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The past, today and future of incoterms in international delivery: A review on the innovations in logistics

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Abstract. Incoterms; are the rules regulating the distribution of responsibilities and costs between the parties at the stages of transportation and delivery of goods, regulated by the International Chamber of Commerce. Incoterms items are expressed with abbreviations consisting of English definitions' initials. They provide a common language so that every company in a global world apprehends the same way of actions in distribution and transportation. Eventually, the firms deliver their products as expected. Incoterms mentions the changes in the abbreviations as well as the transactions. International commercial terms (Incoterms) have played an essential role in implementing global trade since 1936. As the international commercial terms are updated every ten years, the companies are more likely to be affected by the innovations made in Incoterms. In the first part of this study, Incoterms are evaluated according to how it is changed from past to present in terms of quality and quantity. In the second part, the study continues with the evaluation of delivery terms and it is questioned if the changes in the logistics have a source effect on international trade. At the end of the study, implications are given on how changes in logistics can shape the future of international commercial terms.

Keywords. International logistics, International commercial terms (Incoterms), Delivery terms, International trade.

JEL. F02, F13, R42..

1. Introduction

The type, price, amount and payment methods of the products are the main subjects that need to be primarily taken account in the terms of export and import transactions. In calculating the price of product, which is essential and takes time to decide, exporters need to take in account the Incoterms, written into contracts and published by the International Chamber of Commerce (ICC) (Özkan, 2012).

It is vital for companies to understand Incoterms correctly and completely to manage the business risks. Because of the misunderstandings in the transactions, the firms might face great and fatal lost in terms of revenues (Yılmaz, Özken, & Şahin, 2011).

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International logistics companies, which have been providing services rather than transportation for years, are also guiding the importers or exporters in order to avoid any misunderstandings in the delivery types. For this reason, it will be inevitable to use commercial terms, which came out with the transportation of goods first, according to the innovations and updates in the international logistics.

2. Overview of international commercial terms (Incoterms)

To eliminate misunderstandings, legal disagreements, and to avoid wasting money and losing time, the International Chamber of Commerce (ICC), headquartered in Paris, made some arrangements in trading transactions. These transactions are first put in practice in 1936. The price of the exchanged goods is specified in a contract based on negotiation terms, standardized contract terms used in international trade. These terms shows the obligations of parties in terms of payment of transportation (İGEME, 2009).

Incoterms rules used in foreign trade, were first established by the International Chamber of Commerce (MTO). They were first created in 1936 and they are also started to be used in the same year. After, they were first changed in 1953. Then the necessary updates were made in 1967, 1976, 1980, 1990, 2000, and 2010, respectively. When the last four years are evaluated, it is seen that these versions are revised in every ten years (Yılmaz & Ozken & Şahin, 2011).

As in all commercial transactions, it is essential for companies to feel secure in international trade. Because the parties do not know each other, there might be trust issues and disagreements. It is natural to have them for many reasons. Disagreements might be because of the distance between the countries, difference in country laws and regulations etc. However, in order to expand foreign trade, it is important to eliminate the trust issues and uncertainties. In this sense, it was necessary to state commercial terms in foreign trade in a standard way so that everyone will understand the same meaning from the abbreviations and Incoterms were put in practice for this reason (Sayım & Zengin, 2012).

3. Changes in international commercial terms from 1990 to 2020

International commercial terms have changed many times since their emergence. It is more accurate to evaluate the years after 1990 period to see the effect of commercial terms in logistics. Because logistics management' perception on a global scale has intensified between 1990 and 2000. The concept of supply chain management has become more important in international trade after 2000. Therefore, it is more appropriate to limit the evaluation of the commercial terms from 1990 to 2020 in thirty years' time span.

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Changes in Commercial Terms from 1990 to 2020 are depicted below
(Lane, 2012):

Table 1. *International Commercial Terms 1990*

Initials of Commercial Terms	English Meaning
DDP	Delivered Duty Paid
CIP	Carriage and Insurance Paid To
CPT	Carriage Paid To
FAS	Free Alongside Ship
FOB	Free On Board
CFR	Cost and Freight
CIF	Cost Insurance and Freight
FCA	Free Carrier
DAF	Delivered at Frontier
DES	Delivered Ex Ship
DEQ	Delivered at Quay
DDU	Delivered Duty Unpaid

Table 2. *International Commercial Terms 2000*

Initials of Commercial Terms	English Meaning
EXW	Ex Works
DAP	Delivered at Place
DDP	Delivered Duty Paid
CIP	Carriage and Insurance Paid To
DAT	Delivered at Terminal
FCA	Free Carrier
CPT	Carriage Paid To
FAS	Free Alongside Ship
FOB	Free On Board
CFR	Cost and Freight
CIF	Cost Insurance and Freight
DEQ	Delivered at Quay
DDU	Delivered Duty Unpaid

