Survey on logistics cost in Vietnam

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Survey on Logistics Cost in Vietnam

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Keywords: Logistics Cost, Vietnam, Transportation Cost, Container, Round Trip, Ha Noi, Ho Chi Minh City, Da Nang

JEL Classification: L91, O53, R40

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Abstract

This paper analyzes transportation time and costs for domestic and international cargo in Vietnam by using a questionnaire and interview survey of 19 freight forwarders. The cargo route between Ha Noi and Ho Chi Minh City is one of the primary logistics pathways in Vietnam, with logistics costs from Ho Chi Minh City to Ha Noi being higher than that in the opposite direction. For freight forwarders in Vietnam, there are four options: road, railway, ship, and air. In this paper, we compare the transportation time and costs for each mode of transport. For international logistics, cross-border costs such as customs clearance fees are still higher, but the time required for cross-border procedures has shown improvements at borders between Vietnam and Laos. Our survey results also show that the price difference for transporting a 20-foot container versus a 40-foot container by ship is significant, whereas the costs are not different for road transport.

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Introduction

Vietnam is an elongated country from north to south and has two megacities, Ha Noi in the north and Ho Chi Minh City in the south. Both cities have large urban areas that serve as important commercial markets and production bases. Logistics are needed to transport goods and materials between factories and ports/airports, and to deliver domestic and imported commercial goods to shops and households. In Vietnam, the coastal inter-city

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logistics along National Highway No. 1 is an interesting case to study, particularly between Ha Noi and Ho Chi Minh City, as consignors have four options for shipment: road, railway, ship, and air.

Vietnam's cross-border logistics with Cambodia, Laos, Thailand, and southern China have progressed with the development of three economic corridors through the Greater Mekong Subregion (GMS) Economic Cooperation Program (Ishida and Isono 2012; Ishida 2019). Outside of the GMS, trade with the United States, South Korea, Japan, and China are also important.

This paper shows the results of a survey on freight forwarders jointly conducted by the Institute of Developing Economies, Japan External Trade Organization (IDE-JETRO) and the Institute of World Economics and Politics, Vietnam Academy of Social Sciences (IWEP-VASS) in 2017. The survey primarily focused on fundamental aspects of logistics—the time required for transport and transportation costs for specific locations and modes of transport. This paper is composed of six sections. The first section reviews related literature. The second section outlines the framework of the survey and the key features of freight forwarders selected for inclusion in the survey. The third section describes the domestic logistics routes in Vietnam between Ha Noi and Ho Chi Minh City, between Ha Noi and Da Nang, between Ho Chi Minh City and Da Nang, and between other locations in Vietnam. The fourth section focuses on international logistics, including cross-border logistics within the Mekong Region (excluding China) and logistics to areas outside of the Mekong Region. The fifth section shows the differences in cargo transportation costs between a 20-foot container and 40-foot container for both a one-way trip load and round-trip load by different modes of transport.[2] Lastly, concluding remarks summarize the results and discuss future challenges.

1. Literature Review

Here we review well-known studies on logistics in Vietnam and on cargo transportation cost. Regarding studies on logistics in Vietnam, Banomyong *et al.* (2015) illustrates a comprehensive picture of the logistics system in Vietnam from viewpoints of transportation and logistics infrastructure as well as mode of transport. It describes the institutional frameworks and the quality of logistics service providers in accordance with semi-structured interviews with policy makers and business associations related to the logistics business in Vietnam. The paper details two aspects of the logistics system in

[2] "Cargo transportation cost" is also called "transport price," "transport charge," and "logistics charge" in this paper.

Vietnam: a lower-quality logistics system provided by local small and medium-sized firms on the one hand, and a limited number of modernized joint-venture logistics providers for international transportation on the other.

Lu and Lin (2012) presents importance-satisfaction analyses on national logistics competence of Vietnam as well as those of Taiwan and Malaysia in accordance with questionnaire surveys on the evaluation by manufactures. According to the evaluation by the manufacturers, inland transport linkage like road and rail, air transport and ports and maritime transport are well-evaluated while they do not satisfy with eradication of corruption, simplification of customs clearance and financial services like banking and insurance in Vietnam. Nguyen (2016) presents challenges and opportunities for Vietnam upon participation in the ASEAN Single Shipping Market (ASSM) by reviewing the ASSM initiative and the current situations of Vietnamese shipping industry.

As for transportation costs, economists of international trade have tried to estimate the transportation cost out of the imports. As one of representative studies, Hummels (2007) shows a long-term declining trend of transportation costs for ocean and air trpansportation by analyzing data between the 1950s and 2004. Golub and Tomasik (2008) estimates the country-specific international transportation costs of air, maritime, and road transportation for 21 OECD countries. He, Li, and Whalley (2017) develops a general equilibrium trade model using transportation costs between the United States and Canada. Regarding transportation costs in developing countries, Limao and Venables (2001) examine the transportation costs of land-locked countries at the level of infrastructure development and geographical features. Christ and Ferrantino (2011) focuses on the uncertainties of transportation costs and time consumed in Sub-Saharan Africa countries and De (2009) estimates the cross-border transportation costs among India, Pakistan, Bangladesh, Sri Lanka, and Nepal.

However, the number of academic literatures on the logistics in Vietnam and also on transportation costs is limited (Nguyen 2016; Hummels 2007). In addition, the previous studies on logistics in Vietnam have yet focused on the transportation cost in detail; few studies on transportation costs also have not discussed national domestic logistics cost while the major issues of transportation costs have been those out of international trade. IDE-JETRO (2017) has obtained actual transportation costs for certain sections in Laos and Thailand, including the domestic logistics costs and international costs between Bangkok and Vientiane. This paper focuses on the time required for transport as well as cargo transportation costs domestically in Vietnam, internationally in the Mekong Region, and internationally outside of the Mekong Region in accordance with the methodologies adopted in IDE-JETRO (2017).

2. Framework of Logistics Survey and Feature of Freight Forwarders

The IDE-JETRO and IWEP-VASS conducted surveys of freight forwarders, forwarder associations, air cargo operators, and airport terminal operators in Vietnam from September to November in 2017. This paper focuses on the results of the survey with freight forwarders.

Table 1 shows the framework of the semi-structured survey and the features of logistics forwarders grouped as local Vietnamese forwarders, Japanese forwarders, and forwarders in other foreign countries, and by locations (Ha Noi, Ho Chi Minh City, and Da Nang). The sample for the survey includes 19 freight forwarders. By location, there are 9 forwarders in Ha Noi, 7 in Ho Chi Minh City, and 3 in Da Nang; by country of origin, there are 8 local Vietnamese forwarders, 6 Japanese forwarders, and 5 forwarders from other foreign countries. The targets of our survey were "establishments," rather than firms, because each forwarder operates in multiple locations. For example, a firm operating in Ha Noi and Ho Chi Minh City has two establishments, and both establishments operate independently of each other and have a different network of branches in the north and in the south. For the 18 establishments in our sample, both a questionnaire survey was distributed and an interview was conducted; for one establishment we only conducted an interview. In a small number of cases where an establishment provided conflicting answers to the questionnaire and interview survey, the questionnaire survey was used. While the total number of respondents in the sample was 19, in cases where only one respondent replied we show the answer of that one respondent; in such a case, we should interpret that such a respondent exists and not that the respondent represents a majority of respondents. Because the number of respondents is limited for each question, most of the tables show the minimum, maximum, and average values, rather than the standard deviation.

Regarding the year of establishment, Japanese forwarders were mostly established in the 1990s and 2000s, while there were no forwarders of other foreign countries established in the 1990s. One forwarder from a country other than Vietnam and Japan was established prior to 1990, but the year of establishment in this case refers to establishment of the firm in the home country, rather than the establishment in their operation in Vietnam. The year of establishment of forwarders of other foreign countries was mostly after the year 2000, with two established in the 2010s. This trend may reflect the large amount of foreign investments in Vietnam, such as the Samsung mobile phone factories in Bac Ninh Province and in Thai Nguyen Province that were opened in 2009 and 2014, respectively.

In terms of capital structure, all of the Japanese forwarders operate as joint ventures,

Table 1. Features of logistics forwarders in Vietnam in the survey sample (continues)

(number/%)

		Samples		Year of establishment					Location of headquarters			
		Establishments	Share (%)	Before 1990	1990s	2000s	2010s	n.a.	Ha Noi	HCMC	Da Nang	Overseas
Ha Noi	Vietnamese	3	15.8	0	1	0	2	0	3	0	0	0
	Other foreign	2	10.5	0	0	0	1	1	0	0	0	2
	Japanese	4	21.1	0	2	2	0	0	2	1	0	1
	Sub-total	9	47.4	0	3	2	3	1	5	1	0	3
HCMC	Vietnamese	3	15.8	0	0	0	1	2	1	2	0	0
	Other foreign	2	10.5	1	0	0	1	0	0	1	0	1
	Japanese	2	10.5	0	1	1	0	0	0	2	0	0
	Sub-total	7	36.8	1	1	1	2	2	1	5	0	1
Da Nang	Vietnamese	2	10.5	0	1	1	0	0	0	1	1	0
	Other foreign	1	5.3	0	0	1	0		0	1	0	0
	Sub-total	3	15.8	0	1	2	0	0	0	2	1	0
Total	Vietnamese	8	42.1	0	2	1	3	2	4	3	1	0
	Other foreign	5	26.3	1	0	1	2	1	0	2	0	3
	Japanese	6	31.6	0	3	3	0	0	2	3	0	1
	Total	19	100.0	1	5	5	5	3	6	8	1	4

Table 1. Features of logistics forwarders in Vietnam in the survey sample (continued)

(number)

		Capital structure			Number of retained vehicles				Number of employees			
		100% Local	100% Foreign	Joint-venture	Min.	Max.	Ave.	Respondents	Min.	Max.	Ave.	Respondents
Ha Noi	Vietnamese	3	0	0	0	0	0	3	0	18	9	3
	Other foreign	0	2	0	0	0	0	2	15	85	50	2
	Japanese	0	0	4	69	709	389	3	420	900	707	3
	Sub-total	3	2	4	0	709	146	8	0	900	281	8
HCMC	Vietnamese	3	0	0	0	53	18	3	12	100	51	3
	Other foreign	0	1	1	0	40	20	2	100	300	200	2
	Japanese	0	0	2	130	388	259	2	700	900	800	2
	Sub-total	3	1	3	0	388	87	7	12	900	307	7
Da Nang	Vietnamese	2	0	0	13	26	20	2	60	97	79	2
	Other foreign	0	0	1	5	5	5	1	15	15	15	1
	Sub-total	2	0	1	5	26	15	3	15	97	57	3
Total	Vietnamese	8	0	0	0	53	12	8	0	100	42	8
	Other foreign	0	3	2	0	40	9	5	15	300	103	5
	Japanese	0	0	6	69	709	337	5	420	900	744	5
	Total	8	3	8	0	709	101	18	0	900	254	18

