

CARGO INSURANCE IN THAILAND'S BORDER TRADE

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Abstract

To avoid the cargo damage during the transportation is one of the concerns for shippers and consignees. Since cargo damage not only results in the loss of valuable goods but also define significant financial, temporal, and resource burdens on the transporting company. Addressing damaged goods need the collaboration with insurance providers to recuperate losses, a process that can be time-consuming and resource intensive. As such, a proactive approach involving the procurement of insurance coverage prior to the commencement of cargo transportation is highly advisable. Authors focus on development of cross-border cargoes insurance in Thailand. The purpose of this journal was to analyze the risks and the trend of the cross-border cargo insurance in Thailand's border trade. This research was conducted through qualitative research methods. The data were collected from sources of research publication and government entity. Therefore, based on synthesis and extraction factors, author discover the potential trend for the cargo insurance increasing among Thailand and its neighboring countries and this data could be further developed as a tool for assessing the cargo insurance.

Keywords: Cargo damage, Cargo risks, Cargo insurance, Cross-border cargoes

I. INTRODUCTION

Road freight transport experienced a significant increase in activity due to several factors. Initially, there was a slowdown in the first phase of the COVID-19 pandemic, which led to a subsequent surge in production volumes. Moreover, the relaxation of import-export restrictions contributed to the expansion of border trade and cross-border trade value.

Despite the benefits of international goods transportation, it is essential to acknowledge the inherent risks associated with shipping goods across borders, as evident from accident statistics in Thailand, highlighting the need for continuous improvement in risk management practices. Entrepreneurs engaging in cross-border trade must be proactive in mitigating risks by availing product insurance, thereby ensuring adequate protection for the goods or property being transported. Cargo Insurance assumes an important role in safeguarding goods during transit, whether by sea, commercial aircraft, or postal parcel, providing coverage against various potential accidents, including ship burnings, sinkings, and damages incurred during loading and unloading processes. Insurance for cargo moving across borders within ASEAN is extremely important for the region's economic cooperation and the creation of the ASEAN Economic Community (AEC). The main goal of the AEC is to make it easier for countries to trade with each other. This involves simplifying logistics, getting rid of taxes on imports and exports, and making it simple for goods and services to flow freely across borders. Understanding the risks and trends associated with cargo insurance in Thailand's border trade is very important. This understanding is crucial for effective preparation and risk reduction through insurance measures. Additionally, it helps in preventing losses by addressing the risks identified through data analysis.

II. RESEARCH OBJECTIVES

The purpose of this paper is to conduct a comprehensive analysis and assessment of the status and evolving trends in the domain of cross-border cargo insurance within the geographical context of Thailand's border trade.

III. THEORETICAL BACKGROUND AND LITERATURE REVIEW

The history of Insurance

The history of insurance can be neatly divided into seven distinct periods, each characterized by significant milestones in the realm of risk management and financial protection. These periods provide insights into how insurance has evolved alongside changing economic, societal, and geopolitical landscapes. The first period, known as "Ancient Foundations," spans from ancient times to the 14th century. During this era, societies employed primitive forms of risk mitigation, marking the earliest roots of insurance. These early risk-sharing practices laid the groundwork for the insurance industry we know today.

The "Birth of Insurance Policies," which encompasses the 14th to 17th centuries, marks the emergence of formal insurance policies. This period saw the transition from informal risk-sharing arrangements to written contracts that provided individuals and businesses with a more structured means of protection against various uncertainties. In the 18th and early 19th centuries, the "Rise of Insurance Companies" occurred. This phase was characterized by the proliferation of diverse insurance forms and the establishment of insurance companies. These companies played a crucial role in supporting economic activities and enhancing risk management practices.

The "Financial Management and Government Intervention" period, representing the fourth phase, emphasized the development of professional financial management techniques. It also witnessed the formation of the first insurance groups and marked the onset of government intervention through social insurance programs. These interventions aimed to safeguard the welfare of citizens and businesses. Between World War I and World War II, the "Era of Mergers" unfolded, impacting numerous industries, including insurance. Business combinations and mergers were prevalent during this period, leading to increased consolidation and efficiency. The "Regulation and Globalization" phase, spanning from the end of World War II to the close of the 20th century, witnessed growing regulatory measures and government involvement in social insurance programs.

