



THAILAND LOGISTICS REPORT 2010

Office of the National Economic and Social Development Board

- Overview of Thailand's Logistics Costs in 2009
- Logistics Cost Components
- Transportation Cost
- Inventory Holding Cost
- Logistics Administration Cost
- Proportion Logistics Costs to the Gross Domestic Product (GDP)
- Conclusion and Recommendation

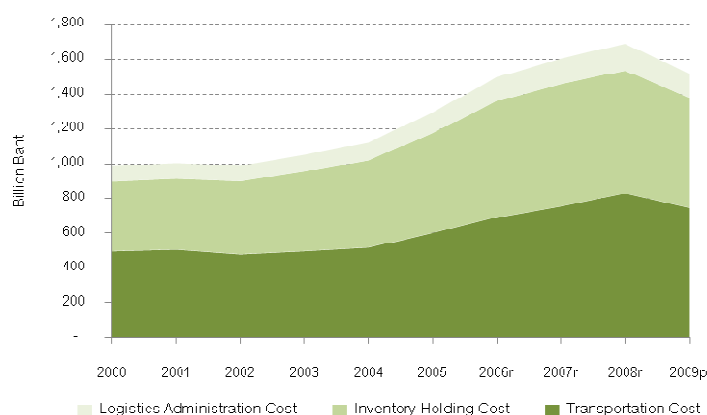


Figure 1: Thailand's Logistics Costs, by types

Overview of Thailand's Logistics Costs in 2009

The overall trends of both Thai economy and logistics costs for the year 2009 were considered to be quite fluctuated and unconventional. This is partially because 2009 was the first time Thailand experienced the severe economic downturn during the past years since the economic crisis in 1997. The 2009 economic crisis mainly resulted from the contraction in the industrial and export sectors which directly affected the commodity volume and the domestic logistics activities and consequently induced the negative growth of logistics costs

The total value of logistics costs of Thailand for 2009 was approximately 1.5 trillion Baht which accounted for 16.8 percent of the Gross Domestic Product (GDP) and reduced significantly from 18.6 percent in 2007. The 1.5 trillion Baht logistics cost composed of 746.5 billion Baht of transportation costs (8.3 percent of the GDP), 633.3 billion Baht of inventory holding costs (7.0 percent of the GDP)

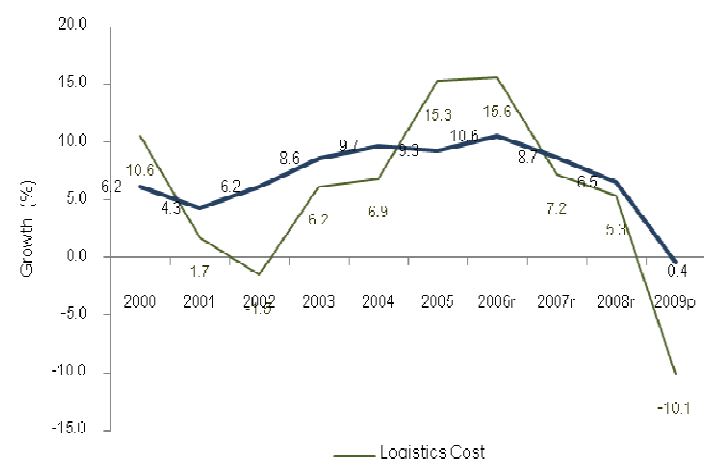


Figure 2: Trends of Logistics Costs and Gross Domestic Product (GDP) growth during 2001-2009

and 138.0 billion Baht of logistics administration costs (1.5 percent of the GDP).

Thailand's logistics costs growth was reduced by nearly 10 percent compared to the year 2008. There are two main reasons behind such the reduction which are, firstly, the global economic slump that inevitably had negative impact on the Thai economy in 2009, causing the economy to recess, and the production in various sectors to decline. Consequently, the volumes of transportation and inventory decreased. In addition, the Minimum Loan Rate (MLR) was also reduced in consistent with the level of liquidity in the market. Secondly, the adjustments made by Thai entrepreneurs in response to the reduced consumers demand. Many businesses attempted to improve their production process's efficiency, warehousing and inventory management as well as logistics costs saving measures within their workplaces in order to be able to reduce certain risks and survive in such the economic conditions in which consumers demand had diminished.

