INTRODUCTION
Foreign trade has long been a key factor in a country’s development. Fostered by globalization, international trade has developed strongly and some countries have been able to exploit these opportunities and become richer while others have become poorer. The sources of these in equalities in the context of this process of globalization and trade openness are multiple and have already been the subject of many comments. Madagascar, like many African countries, specializes in the production and export of raw materials, its trade balance is in deficit every year and poverty persists. Agriculture is, in fact, the main sector of the Malagasy economy. It employs 85% of the population and contributes more than 40% to the Gross Domestic Product (GDP). Agricultural products represent 80% of exports in value terms. Apart from products manufactured in free zones, most of the exported products are coffee, vanilla, cloves, spices and shrimps. The structure of Malagasy exports has not changed much in recent years and any event that may affect the market for these products may affect the country's development.

This is why the theme: The dynamics of Malagasy specialization in international trade was decided to be addressed. The major question at the moment is: in what way has Malagasy international trade developed and what would be the best ways and means to revive it?

DYNAMICS OF MALAGASY SPECIALIZATION IN INTERNATIONAL TRADE

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ABSTRACT
The analysis of Madagascar’s foreign trade through the theory of comparative advantages according to the measure of contribution to the balance has shown that the level of specialization of the food and live animal products sector on which Madagascar’s international trade has always been based has depreciated over time. The degree of specialization of the Malagasy economy has also followed this trend and the performance of Malagasy foreign trade is closely linked to it. Nevertheless, other development poles are quite possible for Madagascar. Apart from the export of agro-food products, the Big Island can also exploit, among other things, the textile sector, which had been successful for some time. The diversification of the countries where Malagasy people should sell their products is essential to initiate the development of Malagasy foreign trade.

MATERIALS AND METHODS

LITERATURE REVIEW
Since mercantilism, academics have sought to understand the interests of international trade. They tried to identify the reasons why some countries perform better than others. Many theories have emerged successively: classical theory, factor proportion theory (Heckscher and Ohlin, 1977), product cycle theory (Vernon, 1966) and modern theory (Porter, 1990) and de Krugman, 1999). Their work focuses mainly on two concepts: absolute and comparative advantages. The theory of
International trade and, more specifically, the section on foreign direct investment (FDI) is also used by some authors to explain International Trade. Reasons related to speed, risk, undercapitalization and, finally, the need to circumvent significant barriers to entry justify the use of FDI for some firms (Joffre, 1994). It aims to acquire a long-term interest in a company located in a country other than its country of origin. Often, such companies establish their subsidiarises broad without using local partners or mobilizing the resources of any network to maintain the acquired comparative advantages (Bodolica and Spraggon, 2006).

Ricardo (1971), based on Smith's (1991) work, argues that it is more profitable for a country to specialize in the production of a good even if it has absolute advantages in the production of other goods. This logic is based on comparative advantages. For this author, the productivity gap between countries justifies their specialization. A country that has better productivity in all areas has an interest in specializing where its advantage is greatest. On the other hand, a country that is lagging behind in all areas has an interest in specializing where it is lagging the least.

This thesis has been developed by many theorists. Thus, the concept of revealed comparative advantage (Balassa, 1965) was developed. On the basis of the latter's work, more elaborate indicators, namely the degree of commitment and the measurement of the contribution to the balance, have been established (Herzog, 1989). The latter indicator is the most relevant for the rest of our analyses on Malagasy foreign trade insofar as it makes it possible to assess the evolution of a country's specialization in a comprehensive way.

Specialization is a state of affairs that involves the introduction into the exercise of productive activity of a system of participation and sharing according to differences in skills and dispositions. An economy is said to be specialized when it increases its productive efforts in the exercise of activities that best correspond to its natural abilities and dispositions or acquired to the detriment of other activities (Abd-El-Rahman, 1999). The specialization of a country's economy can be determined from the notion of comparative advantages.

The competitiveness of an economy is largely subject to the vagaries of the economy. In particular, an increase or decrease in the real exchange rate affects the relative prices of domestic production and subsequently affects the country's competitiveness.