It also marked innovations in the insurance sector, reflecting the evolving landscape of financial services. In the early 21st century, the "21st Century Challenges" period commenced, characterized by unprecedented events such as the 9/11 terrorist attacks and devastating natural disasters like earthquakes and hurricanes. These events necessitated a growing role for governments in protecting against specific risks, including terrorism and natural catastrophes. The 2007-2008 global financial crisis, a critical event during this period, underscored the limitations of risk modelling, Efficient Market Hypothesis (EMH), and risk-management techniques. It revealed the inability to fully define risk profiles, especially concerning complex

human and social behaviour. This crisis affirmed the essential role of effective financial and insurance markets in enabling economic activities [2].

Non-life Insurance

Insurance policies can be broadly categorized into two main groups: life insurance, which life insurance focuses on providing financial protection to beneficiaries upon the policyholder's death [3], and non-life insurance, which covers a broad spectrum of policies that protect against various risks and losses, excluding life-related events [4]. A non-life insurance policy is a contractual arrangement between an insurance company and a policyholder, typically spanning one year. Within this agreement, the insurer assumes the responsibility of providing financial compensation to the policyholder in the event of specific, unforeseen losses. In exchange for this coverage, the policyholder pays a regular fee known as the premium [6].

Non-life insurance policies are diverse, with coverage options encompassing a wide range of scenarios. These policies can protect against damages to assets such as cars, homes, or other properties. They also extend to covering losses resulting from bodily injury, either to the policyholder or to third parties, under the category of third-party liability insurance. For businesses, non-life insurance policies offer protection against property damage, expenses related to business interruptions, and even health-related issues affecting employees. The flexibility of these policies allows individuals and businesses to mitigate the financial risks associated with unexpected events, providing a sense of security and financial stability. Non-life insurance policies serve as a critical tool for transferring the economic burden of unforeseen losses from the policyholder to the insurer. This arrangement ensures that individuals and organizations can manage risk effectively, safeguard their assets, and maintain financial resilience in the face of adversity.

Marine Insurance

Marine insurance is the culmination of a lengthy evolution in trade and shipping practices dating back to ancient times, with some scholars tracing the origins of the concept to mitigate risk to practices such as "bottomry" and "respondentia" in ancient Babylon, which were subsequently refined during the Roman era [5]. "Bottomry" involved a loan secured by a ship. Initially, it resembled a loan covering the upfront expenses of a ship's voyage. However, as the voyage progressed and additional funds were needed by the ship's master, they could borrow money from moneylenders.

By using the vessel as collateral for the loan, if the ship encountered a mishap during the journey or failed to reach its destination, the borrower was exempt from repaying the loan. In such cases, the lender, whose interest rates compensated for the risk they assumed, would recover their debt from the insured ship. These interest rates laid the groundwork for the concept of premium insurance in later marine insurance contracts. Some argue that the origins of marine insurance can be traced back even further, to around 3000 B.C., when it was used to diversify the risk of cargo damage during sea transportation.

Marine Insurance in Thailand

There is still no concrete evidence to confirm the inception of the marine insurance industry in Thailand. However, it is believed to be the first form of insurance to emerge in the country. This development primarily involved foreign merchants engaged in trade within Thailand and did not have direct ties to the Siamese government at that time. In the year 1908, the "Partnership and Company Act, R.E. 130" was enacted, marking the first official mention of insurance in Thai legislation. Subsequently, during the reign of King Prajadhipok, Rama VII, His Majesty enacted the Business Control Act, which addressed matters concerning public safety and well-being, in B.E. 2471.

The Ministry of Economic Affairs at that time issued an announcement on July 31, 1929, outlining the conditions for conducting both life insurance and non-life insurance businesses. However, the initial insurance operators in Thailand acted as representatives of foreign insurance companies rather than being insurers themselves. Moving forward to 1967, the Thai government introduced the Non-life Insurance Act, BE 2510, which prohibited underwriting through agents. Consequently, foreign insurance companies sought permission to establish branches in Thailand specifically for marine insurance. In the early stages, the government granted licenses to British insurance companies to establish branches and operate in Thailand. While this Act was later replaced by the Non-Life Insurance Act B.E. 2535, marine insurance continued to be categorized as a type of non-life insurance under this new law, maintaining the same fundamental principles governing the non-life insurance business [5].

Cargo insurance

In international sales transactions, where goods often need to traverse long distances and face various risks during transit, the potential for loss or damage to these goods is notably elevated. When such unfortunate events do occur, it can result in a significant loss of profitability unless the goods are adequately insured. Marine cargo insurance serves the purpose of minimizing the financial burden associated with the risks of loss or damage during the transportation of goods from exporters to importers. In the past, marine insurance primarily pertained to the insurance of ships and their cargoes. However, in contemporary usage, the term has evolved to encompass what we now call "transportation insurance," which covers all forms of transportation from origin to destination. This includes road transport, airfreight, railway transport, sea transport, and even postal services [6].

