

Research article

# Presentation and Analysis of Model of Reduction of Cost in the Imports and Exports of Containers in Greece

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## Abstract

The developments in the international imports and exports influence decisively the structure and the competitiveness of Greece. The speed with which the transport of merchandises takes place and the reduction of delays in all the stages import and export process are important factors for the increase of competitiveness of Greece in the international trade. In the imports and in the exports in Greece there are long delays in the most general processes of transaction and collection of documents. If in the decades of 80s -90s the technological development concerned main the equipment and handling of charge, since 1990 and afterwards great emphasis is given to the completion of information systems of transport through the world communication network.

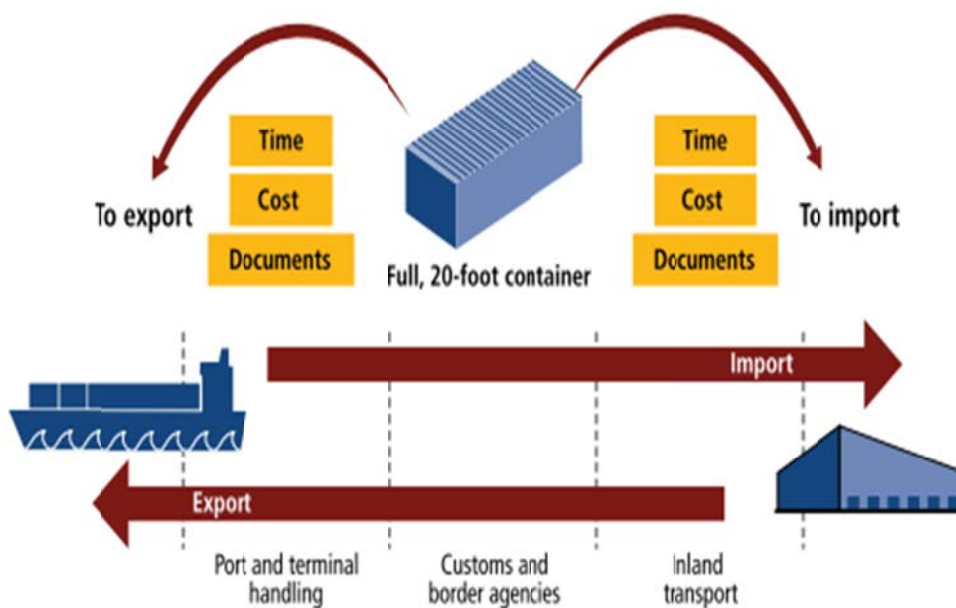
The use of the electronic exchange of information appears to be a key element in the development of imports and exports.

In this article it is mentioned:

- The level of adoption of new technologies of the information technology in Greece
  - The facilitation of imports and exports by using new systems of electronics exchange of information
  - A model for the reduction of the cost of imports - exports with the reduction of the days of collection of the essential documents via the new systems of information technology.
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## 1 Introduction

Why the high cost and long delays? The reasons include poor infrastructure, multiple checkpoints and the cumbersome administrative process of trading.<sup>2</sup> the cost of trading in Greece adds to the already high general prices for goods in the city. Greece may be one case, but the many developing economies around the world that depend on imports for basic needs also suffer from high import costs. The article measures the time and cost (excluding tariffs) associated with exporting and importing by ocean transport, and the number of documents necessary to complete the transaction (figure 1).



**Figure 1:** How much time, how many documents and what is the cost to import and export by sea transport.

The indicators cover documentation requirements and procedures at customs and other regulatory agencies as well as at the port. They also cover logistical aspects, including the time and cost of inland transport between the largest business city and the main port used by traders. These are key dimensions to the ease of trading—the more time-consuming and costly it is to export or import, the more difficult it is for local companies to be competitive and to reach international markets

## 2. Imports and exports in Greece

Trading in Greece, typically involves the following steps:

After signing a contractual agreement with the overseas importer, the exporting company first prepares and obtains all required documents and submits them to the relevant authorities. It makes arrangements with a

commercial bank for the issuance of a letter of credit. The exporter then arranges for the goods to be packed into a container and transported from the warehouse to the port. Inland transport is done by truck, train or barge boat or by a combination of these.