Comparing to the logistics costs of the United States (US), it was found that in 2009 US's logistics costs were around 1,095 billion US dollars, an 18.2 percent reduction compared to those of 2008. This consequently led to the cut back of the ratio of logistics costs per GDP from 9.3 percent in 2008 to 7.7 percent in 2009, an equivalence of 1.6 percent reduction. This declining trend in logistics costs witnessed in the US shows the similarity in the trend of Thailand's logistics costs. As aforementioned, Thailand's logistics costs were reduced by nearly 10 percent resulting in the decline of the ratio of logistics costs per GDP from 18.6 percent in 2008 to 16.8 percent in 2009, an equivalence to 1.8 percent reduction.

The US logistics costs per GDP decreased from 9.3 percent in 2008 to 7.7 percent in 2009, an equivalence of 1.6 percent reduction. This declining trend in logistics costs witnessed in the US shows similarity in the trend of Thailand's logistics costs. As aforementioned, Thailand's logistics costs were reduced.

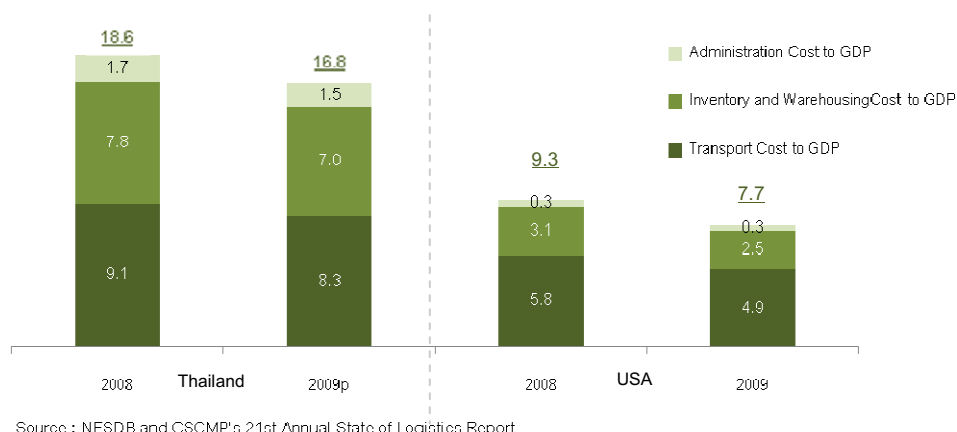


Figure 3: Comparison Logistics Costs of Thailand and the United States, 2008-2009

Logistics Cost Structure

Despite of the declining trend, logistics costs in 2009 still show the resemblance in the structures compared to 2008. Transportation costs make up to 49.4 percent of the nation's total logistics costs, followed by inventory holding costs which have made up to 41.7 percent of the total costs, while administration costs have only contributed 8.9 percent to the total cost.

Since 2007, transportation costs, which are the largest logistics cost component, have been consistently expanding from 47.3 in 2006 to 49.4 in 2009 inflecting the inadequate transportation system that cannot facilitate businesses to fully shift to more energy-efficient transportation modes. In contrast, inventory holding costs have consistently been on a decline from 43.6 to 41.7 percent in 2007 and 2009 respectively. This implicitly reveals the raising awareness of the importance and ability among entrepreneurs to consistently adapt

their business operations to reduce unnecessary inventory and inventory holding costs. As for administrative costs, Thailand has been able to sustain such costs at the same rate of 9 percent of the total logistics costs.

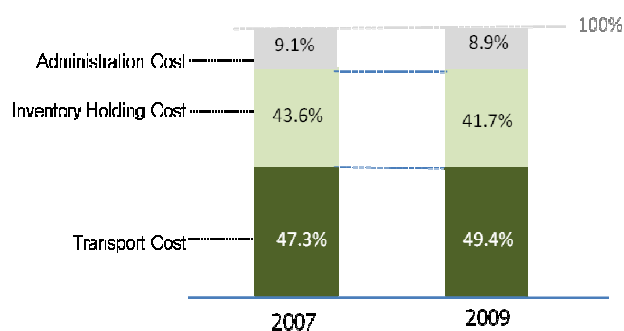


Figure 4: Comparison of Logistics Cost Structure of Thailand between 2007 and 2009