Table 1. Features of logistics forwarders in Vietnam in the survey sample (continued)

(number)

		Services provided (establishents)											
		Transport	Inbound	Outbound	Air Cargo	Shipping	Multimodal	Forwarding	NVOC	Customs	Cosolidation	Packing	Insurance
Ha Noi	Vietnamese	1	2	1	1	1	0	1	0	2	1	1	1
	Other foreign	2	0	0	2	2	0	2	0	2	0	2	0
	Japanese	3	3	3	3	3	2	3	2	3	2	3	2
	Sub-total	6	5	4	6	6	2	6	2	7	3	6	3
HCMC	Vietnamese	1	1	1	1	1	1	2	0	1	0	0	0
	Other foreign	2	0	0	1	2	1	1	0	1	1	0	0
	Japanese	2	2	2	2	2	2	2	2	2	2	2	2
	Sub-total	5	3	3	4	5	4	5	2	4	3	2	2
Da Nang	Vietnamese	2	0	0	2	2	0	0	0	1	0	0	0
	Other foreign	1	0	0	1	1	0	0	0	1	0	0	0
	Sub-total	3	0	0	3	3	0	0	0	2	0	0	0
Total	Vietnamese	4	3	2	4	4	1	3	0	4	1	1	1
	Other foreign	5	0	0	4	5	1	3	0	4	1	2	0
	Japanese	5	5	5	5	5	4	5	4	5	4	5	4
	Total	14	8	7	13	14	6	11	4	13	6	8	5

Notes: 1) Respondents in the sample are defined as “establishments,” rather than “firms,” because we surveyed two establishments of the same firm in Hanoi and Ho Chi Minh City, that are managed independently of each other.

2) The methods for counting the number of vehicles are different depending on the forwarders and may include tractor head and chassis separately.

3) Services provided by the respondents are designed with multiple answers and the categories can be duplicated.

Source: Survey results.

while forwarders of other foreign countries prefer to a operate with 100% foreign capital. Vietnamese law stipulates that foreign firms must establish a joint venture firm if they provide logistics services such as domestic land cargo transport, international cargo transport, and warehousing services (Ikebe 2008). With regard to this regulation, Japanese forwarders prefer to establish joint venture firms, while forwarders from other foreign countries tend to outsource such services. This result is not unrelated to the fact that the average numbers of retained vehicles and employees of Japanese forwarders is overwhelmingly higher than for forwarders from other foreign countries, with Japanese forwarders reporting 337 vehicles and 744 employees, as shown in Table 1. In particular, the minimum number of the retained vehicles and employees for Japanese forwarders is larger than the maximum number for local Vietnamese forwarders and forwarders from other foreign countries. Furthermore, Japanese forwarders provide all of the services enumerated in Table 1, while local Vietnamese forwarders and forwarders from other foreign countries do not provide the full spectrum of logistics services. Comparing local forwarders and forwarders of other foreign countries, the average number of employees of forwarders from other foreign countries is twice as large as the average number employed by local forwarders.

Even though our sample size is limited, we can observe that because most forwarders from other foreign countries tend to operate using 100% foreign capital, they do not retain vehicles for transporting cargo, but rather supply logistics services as front forwarders with a large number of employees. These characteristics differ from Japanese forwarders, which generally choose to operate joint ventures with local partners, provide a full spectrum of services, and retain more vehicles. In contrast, some local forwarders do not retain trucks and trailers, and instead outsource transport and warehouse services to other forwarders, while others use their own vehicles to provide logistics services even though the size of their establishments are not so large.

3. Domestic Logistics in Vietnam

Comparing domestic logistics and international logistics in Vietnam, the demand for domestic logistics is much higher than the demand for international logistics, as indicated in the traffic volumes published by General Statistics Organization of the Vietnam Ministry of Planning and Investment (Table 2). Comparing shares by transport mode, logistics by road accounts for more than 60% of total demand and that share has increased constantly year after year. The share occupied by inland water is the second largest, although this share is trending downward. The traffic volume by air remains negligible.

Table 2. Cargo traffic volume in Vietnam by domestic and international transport and by mode of transport

		1995	2000	2005	2010	2015	2016
Traffic volume (million ton)	Domestic	136.7	214.8	426.1	765.6	1,115.1	1,207.6
		(97.2)	(96.0)	(92.6)	(95.6)	(97.2)	(97.4)
	International	4.0	9.0	34.1	35.3	31.8	32.6
		(2.8)	(4.0)	(7.4)	(4.4)	(2.8)	(2.6)
	Railway	4.5	6.3	8.8	7.9	6.7	5.2
		(3.2)	(2.8)	(1.9)	(1.0)	(0.6)	(0.4)
	Road	91.2	144.6	298.1	587.0	877.6	957.5
		(64.8)	(64.6)	(64.8)	(73.3)	(76.5)	(77.2)
	Inland water	37.7	57.4	111.1	144.2	201.5	212.5
		(26.8)	(25.6)	(24.1)	(18.0)	(17.6)	(17.1)
	Sea	7.3	15.6	42.1	61.6	60.8	64.8
		(5.2)	(7.0)	(9.1)	(7.7)	(5.3)	(5.2)
	Air	0.0	0.0	0.1	0.2	0.2	n.a.
		0.0	0.0	(0.0)	(0.0)	(0.0)	n.a.
	Total	140.7	223.8	460.2	800.9	1,146.9	1,240.2
		(100.0)	(100.0)	(100.0)	(100.0)	(100.0)	(100.0)

Note: Numbers in parentheses represent the share (%) of traffic volume.
Source: General Statistics of Vietnam (various years) *Statistical Yearbook*.

After confirming the higher demand of traffic volume for domestic logistics in Vietnam, we next examined the cargo transportation time and costs between Ha Noi and Ho Chi Minh City, between these two megacities and Da Nang, and between various other domestic locations.

3.1. Logistics between Ha Noi and Ho Chi Minh City

Highway No. 1, which spans the 1,608 km between Ha Noi and Ho Chi Minh City, plays an important role in the logistics of Vietnam. As mentioned in the Introduction, there are four transport options for consignors in Vietnam: road, railway, ship, and air. According to the survey responses from forwarders, electrical and electronics parts and components, machinery, garments, drinking water, and consumer final goods such as motorcycles are transported in both directions. Refrigerated food is also transported using cold chain logistics between the two megacities.

Table 3 shows utilization share by transport mode. Road transport makes up more than half of the traffic volume, but the share is higher for transport to Ho Chi Minh City from Ha Noi than for the transport in the opposite direction. After road transport, cargo

Table 3. Share of utilization by mode of transport between Hanoi and Ho Chi Minh City

(% / number)

		Road	Railways	Cargo ship	Air cargo	Total	Respondents
Ha Noi → Ho Chi Minh City	Vietnamese	70.0	0.0	26.7	3.3	100.0	3
	Other foreign	50.0	0.0	40.0	10.0	100.0	1
	Japanese	63.8	9.5	23.3	3.3	100.0	3
	All samples	64.5	4.1	27.1	4.3	100.0	7
HCMC → Ha Noi	Vietnamese	55.0	0.0	40.0	5.0	100.0	2
	Other foreign	50.0	0.0	40.0	10.0	100.0	1
	Japanese	50.0	0.0	30.0	20.0	100.0	1
	All samples	52.5	0.0	37.5	10.0	100.0	4

Source: Survey results.

ships is the next largest mode of transport. It is interesting that the share of traffic for Japanese and local forwarders using cargo ships is larger for transport to Ha Noi from Ho Chi Minh City than for transport in the opposite direction. As mentioned later, the transport demand to Ha Noi from Ho Chi Minh City is higher than that in the opposite direction. The share of utilization of cargo ships is higher in the direction of Ha Noi and utilization of road transport is lower because the higher demand may be complemented by the utilization of cargo ships. After cargo ships, the share of air cargo is the next highest, while rail is the lowest. According to forwarders that transport by rail, even though it is a relatively small share, transport by rail is advantageous in that the delivery time is more predictable than for other modes of transport.[3] Comparing Table 2 and Table 3, these tables show similar trends while the importance of utilizing air cargo is higher between Ha Noi and Ho Chi Minh City than in the whole country as shown in Table 3.

Table 4 shows the door-to-door time required for transport between Ha Noi and Ho Chi Minh City. The minimum time required by road between Ha Noi and Ho Chi Minh City is 48 hours (2 days) and the maximum time is 96 hours (4 days), for an average of 69 hours. Transporting goods 1,608 km over 48 hours can be accomplished by two drivers working full-time in shifts; if they drive at an average speed of 40 km/h, they have to work 20 hours per day in turn. Thus, many forwarders usually estimate that 72 hours door-to-door is required. For rail and cargo ship, 4.5 days and 6 days are required, respectively, while air only requires 12 hours.

Table 5 shows transport costs between Ha Noi and Ho Chi Minh City according to transport mode. The transport charge from Ho Chi Minh City to Ha Noi is 1.5 times higher

[3] In contrast, Banomyong et al. (2015) shows a different view that the inflexibility and unreliability of rail compared other modes of transport discourage shippers from using rail freight service.