The goods need to be cleared by customs and by authorities such as health ministries. Export companies in Greece often hire agents such as customs brokers to complete the necessary paperwork and other formalities on their behalf. The use of customs brokers is included in the cost. Once the cargo is at the port, port fees and handling costs are paid, and the cargo is moved to the appropriate area until it can be loaded onto the vessel ready for shipment to the relevant authorities. It makes arrangements with a commercial bank for an import letter of credit. Once the vessel arrives at the port of entry, the cargo is offloaded to the port terminal, the necessary documents are submitted to and cleared by port authorities, and all the handling fees are paid.

If customs and other clearance procedures at the port are lengthy, the cargo might need to be moved to a separate container yard, leading to storage fees for the importer.

### **3. Facilitation of commercial transactions in Greece**

The advantages of facilitation of commercial transactions (imports - exports) in Greece are many. Limited access to international markets can prevent the growth of businesses and economies of scale. Local markets are often small, particularly in developing economies, and trade provides potential for greater output at lower cost. Trade also allows developing economies to become part of the global supply chains. Having access to imported raw materials and other inputs is often crucial for businesses, and delays or shortages can affect production. Trade can also lead to favorable externalities such as the transfer of know-how. (Saggi, Kamal. 2002).

However a firm's ability to trade overseas can be hampered by a range of factors something which greatly occurs in Greece.

1. Inadequate infrastructure
2. inefficient port operations,
3. Time consuming documentation requirements,
4. burdensome and time consuming customs procedures,
5. Time consuming inspections and checks by different government agencies.

By removing the unnecessary obstacles which hamper the smooth process of imports - exports, governments can contribute to an environment that encourages entrepreneurs to look beyond their own borders for business opportunities. A study focusing on Asia-Pacific Economic Cooperation (APEC) economies estimates that reducing the days needed to clear exports by half could enable a small to medium-sized enterprise to increase its share of exports in total sales from 1.6% to 4.5%. (Li, Yue, and John Wilson. 2009).

The international trade plays an important role in the development of economies. Therefore, Facilitating trade of both imports – exports is of concern for the politicians of the country. Researchers have concluded that the both complexity and facilitation administrative procedures at the customs has an impact on trade transactions. (Bolaky, Bineswaree, and Caroline L. Freund. 2008). A study in Sub-Saharan Africa has shown that by reducing the export costs by 10% the trade processes increase exports by 4.7%. (Hoekman, Bernard, and

Alessandro Nicita. 2009) It has also been proved from the above study that by improving part efficiency the customs processes and services there was an increase in trade by up to \$377 billion a year in all regions. (Wilson, John S., Catherine L. Mann and Tsunehiro Otsuki. 2004). The governments can also benefit directly from trade facilitation, of the import and export processes for example so that tariff and duty payments are more easily enforced and illegal, “facilitation payments are discouraged in any kinds of transaction.

#### **4. Electronic management of imports - exports in Greece**

The electronic management of commercial transactions is very important for Greece. It is known that in a lot of countries there are henceforth used electronic systems of exchange of data for the submission and the management of essential documents on the imports and exports, which has decreased the cost. With the reduction of days for the collection of the essential documents both in the imports and exports of Greece, there will also be so a decrease in the cost of transactions respectively. The above will with the growth of a gate that will be responsible for the help of the enterprises in Greece to collect the essential documents. For Greece afterwards the agreement between the exporter and the importer on the mission or the receipt of merchandises they need (excluding the marine transports) 20 days at mean for the export and 25 for import. The corresponding documents that need they are collected are 14 and 12 equivalents.

In 2010/11, certain economies rendered easier the introductive and export activity with the submission and collection of electronic documents something which in Greece is not also particularly developed. The economies with developed commercial models based on the electronic transaction are shared characteristically traits. They allow in the tradesmen to exchange the information with the custom and other services of control electronic. (Sarmiento, Alvaro, Krista Lucenti and Aurelio Garcia. 2010).

##### **4.1 Adoption of systems of electronic exchange of data**

Electronic systems for filing, transferring processing and exchanging customs information have become an important tool for managing flows of information, now widely used in complex trading systems. The newest web-based systems allow traders to submit their documents from anywhere and to pay duties online. The key to success is the ability of an economy to accommodate its regulatory framework to the new information technologies. If implemented effectively, such a system saves precious time and money. It can also reduce interactions with officials, which means fewer opportunities for corruption. But introducing an electronic system often requires governments to enact legislation on electronic signatures and transactions. Otherwise it can lead to redundancy and delays, requiring paper submission of signed documents after they have been filed electronically. For small and low-income economies the infrastructure and training costs of implementing such systems can be onerous—and meaningful effects for local traders may take time to materialize.