Transportation Cost

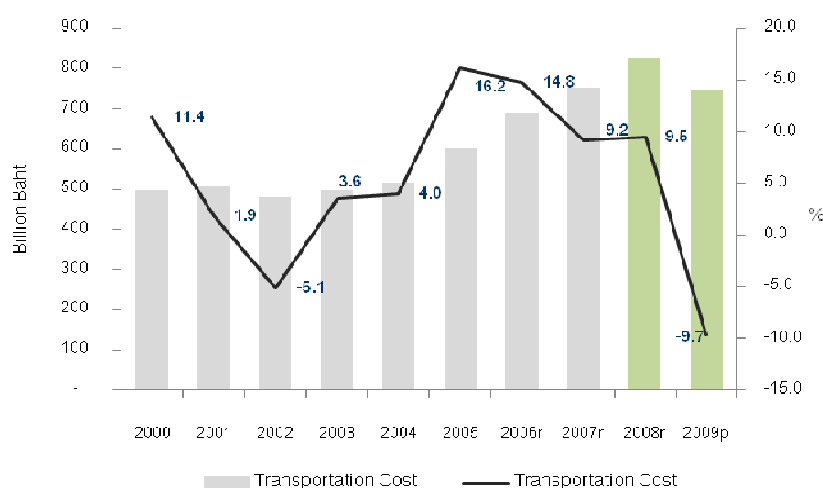


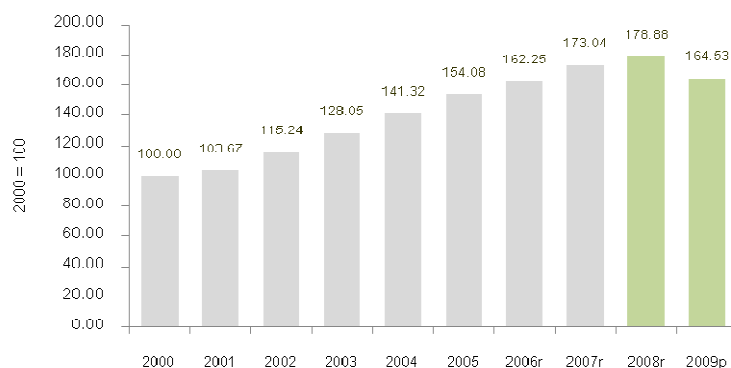
Figure 5: Trends of Transportation Costs

In 2009, Thailand's transportation costs were amounted to 746.5 billion Baht, reducing from 826.4 billion Baht which is equivalent to 9.7 percent drop compared to that of the previous year. The main reason driving the lower transportation costs was due to decreases in the number of commodity transportations at both domestic and international levels by approximately 2 percent. This can be witnessed from the Shipment Index for 2009 at 164.53, dropping from 178.88 in 2008. Also, declining fuel costs played quite a part in the reduction in transportation costs with 20 percent decreases in diesel prices since 2008.

Domestic Freight

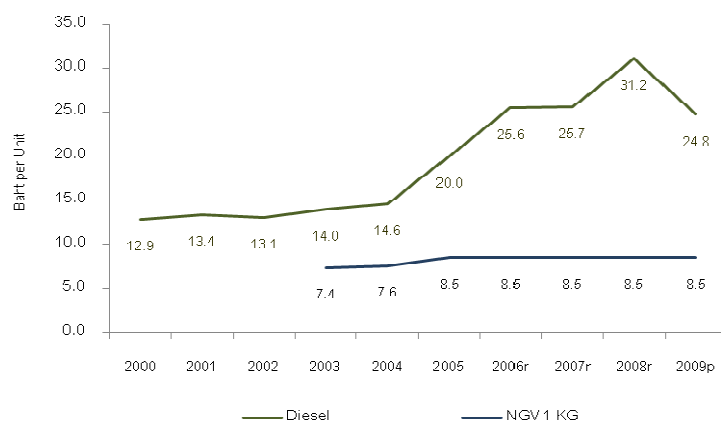
In 2009 the volume of domestic freight transport declined to 505.8 from 515 million tons in 2008, or equivalent to 1.8 percent reduction. Volume of rail transport reduced in the largest proportion (13 percent) followed by inland water transport (12.8 percent) while road transport and coastal transport hardly declined.

Under the current transportation structure, Thailand still relies rather greatly on road transportation mode, making up to 83 percent of the total commodity transportation. From the survey conducted among private operators, it was found that quite a portion of businesses have switched from rail to road modes of transportation for their goods due to severe price competition among truck companies during the downturn period. This can be seen from the reduction of road shipment price index from 132.5 in 2008 to 119.4 in 2009 (Source: Ministry of Commerce). This resulted in the relatively higher charge rate of rail transport compared to road transport. Moreover, rail transportation has a number of limitations which have not been effectively tackled by responsible government agencies including unreliable train timetables, insufficient locomotives and carriages and less-than-demand services frequency. Moreover, a system of double-track



Source: Office of Industrial Economics

Figure 6: Shipment Index



Source: Bank of Thailand

Figure 7: Diesel and NGV Price

railways for major trade routes are still under construction. Consequently, alternative modes of transport such as rail transport is failed to attract businesses.