Table 4. Time required for transport between Hanoi and Ho Chi Minh City by mode of transport

		Min.	Max.	Ave.	Respondents
Ha Noi - HCMC by road	hour	48.0	96.0	68.8	8
	day	2.0	4.0	2.9	
Ha Noi - HCMC by railways	hour	96.0	120.0	108.0	2
	day	4.0	5.0	4.5	
Ha Noi - HCMC by sea	hour	120.0	168.0	141.8	5
	day	5.0	7.0	5.9	
Ha Noi - HCMC by air	hour			12.0	1
Ratio (railways/road)	power	1.3	1.5	1.4	2
Ratio (sea/road)	power	1.5	2.3	2.0	4
Ratio (sea/railways)	power	1.2	1.3	1.2	2

Notes: 1) Time required for transportation decrease in cases where two truck drivers alternative driving.
2) Time required for transportation by road between Hanoi and Ho Chi Minh City is said to be 3 days.
Source: Survey results.

than the return trip. This number is based on the transportation costs for both directions provided by respondents. Comparing the average value of the charges or costs in the case of a 40-foot container between Ho Chi Minh City and Ha Noi, the ratio increases to 2.0 times higher. The transport charge from Ho Chi Minh City to Ha Noi is higher than that for the opposite direction because the demand in that direction is higher, according to the respondents. More than a few respondents noted that the transport charges for a round-trip load is lower than the charges for a one-way trip load, with a round-trip discount rate of 15.5% and 5.6% for road and cargo ship (from door to door), respectively. The round-trip discount by road is the highest, although this value is not so high compared with that for other locations. As a matter of fact, one respondent said that he does not discount the transport charge even when he receives an order for a return trip.

Comparing the transportation time and costs of road transport with that of rail and sea in Table 4 and Table 5, rail transport takes 1.3 to 1.5 times longer than by road whereas a trip by ship takes 1.5 to 2.3 times longer compared with road transport. The transportation costs by truck and trailer is 1.1 to 1.2 times higher than by train and is 1.0 to 2.1 times higher than by cargo ship in the case of a 40-foot container. In other words, the discount in cost for railway and cargo ship is not attractive when the cost performance is taken into account. Using a 20-foot container, however, can be attractive; the ratio of transport by ship becomes 2.4 to 2.5 times less expensive than that by road. For a 20-foot container, the transportation cost is much lower than for a 40-foot container in the case of

Table 5. Transport cost between Hanoi and Ho Chi Minh City by mode of transport (continues)

(USD/number)

		Unit	Min.	Max.	Ave.	Respondents	Distances	Ave./100km
Road	a. Ha Noi → HCMC	40ft	444.4	1,422.2	903.7	6	1,616	55.9
	b. HCMC → Ha Noi	20ft	2,000.0	2,000.0	2,000.0	1	1,616	124.0
		40ft	800.0	3,333.3	1,812.7	7	1,616	112.4
	c. b/a	40ft	1.2	2.1	1.5	5		
	d. Ha Noi ⇔ HCMC	20ft			3,555.6	1	3,225	110.3
		40ft	1,377.8	3,644.4	2,617.8	5	3,225	81.2
	Round trip discount rate (%)	40ft	0.0	13.5	15.5	4		
Railways	e. Ha Noi → HCMC	40ft	533.3	800.0	666.7	2	1,726	38.6
	f. HCMC → Ha Noi	40ft			1,022.2	1	1,726	59.2
	g. f/e				1.3	1		
Cargo ship	h. Ha Noi － HCMC	20ft	311.1	800.0	620.0	2		
		40ft	533.3	977.8	730.6	2		
	i. Hai Phong － HCMC (door to door)	40ft			444.4	1		
	j. Ha Noi ⇔ HCMC	20ft			1,511.1	1		
		40ft	800.0	1,955.6	1,525.9	3		
	Round trip discount rate (%)	20ft			5.6	1		
		40ft	-13.9	30.8	5.6	3		
	1) Ha Noi － Hai Phong	20ft	131.1	177.8	154.4	2	113	136.5
		40ft	144.4	257.8	201.1	2	113	177.7
	2) Ha Noi ⇔ Hai Phong	20ft	196.7	377.8	287.2	2	226	126.9
		40ft	216.7	502.2	359.4	2	226	158.8
	Round trip discount rate (%)	20ft	-6.3	25.0	9.4	2		
		40ft	2.6	25.0	13.8	2		
	3) Hai Phong - HCMC	20ft	177.8	400.0	274.1	3	1,608	17.0
		40ft	222.2	533.3	422.2	3	1,608	26.3
	4) Hai Phong ⇔ HCMC	20ft	155.6	800.0	477.8	2	3,215	14.9
		40ft	377.8	888.9	633.3	2	3,215	19.7
	Round trip discount rate (%)	20ft	0.0	12.5	6.3	2		
		40ft	15.0	16.7	15.8	2		
	5) HCMC Port－its center and suburbs	20ft	133.3	222.2	177.8	2		
		40ft	133.3	231.1	180.7	3		
	6) HCMC Port ⇔its center and siburbs	20ft	200.0	377.8	288.9	2		
		40ft	266.7	386.7	326.7	2		
	Round trip discount rate (%)	20ft	15.0	25.0	20.0	2		
		40ft	16.3	25.0	20.7	2		

a cargo ship because space can be saved while the difference in transport cost is not so different as in the case of road transport. Table 5 also shows transport cost for the route of air cargo, but we do not mention them because the comparing the transport cost of air cargo with the cost by other modes of transport is difficult.

Table 5. Transport cost between Hanoi and Ho Chi Minh City by mode of transport (continued)

(USD/number)

		Unit	Min.	Max.	Ave.	Respondents	Distances	Ave./100km
Air cargo	k. Ha Noi － Ho Chi Minh City							
	7) Ha Noi & its suburbs - Noi Bai Airport	Truck	13.3	26.7	19.4	2		
	Cost in case of round trip	Truck			31.1	2		
	Round trip discount rate (%)				19.2	2		
	8) Noi Bai － Tan Son Nhat Airport	kg			0.8	1		
	9) Tan Son Nhat Airport － HCMC & its suburbs	Truck			13.3	1		
	Cost in case of round trip	Truck			22.2	1		
	Round trip discount rate (%)				16.7	1		
Cost comparison	road/railways (Ha Noi → HCMC)	40ft	1.1	1.2	1.2	2		
	road/railways (HCMC → Ha Noi)	40ft			1.1	1		
	road /railways (Ha Noi－HCMC)	40ft	1.1	1.2	1.1	3		
	road/ship (Ha Noi→HCMC)	40ft	1.0	1.5	1.2	3		
	road/ship (HCMC→Ha Noi)	20ft			2.5	1		
		40ft	1.4	2.1	1.7	3		
	road/ship HCMC ⇔ Ha Noi	20ft			2.4			
		40ft	1.7	1.9	1.8	2		
	railway/ship Ha Noi －HCMC	40ft			0.9	1		
		40ft			1.0	1		

Notes: 1) Exchange rate is assumed to be VND 22,500 per USD.
2) "→" is used in cases where the destination and origin are clear, " – " is used when the destination and origin are ambiguous, and "⇔" is used to indicate round-trip transport.
3) The round-trip discount rate is calculated based on the following formula: [(one-way charge) × 2 – (round-trip charge)] / [(one-way charge) × 2].
4) "HCMC Port" means ports in Ho Chi Minh City and there are a lot of port terminals the mega city along Saigon and Dong Nai River.

Source: Survey results.

3.2. Logistics between the Two Megacities and Da Nang

Da Nang is considered to be the major city in central Vietnam between Ha Noi and Ho Chi Minh City; however, the city is much smaller and it does not have satellite provinces like Ha Noi (Bac Ninh and Hung Yen) and Ho Chi Minh City (Dong Nai and Binh Duong). Some forwarders consider Da Nang a base for transporting to cities in central Vietnam because the distance between Ha Noi and Ho Chi Minh City is too great.

As for goods transported between the two megacities and Da Nang, according to the respondents, construction materials are transported from Ha Noi to Da Nang and consumer goods, like rice and drinking water, are transported from Da Nang to Ha Noi. Consumer goods are transported from Ho Chi Minh City to Da Nang, while electric appliances, automobile parts and components, furniture, cement, and construction materials are transported from Da Nang to Ho Chi Minh City. From Da Nang to other cities in central Vietnam, consumer goods like pastries and drinking water, tapioca glue,

Table 6. Share of utilization by mode of transport between Hanoi and Da Nang and between Ho Chi Minh City and Da Nang

(Unit: %)

	Road	Railaways	Ship	Air	Total	Respondents
Ha Noi→Da Nang	85.0	0.0	10.0	5.0	100.0	1
Da Nang→Ha Noi	85.0	0.0	10.0	5.0	100.0	1
HCMC→Da Nang	100.0	0.0	0.0	0.0	100.0	2
Da Nang→HCMC	100.0	0.0	0.0	0.0	100.0	2

Source: Survey results.

Table 7. Time required for transport between Ha Noni and Da Nang and between Ho Chi Minh City and Da Nang by mode of transport

< Ha Noi － Da Nang >

	Unit for time	Transportation time			Respondents
		Min.	Max.	Ave.	
Road: Ha Noi－Da Nang	hours			36.0	1
	days			1.5	
Ship: Ha Noi－Da Nang	hours	26.0	96.0	51.5	4
	days	1.1	4.0	2.1	
Air: Ha Noi－ Da Nang	hours			7.0	1
Road/ship: Ha Noi － Da Nang	power			1.4	
Road/Air: Ha Noi－Da Nang	power			5.1	1

< Ho Chi Minh City － Da Nang>

	Unit for time	Transportation time			Respondents
		Min.	Max.	Ave.	
Road: HCMC－Da Nang	hours	24.0	72.0	41.7	3
	days	1.0	3.0	1.7	
Ship: HCMC－Da Nang	hours	120.0	144.0	132.0	1
	days	5.0	6.0	5.5	
Air: HCMC－ Da Nang	hours	8.0	10.0	9.0	2
Road/ship: HCMC － Da Nang	power			3.2	
Road/Air: HCMC－Da Nang	power			3.5	1

Source: Survey results.

and fabrics are transported.

Table 6 shows the utilization share by transport mode between Ha Noi and Da Nang as well as that between Ho Chi Minh City and Da Nang. All transport between Ho Chi Minh City and Da Nang is by road; only one forwarder reported sometimes using cargo

ships and air cargo between Ha Noi and Da Nang.

Table 7 shows the amount of time required for each transport mode between the two megacities and Da Nang. In the case of road transport, it takes 36 hours (1.5 days) between Ha Noi and Da Nang, while it takes 42 hours (1.7 days) between Ho Chi Minh City and Da Nang. For a cargo ship, it takes 52 hours (2.1 days) between Ha Noi and Da Nang and 132 hours (5.5 days) between Ho Chi Minh City and Da Nang. Comparing transport times by ship and by road, transport by ship between Ha Noi and Da Nang is just 1.5 times longer than by road, whereas the ratio between Ho Chi Minh City and Da Nang is 3.2 times longer.

