Import Cost Analysis: A Case Study on an Oil & Gas Company in Brazil

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Abstract—The present work aims to analyze the financial impacts incurred in a Norwegian company based in Macaé in the oil and gas industry. In this manner it is intended, at first, to enter in foreign trade facing its history in the world as well as in Brazil, the taxes, laws, NCMs and Incoterms to which the case study of the company is based on for its critical analysis. Then, it presents the company and the flowchart of tasks prior to embark the goods and as a result it analyzes the numbers incurred of the processes, the transport more used at the most and employment of its resources concerning the processes of importation. Finally, it is submitted to the analysis of the costs generated by the choice of air freight shipments and using special customs regime Repetro. The methodology used in this study consisted of an exploratory research, explanatory and descriptive made via books, scientific articles, papers, essays and Internet sites. Secondary data were also raised along with the company studied. Thus, when analyzing the theoretical and practical aspects, it has been highlighted the importance of the employment of inputs in an optimized way with the aim of generating increasingly less cost to the company. Among the analyzes and results obtained, it was realized that there is no planning in acquisition of inputs resulting in exacerbated use of the air freight shipment, as well as the little use of special customs regime Repetro.

Keywords — Logistics, Import Fees, Offshore Industry.

I. INTRODUCTION

Import, export have been and always will be important in the deficit / surplus trade balance of any country in Brazil is no different. the purpose of this article is import costs analysis: seeing process into Macáe, to serve the oil and gas industry.

It was through its autonomy in the negotiations that Brazil entered foreign trade and despite having large-scale export products such as coffee, for example, with its still unfavorable scenario, that is, Brazil imported more than it exported, thus making its balance of trade not reach the positive balance. By virtue of this fact, Brazil intervenes in order to optimize the national industry, which was achieved through high customs duties following the Trade Agreement with England. Such a measure makes the scenario in Brazil have optimistic horizons through which the trade balance reaches the positive balance for the first time in history. (MDIC, 2013).
In the midst of the great development of the world economy, Brazil is gaining notoriety in this scenario of foreign trade, it also increases its national productivity and since then the trade balance oscillating when reaching highs and lows, but with its economy in constant rise. And in the last decades, it has already reached the position among the three countries that import and export the most in the world (FILHO, 2007).

It is well known that the Brazilian oil and gas market is constantly on the rise and the domestic industry in turn does not follow its technological growth, resulting in a local industry that can not meet the demand for equipment for the oil and gas sector, in this way companies are forced to import large quantities of parts and assets to meet production. Brazil is one of the most important countries in the world and the import process has become an increasingly recurring activity in companies. This fact makes the volume of merchandise imports in the country is high and as a consequence the costs of the company also increase. The challenge is to reduce costs in a scenario where logistical expenses and customs duties are high. Having said this, the present work will present an analysis of the import process in light of its costs incurred. Nevertheless, the import process is costly, complex and presents risks and the lack of management of the resources employed can lead to an unsatisfactory result for the company (OLIVEIRA, 2013).

The research was carried out for the purposes, the research will be exploratory, explanatory, and descriptive. Exploratory because, despite the Import Costs theme being well developed in several other countries, in Brazil there is still much to explore in view of our too much bureaucracy in the import process. Explanatory, as it aims to clarify facts that contribute to the knowledge of the import process in Brazil. It is descriptive because it exposes a certain phenomenon, that is, the import process, as well as applied since the analysis of the research will show the means to optimize the costs incurred in the process, thus solving the problem of high costs.

As for the means of investigation, the research will be a case study of an import process of an oil and gas company, followed by an experiment in which the modal of the applied import process will be compared to another modal, leading to the analysis of the costs of each mode experienced.

In the context of the case study, data collection was performed using numbers from the ones selected for the case study. Research is conducted from August 2012 to August 2013. The research instrument chosen is the compilation of all the import processes included in these 13 months.

We will briefly analyze the foreign trade, the customs legislation of the oil sector, the analysis of the import process of a company from Macaé.

II. FOREIGN TRADE

Foreign trade is one of the earliest ways of exchanging its production surpluses and interacting with other peoples, say by means of the Romans and Greeks who crossed the seas in search of merchandise in other lands or even the discovery of the Americas by the Spaniards and Portuguese people who carried in their ships what was found to be valuable to them. However, through the high technology of the countries today, foreign trade can interact and communicate in order to streamline logistics processes. This affirmation ratifies that foreign trade in Brazil could be somewhat more effective if there were logistical planning that would sustain the country's growth and development (FILHO, 2007).