Table 1: Volume of Domestic Freight by Transport Mode

Unit: Million Ton

Transport Mode	2007	2008	2009
Road	11.2	16.1	21.3
Growth Rate (percent)	-	44.2	32.0
Rail	0.76	0.37	0.19
Growth Rate (percent)	-	(52.0)	(48.6)
Sea	194.6	193.3	182.4
Growth Rate (percent)	-	(0.7)	(5.6)
Air	0.22	0.24	0.21
Growth Rate (percent)	-	8.5	(15.2)
Total volume of international freight	206.7	210.0	204.1
Growth Rate (percent)	-	1.6	(2.8)

Source: Ministry of Transport

Moreover, rail transportation has a number of limitations which have not been effectively tackled by responsible government agencies. Consequently, alternative modes of transport such as railway is failed to attract businesses.

¹ For the resolution to Thailand's rail system, The Thailand Cabinet passed a resolution on 27 April 2010 approved the emergency railway investment plan of the state railway of Thailand during 2010-2014 with the budget 176,808.28 million Baht, which has the primary objective to enhance service security, reduce losses from accidents, shorten the travel and transportation time, and increase stability of the infrastructure. Further, this plan is expected to increase the portion of rail transport from 2 percent to 6 percent.

International Freight

In 2009 Volume of international freight transport of almost all modes except road transport contracted significantly. The overall freight volume was 204 million tons compared to 210 million tons in 2008, equivalent to 3 percent reduction. Rail transport contracted the most with 49 percent reduction followed by air transport with 15 percent reduction and maritime transport with 6 percent reduction.

Table 2: Volume of Inbound and Outbound International Freight by Transport Mode

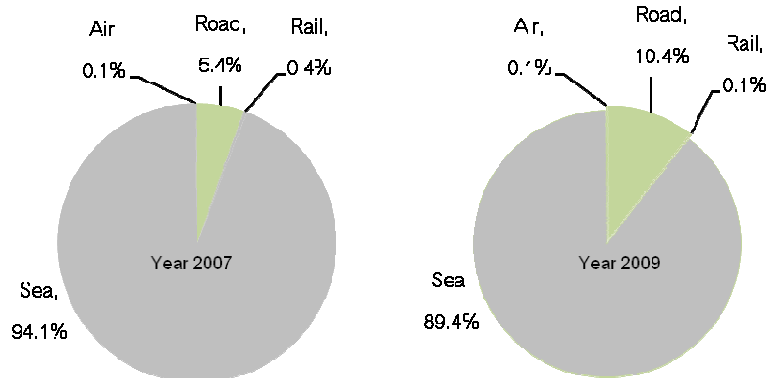
Unit: Million Ton			
Transport Mode	2007	2008	2009
Road	11.2	16.1	21.3
Growth Rate (percent)	-	44.2	32.0
Rail	0.76	0.37	0.19
Growth Rate (percent)	-	(52.0)	(48.6)
Sea	194.6	193.3	182.4
Growth Rate (percent)	-	(0.7)	(5.6)
Air	0.22	0.24	0.21
Growth Rate (percent)	-	8.5	(15.2)
Total volume of international freight	206.7	210.0	204.1
Growth Rate (percent)	-	1.6	(2.8)

Source: Ministry of Transport

Structure of Thailand's international freight has changed continuously. Road transport expanded consecutively for two years since 2007 with 44 percent growth in 2008 and 32 percent growth in 2009 respectively. In 2009 volume of road transport by truck across the Thai border was more than 21 million tons contributing to the double increase in proportion of road transport from 5 percent of all international freight in 2007 to 10 percent in 2009.

Even though Sea transport is Thailand's major mode of international transport accounting for 89 percent of the total international freight or 182 million tons in 2009, sea transport appears to have largest contraction among all other transport modes (from 94 percent of the total international freight in 2007). Proportion of air transport has remained constant at 0.1 percent while that of rail transport has decreased continuously from 0.4 in 2007 to only 0.1 in 2009.

