



IS A MONETARY UNION IN CARICOM DESIRABLE?

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Introduction

Almost all the successful attempts to create a monetary union have been in developing countries, two in Africa and one in the Caribbean. These monetary unions were not the result of ambitious political steps, as in Europe, but arose from a will to limit the cost of independence, to take advantage of monetary assistance of former colonial powers and to ensure the economic viability of these new countries.

These arrangements have indirectly contributed to perpetuation of the monetary community created by the former colonial powers. These unions didn't permit those countries to get over the antagonisms, sometimes numerous, and didn't promote the market integration of their member countries; the common currency is only a veil masking the difficulties developing countries have to undergo. These hindrances have given rise to doubts concerning the efficiency of the models of monetary union between developing countries, because their external dependence is still too strong and the relations established between these economies are too fragile.

Despite all these uncertainties, the idea to form a monetary union in CARICOM has been suggested. As soon as CARICOM was created, the member countries have acknowledged that monetary stability was essential for the good working of the common market¹. This necessity gave birth to the establishment of a compensation procedure aimed at favouring the use of currencies of member countries. Unfortunately, this attempt failed. Nevertheless, the different heads of governments, conscious that the development of the common market was subordinated to the establishment of a strong monetary cooperation between member states, asked their central bankers to study if the creation of a monetary union could be possible between CARICOM states. This report given in March 1992 explains the steps necessary to form a monetary union in 2000. This new stage in the economic cooperation is far from crowning the successes of CARICOM. It appears as a way to boost a process that some are not afraid to qualify as dead. The relevance of this project is also questioned; indeed all CARICOM countries, involved in the dollar zone, have currencies which are closely related to U.S.\$. At last, the advantages of the creation of a single currency seem limited.

The aim of this paper is to evaluate the opportunity of a monetary unification between CARICOM states. We will link up our ideas around three main lines. The first one will describe CARICOM and the potential advantages of a monetary union. Emphasis will be paid on the actual trade policies in these states. It is widely accepted that the adoption of a single currency would favour trade, allowing an optimum assignment of the factors of production and increase welfare. Considering all these *a priori*, we will put our interest in trade potentials between these countries, comparing their degree of economic specialisation. Finally, we will undertake some econometrics tests, which will allow us to examine the efficiency of a monetary union between CARICOM states.

PART 1- A MONETARY UNION FOR CARICOM: WHY AND HOW?

Criticisms against CARICOM are particularly severe as gains from economic integration are quite limited. The lack of a formal space to surround the necessary monetary cooperation is an obvious illustration. The adoption of a single currency could boost the economic integration by creating a common good which will only be sustainable if there is a convergence of national interest.

A. The mitigated results of CARICOM

Twenty seven years after the treaty Chaguaramas was signed instituting CARICOM, the economic results are modest, even pathetic according to some (Celimene and Watson (1991)), which increases the risks of dislocation of this group.

1. The failures of trade

CARICOM didn't evade the difficulties encountered by union movements in the southern countries during the 1980s (Boxill (1993)). Almost all the institutions that supervised the cooperation between southern countries incurred difficulties such as the decline of commerce, the fierceness of commercial rivalries, the dissensions about foreign policy and an obvious predisposition to break off concluded agreements. There are many reasons for this: the existence of trade barriers, the actors lacking political goodwill and conflicts between nations, conflicts, which were created and aggravated out of a worldwide economical crisis. CARICOM didn't succeed in unifying the differing national interests of its member states². As evidence, for almost 10 years there has been no intergovernmental meeting before the 1982 meeting because of the economic crisis, which led to frictions between members states.

Out of the different integration movements between the southern countries, CARICOM has the worst performances regarding intra-zone trade. For example, the commerce inside CARICOM rose by 8% per year between 1980 and 1987 compared to 14% for the commerce between countries of the Latin American Integration Movement³, 22% for the countries of the Central American Common Market⁴ and 50% for the economies of the Association of South East Asian Nations. These modest results seem to show the strong competitive and non-complementary nature of CARICOM members states economy.

2. The failures of industrial cooperation

Concerning industrial cooperation, CARICOM doesn't seem to have reached its objectives of 1973. Although tax harmonization between member countries and free circulation of factors of production were inscribed in the Chaguaramas treaty, they never took effect. A lot of initiatives were never clearly extended or their materialization was incomplete. The large-scale plans were the creation of a cement plant in Barbados to be equally owned by the governments of Barbados and Trinidad and Tobago, and also the creation of two aluminium production units. The first plant was to be set up in Trinidad and Tobago and was to be owned by the governments of Jamaica, Guyana and Trinidad and Tobago (respectively at 33%, 33% and 34%). The bauxite was to be supplied by Jamaica and Guyana whereas the natural gas was to be brought by Trinidad and Tobago. The second plant was to be established in Guyana, powered by hydroelectric energy and owned by Guyana (52%), Jamaica (24%)

and Trinidad and Tobago (24%). Both plants failed because of the unilateral decision of Jamaica to sell bauxite to Venezuela in return for oil.

3. *The failures of the common commercial policy*

Within the common market, quantitative or tariff restrictions could not have been defined in a uniform way. This is also the case for the Common External Tariff (CET) which contrarily to its name has never been common to all countries. The CET was supposed to be implemented since 1985 but, recently, there still existed four custom tariffs; one for the MDC's (Barbados, Guyana, Jamaica, Trinidad), one for the OECS countries, one for Montserrat and a last one for Belize (Celimene and Watson(1991)).

4. *The failures of monetary cooperation*

In order to promote trade development between CARICOM countries, a monetary compensation system, the CARICOM Multilateral Clearing Facility (CMCF) was instituted between member countries.

This system, which was bilateral first, became multilateral in 1977. The bilateral system was limited because it forced each state to hold an account for each of its trade partners, which had to be balanced at the end of the credit period.

The CMCF was supposed to favour the use of currencies internal to CARICOM for the settlement of transaction and was intended to promote monetary cooperation and banking relations between member states. The 'counter values' of each currency of CARICOM were defined in US\$ and to each countries corresponded a credit line not to exceed, the amounts given in Table 1. At the end of the credit period, the debit balance of a country had to be credited in US\$ to the countries with a credit balance. Trust was such that the initial credit period of three months was extended to six months and the overall limit which was fixed at US\$ 40 million was extended to US\$ 100 million between 1977 and 1982. The ambient optimism brought the idea that the increase of regional trade with inflows of currencies coming from third countries would insure the system liquid assets.

Table 1 :Exchange rate and credit line in millions of US \$

	Exchange rate Per US\$	Credit line June 1977	Credit line February 1978	Credit line June 1980	Credit line March 1982
Barbados	2	5.5	11	14	10
Belize	2	5	10	12	8
Guyana	2.55	8.5	19	25	29.5
Jamaica	0.91	9.5	18	23	27.5
Trinidad and T.	2.40	6	6	6	2
West Indies States Association	2.7	5.5	16	20	23
Total		40	80	100	100

Source: Freckleton and Lafta (1993)

Thanks to benevolence of Barbados and Trinidad and Tobago, the CMCF worked. Unfortunately in the early 1980s, the external positions of Barbados, Trinidad and Tobago began to deteriorate. The inability of Guyana to settle its debts and the impossibility for Barbados to grant new terms of payment caused the CMCF to stop (Table2).