Insurance Premium

A marine insurance contract involves two key parties: the insurer, responsible for honouring the terms of the contract and paying claims, and the assured, who agrees to pay a fee known as the premium for the insurance coverage. The premium is the critical financial component of this arrangement, representing the amount of money paid by the assured to the insurer. It serves as the insurer's primary source of income, from which funds are set aside to cover potential claims. The insurer's profit is derived from the difference between the premium income and claims paid out, after accounting for overhead costs [6].

IV. RESEARCH METHODS

To achieve the research objective, this research was conducted through qualitative research methods. The data were collected from sources of research publication such as academic databases, scholarly journals, books, and government entity especially the cargo insurance data that were collected from The Insurance Premium Rating Bureau (Thailand) from 2019-2021. The data were systematically analyzed by the author, addressing each topic individually.

VI. RESEARCH RESULTS

Analysis of Thailand Key Economics Indicator (Real GDP* and Inflation*) from 2012-2022

To gain a comprehensive perspective on Thailand's economic growth, we will conduct an analysis of trends using data from key economic indicators in Thailand spanning from 2012 to 2022. These indicators include Real GDP and Inflation rates. Real GDP is a measure of the country's economic output, adjusted for inflation, serving as a crucial gauge of economic health. Inflation, on the other hand, reflects changes in the general price level of goods and services and is a vital factor in economic planning. By scrutinizing these indicators over the past decade, we aim to uncover patterns and insights that will provide a clear and comprehensive understanding of Thailand's economic growth trajectory during this period, point out on key contributing factors and potential areas for further analysis and policy considerations.

Table 1: Thailand Key Economics Indicator (Real GDP*/Inflation*) from 2012-2022

Year	Real GDP* (%)	Inflation Rate** (%)
2012	7.20	3.00
2013	2.70	2.20
2014	1.00	1.90
2015	3.10	-0.90
2016	3.40	0.20
2017	4.20	0.70
2018	4.20	1.10
2019	2.20	0.70
2020	-6.10	-0.80
2021	1.50	1.20
2022	2.60	6.30

Source: Office of the National Economic and Social Development Council and Office of Insurance Commissioner (OIC)

From the Table 1: It shows that there is an uncertain figure from 2020-2022. In 2020, Real GDP -6.10% because of the COVID-19 pandemic struck a severe blow to Thailand's economy, making existing problems worse [9]. The pandemic-induced crisis reverberated across various sectors, causing disruptions in tourism, manufacturing, and international trade. Thailand's heavy reliance on tourism, a sector that came to a near standstill due to travel restrictions and safety concerns, amplified the economic shock in that year. In 2022, the Thai economy picked

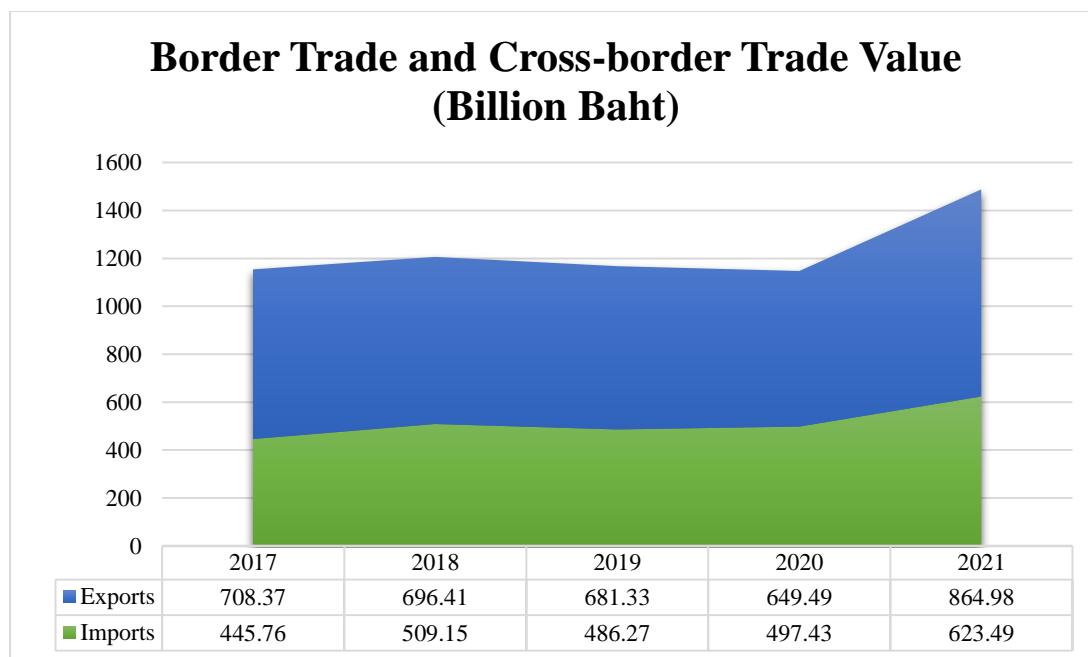
up pace, recording a growth rate of 2.6%, a significant improvement from the 1.5% growth seen in 2021. This growth was primarily fueled by two key factors: the revival of the tourism sector and ongoing enhancements in domestic demand, stemming from increased private consumption and higher levels of investment.

