with the decrease of palm oil export by 5%, Sabah is projected to experience a negative output growth of -4.04%. A decrease in export indicates a decrease in demand for Sabah's products, hence decrease in production and output. The first simulation assumes palm oil export only to decrease by 5%. However, it is important to note that certain export decrease or negative output growth may due to change in world commodity prices. Hence, they may not all the time reflect decline in quantity of export.

Looking into scenario 2, with the decrease of import of manufacturing products only by 5%, Sabah is projected to experience a positive output growth of 1.66%, assuming other factors remain constant. A decrease in import indicates a decrease in demand for foreign products, hence improving the trade balance position. This may also mean that for certain products, local consumers shift their consumption to domestic products, hence decrease the demand for foreign products at least in that particular year or time. The second simulation assumes manufacturing products import only to decrease by 5%. However, it is important to be noted that certain imports decrease may due to increase in product prices or other reasons such as increase in price foreign products or even other reasons which make it to be less attractive for local consumers. In general, quantity of import products may increase or

decrease, depending on the specific reasons or situation happening. In certain instances, decrease of imports of intermediate goods can be beneficial for the growth of certain industry.

Looking into scenario 3, with the decrease of palm oil export by 5% and import of manufacturing products by 5%, Sabah is projected to experience a negative output growth of -2.38%, if other variables remain constant.

Having discussed the above, it is important to note that the value is not projected to be accurate but rather as a guide and as preliminary estimation. The dynamics of Sabah, Malaysia and world economy, geopolitics in the region or in other regions or changes in economic variables may make the value to be vary.

Furthermore, the estimation results imply that how important and vulnerable an economy can be as a result of changes in external sector. Changes in export and import that are due to trade policy changes, non-trade policy changes domestically or around the world and geopolitics for example, may influence the value of trade, hence affecting the output and income of a country. Hence, efforts, policies and incentives to support trade, infrastructure and enabler of trade must be supported as they bring positive impacts on the economy. In this regard, effort and investment to strengthen the position and function of port transhipment hub in Sabah must be supported by all means. In this context, what are the elements or features that should be in place for a port transhipment hub? Table 6 depicts the necessary features of port transhipment hub.

Table 6
Summary of input obtained on the ideal features for port transhipment hub

FEATURES	FEEDBACKS AND RECOMMENDATIONS
Strategic geographical location	A port transhipment hub that is located near major shipping routes has the potential of attracting shipping liners to berth and having transhipment activities.
Connectivity	A port transhipment hub that is connected to a systematic and developed transport infrastructure such as road, rail, and air links has the potential to expedite goods movement.
Sufficient and reliable capacity	A port transhipment hub that is reliable with the ability and sufficient capacity to handle large volumes is important especially in meeting increasing demand.
Infrastructure and intermodal facilities with good security	A port transhipment hub is expected to have necessary infrastructure and intermodal facilities for smooth transfer between different modes of transport, such as containers from ships to trains or trucks. Moreover, sufficient security measures for port transhipment hub must be in place.
State of the art technology and operational efficiency	A port transhipment hub with the state-of-the-art technology has the potential to ameliorate the efficiency and productivity of the port operation. Investment in digitalization and smart operation port has the potential to improve efficiency and attract shipping liners.
Facilitation in customs and regulatory matters	A port transhipment hub with efficient customs clearance processes and regulatory compliance can minimize and reduce delay issue.

Systematic and integrated logistics services with other value added services	A port transhipment hub characterized with systematic and integrated logistics services such as matters related to distribution, warehousing, and other value-added services would be an added value for customers. It can make the port more attractive to shipping liners who are looking for comprehensive solutions.
Sustainability practices	A port transhipment hub which implement environmentally sustainable practices, such as reducing emissions and minimizing waste is an ideal feature of port.
Collaboration and partnerships	A port transhipment hub that establishes partnership with shipping lines, logistics providers, and other strategic stakeholders enhance the competitiveness and attractiveness of the transhipment hub. Cargo consolidation talk with neighbouring ports is important.
Offer competitive pricing, conducive policy and incentives for investors	A port transhipment hub that offer incentives and conducive policies for investors and shipping liners have the potential of attracting investors or shipping liners or other types of investors to invest and bringing bigger traffic of cargos or TEUs to the port. Direct investment and partnerships involving shipping liners are important in increasing trade volume. This can be done by offering attractive port fees for instance. On contrary, a port that is not open or conducive for investors or even shipping liners may find very challenging to become fast growing port transhipment hub.
Arrangement and understanding with key stakeholders in the public and private sectors	Besides domestic stakeholders, it is pertinent for a port transhipment hub to have regular communication, arrangement, understanding, or if necessary cargo consolidation talk especially with neighbouring ports and shipping liners. In addition, collaborating with government agencies to streamline customs procedures, reduce bureaucratic hurdles, and support regulatory compliance can potentially make the port a more attractive alternative for shipping liners.
Promotion effort and industry partnership	For a young port to be projected to be established as a good option for shipping liners, promotion effort must be intensified to highlight the advantageous of berthing at the port, services being offered and cost involved among others. In this regard, collaboration with shipping associations, logistics companies, and trade organizations, may help in promoting the port as a hub for port transhipment hub and for the creation of new shipping routes.
Attractive for direct investment	Direct investment plays important role in the expansion of manufacturing sector of an economy. In certain instance, the inflow of direct investment lead to production of certain goods such as manufacturing goods which are meant for other markets. This lead to increase of export of that country.

Based on the observation, review of selected port operations, inputs obtained and features of established port transhipment hub in the region, it is evident that the above mentioned characteristics are important or crucial for any port transhipment hub. Hence, effort along the areas being highlighted must be intensified.

The experience of many reputable ports around the world indeed can be a good lesson for other smaller ports that plan to expand and play greater role in any region. In this context, Port of Rotterdam is a good example of how from a fishing village it had transformed into becoming the busiest port in Europe and one of the busiest in the world. Port of Rotterdam is the largest seaport in Europe and often cited as the smartest port in the world. It handles over 12 million TEU containers annually. Few important features of Rotterdam port are its

strategic location in Europe, its operational efficiency, investment in digitalization, global leader in smart port technology and innovation as well as its attractiveness for investment.

Conclusion

Moving forward, to increase Sabah's volume of trade, it is imperative that the strategic role of ports to be further supported and facilities to be improved overtime. The role of ports in Sabah can be strengthened and positioned in a way that it can play greater role in Borneo and BIMP-EAGA region.

The effect estimation of decline in trade in all 3 scenarios reveal that the impact on output growth to be above 1%, especially when there is decline in export. Decline in import from one perspective shows a favourable impact to output growth. Preliminary estimation undertaken through simulation exercise reveal that it is no doubt that trade contributes positively to the economy.

In projecting any ports as transhipment hub, it is useful that experience of established and reputable port be learned and studied. The experience of Port of Rotterdam, Port of Singapore and other bigger Malaysian ports for instance indeed will give valuable lesson and guide to many ports around the world. There are many things that can be emulated from ports around the world.

Features such as strategic geographical location, ports with the state of the art technology characterized with smart port features, its operational efficiency, systematic and integrated logistics services with other value added services and advanced facilities and infrastructure are among important features of a port transhipment hub. For any future port transhipment hubs to be established or expanded, it is important that experience of bigger ports to be learned.

Moreover, direct investment inflow in manufacturing sector leads to greater production of manufacturing goods which are meant for other markets. This lead to increase of export of that country. Hence, effort to attract quality direct investment such as foreign direct investment in strategic sectors can be beneficial for the state at least from international trade perspective.

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