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IMPACTO DE LOS ACUERDOS COMERCIALES PREFERENCIALES EN UN CONTEXTO DE COMPETENCIA IMPERFECTA

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Chapter 1

Introducción

1.1 Introducción y resumen

Los primeros países firmantes y protagonistas de los acuerdos del GATT se basaron en las teorías económicas clásicas y neo-clásicas, las cuales abogan por las ventajas del libre comercio con carácter multilateral (o "multilateralismo"). Si bien en el 60^o aniversario de los acuerdos del GATT, la Organización Mundial del Comercio (OMC) puede hacer alarde de una reducción notable de barreras (arancelarias o no) al comercio, hace en cambio un balance menos positivo de los avances del multilateralismo a escala global. En efecto, el aumento exponencial del comercio en esos 60 años se produce esencialmente en el marco de acuerdos comerciales regionales y mayoritariamente en beneficio de países industrializados, con poca redistribución de riquezas y tecnología entre países del Norte y países del Sur.

Ese fenómeno de regionalización acelerado ha llegado a tales proporciones (en 2004 la OMC registraba más de 400 acuerdos regionales de varios tipos) que plantea serias preguntas en la literatura especializada acerca de:

- Sus impactos sobre el proceso mundial de liberalización comercial (con la cuestión subyacente acerca de las motivaciones de los gobiernos que optan por ello en vez de una supresión inmediata y unilateral de sus barreras arancelarias según el espíritu del GATT);

- Sus impactos sobre el bienestar global y a nivel nacional (en especial en el caso de países menos desarrollados).

Tal y como lo demuestran la evolución y la multiplicación de los acuerdos regionales preferenciales registrados desde los años 90, el tipo de acuerdo y el grado de integración que conllevan están estrechamente relacionados con las características propias de sus países miembros. Conviene recordar además que, bien sean acuerdos de tipo ´Norte-Norte´, ´Norte-Sur´ o ´Sur-Sur´, las diferentes variantes de acuerdos regionales suponen unas implicaciones y justificaciones distintas tanto para sus países signatarios como para los países excluidos.

En ese tenor, presentamos un estudio de la formación y de los impactos de acuerdos regionales preferenciales bajo tres grandes capítulos organizados de la siguiente manera :

- Un capítulo repasando hechos estilizados del fenómeno de globalización-regionalización del comercio con un foque especial sobre las pequeñas economías caribeñas;

- Un capítulo proponiendo un análisis teórico de la formación de uniones aduaneras;

- Un capítulo presentando un estudio empírico de los efectos del acuerdo AAE/ EPA Cariforo-UE sobre las regiones ultra periféricas europeas del Caribe.

Nuestro capítulo, titulado **"Regional Integration: New Perspectives And Strate-gies For Small Developing Economies In The Caribbean?"** ("Integración regional: ¿nuevas perspectivas y estrategias para pequeñas economías en desarrollo del Caribe?"), ofrece: (1) una discusión sobre las tesis a favor o en contra del regionalismo y sus efectos sobre el bienestar y el proceso global de liberalización del comercio; (2) un repaso de la evolución de los intercambios comerciales desde la perspectiva de los fundamentos (neo)clásicos de liberalización del GATT; y (3) las perspectivas de políticas comerciales para los países caribeños.

El hecho de que, desde los años 50, el comercio se haya incrementado esencialmente en el seno de acuerdos regionales contraídos entre países industrializados, así como la poca redistribución de riquezas y tecnologías desde países del Norte hacia países del Sur (a

pesar de su apertura comercial), pusieron en evidencia algunas limitaciones del modelo ricardiano básico de la ventaja comparativa.

En efecto, varios países del sur asistieron a una erosión de sus preferencias en grandes mercados y la deterioración de sus balanzas comerciales, debido a varios factores entre los cuales: esas grandes economías contraían acuerdos preferenciales con países terceros; y/o al incrementarse sus ingresos, su demanda variaba para consumir menos productos importados tradicionalmente de países del sur (ejemplo del textil de algodón sustituido en grandes cantidades por fibras sintéticas).

El proceso de integración europeo por otro lado proporciona otro ejemplo de efectos de la liberalización comercial regional no predichos por el modelo ricardiano: el incremento del comercio entre economías similares conllevando una especialización intra-industrial masiva (de tipo Hecksher-Ohlin-Samuelson o a nivel de las empresas).

Al ejemplo de la integración regional europea emergen otros grupos económicos entre países similares en América del Norte o del Sur, frente a los cuales pequeñas economías tales las del Caribe eligen emprender procesos de integración regional. En el caso caribeño, el proyecto de integración regional se enfrentó desde un principio a varios desafíos mayores inherentes a las características de esas (pequeñas) economías vulnerables a choques externos y dependientes de grandes economías (sus antiguas metrópolis o América del norte).

Observamos como ese arduo proceso de integración caribeño, dictado durante décadas por condicionantes externos, da ahora muestras de afianzamiento en instituciones regionales respaldadas por los líderes de la región, con un cambio de paradigma hacia un regionalismo abierto basado en: una mayor cooperación funcional intra-regional y público-privada; una apertura a la región vecina latino-americana; sin desechar las opor-tunidades brindadas por un acuerdo Norte-Sur 'completo' firmado con los países de la UE y otros acuerdos con grandes naciones. El objetivo para la región Caribe es lograr a la vez una mayor integración regional de sus procesos productivos para un mejor posi-cionamiento en los mercados globales y tal vez llegar a pasar de región 'poke' (periférica)

a región 'hub' (céntrica).

En nuestro siguiente capítulo, **"Strategic Formation of Customs Unions"** ("Formación estratégica de uniones aduaneras"), analizamos los efectos de la formación de uniones aduaneras sobre el bienestar doméstico (de países miembros y excluidos) en un contexto de competencia oligopolistica, tomando en cuenta tanto los tamaños de los mercados, como la concentración industrial (el número de empresas) y costes marginales.

Construimos a esos efectos un modelo básico de optimización arancelaria, con cuatro países, y analizamos los efectos sobre el bienestar (de miembros y no-miembros) al pasar de una situación de comercio con aranceles a la formación de una sola unión aduanera entre dos países, y luego a la formación de dos uniones aduaneras. También analizamos los efectos de optar por el libre comercio.

Introducimos luego distintas variantes del modelo para estudiar los efectos de distintos tipos de asimetría aparte de los tamaños de mercado (en la concentración industrial o los costes marginales),

Ese modelo se diferencia de la mayoría de los modelos de ese estilo en el hecho de que se suelen construir con 3 países (mientras que 4 países permiten analizar las estrategias excluidas de un acuerdo por ejemplo). Calculamos además el bienestar en base tanto a los ingresos arancelarios del gobierno y los beneficios de las empresas como a los excedentes del consumidor.

En unas variantes de nuestro modelo, diferenciamos no obstante dos tipos de políticas de redistribución de las ganancias generadas por la creación de una unión aduanera: o bien impulsada por los intereses de las empresas o por motivos más 'sociales'.

En todos los casos, resolvemos un juego no cooperativo en varias etapas: obteniendo primero el sub-equilibrio del mercado con empresas compitiendo a la Cournot, luego estableciendo las tarifas que maximizan el bienestar doméstico y analizando finalmente las estrategias políticas optímales. Mostramos que en una situación de comercio sujeto a aranceles, el equilibrio de Nash suele residir en la formación de dos uniones aduaneras entre países similares y bajo determinadas condiciones. No obstante, la opción del libre

comercio sigue siendo la estrategia favorita cuando es factible.

Nuestro análisis pone en evidencia la importancia de factores (como los tamaños de los mercados, la concentración industrial y la productividad) sobre si un país será aceptado o no por otro, como candidato a la formación de una unión aduanera. Confirma además que la formación de uniones aduaneras genera impactos positivos en los excedentes del consumidor y, bajo ciertas condiciones, en los beneficios de las empresas de la unión. Mientras que tiene unos impactos negativos sobre el resto del mundo. Identificamos también condiciones en las cuales, todos los países podrían beneficiarse de la formación de varias aduaneras, lo cual proporciona una explicación posible para la proliferación de acuerdos regionales.

Finalmente, en nuestro capítulo, **"Empirical Study on the Impact of the CARIFORUM-UE EPA on the French Caribbean Outermost Regions"** ("Estudio empírico sobre el impacto del AAE/EPA CARIFORO-UE") emprendemos el ejercicio novedoso de estudiar y proponer una metodología de seguimiento del impacto del acuerdo de libre comercio AAE/EPA Cariforo-UE sobre el comercio de las regiones ultra periféricas europeas (RUPs) del Caribe francés. La novedad de ese ejercicio consiste en que ese acuerdo firmado en 2008 ha generado ya varios estudios sobre sus impactos sobre las economías del Cariforo y también en que algunos países del Cariforo ya disponen de herramientas de seguimiento (tanto de la implementación como) de los efectos del AAE.

El AAE Cariforo-UE se firmó en 2008, después de 8 años de negociaciones entre la UE y los países ACP (antiguas colonias europeas de África, el Caribe y el Pacifico), a raíz de que la UE tuvo que adecuar sus acuerdos precedentes con los ACP al principio de reciprocidad requerido a los miembros de la OMC. Hasta entonces, el Cariforo beneficiaba de un acceso privilegiado a los mercados europeos pero con el AAE acordó eliminar progresivamente sus barreras arancelarias a los productos europeos (así como liberalizar sus mercados de servicios, entre otras novedades). Cada país del Cariforo negoció un calendario de liberalización arancelaria sobre un periodo de 25 años, para cada producto, así como una lista de productos excluidos del acuerdo, lo cual justifica que se hayan realizado varios

estudios econométricos ex ante para medir el coste de los ajustes arancelarios.

Sin embargo, en el caso de las RUPs, no se planteó esa cuestión ya que, siendo parte de la UE, no parecía necesario. Sin embargo, unas cláusulas del acuerdo reconocen el carácter específico de las RUPs, en el seno de la parte europea, y conceden una corta lista de exclusiones durante un periodo de tiempo determinado para algunos productos agrícolas sensibles (plátano, azúcar, arroz,. . .), así como el permiso para las RUPs francesas de mantener su impuesto Octroi de Mer (el cual, a pesar de ser aplicado sobre todos los productos a la venta en los mercados de las RUPs francesas, lleva un diferencial a favor de los productos locales) durante un tiempo determinado también.

Al margen de esas consideraciones, lo que en nuestra opinión merece observar el impacto del AAE sobre las economías RUPs francesas es el mero hecho de que, antes de dicho acuerdo, no parecían formar parte del panorama (comercial y económico) regional, con la excepción del comercio de productos energéticos y algunos intercambios en pocos sectores más. De repente, ese acuerdo -cubriendo tanto el comercio de bienes y servicios, como el movimiento de personas, capitales, etc. – abre nuevas perspectivas de negocio entre las RUPs francesas y sus vecinos caribeños.

Procedimos entonces a aplicar un modelo (multi-modal) de seguimiento replicable periódicamente (a la excepción de una parte del estudio econométrico):

- La recolección de informaciones cualitativas y cuantitativas a nivel de empresas e instituciones públicas y privadas representativas, mediante encuestas y entrevistas;

- La recolección y el tratamiento de estadísticas aduaneras y demás estadísticas relativas al comercio y a las economías estudiadas;

Esta segunda etapa conllevó un trabajo arduo de recolección y tratamiento de estadísticas aduaneras (y demás estadísticas económicas) para construir un panel de datos con unas series temporales sobre periodos de tiempo suficientemente largos para estudiar los determinantes del comercio de las RUPs francesas con los países del Cariforo y el resto del mundo. Esa etapa, cuyas dificultades exponemos en el desarrollo

del capítulo tercero, no se tendría que repetir para estudios futuros de los impactos del AAE sobre el comercio y las economías de las RUPs francesas.

Como cabía esperar, el periodo corto trascurrido desde la firma del AAE hasta la realización de ese primer estudio, así como su falta de implementación real (al menos en cuanto a las reducciones arancelarias) por parte de la mayoría de los países del Cariforo no permiten aún observar unos impactos claros del AAE en las RUPs francesas en las estimaciones econométricas. Sin embargo, unos resultados preliminares se pudieron apreciar esencialmente a raíz de las encuestas y entrevistas realizadas en el terreno con los operadores económicos concernidos, ya que, como evocamos más arriba, el AAE tiene al menos el mérito de haber acercado las RUPs a sus vecinos caribeños y despertado nuevos intereses de negocio intra-regional.

1.2 Introductory summary

The regionalization-globalization phenomenon observed in the fifties, and more markedly in the nineties, raises a number of questions that have been addressed in the relevant literature. Such questions refer to their impact on the global trade liberalization process, as well as their impact on global welfare and domestic economies— with particular relevance for developing countries. Here we present a detailed study about the formation of regional trade agreements and their impacts, which we organized in three main chapters:

- A review of the stylized facts regarding the globalization-regionalization of trade with a focus on the small Caribbean economies;
- A formal and rigorous analysis of customs union formation in a strategic setting;
- An empirical study of the effects derived from the AAE/EPA Cariforum-EU agreement on European outermost regions in the Caribbean.

Following the introductory chapter, our second chapter entitled **"Regional Integration: New Perspectives And Strategies For Small Developing Economies In The Caribbean?"** ("Integración regional: ¿nuevas perspectivas y estrategias para pequeñas economías en desarrollo del Caribe?"),

offers: (1) a discussion about the pros and cons of regionalism, and their effects on welfare and the global trade liberalization process; (2) a review of the evolution of trade from the perspective of a neoclassical approach to GATT; and (3) the prospects for trade policies in Caribbean countries.

From the start, the Caribbean regional integration project, in a context of trade regionalization and globalization, has faced major challenges inherent to the characteristics of such small economies; i.e. economies that are vulnerable to external shocks and highly dependent on larger economies – be they their former metropolis or North American countries. The difficult path to regional integration has since become a solid process backed-up through regional institutions supported by leading countries in the area; as well as a change in the paradigm towards an open regionalism based inter alia on functional intra-regional and public-private cooperation. Economies are now opening to the neighboring Latin-American countries, while grasping the opportunities offered by a "complete" North-South agreement with the EU and other large economies. The objective for the Caribbean region is to achieve both a larger degree of regional integration for a better positioning in the global market and hopefully move from a poke-region to a hub-region status.

In chapter three, **"Strategic Formation of Customs Unions"** ("Formación estratégica de uniones aduaneras"), we analyze the effects of the strategic formation of custom union agreements. The chapter outlines the effects on welfare — for signatory and non-signatory countries — in an international oligopoly model; the analysis accounts for asymmetries in countries market sizes as well as asymmetries in firm costs and the number of firms competing on the market.

We feature a model with four countries in which governments choose their welfare maximizing tariffs. The relevant literature has usually considered models with three countries, which prevents the analysis of strategic behavior regarding the formation of trading blocs. We assume that, initially, countries have not signed any trade agreement, thus tariffs are set non-cooperatively before oligopolistic firms compete in quantities. The other scenarios examined are one in which two countries form a customs union and so set a common external

tariff cooperatively; and another where the remaining two countries also sign a customs union agreement, so there are two trade agreements in place. We also analyze the free trade equilibrium.

Our analysis confirms that customs union formation generates positive effects on consumers and, under certain conditions, also on producers within the union, while it has a negative impact on the rest of the world. We also identify conditions under which all countries may improve with several customs union formation. This exercise provides a simple yet direct explanation to the proliferation of trade agreements when these occur in waves. It is shown that under tariff-ridden trade- the Nash equilibrium usually (but not always) entails two customs unions formation between similar countries and under specific market conditions. However, whenever possible free trade remains the preferred option.

Our final chapter, **"Empirical Study on the Impact of the CARIFORUM-EU EPA on the French Caribbean Outermost Regions"** ("Estudio empírico sobre el impacto del AAE/EPA CARIFORO-UE") undertakes a novel research exercise with a methodology to follow the impact of a specific free trade agreement, the AAE/EPA CARIFORUM-EU agreement, on EU outermost regions (the French Caribbean). The novelty lies in that, while CARIFORUM countries already possess some tools to evaluate the implementation of this agreement signed in 2008, it is not yet the case for the French Caribbean. The agreement was signed after 8 years of negotiation between the EU and the ACP countries (Africa, Caribbean and Pacific), with the objective of fulfilling the WTO reciprocity principle. Until then, ACP countries benefited from a privileged access to European markets but from that moment on they were also required to gradually reduce tariff and non-tariff barriers on European products. The schedule for tariffs dismantling was established for 25 years, which precisely justifies an on-going evaluation and follow-up of the agreement implementation.
We apply a multi-modal model (that can be periodically replicated) through:
- The collection and treatment of qualitative and quantitative data, using surveys and

interviews, from individual private companies and representative public and private institutions;

- The collection and treatment of customs statistics and other data on trade/economics.

As expected, the short period since the signing of the agreement until the present study, along with its actual implementation by most CARIFORUM countries (at least regarding the progressive tariff liberalization) do not allow us to establish any clear impact of the EPA on the French outermost regions, according to our econometric estimates.

However, based on the surveys and interviews carried out with key actors on the ground, preliminary results suggest that such impact is positive; as noted earlier, the agreement has the merit of having brought the French outermost regions closer to their Caribbean neighbours and has awakened a renewed interest in intra-regional business.

Chapter 2

Regional integration: new perspectives and strategies for small developing economies in the Caribbean?

2.1 Introduction

The first countries protagonizing and signing the GATT (cf table I.1) were impulsed by the classical and neo-classical trade theories, such theories advocating the benefice of multilateral free trade (or "multilateralism" as coined here). Nonetheless, upon the GATT 60th anniversary, the World Trade Organization (WTO) issued a relatively mitigated report of the progresses made towards multilateralism and its costs-benefice impacts around the world/on the world multilateral trade system.

An econometric study undertaken across 175 countries over a 50-year long period (Rose, 2004) reveals that there is no proof that [belonging to] the GATT/WTO actually induces trade growth - except under the Generalized System of Preferences (GSP) extended from industrialized (or "Northern") to less developed countries (LDCs) - and that

the acceleration of trade exchanges over GDP growth can be attributed to numerous factors (independently or jointly with the global multilateralization process) such as: gains in productivity, reduction of transport costs, or... the multiplication of regional trade agreements! Years and many critics later, Rose (2011) has reviewed his initial negative findings, but still maintained that despite the fact that GATT/WTO may encourage 'trading links', there still is no definite proof of its positive impact on world trade and welfare. On the other hand, it is undoubtedly the phenomenon of regionalism that has proven to be the predominant trend in international trade even since the first rounds of the GATT.[1]

It has since been commonly accepted that it was the GATT´s article XXIV and its "good conduct code" or principle of non-discrimination which opened the path for the creation, and thereafter multiplication and expansion, of numerous preferential trade agreements of all sorts – whenever the latter complied with certain conditions related to external tariffs and the reciprocity in the advantages granted amongst the signing parties. Indeed the 80s ended with a new international trade panorama comprising inter alia the Single European Act and the opening of NAFTA negotiations, that is the emergence of two major economic groups of nations. In 2014, the WTO registered approximately 400 of such agreements.[2]The mass phenomenon of regionalization has been raising many questions regarding:

- the primary motivations of signatories opting for this type of trade policy instead of a unilateral reduction/suppression of tariff barriers, in the spirit of the GATT Article I;

- the impact of these preferential trade agreements on the world multilateral trade liberalization process or multilateral trade system (i.e. if these PTA, 'stepping or stumbling' stones for multilateralism) ;

- the impact of these PTAs on global and national welfare (that is its economic spillovers on member countries and outsiders).