Table 2: Situation in April 1983 in millions of US \$

	Debit balance	Credit balance
Barbados	-	65.1
Belize	-	0.7
Guyana	98.6	-
Jamaica	2.3	-
Trinidad and Tobago	-	25.2
West Indies State Association	-	9.9
	100.9	100.9

Source: Freckleton and Lalta (1993)

B. A particular monetary organisation

The reflections concerning monetary union in CARICOM show the sub-optimality of current situation. The monetary division is detrimental to CARICOM countries because they have to adopt the US dollar as an invoicing device and they are also subjected to strong financial restraints which limit the exports of US dollar. The idea of a single currency, when the economic integration has hardly started, is different from the one that led to the European unification. It leads to the question of the efficiency of a monetary unification before or after a achieved economic integration. On this, a theoretical debate is open. In the "economists view", economic cooperation should occur only after a series of satisfactory conditions⁵ is met. In the "monetarists view", the implementation of a monetary part could be the driving force behind the economic integration between Caribbean states (Pisany-Ferry (1994)).

1. The diversity of the exchange regimes

The countries of CARICOM can be classified in several families according to the characteristics of their exchange policy, fixed or flexible, and according to the currency to which their national currency is attached. Three categories will be distinguished:

1. The OECS countries whose currency is the East Caribbean Dollar (EC\$). This currency is strictly attached to the US\$ at the rate 1 US\$ to 2,7 EC\$.
2. The currencies of the Bahamas, Barbados and Belize which are also strictly attached to the US\$, at the rate of 1 US\$ to one unit of the national currency for the Bahamas, and 1 US\$ against 2 units of national currency for Barbados and Belize.
3. The value of the currency of Haiti, Guyana, Trinidad and Tobago, Jamaica and Surinam freely fluctuate on the exchange market.

However, it is important to notice that none of the countries of CARICOM has adopted the US\$ as an official currency.

2. The advantages of a single currency

According to the supporters of monetary unification, the disappearance of exchange dealings and risk of exchange should ease trade relations. Therefore the economies should also benefit the "home bias", as agents increase trade with operators sharing the same currency. For the profits of the unification to be significant, the exchange rate fluctuations

between moneys of CARICOM have to be important, but only five countries float their currency, all the other currencies are linked with the US\$.

Losing monetary independence is described as the major drawback. Nevertheless for the disappearance of monetary autonomy to be a problem, the interest to have it available has to be manifest. But the authorities of the countries choosing the fixed rate of exchange are not quite free to manage independent monetary policies. The authorities can use the monetary instrument for conjectural political purposes only by means of quantitative measures restricting the liquid assets in circulation in the economy.

3. Is CARICOM an optimum monetary zone?

The traditional theorists of optimum monetary zones have insisted that the degree of mobility of the factors of production and the characteristics of international trade are important ingredients to an optimum monetary zone.

For Mundell (1961), the pioneer on optimum monetary zones, the deciding factor is the free circulation of the factors of production, labour in particular. When two countries produce different goods, any shift of the demand of a country towards another will lead to a downturn in the economy, an increase in unemployment and the appearance of a trade deficit in the country producing the good for which demand has contracted. In a Keynesian world of inflexible price and in a situation of fixed exchange, the only modes for an economic realignment should go through the shifting of the workers of the economy in crisis to an expanding economy. According to Mundell, the geographic and administrative hindrances to the displacement of labour between the countries of CARICOM put uncertainties upon how defensible the fixedness of exchanges is⁶. The territorial discontinuity is a natural hindrance and the lack of political will to liberalise the movements of CARICOM nationals is obvious⁷.

According to Mac Kinnon (1963), the more an economy is open, the greater its interest in choosing fixed exchange rates in order to avoid fluctuations in the relative prices between traded goods and non-traded goods. Moreover, the internal aim of price stability can not be reached if a significant fraction of the locally consumed goods is imported and subject to large price swings because of the variation in exchange rates. On this point, all CARICOM countries are characterised by a very important degree of opening⁸. If the small countries of CARICOM have chosen fixed exchanges, the bigger ones have adopted regimes of floating exchanges. The fixed exchange rates are all defined according to the US\$ and for the majority of the countries, the United States is the main trading partner. In 73% of the cases, the United States of America is among the first suppliers or the first customers (see the table 2). The fixedness of exchanges with the first trading partner is therefore widely established.

According to Kenen (1969), the more specialised a country is, the bigger its interest in leaving its currency float. In case of a low world demand, those countries must be able to adjust their exchange rates to boost the demand of their export products, provided that this demand is elastic compared to the price. Despite this rule of decision, the strongly open and specialised developing countries choose fixed exchange rates because they believe that fixing the exchange rates has no real effects on their competitiveness. The choice of fixed exchange rates has insured the full transmission on the export receipts of the price fluctuations seen on the world markets of basic products (Semedo(1997)).

PART 2- THE TRADING FLOWS BETWEEN CARICOM COUNTRIES

Recent analyses about optimum monetary zones have suggested that the countries whose bilateral exchange rates are fixed shouldn't encounter asymmetric shocks. Indeed, if a country is hit by a specific shock of supply or demand⁹ and it can not use an accommodating monetary policy or an active trade policy, its needs in terms of corrective policy will go far from those of the other members of the monetary zone.

At the same way, a consensus was established that monetary unification reinforces economic relationships between states. But from two competing analyses emerge two opposite conclusions about the impact of this intensification of trade relationships upon the economic convergence. The first repeats the conclusions of the European Commission (1990) about the monetary unification in Europe; it upholds the idea that the convergence of the economies goes together with the reinforcement of trade. The second analysis is shared between Eichengreen (1992) and Krugman (1993), and upholds that trade integration increases the risks for a specific shock to occur¹⁰. This controversy will be the starting point of the second part of this paper. During this part, focusing on the characteristics of trade inside CARICOM and the specialisation of the member states, we'll try to see the impact of a potential intensification of trade between states of CARICOM on the economic structures. Can we expect a reinforcement of the economic correlation or should we be afraid of an increase in the number of asymmetric shocks?

A. The European Commission against Eichengreen-Krugman

In its preparatory report for the adoption of a single currency, the European Commission has insisted on the advantages of monetary unification. It favours the development of trade inside Europe by suppressing exchange rate risks. The specific demand shocks of on which Mundell insisted so much would appear less and less as the commerce inside Europe is widely a commerce inside branch and inside industry. "This commerce is based on scale economy and on the defects of competitiveness caused by the differentiation of the products" (DeGrauwe (1999)). So the European countries exchange similar goods, this closeness of productive structures reduce the probability that demand or supply shocks occur.

On the contrary, for Eichengreen-Krugman, the reinforcement of exchanges will lead to an increased specialisation of the economies; this movement would be guided by the exploitation of scale economies allowed by the large European market. The relocation of production units and their integration in given geographical spaces will, by nature, favour the appearance of asymmetric shocks. This analysis is closely akin to Kenen's for whom only diversified economies enough could accept the fixedness of the exchange rates. There are two major objections to this argument. First of all, the movement of geographical integration can take place in border zones such that if an industry is hit by a specific shock, it will concern more than one country. Secondly, the authors seemed to have insisted on supply shocks which considering the increasing specialisation are destined to be less correlated between countries (Frankel and Rose (1996)). But *a priori* a demand specific shock can spread to its neighbours through the propensity to import, despite the increased specialisation of the economies. The recession experienced by a country reduces its absorption capacity and limits the exports of its partners.

Concerning the CARICOM countries, it seems that the increased specialisation at an individual level has been one of the main objectives of the countries that signed the Chaguaramas treaty. Then, according to Jainarain (1976), the individual specialisation was to be the basis of a collective diversification: "The larger market should also increase competition and efficiency through increased specialisation in individual partner, while stimulating the diversification of production in the region as a whole. Finally, integration

should improve the international bargaining position of the partners vis-à-vis third countries." The territorial discontinuity doesn't allow much room for a geographic concentration in the frontiers of the member states. Only the continuation of the industrial integration could have prevented the specialisation from reinforcing the appearance of a specific supply shock. But as we've said before, experiences of industrial cooperation that reached the end have been few and far between.