Major reasons leading to significant expansion of road transport across border despite the economic crisis were comprehensive development of road network structure along the GMS and ASEAN economic corridors. Such expansion of road network was in accordance with the 30 percent increase trend in inland transport all over Asia since the first half of 2009. Apart from that, it can be noticed that a number of large Thai and international logistics service providers employed multimodal transport by connecting road transport to marine and air transport until completely achieve rapid door-to-door shipment service with more than 30 percent cost reduction. For example, TNT Express Worldwide (Thailand) utilizes real time freight tracking system as a strategy to expand its network throughout 127 cities in 7 Asian countries with the distance more than 6,000 kilometers.



Source: Ministry of Transport

Figure 8: Comparison of International Freight Structure of Thailand between 2007 and 2009

² Logistics Digest Magazine, Issue 54th, September 2009

It is noteworthy that the trend of inbound and outbound freight volume across border between Thai and neighboring countries was rather imbalance. In 2007 outbound freight volume was twice as much as inbound freight volume. However, in 2009 inbound freight volume increased to 12.1 million tons compared to 9.1 million tons of outbound freight volume, equivalent to ratio of 1.3 to 1. The figures reflect the fact that the Thai entrepreneurs and consumers begin to realize benefits from the import of low cost materials and commodities from neighboring countries. On the other hand, it might also be implied that Thai trade, production, and

investment has lower potential to access markets of other countries compared to foreign business from neighboring countries

Table 3: Volume of Inbound and Outbound International Freight by Road

Unit: Million Ton

International Freight by Road	2007	2008	2009
Inbound	3.4	7.7	12.1
Outbound	7.7	8.3	9.1
Proportion inbound to outbound	0.4 : 1	0.9 : 1	1.3 : 1

Source: Ministry of Transport

Inventory Holding Cost

In 2009 inventory holding costs were 633.3 billion Baht decreasing from 708 billion Baht in 2008, equivalent to 10.6 percent contraction. Inventory holding costs can be categorized into 2 parts which are inventory carrying costs and warehouse management costs. Inventory carrying cost accounted for the largest proportion of all inventory holding costs with the value of 627.3 billion Baht in 2009, declining from 702.0 billion Baht in 2008. warehouse management cost was 6 billion Baht in 2009, decreasing from 6.5 billion Baht in 2008.

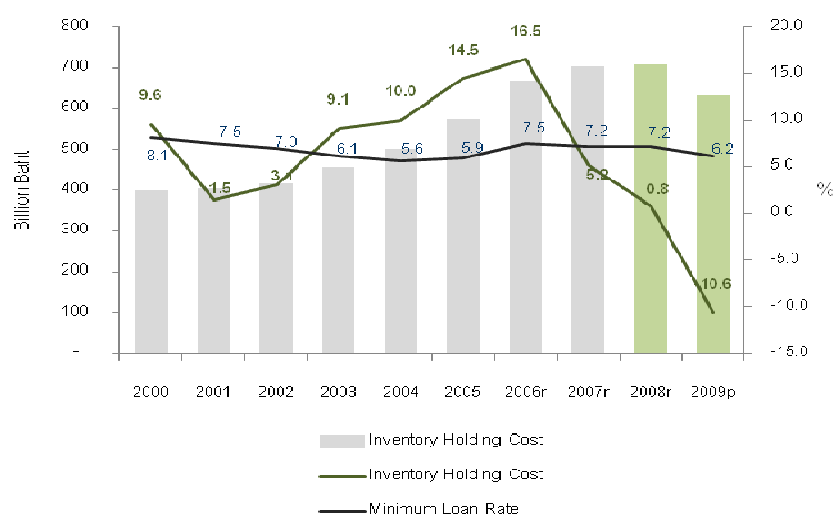
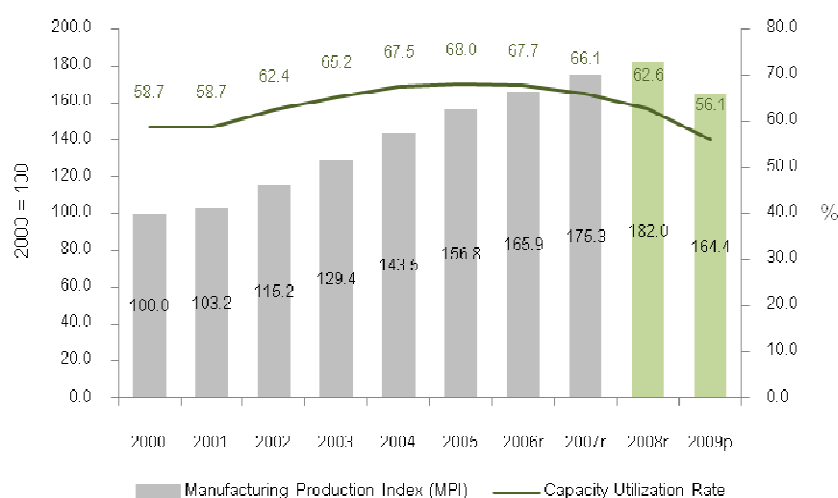