[1](cf WTO World Trade Report 2011).
[2](Whalley, 1998), (WorldBank, 2000), (WB 2014).

Table I.1 : The GATT (1948 - 1994) and WTO

The *General Agreements on Tariffs and Trade* is an international treaty signed in 1948 and its main objective is to regulate international trade. It opened the path to several international rounds of negotiations, the last of which, Doha (or Doha Development Agenda), has not been fully completed.

GATT Mandate : promote trade liberalization, that is the (negotiated) reduction of (tariff and non-tariff) barriers to trade, following 4 main principles:

- Non-discrimination : The Most-Favoured-Nation clause (MFN) extends to all GATT members the concessions granted to one of them.
- Reciprocity : i.e. the obligation to grant the other party trade privileges equivalent to those received.
- The suppression of quantitative restrictions (quotas, contingencies,..) on the volume of imports admitted.
- Trade loyalty : export subsidies and dumping for example are prohibited.

GATT - Article I - *Most-Favoured-Nation Treatment*: "With respect to customs duties and charges […], rules and formalities […], any advantage, favour, privilege or immunity granted by any contracting party […] for any other country shall be accorded immediately and unconditionally […] for all other contracting parties".

GATT - Article XXIV: The article XXIV provides exceptions to article I and allows for the signature of preferential trade agreements and economic groupings under certain conditions: among which, not raising tariffs against non-member countries (but rather to reduce them) so that the regional agreement may benefit the global multilateral liberalization process.

Ever since its signature in 1948, the GATT has generated numerous negotiation rounds, two of the most prominent being the **Uruguay Round (1986-1994)** and most recently the **Doha Round (2001-..).**

The Uruguay Round led to the creation of the **World Trade Organization (WTO)** in 1995, which takes over the GATT's missions, the monitoring of the GATT's implementation and endeavors to arbitrate over international trade disputes.

Figure 2-1: GATT Articles

	Market integration			Monetary integration	Economic policies integration
	Elimination of (tariff) barriers to trade	Common trade policy	Mobility of factors and capital		
Free trade area (FTA)	×				
Customs Union (CU)	×	×			
Common market (CM)	×	×	×		
Monetary Union (MU	×	×	×	×	
Economic and Monetary Union (EMU)	×	×	×	×	×

Figure 2-2: Different types of preferential trade agreements and their degree of integration

Nowadays researchers specializing on the topic have a mouthful of theoretical argumentation and empirical studies to attempt and answer those questions. As can be easily understood the multiplication and ever increasing variety of preferential agreements signed since the 90s has generated an (impressive) load of increasingly sophisticated literature on the issues surrounding regionalism versus/and multilateralism. [3]It goes then without saying that, be them so-called 'North-North', 'South-South' or 'North-South' agreements, the different types of agreements (and their accompanying measures) reflect different degrees of regional integration – from a mere external tariff reduction (FTA) between 'good neighbors', as Pascal Lamy[4] puts it, to regional economic and monetary policies (MEU) amongst Lamy's 'happy family' - and incur different justifications, impli-

[3]A review of this literature is available under our Chapter II

[4]Pascal Lamy was Director-General of the WTO from September 2005 to August 2013.

cations and impacts for their member countries as well as for the outsiders.

Altogether, the evolution, the localization and the degree of regional integration within existing PTAs are closely related to their member countries characteristics and their ability to access such PTAs. In that regards, ever since the early 90s, when APEC countries coined the 'open regionalism' principle, followers and detractors of that principle have endeavored to find in it another possible explanation to the multiplication and forms of PTAs, especially as far as regional integration processes in small or developing economies are concerned. The present chapter sets a focus on small Caribbean economies and the intra-regional (CARICOM) and inter-regional (EPA, CBI, DR-CAFTA, ...) PTAs they are involved with.

For our opening steps, we ought to review briefly theoretical concepts underlying multilateralism and regionalism (Section 2.2), as well as the panorama of hand-in-hand 'globalization-regionalism' since the first rounds of the GATT (Section 2.3), before analyzing the options lying ahead of Caribbean small developing economies in terms of regional integration (Section 2.4).

2.2 Multilateralism (global free-trade?) and regionalism (partial free-trade?): theoretical concepts

"Broad-based liberalization is in the interests of developing countries." A.O. Krueger (1999)

"Regionalism can be a valuable part of a development strategy, although its contribution depends on the form the agreement takes." Venables (2001)

The uncertain outcome of the Doha rounds of negotiations, jointly with the multiplication of preferential trade agreements (PTAs), have raised concerns about the future of the multilateralization process[5]. Typically, regionalization has been suspected by many

[5] The concepts of 'multilateralism' and 'regionalism' under this study shall refer respectively to: unilateral suppression of barriers to trade; and the existence of international regional or preferential trade

trade experts as a possible cause of trade diversion - following Viner's (1950) principles of trade creation and trade diversion - and obstacle to multilateralization. Others nonetheless view regionalism as a ´stepping-stone' and second-best option to multilateralization, as will shall see in the section hereafter. It is noteworthy that both views are based on a commonly accepted idea according to which trade liberalization is the best option towards economic growth and development.

2.2.1 Traditional theses in favor of trade liberalization (or multilateralization)

Multilateral trade liberalization (or 'multilateralization'), as advocated by the WTO, aims at achieving several advantages and benefits for the countries involved in such process. According to the partisans of trade multilateralism, the liberalization of trade exchanges must necessarily induce an increase in trade flows, economic growth and development, thus an improvement in the welfare of countries taking part in the process through higher export revenues, cheaper and greater diversity of intermediate goods and/or final goods imported, resources (efficient) reallocation, higher productivity and trade specialization (geographical or industrial).[6]

Those theses rely essentially on classical and neo-classical international trade theories – in particular the Ricardian law of comparative advantage (18th c.) and Hecksher-Ohlin factor proportions theory (19th c.) – according to which each country would sooner or later specialize in the exports of its goods registering relatively lower production costs (due to the relative abundance of factors required to produce those goods). On a global scale, such trade specialization would lead to an international division of labour across countries (IDL).

These theories still benefit from an overall acceptance and have paved the ground for most international trade theoretical analysis in the 21st c., as we can tell from R.

agreements.

[6] Lamy (2002), as European Commissioner for Trade ; Baldwin and Freund (2011).

Sandretto´s (2005) assertion that it is "arithmetically impossible" for a country not to have any comparative advantage in any production and thus that all countries should benefit from trade liberalization.

In that line of thoughts, *a causal relationship between trade and economic growth is thus generally accepted*. Theoreticians and policy-makers such as Bhagwati and Srinivasan (2002) set China and India as irrefutable illustrations of how faster growth and poverty reduction can be achieved through greater integration into the world economy, which was especially the case for those two countries between 1980 and 2000. A. Krueger (2012) sustains that the post Second World War economic and trade statistics illustrate how international trade growth is an engine for economic growth. As other trade specialists in that line of thought, they advocate for a virtuous circle in which external tariffs reduction leads to economic growth, which in turn lowers further down tariff barriers. They nonetheless emphasize the need to adjust domestic policies in order that gains from trade be effectively converted into economic growth and progressive poverty reduction. There still exist numerous theoretical and empirical research works, as Vamvakidis recalls (1998), showing that rapid economic growth was registered in developing countries following their opening to international trade in the 80-90s.

A. Krueger does not however deny the drawbacks of international trade openness but still believes that the pursuit of the global common or public good should prevail over national or individual interests.[7] According to A. Krueger and her peers, the reallocation of resources resulting from a multilateral elimination of tariff barriers is a necessary evil for the sake of global economic welfare.

SDCs and trade globalization

It seems logic that the drawbacks of trade liberalization weigh more heavily on SDCs. Krueger arguments however that, in the aftermath of the IIWW, even SDCs not hav-

[7] A. Krueger defines a 'public good' or 'common good' as an international economic system free of any barrier/obstacle to trade.

	% fall in tariffs, 1980 - late 90s	% increase in trade / GDP, 1980 - late 90s	Annual growth pc income 1960s	Annual growth pc income 1970s	Annual growth pc income 1980s	Annual growth pc income 1990s
Globalizers	64%	92%	1	1.7	2.6	5.3
Non-globalizers	29%	1%	2.2	2.8	0.2	-0.8
High income		50%	4.5	3.4	2.5	1.9

Source: Dollar and Kray (2000).

Figure 2-3: Growth and trade performance of the globalizers

ing "contributed to multilateralism" but rather the contrary (as they raised their tariff barriers to protect emerging industries) did "illegitimately" benefit from the growth in world trade, as "free-riders", and still could have reaped more benefits from said global trade growth without their protectionist policies. She actually blames the reduction in their shares of the global market on their protectionism, despite the fact that those SDCs had registered an increase in terms of economic growth (derived from the global trade growth).

Venables (2001) (2001) adds the empirical contribution made by Dollar and Kraay (2000) to the plea in favor of multilateral trade openness. The latter go even further than A. Krueger in criticizing some SDCc protectionist policies. They classify SDCs under two broad categories: SDCs open to multilateral tariff reduction ('globalizers') and those refraining from it ('non-globalizers'). They oppose an acceleration of economic growth amongst the 'globalizers' to a slow down followed by economic recession amongst 'non-globalizers'.

Growth and trade performance of the globalizers

Krueger, on the other hand, also warned about the negative back-lashing of an alternative way to multilateral liberalization, inter alia in terms of retaliations and loss in market shares, as mentioned earlier.

In that line of consideration and beyond, Fontagné and Mimouni (2002) built the Trade Performance Index (TPI) in an attempt to measure more precisely the impact of trade opening on 'globalizers' trade performance (accounting for gains and losses in international market shares, degree of export diversification, as well as the factors behind those changes) and economic development. This trade performance measuring tool appears adapted to SDCs and did reveal that overall trade development was positively correlated with economic development, but that some LDCs had "missed the full benefit of openness" (Fontagné & Mimouni, 2002).

Overall, despite the fact that classical and neo-classical theories have paved the way to the international trade negotiations ever since the GATT and the WTO liberalization principles thereof, such theories have been under scrutiny also as they do not seem to quite predict several features and outcomes of trade liberalization, even among developed economies, as we shall see in the following sections.

2.2.2 Limitations of classical and neo-classical trade theories

At this stage, despite the virtues attributed to trade liberalization in terms of economic growth, it seems important to distinguish between a trade-growth causal relation and a trade-growth correlation,[8] and also appropriate to question what type of trade liberalization – associated to which domestic policies – is likely to contribute to real economic growth.

Several trade specialists, among whom Jagdish Bhagwati, go as far as pointing the finger at the potentially impoverishing character of [trade-led] growth whenever certain conditions are met: strong exports, a higher propensity to import (on export-generated

[8]Douglas A. Irwin (2002) even reports cases of countries, such as Argentina and Canada, experimenting high economic growth during the late 19th c. while applying high tariffs to raise government revenues in specific industries; which clearly establishes correlation but not necessarily causal relationship between tariffs and growth. The corollary is thus worthy to be considered, especially since a model of regional integration behind high external tariff walls was pursued by some countries in the 1960s and 70s but has been abandoned as a failure (Venables 2001).

Rodriguez and Rodrik (1999) have found positive correlation between trade and growth but this study has received many critics (cf Venables p.7).

revenues) but with a potential incapacity to generate enough exports revenues to compensate for the rise in imports (which was witnessed in some African countries exporting mainly primary goods). Others like Perez and Ali[9] (2007) use a leader-follower trade model and also focus on export-revenues elasticities and import-revenue elasticities with regards to the rest of the world to warn that free trade may accentuate the disparities in terms of growth between countries and radically refute the comparative advantage principle and the benefits of free trade for developing countries.

Classical theories in favor of trade liberalization, based on the principle of the classical Ricardian perfect competition case, have also generated numerous critics and enrichments to the first theoretical models to include new considerations related to factors, technologies and industrial structuration of markets behaving under perfect or imperfect competition.

We shall not dwell into all the progresses made here, but rather mention critics stemming from the lack of international economic convergence (despite being predicted by the neo-classics) and the possible protectionist implications of the HOS model, in:

- growing disparities between industrialized countries and the South, often attributed among other factors to a "wrong specialization" of the South confronted to major monopolistic/oligopolistic industries;

- an HOS-type industrial specialization – especially in regards of factor retribution (labor for example) and the choice of specializations in some industries, to the detriment of others, causing growing disparities at the national level (wage gaps, unemployment, ...). Such disparities seem to justify protectionist pressures exerted, within industrialized countries, by some low-skilled labour-intensive industries (agriculture, mining, ...).

Before the modern reality of the international trade system, Baldwin and Freund (2011) define three reasons to impose trade tariffs rather than adopting multilateral liberalization:

[9]Respectively, in 2007, from CEPAL Economic Development Division and T&T Foreign Affairs Ministry.

(1) = Terms of trade considerations may induce countries to impose tariffs on imports to increase domestic demand for local production;

(2) = Political constraints stemming from traditional industrial geographic concentration and historical factors;

(3) = Developing countries rely heavily on tax revenues.

According to Baldwin and Freund, all 3 reasons to raise tariffs can be dropped off with PTAs:

1st- countries would partner up with the country/ies allowing gains from reciprocal tariff reductions (Ricardian specialization);

2nd- binding bilateral agreements lock-in ´domestic reform´ and reduce pressures from special domestic interests;

3rd- North-South type agreements usually come with "provisions to help [developing] countries adjust to revenue loss".

PTAs can thus and nevertheless be seen as serving national interests (vs multilateralism's 'common good') and potentially violate the MFN principles.

How then to position oneself in the trade-off between A. Krueger´s neoclassical approach of «common good superior to national interests» and domestic economic interests relying on 'welfare-maximizing tariffs'?

Recent development in international trade theories allow to estimate better the adjustment costs (and therefore impacts) related to different types of trade specialization.

Indeed, in a context of imperfect competition, specialization choices are made rather at the firm level – than at the country level – in which case, we witness intra-industrial trade flows of similar products between similar economies (and thus such trade flows do not originate so much from classical comparative advantages). This type of industry-level trade specialization has actually been one of the key features of the European regional integration process (Fontagné-Freundenberg, 2000). A theoretical fundament for this was provided by Helpman and Krugman (1985) who addressed this limitation

of the Ricardian theory, by introducing the notion of integrated equilibrium, associating imperfect competition and intra-industrial trade of similar products (essentially between (similar) industrialized countries, implying industry-level specialization) together with an explanation of trade between dissimilar economies (country-level specialization).

As far as the estimation of the adjustments costs related to each type of trade specialization is concerned, Fontagné and Freudenberg show how specialization resulting in intra-industrial trade conveys lower adjustment costs than those implied in inter-industrial trade specialization. This partly explains significant trade flows across (similar) industrialized economies and the multiplication of PTAs across those. It thus appears necessary to estimate the impacts of (multilateral or regional) tariff liberalization not just in terms of Vinerian trade creation/diversion, but also in terms of trade policy adjustment costs.

Least Developed and Small Developing Countries (LDCs/SDCs)

In view of the low levels of development registered by small economies and their situation of economic and trade dependence (vis-à-vis their former metropolis or large economies in general), the debate initiated in the 19th c. about the trade-growth relation has since the 50s been enriched with several postulates, one of which the LDCs' terms of trade deterioration.

In the 1950s, Prebish and Singer asserted that trade openness induced LDCs into an heterogeneous modernization and persistent specialization in traditional (primary) sectors/industries registering a low productivity (thus no increment in factor revenues, e.g. Labor, but rather price reduction). Opposed to this phenomenon is the trend in industrialized countries benefiting from trade openness through an homogenous modernization process and production diversification. Thus a general tendency to the deterioration of the terms of trade between primary-products net exporters and manufactured-products net exporters.

Thus, the theses sustaining international trade as an engine for growth would only

hold under certain conditions: that richer countries have a high propensity to import primary products from LDCs and/or that LDCs accelerate the pace of national technical progress and increment their domestic productivity. That has not really been the case over the past decades, since Northern countries have on one hand reduced their imports in food products and substitute traditional primary products (and inputs) by synthetic products.[10] Actually, during the Doha rounds of negotiations, LDCs that (used to) benefit from a privileged access to European markets expressed their opposition towards the multilateral liberalization of European agricultural markets and a subsequent erosion of their preferences. Such tendency has commonly been coined as 'preference erosion stumbling-bloc logic'.

That is certainly not the only cause for the failure of classical and neo-classical trade theories, as far as growth redistribution through trade is concerned. If we take into account the evolution of trade and economic policies in LDCs since the 50s, we can spot different ways of treating that problematic. In Caribbean SDCs, for instance, several governments willing to stimulate technical progress and productivity[11] opted for the attraction of FDI massively, in key economic sectors (energy in T&T, Tourism in Barbados, etc...). Others did largely bet on import substitution policies to favor local industrialization. Some endeavored both at the same time. However, the mitigated success -or even failure sometimes - of those types of policy, in terms of spillovers on domestic economies, led the same countries to a change in paradigm and foresee different ways towards development (one of which being to take the path of regional economic integration, following the European model).

[10] Only a few Asian LDCs managed to make a qualitative productivity leap, for example by importing new products from industrialized countries to generate progressively a local production of the same which allowed to progressively import the primary goods from lesser developed countries.

[11] To be noted, as Crusol indicates, ("Les îles à sucre », 2008), that the post-colonial sugar industry offers a good example of how important technological transfers from former metropolis can be. Such transfer allowed for a modernization of that industrial sector which benefitted the former colonies, at least for a while, until the shift in the world demand for this type of agricultural product.

Table I.2 : Small Developing Countries characteristics

Although each SDC[1] is unique and dispose of specific socio-cultural, historical or economic traits, it is increasingly admitted that they share certain specific characteristics that justify specific development strategies (Commonwealth Secretariat/World Bank Joint Task Force on Small States, 2000):

- Distance and remoteness
- Trade openness
- Vulnerability to natural and environmental disasters
- Poor export diversification
- Poverty
- Limited institutional capacities

Put together, all or some of those characteristics lead to secondary effects such as : a high volatility in revenue trends and low FDI attractiveness.

The Task Force report (WB 2000) identifies several challenges to be addressed by SDCs, among which the need to adopt new approaches towards regional cooperation and aid from international development donors, in order to:

- Reduce incomes volatility and vulnerability to natural risks ;
- Ensure an economic transition to face globalized world trade system ;
- Strengthen their institutional capacities ;
- Take up the challenges and opportunities stemming from globalization (supporting key industrial sectors for a better positioning of those SDCs on the world market)

[1] The World Bank registers as small states, countries with a population no superior to 1.5 million

Figure 2-4:

2.2.3 LDCs/SDCs: Regionalism as a stepping stone towards multilateralization?

"Effective participation in the world economy is an important – probably necessary – element of a successful development strategy. [But] Should a developing country's strategy focus on the world as a whole, or is there scope for concentrating on integration with selected regional partners?" Venables (2001)

For Southern countries, regionalism appears as an intermediate formula or even an obligatory transition towards multilateral trade openness, provided it is adapted to their specific economic issues. In the 50s, economic and trade panorama in LDCs (and SDCs in particular)[12] favor the emergence of new development economic and market integration theories. As Suarez (2009) points out there are now many heterogeneous theses regarding the « objectives and potential effects » of regional integration among LDCs. Such theses are enriched from new reflections stemming from the contribution of new trends in development economics introducing new variables to be taken into account: FDI, unemployment, allocation of resources, an equal distribution of benefits from customs unions among members, slow development of industries due to import substitution policies (i.e. positive trade diversion).