However, in 2022, inflation took a notable jump, mainly due to the persistent high energy prices compared to the previous year, 2021. At the end of 2021, Consumer goods prices in Thailand, including essential items like petrol, cooking gas, meat, eggs, and vegetables, have experienced their most significant increase in a decade. In February, the annualized inflation rate reached 5.73% [10].

This increase was influenced by several factors, including the higher limit on diesel prices, a gradual uptick in cooking gas (LPG) costs, and an increase in the Ft value. Additionally, consumer goods, particularly fresh and prepared foods, saw price hikes due to increased production expenses. Moreover, rising logistics expenses, export limitations in certain countries, and a surge in tourism and exports demand all played significant roles in driving up inflation.

Analysis of Road freight in Thailand’s border trade from 2017 to 2021

Figure 1: Border Trade and Cross-border Trade Value (Road freight)



Source: Thailand’s Logistics Report 2021 (NESDC)

The relaxation of import-export restrictions had a profound impact on the expansion of border trade and cross-border trade value in Thailand. In 2021, this value reached a substantial 1,488.47 billion baht, marking a significant increase from the previous year's figure of 1,146.92 billion baht. This represents a remarkable surge of 29.78% [1].

This notable growth in cross-border trade can be attributed to several factors. The relaxation of trade measures allowed for more fluid movement of goods between countries, boosting economic activity and trade volumes. Additionally, it reflects the resilience and adaptability of Thailand's trade sector amidst the challenges posed by the global pandemic.

The increase in cross-border trade value underscores the importance of effective trade policies and border management in facilitating economic growth and international commerce. This growth not only reflects the recovery from the pandemic's impact but also signifies the potential for further economic expansion through strategic trade initiatives.

Analysis of border trade value

Table 2: Border trade value from 2019-2021

Year	Border Trade Value (Billion Baht)	Proportion as a percentage of total Border Trade and Cross-border Trade Value (Billion Baht)
2019	826.41	71%
2020	760.15	66%
2021	924.08	62%

Source: Department of Foreign Trade, Ministry of Commerce Thailand

The data presented in Table 2 highlights a significant trend in Thailand's road freight industry. It reveals that border trade value holds a substantial proportion within the category of road freight, encompassing both Border Trade and Cross-border Trade. This indicates that border trade plays a key role in Thailand's road freight activities, comprising the majority of this sector's transportation. While there was a slight decline from 71% to 62% in the proportion of border trade value within road freight in 2021[11], it remains a dominant force, consistently representing more than 50% of the total road freight, which is a considerable share. This data underscores the crucial importance of border trade in Thailand's logistics and transportation landscape. It suggests that border trade activities significantly impact the movement of goods within the country and across its borders, emphasizing the need for efficient logistics management and trade facilitation to support this essential component of Thailand's economy.

Table 3: Border trade value by countries from 2019-2021

Year	Border Trade Value (Billion Baht)			
	Malaysia	Myanmar	Laos	Cambodia
2019	274.49	193.26	197.44	161.21
2020	249.52	164.78	189.82	156.04
2021	335.99	204.16	214.81	169.10

Source: Department of Foreign Trade, Ministry of Commerce Thailand

Thailand-Malaysia

Table 3 provides insightful data regarding Thailand's border trade dynamics, with Malaysia emerging as a prominent player. In 2021, Malaysia accounted for a significant 36% of the total border trade value, reflecting its substantial role in Thailand's cross-border commerce. Notably, there has been a discernible upward trend in border trade between Thailand and Malaysia since

2019, with the value increasing from 249.52 to 335.99 billion Thai Baht, representing a substantial 34% growth. This growth significantly outpaces that seen in trade with neighbouring countries like Myanmar, Laos, and Cambodia. Based on the data from Department of Foreign Trade, Ministry of Commerce Thailand, examining the top export products reveals key contributors to Thailand's border trade success. Computer equipment leads the pack, comprising 16.61% of the total export value, followed by rubber (13.93%), automobiles and equipment (5.58%), video equipment (4.17%), and electronic circuit boards (3.22%). On the import side, magnetic tapes and magnetic discs for computers dominate, making up 20.78% of the total import value, followed by computer components (6.91%), electrical machinery (4.75%), plastic resins (4.68%), and diodes (4.34%) [11].