2.1 IMPORT AND EXPORT INTO BRAZIL

Currently, Brazil has major presence the world scenario to foreign trade, it has already reached a relevant position, which benefits transactions. This position was reached due to the country's economic growth in the middle, and despite crises around the world. Soon after joining the international negotiations and negotiations, Brazil instituted a 24% tax rate on imported products of any nationality (SILVA, 2013).

After entering international protectionist measures were implemented with the purpose of controlling the flow of goods in the country as well as promoting the domestic industry, however the countries interested in the Brazilian market were manifested and agreements had to be made, the Decree of June 11, 1808, whereby goods coming from Portugal would have cheaper tariffs in comparison with other countries, thus favoring ties with the Portuguese economy (MDCI, 2013).

Some time after, Brazil sees the need to expand its international business and makes agreements with other countries. In this way the measures and rates applied to Portugal are also valid for items coming from England. Such agreement makes England the main exporter for the Brazilian lands. In effect in the Brazilian economy, the tariff agreement until then valid only for Portugal and England, becomes valid for any country with an interest in doing business with Brazil (SILVA, 2013).

There was a change in the years that followed regarding protectionist measures. Liberals interested in developing international trade reduced the rights and privileges of certain industries and it was through these liberal measures that Brazil, for the first time since its autonomy, achieved a positive balance of trade.

Despite reaching the positive balance of trade, Brazil is in crisis and uses a customs tariff as an economic measure, and since then it has become an instrument of financial policy and foreign trade, around it were taken important decisions of the Government in the economic sphere, in view of crises and swings of change.
Figure 1 reflects the scenario in which Brazil was in a phase and that justified interventionist measures of the government regarding customs tariffs. One can see the decline from 1928 onwards, in which Brazil invoices in exports around 500 million dollars and subsequently fluctuates between 100 and 400 million dollars. Progress, in turn, arises from 1941 to almost 700 million in 1945. This phase was amidst crises and world wars.

Brazil understood that there should be changes in order to boost its economy, that is, through products that add more value and not only the basic product like coffee, it would open more doors to international trade with the aim of leveraging and saving profit for the public safes. These aggregate products were high value and more sophisticated goods such as cars and parts and electronics, whose values were up in the international market and for this the government stimulated foreign investment as well as a more incentive exchange rate policy. This is then an example of how the Brazilian economy made use of foreign trade as a financial and economic policy platform (GAMA, 2012).

2.2 CUSTOMS TAXES AND NCM - COMMON MERCOSUR NOMENCLATURE

The taxes incurred by the companies carrying import or export transaction. When there is incidence, it occurs on the assets of the companies. The taxes are the import tax (II), tax on industrialized products linked to import (IPI), contribution to social integration programs and training of public servant assets (PIS / PASEP - Import), social contribution to financing of social security (COFINS - import), all of which are within the competence of the Union. States may, according to their legislation, change the rates on goods and services of interstate and inter-municipal transportation and communication services (ICMS). (Silva, 2007).

The aforementioned taxes have their rates based on NCMs - Mercosur Common Nomenclature. Then clarified about the NCM and its origin. Since always the classification of merchandise is interest of the most varied nations that aim the tributes regarding the procedures of foreign trade. The first lists with the classified goods appeared alphabetically, but there was a need to expand by virtue of the different words within the same territory, even when the subject was treated at an international level (BIZELLI, 2003).

The Harmonized Commodity Description and Coding System is a method of classifying commodities which aims to promote international trade in order to make statistical measurements feasible, facilitate negotiations, facilitate the preparation of freight rates, among others. The system is composed of 6 (six) digits, which delimit for example, the origin and raw material of a given piece. This system is the basis of NCM through which tax rates are established (MDCI, 2013).

Since January 1995, Brazil, Argentina, Paraguay and Uruguay have used the Mercosur Common Nomenclature, which, as previously mentioned, is based on the Harmonized System. Therefore, NCM is composed of the digits of the Harmonized System followed by two (2) digits that are specific and attributed to MERCOSUR.
as shown in figure 2, where one can see the formation structure of an NCM. It is by means of the classification of the goods that defines the percentage of the tax rates incident and which body is competent to authorize the importation of the product.