Ultimately however, regional integration cannot be the goal in itself for LDCs, as it cannot automatically resolve all the socioeconomic and development issues they face. Nonetheless, regional integration is appealing to LDCs for several reasons:

- Deeper regional integration can be achieved faster (and at lower adjustment costs) than external trade liberalization;

- Regional integration could help LDCs exploit better their comparative advantage and could be used as a stepping stone towards global trade liberalization

- Regional integration provides a potential gain to LDCs in terms of the rationalization of production structures.

[12] The World Bank registers as small states, countries with a population no superior to 1.5 million.

Thus regional integration can potentially impulse a better positioning of LDCs on world markets, as long as it is accompanied with significant economic transformations among member countries. In that regards, the form PTAs take is crucial: the choice of partners is important and so are the degree and type of regional integration. Those obviously depend on the characteristics of member countries.

4 traditional approaches to regional integration in LDCs

Types of regional integration	Characteristics	Applicability
1. Market integration	Protectionnist policies and high CET	Market integration ideally requires pre-existing intra-regional trade and cooperation (as in the European case), similar levels of economic development (otherwise the regional integration gains are inequally distributed). This approach is often rapidly dismissed in LDCs, as it poses specific problems linked to the liberalization process (negotiations, pace, etc.)
2. Complexe integration	Aiming at deep structural adjustments to economic enhance growth	In *industrialized countries*, usually based on pre-existing interdependence and high technologies. In *LDCs*, must tackle heterogenous levels of development through major structural adjustments to promote growth. Considerations no longer regard exclusively trade creation or diversion but also socio-economic aspects. A successful regional integration requires (Trade, industry, currency, tax-related) policy harmonization, efficient regional institutions and welfare compensation schemes for lesser developed members; all of which imply state interventions.
3. Functional approach	○ Integrated production towards local development ○ (Other) measures to promote development ○ Greater global political positioning	Emerged in the 70s, following several failures in regional integration processes among LDCs and an increasing influence of multinational firms. Although common aspirations lie in potential regional integration gains from regionally integrated production processes and common policies vis-à-vis the ROW, the fear of losses in national sovereignty make is a hurdle to this process.
4. Structural approach	○ Policy harmonisation ○ Expansion of new economic activities and export diversification ○ State intervention in key sectors	This approach combines economic, politic and institutional factors In LDCs, it requires : policy harmonization, development of new economic activities and export diversification, public intervention in key sectors; and thus common infrastructures and financing which would require negotiating with international donors and (according to certain trade specialists) maintain high tariff barriers to generate tax revenues during an adjustment period.

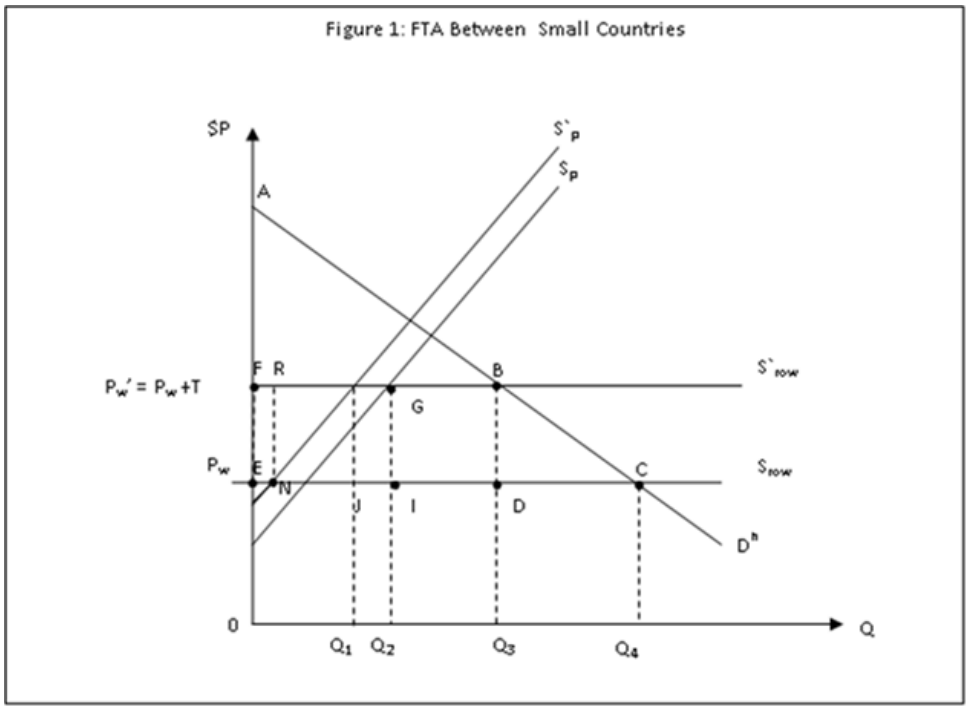
(Source: Suarez, 2009)

South-South or North-South PTAs ?

As mentioned supra, the type of PTAs is also a crucial element to be taken into account in order to gauge the impacts of regionalism not only in terms of (national and global) welfare, but also in terms of its effects on the multilateralization process, still openly pursued politically but whose progresses are fairly mitigated in practice.

Through an empirical model and defining different notions of openness, Vamvakidis (98) shows that small economies are likely to grow faster when they integrate PTAs with larger and more developed economies. Also when he tested for the impact of five regional trade agreements during the 1970s and 1980s – most of which among LDCs and SDCs - he found that none led to faster growth.

In a similar vein, Schiff (97) points the finger at the negative impacts of S-S FTAs among SDCs, in terms of losses in customs tax revenues and efficiency, and illustrates (Figure 1 below) the case where the (small) home country deters from free-trade and imposes a MFN tariff (T), prior to joining in a FTA with a small partner. As depicted, partnering-up with a small country, the home country would clearly gain less tariff revenues (BDIG) than if it imposed T on all imports (in which case its tariff revenues would be BDEF). Under free-trade, however, the home country's welfare would be higher, since in that case consumer surplus would be ACE.



Source : Hosein (2003), Schiff (1997)

Neither does Venables (2001) trust South-South agreements to offer as many opportunities to LDCs as would North-South, as he believes richer LDCs within South-South PTAs would suffer from trade diversion and revenue losses by importing goods from a partner likely to be less efficient than the rest of the world. (To be noted however that Shiff (2003) asserts that in S-S agreements it is the poorer countries which are likely to import manufactured products from the richer ones which implies a transfer of tariff revenues from the poorer to the richer). In Venables´ logics, South-South agreements are most likely to induce member countries to specialize in the 'wrong' industrial sectors, that is the specialization corresponding to the trade relationships engaged with Southern member countries that would supposedly be different in trade relationships with Northern countries. Venables also suggests that S-S agreements may be stumbling stones for multilateralization if members of such PTAs get locked into their ´wrong´ industrial spe-

cialization choices (they would not be able to exploit their comparative advantage under global free trade).

Other trade experts like Sanguinetti (2009) and Mayda (2008) have echoed Venables´ assertion that LDCs having an 'extreme' comparative advantage are deemed to suffer from South-South agreements and should sign up for N-S agreements which are likely to have a more positive impact in terms of economies of scale and comparative advantage, thus opening the way to "fuller participation in global production networks". They leave as a viable option, the creation of apparent S-S agreements with the integration of at least one larger/developed country.

Kose and Riezman (2000) build a general equilibrium model to show that SDCs may indeed experience great welfare losses if left out of a CU formed by larger countries (and lesser losses if left out a FTA formed by larger countries). However, they also show that SDCs would be better off out of such FTA, rather than within and would be even better off under global free trade rather than within a FTA with a larger country. They thus imply that the type of agreement is a key determinant to whether a SDCs should partner-up with a large country over free-trade.

Of particular relevance to us, is the work of Schiff (2003) studying the impact of several regional trade policies on SDCs. He sheds some interesting light on the potential outcomes of S-S agreements, and suggests that if LDCs decide to join in such types of RTA they may still benefit from them, but the SDCs within the group are most likely to experiment a loss in welfare, unless the S-S bloc lower their external tariffs to guarantee higher welfare and engage in S-S cooperation in regional public goods.

We ourselves have built a theoretical 4-country welfare-maximizing tariffs model to study the impact and attractiveness of customs union creation under a context of imperfect competition (cf Chapter II). We found that: *the partner country(ies) market and industrial size or level of development do matter,* but that too much asymmetry between potential partners (in terms of market size or productivity) is not conducive (even) to a CU. Symmetrical market sizes and marginal costs of production, in turn, are conducive to

union creation and even global free-trade. Interestingly enough, we found that the option of several Southern countries partnering up with a Northern country is rather unlikely, no matter whether potential partners agree on a 'socially-correct' or a 'business-oriented' regional integration policy regarding the welfare redistribution of the benefits gained from the union. Thus to us, theoretically, customs unions still appear more appealing between relatively symmetric partners, and even though N-N agreements admittedly profit more to their members than S-S members, N-S agreements are not necessarily the panacea for SDCs confronted to a much larger economy. Our model also highlights the potential influence of producers' interests on their government trade policy decision making.

In any case, we also acknowledge that, no matter how well-crafted theoretical models may be, real world policy-makers (especially in LDCs and SDCs) do not usually add up consumer surplus to the public budget and still endeavor to generate direct revenues (or limit their losses) from (domestic or foreign) private firms, public infrastructures, etc.

It goes then to say that several determinants influence LDCs and SDCs choices in terms of regional integration but also that, even though real life situations are far more complex than theoretical or even empirical studies, they still point to the idea that such countries are better off integrating regional integration processes, under properly tailored conditions, which may eventually be stepping stones towards profitable multilateralization. [they don't seem to have a choice anyway] The real question remaining is what type of regionalism and what accompanying political measures to choose.

2.2.4 Multilateralism Vs Regionalism, and the winner is?

"Multilateralism is also understood as ´three or more actors engaging in voluntary (more or less) institutionalized cooperation governed by norms and principles, with rules that apply (more or less) equally to all, [...] without regard to the particularistic interests of the parties or the strategic exigencies that may exist in any specific occurrence ´"[Dookeran-Malaki, 2013]

At this stage, it seems obvious that if all GATT signatories were fully convinced of the

benefits of immediate multilateral liberalization, they would engage more actively in that direction and would face courageously its potentially perverse effects on their domestic economy, which is not the case! As a matter of fact, the success of GATT´s article XXIV – versus its article I and the MFN principles – as made obvious by the multiplication (proliferation according to some) of PTAs leads to believe that *regionalization* (rather that multilateralization) seems a better option to many, as far as its impacts on domestic welfare are concerned. Another justification for the preference towards regionalization may stem from the lack of trust in the international operators´ bona fide (good faith) and the fear of the potential 'free-ride' attitudes as MFN principles are adopted by some countries while others benefit from markets expansions without undergoing any reciprocal commitments (cf A. Krueger´s quarrel among others).

As far as the impact of *multilateralization* on domestic economies is concerned, Sandretto asserts that if we take into account international comparative costs (instead of absolute costs), industrialized countries should not fear competition from low-wage countries. However, the situation of the South in the face of globalization illustrates the limited explanatory capacity of classical and neo-classical theories based on the "logics of differences" (in terms of costs, factor endowments and technology). According to these theories, trade should take place mainly between dissimilar economies and industrial specialization based on comparative advantages would eventually lead to an optimal distribution of revenues.[13] Which is not necessarily the case!

Following the theoretical logics exposed supra under section I.1, PTAs are commonly considered only 'second best option' (after global multilateral free trade): either partial trade liberalization (i.e. only across a group of countries or 'region') as an alternative to or protection from global free trade; or partial liberalization as a way to prepare for wider multilateral liberalization.

As is well known, the pioneering works of Viner (1950) - and Meade (1955) - established the foundation for the evaluation of PTA impacts on the criteria of trade creation

[13] Also see Bhagwati-Srinivasan 2002.

or diversion, in a context of (Ricardian-type) perfect competition. Viner argued that if unilateral tariff reduction induces trade creation and increases global economic welfare, PTAs on the contrary may cause revenue losses. The reason invoked by Viner was that tariff reduction within customs unions may diverse trade flows to the benefit of a member country that happens to be less competitive than an outsider country, which implies losses in terms of consumer surplus and production efficiency (see Winters, 1996). Such trade diversion would evidence a type of protectionism aiming at safeguarding member firms against more efficient foreign firms.

An abundant literature on the subject adopted this theoretical inheritance as Viner´s theory was revisited and declined in many theoretical works shedding light on a large variety of potential effects of regionalism, varying according to the types of agreements and member countries characteristics, at the macro- and micro level. Many of those works found that PTA formation led to customs tariff reduction, which promotes the idea that PTA contribute to global tariffs reduction and hence to the global multilateralization process.

Aside from the specific literature on customs unions formation and Vinerian issues, most of the theoretical works studying the impact of PTAs –more or less sophisticated as they endeavoured to integrate countries and industries characteristics, integration policies, etc. - can be classified under other 3 main areas of study:

1. Economic welfare (for member countries, outsiders and globally)
2. The process of multilateral trade liberalization and the world trade system
3. The particular case of LDCs

We shall mention only a few of the relevant works for our purpose here since we offer a more extensive review of such theoretical literature under our Chapter II. In any case, a review of such literature can be found in Panagariya (2000) and also Whalley (1998) on different types of regional agreements and their political and theoretical foundations/justifications.

1) **On the impact of PTA formation in terms of welfare**, Krugman (1991)

"Is Bilateralism bad?" probably marks a turning point in the literature on that subject, especially because the late 80s early 90s witnessed a major spread of regionalism. In these works, Krugman integrated some developments in international trade theory regarding imperfect competition and developed a tariff-optimization model on trade in differentiated products, in a context of sequential formation of customs unions, to study the impact of regional integration on global welfare. Krugman´s results, according to which global welfare is maximized under free trade and at its lowest level when the world comprised only three economic blocs while welfare increased beyond that number, was largely reproduced and criticized a posteriori.

Yi (1996, 2000) also examined the formation, expansion or merger of CUs and their impact on member (MC) and nonmember countries' (NMC) welfare and found that the formation of a CU reduces outsiders' welfare and that expansion or merger of CU worsen NMCs' welfare situation. He estimated that world welfare is higher under a single 'grand customs union' and goes on to consider whether that can be an equilibrium outcome. In order to do so, he distinguished between two possible rules governing the formation of a CU: Open Regionalism (under which NMC can join without the consent of MC) or Unanimous Regionalism (under which NMC cannot join without prior consent of existing members). Not surprisingly he found that under open regionalism, a 'grand CU' is the Nash equilibrium outcome, while under unanimous regionalism equilibrium is reached with two asymmetrically-sized CUs (which seems to fit with the general understanding of North-South trade relationships).

2) As far as **the impact of different forms of regional integration on the global trade liberalization process** is concerned, the underlying question is whether PTAs will eventually lead to multilateralization or if the Nash equilibrium will be the 'permanent' existence of PTAs.

As mentioned earlier, both the type of PTA and the choice of partners are important to determine the effects of PTAs on the multilateral trade system: either as a preparatory phase towards multilateralism (stepping stone) or as stumbling stone.

Krugman's (91) being also a key reference on that subject, several authors, such as Krishna (1998), have gone further into his line of research and analyzed the effects of free trade areas formation on multilateralism, through a multi-country oligopolistic model, in which only producer interests matter to trade policy makers. Thus, for member governments, the more "trade diverting" the agreement the better. Surprisingly enough, under this setting, the rest of the world finds such arrangements satisfactory since they still enjoy an increased access to the new-union market driven by lower external tariffs, unless of course they estimate their producers could gain more by suppressing their own trade barriers and encouraging multilateral liberalization.

After reviewing the works of several authors who endeavoured to demonstrate that formation or enlargement of trading blocs increases the incentives of nonmember countries to form a global trading bloc (Baldwin 97, Krishna 98 and Levy 97 , for eg.), Yi (1996b, 2000) warns that PTAs – as opposed to CUs - tend to induce free-rider behavior in non-member countries who would choose to export to member countries fixing lower external tariffs, while they would still benefit from high external tariffs protecting their domestic economies. In which case those non-members would not prefer free-trade over PTAs. On the contrary, Yi sustains that the formation and expansion of CUs operating under 'Open Regionalism' principles should eventually lead to global free-trade.

Finally and wrapping-up on the question of regionalism being a stepping or stumbling stone to multilateralism, Baldwin and Freund (2011) provide a review of the theoretical and empirical literature and classify stumbling-bloc and stepping-bloc logics under:

Stumbling-bloc logics:

(1) 'Preference erosion' (or what they qualify as the exploitation of excluded nations, due to insiders' veto option – this is known as Unanimous or Closed Regionalism);

(2) 'Goodies-bag' (or what is in the agreement for members. N-S agreements look appealing to SDCs because of market expansion and development incentives, while for industrialized countries, they may convey the fulfilment of post-colonial development policies (EU) and/or global security policies);

(3) 'Cherry-picking' (HOS-type argumentation about intra-industry trade and interindustry trade specialization, among industrialized partners).

:*Building-bloc logics*

(1) Juggernaut (or trade liberalization among a few carrying incentives towards wider liberalization);

(2) Frankel and Wei Momentum (complementary to the juggernaut: PTA is seen as a partial liberalization trial before engaging in further opening);

(3) Kemp-Wan Theorem and the domino effect from the formation of a single bloc that would impulse worldwide free trade, if certain conditions are fulfilled in terms of international lump-sum transfers and commodity taxes and subsidies;

(4) Veto-avoidance logic (vetos or 'unanimous regionalism' are only applicable for one´s own trade bloc and thus cannot avoid the multiplication of other PTAs which would lead to the elimination of tariffs globally).

Baldwin and Freund adopt the view that the world trading system is mainly characterized by hub-and-spoke trade blocs (derived from unanimous regionalism principles) and even though partner countries would fear preference erosion, they would also engage in spoke-spoke trade blocs as a response to a possible hub-and-spoke expansion. They recommend (open) regionalism as a building bloc towards multilateralization and deep integration as a path towards (national and hence) welfare-improving regionalism (deep integration would prevent the traditional costs of PTAs in tariff revenues and trade diversion).

3) As already evoked under I.3, **a more recent trend in the literature has been focusing on specific trade issues affecting LDCs, and SDCs in particular**, as it is commonly admitted that they differ from other economies, for numerous reasons.[14]

Notwithstanding what we mentioned so far under this section, PTAs (especially North-South agreements) are considered by some to be an effective mean to develop

[14]Schiff (2003) points out the WTO (2001) declaration to specifically examine trade issues related to small economies.

some lower developed regions, as Venables (2001) recalls. The EU even estimates the « costs of non-integration » and advocates for regional integration "as a tool to benefit from the advantages of globalization" and encourage growth in lesser developed countries (LDCs)[15] , among which the ACP countries [African-Caribbean-Pacific][16] .

PTAs could guarantee their LDC members benefits from trade liberalization such as: a better allocation of resources and production factors; economies of scale derived from market expansion; competition emulation leading to higher competitiveness before facing world markets competition; along with a increased power of negotiation, etc..

It is on these premises, that , as Lamy (2002) recalls, the [American] Southern cone has been a 'trial laboratory' for different types and degrees of regional integration (ranging from the good-neighbors to the happy-family type) and ever since the 90s, many Southern countries have decided to walk resolutely towards achieving the "Open Regionalism" concept coined for APEC countries.