Figure 9: Trends of Inventory Holding Cost and Average Loan Rate



Source: Office of Industrial Economics

Figure 10: Manufacturing Production Index (MPI) and Capacity Utilization Rate

From the analyses, there are 3 factors affecting the inventory holding costs in 2009 as follows;

- (1) The declining production value can be seen from the decreasing Manufacturing Product Index (MPI) from 182.0 in 2008 to 164.4 in 2009. Moreover, the capacity utilization rate also declined from 62.6 percent in 2008 to 56.1 in 2009 (Source: Ministry of Industry). This reflects that Thai entrepreneurs in all sectors adjusted their businesses rapidly by reducing new production after foreseeing the trend of economic downturn from the decreasing production order since late 2008.

- (2) **The reduction of inventory carrying rate in all sectors** In 2009 value of carrying inventory was 2.7 trillion Baht reducing from 2.5 trillion Baht in 2008, or equivalent to 7.1 percent contraction. This was mainly resulted from the rapid release of inventory to the market as well as the reduction of production rate in order to search for survival opportunity during the severe economic contraction. However, the increase efficiency in inventory management was also accounted as a key success factor for business adjustment of private sector. This can be seen from the trend of inventory carrying cost especially in the industry and trade sectors (Source: Industry consensus, trade and service survey, and quarterly

sales survey, National Statistics Office) which reflects the awareness of entrepreneurs to apply technology in order to improve inventory management to achieve Just – in –Time and maximum efficiency.

- (3) **The decrease in minimum lending rate (MLR).** In 2009 MLR was 6.2 percent compared to 7.2 percent in 2008. This trend was in line with the policy of Monetary Policy Committee which intended to utilize Expansionary monetary policy in the first half of the year and maintain the interest rate at the appropriate level in order to support the economic recovery in the second half of the year

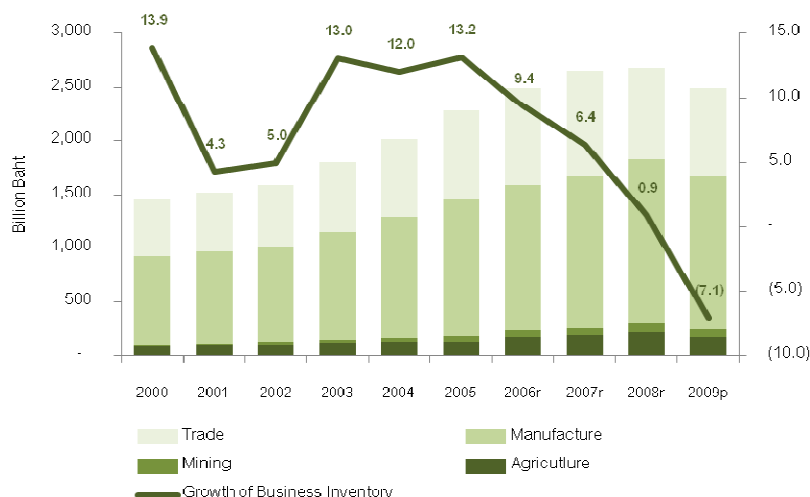


Figure 11: Value of Inventory

Logistics Administration Cost

In 2009 inventory management cost was 138 billion Baht declining from 153.5 billion Baht in 2008 or equivalent to 10.1 percent reduction. This is in line with the shrinkage trend in transport costs and inventory holding costs. Currently, Thailand still refers to the assumption that logistics administrative cost accounts for 10 percent of overall transportation and inventory management costs.