At this stage of thought, it is particularly difficult to decide which one of the two analyses is the best to fit the CARICOM members. Only the study of commerce inside CARICOM and of the levels of states specialisation will allow us to be more precise in our conclusions about the possible impact of a trade reinforcement.

B. The weight and the evolution of the commerce inside CARICOM

The intensity of trade is often the pretence for increased integration and for the lifting of the hindrances to free circulation of goods and people, economic operators needs guide political choices. It's an opposite situation in the Caribbean where the trade movements are rather small and weak to inspire the integration dynamics.

The intensity of the trading flows is often taken as an indicator of the complementary degree or of competition between economies. Thus the analysis of the commerce inside CARICOM would particularly reveal the difficulties to create sustained relationships between those states.

1. The evolution of the commerce inside CARICOM between 1968 and 1996

The contribution of the commerce inside CARICOM to the total commerce of the countries of the zone has clearly increased during the last 25 years. Its contribution to total commerce went from 5% to 13%. Nevertheless this increase is still modest considering what was announced initially and the willingness to reinforce trade between those countries (Table 3).

Table 3: Contribution of the commerce inside CARICOM to the total commerce of the member states.

Years	Percentages
1980	8.9%
1985	11.1%
1990	10.5%
1996	13%

Source: CARICOM

1968-1981, a strong increase in trade between Caribbean countries is observed. Under the boost of CARIFTA¹¹, the commerce increased on average by more than 20% a year between 1973 and 1980. The average yearly growth rate reaches its highest point at 27% between 1971 and 1976 and comes back to 11% a year between 1977 and 1981. The massive direct investments, thanks to the strategy of import substitution and of industrialisation at invitation, have favoured the trade of manufactured goods. But from 1977, Jamaica and Guyana confronted by a debit in their balance of payments started to limit their imports from CARICOM by establishing quotas. Under the pressure of the International Monetary Fund, their currencies were devalued. Two official exchange rates were defined for the Jamaican \$, the former exchange rate was reserved for the governments operations, for bauxite export and for basic products and drugs imports. A new devalued exchange rate was installed for the import of basic consumer goods called "non fundamental" and the export of goods coming from favoured sectors (Célimène and Watson (1991)). These measures of structural

adjustment have increased the divisions and made the economic integration of CARICOM states more delicate.

1981-1986, a strong decrease in the volume of trade is noticed. The average yearly downturn is 11.8%. Trading inside CARICOM contracted during the 1980s particularly because of the difficulties linked to the debt of some countries, the oil price fall¹² and the collapse of the multilateral compensations system.

The forced import restrictions have been harsher for the commerce inside CARICOM as it concerns consumer goods, which can be locally produced. The export outside CARICOM concern mainly capital goods which exchanges can not be limited without endangering the capacity of production of the economy concerned.

1987-1996, the revival of the commerce inside CARICOM is obvious. It progresses on average by 4.5% a year with an increase of 10% between 1990 and 1995. It is led by the economic renewal in the early 1990s.

The evolution of the commerce inside CARICOM intensify the trends of the total commerce of the member states. Indeed, in a period of trade expansion, the commerce inside zone increases more than the total commerce and in a period of trade contraction, the commerce inside the zone decreases more than the gross volume of trade (Table 4).

Table 4: The average yearly growth rate of the commerce inside CARICOM and of the total commerce

Period	Trade inside CARICOM	Total Trade of the member states
1981-1996	1.9%	0.1%
1981-1986	-11.8%	-10.3%
1987-1996	4.5%	3.1%

Source: CARICOM

2. The commerce inside CARICOM per countries.

The contribution of the commerce inside CARICOM varies from a country to another (Table 5)

Table 5: Contribution of the commerce inside CARICOM to the total commerce of the member states

Country	1980	1985	1990	1995
Antigua and Barbuda	37.4%	N.D.	N.D.	N.D.
Barbados	20.1%	17.5%	19.1%	21.1%
Belize	3.2%	2.6%	6.3%	4.3%
Dominica	32.7%	29.4%	22.5%	31.2%
Grenada	27.8%	25.9%	24.2%	27.7%
Guyana	18.8%	22.8%	9.4%	N.D.
Jamaica	6.6%	5.0%	5.2%	5.8%
Montserrat	59.6%	27.6%	17.8%	N.D.
Saint Kitts and Nevis	19.9%	22.5%	14.1%	16.5%
Saint Lucia	24.6%	19.3%	17.7%	20.6%
Saint Vincent	32.1%	37.3%	25.9%	35.9%
Surinam	7.3%
Trinidad and Tobago	5.8%	9.1%	10.3%	15.0%

Source: CARICOM

Trinidad and Tobago is the only country whose trade with the other members is increasing, it went from 5.8% to 15% between 1980 and 1995. The other countries have encountered wide fluctuations during that period. Generally speaking, the contributions of the commerce inside CARICOM in 1980 are quite similar to that in 1995. Three groups can be distinguished.

Group 1: The countries in which the commerce inside the zone reaches a higher level than 30%; Saint Vincent and Dominica.

Group 2: The countries in which the commerce inside the zone is bounded between 15% and 30%; Barbados, Grenada, Saint Lucia, Saint Kitts and Nevis, Trinidad and Tobago.

Group 3: The countries in which the commerce inside the zone reaches a lower level than 15%; Belize, Jamaica, Surinam.

These three groups contribute unequally to the commerce inside CARICOM (see Table 6).

Table 6: Contribution of the three groups to the commerce inside CARICOM in 1996.

	Percentages
Group 1	7.4%
Group 2	67.5%
Group 3	25.1%

Source: CARICOM

Larger countries (Jamaica, Trinidad and Tobago, Suriname) are the ones for whom intra-CARICOM trade is the less important.

Apart from the limited contribution of the commerce inside the zone, the sparseness of the bilateral export and import matrices is a second element confirming the relative weakness of the trade relationships between the member states. The number of bilateral relationships less than 30,000 EC dollars for exports and imports is stable between 1980 and 1995. But it represents almost 15% of the potential trade flows between CARICOM states¹³. Montserrat and Belize are typical cases. Montserrat is the country which exports the less within CARICOM while Belize has few trade contacts either with imports or exports (Table 7).

Table 7: Trading flows inside CARICOM inferior to 30.000 EC dollars (11.111 US\$)

Export	1980	1985	1990	1995
8			Montserrat	
7		Belize		
6		Montserrat		Montserrat
5	Belize		Belize	Surinam
4	Grenada	Grenada		
3	Montserrat	Saint Kitts and Nevis		Belize Saint Kitts and Nevis
2	Antigua and Barbuda Saint Kitts and Nevis Saint Vincent and Grenadines	Saint Vincent and Grenadines	Grenada	Grenada Saint Vincent and Grenadines
1	Dominica Saint Lucia	Antigua and Barbuda Saint Lucia	Guyana Antigua and Barbuda Dominica Saint Kitts and Nevis Saint Vincent and Grenadines	
Total	20	24	20	21

Import	1980	1985	1990	1995
7	Guyana		Belize	
6	Belize	Belize		
5				Surinam Belize
4				
3		Guyana Jamaica Saint Vincent and Grenadines		Grenada
2	Grenada Montserrat Saint Kitts and Nevis	Montserrat Grenada	Guyana Grenada Montserrat	Jamaica Saint Kitts and Nevis Saint Vincent and Grenadines
1	Saint Vincent and Grenadines	Antigua and Barbuda Saint Lucia Trinidad and Tobago Dominica Saint Kitts and Nevis	Barbados Jamaica Trinidad and Tobago Dominica Saint Kitts and Nevis Saint Lucia Saint Vincent and Grenadines	Dominica Saint Lucia
Total	20	26	20	21

C. Specialisation and trade inside CARICOM

1. The nature of trade inside CARICOM

The crude oil exports from Trinidad and Tobago constitute the main item of the commerce inside CARICOM. The strong decrease in trade observed in 1990 is linked to the decrease of crude oil price and to the oil purchase by Guyana from suppliers outside CARICOM (Venezuela). The trading of manufactured products (products 5 to 8) increased at a yearly growth rate of 45% between 1970 and 1981. The increase of the products 5 and 6 is noteworthy between 1980-1995 (Tables 8 and 9).