Exchange of customs data and harmonization of customs procedures are important pillars of many regional communities, and electronic data interchange systems can support these regional integration initiatives. In Central America the International Goods in Transit (TIM) system harmonizes previously cumbersome

procedures in a single document to manage the movement of goods across nine economies. At some border locations this has reduced clearance times for goods in transit by up to 90%. A model of adoption of system of electronic exchange of data will help the growth the introductive and export activity in Greece.

But linking two or more information technology systems through a common interface is not always easy. Integrating Kenya's Simba system with Uganda's ASYCUDA++ through the development of the Revenue Authorities Digital Data Exchange (RADDEx) system has taken several years and does not yet cover all trade between the 2 countries. Expanding this system to the rest of the East African Community also remains an ongoing challenge. (Sarmiento, Alvaro, Krista Lucenti and Aurelio Garcia. 2010).

Today 82% of economies around the world allow traders to submit at least some of their export and import declarations, manifests and other trade-related documents to customs authorities electronically. Also with the same way they have the possibility communicate also other factors the introductive and export chain as banks, responsible ministries, companies of transports and other. However many of these automatic systems do not support the transport via Internet and many from the documents need hard copies. In Greece the bigger percentage of imports and exports becomes printed and the collection of essential documents with the help of companies of custom clearance with result the delay of so much imports of what exports respectively. The growth of such systems of electronic exchange of data that constitutes part of thesis is a effective way in order to are decreased the days of collection of documents on the commercial transactions with impact the reduction of cost. (Ahmad, Manzoor. 2010).

#### **4.2 Interconnection of services in single electronic window**

Increasingly, economies are going a step further by virtually linking not only traders and customs but all agencies involved in trade and transport through an electronic single-window system. In the best case such a system allows traders to file standard information and documents through a single entry point to fulfill all import, export and transitrelated regulatory requirements—then shares relevant information with all parties involved in trade, including private participants such as banks and insurance companies as well as public agencies such as immigration and vehicle registration authorities. Today 49 economies around the world have implemented single-window systems of varying complexity. Developing economies are increasingly interested in such systems. Colombia and Senegal have both implemented single-window systems, though achieving complete functionality is an ongoing process(Doing Business 2009)..

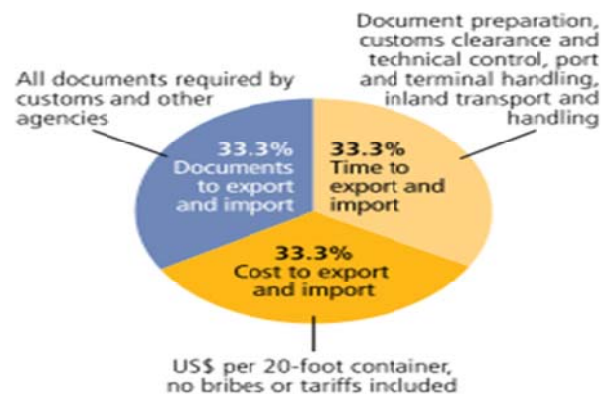
Like the electronic data interchange system, the single-window system is being embraced by regional communities. The 10 member nations of the Association of Southeast Asian Nations (ASEAN) have set an ambitious goal of establishing an ASEAN wide single window. Plans call for integrating members' national single windows so that a single submission of data and information suffices for the entire ASEAN region. Several economies have reported positive results from the implementation of single-window systems. The Korea Customs Service estimates that the introduction of its single-window system brought some \$18 million in benefits in 2010. Indeed, for Korean-based companies such as Samsung and LG, global leaders in the

electronics industry, achieving rapid and predictable turnaround times is an important part of their competitiveness strategies.

With the use and the development of such systems the enterprises can limit the utilisation of companies of custom clearance in a lot of offered services with result the important reduction in per year and in the cost of import and export.. With this way will exist bigger competition between these companies and the enterprises will achieve lower economic agreements and higher quality of service. Adoption of such systems in the imports and exports on one side provides easy access in required documents and in the other it can decrease the costs of transactions. When the processes and the requirements of payments are precise the customs-brokens and the commercial advisers they are not essential. Study showed that in countries that used such systems, the rate of cost in the custom for the imports was 25,3% smaller in those that the information was easily accessible.