So, multilateralism or regionalism?

At the end of the day, partisans of multilateralism still argue that even though regional trade agreements undoubtedly promotes trade growth, they may induce negative effects on (global) welfare and the world trading system, posing mainly two threats: trade diversion (hence lower global welfare) and obstacle to multilateralism; the last threat seemingly being to be feared the most as it would shake the GATT's grounds. No consensus however has ever been reached on that.

Trade specialists advocating for regionalism for different reasons exposed supra are nonetheless aware that regionalism is a 'good solution', as long as certain conditions and rules are followed, inter alia: negotiate binding external tariffs (that they may not be raised after PTA formation but rather be lowered on a multilateral basis); redefine or adjust N-S agreements (with a clear purpose to foster development); open regionalism. Finally, they also acknowledge, as Lamy (2002), that regionalism tends more to foster

[15] COM (1995) 219 final.
[16] COM (2008) 604 final/2.

About Open Regionalism

Since 1989, APEC countries (N-S agreement) have opted for the path of 'Open Regionalism' (OR), which is broadly characterized by: flexible relationships between countries, open access to PTAs, intra-regional tariff liberalization (generally associated with/leading to multilateral tariff reductions), trade facilitation measures to accompany tariff liberalization.
LAC countries also decided to bet on open regionalism in the 90s.

Reynolds, Thoumi y Wettman (1993) were the first scholars/academics/trade specialists to coin the OR as '*a set of dynamic markets fully integrated to the international economy through the progressive removal of barriers to economic exchange plus proactive measures to increase social access to the modern market*'.

ECLAC (1994) then defined OR as ' *a process of growing economic interdependence at the regional level, promoted both by preferential integration agreements and by other policies in a context of liberalization and deregulation, geared towards enhancing the competitiveness of the countries of the region and, in so far as possible, for a more open and transparent international economy.*'

According to Girvan 2010, Open Regionalism serves two ideologies at once: protectionism and free trade, since it promotes both closer and more efficient intra-regional relations as well as tariff liberalization with third countries. But according to some trade experts (like Schiff, 2003) Open Regionalism is "little more than a slogan" or a manifest of good intentions.

Figure 2-5: About open regionalism

cooperation between member countries while multilateralism is obviously more geared towards fostering competition.

The same Lamy advocates for a consensus on the organization of the world's neighborhood, by combining both regionalism and multilateralism, instead of having to choose either one or the other (Pascal Lamy, 2002).

It still remains that LDCs, and SDCs specially, ought to choose carefully the type of regional trade policy they wish to implement in order to actually reap off the benefits of greater integration into the world's economy.

2.3 The Phenomenon of Trade Globalization/ Regionalization since the GATT

2.3.1 Brief panorama of international trade

Even though it is commonly heard that the signing of the GATT in 1948 has in itself induced relatively few progresses towards multilateral global free trade, the WTO has estimated that customs tariffs have been reduced progressively (divided by 10) –especially after the Uruguay Round- and that world trade has been growing ever since (multiplied by 27, while world production was only multiplied by 3).[17] The causes lying behind tariff reduction and trade growth are still under scrutiny, but the fact remains that there has been growing exponentially from the 1950s onwards: international trade flows accounted for a mere 2% of world GDP in 1800 and 5% in 1950 ; while in 2000 they reached 20% of world trade, which implies that GDP grew 8 times slower than trade.

Trade in services is also estimated to have grown even more rapidly than trade in merchandises, up to approximately one-third of total trade in both goods and services.Tariff reduction appeared first and foremost in industrialized countries manufacturing sector. It's only *from the 80s onwards* – with the Uruguay rounds of negotiation – that less

[17]Source: WTO, Word Trade Report 2007.

Graph 2.1: World exports of merchandises and GDP, 1950-2009,
yearly variations in % (Based on the WTO World Trade Report, 2010)

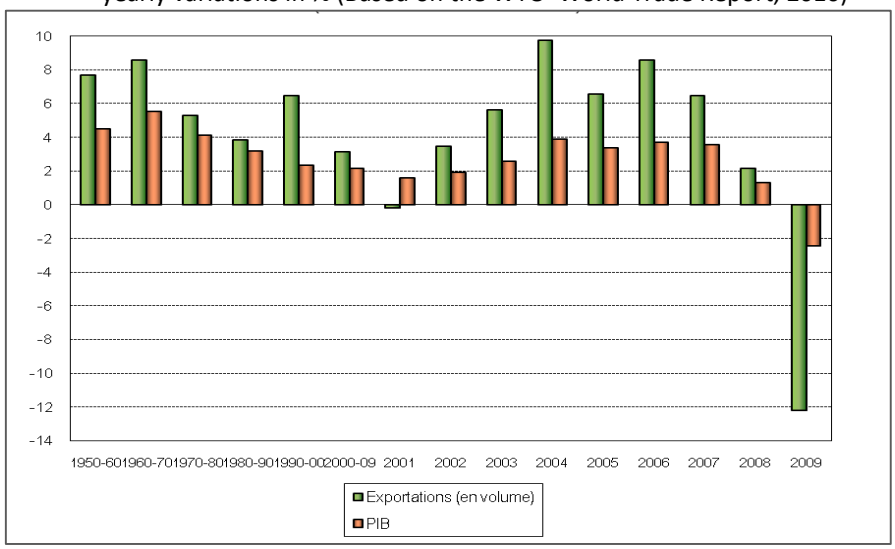


Figure 2-6: World exports of merchandises and GDP

industrialized countries (many of which had just recently reached their political independence) started to participate actively in the GATT's rounds of negotiation and adhered to significant tariffs reduction and to the progressive elimination of non-tariff barriers to trade.

Following which, *the early 90s* witnessed an accelerated multiplication of regional trade agreements, accompanied with an important growth in world trade of merchandises. (World GDP went on growing but at a slower rate than in previous years).

If we look at current trade accounts since the 90s, we observe an increasing disequilibrium between countries registering trade surplus (East Asia, some OECD countries, oil exporters and some emerging countries) and those a deficit (USA, other OECD countries, ..). The WTO 2007 World Trade Report explains the growing disequilibrium to the integration of capital and financial services markets.

Those disequilibrium in trade current account balances, the US deficit in particular, are thought to have indirectly contributed to the growth in the global trade of merchandises: the US propensity to import surpassing their capacity to finance those imports on exports revenues, US trade partners (especially China) chose to accumulate future credits while benefitting from advantageous investment opportunities.

During the 2000 decade (see Graph 2.2), world trade and GDP experienced significant fluctuations. Following the 2000 boom (linked to NTIC), occurs the 2001 "technology bubble burst", leading to a decrease in world trade of merchandises and slower GDP growth.

2004 and 2006, on the contrary, register record growth in trade (and GDP to a lesser extent : +3,7% in 2006, for instance). In 2006, the value of world trade of merchandises increased in 15.4%, reaching US$ 11,670 billion (for an approximate 8% increase in volume). This trend was even more noticeable in LDCs (with an approximate 6% growth in GDP over several consecutive years), which is partly explained by a significant inflation in world prices of minerals, metals (+56%), energy (+20%), agricultural and agro-food

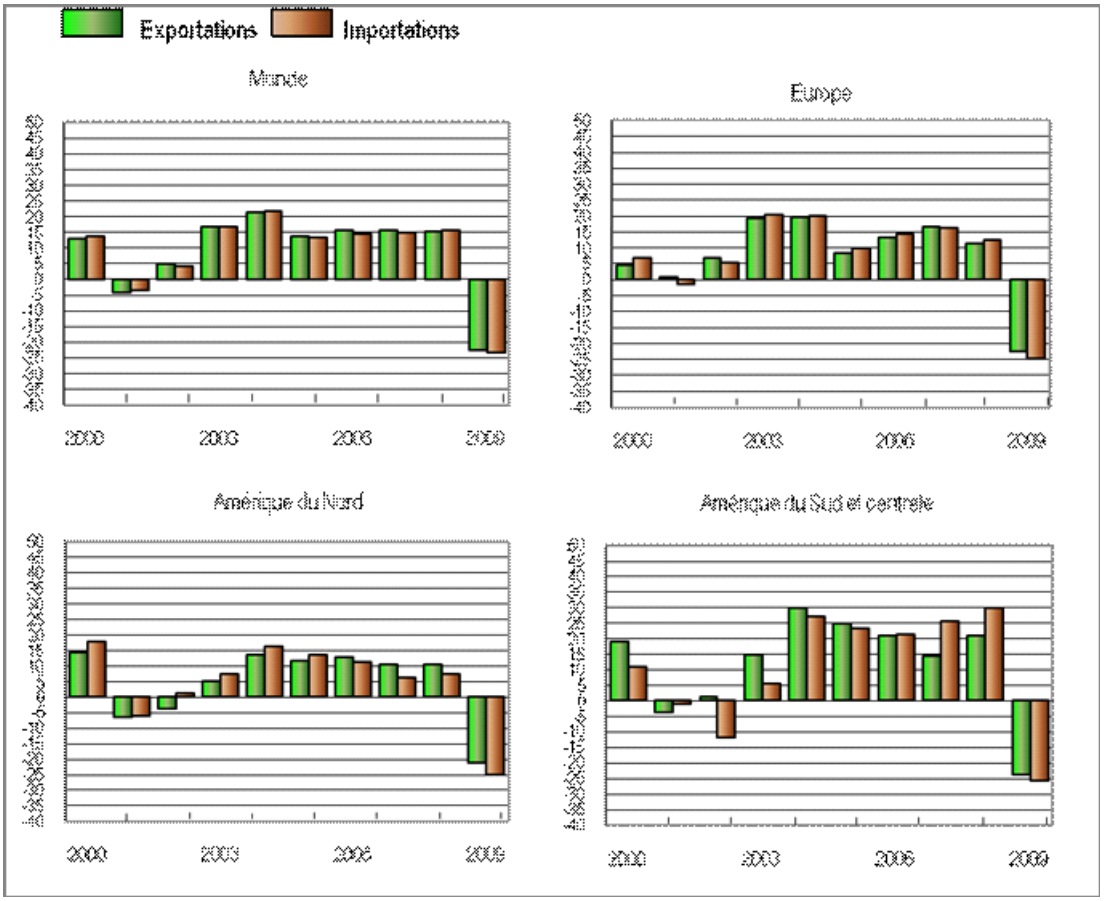


Figure 2-7: World trade of merchandises by geographical regions 2000-2009

(+10%) exports.[18]

Over the same period, world export in services also increased (+11% in 2006) but generally at a slower pace than merchandises.*In 2008*, the GATT's sixtieth anniversary unfortunately coincides with a crisis in the financial and banking sector affecting seriously the level of demand in the largest economies and inducing a 2.2% recession of the world economy and employment.[19]

[18]To be noted, as emphasized by the WTO (World Trade Report 2007) , that in 2006 the currency rates fluctuation had little impact on international prices of merchandise (in US$).

[19]At the end of year 2009, the International Labor Organization estimated a record high level of unemployment of 200 millions people, 20 millions of which since 2008 !

In 2009, the international demand record lows – and a relative reappearance of protectionism – coupled with the lack of available funding for international trade transactions lead to the major trade recession registered since the IIWW, that is -12.2% in volume and -22.6% in value (WTO, 2010).[20] Once more, it is the price differential between energy products and other primary products that largely explain the gap between volume and value. Trade in services is not exempted from the general trend (-12%).

World GDP also dropped (by -2.4%) for the first time since the Great Depression, and the main currencies depreciated with respect to the dollar (with the exception of the Japanese Yen which appreciated, and the Chinese Yuan which is anchored to the US Dollar).

In 2010, over 60 years after the 'birth' of the multilateral trade system, an analysis of world trade evolution sheds some light on the impact of the trade policies adopted around the globe, in particular with regard to the progresses made by the signatories of preferential trade agreements.

2.3.2 Trade Regionalization

One of the remarkable characteristics of the new world trade panorama is that trade growth has essentially been registered within regional trade agreements, signed mostly among Northern countries,[21] then among Southern countries. Over the last decade, intraregional trade has largely dominated interregional trade and has essentially taken place within PTAs signed among industrialized countries (in Europe, for instance, 72% of trade is intraregional).

The above illustrates the idea that regional trade agreements are primarily signed among countries displaying similar levels of development and having a pre-existing history of significant trade relations. North-South agreements, emerging in the 90s, remain

[20] WTO World Trade Report 2010.

[21] In the late 90s, the WTO estimated that approximately 80% of the agreements enforced were signed between industrialized countries.

relatively less numerous (they originate mainly from the EU and NAFTA).

We have thus been witnessing, for over half a century, an accelerated multiplication of regional trade agreements and mostly of the North-North type: in 2008, the WTO registers over 420 regional trade agreements, among which 324 based on the GATT's Article XXIV, 230 of which have effectively been implemented. More than 10 years ago, Schiff and Winters (2003) already stated the puzzling truth that virtually all countries in the world are now members of at least one regional trading bloc. Hence overall, the GATT's Article I appears less attractive than its Article XXIV! [22]

[22] Article XXIV allows for the creation of preferential trade agreements and regional economic blocs, provided they fulfill certain conditions aiming at reducing the perverse effects of such agreements on non-member countries.

Trade in merchandise under various regional trade agreements, 2000-2009

(Billion US$)

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
European Union (27)										
Total Exports	2453	2469	2638	3149	3762	4065	4591	5347	5921	4588
Intra-Reg Exports	1668	1677	1794	2166	2577	2756	3136	3646	3993	3059
Extra-Reg Exports	785	792	843	983	1185	1310	1456	1701	1928	1528
Total Imports	2580	2549	2672	3214	3855	4222	4830	5611	6295	4733
Intra-Reg Imports	1663	1673	1786	2156	2576	2754	3133	3646	3993	3059
Extra-Reg Imports	917	877	886	1058	1278	1468	1697	1965	2302	1673
NAFTA										
Total Exports	1225	1148	1106	1163	1320	1476	1664	1841	2035	1602
Intra-Reg Exports	680	633	621	650	739	824	901	950	1012	768
Extra-Reg Exports	544	515	486	513	581	651	763	891	1023	835
Total Imports	1684	1580	1601	1723	2008	2283	2541	2701	2907	2177
Intra-Reg Imports	668	627	618	640	715	791	864	914	964	717
Extra-Reg Imports	1015	953	983	1083	1292	1492	1676	1786	1942	1460
ASEAN										
Total Exports	432	388	407	475	569	656	770	865	990	814
Intra-Reg Exports	99	87	92	117	142	165	192	218	252	202
Extra-Reg Exports	333	301	315	358	427	491	578	647	737	612
Total Imports	381	347	367	412	514	603	688	775	938	725
Intra-Reg Imports	86	77	84	101	125	151	174	195	229	179
Extra-Reg Imports	294	270	283	311	389	452	514	581	709	546
MERCOSUR										
Total Exports	85	88	89	106	136	164	190	224	278	217
Intra-Reg Exports	18	15	10	13	17	21	26	32	42	33
Extra-Reg Exports	67	73	79	93	119	143	164	191	237	185
Total Imports	90	84	62	69	95	114	140	183	258	186
Intra-Reg Imports	18	16	11	13	18	22	26	33	44	32
Extra-Reg Imports	72	68	52	56	77	91	114	149	214	154
Andean Group										
Total Exports	26	25	26	30	39	51	65	77	94	78
Intra-Reg Exports	2	2	3	3	3	5	5	6	7	6
Extra-Reg Exports	24	23	23	27	36	47	60	71	87	73
Total Imports	25	27	28	31	37	46	56	71	93	74
Intra-Reg Imports	2	3	3	3	4	5	6	7	9	7
Extra-Reg Imports	22	25	25	27	33	41	50	64	85	67

a Excluding Singapur-Indonesia trade in 2000-2001.

Source: http://www.wto.org/french/res_f/statis_f/its2010_f/its10_appendix_f.htm

World trade flows over the past 30 years reveal that *intraregional trade has grown faster than other type of trade.* Venables (2001) reports the example of trade flows within the Americas growing much faster than world trade that grew relatively less (US-Mexico trade x 3; US+Canadian exports to Mexico: + 217%; their imports from Mexico: + 241%;, Argentina-Brazil trade within Mercosur x 4; and world trade: + 63% in real terms!) between 1980-84 and 1993-97.

Another remarkable characteristic consists in an increase in intra-industrial trade and a tendency towards specialization at the industry-level, within N-N agreements.

Traditionally, trade between industrialized countries and preferential agreements between the same (so-called North-North agreements), are thought to be 'natural' since they are occurring between diversified and complementary economies, with pre-existing trade relations, similar production costs and costs of living, and benefitting from factor mobility (hence with relatively low adjustment of costs related to the regional integration process).

Under those conditions, regional integration appears as a potential stepping-stone towards multilateralization while improving member countries welfare at the same time, since low integration costs guarantee spillovers relatively soon from: market expansion, higher productivity, greater product diversification.

Nevertheless, the characteristics of this type of regional integration seems to be in contradiction with or at least not following the classical comparative advantage principles, since they usually improve intra-industrial trade (instead of inter-industrial trade). Hence the justification for integrated equilibrium models of the kind developed by Helpman and Krugman (1985) -as mentioned under I.2- in an attempt to provided theoretical grounds different types of trade specialization: either at the industrial level or at country level, the European regional integration movement certainly providing a good case study.

Europe: an exemplary North-North integration model?

What may partly explain the greater appeal of GATT's art. XXIV over its art. I may be the fact that, in the aftermath of the IIWW and the Cold War, Northern countries felt the need to maintain peace through international cooperation and strengthen their economies through regional agreements. The Treaty of Rome (1957) creating the European Economic Community is a good illustration of it.

What the European integration does not seem to illustrate so well is the expected impact of trade openness on trade specialization. Indeed, at the dawn of European integration, what was expected, through intra-regional tariffs elimination, was a high specialization following the classical Ricardian comparative advantage principle. As Fontagné and Freudenberg (2000)[28] observe, the first European integration wave can be read from the prism of classical theories predicting an increment in intraregional trade. However, the structure of intra-European trade itself highlights the limited explanatory power of these theories, not only because it does not induce the country-level specialization predicted by comparative advantage principles, but also because it is characterized by a high proportion of intra-industrial trade (hence trade in similar products between similar economies). What has actually happened since the creation of the single market is that EC (EU) countries have incremented their intra-industrial trade flows, specializing in differentiated products (either vertically or horizontally), following neo-classical HOS theories.

The European regional trade integration process is thus characterized by a high specialization at the level of European firms (rather than clear-cut specialization at country-level). These firms benefit from economies of scale allowing them to satisfy to European consumers demand for a large variety of differentiated products. At the end of the 70s, new trade theories integrate several notions of industrial economics which were until then barely taken into account, especially in a context of imperfect competition, with economies of scale and differentiated products.

Over 50 years after the Treaty of Rome and deeper regional integration, Pascal Lamy (2002, 2011) and Anne Krueger (2011) offer different readings of the European integration process. Lamy acknowledges that European regionalism is not exempt from all ambiguity but is still the 'happy-family' type (not just the 'good neighbors' type): a single market, welfare redistribution and other common policies regarding trade and competition, a single currency used by over 300 million citizens, a macro-economic 'stability pact', etc.

Krueger, for her part, attributes the apparent European integration success [in terms of welfare inter alia] to the post IIWW multilateral trade system which facilitated the emergence of European institutions, and even argues that the failure to recognize this gives too much credit to the benefits of regional preferential agreements over the real benefits granted through multilateralism, thus the EU regional bloc may potentially represent rather a stumbling block on the path to multilateralization. To which Lamy advocates that European integration is a proof that multilateralism combined with regionalism does work.