Table 8: Composition of the commerce inside CARICOM per sections S.I.T.C.¹⁴

SECTIONS S.I.T.C.	1980		1985		1990		1995	
	Value	%	Value	%	value	%	value	%
0 - Food, living animals	266 234	18.7	219 650	17.8	242 337	17.6	372 501	16.5
1 - Drinks and Tobacco	36 122	2.5	38 645	3.2	90 301	6.6	143 301	6.3
2 - Inedible crude equipments	13 468	0.9	11 843	1	14 770	1.1	8 066	0.4
3 - Fuels, minerals and lubricants	620 217	43.4	623 367	50.7	289 580	21	825 213	36.6
4 - Oil, animal and vegetable fat	12 255	0.9	4 554	0.4	21 754	1.6	18 238	0.8
5 - Chemicals	141 677	9.9	112 200	9.2	208 420	15.1	279 634	12.4
6 - Manufactured items	125 471	8.8	119 672	9.8	293 476	21.3	383 802	17
7 - Transport machines and equipments	66 112	4.6	32 492	2.7	76 450	5.6	88 381	3.9
8 - Various manufactured items	143 965	10.1	58 232	4.8	135 833	9.9	138 360	6.1
9 - Unclassified items and transactions	2 374	0.2	5 171	0.4	3 264	0.2	289	0
All sections (in thousands of EC\$)	1 427 895	100	1 225 826	100	1 376 185	100	2 257 785	100

Source : CARICOM

Table 9: Ventilation of trade inside CARICOM between
basic products and manufactured goods

	1980	1985	1990	1995
Manufactured products (Sections 6 to 8)	23,5%	17,2%	36,8%	27,0%
Base products including crude oil (Sections 0 to 4)	66,4%	73,3%	47,9%	60,6%
Others (Sections 5 et 9)	10,1%	9,6%	15,4%	12,4%
TOTAL	100%	100%	100%	100%

Source : CARICOM

2. The degree of specialisation within CARICOM countries

The degree of trade specialisation inside CARICOM and of each member state will be studied using Herfindhal index, which is defined as the sum of the contribution squares of each export product.

$$H_{i,t} = \sum_{j=1}^{10} \left(\frac{x_{i,j,t}}{\sum_{j=1}^{10} x_{i,j,t}} \right)^2$$

This index is calculated for the country i and for the period t . The index j shows the category of the products. The stronger the index (near 1), the more specialised the country, the weaker the index (near 1/10), the more the country has a diversified structure of its foreign trade¹⁵.

The decrease in the contribution of the crude export automatically resulted in the reduction of the degree of specialisation of exchanges inside CARICOM (Table 10)

Table 10: Evolution of the Herfindhal index for trade inside CARICOM

	1980	1985	1990	1995
Herfindhal index	0.254	0.311	0.161	0.215
Herfindhal index (excluding section 3)	0.204	0.225	0.187	0.200

Source: Authors estimates

The same index, H will be used to evaluate the degree of specialisation of the member states of CARICOM. Their export structure will be used to calculate the H index. Only Barbados has a structure more diversified than what is inside CARICOM (Table 11).

The seven countries of the OECS are among the eight countries whose structure of foreign trade is the more specialised. Rose and Engel (2000) have shown that the H index was systematically higher for the countries sharing the same currency, a proof according to them that the monetary unification and the polarisation of the productive base go together. Nevertheless they don't mention the relations of cause and effect and don't conclude that the monetary unification would lead to an increasing specialisation of the productive system. Besides, they voice the hypothesis that the characteristics of the productive structure would be prior to the monetary unification.

Table 11: Herfindhal index for the member states of CARICOM in 1996.

Countries	Herfindhal index
Barbados	0.180
Intra-CARICOM	0.216
Bahamas	0.248
Trinidad and Tobago	0.326
Jamaica	0.329
Haiti	0.368
Guyana	0.393
Suriname	0.398
Dominica	0.443
Saint Kitts and Nevis	0.454
Montserrat	0.462
Saint Lucia	0.489
Grenade	0.561
Antigua and Barbuda	0.604
Saint Vincent and Grenadines	0.618
Belize	0.636

Source : Authors estimates

The national export structures confirm the strong specialisation of the states. Thus, a single category covers at least 31% of the total export and 79% for the maximum. The national situations are rather different. Almost 80% of the foreign trade of Belize, Saint Vincent and Grenadines and Antigua and Barbuda rests on a single item of export. Barbados is the country which foreign trade depends the least on a family of products. Lastly, the category "0-Food and living animals" appears in the first or second position in the hierarchies of export for 13 of the 15 countries of CARICOM (Table 12).

Table 12: Structure of national export

	Number of S.I.T.C. categories to cover 70% of exports	S.T.C.I. categories which cover at least 70% of exports	Corresponding percentage of exports	Contribution of the main export post
Intra-CARICOM trade	4	3-6-0-5	84%	36%
Barbados	4	0-6-7-3	73%	31%
Bahamas	3	0-7-2	81%	37%
Jamaica	3	2-0-8	89%	50%
Trinidad and Tobago	3	3-5-6	86%	50%
Dominica	2	0-5	94%	48%
Grenada	2	0-6	84%	74%
Guyana	2	0-9	77%	55%
Haiti	2	8-0	76%	55%
Saint Kitts and Nevis	2	0-7	91%	59%
Saint Lucie	2	0-8	79%	68%
Suriname	2	2-0	80%	58%
Montserrat	2	7-0	94%	57%
Belize	1	0	79%	79%
Saint Vincent and Grenadines	1	0	78%	78%
Antigua and Barbuda	1	7	77%	77%

Source : Authors estimates

As the countries are quite strongly specialised, and intra-CARICOM trade is rather diversified, it seems possible to make the assumption that current possibility of trade inside CARICOM is widely exploited. It is still true that the economic similarities restrict the exchanges and the weakness of the economic complementarities limit trade between states to a part of their production, which can be exported towards its neighbours.

D. The economic correlations

The insertion of the states of CARICOM into the international division of labour is quite similar¹⁶. This closeness reduces the probability of specific demand and supply shocks for a certain number of countries. Nevertheless the productive structures are not strictly identical. The economies of Trinidad, oil exporter and the economy of Barbados, oil importer can not react the same way to a change of the crude oil prices on the world-wide market. Even the natural disasters which can cause important supply shocks don't have the same consequences on all the states of CARICOM considering how far they are from each other. In fact, it seems important to value the correlation degree of the economies of CARICOM countries.

The study of the correlation coefficients of the growth rates and of the inflation rates puts forward another feature of these states. The correlation degrees of the growth rate of real GDP are quite low even negative, the inflation rates are strongly correlated. We should also notice that almost all the correlation coefficients of the inflation rates between the OECS countries are significant at the 1% level (Table 13).