Table 8 shows the logistics charges, or cargo transportation costs, between the two megacities and Da Nang. The transport costs per 100 km between Ha Noi and Da Nang are lower than those between Ho Chi Minh City and Da Nang except the cases of transporting a truck. In particular, the transport charge per 100 km between Ho Chi Minh City and Da Nang for the one-way transport of a 40-foot container load by road (USD 140) is higher than the transport charge between Ha Noi and Da Nang (USD 70 to USD 87). For ship, the transport charge per 100 km between ports in Ho Chi Minh City and Da Nang Port (USD 29) is much cheaper than that between Hai Phong and Da Nang Port (USD 43) for a 40-foot container. Thus, the use of ship is more advantageous between Ho Chi Minh City and Da Nang than between Hai Phong and Da Nang. While not many forwarders use cargo ships for this route, as shown in Table 6, it may reflect the smaller demand for the route.

3.3. Accessibility between Center/Suburbs and Ports/Airports of the Two Megacities

This subsection shows the transport time and logistics costs between the center/suburbs and ports/airports of Ha Noi, Ho Chi Minh City, and Da Nang.

Table 9 shows the time required for the various routes. Transport between the center/suburbs and port/airport of Ha Noi and Ho Chi Minh City requires between 2 and 5 hours, while for Da Nang the time required varies from 2 to 24 hours. Considering, however, that the area of Da Nang city is smaller and there are no surrounding suburbs, transport times of 24 hours can be assumed to be from other provinces in central Vietnam. On the other hand, the time required for procedures at ports varies and depends on the shipping company, according to respondents. As for the time required between the center/suburbs and the airport, shorter time is required for transport and procedures at the airport, although this is limited to the route between the center/suburbs of Ha Noi and Noi Bai Airport.

Table 8. Logistics charges between Hanoi and Da Nang and Ho Chi Minh City and Da Nang by mode of transport (continues)

(USD/number)

		Unit	Min.	Max.	Ave.	Respondents	Distances	Ave./100km
Road	a. Ha Noi－Da Nang	Truck			800.0	1	759	105.3
	b. Ha Noi → Da Nang	40ft			888.9	1	759	117.0
	c. Da Nang → Ha Noi	40ft			533.3	1	759	70.2
	d. Ha Noi ⇔ Da Nang	40ft			1,333.3	1	1,519	87.8
	Round trip discount rate for b (%)	40ft			25.0	1		
	Round trip discount rate for c (%)	40ft			-25.0	1		
	c. HCMC－Da Nang	Truck	800.0	1,022.2	911.1	2	879	103.6
		20ft	1,066.7	1,422.2	1,244.4	2	879	141.5
		40ft	1,066.7	1,555.6	1,229.6	3	879	139.8
	d. HCMC⇔Da Nang	Truck	1,066.7	1,777.8	1,422.2	2	1,759	80.9
		20ft	1,466.7	2,222.2	1,844.4	2	1,759	104.9
		40ft	1,466.7	2,666.7	1,985.2	3	1,759	112.9
	Round trip discount rate (%)	Truck	13.0	33.3	23.2	2		
		20ft	21.9	31.3	26.6	2		
		40ft	14.3	31.3	20.0	3		
Cargo ship	e. Ha Noi－Da Nang	20ft	177.8	531.1	295.6	3		
		40ft	222.2	657.8	385.9	3		
	f. Ha Noi ⇔ Da Nang	20ft			222.2	1		
		40ft			311.1	1		
	Round trip discount rate (%)	20ft			37.5	1		
		40ft			30.0	1		
	1) Ha Noi －Hai Phong	Truck			88.9	1	113	78.6
		20ft	66.7	131.1	98.9	2	113	87.4
		40ft	77.8	144.4	111.1	2	113	98.2
	2) Ha Noi⇔Hai Phong	Truck			151.1	1	113	133.5
		20ft	142.2	155.6	148.9	1	113	131.6
		40ft	155.6	164.4	216.7	1	113	191.5
	Round trip discount rate (%)	Truck			15.0	1		
		20ft			25.0	1		
		40ft			25.0	1		
	3) Hai Phong －Da Nang	20ft	77.8	311.1	194.4	2	670	29.0
		40ft	166.7	411.1	288.9	2	670	43.1
	g. HCMC－Da Nang	20ft						
		40ft			653.3	1	937	69.7
	4) HCMC & its suburbs －HCMC Port	20ft						
		40ft			120.0	1		
	5) HCMC Port－Da Nang Port	20ft						
		40ft	166.7	373.3	270.0	2	937	28.8
	6) Da Nang Port－Da Nang & its suburbs	20ft						
		40ft			71.1	1		

Table 8. Logistics charges between Hanoi and Da Nang and Ho Chi Minh City and Da Nang by mode of transport (continued)

(USD/number)

		Unit	Min.	Max.	Ave.	Respondents	Distances Ave./100km
Air cargo	h. Ha Noi－Da Nang						
	7) Ha Noi & its suburbs －Noi Bai Airport	Truck	13.3	22.2	17.8	1	
	8) Noi Bai －Da Nang Airport	kg			0.6	1	
	9) Da Nang Airport－Da Nang & its suburbs	20ft			88.9	1	
		40ft			102.2	1	
	i. HCMC－Da Nang						
	10) HCMC & its suburbs－Tan Son Nhat Airport	Truck					
	11) Tan Son Nhat Airport - Da Nang Airport	kg			0.4	1	
	12) Da Nang Airport－Da Nang & its suburbs	20ft			133.3	1	
		40ft			200.0	1	
Compair	road/cargo ship (Ha Noi－Da Nang)	40ft			2.7	1	
	road/cargo ship (Ha Noi－HCMC)	20ft			3.7	1	
		40ft			2.2	1	

Notes: 1) Exchange rate is assumed to be VND 22,500 per USD.
2) "→" is used in cases where the destination and origin are clear, " – " is used when the destination and origin are ambiguous, and "⇔" is used to indicate round-trip transport.
3) The round-trip discount rate is calculated based on the following formula: [(one-way charge) × 2 – (round-trip charge)] / [(one-way charge) × 2].

Source: Survey results.

Table 10 shows the logistics charge for transport between the center/suburbs and ports/airports of Ha Noi, Ho Chi Minh City, and Da Nang. Considering the small size of Da Nang and the fact that it does not have suburbs, the transport charge between the center/suburbs and the port is smaller than those for Ha Noi and Ho Chi Minh City, as expected. For Ha Noi and Ho Chi Minh City, the transport costs for a 20-foot container and 40-foot container do not show much difference. Table 10 does not show the transportation costs per 100 km because it includes numerous diverse cases. Considering that the distance between Ha Noi and Hai Phong is about 100 km and the transportation costs for Ha Noi and Ho Chi Minh City are between USD 100 and USD 200, these amounts seem reasonable. Regarding the higher transport charge to the airport in Da Nang, USD 111 and USD 151 with 20-foot and 40-foot container, respectively, than those of cases of Ha Noi and Ho Chi Minh City, it is because the transport depends on smaller trucks in Ha Noi and in Ho Chi Minh City while it depends on trailers with 20-foot and/or 40-foot container between center/suburbs and the airport in Da Nang.

Table 9. Time required for transport by truck from center of cities or their suburbs

<Center or suburbs－port> (hour/number)

		Time Required for:			Samples	Respondents
		Min.	Max.	Ave.		
Ha Noi & its suburbs－Hai Phong	Transport	2.0	5.0	3.0	6	4
	Procedures	3.0	48.0	20.0	5	4
	Sub-total	5.0	53.0	23.0		
HCMC & its suburbs－its port	Transport	2.0	5.0	3.5	5	5
	Procedures	2.0	22.0	11.8	4	4
	Sub-total	4.0	27.0	15.3		
Da Nang & its suburbs－its port	Transport	2.0	24.0	13.3	1	1
	Procedures	1.5	12.0	6.4	1	1
	Sub-total	3.5	36.0	19.6		

<Center or suburbs－airport>

		Time Required for:			Samples	Respondents
		Min.	Max.	Ave.		
Ha Noi －Noi Bai Airport	Transport			2.0	1	1
	Procedures			2.0	1	1
	Sub-total			4.0		
Da Nang - Da Nang Airport	Transport			1.0	1	1
	Procedures			2.0	1	1
	Sub-total			3.0		

Notes: 1) “Truck” includes transport by a tractor and trailer.
2) “Procedure” means time required for procedure at ports.
3) One respondent provided the time required for the same route depending on whether the final destination was domestic or international. We included both cases in the sample.
Source: Survey results.

3.4 Logistics for Other Routes in Vietnam

Some respondents provided information on the time required and logistics charges for specific transport routes. Even though these routes were supplied by only one respondent, we list them here. Table 11 shows the time required and Table 12 shows the transportation costs for specific routes in Vietnam. The route between Hai Phong and Bac Ninh and the route between Ho Chi Minh City and Binh Duong are similar to the cases described in Table 9. Qui Nhon, Quang Binh, and Kon Tum are provinces located in Central Vietnam.

The transportation charges per 100 km between Ho Chi Minh City to Phu Tho in the North, which takes 48 hours, between Da Nang and Hue, and between Da Nang Port and Dung Quat Economic Zone are less than USD 100, maybe because the cargos are

Table 10. Transportation cost by road from center of cities or their suburbs to ports and airports in Hanoi, Ho Chi Minh City, and Da Nang

<Center or suburbs－port> (USD per kg or Container/number)

	Unit	Min.	Max.	Ave.	Samples	Respondents
Ha Noi－Hai Phong	20ft	131.1	177.8	152.6	4	2
	40ft	144.4	257.8	180.6	4	1
HCMC & its suburbs－its port	20ft	133.3	222.2	177.8	2	2
	40ft	133.3	231.1	180.7	3	3
HCMC & its suburbs－Vung Tau port	20ft			150.0	1	1
	40ft			170.0	1	1
Da Nang & its suburbs－its port	20ft			88.9	1	1
	40ft	71.1	102.2	81.5	3	3

<Center or suburbs－airport> (USD per kg or Container/number)

	Unit	Min.	Max.	Ave.	Samples	Respondents
Ha Noi & its suburbs－Noi Bai Airport	Ttuck	0.6	26.7	15.4	4	2
HCMC & its suburbs－Tan Son Nhat Airport	Truck			13.3	1	1
	Truck			22.2	1	1
Da Nang & its suburbs－its port	20ft	88.9	133.3	111.1	2	1
	40ft	102.2	200.0	151.1	2	1

Notes: 1) " – " is used in cases where the destination and origin are ambiguous.
2) One respondent provided the time required for the same route depending on whether the final destination was domestic or international. We included both cases in the sample
Source: Survey results.

transported by smaller trucks. But the transportation costs per 100 km for other routes are mostly between USD 100 and USD 200. On the other hand, the costs per 100 km between Ho Chi Minh City and Vung Tau, between Ho Chi Minh City and Can Tho, and between Da Nang and Kon Tum are higher than USD 200. Among these, the route between Da Nang and Kon Tum includes mountainous routes, so it is understandable why the logistics costs are higher; however, for the other two routes, it is unclear what accounts for the higher costs.