These insights illuminate Malaysia's key role in Thailand's border trade landscape and underscore the significance of specific product categories in shaping the cross-border trade dynamics. Moreover, Cross-border trade between Thailand and Malaysia is connected to Singapore by road transportation. Even Thailand's trade with Malaysia has the highest value border trade, it still faces many problems and develops slowly [7] if Thailand and Malaysia can coordinate to reduce the trade barriers such as the bottleneck at the border check-point. It could be helping to increase the efficiency of border trade between Thailand and Malaysia.

Thailand- Myanmar

Border trade between Thailand and Myanmar experienced a modest increase from 2019. Thailand's top exports to Myanmar included diesel (6.81% of total exports), non-alcoholic beverages (5.05%), other instant oils (4.54%), electric wires and cables (4.29%), and spices and herbs (3.83%). Conversely, the primary imports into Thailand from Myanmar were dominated by natural gas, constituting a substantial 65.07% of total imports. Additionally, grains accounted for 14.78% of imports, followed by aquatic animals (3.77%), iron (1.95%), and vegetables and vegetable preparations (1.82%) [11]. The relaxation of border trade restrictions holds promise for further enhancing trade between Thailand and Myanmar. This positive development has raised hopes for an increase in trade value, fostering stronger economic cooperation and mutual growth prospects between the two nations.

Thailand- Laos

In 2021, the trade between Thailand and Laos saw a modest increase in value. Thailand's top five exports to Laos included unwrought gold, representing a notable 9.70% of the total export value, followed closely by diesel (9.55%), other refined oils (6.39%), passenger cars (5.34%), and cosmetics, fragrances, and soaps (2.75%). On the import side, the primary products imported by Thailand from Laos were primarily other fuels (electricity), making up a substantial 70.95% of the total import value. Additionally, imports included vegetables and vegetable preparations (8.16%), signals and equipment (3.85%), radio receivers (2.77%), and cement (2.10%) [11]. Laos has the potential to play a key role in improving trade connectivity between Thailand and China. By expediting discussions among relevant agencies to establish additional border checkpoints along the Thailand-Laos border, Laos could significantly enhance the movement of Thai goods into China. This increased flexibility in transportation,

particularly for perishable items like fruits, holds the promise of more efficient trade, especially when these products are in season. Such efforts to streamline cross-border logistics have the potential to boost economic activity, benefiting all parties involved by unlocking new opportunities for trade and regional cooperation. However, collaboration between the Thai and Lao governments is essential to reduce cross-border trade restrictions and enhance the economic vitality of their shared border trading zones [8]

Thailand-Cambodia

The trade value between Thailand and Cambodia represents the smallest proportion of border trade value among Thailand's neighbouring countries. Thailand's top five exports to Cambodia include non-alcoholic beverages (8.87% of total exports), cars (8.09%), motorcycles (3.96%), internal combustion piston engines (3.56%), and other vehicles (3.36%). On the import side, Thailand primarily imports vegetables and vegetable preparations from Cambodia, accounting for a substantial 30.29% of the total import value. Additionally, imports include aluminium and its products (23.10%), wire and cable (12.18%), copper and its products (5.57%), and iron (2.58%) [11]. The trend in border trade between Thailand and Cambodia appears poised for growth as more businesses invest in Cambodia. Cambodia's efforts to diversify investments across various industries contribute to this positive outlook. This potential increase in trade activity reflects the evolving economic relations between the two nations and opens doors for further cooperation and development.

Analysis of Cargo risks in border trade by countries

Despite the benefits of international goods transportation, it is important to acknowledge the inherent risks associated with shipping goods across borders. In this section, we will show some

In Thailand, ranked as the second most dangerous country to drive in by the Zutobi driver's education portal website, reported 21,052 accidents in 2020 and 11,138 accidents in 2021. The ranking took into account five key factors: estimated road death rates, maximum motorway speed limits, seat-belt wearing rates, alcohol-related deaths, and blood alcohol concentration (BAC) limits. Surprisingly, motorcycles were not the primary culprits behind accidents as commonly assumed. Instead, most accidents in 2020 and 2021 involved pickup trucks (37 percent), followed by a category encompassing both private and public vehicles (27 percent) [12]. These statistics underscore concerns about the risk of damage to cargo in Thailand due to the high frequency of accidents. With such a significant number of accidents involving vehicles commonly used for transporting goods, safeguarding cargo from potential damage remains a critical consideration for businesses operating in the region.