Table 13 : Correlation coefficients of real GDP growth and inflation in CARICOM

	Barbados	Guyana	Jamaïque	T-Tobago	Belize	A-Barbuda	Dominique	Grenade	St Kitts	Ste Lucie	St Vincent
Barbade	-	0.18	-0.06	0.57 *	0.73 **	0.62 **	0.81 **	0.90 **	0.85 **	0.79 **	0.83 **
Guyana	0.06	-	-0.55 *	0.29	0.15	0.44	0.01	0.14	-0.06	0.03	-0.06
Jamaïque	-0.07	-0.32	-	-0.42	-0.06	-0.27	0.01	-0.09	0.01	0.03	-0.05
T-Tobago	-0.25	0.47	-0.02	-	0.54 *	0.48 *	0.58 *	0.68 **	0.58 *	0.52 *	0.61 **
Belize	-0.01	0.06	0.72 **	0.01	-	0.77 **	0.92 **	0.85 **	0.89 **	0.79 **	0.84 **
A-Barbuda	0.53 *	-0.05	-0.02	-0.55 *	0.03	-	0.78 **	0.71 **	0.64 **	0.73 **	0.57 *
Dominique	0.07	-0.07	0.18	-0.14	0.09	0.26	-	0.87 **	0.93 **	0.88 **	0.86 **
Grenade	0.37	-0.18	0.14	-0.21	0.27	0.44	0.29	-	0.92 **	0.83 **	0.87 **
St Kitts	0.50 *	0.10	-0.09	-0.03	0.20	0.43	0.38	0.46	-	0.89 **	0.92 **
Ste Lucie	0.29	-0.32	-0.07	-0.44	0.13	0.38	0.34	0.35	0.41	-	0.85 **
St Vincent	0.02	-0.28	0.11	-0.27	0.26	-0.11	0.56 *	0.07	0.26	0.62 **	-

Notes:

(1) Above main diagonal, correlation coefficients of growth rate; below main diagonal, correlation coefficients of inflation rates.

(2) * significant at 5% level

(3) ** significant at 1% level

However, the weakness of the real correlations mustn't lead to the hasty conclusion that a single currency wouldn't be viable inside CARICOM. Besides, the growth rates were not one of the convergence criterion in the European union treaty. Moreover, the inflation rates have converged between 1980 and 1996 excepted for Jamaica. The inflation amplitude¹⁷ which was 16.3 in 1980 was only 5.3 in 1996¹⁸. Note that only 3 countries, Jamaica, Belize and Saint Vincent and Grenadines, do not meet the rule dictated in the European union treaty in terms of inflation¹⁹.

PART 3- THE ECONOMETRICS IMPLEMENTATION

In this third part, we will introduce the econometric methodology kept to check the nature of the existing relations between the economies correlations and the importance of trade flows. We will test the hypothesis that the reinforcement of trade increases the economies correlations and reduces the probability of asymmetrical shocks. The method used follows the work of Frankel and Rose (1996 and 1998), Frankel (1999) and Rose (1999) and consists in estimating a relation of the type:

$Corr_{ij,t} = a \times \ln Trade_{ij,t} + b + \varepsilon_{ij,t}$ where $Corr_{ij}$ in a correlation index between economy i and economy j , and $Trade_{ij}$ is an index of trade intensity between country i and country j .

A. The variables used

The correlation indicators used as proxy of the correlation degrees between the economies are based on the growth rates of the real GDP (g) and on the inflation rates (π). The lack of statistics on labour and industrial production indices forces us to limit our work to these macroeconomics data. Thus the five following correlation indicators will be successively used:

CORR(1) is the opposite of what we call the economic distance between two countries. The stronger the distance, the less important the correlation.

$$CORR(1)_{ij} = -\sqrt{(g_i - g_j)^2 + (\pi_i - \pi_j)^2}$$

CORR(2) et CORR(3) are binary variables, the relations in which they are set will be estimated with a probit model.

$$CORR(2)_{ij} = \begin{cases} 1 & \text{if } |g_i - g_j| < 1\% \\ 0 & \text{else} \end{cases}$$

$$CORR(3)_{ij} = \begin{cases} 1 & \text{if } |\pi_i - \pi_j| < 1\% \\ 0 & \text{else} \end{cases}$$

CORR(4) is the opposite of growth rate differential, the weaker this differential, the stronger the correlation.

$$CORR(4) = -|g_i - g_j|$$

CORR(5) is the opposite of inflation rate differential, the weaker this differential, the stronger the correlation.

$$CORR(5) = -|\pi_i - \pi_j|$$

Six indicators of trade intensity will be used, they will be established from the combination of the following data:

$X_{ij,t}$: Exports from country i to country j in t

$X_{i,t}$: Total exports from country i in t

$X_{j,t}$: Total exports from country j in t

$M_{ij,t}$: Imports of country i from country j in t

$M_{i,t}$: Total imports of country i in t

$M_{j,t}$: Total imports of country j in t

$$TRADE(1)_{ij,t} = \frac{X_{ij,t}}{X_{i,t} + X_{j,t}}$$

$$TRADE(2)_{ij,t} = \frac{M_{ij,t}}{M_{i,t} + M_{j,t}}$$

$$TRADE(3)_{ij,t} = \frac{X_{ij,t} + M_{ij,t}}{(X_{i,t} + X_{j,t}) + (M_{i,t} + M_{j,t})}$$

$$TRADE(4)_{ij,t} = \frac{X_{ij,t}}{X_{i,t}}$$

$$TRADE(5)_{ij,t} = \frac{X_{ij,t}}{X_{i,t} + M_{j,t}}$$

$$TRADE(6)_{ij,t} = X_{ij,t}$$

Thirty regressions will be done with the different indicators of the economic correlations and of trade intensities :

$$Corr(k)_{ij,t} = a \times \ln Trade(I)_{ij,t} + b + \varepsilon_{ij,t} \quad (1)$$

B. The estimation results

The results in the following table have been obtained from the estimation of the relation (1)²⁰. Only the coefficients *a* and their respective *t-student* have been reported in the following table.

	CORR(1)	CORR(2)	CORR(3)	CORR(4)	CORR(5)
ln TRADE(1)	0.5545 ** (3.561)	0.07488 ** (3.40488)	0.03426 ** (3.7707)	0.1922 ** (3.34108)	0.5202 ** (3.513)
ln TRADE(2)	0.1463 * (0.904)	0.05061 * (2.31695)	0.03192 (1.6351)	0.01247 (0.21918)	0.2056 (1.3252)
ln TRADE(3)	0.0765 (0.472)	0.06977 ** (2.87629)	0.01701 (0.83906)	0.08530 (1.42732)	0.05887 (0.3762)
ln TRADE(4)	0.3593 * (2.345)	0.04088 (1.97758)	0.02603 (1.37259)	0.11705 * (2.1238)	0.3520 * (2.4126)
ln TRADE(5)	0.2865 (1.7997)	0.06208 ** (2.28471)	0.0509 ** (2.62199)	0.0838 (1.46371)	0.3107 * (2.0422)
ln TRADE(6)	-0.5749 ** (-4.7499)	0.04099 * (2.56788)	-0.01354 (-0.94678)	-0.0632 (-1.4777)	-0.5162 ** (-4.4132)

* significant at 5% level

** significant at 1% level

Apart from 4 coefficients, all of them are positive. Of the 17 coefficients significant at 5% of risk, 15 are positive. Moreover, all the negative values concern the bilateral exchange indicator LTRADE (6). We can thus admit the hypothesis that the *a* parameter is positive. This result is not very surprising and only confirms former results, it transposes to the Caribbean case the conclusions of the European Commission which said that trade intensification lead to high economic correlation.

Thus it appears that:

- The economic distance reduces between countries when trade intensifies (column 1).
- The probability that the growth rate differential is inferior to 1% increases with the trade flow (Column 2). It is the same with the inflation rate differential (Column 3). Nevertheless trade have a more important impact on the probability of the growth rate differentials to be inferior to 1%; the coefficients of column 2 are systematically superior to the ones in column 3.
- The inflation rate differential is more sensitive to trade intensification than the growth rate differential (columns 4 and 5). The impact of exchanges on the convergence of inflation rates would be stronger than the real growth rates.