<table>
<thead>
<tr>
<th>Subitem (8º digit da NCM)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Item (7º digit da NCM)</td>
</tr>
<tr>
<td>Subposition (6 first digits do SH)</td>
</tr>
<tr>
<td>Position (4 first digits do SH)</td>
</tr>
<tr>
<td>Chapter (2 first digits do SH)</td>
</tr>
</tbody>
</table>

Fig. 2: Formation of NCM. Source: Ministry of Commerce and Industry Development, 2013.

2.3 INCOTERMS – INTERNATIONAL COMMERCIAL TERMS

Araújo (2009) affirms that it is not of today that the society is governed by contracts. Be it the Brazilian society only or even internationally. In international contracts there are rules that dictate the rights, obligations and duties of the parties involved, that is, the importer and the exporter. In other words, in the absence of specific legislation risk transfer is clearly exposed through Incoterms (GLITZ, 2013). These rules are called Incoterms (International Commercial Terms) and an operation based on them has its reduced uncertainties making the process run with less possibility of errors and litigations (ARAÚJO, 2009).

Incoterms were created by the ICC (International Chamber of Commerce) in 1936 with only seven rules and in 1953 two more rules were added to its list. Another five revisions occurred in 1967, 1976, 1980, 1990 and 2000 respectively, the year in which Incoterms were included, excluded and replaced in order to meet the market and current demand. This last revision of 2000 was in force until 2010, when one more revision was published, going into effect on January 1, 2011 to the present day (SOUZA, 2003).

The Incoterms serve to facilitate negotiation and clarify it, as well as define the responsibility of those who pay what part of the process, where the risk is transferred from the exporter to the importer, who contracts and pays for the insurance of the cargo, who hires and pays the transportation of the cargo, who produces the necessary documentation among other factors that are decided in the negotiation of purchase and sale (SOUZA, 2003; RACHED and CÔRTES, 2010).

Thus, Incoterms are divided into categories according to modal, or simply through the "E", "C", "D" and "F" groups, as will be explained in more detail below (SOUZA, 2003).

In group "E" is Incoterm EXW (Ex Works), in which the importer or buyer is responsible for the collection of the cargo with the exporter or seller, in this way the risk and all contracting freight and insurance are the responsibility importer. When making use of this Incoterm the exporter has the minimum of obligation and risks. (BERTAN, 2010).

In Group "C" are Incoterms CPT (Carriage Paid To), CIP (Carriage and Insurance Paid To); CFR (Cost and Freight) and CIF (Cost Insurance and Freight) (SOUZA, 2003).

The Incoterms "D" group is represented by the Delivered at Terminal (DAT), DAP (Delivered at Place or Delivered Duty Paid) and DDP (Delivered Duty Paid) and can be used in any modal (RACHED, CÔRTES, 2010).

Finally, there is the group "F" of Incoterms, which consists of the terms FCA (Free Carrier), FAS (Free Alongside Ship) and FOB (Free on Board).

2.4 CUSTOMS REGULATION FOR THE PETROLEUM SECTOR - REPETRO

Since 1970, after international financial crises, Brazil has seen the economic need to produce oil and gas through which its self-sufficiency would be achieved. It was supported by IN 136/87 that Brazil imported inputs into temporary admission to serve the gas oil industry at this time. However, the law was not exclusive to the sector and, in view of the need for economic growth, new laws were introduced, thus revoking the previous ones in order to structure the regime according to the table above (SANTOS, 2011).

In order to encourage the participation of foreign companies and their investments, Brazil created at the end of 1990, rules that reduce the tax contribution of companies when they import or export their assets. The tax reduction occurs when the oil assets and according to the legislation described in the 2002 Customs Regulation, Decree No. 4543/02, pass through the Brazilian Customs. The assets that fit under this special customs regime then have their taxes suspended (SILVA, 2007).

The main special customs regime used is called REPETRO (special regime of import and export of goods designated for research and mining of oil and gas). Before an analysis to benefit from the REPETRO benefit, companies must pay attention to the requirements of the government, among which is the presentation of a computerized system for real-time monitoring, through which federal revenue has access to any and all movement of items in this customs regime (SILVA, 2007; SANTOS, 2011).

Currently, REPETRO is supported by IN 844/2008, an instruction that defines the goods that are covered by the law, that is, it stipulates and guides the importer as to what good it may bring, thus making it a tax suspension benefit. These items should have their applicability directly linked to the research and mining activities of the oil and natural gas fields as well as their production. (SANTOS, 2011).