4. International Logistics for Vietnam

International logistics makes up between 2% and 8% of total demand, based on the traffic volume shown in Table 2. Considering the importance of imports and exports, however, the international logistics in Vietnam should not be underestimated. For our analysis of international logistics in Vietnam, we separated logistics into two groups: international

Table 11. Time required for transport by road for other domestic routes in Vietnam

Section	Transportation Time			Respondents
	Min.	Max.	Ave.	
Hai Phong－Bac Ninh	3.0	4.0	3.5	1
HCMC－Binh Duong	1.5	2.0	1.8	1
HCMC－Long An Province			2.0	1
HCMC－Vung Tau	3.0	3.5	3.3	1
HCMC－Binh Duong Province	1.0	2.0	1.5	1
HCMC－Can Tho City			9.0	1
HCMC－Phu Tho Province			48.0	1
Da Nang－Quy Nhon			6.0	1
Da Nang－Quang Binh			6.0	1
Da Nang－Kon Tum			8.0	1
Da Nang－Dung Quat			5.5	1
Da Nang - Van Dong Industrial Park			2.5	1

Source: Survey results.

logistics within the Mekong Region and international logistics with other foreign countries. In the Mekong Region, land transport can be chosen, in addition to sea and air transport. Land transport is used between Vietnam and China, and Yunnan Province and Guangxi Zhuang Autonomous Region are members of the GMS Economic Cooperation Region. However, China is far larger than just these two provinces. Therefore, China is grouped with other foreign countries in this paper. South China, including Hong Kong, Guangzhou, Huizhou, and Shanghai, as well as Incheon in South Korea and the west coast of the United States, including Los Angeles, were listed by respondents as foreign countries with which they are engaged in logistics.

4.1 Logistics within the Mekong Region

Within the Mekong Region, road transport can be chosen, in addition to sea and air transport. The transport modes most frequently utilized vary depending on the exact route. For instance, between Ho Chi Minh City and Bangkok, ship is frequently chosen because it takes just 5 to 7 days, whereas transport by road takes at least 2 to 3 days. On the other hand, road transport is mostly used between Bangkok and Phnom Penh. This is because an approximately 220 km stretch of road transport between Sihanoukville and Phnom Penh, around 100 km transport between the center/suburbs of Bangkok and Bangkok Port or Laem Chabang Port, the cost of transshipment are added to the port to port transport between Sihanoukville Port and Bangkok/Laem Chabang Port; on the other

Table 12. Transportation cost by road for other domestic routes in Vietnam by size of containers or by truck

(Unit : USD)

	Container Size or Truck	Transportion Cost (USD)			Respondents	Distances (km)	Ave./100km
		Min.	Max.	Ave.			
Hai Phong－Bac Ninh	20ft			66.7	1	98.5	67.7
	40ft	66.7	88.9	77.8	1	98.5	79.0
HCMC－Long An Province	20ft			97.8	1	80.6	121.4
HCMC－Vung Tau	20ft			244.4	1	103.2	236.9
	40ft			288.9	1	103.2	280.0
HCMC－Binh Duong Province	20ft			111.1	1	78.1	142.3
	40ft			124.4	1	78.1	159.4
HCMC－Can Tho City (One-way)	Truck			444.4	1	168.3	264.1
	20ft			577.8	1	168.3	343.3
	40ft			688.9	1	168.3	409.3
HCMC－Can Tho City (Round Trip)	Truck			755.6	1	336.6	224.5
	20ft			1,066.7	1	336.6	316.9
	40ft			1,155.6	1	336.6	343.3
HCMC－Phuto Province	Truck			850.0	1	1,698.2	50.1
Da Nang－Hue	Truck	53.3	66.7	60.0	1	103.5	58.0
Da Nang－Qui Nhon	40ft	400.0	466.7	433.3	1	306.6	141.3
Da Nang－Quang Binh	40ft			400.0	1	340.5	117.5
Da Nang－Kon Tum	40ft			577.8	1	270.5	213.6
Da Nang Port－Chu Lai EZ.	20ft			142.2	1	101.1	140.7
Da Nang Port－Phu Bai Airport	20ft			142.2	1	87.3	163.0
Da Nang Port－Dung Quat EZ.	20ft			177.8	1	128.3	138.6
	Truck	62.2	75.6	68.9	1	128.3	53.7

Source: Survey results.

hand, the distance by road between Phnom Penh and Bangkok is just 659km. Furthermore, cargo ships are not frequently called at Sihanoukville Port.

As for goods transported between Vietnam and the other countries of the Mekong Region, according to the respondents, plastic chips, steel, and garments are exported to Bavet in Cambodia from Ho Chi Minh City; bicycle parts and garments are imported from Bavet to Ho Chi Minh City. Between Ho Chi Minh City and Phnom Penh, garments, plastic chips, steel, machinery, and chocolate are exported by road to Phnom Pneh whereas wood, agricultural products, electrical parts and components, and bicycle parts are imported by road from Phnom Penh. For transport by ship, fertilizers, purified petroleum, and vegetables are exported to Phnom Penh, while wood and rubber are imported from Phnom Penh. Between Ho Chi Minh City and Bangkok, agricultural products, garments, cement, and steel are exported to Bangkok, whereas beverages, vegetables, washing machines, plastic chips, and construction materials are imported

Table 13. Time required for transport to foreign cities in the Mekong Region by mode of transport

Route	Mode	Unit of Time	Transportation Time			Respondents
			Min.	Max.	Ave.	
HCMC－Bavet	Road	hours	5.3	66.0	41.4	3
		days	0.2	2.8	1.7	
HCMC－Phnom Penh	Road	hours	9.0	72.0	32.2	3
		days	0.4	3.0	1.3	
HCMC－Phnom Penh Port	Ship	hours	81.5	110.0	95.8	1
		days	3.4	4.6	4.0	
HCMC－Phnom Penh	Air	hours	3.0	7.0	4.8	1
HCMC－Bangkok	Road	hours	58.0	85.0	71.5	1
		days	2.4	3.5	3.0	
HCMC－Bangkok	Ship	hours	120.0	168.0	144.0	1
		days	5.0	7.0	6.0	
Ha Noi－Bangkok	Road	hours	96.0	100.0	97.0	2
		days	4.0	4.2	4.0	
Ha Noi－Bangkok (Laem Chabang)	Ship	hours			168.0	2
		days			7.0	
Ha Noi－Bangkok (Bangkok Port)	Ship	hours			264.0	2
		days			11.0	
Ha Noi－Bangkok	Air	hours			7.5	1
Da Nang－Vientiane	Road	hours			99	1
		days			4.1	
Da Nang－Savannakhet	Road	hours	12.0	13.0	12.5	1
Da Nang－Attapeu	Road	hours			16.0	1

Source: Survey results.

from Bangkok. Between Ha Noi and Bangkok, electric parts and components are traded in the both directions, while automobile parts and components are exported to Bangkok.[4] Between Da Nang and cities in Laos, including Vientiane, Savannakhet, and Attapeu, plywood and machineries are exported from Da Nang, while wood and cut tobacco are imported from Laos.

Table 13 shows the transport time required for routes between Ho Chi Minh City or Ha Noi and cities in the other countries in the Mekong Region. The distances from Ho Chi Minh City to Bavet and to Phnom Penh are 90 km and 240 km, respectively. The

[4] It may seem strange to some that automobile parts and components are exported to Bangkok, where the these industries are agglomerated. This may be because we only surveyed forwarders in Ha Noi, but not forwarders in Bangkok, which would have revealed the reciprocal side of this trade.

minimum time required was reported as 5.3 hours and 9.0 hours, respectively, including the time required for cross-border procedures, which appears to be a reasonable estimate. The maximum times, however, were reported as 2.8 days and 3.0 days just for 90 km and 240 km, respectively, which looks to be too long. In particular, two forwarders replied that it takes 36 hours and 52 – 55 hours in Vietnam, respectively, for just approximately 90 km between center/suburbs of Ho Chi Minh City and the border with Cambodia, Moc Bai. However, the reason why this route may take so much time should be checked again. On the other hand, the times required by ship and by air range from 3.4 to 4.6 days and 3.0 to 7.0 hours, respectively; however, this information came from only one respondent. The times required for transport by road and by ship between Bangkok and Ho Chi Minh City are 2.4 to 3.5 days and 5.0 to 7.0 days, respectively, and no respondents reported time by air, perhaps because few forwarders utilize air for this route, as well as by road as stated at the beginning of this section. On the other hand, between Ha Noi and Bangkok, there are forwarders who utilize roads, sea routes, and airlines. In the past, transport between Ha Noi and Bangkok was conducted by road, even though the distance is 1,391 km at a minimum. Road transport was previously utilized for this route because there were no direct ships between Bangkok and Ha Noi; the cargo had to be transshipped at Hong Kong or Ho Chi Minh City, thus it took between 10 days and 2 weeks by sea (JETRO 2008; Ishida 2013). However, a direct ship route has been operated between these cities since around 2014, taking only 5 days between Hai Phong Port and Laem Chabang Port and 9 days between Hai Phong Port and Bangkok Port. Thus, door to door, it takes an average of 7 days in the former cases. By road, one logistics forwarder estimated a 2.5-day-transport service and, as shown in Table 13, it takes around 4.0 days on average. Therefore, the difference in time between transport by road and by ship has decreased compared with the pre-2014 period. On the other hand, it takes only 7.5 hours by air, but it should be noted that only one respondent reported using this option.