To study the underlying trends in the specialization of a national economy, they must be dissociated from the macroeconomic situation. Unlike competitiveness, which is measured between nations (for each product), comparative advantage is measured between products or branches of activity (for each nation). For a given nation, it makes it possible to compare between them the different products, regardless of the overall balance affecting all goods. We thus place ourselves in the logic of "the contribution to the balance" by allocating a fraction of the overall surplus or deficit to each of the products on a flat-rate basis. The condensed for mula for the contribution to the balance can be written:

\[ \text{Fij} = \frac{1000}{Y_j X_{ij}} - X_{Mij} \]

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Value (in millions of current US dollars)</th>
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<tbody>
<tr>
<td>GDP</td>
<td>2977</td>
</tr>
<tr>
<td>Exports</td>
<td>326.6</td>
</tr>
<tr>
<td>Imports</td>
<td>432.2</td>
</tr>
<tr>
<td>Balance in relation to GDP</td>
<td>-105.6</td>
</tr>
<tr>
<td>Weight of the branch</td>
<td>1000 x (X/M)/Y</td>
</tr>
<tr>
<td>Total exchanges</td>
<td>758.8</td>
</tr>
<tr>
<td>Notional balance</td>
<td>-35.47</td>
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<tr>
<td>Advantage or disadvantage</td>
<td>81.89</td>
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**METHODOLOGY**

Among the comparative advantage indicators, those of the contribution to the balance seem to be the most developed and relevant because they make it possible to compare the major branches of the economy with each other and to analyse the dynamics of a country's specialization over time. Among other things, it makes it possible to identify the strengths and weaknesses of an economy and to assess the degree of a country's openness to the outside world in this process of globalization. Thus, our choice was based on this logic to assess the profound trends in Malagasy specialization in international trade.

Raw materials constitute the major part of the country's exports and capital goods occupy a large part of its imports, which is quite logical according to the vocation of the big island. In this context, we will see the evolution of its comparative advantages over time to fully appreciate the dynamics of its specialization.

The calculation of comparative advantage indicators involves a few steps. Table 1 below illustrates the procedure to be followed for this purpose. The case of the food and live animal products industry for 1994 is treated here as an example to facilitate understanding of the calculation principle.

**Table 1 Principle for calculating the comparative advantage indicator contribution to the balance for Madagascar's branch k (food and live animals) for 1994 (in millions of current US dollars)**

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</table>
This table represents the details of the calculations to be made for the determination of comparative advantage indicators according to the condensed formula cited above. Each of the branches must be the subject of this calculation and for each year. The figures used (in millions of current dollars for imports, exports and GDP) were taken from the United Nations International Trade Statistical Year book, in which the data are already classified in a standardized manner by industry and country. The "branch k" column shows the results of each calculation step codetermine the comparative advantage indicator of the branch. The "total" column represents those of the nation.

Data on Malagasy international trade were processed using advanced Excel software, which makes it easy to process the various calculation steps leading to the determination of comparative advantage indicators by branch and year (from 1994 to 2016). All the results obtained by this step subsequently made it possible to calculate the level of specialization of Malagasy international trade over time.

RESULTS

The results relating to the 6 branches that we considered to be sensitive insofar as they have direct effects on the specialization of the Malagasy economy have been grouped together in the following Table after processing the data on excel (see Table 1 and Graph 1 P.9).

According to the table and the related curves, Madagascar's economy is mainly marked by a strong dependence on the primary sector and international trade is also influenced by this situation. At the very beginning of the period under review, Madagascar specialized in the food, live animals and non-edible raw materials sectors. This is only logical since the big island exports many more raw materials and imports few. Each year, these two branches record the highest indicators of positive comparative advantage and constitute the strong points of Malagasy foreign trade. It was only in 2000 that another development centre for Malagasy foreign trade was created. This is the miscellaneous manufactured articles branch, which mainly includes the textile sector. The latter's export was strongly stimulated by the existence of AGOA and had a positive effect on the coverage rate, which reached, for the first time, the highest rate of 98% in 2008.

Never the less, this remark able trend was curbed by the political crisis of 2009, at which point a downturn in the sector was noted due to the suspension by the Americans of Malagasy refits under AGOA.

The general trend in Malagasy specialisation branches has depreciated sharply over time and that of inedible raw materials has even fallen below zero from 2014 onwards, while the food and live animal products branch has seen a marked recovery and has surpassed the 50 mark in terms of a comparative advantage indicator.
The degree of specialisation, which his none other than the difference between the maximum and minimum benefits (all branches combined) and represented by the area between the upper and lower curve (see GRAPH 1) has also decreased. It went from 81.90 (-37.1) or 119 in 1994 to 20.83- (-22.33) or 43.16 in 1999 and to 65-(-44.3) or 109.3 in 2016. These results are in fact due to the vulnerability of Malagasy foreign trade to political instability, external shocks (price instability, external demand rigidity, climate change, international competition), insufficient diversification of exported products and low processing of export items. Three periods can be clearly distinguished when referring to the trend of the indicators thus developed.