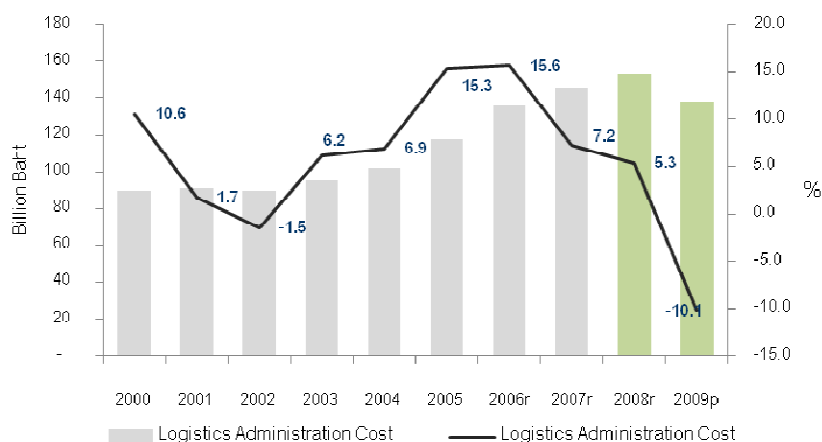


Figure 12: Trends of Thailand's Logistics Administration Cost

³ In Yr2009, the finished goods inventory index is at 181.69, which dropped from 189.11 in Yr2008. (Source: Ministry of Industry)

⁴ From the Upgrading Competitiveness of Thailand's Logistics Phase 2 survey project, the administrative logistics cost was estimated at 8% of the transport cost and the inventory holding cost (using geometric mean method calculating regarding to the company's size). This result supports the current assumption of calculating the Thailand administrative cost.

Logistics Costs to Gross Domestic Product (GDP)

The logistics cost per gross domestic product at nominal value has been decreasing since 2006. The ratio declined from 19 in 2006 to 18.8 in 2007, 18.6 in 2008, and 16.8 in 2009. Nevertheless, as mentioned earlier the declining ratio in 2009 was different from the earlier years because the Thai and world's economy had to experience fluctuated and unconventional economic situation for the first time since the economic shrinkage during the financial crisis in 1997 which resulted in considerable contraction in the commodity volume, logistics activities, and eventually logistics cost.

Table 4: Logistics Costs to GDP during 2001-2010e

	2001	2002	2003	2004	2005	2006r	2007r	2008r	2009p	2010e
Transport Costs to GDP	9.9	8.8	8.4	8.0	8.5	8.8	8.9	9.1	8.3	8.7
Inventory Holding Costs to GDP	7.9	7.7	7.7	7.7	8.1	8.5	8.2	7.8	7.0	7.6
Administration Costs to GDP	1.8	1.6	1.6	1.6	1.7	1.7	1.7	1.7	1.5	1.6
Total Logistics Cost to GDP	19.6	18.1	17.7	17.3	18.3	19.0	18.8	18.6	16.8	17.9

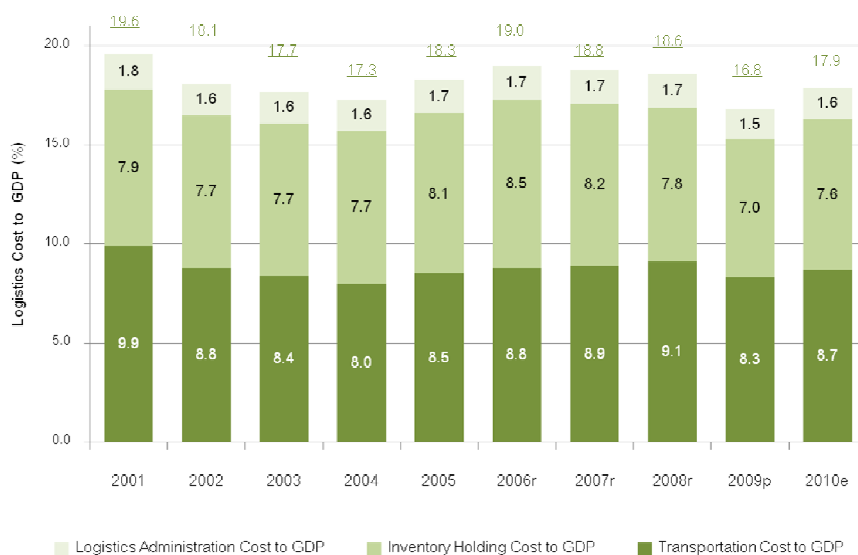
Source: NESDB

Note: There has been some information revision of GDP and total logistics costs in 2006-2008 in accordance with the National Income in 2010

Additionally, NESDB undertakes a preliminary analysis in order to eliminate variation from the effect of the world's economic downturn. It was found that the economic contraction has an impact on the decreasing logistics costs by approximately 1.5 percent per GDP. It means that in normal economic situation the ratio of logistics costs per GDP in 2009 should be around 18.3 percent slightly decreased from 2008 (18.6 percent). This was mainly resulted from an increase in the efficiency of carrying process and inventory management of the Thai entrepreneurs.