### 5. Model of Reduction of Cost in the Imports and Exports in Greece

In this article is presented the model for the reduction of cost in the exports and the imports in Greece via reduction of days in the collection of essential documents. Afterwards becomes a estimate the time and cost (excluding tariffs) associated with exporting and importing a standardized cargo of goods by ocean transport. The time and cost necessary to complete every official procedure for exporting and importing the goods—from the contractual agreement between the 2 parties to the delivery of goods—are recorded. All documents needed by the trader to export or import the goods across the border are also recorded. For exporting goods, procedures range from packing the goods into the container at the warehouse to their departure from the port of exit. For importing goods, procedures range from the vessel's arrival at the port of entry to the cargo's delivery at the warehouse. The time and cost for ocean transport are not included. Payment is made by letter of credit, and the time, cost and documents required for the issuance or advising of a letter of credit are taken into account. The ranking on the ease of trading across borders is the simple average of the percentile rankings on its component indicators (figure 2). Local freight forwarders, shipping lines, customs brokers, port officials and banks provide information on required documents and cost as well as the time to complete each procedure. To make the data comparable across economies, several assumptions about the business and the traded goods are used.



**Figure 2:** Trading across borders: exporting and importing by ocean transport. Rankings are based on 3 indicators

### **Assumptions about the business**

The business:

- Have at least 60 employees.
- Is located in the economy's largest business city.
- Is a private, limited liability company. It does not operate in an export processing zone or an industrial estate with special export or import privileges.
- Is domestically owned with no foreign ownership.
- Exports more than 10% of its sales.

### **Assumptions about the traded goods**

The traded product travels in a dry-cargo, 20-foot, full container load. It weighs 10 tons and is valued at \$20,000.

The product:

- Is not hazardous nor does it include military items.
- Does not require refrigeration or any other special environment.
- Does not require any special phytosanitary or environmental safety standards other than accepted international standards.
- Is one of the economy's leading export or import products.

All documents required per shipment to export and import the goods are recorded (table A.1). It is assumed that the contract has already been agreed upon and signed by both parties. Documents required for clearance by government ministries, customs authorities, port and container terminal authorities, health and technical control agencies, and banks are taken into account. Since payment is by letter of credit, all documents required by banks for the issuance or securing of a letter of credit are also taken into account. Documents that are renewed annually and that do not require renewal per shipment (for example, an annual tax clearance certificate) are not included.

### **A. IMPORTS-ESSENTIAL DOCUMENTS**

1) Tariff from the house of abroad with the description of merchandise analytically, price of unit and total in the foreigner currency.
2) Box list or weight list (without regard from the Inland Revenue or considered without however the tax of added value
3) Bill-of-lading (CMR or BILL OF LADING)
4) Title of Property of merchandise
5) Cerificates EUR1,FORMA, ATR1, η certificate of ORIGIN
6) Approval of import where if they need also for certain categories of merchandises.

**Table 1:** Documents of Imports

**B. EXPORTS-ESSENTIAL DOCUMENTS**

1) Tariff of export (without regard from the Inland Revenue or considered without however the tax of added value.)
2) Box list3) Information on registration in the special registration of exports..
4) Bulletin of mission considered with recipient the customer of abroad and place of delivery the custom of export..
5) Chamber awareness (photocopy of also 2 aspects of card that grants the Commercial and Industrial Chamber that appears the registration of exporter in the Special Registration of Exports)

**Table 2:** Documents of Exports

**3.1 Time**

The time for exporting and importing is recorded in calendar days. The time calculation for a procedure starts from the moment it is initiated and runs until it is completed. If a procedure can be accelerated for an additional cost and is available to all trading companies, the fastest legal procedure is chosen. Fasttrack procedures applying to firms located in an export processing zone are not taken into account because they are not available to all trading companies. Ocean transport time is not included. It is assumed that neither the exporter nor the importer wastes time and that each commits to completing each remaining procedure without delay. Procedures that can be completed in parallel are measured as simultaneous. The waiting time between procedures—for example, during unloading of the cargo—is included in the measure.