In Malaysia, cargo crime is an ongoing issue in Malaysia, marked by fluctuating statistics showing periods of both decreased and increased incidents. In early 2011, for instance, there were 21 reported cargo crime incidents in the country [13]. These statistics show that there were risks that shipper/consignee might lose their cargoes while transporting the goods in border trade especially the high value cargoes.

In Myanmar, Myanmar has encountered a series of challenges following the coup in February 2021. Amidst the ongoing COVID-19 pandemic, the military takeover has plunged the nation into a severe economic downturn [14]. However, beyond the economic implications, the persisting conflict and political instability pose a significant threat in terms of cargo damage. The continuous turmoil raises substantial political risk, potentially jeopardizing the safety and security of cargo during transportation. This uncertain environment adds another layer of complexity and concern for businesses involved in trade with Myanmar.

In Cambodia, the issue of roads connecting border checkpoints between Thailand and Cambodia is becoming concern. These roads are operating at full capacity and are deteriorating [15], raising concerns about the potential for cargo damage during transportation. The strain on these crucial transport routes not only hampers efficiency but also poses a heightened risk to the safe and timely delivery of goods. Addressing this infrastructure challenge is vital to ensure smoother and safer cross-border trade, safeguarding against potential cargo damage and logistical disruptions.

In Laos, while there are currently no significant cargo damage risks, a growing concern revolves around the recent high inflation rates. This inflation has the potential to contribute to future cargo-related crimes, emphasizing the need for proactive measures to safeguard against such risks in border trade.

Analysis of cargo insurance in border trade (road transportation)

Figure 2: Net Premium amount in import/export to Thailand by road transportation

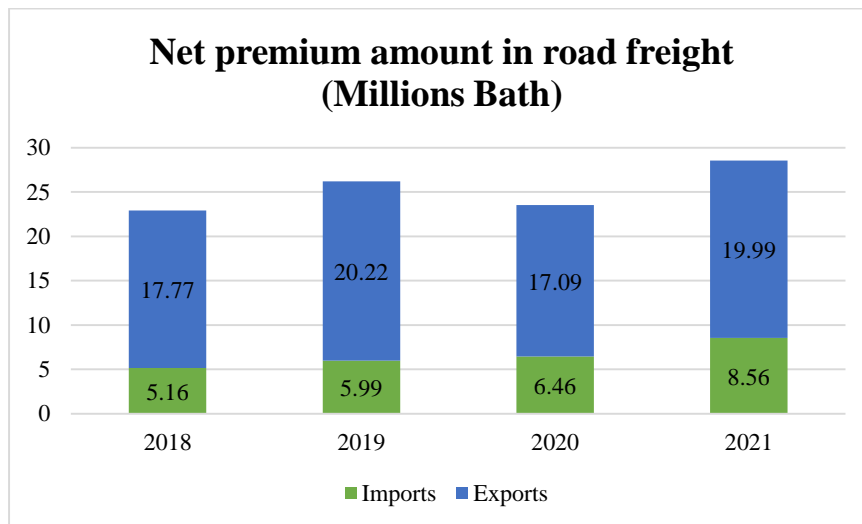
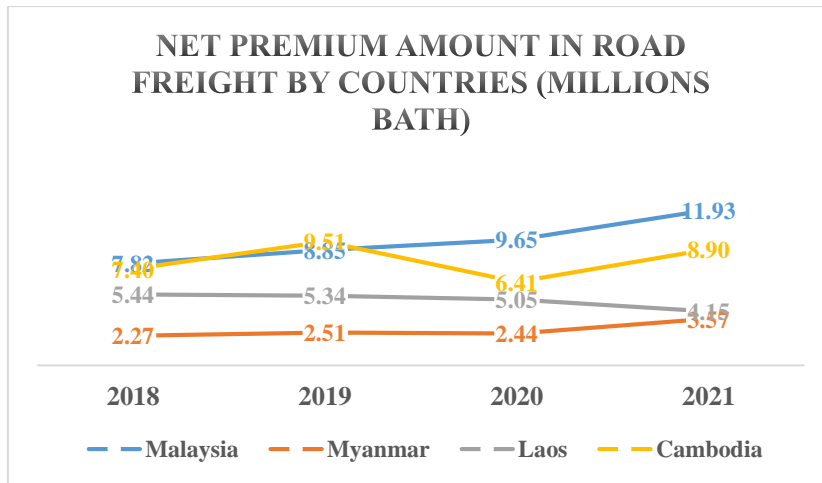