Period of despecialization (1994 to 1999) The trend in the comparative advantage indicators of the branches of specialization has clearly decreased over the period indicated above. Indeed, that of the food and live animal products branch, which includes coffee, vanilla, cloves, vegetables, crustaceans, various spices, etc., fell from 81.90 to 20.83. On the other hand, the most disadvantaged branch of the transport machinery and equipment industry increased during the same period, from -37.10 to -22.83. These two opposing movements have contributed to the despecialization of the Malagasy economy. This situation was mainly due to: - the collapse of commodity prices on the international market. The decline in prices and their instability are, in fact, aggravated by the inadequate responses of producing countries to the rigidity of demand from importing countries. Producers generally seek to compensate for the decline in prices by increasing production and sales in order to limit revenue declines. But the effect of this policy has too often precipitated the collapse of prices.

- cyclonic damage that affected both coasts and already poor roads. Thus, the quantity of coffee exported, for example, has gradually decreased in response to this situation, from 50556 tonnes in 1993 to 13681 tonnes in 1999.
- The intensification of competition on the international market. Malagasy vanilla has been highly competitive with that of Indonesia, which has adopted a policy of massive penetration by using prices to gain additional market share. This situation has led to a decrease in the exportable quantity of Malagasy vanilla, while the Big Island is the leading producer in this area. Vanilla exports increased from 934 tonnes in 1994 to 685 tonnes in 1999.
- The ageing of coffee or vanilla plants, which has an impact on yield and thus on the quantity produced and exported.
- The austerity policy applied within the framework of the Structural Adjustment Programmes known to the country and limiting foreign exchange outflows (imports) for balance purposes.

Recovery period (2000 to 2008)

Since 2000, the profile of the branches' comparative advantages has undergone a radical change due to the remark able growth of the miscellaneous manufactured articles branch, which mainly includes the textile sector. It had become the branch of specialization of the Malagasy economy thanks to US support under AGOA. The corresponding comparative advantage indicators thus showed a clear improvement from 0.9 in 1999 to 127.2 in 2008. The degree of specialization also increased during the same period from 43.1 to 193.5. This phenomenon reveals the increasing openness of the Malagasy economy to the outside world in that Madagascar has imported more manufactured goods and exported more food, live animals and miscellaneous manufactured goods. The coverage rate of Malagasy international trade reached 98% for the first time.

The good performance recorded in the food and live animal products sector is mainly attributable to the remark able growth in Malagasy exports of three products among many others, including crustaceans and molluscs, vanilla and spices.

While in 1999 the export of crustaceans and shellfish was from 2020 tonnes to $9.5 million, it had risen to 16181 tonnes and was worth $125.9 million. Madagascar’s shrimps and lobsters have acquired a certain notoriety on the international market and now constitute a development pole of the Malagasy economy. The same is true for Malagasy spices, which are highly valued and whose exports were respectively 9525 tons to 33 million dollars in 1999 and 18171 tons to 219.7 million dollars in 2003. Finally, the recovery of Malagasy vanilla on the international market is remarkable despite the strong competition it has faced for many years. The export of this product generated $12.1 million in 1999 and $188.7 million in 2003. In terms of quantity, it increased from 685 tonnes to 1042 tonnes during the same period.

From 1999 to 2008, imports also increased, but in a slow way, unlike exports, which accentuated the specialization of the Malagasy economy. This is the consequence of the rapid development of the free trade zone in Madagascar, promoted by the "American Growth Opportunity for Africa" (AGOA).

Indeed, according to United Nations international trade statistics, imports of textile yarns and articles, largely by companies located in free zones, grew strongly in value from $11.6 million in 1999 to $213.5 million in 2003. The paper and card board, manufacture drubber, iron and steel branches also increased in value by 150%, 56.38% and 139.5% respectively. Exports by companies in free zones have also increased remarkably. While in 1994 the value of exported textile articles amounted to $7.7 million, it first fell to $1.1 million in 1999 and then reached $236.1 million in 2003. The textile sector thus generated a surplus of $22.6 million dollars and for the first time in 2001, Madagascar's trade balance performed very well. It should be noted, however, that the majority of companies located in free zones are owned by foreigners (French, Mauritians, etc.). Malagasy operators are particularly active in the food and live animal products sector.