The influences of two dummies are also tested. The two indicating variables of interest here are DUMMYO ECS²¹ and DUMMYFIX²². They are supposed to indicate the impact of pertaining to an economic community and the impact of adopting a fixed exchanges rate on economic correlations.

The indicative variables are successively introduced in relations following the pattern:

$$Corr(k)_{j,t} = a \times \ln Trade(I)_{j,t} + \mu \times DUMMY + b + \varepsilon_{j,t}$$

They are both significant at the level of 1% in the regressions of CORR(1), CORR(4) and CORR(5). The indicative variables sensibly improve the R2 of the regressions in which they are introduced. But the quality improvement of the regression is far more sensitive with DUMMYFIX.

However, let's not rush to conclude that a single Caribbean currency and its corollary and the reinforcement of trade relationship can remove the probability of asymmetrical shock. Indeed, let's not forget that commerce inside CARICOM takes up a marginal place in the overall commerce of the states of the zone. This marginal characteristic and the strong dependence of the countries towards foreign trade partners (the United States of America) or international markets conditions (the world-wide market of oil and sugar) can obviously influence the apparent positive relationship between the economic correlations and the intensity of trade flows. In case of a recession in the U.S. of America, the American imports will contract and the Caribbean will witness a fall in their exports, which would prevent them from stocking up and would cause them to limit their trade relations with their partners. In order to take into account these potential influences, we'll estimate relation (1) using the instrumental variables methods and using the gravity model of international trade.

C. The gravity model

The gravity model explains the basics of international trade with a set of variables representing the attraction and resistance forces to the exchanges existing between countries²³. Many assumptions are used when the gravity model is applied to international trade. The transactions between two countries are mapped to the gross domestic product of both the economies considered (Y_i and Y_j), their population size (L_i et L_j) and their development level represented by the gross domestic product per capita (y_i et y_j). The resistance forces are represented by transports costs which can be studied by the distance in kilometre (D_{ij}). Non-economics factors are also considered. For example, cultural elements such as language or common history (P_{ij}). The formulations usually considered are the following:

$$X_{j,t} = \alpha_0 Y_{i,t}^{\alpha_1} Y_{j,t}^{\alpha_2} L_{i,t}^{\alpha_3} L_{j,t}^{\alpha_4} D_{ij}^{\alpha_5} P_{ij,t}^{\alpha_6} e^{u_{j,t}} \quad (1)$$

$$X_{j,t} = \beta_0 y_{i,t}^{\beta_1} y_{j,t}^{\beta_2} L_{i,t}^{\beta_3} L_{j,t}^{\beta_4} D_{ij}^{\beta_5} P_{ij,t}^{\beta_6} e^{v_{j,t}} \quad (2)$$

$$X_{j,t} = \delta_0 Y_{i,t}^{\delta_1} Y_{j,t}^{\delta_2} y_{i,t}^{\delta_3} y_{j,t}^{\delta_4} D_{ij}^{\delta_5} P_{ij,t}^{\delta_6} e^{w_{j,t}} \quad (3)$$

The closeness of CARICOM states and the geographic discontinuity of the whole avoids taking into account particular difficulties linked to the non-equivalence between the distance in kilometre and the transport restraints²⁴.

The GDPs of the exporting and importing country are supposed to be positively linked to trading between both countries. The gross domestic product of the exporting country (Y_i) shows the productive ability and the aptitudes of the country to take part in international trade. The gross domestic product of the importing country (Y_j) shows the absorption capacity of this economy.

The import and export abilities are not closely linked to the gross domestic products. Indeed, of the three countries with the highest gross domestic product in CARICOM²⁵, Jamaica is the only one where the export and import rates per capita are the most important²⁶. In the same way, the three countries with the lowest gross domestic product²⁷ don't have the lowest import and export rate per capita^{28 29}.

The signs of the coefficients related to the population of both countries are ambiguous. The population gives an indication of the size of the country and on the degree of diversification of the economy. But the more an economy is diversified, the less it should participate to international trade because the economy meets the demand of its local population. Assuming this, the population should be negatively linked to international trade. Nevertheless, the supply of the wide local market can lead to a certain specialization of the economy, the domestic market allowing to reach a critical size. The will to exploit the scale economies supplying foreign markets would be strong: under these conditions, the relation between the population and the exchanges should be positive. The more populated countries of CARICOM³⁰ seem to confirm the positive correlation³¹.

The GDP per capita is a proxy of the development degree of the considered economy. The more important the wealth per inhabitant, the more it is expected that the necessary infrastructures are present. The relation would therefore be positive. But the inhabitants can show more sensibility towards the quality of the products proposed and to search for differentiation. It is not certain that CARICOM countries can meet the need of differentiation of the countries when GDP is the highest. As a proof, the three countries who GDP per capita is the highest³² don't trade that much in CARICOM.

Distance is a resistance factor to international trade, the higher the distance, the weaker the trade relations should be³³. The estimation results of the six relations are following:

$$\ln \text{TRADE}(I)_{ij,t} = \alpha_0 + \alpha_1 \ln Y_{i,t} + \alpha_2 \ln Y_{j,t} + \alpha_3 \ln y_{i,t} + \alpha_4 \ln y_{j,t} + \alpha_5 \ln D_{ij} + \varepsilon_{ij,t}$$

	ln TRADE(1)	Ln TRADE(2)	ln TRADE(3)	ln TRADE(4)	ln TRADE(5)	ln TRADE(6)
R ²	0.454	0.499	0.609	0.559	0.484	0.680
α_0	-2.1524 (-1.923)	0.6068 (0.583)	0.1496 (0.170)	-0.9458 (-0.965)	-0.5440 (-0.507)	11.3200 (12.293)
α_1	0.6466 ** (19.796)	0.3192 ** (10.629)	0.562 ** (22.173)	0.240 ** (8.470)	0.7912 ** (25.449)	1.375 ** (50.053)
α_2	0.1273 ** (3.930)	0.8426 ** (27.844)	0.5637 ** (22.218)	0.8189 ** (28.652)	0.2147 ** (6.890)	0.8058 ** (29.620)
α_3	-0.4673 ** (-4.721)	0.092 (1.031)	-0.2493 ** (-3.216)	-0.229 ** (-2.650)	-0.5801 ** (-6.1327)	-1.036 ** (-13.4164)
α_4	0.4123 ** (4.215)	-0.832 ** (-9.212)	-0.2718 ** (-3.505)	-0.0085 (-0.1021)	0.1123 (1.2167)	0.0191 (0.2403)
α_5	-1.2666 ** (-29.159)	-1.2844 ** (-31.549)	-1.386 ** (-42.037)	-1.3122 ** (-34.344)	-1.2663 ** (-30.2509)	-1.3318 ** (-36.3046)

t-student in parenthesis

* significant at 5% level

** significant at 1% level

The coefficient signs are the identical ones for the different trade intensity indicators with two exceptions: the two gross domestic products per capita. Both real gross domestic products are positively correlated to trade indicators and distance negatively influences bilateral trade flows. There still is an ambiguity for the coefficient signs affected to both gross domestic products per capita. The gross domestic product per capita of the importing country negatively modifies the exchanges confirming the idea that CARICOM products are essentials. They can be replaced by items of higher quality as soon as the purchasing power allows it.

The R^2 are similar to Thoumi's results (1992) who found R^2 between 0.515 and 0.721 in similar study. But they are inferior to standard gravity models results, generally between 0.65 and 0.85. Thoumi explained it by the weakness of the relations inside CARICOM. Trade inside CARICOM would be insensitive to the evolutions of macro-economic variables because the main trade partners would be outside the zone. There should be other determinants to the intensity of trade between countries.