[28] « L'Intégration Régionale et les spécialisations européennes » [Fontagné, Freudenberg, 2000]

2.3.3 LDCs and SDCs facing globalization

If, after the IIWW and the signing of the GATT, it is mostly between industrialized countries (or the North) that a substantial increment in trade flows has been observed, it is also among those countries that the highest increase in domestic revenues has been registered.

Moreover, until the 70s, many LDCs were still engaged in a decolonization and (economic and political) restructuring process thus their reticence towards initiating trade opening immediately.

As mentioned in the previous section, generally, LDCs experienced a deterioration in their terms of trade, with growing disparities between the North and the South, despite many southern countries engaging in trade opening. Global trade has also been characterized by relatively few North-South trade (i.e. trade between economies displaying different levels of factor endowment and technology). (cf Fontagné, 2002).

Indeed, most LDCs which used to depend on primary-good and agro-products exports to large economies, have experienced that, since the 90s,[23] exports of those products the largest economies has substantially diminished. That is either due to the North growing auto-sufficiency in those sectors (synthetic fibers produced in the North have replaced the textile that used to be traditionally imported from some LDCs; the USA have been producing larger quantities of certain agro-food products that they used to import from LDCs, etc.); either to a high marginal propensity to purchase other (luxury) products stemming from higher incomes registered in the North.

In addition, after the IIWW, LDCs have been somewhat marginalized due to the multiplication of RTAs amongst northern countries, which conveyed some new type of (non-tariff) protectionism reducing further their access to northern markets (Suarez). Southern countries also faced northern firms multinationalization (thanks to technological

[23] Even though, since the 80s – as was observed by the CNUCED (1994), etc.- LDCs had been commended for being pioneers to tariff liberalization, while OECD countries on the contrary were maintaining or sometimes raising their tariff barriers!

advances in the North, in the telecommunications sector inter alia).

The LDCs/SDCs were thus facing the imperious necessity to reallocate their productive resources and attract foreign direct investment in order to restructure their productive system.

Thus, contrary to A. Krueger's assertions (1999) and the GATT's spirit of trade liberalization inducing technology and wealth transfer from the North to the South, it seems that, far from benefitting from trade openness, many LDCs/SDCs have resented the erosion of their preferential access to northern markets, along with a progressive reduction of the financial support they used to receive from their former metropolis.

Hence, when southern countries actively integrate the GATT's negotiations in the 80s under the Uruguay rounds, global requirements in terms of trade openness and the GSP appear to them as major or hardly profitable challenges, at least in the short term. On the one hand, industrialized countries seem to benefit from the post IIWW freer trade (mostly within regional agreements); and on the other, LDCs (especially the SDCs) – even those betting on trade openness- face new challenges and do not seem to share the expected benefits from freer trade: wealth and technology transfer from the North; or else at great cost.

Nonetheless, as can be gathered so far and despite some inconclusive results on its effectiveness, trade openness is either already a reality for LDCs or has become fully integrated in modern economic development strategies and LDCs seemingly no longer have a choice between closing (adopting import-substituting policies, for instance) or opening-up their customs, but rather between multilateral or regional opening (under PTAs). The latter seems the most straightforward choice for LDCs/SDCs who have witnessed the formation of three major blocs in the aftermath of the Cold War (Europe, North-America, China-Japan).

In the early 2000s, as Schiff reports, 41 small countries[24] (14 of them LDCs) were

[24] i.e. with a population of 1.5 million or less, as defined in the Commonwealth Secretariat/World Bank Joint Task Force (2000).

registered as signatories of 17 regional integration agreements, several of them belonging to 2 to 4 at once. And even though they do not strike as highly recommended in the specialized literature, South-South agreements represent over 50% of all new trade agreements (Mayda2008), some of which like MERCOSUR or CARICOM being regarded as promising efforts towards the development of their regions and their better positioning on global markets.

Former WTO DG, Lamy (2002) actually sees MERCOSUR on the right path towards a combination of the two types of regional integration processes he usually describes as the 'good neighbors' and 'happy-family' types, by going beyond trade barriers removal in strengthening regional institutions, harmonizing macro-economic policies and incrementing their global negotiating power as a group, inter alia.

At this stage, we cannot elude the current challenges faced by the world trade system, embodied in the controversial Doha rounds of negotiations that were initiated in 2001 but have still not reached a consensus on the 20 points of its agenda. It is noteworthy that these rounds of negotiations are precisely geared towards LDCs development through a better accessibility to international markets.

2.4 What perspectives for the Caribbean regional integration?

"The Caribbean integration movement has today reached its limits." [Dookeran-Malaki, 2013]

"With every passing day, week, month and year, we try by the things we say and by the things we do to make our integration movement more perfect."

(F. Stuart, Barbados Prime Minister, July 2015, on the 50th anniversary of CARIFTA).

Doha Round: Challenges and Opportunities

The Doha Round is the ninth round of negotiations since the Second World War and the first since the creation of the WTO in 1995. The talks mainly take place in Geneva but are called the Doha Round after the city where they were launched. They are also called the Doha Development Agenda, as development is one of its main objectives, another one being the issues regarding the implementation of the existing agreements.

All 157 WTO member governments participate and the negotiations form a single package of about 20 subjects. The negotiations are complex and different issues needed to be addressed in several stages. From the beginning, ministers agreed nevertheless on questions such as: to postpone the deadline for some developing countries to eliminate export subsidies and for least-developed countries to provide protection for pharmaceutical patents and test data, inter alia.

The first major agreement in the Doha Round after the Doha Ministerial Conference was on special treatment in services for least-developed countries.

A number of issues still need to be resolved, but they are politically difficult. This is particularly true of the latest (December 2008) drafts in agriculture and non-agricultural market access.

Figure 2-8: Doha Round: Challenges and Opportunities

2.4.1 Historical premises of the Caribbean regional integration process: from 'closed regionalism' to 'open regionalism'

It was during the era of mercantilism that several European nations set foot in the Caribbean territories and initiated what became known later as the model of plantation economy, which led to the economic and trade dependence of the region through trade specialization in the primary and agricultural products in demand then in European markets.

It is commonly admitted that the primary motive for Caribbean small states to engage in a regional integration process was to transition as smoothly as possible from political and economic dependency to autonomy, as their small sizes and high vulnerability to external shocks were major impediments to achieve the same. N. Girvan also points out the purposes of sharing common costs of public goods and functional cooperation, gaining more international bargaining power and assuming a West Indian identity.

The first real attempts of Caribbean regional integration can hence be traced back to the 1950s, following the newly gained independence of several British colonies, with the creation of the West Indian Federation (1958-1962), and the subsequent (but failed) attempt of a customs union formation between the same countries. Instead a (partial) free trade agreement was signed establishing the CARIFTA (1968-1973), prior to the Treaty of Chaguaramas, in 1973, creating the CCM (Caribbean Community and Common Market).

The CCM proved to be another failed attempt at customs union creation. Initially integrated by 13 English-speaking nations, it was limited: to intra-regional trade liberalization in a few specific sectors of activity (manufacture and agriculture); closing doors to trade with countries from outside the region; promoting imports substitution industrialization policies.

On the Caribbean regional integration road, two key steps towards the opening of CARICOM regionalization are:

1) The **Nassau Memorandum of Understanding (MOU, 1984)** paving the way to structural reforms (SAPs) in response to the CDB's report identifying the region's

structural deficiencies in the spotlight and the needs for reforms to promote the regional market competitiveness and open regionalism principles;

2) The **revision of the Chaguaramas Treaty in 1989** leading to the creation of the Caribbean Single Market and Economy (CSME) and integrating dispositions for: the creation of the creation of regional institutions (to strengthen regional governance with no prejudice to domestic policies), CET reduction, free mobility of persons and other factors, facilitation of trade in goods and services, common policies on transportation, manufacturing industry, agriculture, dispute settlement, business establishment, etc.

This revision of Chaguaramas has been interpreted by Girvan as the key to transition to a new type of 'production integration' derived from 'market-driven integration' leading[25] to the diversification of exports to third countries (and thereof leaving behind the sole plantation economy based on agro-products exports to the old metropolis). He also emphasizes the role of a knowledge- and technology-based economy in the transition from primary to tertiary economies.

However, despite encouraging steps so far -a partial common market (the CSM, Caribbean Single Market) was implemented in 2006- the CSME has registered slow progresses: only a few CARICOM countries have implemented the CET and the single customs union is not a reality as yet; the mobility of services, capital and human resources is not enforced either. Neither have substantial advances been made towards policy and legal harmonization, nor economic development can apparently be attributed to regional economic integration.

The usual suspects behind the slow progresses are:

- The presumed feebleness of Caribbean governments to concede more responsibilities to regional institutions (fear of sovereignty loss), which in turn is not very appealing for private operators and investors;

- The very characteristics of those small, hardly diversified and highly dependent

[25] GIRVAN 2006,11: "the revised treaty transformed the model of production integration by moving it 'from the realm of inter-industry relation in productive activities to the free movement of factors of production in the service enterprise efficiency".

economies vis-à-vis larger countries from outside the region, which imply that a bit more than standard regional economic integration is required to foster development and attract investors.

One can understand then why Dookeran would say that the Caribbean integration movement had reached its limits, although those were the first (not last!) words of a speech on Caribbean convergence he gave to Caribbean Foreign Ministers gathered in T&T in 2013. What Dookeran was pointing at was the need to set the Caribbean integration project on a new trajectory, which he, alike other regional leaders, envision through a greater opening of CARICOM towards the rest of the Latin-American and Caribbean region.

2.4.2 The influence of actors from outside the Caribbean

As exposed supra, until the 70s and 80s, the Caribbean efforts to foster deeper regional integration looked rather feeble. It seemed then that the newly independent nations were oscillating between giving the priority to bilateral agreements with (much) larger economies -European, North-American or even Asian- or settling with their immediate neighbors to try and gain a better position on global markets and political arena.[26]

Those major economies were at the same time proposing seemingly attractive regional trade arrangements, each of them for different reasons (we may refer here to Baldwin and Freund's 'goodies bag'). So, with the Caribbean Basin Initiative (CBI), the CARIBCAN (granting them preferential access to the US and Canada respectively), along with the ACP-EU trade agreements, among others, Caribbean LDCs/SDCs have a mouthful.

US-Caribbean trading relations

The US have signed multiple preferential trade arrangements with Caribbean coun-

[26] For the non-independent Caribbean territories, the question was not raised in those terms but rather what degree of (political, economic) linkage they should have with their metropolis. While the FCORs chose the status of Overseas Department and Regions, the Dutch decided to be autonomous territories within the Dutch Commonwealth.

tries, the first being the Caribbean Basin Initiative (CBI), a US unilateral free trade arrangement made with Caribbean and Central American countries, in 1983. Other programs include the Caribbean Basin Trade Partnership Act (CBTPA) of 2000, which provides tariff preferences for imports of apparel products, and the most recent Haiti HOPE Act of 2006 (amended in 2008 and 2010), which gives larger preferences to imports of Haitian apparel.

Even though US-Caribbean trade has grown since the signing of the CBI, they did not lead to the economic spillovers that the region expected: trade tended to occur mainly with a few countries and within limited industrial sectors, which did not induce export diversification.

Furthermore, and following global trends, the Caribbean signatories have witnessed the erosion of their trade preferences as the US engaged in other regional trade programs (especially NAFTA) and multilateral trade liberalization.

Nonetheless, some (Latin-American and) Caribbean countries have still decided to pursue further bilateral agreements with the US, as is the case with the DR-CAFTA.[27] This FTA integrating the Dominican Republic and several Central American countries differs from the CBI as it encompasses principles of reciprocity: while the LAC signatories already enjoyed privileged access to US markets under the CBI, with the DR-CAFTA they also have to eliminate tariff duties on 80% of US exports to their countries. This FTA is often considered a first step towards a Free Trade Area of the Americas (FTAA), expanding NAFTA to the rest of the region. However if the FTAA is thought to be an ambitious though desirable project from the US perspective, it meets a strong opposition from several influential LAC countries (such as Venezuela, Argentina, Bolivia, and Brazil) who advocate for a better regional integration model. To be noted that the FTAA project was initially designed by the US for the whole region except Cuba.

[27] The Dominican Republic–Central America Free Trade Agreement (DR-CAFTA) is a free trade agreement signed initially between the United States and the Central American countries of Costa Rica, El Salvador, Guatemala, Honduras, and Nicaragua (CAFTA); before the Dominican Republic joined in 2004.

Now that the US-Cuba trade relations have been given a fresh start since December 2014 and the Obama's administration[28] decision in January 2015,[29] the role Cuba shall decide to play in the Caribbean integration project or/and with the rest of the Americas remains to be seen, knowing that Cuba has maintained strong links with the aforementioned influential LAC throughout the US embargo.

Actually, back in 1972, in Chaguaramas, 4 Caribbean leaders were advocating for the end of Cuba's isolation. Today, with the inception of trade negotiations between Cuba and the EU and several rounds of negotiations taken place between the US and Cuba on various issues, such as migration, environment, natural disasters , communications, etc., Cuba reappears in the Caribbean region panorama, which in itself conveys both opportunities and challenges for CARICOM:

- Challenges as Cuba is a potentially strong competitor in selected sectors such as tourism and maritime/airline infrastructures;
- Opportunities in fostering attractive Caribbean multi-destination tourism packages, providing Cuban markets with Caribbean (hence culturally related) products, Cuba may become a new maritime and airline hub and can supply oil to the region.

Thus far CARICOM is apparently not reluctant to extend membership to Cuba and T&T already opened a Trade Facilitation Office in the Havana (in 2007).

EU-Caribbean trading relations

Since the Lome Agreement in 1975,[30] CARIFORUM states (alike the other ACP countries) benefitted from non-reciprocal preferential access to the EU market (some CARIFORUM goods had free access to the EU market while the CARICOM common external tariff reached rates up to 45%).

Through these Lome conventions, the EU were pursuing a trade-for-growth policy

[28] On December 17, 2014, both the US President Obama and Raul Castro gave a speech announcing the renewal of diplomatic relations, on their respective national TV networks.

[29] To allow US citizens to travel and US companies to export goods, provide telecommunications services to and open bank accounts in Cuba, inter alia.

[30] Cf a summary of ACP-EU trade agreements in Annex.

–the results of which were not very conclusive though- but under the WTO pressure, the EU had to sign a new agreement with its former colonies (Cotonou, 2000) offering a new deal to the CARIFORUM states in terms of a new WTO-compatible trading relationship with the EU based on reciprocity.

Cotonou was in fact the opening statement for the negotiation of Economic Partnership Agreements (EPAs) between the UE and each of the 6 ACP regions. To date, only 15 Caribbean ACP countries[31] have signed the CARIFORUM-EU EPA in October 2008, with the exception of Haiti and Suriname which signed in 2009 and 2010.[32]

On the purely trade-related provisions of the EPA, even though CARIFORUM goods already benefitted from privilege access to the EU markets, one of the novelties with the EPA is that it removes barriers to most Caribbean exports in goods and services to the EU (exceptions made for sugar and rice for now) and includes improved 'rules of origin' allowing for intermediate products from outside the region.

Moreover, the application of the reciprocity principle has been hampered thanks to a 25-year progressive tariff-liberalization schedule negotiated for each product and by each CARIFORUM state.[33] The progressive reduction of tariffs on imports from the EU is thought to help CARIFORUM economies make the necessary structural adjustments to gradually face the European competition. A list of sensitive CARIFORUM products to be excluded from the agreement was also negotiated.

Aside the progressive liberalization arrangement and exclusion list, the appeal in the EPA, from the Caribbean perspective, did not stem from its reciprocal-trade character

[31] CARIFORUM signatories are Antigua and Barbuda, The Bahamas, Barbados, Belize, Dominica, Dominican Republic, Grenada, Guyana, Haiti, Jamaica, St. Christopher and Nevis, St. Lucia, St. Vincent and the Grenadines, Suriname and Trinidad and Tobago.

[32] The French Caribbean Outermost Regions (FCORs) and Duth Caribbean territories are fully covered by the EU commitments under the EPA but benefit nonetheless from special provisions taking into account their specific interests and position in the region. At the moment, their local markets are still excluded from the liberalisation of bananas and sugar originating from CARIFORUM and still benefit from specific fiscal instruments. The safeguard clauses also provide specific arrangements for the FCORs/Dutch Caribbean allowing them to benefit from similar conditions to those prevailing for the CARIFORUM (which are more favorable compared to those applying for EU member states).

[33] The text of the CARIFORUM-EPA actually encompasses hundreds of pages dedicated exclusively to the tables displaying the tariff-liberalization Schedule.

but rather because it was explicitly designed to foster growth, employment and development in the Caribbean. A particular aspect of this agreement is that it entails liberalization in goods and services under specific principles and conditions such as sustainable development, regional integration and development cooperation.

Moreover, the EU is also committed to providing the CARIFORUM states with funding under the Aid for Trade financial programme (in addition to the 165 million Euros 10th EDF program).

However, despite the 'goodies bag' provided by the EPA, today the agreement has still not been ratified by all parties and its implementation, even among the ratifying members, has experimented several hurdles, such as [Agripulse2011]:

- The lack of manpower and EU-funding actually allocated towards the implementation (due inter alia to timing and procedures);

- CARIFORUM leaders are still not fully-convinced about the EPA's potential benefits and fail to implement alternative tax policies to compensate for the loss in tariff revenues;

- The lack of coherence between the EPA and Caribbean regional agenda (such as the CSME);

- (Related to the above) the lack of dynamism within the CARIFORUM regional integration movement (especially due to unsolved issues between CARICOM and the Dominican Republic);

- The global economic crisis emerging at the same period of the signing of the agreement.

So, is the CARIFORUM-EU EPA: a North-South agreement model?

The Lome Convention signed in 1975 between the EC and ACP countries laid the ground for the North-South type of regional trade agreements; in the sense that not only were the EU granting these countries a privileged access to its market, but were also providing financial support with the objectives of boosting economic development and trade infrastructures to render ACP exports more competitive on the global market.

The EPA is also considered to be the first exhaustive North-South agreement, as it covers not only trade in merchandises but also in services, in addition to provisions for the mobility of capital, labor and for aid-for-trade and development funds.

However, if the EU considers this agreement to be in line with the Millenium Development Goals, some of the EPA detractors claim that the agreement conveys the perpetuation of the plantation trade logic and economic dependency. They believe indeed that the agreement will not lead to Caribbean export diversification but rather maintain the 'wrong trade specialization' in low-value products, inherited from the colonial period (banana, coffee, cocoa, rum, rice, …) – so much for Venables' logics of wrong specialization within South-South agreements – and may even impede local production geared towards local consumption (and food autonomy).

Besides, the CARIFORUM group comprises 15 very asymmetric and diverse members (in economic/population/geographical sizes, languages, cultural influences, etc), 14 CARICOM countries and the DR. The latter, together with T&T, is feared by the SDCs/LDCs members, as they seem more readily able to reap off the benefits both from CARIFORUM integration (diverting tariff revenues from the poorest, as depicted by Schiff) and the EU aid-for-trade to modernize their manufacturing and trade infrastructures. In this regards, the DR has actually proven to be one of the fastest EPA-aid implementer, together with T&T and Barbados.

To date, only 8 CARIFORUM countries are (more or less) implementing the tariff-liberalization schedule and only 3 have established EPA implementation units.