Figure 3: Net Premium amount in road freight by countries



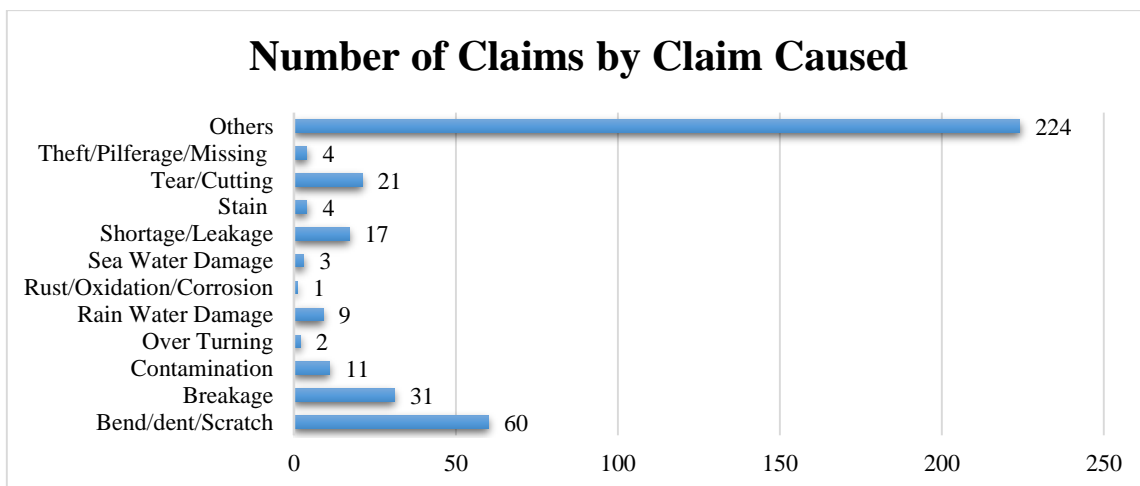
Source: The Insurance Premium Rating Bureau (Thailand)

In figure 2 and figure 3, there is a noticeable upward trend in net cargo premiums within border trade, particularly following the year impacted by COVID-19. Based on the collaborative efforts between Thailand and its neighbouring countries, it could be believed that border trade will experience growth in both its value and volume.

From the various risk factors associated with cargo transportation on roads, the author also observes a growing trend where cargo insurance is poised to play a key role in the future of border trade. Cargo insurance is seen as a key factor in mitigating the adverse effects stemming from cargo loss and damage.

Analysis of cargo insurance claims caused in border trade (road transport)

Figure 4: Number of claims in road freight cargo insurance by claim caused from 2018-2021



Source: The Insurance Premium Rating Bureau (Thailand)

From the figure 4: it shows that from 2018-2021 we have 387 claims due to the factors as below.

The top 5 caused that we can clarify is

1. Bend/dent/Scratch 60 claims
2. Breakage 31 claims
3. Tear/cutting 21 claims
4. Shortage/Leakage 17 claims
5. Contamination 11 claims.

Additionally, there are claims related to rainwater damage, Sea water damage, theft/pilferage/missing items, stains, rust/oxidation/corrosion, and overturning, totalling 23 claims.

Based on this data, the author anticipates that shippers and carriers should consider reviewing their vehicles, equipment, operations, and packaging methods to prevent potential damage causes. However, it's essential to acknowledge that certain causes, such as adverse weather conditions, road conditions, or theft, may be beyond our control. In such cases, the author recommends that shippers and carriers consider insurance coverage to mitigate the financial impact.

However, the raw data from The Insurance Premium Rating Bureau contains nearly 224 cases categorized as "Others," for which the specific cause cannot be determined or clarified.

DISCUSSION

Cargo insurance provides valuable advantages for both cargo owners and transporters by offering protection against the unforeseen accidents that can affect goods during transit. While existing research predominantly centers on maritime transport, the context of Thailand reveals a substantial emphasis on road transportation.

This emphasis is further underscored by the increasing trend in road transportation due to collaborative efforts between Thailand and its neighboring countries. Consequently, it is crucial for business operators and relevant authorities to recognize the significance of cargo insurance, particularly in the context of cross-border trade. Prioritizing cargo insurance can effectively safeguard the interests of all stakeholders involved in the transport of goods.