The dummy variable DUMMYOECS is significant at 1% in all the regressions in which it is introduced. The DUMMYFIX variable is significant only twice in the regressions of LTRADE (1) and LTRADE (5).

D. The estimation results by the method of instrumental variables.

The results are far more ambiguous. Only eight coefficients are significant at 5% and the signs are far more fluctuating since eight out of thirty coefficients are negative. Among the coefficients significant at 1% level, there are positive elements as well as negative ones. The R^2 are also weak even weaker than previously.

	CORR(1)	CORR(2)	CORR(3)	CORR(4)	CORR(5)
ln TRADE(1)	0.83 ** (4.39)	0.045 (1.69)	0.005 (0.219)	0.13 ** (1.93)	0.85 ** (4.64)
ln TRADE(2)	-0.013 * (-0.07)	0.032 (1.24)	-0.054 * (-2.28)	0.023 (0.36)	0.023 (0.13)
ln TRADE(3)	0.26 (1.44)	0.039 (1.50)	-0.036 (-1.55)	0.06 (0.93)	0.0301 (1.68)
ln TRADE(4)	0.289 (1.66)	0.035 (1.44)	-0.025 (-1.11)	0.06 (0.988)	0.32 (1.90)
ln TRADE(5)	0.295 (1.57)	0.037 (1.40)	-0.032 (-1.33)	0.06 (0.94)	0.32 (1.79)
ln TRADE(6)	-0.88 ** (-6.77)	0.011 (0.59)	-0.092 ** (-5.22)	-0.091 (-1.95)	-0.82 ** (-6.51)

t-student in parenthesis

* significant at 5%

** significant at 1%

Considering the significance of DUMMYOECS and DUMMYFIX in the initial equation and in the trade intensities. We will introduce it in the new correlation equation. Considering their strong similarity, the two can not be introduced efficiently without altering the significance of one of them. We'd better introduce the second variable hence the relation following the pattern:

$$\text{Corr}(k)_{ij,t} = a \times \ln \text{Trade}(l)_{ij,t} + \mu \times \text{DUMMYFIX} + b + \varepsilon_{ij,t}$$

		<i>a</i>	μ	<i>b</i>	<i>R</i> ²
CORR(1)	ln TRADE(1)	0.754 ** (4.49)	10.003 ** (22.20)	-10.26 ** (-9.32)	0.227
	ln TRADE(2)	0.599 ** (3.63)	10.32 ** (22.55)	-11.04 ** (-9.75)	0.224
	ln TRADE(3)	0.684 ** (4.19)	10.262 ** (22.61)	-10.74 ** (-10.10)	0.226
	ln TRADE(4)	0.596 ** (3.879)	10.20 ** (22.52)	-12.03 ** (-14.57)	0.225
	ln TRADE(5)	0.65 ** (3.92)	10.21 ** (22.54)	-10.80 ** (-9.68)	0.225
	ln TRADE(6)	0.25 * (1.96)	10.46 ** (20.96)	-17.09 ** (-15.27)	0.220
CORR(2)	ln TRADE(1)	0.044 (1.65)	0.093 (1.27)	-0.885 ** (-5.016)	
	ln TRADE(2)	0.038 (1.467)	0.114 (1.54)	-0.909 ** (-5.012)	
	ln TRADE(3)	0.043 (1.642)	0.109 (1.487)	-0.898 ** (-5.272)	
	ln TRADE(4)	0.038 (1.56)	0.106 (1.451)	-0.975 ** (-7.381)	
	ln TRADE(5)	0.0406 (1.525)	0.107 (1.453)	-0.904 ** (-5.060)	
	ln TRADE(6)	0.027 (1.29)	0.142 (1.752)	-1.39 ** (-7.56)	
CORR(3)	ln TRADE(1)	-0.001 (-0.07)	0.839 ** (11.42)	-1.39 ** (-8.22)	
	ln TRADE(2)	-0.012 (-0.51)	0.833 ** (11.236)	-1.47 ** (-8.36)	
	ln TRADE(3)	-0.008 (-0.36)	0.836 ** (11.339)	-1.44 ** (-8.87)	
	ln TRADE(4)	-0.004 (-0.182)	0.838 ** (11.378)	-1.407 ** (-10.79)	
	ln TRADE(5)	-0.008 (-0.33)	0.837 ** (11.36)	-1.441 ** (-8.314)	
	ln TRADE(6)	-0.011 (-0.575)	0.821 ** (10.29)	-1.29 ** (-7.37)	
CORR(4)	ln TRADE(1)	0.11 (1.77)	1.82 ** (10.40)	-4.97 ** (-11.59)	0.0600
	ln TRADE(2)	0.13 ** (2.12)	1.89 ** (10.65)	-4.80 ** (-10.91)	0.0607
	ln TRADE(3)	0.13 ** (2.15)	1.87 ** (10.62)	-4.85 ** (-11.72)	0.0608
	ln TRADE(4)	0.11 (1.95)	1.86 ** (10.57)	-5.12 ** (-15.93)	0.0604
	ln TRADE(5)	0.12 * (1.97)	1.86 ** (10.58)	-4.88 ** (-11.24)	0.0604
	ln TRADE(6)	0.13 ** (2.63)	2.05 ** (10.59)	-6.80 ** (-15.66)	0.062
CORR(5)	ln TRADE(1)	0.79 ** (4.79)	9.56 ** (21.53)	-7.21 ** (-6.65)	0.208
	ln TRADE(2)	0.61 ** (3.78)	9.88 ** (21.90)	-8.14 ** (-7.29)	0.204
	ln TRADE(3)	0.70 ** (4.41)	9.82 ** (21.97)	-7.79 ** (-7.44)	0.206
	ln TRADE(4)	0.62 ** (4.12)	9.77 ** (21.88)	-9.10 ** (-11.19)	0.205
	ln TRADE(5)	0.67 ** (4.12)	9.78 ** (21.89)	-7.85 ** (7.14)	0.205
	ln TRADE(6)	0.26 * (2.10)	10.04 ** (20.39)	-14.40 ** (-13.10)	0.200

t-student in parenthesis

* significant at 5%

** significant at 1%

Conclusion

The appearance of monetary part in the CARICOM countries agenda shows their willingness to carry on the integration process started in early 1970's. The adoption of a single currency would be political proof that CARICOM wants to improve cooperation between members states. Unfortunately, on basis of the economic criteria the attempt is almost groundless. Individually taken, the economies are more competitive than complementary . They seem to exploit already most of their trade potential among them.

Moreover, some of these economies have currencies linked to the US \$ in a stable way. For these countries, leaving their actual account unity could be done only by favouring a unity as strong or a unity which exchange rate towards the dollar is fixed. Considering these evolutions and economic specialisations, the needs in terms of conjectural policy are sensibly different and are hardly affected by the trade volume between these countries. It seems delicate at the moment to disagree with opponents to monetary union³⁴. Nevertheless, such an attempt can finally provide the members states with the lacking collective public good. Managing this monetary unity could be the catalyst of integration policy and the cradle of a new interest community.

Monetary unification is a strong political act which economic benefits can be important only if the unification is accompanied by measures aiming at increasing the industrial integration and the economic cooperation between members states.