As far as the impact of the EPA in terms of structural changes and improved economic attractiveness (to FDI), despite the fact that many CARIFORUM countries have fulfilled their commitments to liberalize services related to business development, tourism, entertainment, transport and telecommunications, they hardly manage to access the equivalent in the EU (except in the entertainment business). In general, only T&T, the DR and Barbados have succeeded to increase their offers in higher value-added manufacture products and services; and Jamaica has increased its exportable offer thanks to the EPA. The same cannot be said for the SDCs signatories of the EPA.

Some trade specialists focusing on the Caribbean integration project, such as Jules, warn however about the danger of 'policy trilingualism' defined as the fact that Caribbean leaders use three different types of discourse on regional integration projects whether they address their nationals, regional institutions (such as CARICOM) or international donors. The challenge remains then for regional leaders to adequate their discourse to meet both national interests and regional aspirations while complying with the requisites for international funding.

It is noteworthy nonetheless, that in the recent ACP-EU summits on the 'ACP-EU relations beyond 2020', the EU has emphasized the need for ACP countries to take the leadership in terms of regional integration, development policies to be implemented by the ACP group and the relations with the EU. ACP countries were also strongly invited (as is specifically laid out in the EPA as well) to foster further integration with countries from their own regions. In that sense, it can be said that the Caribbean is well on the path as can be seen from its relations with Latin- and Central-American countries.

Latin/Central America-Caribbean trading relations

After the implementation of the CSM in 2006, the Caribbean integration project has been coexisting with several hemispheric integration processes to which some Caribbean countries are participants:

- ACS (32 Countries and Territories of the Greater Caribbean, i.e. all territories in or bordering the Caribbean Sea)[34]
- ALBA (integrating: Dominica, since 2008; Antigua & Barbuda and St Vincent & the Grenadines, since 2009; Haiti, Saint-Lucia and Suriname, since 2012)[35];

[34]The ACS integrates 32 Countries and Territories of the Greater Caribbean "to enhance cooperation within the region, an initiative aimed at building upon obvious geographic proximity and well-documented historical linkages". The ACS' primary purpose is "to be an organization for "consultation, cooperation and concerted action" for its member countries. Its framework provides a forum for political dialogue that allows Members the opportunity to identify areas of common interest and concern that may be addressed at the regional level, and the solutions for which can be found through cooperation". http://www.acs-aec.org/index.php?q=about-the-acs

[35]ALBA (Bolivarian Alliance for the Peoples of Our America)

- UNASUR (integrating Guyana and Suriname, since 2010)[36]; and
- CELAC (integrating 13 CARICOM members).[37]

While the AEC is more of a (wide) political platform, the last three generally pursue market-driven regional integration in response to globalization.

Aside from the main LAC integration projects, several bilateral and smaller regional agreements between Caribbean and LA/CA countries are under course. The Dominican Republic for example, not only participates in the DR-CAFTA with Central American countries but also has a partial-scope agreement (on a limited number of goods) with Panama being renegotiating and is negotiating a trade agreement with Chile.

Trinidad y Tobago (also) adopted Dookeran's multi-track diplomatic policy concept, in their bilateral relationships and with Latin America to gain more negotiating power globally. For eg. TT have joined the Andean Development Bank as a full member to depart from a sole reliance on traditional international funding from the World Bank and the IDB.

When in the early 90s, LAC countries as a whole adopt the Open Regionalism concept as a guiding principle for its integration; Caribbean countries in particular envision it as a mean to correct some of the failures experimented by the CARICOM integration project in the 80s.

Over 20 years later, the Great Caribbean seems a more tangible reality impulse from within the region. In 2013, the ACS establishes the Caribbean Sea Commission and, with the Declaration of Haiti, defines an initiative to promote economic growth in the region through economic convergence based on capital mobility, the development of transport infrastructures (of relevance is the enlargement of the Panama channel, observed closely by other LAC countries) and new policies regarding the relations with international financial institutions.

[36] UNASUR (Union of South-American Nations)
[37] CELAC (Community of Latin-American and Caribbean States)

2.4.3 New perspectives of integration for the Caribbean

W. Dookeran (2013): *"The [new Caribbean] convergence argument is that trade and markets should be buttressed by production, distribution and competitiveness" but "negligible attention [has been given] to the most important economic and market actor, the private sector and "integration is multi-track in nature – its forces are local, regional and international all at the same time."*

The general assessment of the regional integration policies adopted by the CARICOM until the early 90s was that they did not seem to respond to the reality of Caribbean countries and that a change of paradigm was required.

Since then, CARICOM members have been attempting to step away from traditional regional integration processes to introduce new ways of integration of their own. After all, the European regional integration scheme that had long appeared as a model to look up to is not only hardly replicable in this region due to the very specificities of the Caribbean countries (small-sized, economically dependent, scattered across the Caribbean sea, etc.) but was also initiated in specific historical, political and economic contexts that are also hardly replicable in today's global trends.

As a response, in 2007, CARICOM countries designed a Single Development Vision identifying growth engines in specific industrial sectors: energy, agriculture geared towards regional market demand, key manufacturing sectors, sustainable tourism, exports services; but also through the adoption of regional policies and functional cooperation in common services (R&D, education, export promotion, etc.) to support those key industrial sectors.

CARICOM heads of states also designed a Strategic Plan for Regional Development to foster public-private cooperation to guarantee food security in the region, promote re-

newable energies and maritime transport and induce higher competitiveness on regional and international markets.

Progressively, CARICOM integration Project left aside import substitution policies to adopt an hybrid-type of policy promoting growth through common industrial policies and functional cooperation in specific areas to foster exports in goods and services within and outside the region, while applying open regionalism principles with larger countries of the LAC region and their former metropolis (to attract FDI among other objectives).

The Caribbean integration initiatives: from CARIFTA to Single Development Vision				
	CARIFTA	**CARICOM**	**CARICOM Revised / CSME**	**Single Development Vision**
Duration	1968-1973	1973-1989	Post 1989	2008-2015
Membership	12 Anglophone countries	13 Anglophone countries	CARICOM: 15 countries CSME: 12 countries	12 CSME member countries
Intended Form	Free Trade Area	Customs Union	Economic Union	Economic Union
Scope	Merchandise trade	・Merchandise trade ・Some provision for services and capital ・Incentives policy harmonization ・Industrial allocation ・Joint development of agriculture and natural resources	・Merchandise trade ・Services and capital ・Skilled labour ・Macroeconomic policy harmonization ・Sectoral policy harmonization ・Monetary union	・CSME completion ・Multi-dimensional development framework ・Coordinated policies for 'economic drivers' And 'enabling economic environment'
Strategy	Regional import substitution	Integration for development and transformation	Open Regionalism	Developmental Open Regionalism
Orientation	Inward-looking	Inward-looking	Outward-looking	Outward-looking
Theory	Neoclassical	Development and transformation	Neoliberalism	'New' Neoliberalism
Governance Mode	Inter-governmental	Inter-governmental	Inter-governmental / Supranational	Inter-governmental / Supranational
Context	・Exhaustion of national import substitution ・UK application to the EEC	・Trade expansion under CARIFTA ・UK joining the EEC	・Washington consensus ・Uruguay Round ・NAFTA ・EU Single Market	・Inauguration of CSM ・Sequencing of Single Economy implementation
Complementary pillars	Common services	・Functional (social) cooperation ・Foreign policy coordination	・Functional cooperation (inc. external trade) ・Foreign policy coordination	・Functional cooperation (inc. economic) ・Foreign policy coordination
Motive force	Mainly internal ・Governments ・Private Sector ・Regional academics	Mainly internal ・Governments ・Private Sector ・Regional academics	Mainly external ・Globalization ・WB, IMF ・Donor countries	Mainly internal ・Governments ・Private Sector, regional stakeholders ・CARICOM Secretariat ・Regional academics

Based on various synthetic tables provided by N. GIRVAN (2010)

During their May 2011 retreat, CARICOM Heads of States gauged the progresses made so far on their common development goals as defined in the Single Development Vision adopted in 2007, especially regarding *regional governance and common policies*. It appeared that the 3 main challenges still to be tackled to guarantee the success of the new 'hybrid' regional integration formula are:

- The financing of regional public goods;

- Institutional machinery reform

- The reconciliation of the CSME with treaties with third countries (EU, RD, USA, ...)

Regarding the financing of regional public goods, Dookeran and Girvan advocate for a new mechanism of convergence involving more private operators. They foresee public-private economic partnerships as a way to go beyond market expansion and trade growth (the traditional integration model) to achieve more competitiveness and resilience against external shocks. They have also identified three areas of intervention to orientate this type of partnership: the investment climate, logistics and connectivity, productivity. The latter requires reliable energetic solutions and, to face oil prices volatility, renewable energies appear as a niche sector to be developed in the region. This, in turn requires better regional interconnectivity (pipelines, new maritime routes, etc.), which in turn calls for an adequate regulatory framework, i.e. for the "alignment of the logics of politics and the logics of economics" (Dookeran, 2013).

Financing is also thought to be achieved through a new design of international donors collaboration and the creation of a regional stock market.

Dominica's Prime Minister, Roosevelt Skerrit, also recalled the importance, beside pursuing competitiveness, of achieving regional autonomy in areas such as (energy and) food security, through functional cooperation.

The second aspect of the new Caribbean regional project, as evoked supra, is *Open Regionalism*. Today´s global context is an obvious parameter to be taken into consideration for the future of the Caribbean regional integration: the already-mentioned of

ACP countries' preferences on EU markets; an increased globalization with the expansion of large economic blocs interacting with each other, a global economic crisis (in which emerging countries with growing national savings and technological capabilities seem ready to take up the opportunity but also appear as major consumers) and the BRICS predicted as future key players in the world economy.

Hence, convinced that traditional diplomacy was giving way to a new 'multi-track' diplomacy as a response to modern global challenges, Dookeran along with his fellow regional leaders advocated for a full membership to be granted the DR and associate member status to European overseas regions in the Caribbean and other innovative ways to open the CARICOM integration project to a Caribbean Sea convergence (CSC), hence expanding the frontiers of Caribbean integration to face global challenges. This new regional vision, driven by knowledge-based economy, seems however possible only if based on the movement of capital, labour, service and technology.

Subsequently, during the 2013 Retreat for Foreign Ministers on "Caribbean Convergence" in Trinidad and Tobago, the Ministers recommended the adoption of an ambitious 12-point action plan -falling under 5 main areas of intervention- towards the Caribbean Sea Convergence (CSC), requiring strong public-private partnerships:

Action Plan for Caribbean Convergence

1- Expanding the political and economic space of CARICOM to the Caribbean Sea (incorporating the Dominican Republic and the Dutch and French territories[1]);

2- Developing a CSC Integrated Transport Logistics (better airlines and maritime interconnection and networking);

3- Establishing a CSC Capital Mobility Policy (with the creation of a single capital market and national wealth funds)

4- Developing CSC Energy and Food Security Policies;

5- Implementing a CSC Finance Policy (calling for a coordination of development finance institutions operating in the region: CDB, IDB, etc.)

[1] It should be noted that Article 239 of the EPA addresses the issue of EC Outermost Regions and states specifically that "Taking account of the geographical proximity of the outermost regions of the European Community and the CARIFORUM States and in order to reinforce economic and social links between these regions and the CARIFORUM States, the Parties shall endeavour to specifically facilitate cooperation in all areas covered by the present Agreement as well as facilitate trade in goods and services, promote investment and encourage transport and communication links between the [European] outermost regions and the CARIFORUM States."

2.5 Conclusions

As Dominica's Prime Minister ,the Hon. Roosevelt Skerrit recalls,[38] Saint-Lucian Derek Walcott, upon receiving the Nobel prize, described the Caribbean region as *"a beautiful vase that had been shattered by its history into many pieces"*. R. Skerrit goes on to state that the future of [the Caribbean] countries lies with regional integration, *"to recreate the unity of the first [Caribbean] people, whom the sea united not divide"*, and announces that this is what CARICOM leaders intend to do today.

This is an ambitious yet powerful statement, as CARICOM members are today more than ever aware of the fact that regional integration is crucial to the development of the

[38] Hon. Roosevelt Skerrit, Prime Minister of Dominica, Oct. 2011.

region, that this implies major challenges and opportunities ahead and are optimistic about it.

After all, they have fully embraced Lamy's view that a combination of both regionalization and globalization is desirable and have resolutely moved on the way towards deeper regional functional cooperation combined with the opening of the region to rest of the Caribbean Sea and beyond, hopefully to progressively become a hub instead of a poke.

Chapter 3

Strategic Formation of Customs Unions

3.1 Introduction

Under the GATT's code of non-discrimination (art. I), signatories have agreed to pursue global trade liberalization which was commonly accepted as a good way to improve welfare and economic development. Several authors sustained that high costs of protection incurred losses in welfare and that even low tariffs caused large deadweight losses under imperfect competition (for eg. Panagariya (2002)). Bhagwati and Srinivasan (2002) say that freer trade benefit the poor even. They point out that from a dynamic analysis, trade promotes growth, which in turn reduces poverty[1].

However the best way toward global free trade and welfare improvement remains unclear. Indeed, besides its Art.I, the GATT also allowed trade integration through free trade agreements -under art. XXIV- provided they fulfill certain conditions regarding partners' mutual trade and external tariffs. Since then, we have witnessed a real proliferation (and expansion) of preferential trade agreements of all kinds. According to the

[1]That is, according to them, if they use their comparative advantage and/or maintain export-promoting policies while monitoring inflation.

WTO Secretariat their number has virtually doubled over the past 15 years to reach around 400 today[2] (WTO 2013), with growing questioning over the impact of such preferential agreements on the world trading system and welfare, as well as governments' real incentives to reach such agreements instead of just reducing trade barriers unilaterally![3] An empirical econometric study by Rose (2004), using a "gravity" model of bilateral trade for 175 countries over a period of 50 years, actually shows that there is "no evidence that GATT/WTO has actually encouraged trade" but trade might have grown faster than income for many other reasons [than GATT art.I liberalization spirit] as for example: higher productivity, falling transport costs or regional trade agreements...

There nonetheless is evidence that trade grew mostly and more rapidly between countries with similar levels of development and usually within preferential trade agreements (PTAs). So what part do PTAs play in encouraging or undermining free trade liberalization and in improving or reducing welfare?

3.1.1 Some theoretical background

As early as 1950, Viner defined preferential trade agreements as *second best* "partially free trade" and argued that they are not always to be considered as a good step towards a so-called *best option* free trade: specifically customs unions can be trade diverting instead of trade creating, the former incurring social loss.[4]

Many years after, such issue still gives rise to much literature (see Panagariya 2000 review). And yet, it has not appeared to be a clear-cut separation between those authors who are somehow confident in that "FTAs offer a quicker and surer way"[5] of getting to multilateral free trade whilst accompanying global welfare improvement and those who

[2] In their 2011 World Trade Report, the WTO acknowledged nearly 300 PTAs, which was already 3 times more than two decades earlier.

[3] See Whalley (1998) for a review of "regional" trade agreements and the motives behind their formation.

[4] Winters (1994).

[5] See Krishna (1998), "Regionalism and Multilateralism: A Political Economy Approach".

are more skeptical in either regard. Indeed, most of the former (eg. Krishna 1998, Moner and Sempere 2014, Ornelas 2005b) and the latter (eg. Copeland 1990, Kennan and Riezman 1990**,** Bagwell and Staiger 1994, Andriamananjara 1999, Ornelas 2005a!) have long integrated Viner's trade-either-diverting-or-creating (and hence welfare-improving-or-deteriorating) aspect of FTAs and have since then engaged in more detailed theoretical considerations regarding their effects on welfare and trade multilateralization.

Fairly sophisticated theoretical settings encompassing Viner's postulates allow for different possible outcomes that may serve in one sense or the other, depending on specific contexts and given parameters: see for example Spilimbergo and Stein's (1998) variations on Krugman's (1991)[6] tariff-optimizing model with market segmentation and differentiated products; and subsequent rispostes to Krugman (1991) by Deardoff et al. (1994) - introducing comparative advantage instead of product differentiation **-** and Haveman (1992, 1996) - setting tariffs endogenously.

Along those lines of research, stands the work of Krishna's (1998) advocating for the *positive* effect of trade diversion. Through an oligopolistic-competition setting of three countries, with segmented markets, in which *only producer interests* matter to trade policy makers, Krishna pledges that the more "trade diverting" the FTA the better (in terms of impact on multilateralism).

Among the *less optimistics*, it is worth mentioning multi-country political economy models such as those developed by Yi (1996) and Andriamananjara (1999) that recall Krugman's work and consider the formation, expansion or merger (rather than the proliferation) of trading blocs (customs unions in Yi (1996)) and their effects on both the welfare of outsiders and insiders on one hand and the world trading system on the other hand, i.e. whether increasing "regionalism" leads to global free trade. They find that

[6]In one of his most-quoted works, **Krugman (**1991**)** developed a model with differentiated products, market segmentation and optimal tariffs, analyzing the effects on world welfare of a sequential process of customs unions formation, and found that world welfare declined from its maximum level at one bloc (i.e. free trade) until reaching three unions, but from four unions onward, welfare increases again. Krugman believed non-cooperative tariff settings always led to an increase in external tariffs and thus to a tariff war amongst trading blocs.

outsiders generally prefer to apply for membership but expansion usually depends on members' acceptance (more unlikely as the bloc expands). A ruling described in Yi (1996) as Unanimous Regionalism, as opposed to Open Regionalism under which outsiders can join an existing customs union without prior consent of insiders. Both Yi and Andriamananjara sustain that since the formation (expansion or merger) of a customs union/trading bloc reduces (further) the welfare of outsiders, under unanimous regionalism the Nash equilibrium is reached with two-asymmetrically sized CUs or trading blocs. Nonetheless, under open regionalism, the Nash equilibrium outcome would be a 'grand CU' or global free trade, thus open regionalism would be 'good' for the multilateral trading system.

As far as welfare is concerned, Yi (2000) considers that customs unions welfare-maximising tariffs make outsiders worse off while free-trade areas offer a positively different picture. According to him, taking into account consumers love-of-variety preferences, the welfare function is 'supermodular' in external tariffs for the sake of a balanced consumption portfolio, i.e. internal and external tariff reduction benefit both FTA members and nonmembers. However, according to Yi while that very feature of FTAs may be beneficial for global welfare, it may be harmful to the global trading system, since FTA tariff externatilies create potential free-rider problems, as outsiders can optimally choose their tariffs (and hence have no real incentive towards a 'grand CU').

Ornelas gives another good example of how relative things can be depending on the settings chosen. Ornelas (2005a) adopts Krishna's framework allowing for endogenous tariffs - to focus on the trade creating aspect of FTAs - and finds that, even then, FTAs can be harmful to the world trading system. Later, in Ornelas (2005b) he constructs a model where both FTA formation and external tariffs settings are endogenous and concludes that FTAs can only reduce obstacles to further multilateral -and hence global- liberalization.

While most models had offered a limited setting with only three symmetrically-sized

countries, Das and Gosh (2006) chose to study the endogenous formation of trading blocs among four or more countries under imperfect competition (Cournot-oligopolistic firms and market segmentation), introducing countries asymmetries in size and accommodating inter-industry and intra-industry trade for both industrialized and developing countries. They show that high-income countries (i.e. North/large countries in their setting) match with each other, while low-income (or South/small) countries also wish to join in with high-income countries. Since Das and Gosh do not envisage open regionalism, equilibrium outcome is reached either through polarization (if market sizes differ substantially) or through global free trade only if countries are relatively similar. They exclude North-South (or large-small) mixing as a possible equilibrium outcome and sustain that South countries do not wish to block global free trade (unlike substantially larger North countries).