### Table 1: Current and Revoked Laws. Source: Repetro Special Customs Regime - Jus Navigandi Magazine - Doctrine and Parts. Ferreira, 2013.

<table>
<thead>
<tr>
<th>YEAR</th>
<th>LAW</th>
<th>IMPORTANT OBSERVATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>1997</td>
<td>IN 136/97</td>
<td>Temporary admission covering oil and gas imports.</td>
</tr>
<tr>
<td>1998</td>
<td>Added IN 162/98</td>
<td>It fixed the terms, depreciation and useful life of the imported goods in the regime.</td>
</tr>
<tr>
<td></td>
<td>Added IN 163/98</td>
<td>He talked about the application of NCMs.</td>
</tr>
<tr>
<td></td>
<td>Added IN 164/98</td>
<td>It disciplined the action of the regime.</td>
</tr>
<tr>
<td>1999</td>
<td>IN 122/99</td>
<td>Repeals IN 163/98.</td>
</tr>
<tr>
<td></td>
<td>IN 150/99</td>
<td>Repeals IN 164/98.</td>
</tr>
<tr>
<td>2000</td>
<td>Added IN 87/00</td>
<td>Requires computerized system for control of goods in real time.</td>
</tr>
<tr>
<td>2001</td>
<td>IN 04/01</td>
<td>Support REPETRO and repeal IN 136/97</td>
</tr>
<tr>
<td>2008</td>
<td>IN 844/08</td>
<td>More rigidity regarding the applicability of the goods, as well as obtaining the authorization of the regime.</td>
</tr>
</tbody>
</table>

III. THE COMPANY

In the middle of the nineteenth century, three brothers became ship commanders in the town of Hvitsten, a village in Norway at a very young age. Shortly thereafter, and by accumulating all the expertise in the segment as commanders, the brothers began to buy boats and became owners of a fleet of 43 ships, the growth of their company made that a complex to receive all that fleet was created in the city by Hvitsten. In 1848 the company of the brothers, identified here as Parent Company, appeared in the navigation segment. Years passed, and the family saw the opportunity to diversify their businesses around the world.

The entry into the oil segment and its exploration only occurred in the following century. As early as 1960 the parent company group entered a company with 45% of the shares of two companies that ended up having a considerable success in oil exploration, refining oil and oil sales. In 1974, Company X emerged, in the oil and gas division in Houston, United States and later in Stavanger, Norway and Aberdeen, Scotland. Atualmente a Empresa X tem uma frota de 11 (onze) sondas ao redor do mundo operando na África, no mar do Norte, no Golf do México e na América Latina.

Of these eleven platforms, two operate in Brazil. With an operational base located in the city of Macaé, a study can be carried out on the import processes in Company X.

3.1 THE DEPARTMENT OF EXPORT AND IMPORTATION

The Import Sector in Brazil is composed of two employees, one analyst and one coordinator. The coordinator is responsible for the subpoenas received from various government agencies and other legal matters, while the analyst is responsible for daily import and export activities, performance measurements of cargo.
agents and customs brokers, and indicators for top management. The indicators brought by the analyst will be the basis of all the study presented here.

IV. AN ANALYSIS OF THE IMPORTATION PROCESS OF A MACAE COMPANY

The shipments come mostly from Aberdeen and from the origin the shipment coordinator organizes the shipment according to the requests of Brazil, in order to comply with the Brazilian customs legislation. Below you can see the flowchart of the tasks before the load is sent. The purpose of this flowchart is precisely to avoid that the work of adaptation to the legislation had to be redone. The flowchart marks the beginning of the material report preparation process, issued by the warehouse supervisor in Aberdeen. Subsequently, the shipment coordinator, also based in Aberdeen, sends the report to the analyst, who, together with the customs broker, translates and classifies the NCMs of each item in the report.

When classifying and translating, the analyst consults with the stockist of the platform to consult the requestor of an item about the raw material, urgency and other questions so that the classification can be accurate. After the translated and classified report, the analyst asks the platform manager that air shipments, when the volume of processes is increased, are approved. Once approved the report, the analyst sends the final version to the shipment coordinator so that the shipment coordinator can issue the documentation according to the instructions of the report and Brazilian legislation, as shown in figure 3.