Table 14 shows transportation costs between cities in Vietnam and foreign cities in the Mekong Region for specific routes. The transport charges by road between Ho Chi Minh City and Bavet range from USD 350 to USD 1,700; charges between Ho Chi Minh City and Phnom Penh range from USD 1,000 to USD 2,000; and the charge between Ho Chi Minh City and Bangkok is shown as USD 3,200. As can be seen, the logistics charges become more expensive with the increase in distance. Using the average transport charge per 100 km, the inverse can be seen. In particular, the transport charge per 100 km between Ho Chi Minh City and Bavet is the highest in the survey. Considering that the time required for the route between Ho Chi Minh City and Bavet is also quite long, the cross-border processes at Moc Bai – Bavet border likely needs some improvements.

Table 14. Transportation cost between cities in Vietnam and foreign cities in the Mekong Region by mode of transport

(USD/number)

		Min.	Max.	Ave.	Respondents	Distance (km)	Ave./100km
HCMC－Bavet (one-way)	Road	350.0	1,700.0	1,033.3	3	90	1,146.1
HCMC－Bavet (round trip)		1,440.0	1,640.0	1,540.0	1	180	855.6
HCMC－Phnom Penh	Road	1,000.0	2,000.0	1,400.0	4	240	584.4
HCMC－Phnom Penh Port (20ft)	Ship	180.0	190.0	185.0	1		
HCMC－Phnom Penh（per kg）	Air	3.3	3.5	3.4	1		
HCMC－Bangkok	Road			3,200.0	1	934	342.5
HCMC－Bangkok (20ft)	Ship	665.0	2,500.0	1,539.3	2		
HCMC－Bangkok (40ft)	Ship			3,000.0	1		
Ha Noi－Bangkok	Road	3,000.0	3,600.0	3,300.0	2	1,391	237.3
Noi Bai－Bangkok (per kg)	Air			10.7	1		
Da Nang－Vientiane	Road			1,555.6	1	891	174.5
Da Nang－Savannakhet	Road			1,200.0	1	492	244.1
Da Nang－Attapeu	Road	1,422.2	1,555.6	1,488.9	1	378	394.4

Source: Survey results.

Comparing the difference in charges between road and sea, the logistics costs by road is 7.6 times higher and 1.1 – 2.1 times higher than by sea between Ho Chi Minh City and Phnom Penh and between Ho Chi Minh City and Bangkok, respectively.[5] For the route between Ha Noi and Bangkok, the average logistics charges per 100 km is lower than between Ho Chi Minh City and Phnom Penh and between Ho Chi Minh City and Bangkok. In addition, the difference between the minimum and maximum values reported are not so large; however, only two respondents indicated that they use this route. These situations show that cargo transport between Ha Noi and Bangkok is more competitive than the other routes listed in Table 14. The transportation costs from port to port between Hai Phong and Laem Chabang are even lower; the differences are 18.3 times for a 20-foot container and 12.2 times for a 40-foot container. Transportation costs between these ports range between USD 160 and USD 200 per 20-foot container and USD 120 and USD 400 per 40-foot container (Table 20), which are lower than the costs for a one-way trip for transport between Hai Phong and Ho Chi Minh City, which are between USD 178 and USD 400 for a 20-foot container and USD 222 and USD 533 for a 40-foot container (see Table 5).[6]

[5] The door-to-door transport cost from Ho Chi Minh City to Phnom Penh looks too low (USD 185) in Table 14. However, the respondent replied that the shipping cost from port to port was USD 93.
[6] The transport cost for the opposite direction, from Laem Chabang/Bangkok to Ha Noi, may be more expensive considering the demand for the route while there were no answers for the direction.

Table 15. Customs clearance fees and time required for cross-border procedures at the Vietnamese borders with China, Laos, and Cambodia

	Customs Clearance Fee (USD/Number)				Time for Cross-bodering (hour /Number)			
	Min.	Max.	Ave.	Respondents	Min.	Max.	Ave.	Respondents
Vietnamese Side			150.0	1	0.5	4.0	2.6	4
Chinese Side			280.0	1	2.5	4.0	3.5	4
Chinese/Vietnamese side			1.9	1	1.0	7.0	2.6	4
Vietnamese Side	10.0	120.0	75.8	3	0.4	4.0	2.0	4
Lao Side	80.0	600.0	307.5	4	0.4	4.0	2.1	4
Lao/Vietnamese Side	1.5	9.0	3.5	3	0.8	9.0	1.1	4
Vietnamese Side	0.0	100.0	49.2	2	1.0	5.0	2.8	4
Canbodian Side	0.0	1000.0	416.7	2	1.0	8.0	3.7	4
Canbodian/Vietnamese side	1.0	12.5	6.2	2	1.0	6.0	1.5	4

Notes: 1) Regarding the comparative ratios between Vietnam and other countries, “Min.” means the ratio of the lower limit to the upper limit, while “Max.” means the ration of the upper limit to the lower limit.
2) The border with China represents cross-border transport by way of the “Lan Song–Pingxiang” border.
3) The border with Laos includes cases of cross-border transport between Hanoi and Bangkok, between Da Nang and Vientiane, and between Da Nang and Savannakhet (or Attapeu).
4) The border with Cambodia includes crossings by way of the Moc Bai–Bavet border and includes transport from Ho Chi Minh City to Bavet, Phnom Penh, and Bangkok.
5) The comparative ratio between Vietnam and Cambodia is calculated with an assumption that it is equal to one even though the respondent answered that the custom clearance fees at both sides of Vietnam and Cambodia are equal to zero.
6) The customs clearance fee in case of round trip between Ho Chi Minh City and Bavet is calculated as the summarized value the fees on both sides.
Source: Survey results.

After comparing the time required and transportation costs by route, let us consider the cross-border costs. Table 15 shows the customs clearance fees and time required for cross-border procedures at the Vietnamese borders with China, Laos, and Cambodia. Comparing the customs clearance fees between the Vietnamese side and the other countries’ sides, the former is lower than the latter. This is partly because the customs clearance fees for exporting are usually lower than those for importing; and also because the customs office tends to more strictly check foreign forwarders than domestic forwarders. Compared to the Vietnamese side of the border, the customs clearance fees at the Cambodian side are 6.2 times higher, those on the Laotian side are 3.5 times higher, while those on the Chinese side are 1.9 times higher. Regarding the customs clearance fee on the Cambodian side, one forwarder responded that the fee was zero USD, while another forwarder answered that it was USD 1,000. One forwarder replied that the

Table 16. Share of Vietnamese Exports and Imports with China by Mode of Transport

	The Amount	Share by Transport Mode (%)					
	(million USD)	Sea	Road	Air	Railways	Post	Others
Exports	60,910	58.6	30.6	9.0	1.7	0.0	0.1
Imports	27,251	44.0	28.6	27.4	0.0	0.0	0.0
Total	88,161	54.1	30.0	14.6	1.1	0.0	0.1

Source: Calculated based on "Global Trade Atlas."

documentation fees for customs clearance range from USD 20 to USD 100 on the Vietnamese side and from USD 40 to USD 300 on the Cambodian side, plus unofficial fees may be incurred if there are errors in documentation. The average reported times required for cross-border procedures are 6.1 hours at the Vietnam–China border, 4.1 hours at the Vietnam–Laos border, and 6.5 hours Cambodia–Vietnam border. The minimum times required for customs clearance were reported as 3.0 hours, 0.8 hours, and 2.0 hours for these border crossings, respectively. The shorter time required when crossing the Vietnam–Laos border reflects the implementation of single-stop inspection at the Lao Bao–Denh Savanh border starting on 6 February 2015, the result of efforts by border officials from both countries. At the border, border officials from both sides are separated into two groups, and one group from the Laotian side conducts the inspection on the Vietnamese side of the border, and one group from the Vietnamese side conducts the inspection on the Laotian side of the border. Customs, quarantine, and immigration inspections are conducted only once when a vehicle enters the other side.

4.2 International Logistics of Vietnam with Other Countries

Here, we discuss logistics from Vietnam to China, South Korea, and the United States. Regarding China, Ha Noi and its neighboring provinces have close economic relations with Hong Kong and cities in Guangdong Province of China such as Guangzhou, Guizhou, and Shenzhen. According to the respondents in Vietnam, garments and electronics parts and components are transported in both directions by road and by rail, in addition to shipping by sea between Hai Phong and Hong Kong or Shenzhen. Vietnam exports wood products, garments, and footwear, and imports machinery and electrical appliances to and from Shanghai. The modes of transport for exporting and importing to and from China are varied, as with the route between Ha Noi and Ho Chi Minh City (Table 16). Regarding South Korea, gloves, rattan, and bamboo are exported, and vacuum cleaners and electronics parts are imported to and from Incheon by ship, whereas electronics parts are

Table 17. Time required for transport with foreign cities outside the Mekong Region (including the route between Hanoi and South China) by mode of transport

	Mode	Unit of Time	Transportion Time			Respondents
			Min.	Max.	Ave.	
Ha Noi－South China	Road	hours	30.0	47.0	38.5	2
		days	1.3	2.0	1.6	
HCMC－Shanghai (direct flight)	Ship	hours	120.0	192.0	150.0	2
		days	5.0	8.0	6.3	
Da Nang－Shanghai	Ship	hours			144.0	1
		days			6.0	
Thai Nguyen－Incheon	Ship	hours	144.0	192.0	168.0	1
		days	6.0	8.0	7.0	
HCMC－Incheon	Air	hours	6.5	13.5	10.0	1
HCMC－Los Angelse/New York	Ship	hours	408.0	600.0	474.0	2
		days	17.0	25.0	19.8	

Source: Survey results.

Table 18. Transportation cost between cities in Vietnam and foreign cities outside the Mekong Region (including the route between Hanoi and South China) by mode of transport

（Unit：USD）

	Mode	Transportion Time			Respondents	Distance (km)	Ave./100km
		Min.	Max.	Ave.			
Ha Noi－South China (40-48ft container)	Road	250.0	5,500.0	2,855.0	5	956.7	298.4
Thai Nguyen－Incheon (20ft container)	Ship			582.2	1		
(40ft container)	Ship			736.7	1		
HCMC－Los Angelse/New York (20ft container)	Ship			2,118.9	1		
(40ft container)	Ship			3,013.3	1		

Source: Survey results.

exported to Incheon by air. Respondents reported exporting garments, footwear, wooden furniture, electronics parts, and machinery.