Moner and Sempere (2014) dropped the market segmentation assumption and tightened the setting up slightly allowing for technology flexibility. They find that, under diseconomies of scope at home (both in domestic and export production), an FTA leads to members reducing their tariffs while the rest of the world responds with a tariff increase when there are economies of scope. Under that setting, they also find that FTAs are trade creating devices (following Ornelas (2005a) definition of trade creation) and welfare improving both for member and non-member countries. Loke and Winters (2012) -allowing for increasing marginal costs too- review Yi's results regarding global welfare and the stability of a grand customs union equilibrium outcome and find that, in a setting with diseconomies of scope, CES preferences and market size asymmetries, free trade is not a stable equilibrium outcome. Their findings show that larger countries prefer either forming a union with a few small countries or not joining at all. They also show that small countries had rather join in a union with a large country and very few small ones -which is consistent with other similar researches insofar- however they sustain that the alternative favourite choice would not be global free trade but rather optimal tariff-ridden trade.

As the importance of taking asymmetries into account has become more evident so far (to measure either welfare impact or/and equilibrium stability), it is worth mentioning Murat and Saggi's (2010) work. Their results are however not consistent with most previous works, nor our own, in that they find that larger countries prefer forming bilateral FTAs with smaller countries. They also sustain that if, under high asymmetries, Nash equilibrium outcome is that large countries form FTAs among each other, it is ultimately because of small countries defecting from joining in. Their intuition is that largely endowed countries rely relatively less on import tariff revenues and thus are less reluctant to open up to free trade. Thus they show that equilibrium outcome under endowment symmetry is global free trade, while under asymmetry it can be either free trade or FTAs among large countries.

In this paper, we adopt the use of four countries for it allows several trading blocs at once and introduce different types of asymmetries among countries, such as substantial variations on markets structures (market and industry sizes, costs asymmetries). Our analysis confirms that customs union formation usually occurs among similar countries and generates positive effects on consumers and, under certain conditions, on producers within the union, while it has a negative impact on the rest of the world. However, when potential partners exhibit relative market size symmetry, free trade remains the preferred option whenever possible. We also identify conditions under which all countries may improve with the formation of several customs unions. This exercise provides a simple yet direct explanation to the proliferation of trade agreements when these occur in waves. Whether regional trade agreements are stumbling or building blocs towards global free trade is definitely still open to discussion, but it seems that, through negotiations and cooperative attitude, governments can reach welfare-improving trade policies after all.

3.1.2 Our proceedings

While up to now most models treated three (similar) countries only, our basic model is similar to Das and Gosh (2006) in that it studies the endogenous formation of trading

blocs through a novel four-country model in an imperfectly competitive setting (Cournot-oligopolistic and market segmented), introducing countries asymmetries in size (accommodating trade between industrialized and developing countries), but it differs in that besides market size asymmetries, we introduced asymmetric marginal costs and account for industrial size with more than one firm in each country.

In the next section we build a basic four-country model, analyzing members and non-members' welfare moving from tariff-ridden trade to a *single* customs union and then to a *double* customs union situation. Governments intend to set external tariffs that maximize national welfare, which we define as the sum of firms profits, consumer surplus and government tariff revenues to disregard special interests politics. Note that once a customs union is formed, union governments tariffs are set to maximize union welfare as a whole, without dwelling into political arrangements regarding how union welfare is distributed among union member countries and their respective economic agents. We shall nonetheless take that issue into consideration in some variations of the model [7], where we introduce two types of regional integration political schemes, either a ´social ´one (under which joint welfare is evenly distributed among signing partners) or a ´market-driven´ one (under which welfare is distributed according to each partner´s specific characteristics).

In the following sections, we modify our model and consider different situations: free trade and asymmetric marginal costs.

Our analysis confirms that customs union formation generally occurs among similar countries and generates positive effects on consumers and, under certain conditions, on producers within the union, while it has a negative impact on the rest of the world. However, we also find that industrial concentration, market size and relative marginal costs determine whether members' welfare improves with respect to non-members' or not,

[7] For now, we assume that union governments reached an agreement for an equitable share of union's advantages beit compensation from one country to the other, and at all levels: governments revenues, consumer surplus, firms profits. However, when introducing marginal costs asymmetries across countries, we consider that more-efficient firms may exert some political pressure to influence welfare distribution following the signing of a customs union agreement.

whether countries are better off in the double-union situation or when no union existed and also whether members' welfare exceed non-members' or not.

Given that union formation affects negatively the other two countries' welfare, it is interesting to examine non-members' response and whether customs unions are socially desirable for all in a setting with strategic union formation. To this end, we solve a non-cooperative game where countries A and B on one side, and countries C and D on the other, decide simultaneously and independently whether to form a customs union[8]. Then the formation of customs union is endogenously obtained as an equilibrium of this game, where the payoffs are given by the corresponding equilibrium welfare levels computed previously. It is shown that -under tariff-ridden trade- the Nash equilibrium usually (but not always) entails two customs unions when market sizes do not differ much and under specific market conditions, although free trade remains the best possible strategy. That is consistent with Das and Gosh assertion that 'polarization' is the best possible outcome, after free trade. However while they consider a setting with extremely concentrated industries (n=1 firm), we show the role played by industrial concentration, along with market size and marginal costs.

3.2 The Basic Model

We construct a model with four countries λ, $\lambda = A, B, C, D$. In each country there is a homogeneous good industry with n firms behaving like Cournot type oligopolies, with $n_A = n_B = n_C = n_D = n$. All firms face the same constant marginal costs c of producing the homogeneous good.

Demand in country λ is given by

$$Q_\lambda = \gamma_\lambda(a - p_\lambda) \tag{3.1}$$

[8]Since we allow asymmetries both between potential partners and versus the rest of the world, the choice of the partner country is actually endogeneous.

where $a > c$, with parameter γ_λ representing the market size[9] of country λ and Q_λ the demand in country λ at price p_λ. All markets are open to trade. Each government sets a per unit nondiscriminatory tariff t_λ on imports to their country. We are going to characterize the equilibrium of a two-stage game where first governments non-cooperatively set tariffs and then oligopolistic firms compete in quantities. The game is solved in the standard backwards way. We shall proceed to characterize three different situations, the *pre-union situation,* the *single customs union situation* and the *"double" customs union situation.*

3.2.1 The pre-union situation

Thus, profits of a representative firm located in country A consist of

$$\Pi_A = (p_A - c)q_{AA} + \sum_{\lambda=B,C,D} (p_\lambda - c - t_\lambda)q_{A\lambda} \tag{3.2}$$

where the first term captures profits of sales in market A and the latter three collect profits of output exported to the other markets. The notation $q_{A\lambda}$ indicates output of a firm from A sold in market λ; the first subscript stands for the location of the producer firm whereas the second subscript denotes the target market.

Given the above assumptions, markets are segmented and we may therefore focus on firms' maximisation problem in one of them, say market A. In market A there clearly is an asymmetric oligopoly of size $4n$, with n local firms having marginal costs c on one side and on the other $3n$ foreign firms having marginal costs plus tariff $c + t_A$.

Multiplying the system of first order conditions by n (as there are n firms in each

[9]Note that market size here can be interpreted as the level of national demand or level of income, thus big γ vs small γ can also be interpreted as high-income (North) vs low-income (South) countries.

country), we yield the next subgame perfect equilibrium outputs in market A:

$$\begin{aligned} q^*_{AA} &= \gamma_A \frac{a-c+3nt_A}{4n+1} \\ q^*_{BA} &= q_{CA} = q_{DA} = \gamma_A \frac{a-c-(n+1)t_A}{4n+1} \end{aligned}$$

Clearly, the higher the tariff, the higher local firms' output and the lower foreign firms' output. In addition, there is a restriction on the size of t_A to ensure positive (equilibrium) imports, i.e. $t_A < \frac{a-c}{n+1}$. It is also the case, from the Cournot assumption, that the above outputs are decreasing with oligopoly size n.

Adding up firms' outputs on market A we get total equilibrium output for market A:

$$Q^*_A = n \sum_{\lambda=A,B,C,D} q^*_{\lambda A} = \frac{n\gamma_A \left(4(a-c)-3t_A\right)}{4n+1} \tag{3.3}$$

and subsequent equilibrium price:

$$p^*_A = \frac{a+4nc+3nt_A}{4n+1} \tag{3.4}$$

Country A sets the per unit tariff that maximizes national welfare W_A, which is defined as the sum of national firms' profits $n\Pi_A$, consumer surplus CS_A and tariff revenue TR_A. In particular, consumer surplus in country A would be given by,

$$CS_A = (a-p^*_A)\frac{Q^*_A}{2} = \frac{\gamma_A n^2 \left(4(a-c)-3t_A\right)^2}{2\left(4n+1\right)^2} \tag{3.5}$$

and tariff revenue:

$$TR_A = t_A n \sum_{\lambda=B,C,D} q^*_{\lambda A} = 3nt_A\gamma_A \frac{a-c-(n+1)t_A}{4n+1} \tag{3.6}$$

As for the equilibrium profits of a representative firm, and from the segmented markets assumption, it is easy to see that the tariff t_A just enters the profits expression in the

term that corresponds with the local market, i.e. Π_{AA} so that we have that

$$n\Pi_{AA} = n\gamma_A \left(\frac{a - c + 3nt_A}{4n + 1} \right)^2 \tag{3.7}$$

Maximising W_A with respect to t_A yields the following equilibrium tariff:

$$t_A^* = \frac{(a - c)(1 + 2n)}{2 + 7n + 2n^2} \tag{3.8}$$

The equilibrium tariff decreases as oligopoly size n increases. Replacing t_A^* above allows us to write down country A's equilibrium levels for (local and foreign) firm's outputs, consumer surplus, tariff revenue, firm's profits in the local market, and national welfare:

$$q_{AA}^* = \gamma_A \frac{2(a - c)(1 + n)}{2 + 7n + 2n^2}, \qquad \text{and} \qquad q_{\lambda A}^* = \gamma_A \frac{(a - c)}{2 + 7n + 2n^2} \tag{3.9}$$

$$CS_A^* = \gamma_A \frac{(a - c)^2 n^2 (5 + 2n)^2}{2\left(2 + 7n + 2n^2\right)^2} \tag{3.10}$$

$$TR_A^* = \gamma_A \frac{3(a - c)^2 n(1 + 2n)}{\left(2 + 7n + 2n^2\right)^2} \tag{3.11}$$

Regarding equilibrium profits (say in country A) of a home firm and of a foreign firm, these are given by,

$$\Pi_{AA}^* = \gamma_A \left(\frac{2(a - c)(1 + n)}{2 + 7n + 2n^2} \right)^2$$

$$\Pi_{\lambda A}^* = \gamma_A \left(\frac{(a - c)}{2 + 7n + 2n^2} \right)^2$$

The pre-union equilibrium in countries B, C and D is characterized straightforwardly by substituting for the corresponding market size. It then follows that equilibrium profits for one firm in country A can be written as,

$$\Pi_A^* = \frac{(a - c)^2 (4(1 + n)^2 \gamma_A + \gamma_B + \gamma_C + \gamma_D)}{\left(2 + 7n + 2n^2\right)^2} \tag{3.12}$$

and consequently, equilibrium welfare reads as follows,

$$W_A^* = \frac{n(a-c)^2[(7+2n)\,(2+7n+2n^2)\,\gamma_A + 2\,(\gamma_B+\gamma_C+\gamma_D)]}{2\,(2+7n+2n^2)^2} \tag{3.13}$$

which is similar for all four countries (saving for market size variable).

3.2.2 The single customs union situation

Now suppose that two countries, say country A and country B, form a customs union. We wish to characterize the equilibrium when a *single customs union* agreement has been signed. This has several implications. Firstly, firms located in A and B do not incur the tariff costs since trade is liberalized between these two countries. Secondly, the (common external) tariff on imports from countries C and D will be chosen to maximize the welfare of the two signatory countries. With this in mind, we next proceed to solve the two-stage game specified above. In particular, we have to compute the Cournot equilibrium in a market of size γ_{AB}, $\gamma_{AB} = \gamma_A + \gamma_B$. Adding up demands $Q_A + Q_B$, denoted by Q_{AB}, and inverting we have that $p_{AB} = a - \dfrac{Q_{AB}}{\gamma_{AB}}$. Now t_{AB} stands for the tariff set by the customs union.

As in the pre-union situation, there is an upper bound on the size of the tariff to ensure positive equilibrium outputs, that is, $t_{AB} < \frac{a-c}{2n+1}$. In the first stage, the tariff t_{AB} is set so as to maximize W_{AB} defined as the sum of industry profits, $n(\bar{\Pi}_A + \bar{\Pi}_B)$, consumer surplus $\overline{CS}_{AB}$ and tariff revenue $\overline{TR}_{AB}$ (the upper bar is employed to denote the corresponding variable when a single customs union is formed [10]).

Concerning firms' profits, note that

$$\begin{aligned} \bar{\Pi}_\lambda &= (\bar{p}_{AB} - c)\bar{q}_\lambda + (p_C - c - t_C)q_{\lambda C} + (p_D - c - t_D)q_{\lambda D} \\ &= \bar{\Pi}_{\lambda AB} + \Pi_{\lambda C} + \Pi_{\lambda D} \end{aligned}$$

[10] The properties of the demand function are such that the equilibrium output $\bar{q}_A = \bar{q}_B$ is indeed equal to the sum of the outputs had we considered separately each market demand, i.e. $\gamma_A \frac{a-c+2nt_{AB}}{4n+1} + \gamma_B \frac{a-c+2nt_{AB}}{4n+1}$.

for $\lambda = A, B$, where due to market segmentation t_{AB} only enters the first term, $\bar{\Pi}_{\lambda AB}$ (profits of a representative firm belonging to the customs union in that market). Setting the derivative of W_{AB} with respect to t_{AB} equal to zero and solving for t_{AB} yields the equilibrium tariff

$$\bar{t}^*_{AB} = \frac{(a-c)}{2(1+n)} \tag{3.14}$$

Substituting for $\bar{t}^*_{AB}$ we obtain equilibrium outputs, profits, consumer surplus and tariff revenue. Note that, in markets C and D, profits of a firm belonging to AB customs union remain the same because of market segmentation. Following which, equilibrium welfare for the countries in the customs union is given by,

$$\bar{W}^*_{AB} = \frac{n}{2}(a-c)^2 \left(\gamma_{AB} \frac{(5+4n)}{(1+5n+4n^2)} + \frac{4(\gamma_C + \gamma_D)}{(2+7n+2n^2)^2} \right) \tag{3.15}$$

The formation of a customs union has produced an asymmetry and it is useful to obtain the equilibrium welfare level of a non-member country. In particular, consumer surplus and tariff revenue remain unchanged. However a representative foreign firm say from country C has profits given by,

$$\begin{aligned} \bar{\Pi}^*_C &= \bar{\Pi}^*_{CAB} + \Pi^*_{CC} + \Pi^*_{CD} \\ &\quad (\bar{p}^*_{AB} - c - \bar{t}^*_{AB})\bar{q}^*_C + (p^*_C - c)q^*_{CC} + (p^*_D - c - t^*_D)q^*_{CD} \\ &= (a-c)^2 \left(\frac{\gamma_{AB}}{4\left(1+5n+4n^2\right)^2} + \frac{4\left(1+n\right)^2 \gamma_C + \gamma_D}{(2+7n+2n^2)^2} \right) \end{aligned} \tag{3.16}$$

Consequently, the equilibrium welfare of a non-member, say country C, when a single customs union has been formed is

$$\bar{W}^*_C = \frac{n}{2}(a-c)^2 \left(\frac{\gamma_{AB}}{2\left(1+5n+4n^2\right)^2} + \frac{2\gamma_D + \gamma_C(2+n)(5+20n+4n^2)}{(2+7n+2n^2)^2} \right) \tag{3.17}$$

We are now in a position to make some comparisons between the single customs union

and the pre-union situations and state some results[11].

Result 1 *i) The equilibrium output of a member firm, say from country A, in the union market is greater than before union formation, that is,* $\bar{q}_A^* > q_{AA}^* + q_{AB}^*$ *iff* $\frac{\gamma_B}{\gamma_A} > \frac{n(1+2n+4n^2)}{1+6n+12n^2+4n^3}$.

ii) Imports from non-member countries decrease $n(q_{\lambda A}^* + q_{\lambda B}^*) > n\bar{q}_\lambda^*$, *for* $\lambda = C, D$.

iii) The equilibrium tariff with single union formation is lower, $\bar{t}_{AB}^* < t_A^*$.

Note that the ratio $\frac{n(1+2n+4n^2)}{1+6n+12n^2+4n^3}$ is smaller than unity for any given oligopoly size. Let's call $\frac{\gamma_B}{\gamma_A}$ the relative market size ratio for member countries. Suppose that ratio is inferior to 1, i.e. that γ_A is greater than γ_B. Then equalling $\frac{\gamma_B}{\gamma_A}$ to $\frac{n(1+2n+4n^2)}{1+6n+12n^2+4n^3}$ defines a threshold value for oligopoly size, say $\tilde{n}$, such that for $n < \tilde{n}$ member firms' output increases. While for $n > \tilde{n}$ their output decreases.

Remark also that a rather concentrated oligopoly (lower n) is compatible with some market size asymmetry; if competition is more intense, which is the case when n is rather large, then market sizes must be quite similar for the above interval condition to be met. This reasoning highlights the relevance both of market size and of oligopoly size.

Part ii) leads us to elaborate on Viner's concepts of *trade creation* and *trade diversion*: some imports shift from non-member countries to partner country, thus the union has a *trade diverting* effect; however we also witness a *trade creating* effect globally (following Ornelas (2005a) definition of trade creation[12]) since, with the suppression of tariffs between member countries, member firms lose home market shares to the benefit of their new partner (because consumers now have free access to the partner´s good). Hence, total outputs in market AB increase ($\bar{Q}_{AB}^* > (Q_A + Q_B)$) while ouputs in markets C and D remain unchanged. What makes the union appealing is the production and consump-

[11] All proofs available on request.

[12] Ornelas (2005a) adapts the standard Vinerian definition of trade creation/trade diversion to models with imperfect competition and identical marginal costs, and defines "trade creation" ("trade diversion") as improvements (reductions) in trade flows induced by a bilateral agreement

tion re-allocation effect between member countries; this is well illustrated whenever part i) holds.