CONCLUSION

From the study and research on cross-border cargo insurance in trade, it can be gathered and analyzed that Thailand has a growing trend in international cargo insurance. This trend is due to collaborations between Thailand and neighboring countries, such as the opening of border checkpoints and trade facilitation measures.

Based on this, it can be summarized that Thailand and its neighboring countries are inclined to engage in cross-border trade, with a significant focus on land transportation. The data from various research studies and statistical analysis from The Insurance Premium Rating Bureau (Thailand) indicate that there are risks associated with international road transportation of goods.

These risks are evident from the various causes of cargo claims, including issues like Bend/dent/scratch, Breakage, Tear/cutting, Shortage/Leakage, Contamination, Rainwater damage, Theft/pilferage/missing items, stains, Rust/oxidation/corrosion, and overturning. Many of these causes may arise from different risk factors in each country, highlighting the importance for cargo shippers and transporters to understand these risks. This understanding can help mitigate potential risks to their goods.

Some risks, such as the condition of the packaging, can be addressed proactively to strengthen goods and prevent damage. However, there are external factors like natural disasters or theft that may be beyond control. In such cases, cargo insurance becomes crucial in reducing the financial impact.

Overall, cargo insurance plays an important role in international cross-border trade, and it is important for cargo owners, consignees, and transporters to consider the cargo insurance for the border trade by road transportation.

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References

- 1) The National Economic and Social Development Council (2022, September). Thailand's Logistics Report 2021. <https://www.nesdc.go.th/>
- 2) Masci, P. (2011). The history of insurance: risk, uncertainty and entrepreneurship. *Business and Public Administration Studies*, 6(1), 25-25. Ohlsson, E., Johansson, B. (2010). Non-Life Insurance Pricing. In: *Non-Life Insurance Pricing with Generalized Linear Models*. EAA Lecture Notes. Springer, Berlin, Heidelberg. https://doi.org/10.1007/978-3-642-10791-7_1
- 3) Black, K. (2006). *Business Statistics: For Contemporary Decision Making* (4th ed.). John Wiley & Sons.
- 4) Hoyt, R. E., & Liebenberg, A. P. (2011). The Value of Enterprise Risk Management. *The Journal of Risk and Insurance*, 78(4), 795-822. doi:10.1111/j.1539-6975.2010.01388.x
- 5) Chancheewa, P. (2011). *Marine insurance*. Chulalongkorn University Printing House.
- 6) Association of Southeast Asian Nations (ASEAN). (2014). *Risks Management (including International Conventions)*. https://asean.org/wp-content/uploads/images/2015/september/transport-facilitation/batch-1/Risk-Management/AFFA%20Chap3%20Marine%20Cargo_ASEAN%20disclaimer.pdf
- 7) Sakolnakorn, T. P. N., & Doungsuwan, N. (2022). Guidelines for Development of Government Units at Thai's Custom's Checkpoint to Provide Cross-Border Trade Services between Thailand and Malaysia. *Academic Journal of Law, Thaksin University*, 10(12), 148-165.

- 8) Insurance Premium Rating Bureau (IPRB). (2023, March 1). TGIA Market Update. https://www.tgia.org/upload/NonLifeInsStat/1/insure_2342.pdf
- 9) The World Bank in Thailand. World Bank. (2023, April). <https://www.worldbank.org/en/country/thailand/overview>
- 10) Charuchart, K. (2022, April). Where next for the Thai economy, now that inflation is rising and the ... Krungsri Research. <https://www.krungsri.com/en/research/research-intelligence/inflation-unevenrecovery>
- 11) Trade and Investment Cooperation Division. (2023, January). Overview of border trade and cross-border trade in Thailand. <https://www.dft.go.th/bts/trade-report>. <https://www.dft.go.th/bts/trade-report>
- 12) THE NATION. (2022, August 2). Over 32,000 road accidents in Thailand in past two years. Nationthailand. <https://www.nationthailand.com/in-focus/40018423>
- 13) Samsudin, N. Z., Jaafar, H. S., & Mahmud, T. J. T. (2013). Cargo crime on the road in Malaysia: targeted shipment. *Management*, 3(1), 20-23.
- 14) Nikkei Asia. (2023, June 27). Myanmar's crisis will "permanently" Scar Economy, World Bank warns. <https://asia.nikkei.com/Spotlight/Myanmar-Crisis/Myanmar-s-crisis-will-permanently-scar-economy-World-Bank-warns>
- 15) Department of Primary Industries and Mines - DPIM. (2018, December). Mineral Industry Investment Handbook : Kingdom of Cambodia. GIT GEM & amp; JEWELRY LIBRARY. <https://elibrary.git.or.th/book-detail/161>