Table 17 shows the time required for transport and Table 18 shows the logistics charges for the above-mentioned routes. Between Ha Noi and South China, the average charge is USD 2,855, with the range between the minimum (USD 250) and maximum (USD 5,500) being too large.[7] The average charge per 100 km is USD 298, compared with a charge of USD 237 between Ha Noi and Bangkok (Table 14). The time required for transport between Ha Noi and South China is about 1.6 days on average (Table 17),

[7] Regarding the case that show the maximum transport charge (USD 5,500) between Ha Noi and South China, the forwarder replied that the transport charge is higher because the firm transport liquid crystal display (LCD) panel and light emitting diode (LED) panel for the section.

while the time required between Bangkok and Ha Noi is about 4 days on average (Table 13). The time between Ha Noi and Southern China is shorter than that between Ha Noi and Bangkok, partly because the distance to Guangzhou is 957 km compared with a distance between Ha Noi and Bangkok of 1,391 km; and partly because the former route crosses one border, while there are two crossings for the latter.

To the United States, the time required for transport ranges from 17 to 25 days and it takes 3.6 to 4.1 times longer days than between Thai Nguyen to Incheon. Furthermore, the logistics charges for transport to the United States increases to between USD 2,119 and 3,013, which is between 3.6 and 4.1 times higher than to South Korea. In addition to China, South Korea, and the United States, we had respondents who indicated logistics operations to Europe, as well as to Central Asia and to Russia by way of China, but there was only one case of each.

5. Other Findings from the Survey of Forwarders in Vietnam

Thus far, we have discussed the times required for transport and logistics charges for domestic and international routes, and which kinds of goods respondents reported transporting for each route. Next, we discuss some other findings yielded in the survey that do not fit within the previous discussion of domestic and international logistics, but can provide us useful information. Specifically, we will look at the time required for transport and shipping charges from port to port; the difference in transport charges between 20-foot and 40-foot containers; the cost ratios between one-way trip loads and round-trip loads, and the round-trip discount ratio from the whole sample.

5.1 Time Required and Transportation Costs from Port to Port

Transport using cargo ships requires road transport twice, from door to port and from port to door, and also requires transshipment twice. Thus far, we have discussed the door-to-door transportation time and costs for cargo ships, except in a few cases clearly mentioned as being “from port to port.” Here we collect other reported examples of port-to-port transport and make comparisons.

Table 19 shows the time required for shipping from port to port. The time required between Hai Phong and Ho Chi Minh City ranges between 48 and 100 hours, between Hai Phong and Da Nang 26 to 48 hours, and between Ho Chi Minh City and Da Nang 72 hours. Regarding international shipping, the time required between Ho Chi Minh City and Shanghai is between 5 and 7 days with a direct ship, and 14 days by way of Kaohxiung or Hong Kong. The time required for transport from Ho Chi Minh City to

Table 19. Time required for shipping transport from port to port

<from port to port> (hour/number)

		Transportation Time			Respondents
		Min.	Max.	Ave.	
Hai Phong－HCMC	hours	48.0	100.0	72.7	6
	days	2.0	4.2	3.0	
Hai Phong－Da Nang	hours	26.0	48.0	37.0	2
	days	1.1	2.0	1.5	
HCMC－Da Nang	hours			72.0	1
	days			3.0	
Hai Phong－South China	hours	72.0	168.0	72.0	1
	days	3.0	7.0	3.0	
Hai Phong－Laem Chabang	hours			120.0	1
	days			5.0	
Hai Phong－Bangkok	hours			216.0	1
	days			9.0	
Hai Phong－Singapore	hours			145.0	1
	days			6.0	
Hai Phong－Busan	hours	144.0	192.0	168.0	1
	days	6.0	8.0	7.0	
Hai Phong－Incheon	hours	120.0	168.0	144.0	1
	days	5.0	7.0	6.0	
HCMC－Phnom Penh	hours	48.0	72.0	60.0	1
	days	2.0	3.0	2.5	
HCMC－Bangkok	hours	45.0	72.0	59.3	2
	days	1.9	3.0	2.5	
HCMC－Singapore	hours			72.0	1
	days				
Shanghai → HCMC	hours	120.0	168.0	144.0	2
（Direct Ship）	days	5.0	7.0	6.0	
Shanghai → HCMC	hours			336.0	1
(by way of Kaohsiung/Hong Kong)	days			14.0	2
HCMC － Los Angelse	hours	480.0	600.0	540.0	1
	days	20.0	25.0	22.5	1
Shanghai → Da Nang	hours			144.0	1
	days			6.0	
Da Nang － South China	hours			168.0	1
	days			7.0	

<from airport to airport>

Noi Bai － Tan Son Nhat	hours	1.5	2.0	1.8	3

Source: Survey results.

Table 20. Transportation cost from port to port by cargo ship (continues)

<from Port to Port> (USD/number)

	Container Size	Transportation Cost (USD) Min.	Max.	Ave.	Respondents	Distance (km)	Charge /100km
Hai Phong－HCMC	20ft	177.8	400.0	274.1	3	1,607.5	17.0
	40ft	222.2	533.3	422.2	3	1,607.5	26.3
Hai Phong－Da Nang	20ft			311.1	1	670.4	46.4
	40ft			411.1	1	670.4	61.3
HCMC－Da Nang	40ft			373.3	1	937.1	39.8
Hai Phong－Bangkok	20ft	160.0	200.0	180.0	1	3,204.0	5.6
	40ft	120.0	400.0	270.0	2	3,204.0	8.4
Hai Phong－Singapore	20ft			240.0	1	3,028.0	7.9
(One-way Trip)	40ft			440.0	1	3,028.0	14.5
Hai Phong－Singapore	20ft			300.0	1	6,056.0	5.0
(Round trip)	40ft			540.0	1	6,056.0	8.9
Hai Phong－South China	20ft			120.0	1	1,142.7	10.5
	40ft			240.0	1	1,142.7	21.0
Hai Phong－Incheon	20ft			400.0	1	3,839.2	10.4
	40ft			550.0	1	3,839.2	14.3
HCMC－Phnom Penh	20ft	88.9	97.8	93.3	1	403.7	23.1
HCMC－Bangkok	20ft	88.9	97.8	93.3	1	1,489.0	6.3
Ho Chi Minh City －Singapore	20ft			150.0	1	1,435.3	10.5
(One-way Trip)	40ft			270.0	1	1,435.3	18.8
Ho Chi Minh City －Singapore	20ft			300.0	1	2,870.6	10.5
(Round trip)	40ft			540.0	1	2,870.6	18.8
Shanghai → HCMC	20ft	100.0	350.0	192.5	2	3,698.4	5.2
（Direct Ship）	40ft	200.0	700.0	382.5	2	3,698.4	10.3
(by way of Gaoxiong/Hong Kong)	40ft			336.0	1	3,698.4	9.1
HCMC→Shanghai	20ft	80.0	120.0	100.0	2	3,698.4	2.7
	40ft	160.0	200.0	180.0	1	3,698.4	4.9
HCMC － Los Angelse/New York	20ft	1,300.0	1,800.0	1,550.0	2	13,315.9	11.6
	40ft	1,450.0	2,600.0	2,025.0	2	13,315.9	15.2
Da Nang→Shenzhen	20ft			200.0	1	1,289.0	15.5
Da Nang － South China	20ft			200.0	1	1,289.0	15.5
	40ft			400.0	1	1,289.0	31.0
Shanghai → Da Nang	20ft			300.0	1	2,979.9	10.1
	40ft			600.0	0	2,979.9	20.1
Da Nang→Shanghai	20ft			100.0	1	2,979.9	3.4
Shenzhen→Da Nang	20ft			200.0	1	1,289.0	15.5
	40ft			400.0	1	1,289.0	31.0
Ningbo→Da Nang	20ft			400.0	1	2,883.6	13.9
	40ft			750.0	1	2,883.6	26.0
Da Nang→Ningbo	20ft			200.0	1	2,883.6	6.9

Table 20. Transportation cost from port to port by cargo ship (continued)

<from Airport to Airport>

	Unit	Min.	Max.	Ave.	Respondents
Noi Bai - Da Nang Airport	/ kg			0.62	1
Tan Son Nhat - Da Nang Airport	/ kg	1.45	2.00	1.73	3

Source: Survey results.

Phnom Penh and to Bangkok are about the same. The time required between Hai Phong and Laem Chabang is 5 days; however, it is unclear why the reported time required between Hai Phong and Bangkok is 9 days.

Table 20 shows the transportation costs from port to port by cargo ship, including the average charge per 100 km. Per 100 km, we can see that the charge between Hai Phong and Da Nang is the highest (USD 61 for a 40-foot container), between Ho Chi Minh City and Da Nang is the second highest (USD 40 for a 40-foot container); with 20-foot container, the charge between Hai Phong and Da Nang is the highest (USD 46 for a 40-foot container) and between Ho Chi Minh City and Phnom Penh is the second highest (USD 23 for a 20-foot container). On the other hand, the transport charge between Ho Chi Minh City and Bangkok is the third lowest (USD 6.3 for a 20-foot container), between Hai Phong and Bangkok is the second lowest (USD 5.6 for a 20-foot container), and between Shanghai and Ho Chi Minh City is the lowest at USD 5.2. Comparing the lowest and highest routes, the size of ships is smaller and the amount of competition is lower when there are higher transportation costs, while the scales of the cities connected are larger in cases of lower transportation costs.

Respondents reported engaging in logistics between Ho Chi Minh City and Shanghai and between Da Nang and Shanghai. For direct shipping between Ho Chi Minh City and Shanghai, it takes between 5 and 7 days, which is not so different compared with the time required between Da Nang and shanghai (6 days). The transport charge from Shanghai to Ho Chi Minh City ranges between USD 100 and USD 350 for a 20-foot container and between USD 200 and 700 for a 40-foot container, while the transportation costs from Ho Chi Minh City to Shanghai range between USD 80 and USD 120 for a 20-foot container and USD 160 and USD 200 for 40-foot container; thus, the former is between 1.3 and 3.5 times higher. In case of Da Nang, the transport charge from Shanghai to Da Nang is three times higher than the charge in the opposite direction. According to one respondent, the demand for transport from Shanghai to Ho Chi Minh City is much higher, while few goods are exported from Ho Chi Minh City to Shanghai.