Malagasy free zones were very captive in the mid-1990s. For example, it took Mauritians ten years to bring together their first hundred free companies, but Madagascar has been able to attract one hundred and twenty-five investors in the space of five years. In addition to the favourable tax measures offered, investors are interested in the abundance of the country's raw material resources and the abundance of cheap labour.

Transitional period (2009 - 2016)

During the first phase (2009-2013) of this transitional period, Malagasy international trade experienced a new profile in view...
of the political crisis that existed in Madagascar from 2009 onwards. Indeed, in the absence of explicit international recognition, the Governments, due to a lack of foreign exchange, had to adopt a policy of restricting imports, which had significant effects on the specialization of the Malagasy economy. Interms of comparative advantage indicators, the trend in the machinery and transport equipment branches fell sharply from 62.9 in 2008 to -24.2 in 2013.

On the other hand, the comparative advantage indicators of the miscellaneous manufactured goods sector, which has been specialising Malagasy international trade since 2004, declined steadily during the first phase of the transitional period. They fell from 127.2 to 38.8, a decrease of 69.5%. This situation is due to the suspension by the Americans of Madagascar's preferential regimes under AGOA and has led to the despecialization of the country's international trade. Indeed, the degree of specialization has increased from 190.1 in 2008 to 63 in 2013. This situation also reflects the vulnerability of Malagasy foreign trade to dependence and concentration of its foreign trade with certain countries, including the United States.

The second phase (2014-2016) is marked by a moderate recovery in the specialisation of Malagasy international trade. The miscellaneous manufactured articles branch, including textiles, did not recover. It has stabilized around 40 since 2010 in terms of comparative advantage indicator. Madagascar's return to AGOA is not yet effective. Nevertheless, the indicator of comparative advantages of the food and live animal products sector increased steadily from 2013 onwards to the point that it had once again become the branch of specialisation of the Malagasy economy since 2015.

During the period under review (2013 to 2016), the comparative advantage indicators for the machinery and transport equipment branch rose from -24.2 to -44.3, marking an increasingly open and specialized Malagasy international trade. The corresponding degrees of specialization have increased from 63 to 109.3. There is indeed a clear recovery, but the level of 1994 or 2008 has not been reached.

**DISCUSSIONS**

Madagascar has an agricultural vocation and, like most developing countries, is engaged in exporting so-called "low-demand elasticity" products (Prebish and Singer, 1950).

In their work, these authors found that the elasticity of demand for manufactured products is greater than that of primary products and that it is the structure of the market itself that is responsible. This problem is due both to technological progress, which has made it possible to reduce the quantity of raw materials needed to manufacture a product, and to the increasing use of alternative synthetic products in the components of the products manufactured (this is the case of vanilla, which has been challenged by vanillin). Despite the drop in raw material prices, consumption is only increasing in a small proportion. As a result, the country's export growth tends to be lower than the average growth of world trade.

In this case, would Madagascar be classified among the countries that suffer from poor specialization?

Indeed, if the country is subject to poor specialization, i.e., if it imports highly elastic goods and exports low elastic goods instead, then its trade balance will tend to be in deficit. It will be subject to strong external pressure, its factors will be allocated to the less dynamic sectors and its economic growth may, at the limit, be lower than the level it could have achieved in autarky. This leads to theories of impoverishing growth due to specialization in regressive products (Henner, 1998).

**Creation of new areas of specialization**

The solution would then be to diversify exportable products in the light of what some South-East Asian countries have done. Indeed, South Korea, Hong Kong, Taiwan and Singapore have relied on cheap labour to start their development and have joined the list of developed countries. In Madagascar, products are exported raw in almost all cases, where as their processing would have brought more added value to the nation. This situation also creates instability in international trade given their vulnerability to price fluctuations.

The sale of agri-food products outside the country is one of the most appropriate ways to remedy the situation. It would improve the country's level of specialization and provide more added value. It is indeed unacceptable to note that in Madagascar, an agricultural country; there are only a few operational agri-food industries that sell almost all of their production on the local market. This phenomenon of disarticulation is one of the factors that handicaps the Malagasy economy.