![Material Report Flowchart](image)

Fig. 3: Material Report Flowchart

Next, facts and conclusions based on the numbers provided and analyzed of the company studied are elucidated. All the graphs cover the period from August 2012 to August 2013 and through them you can see more
clearly where the company's resources were used, where the failures in the import process as well as other were analyzes for information. Depending on the modalities used in the shipment there are some steps that precede the registration of the DI - Import Declaration - and from the measurement on how long this step of the process is can observe the speed and efficiency of the customs agent, which is the executing this task in the import process. The effectiveness of DI recording directly impacts the storage of the load, so the longer it takes to register an DI, the higher the storage cost, as shown in Figure 4.

Fig. 4: DI Log Lead Time - Average - in Days

The present figure 4 shows the number of days that the analyzed company took, in average, to the registry of its DIs from the arrival of the load in the airport or port. It is noted that there was an improvement in the performance of this stage of the process, Figure 5 analyzes the percentage of air and sea shipments.

Fig. 5: Percentage of Shipping Mode and Stipulated Target
Figure 5 shows the modal air and modal modal relation of the shipments, as well as the comparison of the air modal in relation to the total of the shipments. During these 13 months of analysis it can be concluded that the number of shipments with air freight was higher than the number of shipments with maritime freight. It is also noted that the goal of air shipments to be achieved, stipulated by the company at 20%, was not successful leading to consider a lack of inventory planning and spare parts, which in turn leads to the urgency at the time of export, figure 6 analyzes the quality of import processes.

Figure 6 illustrates the number of import processes in relation to the modal chosen. In it we can observe that the percentage of air shipments to an average of 52%, was above the goal stipulated in 20%.

Both graphs lead to the conclusion that the lack of planning of the stock of spare parts and spare parts leads to an urgent demand for the cargo making it impossible to board the ship. Such a failure leads to the impossibility of reducing costs as we shall see later.

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**Fig. 6: Quantity of Import Processes x Modal**

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**Fig. 7: Percentage of Shipping Mode and Stipulated Costs Target**
Costs incurred with freight during the analyzed period are shown in figure 7. By means of numbers, it can be concluded that air freight is much costlier than sea freight. The months of May and July 2013 stand out, and in a comparison with figure 16 one has the conclusion of the freight more onerous.

In May, 42 cases were imported, and in July, 44 cases, as illustrated in figure 6, but despite importing less, the month of May was more expensive than the month of July and the modal chosen was the explanation. In figure 7, it can be seen that around 140 thousand dollars was the freight cost in May, while in July it was spent only around 80 thousand dollars. Therefore, it should be concluded that in making use of more air freight, in detriment of the maritime, the company incurs more costs, as shown in figure 16, in which 52% of the 42 processes were airborne in May, and in July only 39% were aerial. Another alarming figure shown in figure 7 is that 84% of freight costs in May came from the airlift mode, while in July the cost of the airlift dropped to 27%.

Figure 8 shows the CIF values (Cost, Insurance, Freight or Cost, Insurance and Freight on which taxes are levied) of consumable items and items admitted in temporary admission, as well as the representation of how much in Repetro in relation to total. We will do the comparison again between May and July.

In May, imports of items in Repetro were significantly higher than imports of consumable items in relation to the CIF cost (Cost, Insurance, Freight or Cost, Insurance and Freight) of the merchandise.

V.  **FINAL CONSIDERATIONS**

Despite constant changes in Brazilian customs legislation, logistical and geographical limitations, the Brazilian tax burden and even the lack of knowledge of the legislation by oil companies, they import a considerable amount of inputs to service their operations.

As it was verified that the cost with the air freight was higher than the cost with the maritime freight, it is suggested to the studied company a reorganization of the department in the supply chain so that there is the inventory control making use of the tool of maximum and minimum stock, for example, so that your stock is always spinning in as few pieces as possible. In this way there would be more resources deposited in the planning of purchase of the parts thus avoiding the waste of merchandise, the stock stopped or missing, which consequently accelerates the urgent imports.

Shipment planning becomes positive as urgent imports become costlier because of rapidity as an added value to it. In making the exacerbated use of air freight the company incurs costs, which with the right tool and
planning, could be avoided. It can be seen then that the lack of planning costs the import costs, the lack of customs and logistic knowledge on the part of the taxpayer company also lead to a more expensive and expensive import process. It is concluded that the company studied makes too much use of the most expensive modal, air freight, as well as does not make planning in obtaining its inputs.

REFERENCES