Bibliography

- BOXILL Ian (1993)** : *Ideology and Caribbean Integration*, Consortium Graduate School of Social Sciences, 130 pages, Mona Campus, Jamaica.
- CELIMENE Fred and WATSON Patrick (1991)** : *Economie Politique Caraïbienne*, Economica, 240 pages, Paris.
- CHEMAIN Régis (1999)** : « Monnaie et intégration régionale dans la Caraïbe », in JOS Emmanuel et PERROT Danielle (1999) : *La Caraïbe face au défi de la mondialisation : marchés et nations dans l'aire Caraïbe/Amérique*, Cahiers internationaux, Montchrestien, 370 pages, Paris.
- EUROPEAN COMMISSION (1990)** : « *One market, one money* », *European Economy*, n°44, Octobre.
- DE GRAUWE Paul (1999)** : *Economie de l'intégration monétaire*, 3^{ème} édition, De Boeck University, 239 pages.
- FARRELL Terence (1991)** : « The political economy of caribbean monetary and financial integration », *Caribbean Affairs*, Octobre-Décembre, Vol.4, numéro 4.
- FONTAGNE Lionel, Michael PAJOT and PASTEELS Jean-Michel (1997)** : « Potentiels de commerce entre économies hétérogènes : un petit mode d'emploi des modèles de gravité », *CEPII Working Paper*, unpublished.
- FRECKLETON Marie and LALTA Stanley (1993)** : *Caribbean Economic Development: The first Generation*, Kingston, 400 pages.
- FRANKEL Jeffrey and ROSE Andrew (1998)** : « The endogeneity of the optimum currency area criterion », *The Economic Journal*, Vol. 108, n°449, July, pp. 1009-1025.
- FRANKEL Jeffrey et ROSE Andrew (1996)** : « Economic structure and the decision to adopt a common currency », unpublished.
- FRANKEL Jeffrey (1999)** : « No single currency regime is right for all countries or at all times », *NBER Working paper*, number 7338, september.
- JAINARAIN Iserdeo (1976)** : *Trade and underdevelopment*, Institute of Development studies, 390 pages, Guyana.
- JOS Emmanuel (1996)** : *Coopération et Intégration économique régionale dans la Caraïbe*, Montchrestien, 270 pages, Paris.
- JOS Emmanuel et PERROT Danielle (1999)** : *La Caraïbe face au défi de la mondialisation : marchés et nations dans l'aire Caraïbe/Amérique*, Cahiers internationaux, Montchrestien, 370 pages, Paris.
- KENEN Peter (1969)** : « The theory of optimum currency areas : an eclectic point of view », in MUNDELL R. et SWOBODA A.K. (eds) *Monetary Problems of the international Economy*, Chicago, University of Chicago Press, pp.41-60.
- KRUGMAN Paul (1993)** : « Lessons of Massachusetts for EMU », in GIAVAZZI F. et TORRES F. (eds), *The transition to economic and Monetary Union in Europe*, Cambridge University Press, pp.241-261.
- LEWIS Arthur (1968)** : *The growth of the modern West Indies*, Mac Gibbon and Kee, Londres.
- Mac KINNON R. (1963)** : « Optimum currency areas », *American Economic Review*, Vol. 53, pp. 717-725.
- MUNDELL Robert (1961)** : « A theory of optimum currency areas », *American Economic Review*, Vol. 51, pp. 657-664.
- PAYNE A. (1980)** : *The politics of the Caribbean Community*, Manchester University Press, Manchester.
- PISANY-FERRY Jean (1994)** : « Union monétaire et convergence: qu'avons-nous appris? », *CEPII Working Paper*, n°94-14.
- ROSE Andrew and ENGEL Charles (2000)** : « Currency union and international integration », non publié.
- ROSE Andrew (1999)** : « One money, one market: Estimating the effect of common currencies on trade », *NBER Working Paper*, number 7432, december.
- THOUMI Francisco (1992)** : « Trade flows and economic integration among the LDC's of the Caribbean Basin », in TIRADO de ALONSO Irma, *Trade issues in the Caribbean*, Gordon and Breach, Miami, 232 pages.
- WORRELL Keith (1995)** : « A note on the null-case for a common CARICOM currency », *Social and economic studies*, Vol.44, number 1.

NOTES

¹ Article 43 of the annex of the Chaguaramas treaty: "the member states, acknowledging that the fixedness of exchange rates among themselves is compulsory for the good working of the common market, agree(...) to examine the ways in order to harmonize their policies in terms of currencies, exchange rates and payments towards the good working of the common market (...). They agree to have all the necessary measures taken by their central bankers or their monetary authorities and to have the notes and coins of each of them exchanged on the other" territory at the official parity without commission, to elaborate the co-operation agreements for other monetary issues such as the implementation of a clearing agreement between the central monetary authorities."

² Besides, Lewis hadn't hesitated some years before to talk about the balkanisation of the Caribbean area (Lewis(1968)).

³ LAIM includes the 10 south american countries and Mexico.

⁴ CACM includes Costa Rica, El Salvador, Guatemala, Honduras et Nicaragua.

⁵ It's the crowning theory.

⁶ Article 38 of the Chaguaramas treaty: "No arrangements of the present treaty will be interpreted as forcing a member state to give the right to free movement of people on his territory even if they are citizens of other member states.

⁷ P.K. insisted on the fact that a citizen of the European Union had easier access to a CARICOM country than a CARICOM citizen.

⁸ The opening degree of CARICOM countries are superior to 90% except Haiti and Saint Lucia.

⁹ Mundell had mainly kept this second hypothesis.

¹⁰ This analysis is often analysed as the "Eichengreen-Kenen-Krugman view".

¹¹ Caribbean Free Trade Association

¹² And the decrease of the absorption ability of Trinidad and Tobago.

¹³ The data about the Bahamas don't appear in the following table. For the 1980s, 1985s, 1990, 132 bilateral import or export relations can be established. In 1996, the Surinam arrival increased this number to 156.

¹⁴ Standard International Trade Classification

¹⁵ The inferior post of the Herfindhal index is 1/10 because here we consider the ventilated export on the basis of the S.I.T.C. with 10 posts.

¹⁶ The non alcoholic drinks are among the 10 first export posts for 7 CARICOM countries, sugar is among the first 3 export for 5 of the 15 CARICOM countries.

¹⁷ Inflation gap between the most inflationist and the less inflationist country.

¹⁸ Without taking account Jamaica.

¹⁹ Just a reminder, the inflation of the countries candidate to the single currency was not exceed of more than 1,5% the average of the 3 most virtuous countries.

²⁰ 2244 available data of bilateral trade for 12 CARICOM countries between 1980 and 1996 are used.

²¹ Antigua and Barbuda, Dominica, Grenada, Montserrat, Saint Lucia, Saint Kitts and Nevis and Saint Vincent.

²² The OECS countries to which Barbados and Belize are added.

²³ For a literary review and the recent developments concerning the gravity models, the reader will refer to Fontagné, Pajot and Pasteels (2000).

²⁴ Several types of difficulties can emerge, the goods can not follow a direct trajectory, natural hindrances can oblige to consequent detours.

²⁵ Trinidad and Tobago, Jamaica and the Bahamas.

²⁶ Jamaica is the third one, Trinidad and Tobago are fifth and the Bahamas are eighth.

²⁷ Montserrat, Dominica and Saint Kitts.

²⁸ Classified in an increasing order of their export rate per inhabitant, these countries are fourth, ninth and twelfth.

²⁹ Classified in an increasing order of their import rate per inhabitant, these countries are seventh, tenth and twelfth.

³⁰ Haiti, Jamaica and Trinidad and Tobago.

³¹ Except for Haiti which is an atypical case, Jamaica is second, Trinidad and Tobago are fifth considering their export and import rate per capita.

³² Bahamas, Barbados and Trinidad.

³³ Distances will be calculated apart from the positions in latitude and longitude of the capitals of CARICOM countries. To calculate distances in kilometres, one must know that 1° in latitude on the same meridian or 1° in longitude on the same parallel equals 40.000 km/360°, around 111 km.

³⁴ "Whatever the emotional or political attraction for the common currency (...) there is little economic justification for it..." (Worrell (1995)).