The export of pink gold (fish and shellfish products) should be the subject of a special study in order to support the remarkable growth recorded within the sector. The processing of these products on-site would certainly bring a profitable surplus to the entire country.

Finally, specialization in the textile sector is not to be ruled out given the promising results that have been achieved since the existence of AGOA. Thanks to textile products, some countries such as China and Thailand have experienced strong economic growth. The big island has an abundant and cheap work force experienced in this activity. It is one of the labour-intensive countries in relation to the theory of the proportion of factors (HECKSCHER and OHLIN, 1977). This capital and labour-baseds approach to international trade encourages a country with abundant labour to specialize in the production of labour-intensive goods and to import capital-intensive goods and vice versa. This theory could be applied to the case of the textile sector in Madagascar, which is now a new pole of development for trade on the big island. The strong growth recorded in this area as we have seen confirms this possibility.

Madagascar should, however, improve its competitiveness to face strong international competition in this sector. The textile sector presents a competitive environment of volume, so the strategy of global cost domination (M. PORTER, 1982) is adaptable to its situation. Controlling the production and distribution costs of a product is very important to improve competitiveness in the market. It requires sustained investment, technical process skills, intensive labour monitoring, product design to make production easier and an inexpensive distribution system.
**Market diversification**

In addition to the various bilateral and multilateral agreements (EEC-ACP, AGOA, etc.) Madagascar should exploit regional markets in which products of Malagasy origin benefit from certain tax advantages and easy access. The IOC (Indian Ocean Commission), COMESA (Common Market of Eastern and Southern Africa), SADC (Southern African Development Community) are major potential markets to be exploited. Indeed, COMESA represents a large market of more than 380 million inhabitants and SADC has more than 200 million inhabitants. In addition to the market access facilities of the member countries, Madagascar benefits from balance of payments assistance to compensate for the resulting tax loss, assistance for participation in international fairs and the upgrading of national operators. The strength of the big island lies in the fact that it has an abundant and competent work force, at low cost. For reasons of proximity and given its vocation, Madagascar could be one of the preferred suppliers of agri-food products to this mass of the population.

The development of trade with other countries on a bilateral basis is also an avenue to be explored, following the example of AGOA, which has provided evidence of success for Malagasy international trade. This model can be adopted with other countries and products in order to reduce the vulnerability of the economy to dependency on the two factors mentioned above. Indeed, the United States' decision in 2009 to suspend AGOA for Madagascar had negative impacts on the dynamics of specialization in the Big Island. Diversification at both country and product level is therefore unavoidable.

But exploiting these opportunities is not at all easy, there are indeed constraints to overcome of all kinds. First, the linguistic and cultural differences existing within the members constitute a barrier to the fluidity of goods and people. Malagasy people, for example, have difficulty adapting to English-speaking countries. Logistics and information problems also hinder exchange initiatives, but perhaps the most important is the lack of a corporate culture that allows companies to take advantage of the benefits that exist within this community. The grouping of operators within the frame work of a community of exporters (ANDRIAMASIMANA O., 2016) will be beneficial in this respect. It remains to be seen what Malagasy economic operators and governments want in the face of these vast opportunities offered to the Big Island.

**CONCLUSION**

Madagascar has a potential of natural and human resources that has so far been under-exploited and has not really contributed to the country's effective development. Many internal and external factors are at the root of these problems. The empirical study on the case of Malagasy specialization in international trade carried out on the basis of comparative advantage theory (contribution to the balance) revealed that there is indeed a link between the performance of foreign trade and the level of specialization of Madagascar's economy. As time passed, the degree of specialization of Malagasy international trade decreased.

A country like Madagascar should improve the performance of its specialized sectors by diversifying and processing its export products locally as much as possible. This will result in an added value surplus that will benefit the nation and make exportable products more elastic in relation to demand. Agri-food and textile products are particularly recommended in this respect. But consideration should also be given to improving the nature of specialization with other highly elastic and products to compensate for Madagascar's weak international trade, and this applies to some African developing countries. Finally, it is essential to fully exploit the advantages offered by regional markets such as IOC, COMESA and SADC if we really want to improve the performance of the island's foreign trade and contribute to the country's economic and social development. But to carry out these projects it is necessary to look for ways and means to sensitize local operators to embark on the export path. The internationalization of Malagasy companies is then another research perspective that could be under taken on the basis of this article.

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