Table 21. Difference in transportation cost between 20-foot and 40-foot containers

＜In case of road transport＞

	Ave.	S.D.	Samples	Respondents
In case of one way	1.19	0.18	22	10
In case of round trip	1.17	0.14	6	3
Total	1.19	0.17	28	10

＜In case of water transport＞

	Ave.	S.D.	Samples	Respondents
In case of one way	1.56	0.34	10	8
In case of round trip	1.77	0.66	2	2
Total	1.59	0.42	12	8

Source: Survey results.

5.2 Cost Differences of 20-foot Containers and 40-foot Containers

So far, the transportation costs have been analyzed for 20-foot and 40-foot containers. For transportation by trailer, a 40-foot container is used for bulky goods with a lower weight such as garments, while a 20-foot container is used for goods with heavier weight per individual item. Thus, the total weight of the cargo transported may not be that different between 20-foot containers and 40-foot containers. A forwarder that only retains semi-trailers for 40-foot containers said that they use them for transporting one 20-footcontainer. Other forwarders said that transport charges are equivalent between 20-foot and 40-foot containers. On the other hand, the transport charges are different when transporting 20-foot and 40-foot containers by cargo ship since a 40-foot container needs twice as much space as a 20-foot container.

Table 21 shows the averages and standard deviations of the ratios of transportation costs of 40-foot containers to those of 20-foot containers. Each sample is based on the reported transportation costs for each route that included responses for both 20-foot and 40-foot containers.

Costs are not so different between one-way trip load and that of round-trip loads; as a matter of fact, the average value for a one-way trip load is higher for road transport, while the average value of a round-trip load is higher for water transport. The average value of the ratio for water transport is higher (1.56) than that for road transport (1.19). Comparing the standard deviation, the variance of water transport is larger than that of road transport.

5.3 The Problem of Empty Loads

A one-way trip load means transporting an empty load in the opposite direction; thus, the cost for a round-trip load is lower than that of a one-way trip load. When using the shipping companies' container, the consignor has to transport an empty load on the way and load goods for export in the container to return to the port; the forwarder has to return the empty container to the port after importing goods. This is because it is not clear whether the first consignor who is importing should be responsible for container damages or the second consignor who is exporting should be responsible when damages are found after the first consignor passes the container to the second without inspection by the shipping company staff. However, there are some exceptions. First, when the first consignor and the second consignor are the same company, loading both ways is possible. Second, if the first consignor moves the empty container to an inland container depot (ICD) after importing, the second consignor, following inspection, can get the empty container and transport to other countries by way of a port after loading. Third, if the first consignor and the second consignor agree to certain conditions in case of container damage, loading both ways is also possible (container round use). Fourth, if the destination and origin are connected by road, like Ha Noi and Bangkok, loading both ways is possible. Sixth, if the import and export quantities are uneven, then one-way loads must include empty loads, even when loading is possible, as described in the first five examples. For instance, imports to Laos from Thailand are much larger than from Laos to Thailand.

For which types of transport routes are one-way loads more common than round-trip loads? How much is the round-trip discount rate when goods to load are found on the way back? Table 22 shows the share of one-way trip loads, of loading for transport on the way back, and of round-trip loads by route. Between Ha Noi and Ho Chi Minh City, the share of round-trip loads is more than a half (52.2%). This is because the scales of both cities are larger and they are connected by road. In the case of shipping between Ho Chi Minh City and Da Nang, the share of round-trip loads is the largest (65.0%). Between Ho Chi Minh City and Can Tho, the ratio is 40%. Da Nang and Can Tho are not megacities, but both are the main cities in central Vietnam and the Mekong Delta, respectively. On the other hand, between Ha Noi and Da Nang, one-way trip loads represent 100% of the transport.

Between Ha Noi and Hai Phong, between Ho Chi Minh City Port and its suburbs, and between Da Nang Port and Da Nang and the surrounding suburbs, the ratios of one-way trip loads are 82.5%, 70.0%, and 100.0%, respectively. One-way transports to and from ports are often empty, due to the reasons mentioned above. Between Ha Noi and

Table 22. The ratio of one-way trip load to round trip load by route (%)

	One Way	Empty Outbond	Round Trip	Total	Respondents
Ha Noi－HCMC	37.8	10.0	52.2	100.0	9
Ha Noi－Da Nang	100.0	0.0	0.0	100.0	1
Ha Noi－Hai Phong	82.5	5.0	12.5	100.0	4
Ha Noi－Noi Bai	83.3	0.0	16.7	100.0	3
HCMC－Its Suburbs	70.0	5.0	25.0	100.0	2
HCMC - Can Tho	60.0	0.0	40.0	100.0	1
Ports in HCMC－Da Nang	35.0	0.0	65.0	100.0	2
Tan Son Nhat Airport－HCMC Suburbs	80.0	0.0	20.0	100.0	1
Da Nang Port－Da Nang & Its Suburbs	100.0	0.0	0.0	100.0	1
	61.3	5.0	33.8	100.0	24

Source: Survey results.

Table 23. Round-trip discount rate for each route

<Round trip discount rate in case of transporting by road> (Unit: %/Number)

	Truck		20ft		40ft		All Types	
	Discount	Samples	Discount	Samples	Discount	Samples	Discount	Samples
Ha Noi⇔HCMC	31.2	2	11.1	1	14.3	4	18.6	7
Ha Noi⇔Da Nang	11.1	1			25.0	1	18.1	2
Ports in HCMC⇔Da Nang	23.2	2	26.6	2	20.0	3	22.8	7
HCMC⇔Can Tho	15.0	1	7.7	1	16.1	1	12.9	3
Ha Noi⇔Hai Phong			14.6	3	18.6	4	16.9	7
Ports in HCMC⇔Its Suberbs			20.0	2	20.7	2	20.3	4
Da Nang Port⇔Suburbs of Da Nang			8.3	2	11.1	2	9.7	4
Total	22.5	6	15.7	11	17.4	17	17.7	34

<Round trip discount rate in case of shipping 'from port to port transport>

	20ft		40ft		All Types	
	Discount	Samples	Discount	Samples	Discount	Samples
Hai Phong⇔Ports in HCMC	6.3	2	15.8	2	11.0	4
HCMC⇔Shanghai	33.3	1	20.0	1	26.7	2
Total	15.3	3	17.2	3	16.3	6

<Round trip discount ratio in case of 'from door to door' transport>

	20ft		40ft		All Types	
	Discount	Samples	Discount	Samples	Discount	Samples
Ha Noi⇔HCMC	5.6	1	5.6	3	5.6	4
Ha Noi⇔Da Nang	37.5	1	30.0	1	33.8	2
Total	21.5	2	11.7	4	15.0	6

Source: Survey results.

Noi Bai Airport and between Ho Chi Minh City and its suburbs and Tan Son Nhat Airport, the share of one-way trip loads are 83.3% and 80.0%, respectively.

Table 23 shows the round-trip discount rate when transporting a load both ways compared with an empty load one-way. The round-trip discount rates are all higher than20% in the cases of transport between the ports in Ho Chi Minh City and Da Nang and between the ports in Ho Chi Minh City and its suburbs, while the rate in many cases ranges between 10% and 20%. The average discount for all types is 17.7%. The round-trip discount rate for all types in the case of shipping is 16.3%, and the discount in the case of door-to-door transport is 15.0%.

Concluding Remarks

This paper analyzes the time required for transport as well as cargo transportation costs domestically in Vietnam, internationally in the Mekong Region, and internationally outside of the Mekong Region to China, South Korea, and the United States. As for door-to-door domestic transport between Ha Noi and Ho Chi Minh City, the time required for transport by road, railways, ship and air are, on average, 2.9 days, 4.5 days, 5.9 days, and 12.0 hours, respectively. The transport costs by road from Ho Chi Minh City to Ha Noi is 1.4 time higher than in the opposite direction. Logistics charges for transport by road are 1.1 to 1.2 times higher than those by railways, and transport costs by road are 1.0 to 2.1 times higher than by ship for a 40-foot container and 2.4 to 2.5 times higher for a 20-foot container.

For logistics in the Mekong Region, cross-border costs, including customs clearance fees, are the highest at the borders of Vietnam with Cambodia and Laos, while the time required for the cross-border process has become shorter between Vietnam and Laos. Between Ha Noi and Bangkok, cross-border road transport was popular when there were no direct ships and transport by sea took 10 days to 2 weeks by way of Ho Chi Minh City or Hong Kong. Direct shipping, however, has been available since around 2014 and the transport charges for shipping between Ha Noi and Laem Chabang are much lower. Thus, cross-border road transport between Ha Noi and Bangkok no longer has a competitive advantage.

Regarding international logistics of Vietnam outside of the Mekong Region, transport is primarily by ship, with the exception of the route between Ha Noi and South China, for which forwarders operate logistics by railway and road. Between Ho Chi Minh City and Shanghai, the transport charges from Shanghai to Ho Chi Minh City are much higher than that in the opposite direction. This is also the case for the route between Ho

Chi Minh City and Ha Noi.

In terms of other survey findings, the transport costs of using a 40-foot container are1.2 times higher than using a 20-foot container in the case of road transport, with the cost ratio between the container sizes increasing to 1.6 times in the case of shipping. The ratio of round-trip loads is higher than 50% between Ha Noi and Ho Chi Minh City, and between Ho Chi Minh City and Da Nang. In contrast, for the route between the center or suburbs of the megacities like Ha Noi and Hai Phong and their ports or airports, the share of one-way trip loads is 70% or higher. Regarding the price difference between a round-trip load and a one-way trip load, the round trip discount rate was mostly between 10 – 30%.

This paper examined the logistics between the two megacities of Ha Noi and Ho Chi Minh City in Vietnam, inter-city logistics with other cities in the Mekong Region, and international logistics. This paper did not however look at the logistics inside of these megacities. The unit of analysis for transportation costs is based on 20-foot and 40-foot containers while the analyses in this paper did not consider the price differences due to the quality of logistics services or the cost differences for specified goods, such as perishables, dangerous goods, or precision parts and components that are sensitive to the shaking of trucks. These areas outside the scope of the analyses of this paper and represent avenues for future examination.

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