Table 3. *International Commercial Terms 2010*

Initials of Commercial Terms	English Meaning
EXW	Ex Works
DAP	Delivered at Place
DDP	Delivered Duty Paid
CIP	Carriage and Insurance Paid To
DAT	Delivered at Terminal
FCA	Free Carrier
CPT	Carriage Paid To
FAS	Free Alongside Ship
FOB	Free On Board
CFR	Cost and Freight
CIF	Cost Insurance and Freight

Table 4. *International Commercial Terms 2020*

Initials of Commercial Terms	English Meaning
EXW	Ex Works
DAP	Delivered at Place
DDP	Delivered Duty Paid
CIP	Carriage and Insurance Paid To
DAT	Delivered at Terminal
FCA	Free Carrier
CPT	Carriage Paid To
FAS	Free Alongside Ship
FOB	Free On Board
CFR	Cost and Freight
CIF	Cost Insurance and Freight
DPU	Delivered at Place Unloaded

When the tables are examined, the number of articles in Incoterms was twelve in 1990 whereas in 2000, it became thirteen. In 2010, the number of articles was eleven, and then the number of articles was increased to twelve in 2020. It is seen that Incoterms, DDP, CIP, CPT, FAS, FOB, CFR, CIF and FCA are still valid since 1990. EXW, DAP, DAT commercial terms were accepted in 2000 while DPU is included to Incoterms in 2020.

4. Innovations in logistics and their effect on Incoterms

When the innovations in logistics are evaluated from the beginning, it will be a subject of a different study. However, this study will focus on innovations experienced in logistics management and how these innovations affect delivery terms. Implications on how these innovations affect future developments will also be added to the study. Logistics 4.0, and developments in technology are the sources of the considerable change in logistics recently and they will naturally take place in this study.

The focus of Logistics 4.0 is on the use of new and innovative technologies such as predictive supply chain management. Performance criteria such as delivery reliability, quality, flexibility, capability and service level can be optimized using these new and innovative technologies. In order to reach the targeted performance criteria for Logistics 4.0, it is necessary to plan, implement, control and correct the information and material flow in logistics processes (Yılmaz & Duman, 2019).

With Logistics 4.0, how technologies in the industry will continue, is very essential without a doubt. Especially with the effect of factors such as big data-analytics, autonomous robots (automations), simulations (digital universes), horizontal-vertical system integration, internet of things, cyber security, cloud computing, additive manufacturing and augmented reality, the industry has started to transform over industry 4.0. With the future plans of Logistics 4.0, in addition to the technologies mentioned above, it will be even stronger with new information systems (Çelik, 2020).

Logistics experts agree that in the near future, new technologies such as automation, robots, wearable technologies, unmanned vehicles, wearable

devices, artificial intelligence, internet of things, and artificial intelligence will manage the logistics (Ateş & Önaçan, 2018).

Logistics 4.0 and new technologies have remarkably changed not only by the number of commercial terms but also with their usage in international trade. FOB delivery method, which was previously used for maritime transportation, has been used for all types of transportation with the spread of combined transportation services by logistics service providers. In our country, unless otherwise specified, FOB delivery method in export operations, and CIF delivery method in import operations became the customary way of doing transactions.

In the future, logistics and supply chain experts predict that almost all of the consumers will make their purchases via electronic media instead of stores; therefore the role of the retailers in the supply chain will become more important. Additionally, direct shipments from distribution centers to the homes or workplaces of the customers will be used more often. Eventually, with this, as consumers generally demand products in small units, the number of daily operations will increase, and the variety of products subject to operations will increase as well. As a natural consequence of this, the logistic flow rate will increase rapidly and the variety of products flowing in the system will reach dimensions that have never been in the past (Görçün, 2018).

The change in consumers demanding products and the increase in the logistics flow rate immediately had an effect on the commercial terms. As of 2000, EXW came out as commercial term. In addition, DAP and DAT commercial terms came out as a need of more space in delivering products.

5. Conclusions and recommendations

When the developments in logistics and supply chain management are examined, it can be easily seen that the technological transformation will continue to have a great impact today and in the future. It is clear that as the logistics activities transform and their weight in international trade increases, the relationship between the two main actors of international trade (exporter and importer) will also continue to change.

The development of drone use that provides delivery for the product in a very limited place for today, the possibility of overcoming very long distances in a very short time with tube-like transportation vehicles, groundbreaking developments in the field of artificial intelligence and cloud computing systems that can easily overcome the obligations of paper-based trade are few changes that will happen in future.

Although we will not see dramatic changes in the new version of the commercial terms expected to be announced in 2030, we can say that there will be striking changes in the number and content of the commercial terms to be announced in 2040.

As logistics and supply chain management develop speed-oriented and find more application areas in the virtual environment, it will not be an

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assertive view that the Incoterms delivery terms, based on location, time and payment will change radically or disappear completely.

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