In addition, the forecast of Thailand economic situation in 2010 expects that the growth rate will grow by 7.9 percent. Accordingly, the logistics cost per GDP of 2010 is expected at 17.9 per GDP, increasing from 2009, which is mainly caused by an increase in trading and transport activities in response to the recovery of global and domestic economies. This is coupled with a rising trend of 2010 oil price which is another important component of the logistics cost.

Figure 13: Proportion of Logistics Costs to the Gross Domestic Product (GDP) at Current Prices, 2000-2010e



Source: NESDB

Conclusions and Recommendations

From the analysis of available data, domestic economic circumstances and the adjustment direction of the business sector, it can be predicted that **Thailand's logistics costs for the year 2009 should illustrate the same declining trend as evident in other countries worldwide owing to two main reasons including the global economic downturns and diminishing international trades since the end of 2008. These downturns have persistently impacted the Asian countries' economy including Thailand throughout 2009.**

Nevertheless, from the observation of the business sector's behaviors during this past year, it was found that **the changes in behaviors of logistics related businesses such as exporters/importers and logistics service providers have also contributed to the reduction in the national logistics costs for 2009.** They have opted for strategies designed to increase their logistics activity administrative management inducing upon lower logistics costs and more effective responses to customers' demands. These changes are partially a result of the government's constant efforts in having their logistics related policies implemented, creating understanding and raising awareness of the importance of logistics strategies as their tools to stay on top of competitions among businesses. There have been a countless number of seminars, meetings, workshops held by related government agencies in order to provide logistics knowledge and related information to more than 50,000 logistics personals during the past years. This has contributed to the increases in productivity of the business sector's logistics administrative management to quite a great extent, which can be witnessed by the recent pleasant reduction in the warehousing costs.

However, despite of having more than 50,000 professionally trained logistics personals during the past years, this figure is still considered to be significantly small, equivalent to just 1 percent of the total logistics personals demanded by the business sector. As a result, the logistics sector development has not progressed as it should have been. The following are some recommendations of Thailand's logistics system development measures during the next years.

- **Urgently develop capacity building and professionalism among logistics personals** to be ready to deal with the increasing competition at the regional level as a result of the global and

regional economic recovery. Furthermore, competitions at supply chain level are currently considered as the main tool to increase businesses' competitiveness worldwide including Thailand. Hence, it is essentially important to seriously prepare professional Thai logistics personals to be ready for the seemingly more intense competitions.

- **Create awareness and incentives among the private sector to hastily improve their logistics administrative management's efficiency** because the government's efforts in trying to successfully develop logistics personals or improve the business sector's efficiency alone without any assistance from the private sector will be implausible to effectively increase Thai businesses' competitiveness in response to the changing business environment. As a result, it is important for related government agencies to develop relevant logistics performance indices for each industry so that businesses can use them to evaluate their performance and then comparing themselves with their competitors within the same industry. This can bring about an adequate logistics performance improvement.
- **Urgently improve trade facilitation system and promote the use of energy saving transportation modes as rail and water systems. Including the use of modern technology and techniques for managing efficiency in each logistics management activity.** These measures have to impel continuously because they can solve the structural problems and able to increase efficiency and sustainability in both the short and long term.
- In addition, intense competition trend is continuing in the Logistics Service Providers (LSPs) due to the large multinational companies in this sector from around the world use Thailand as a base to penetrate markets in the region. These become a threat to the survival of Thai entrepreneurs significantly. However, in the mean time, these reflect an opportunity to expand widely market areas and increase chances for survival of businesses if conducting the strategy properly. Therefore, policy for the next years should be also important is **supporting and accelerating the preparation for Thai entrepreneurs in manufacture, trade and services to be ready to go out to the market in the region.**



Office of the National Economic and Social Development Board (NESDB)

962 Krung Kasem Rd. Pomprab
Bangkok 10110

Tel: 662-280-4085 ext.
6190 Prapasri Pongwattana
6192 Kingkamon Loedthitinunkun
3623 Sukit Sivanunsakul
3405 Anuwan Vongpichet
or Noppachit Luangchosiri

Fax: 662-280-1860

www.nesdb.go.th