**3.2 Cost**

Cost measures the fees levied on a 20-foot container in U.S. dollars. All the fees associated with completing the procedures to export or import the goods are included. These include costs for documents, administrative fees for customs clearance and technical control; customs broker fees, terminal handling charges and inland transport. The cost does not include customs tariffs and duties or costs related to ocean transport. Only official costs are recorded

**3.3 ANALYSIS OF MODEL**

Below is given a in detail analysis of requirements for import and export of standardised charge of products in Greece. The all required documents are connected with each official process between the agreements of two contracting parts on the delivery of products in the required time of delivery.

Οι πληροφορίες που δίνονται προέρχονται από το project Doing Business το οποίο μετρά και συγκρίνει τους κανονισμούς σχετικούς με τον κύκλο ζωής μιας μικρομεσαίας εσωτερικής επιχείρησης στην Ελλάδα. Ο πιο πρόσφατος κύκλος της συλλογής δεδομένων για το πρόγραμμα ολοκληρώθηκε Ιουνίου 2011.



<b>PROCESSES OF IMPORTS</b>	<b>Duration (in days)</b>	<b>Cost (in \$)</b>
Document Preparation - DP	12	140
Customs clearance and technical control - CCTC	6	265
Ports and terminal Handling – PTH	5	380
Inland transportation and Handling – ITH	2	480
<b>Total</b>	<b>25</b>	<b>1265</b>

<b>PROCESSES OF EXPORTS</b>	<b>Duration (in days)</b>	<b>Cost (in \$)</b>
Document Preparation - DP	14	235
Customs clearance and technical control - CCTC	2	230
Ports and terminal Handling – PTH	2	228
Inland transportation and HANDLING – ITH	2	460
<b>Total</b>	<b>20</b>	<b>1153</b>

**Table 3:** Processes of Exports of - Imports

From the above elements Greece needs 20 days in order to it exports merchandises and 25 days in order to it imports with cost 1153\$ and 1265\$ respectively. Consequently if it is decreased somebody of the factors in the processes for the imports or the exports will have as result the reduction of cost.

Aim of article is the reduction of parts in the preparation and the collection of documents on Greece something which can be achieved with the growth of gate of interconnection of all essential rings for the commercial transactions. With a estimate of elements if becomes reduction from the 14 days even one day is obvious that the cost will be decreased. Proportional results result also for the imports.

Types that are used for the calculation of duration and the cost of imports and exports are below:

$Duration = Dp + Cctc + Pth + Ith$
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DP: Document Preparation

Cctc: Customs clearance and technical control

Pth: Ports and terminal Handling

Ith: Inland transportation and Handling

$$\text{Cost} = \text{CDp} + \text{CCctc} + \text{CPth} + \text{CIth}$$

CDp : Cost for Document Preparation

CCctc: Cost for Customs clearance and technical control

CPth: Cost for Ports and terminal Handling

CIth: Cost for Inland transportation and HANDLING

If it is supposed that the days for the collection of documents on the exports it is decreased at 4 days the results that will be exported they are below.

Γα DP =14

$$\text{Duration} = \text{Dp} + \text{Cctc} + \text{Pth} + \text{Ith} = 14 + 2 + 2 + 2 = 20$$

$$\text{Cost} = 235 + 230 + 228 + 460 = 1153$$

Γα DP = 10

$$\text{Duration} = \text{Dp} + \text{Cctc} + \text{Pth} + \text{Ith} = 10 + 2 + 2 + 2 = 16$$

$$\text{Cost} = 167,85 + 230 + 228 + 460 = 1085,85$$

Consequently is observed a difference in cost 67,85\$ and corresponds reduction of days. From a estimate of model reduction at one day in the days of imports or exports of product we have increase of trade at 1%.

#### 4. Conclusions

In this article they were used a total of data on per year and the cost of imports and exports in Greece. Was given the time that needs a packed product it is transported by the factory in the boat. Was per year developed a model for the reduction of cost of imports and exports with base. Was given a equation that calculates the time that needs is completed a commercial transaction in Greece. The results Showed that even one day of reduction in the collection of documents that is the factor with which it deals the thesis can increase the trade at 1% and consequently decrease the cost.. The results showed that Greece might facilitate the introductive and export activity decreasing the days of collection of essential documents. This could become with the growth of system that will interlink the all essential members and will give the right in each enterprise be possible with her own resources to complete certain processes.

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