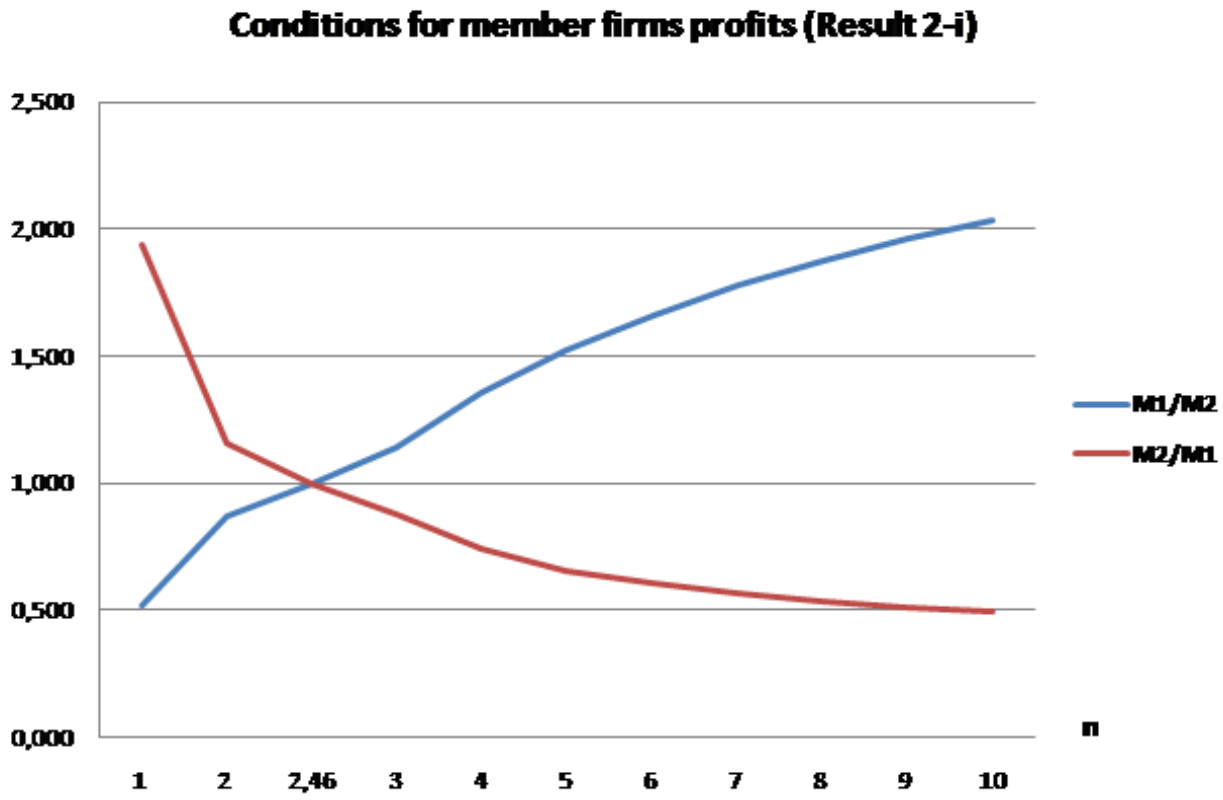
Result 2 *i) Profits of member firms increase as long as*

$$\frac{M_1}{M_2} < \frac{\gamma_B}{\gamma_A} < \frac{M_2}{M_1}$$

where $M_1 \equiv n(1+2n+4n^2)(4+n(23+34n+12n^2))$ *and* $M_2 \equiv (3+4n(4+5n+n^2))(1+2n(3+6n+2n^2))$.

ii) Non-member firms' profits always decrease as a result of AB union being formed.

A few comments on Part i) are in order. The function $\frac{M_1}{M_2}$ increases with oligopoly size n; the function $\frac{M_2}{M_1}$ decreases with n (i.e. the interval gets smaller as n increases). Altogether these restrict which oligopoly size is compatible with a certain degree of market size asymmetry. It is easily checked that the functions $\frac{M_1}{M_2}$ and $\frac{M_2}{M_1}$ intersect at $n = 2.46012$. Thus, for $\gamma_A = \gamma_B$ the oligopoly must be very concentrated ($n \leq 2$) such that firms in member countries earn higher profits after union formation.



Part ii) highlights that the advantage non-member firms gain with lower tariffs after AB union is offset by a substantial loss in AB market share thus the loss in profits.

Note that even though non-member firms' profits decrease as a result of AB union, those profits are not necessarily inferior to member firms profits. They would indeed remain superior (as it would already be so in the pre-union situation) under the sufficient condition $\gamma_\lambda \geq \gamma_B + \gamma_A$, for $\lambda = C, D$. That unveils once again the relevance of market size and oligopoly size. Regarding market size for instance, if a non-member market size exceeds the combined sizes of member countries then, regardless of oligopoly size n, equilibrium profits of firms not in the union are larger than member firms'.

Result 3 *i) Consumer surplus in member countries always increases.*
ii) Welfare in member countries always increases.

iii) In non-member countries, consumer surplus and tariff revenues remain unchanged thus welfare varies with firms profits only and decreases (cf Result 2.ii)).

The fact that consumer surplus increases seems quite reasonable since it depends on the total output increment (which in turn induces price reduction). As for members welfare, gains -beit in consumer surplus or firms profits- compensate for losses (eg. in tariff revenues), but it is oligopoly size which determines whether the driving force behind the increase in welfare is consumer surplus or industry profits.[13] Note that, at this stage, joint welfare is assumed to be equally distributed amongst member countries, under what we shall call a 'social' political setting.

Finally, the formation of a customs unions results in welfare losses for non-member countries, regardless of market and oligopoly sizes. But this does not necessarily imply that welfare of non-member countries be lower than welfare of members (see part iii) in result 2 above).

3.2.3 The double customs union situation

Now suppose that the other two countries, C and D, form a customs union. We shall then consider a situation where a second customs union is formed (in addition to the existing one) and how both unions affect each other's welfare.

We solve a similar two-stage game for countries C and D forming a customs union; with demand in market CD being $Q_{CD} = \gamma_{CD}(a - p)$, where $\gamma_{CD} = \gamma_C + \gamma_D$, and thus $p_{CD} = a - \dfrac{Q_{CD}}{\gamma_{CD}}$. Now t_{CD} stands for the tariff set by the new customs union. The computation of the equilibrium is straightforward. Thus, the output of a representative firm of members in the CD union will correspond with that computed for a representative

[13] In fact, total industry profits increase as long as $n \leq 2.46$ but one can check that the increase in consumer surplus offsets the decrease in tariff revenue for $n > 1.325$. That is, with duopoly, consumer gains suffice for a welfare improvement in the union.

firm of members when the AB union was formed, except for market size; accordingly for a non-member firm. Consumer surplus and tariff revenue expressions are similar to those given under the single union situation (switching CD for AB). However firms' profits is now defined as

$$\begin{aligned}\widehat{\Pi}_\lambda &= \widehat{\Pi}_{\lambda CD} + \bar{\Pi}^*_{\lambda AB} \\ &= (\widehat{p}_{CD} - c)\widehat{q}_\lambda + (\bar{p}_{AB} - c - \bar{t}_{AB})\bar{q}_\lambda\end{aligned}$$

for $\lambda = C, D$, where we use $\widehat{\ }$ to denote the corresponding variable when a new second customs union is formed. $\widehat{\Pi}_{CD}$ - profits for a representative CD union firm in CD's market- has the same expression as for AB union firms' local profits, and $\bar{\Pi}^*_{\lambda AB}$ stands for the profits made from sales abroad (i.e. in AB union market), $\frac{\gamma_{AB}(a-c)^2}{4(1+5n+4n^2)^2}$; these remain the same due to market segmentation.

Once more we proceed to compute the union's welfare $\widehat{W}_{CD}$ as the sum of $\widehat{CS}_{CD}$, $\widehat{TR}_{CD}$ and $n(\widehat{\Pi}_C + \widehat{\Pi}_D)$. Deriving $\widehat{W}_{CD}$ with respect to t_{CD} and solving as before we get the equilibrium tariff t_{CD}, which is equal to $\bar{t}^*_{AB}$. From which we have similar expressions for equilibrium outputs, equilibrium consumer surplus, and equilibrium tariff revenue. Only equilibrium profits of a new member firm differ:

$$\begin{aligned}\widehat{\Pi}^*_\lambda &= \widehat{\Pi}^*_{\lambda CD} + \bar{\Pi}^*_{\lambda AB} = \\ &= (a-c)^2\left(\gamma_{CD}\frac{(1+2n)^2}{(1+5n+4n^2)^2} + \frac{\gamma_{AB}}{4(1+5n+4n^2)^2}\right) \qquad (3.18)\end{aligned}$$

for $\lambda = C, D$. Therefore, equilibrium total welfare for member countries is given by

$$\widehat{W}^*_{CD} = \frac{n(a-c)^2}{2}\left(\frac{\gamma_{AB}}{(1+5n+4n^2)^2} + \frac{\gamma_{CD}(5+4n)}{(1+5n+4n^2)}\right) \qquad (3.19)$$

As for AB countries, the outcome is now very similar so that equilibrium profits are:

$$\widehat{\Pi}_{\lambda}^{*} = (a-c)^2 \left(\gamma_{AB} \frac{(1+2n)^2}{(1+5n+4n^2)^2} + \frac{\gamma_{CD}}{4(1+5n+4n^2)^2} \right)$$

for $\lambda = A, B$, and equilibrium total welfare is

$$\widehat{W}_{AB}^{*} = \frac{n(a-c)^2}{2} \left(\frac{\gamma_{CD}}{(1+5n+4n^2)^2} + \frac{\gamma_{AB}(5+4n)}{(1+5n+4n^2)} \right) \tag{3.20}$$

Given the obvious symmetry in computations, saving for market sizes, we can establish similar statements to all Results above, except for Result 2iii). That is, the equilibrium output of a member firm in the union market is greater than before union formation as long as the relative market size ratio for the new member countries be sufficiently large; imports from non-member countries decrease; the equilibrium tariff with the new union formation is now lower; member firms profits increase under certain conditions while profits of firms outside the new union always decrease; and the new union's welfare increases while countries outside the new union see their welfare decrease.

We have shown above (Result 3ii and 3iii) that customs union formation by a pair of countries is welfare improving for member countries whereas non-member countries see their welfare decrease. Then the question is whether it is possible that all countries gain with union formation. The answer is positive in the case that customs union formation occurs in *waves*. That can be checked easily when comparing the equilibrium welfare levels under the double customs union situation with those under pre-union situation.

Result 4 *AB and CD unions members now have similar welfare gains - differing only with market sizes - and both unions' welfare improve simultaneously, with respect to pre-union equilibrium levels, provided that*

$$\frac{N_1}{N_2} < \frac{\gamma_{CD}}{\gamma_{AB}} < \frac{N_2}{N_1}$$

where $N_1 \equiv 3n(1+2n)(4+17n+10n^2)$ and $N_2 \equiv (1+5n+4n^2)(4+n(23+40n+12n^2))$.

Such an interval exists: as n tends to infinity, the lower bound, being a decreasing function in n, ranges from 0.353 to 0 and the upper one an increasing function in n ranging from 2.831 to ∞. Market size and concentration determine whether the countries actually benefit from joining in a union in comparison with how they did before none of the unions existed. That provides a simple yet direct explanation to the proliferation of trade agreements just because they can be socially advantageous to everyone in face of a customs union wave.

3.2.4 The simultaneous game of customs union formation

The foregoing analysis suggests that customs union formation is privately profitable only under some circumstances. It is interesting to examine whether they are socially desirable in a setting with strategic union formation. Thus, we solve a non-zero-sum non-cooperative game where 2 sets of players -countries A and B, and countries C and D- decide simultaneously and independently between *two strategies*: to form a customs union with their co-player (U) or not to form a union (N). Then the formation of customs union is endogenously obtained as an equilibrium of this game. Payoffs are given by the corresponding equilibrium welfare levels computed in the previous subsections.

Game results under the basic setting

Let us proceed first to analyze the best response for countries A and B.

Provided that countries C and D do not form a union, countries A and B have an incentive to do so if

$\bar{W}^*_{AB}/2 - W^*_\lambda \geq 0 \;\; (\lambda = A, B)$ i.e. if

$$\bar{W}^*_{AB}/2 - W^*_A = \frac{1}{4}(a-c)^2 n\left(\frac{5+4n}{1+5n+4n^2}(\gamma_A+\gamma_B) - \frac{2(7+2n)\gamma_A + 4\gamma_B}{2+7n+2n^2}\right) \geq 0$$

$$\bar{W}^*_{AB}/2 - W^*_B = \frac{1}{4}(a-c)^2 n(\frac{5+4n}{1+5n+4n^2}(\gamma_A+\gamma_B) - \frac{2(7+2n)\gamma_B + 4\gamma_A}{2+7n+2n^2}) \geq 0$$

Which ocurrs whenever:

$$\frac{W1}{W2} \leq \frac{\gamma_B}{\gamma_A} \leq \frac{W2}{W1}$$

where $W1 = 4+31n+38^2+8n^3$ and $W2 = 16+136n+381n^2+368n^3+132n^4+16n^5$, which means that for $1 < n < \infty$, $W1/W2$ ranges from 0.07722 to 0 and $W2/W1$ ranges from 12.8272 to ∞. The condition (21) is fulfilled for $\frac{\gamma_B}{\gamma_A} < 12.8$ (and incidentally for $\frac{\gamma_B}{\gamma_A} = 1$).

Provided that C and D form a union, countries A and B have an incentive to do so if

$\widehat{W}^*_{AB}/2 - \bar{W}^*_\lambda \geq 0$ $(\lambda = A, B)$ i.e. if

$$\widehat{W}^*_{AB}/2 - \bar{W}^*_A = \frac{1}{4}(a-c)^2 n(\frac{(W3)\gamma_A + (W2)\gamma_B}{(1+5n+4n^2)(2+7n+2n^2)^2}) \geq 0$$

$$\frac{W3}{W2} \leq \frac{\gamma_B}{\gamma_A} \leq \frac{W2}{W3} \tag{3.21}$$

where $W3 = n(34+189n+280n^2+132n^3+16n^4)$. The lower bound $W3/W2$ is increasing with n and tends to 1 as n tends to infinity. While the upper bound $W2/W3$ is decreasing with n and tends to 1 as n tends to infinity. Hence, condition (22) definitely holds for $\frac{\gamma_B}{\gamma_A} = 1$. However, as n increases, the range for a favourable partner size asymmetry diminishes. Thus, a low industrial concentration (large n) combined with large partner size asymmetry will mean NO incentive for A and B to reach a mutual agreement and join in a union together.

If we proceed in the same manner for countries C and D, it is easy to verify that their best responses are the same, substituting $\frac{\gamma_B}{\gamma_A}$ for $\frac{\gamma_C}{\gamma_D}$.

Result 5 *Consider the game where countries A and B on one side, and countries C and D on the other, decide simultaneously whether to form a customs union.* ***The Nash equilibrium is (U, U) provided (21) and (22) hold****. The double customs union is* ***always*** *the equilibrium outcome* ***when members have symmetric market sizes.***

Thus, we conclude that *under conditions (21)-(22)*, no matter what strategy countries C and D (A and B) choose, A and B's (C and D's) best response is always to form a customs union, which means that under those conditions the dominant strategy is clearly (U,U).

Recall that Result 3 ii) states that welfare always increases for member countries, provided that the other two do not form a customs union. The fulfilment of (21) means that there is a unilateral incentive to form a customs union which, as indicated earlier, is typically driven by consumer gains. Equation (21) also implies that there is a (small) possibility that forming a union may not be in the interest of both countries if their respective market sizes happened to be very dissimilar (assuming total welfare within the union be equally shared between both member countries). Thus, if outsiders chose not to form a union, then potential partners could form a union *at almost any market size* relatively to one another without suffering a loss in national welfare.

However, should C and D form a union, it is worth noting that the interval in condition (**22**) is smaller than the one specified in condition (21); i.e. condition (**22**) is most unlikely to hold if A and B's respective markets are characterized by low concentration combined with relative markets differing much in size, in which case A and B's best response is not to form a union!

Similarly, once AB union exists it is not worth for C and D to form a union if they are very dissimilar in size (even if condition under result 4 holds).

Result 6 *Even in the case of outsiders forming a union, potential partners will not join in a union of their own if they exhibit low industrial concentration (large n) combined*

with large relative partner size asymmetry. In which case, ***the Nash equilibrium is (N, U)(or (U, N)),*** *i.e. only one union shall be formed.*

As mentioned above, what determines the outcome of the game is how customs union formation affects social welfare. From the previous section, we know that as countries join into a union, consumer surplus always increases, while government tariff revenues always diminishes (from the reduction both in tariffs and imports from non-members) and firms profits variation depends on market size and concentration.

It is remarkable that, due to market segmentation, conditions (**21**) and (**22**) that determine the game outcome depend on (co-players') partners' relative market sizes. What counts is not whether a union is "doing better or worse" than the other (which depends on unions' relative market size) but that a country's national welfare should not be worse after forming a union with their partner. In sum, under this setting we claim that **the Nash equilibrium entails two customs unions when partners relative market sizes are close to 1**, regardless of oligopoly size.[14]

Following result 5 and the above considerations, we may proceed to formulate the game payoffs by comparing the pre-union and double-union situations, when conditions (**21**) and (**22**) hold -**which is the case if we assume that market size of countries** A **and** B **is the same,** say $\gamma_A = \gamma_B = \gamma$; and similarly, **if market size of countries** C **and** D **is the same**, say $\gamma_C = \gamma_D = \delta$. We then construct an ordinal payoff matrix indicating how each country ranks each possible customs union situation. Each set of countries ranks their welfare levels are ranked from 1 to 4 (from the least to the best payoff); the first entry in each cell is country $A's$ **(**and $B's$) ranking whereas the second entry corresponds to country $C's$ (and $D's$). We can then present the game and payoffs,

[14]If governments' decisions were moved by producers interests only, then condition (21) holds harder: it does only for a highly concentrated market (less than 3 firms), beyond that number firms from either one country or the other experience profits losses.

for symmetric partner sizes, as follows[15]:

Countries A & B / Countries C & D	*(N)*	*(U)*
(N)	(2,2)	(1, 4)
(U)	(4,1)	(3, 3)

Note that **if Result 4 does not hold** -i.e. should the two unions' relative market size ratio $\frac{\delta}{\gamma}$ fall anywhere outside the interval defined above- then payoffs (N,N) and (U,U) will be different. Indeed, if $\frac{\delta}{\gamma} < \frac{N_1}{N_2}$, then countries C and D*ı*s best response (U,U) will grant them lower payoffs than in a situation with no union being formed at all.[16] Similarly, if $\frac{\delta}{\gamma} > \frac{N_2}{N_1}$, then countries A and B would be those wishing no other union (but theirs) were formed.[17]

This analysis unveils several points: i) that there is no prisoner's dilemma situation**,** ii) that too large a union relative market size asymmetry would not render a setting with two customs unions equally desirable to all countries, and iii) countries are indeed better off when their customs union is the only one being formed.

Game results under a setting with Free Trade

The above analysis discloses then that customs union formation is a dominant strategy, saving under some extreme market conditions. Despite its limitations it sheds some light on the proliferation of preferential trading arrangements. Nevertheless, as noted in the introduction, some authors think that they might indeed create an obstacle to multilateral trade liberalization. Hence one wonders whether the countries in our model could do better in a world with free trade.

[15] Considering large size asymmetries between partners yield an infinite number of possible different NE outcomes that cannot practically be synthesized in the same manner.

[16] Payoffs (N,N) would be : (2, 3'); payoffs (U,U): (3, 2'), but they would still definitely enjoy being the unique customs union under the sun since payoffs (N,U): (1, 4'); and have no choice but unite if AB do so, as (U,N)<(U,U)

[17] Specifically, payoffs (N,N): (3', 2); payoffs (U,U): (2', 3) and Payoffs (U,N): (4',1).

As an attempt to answer that question, we compare a setting with free trade (setting tariffs equal to zero) to a setting where market conditions are favourable to a double customs-union formation as per the assumptions solving the game supra (setting symmetric market sizes, $\gamma_A = \gamma_B = \gamma$, and $\gamma_C = \gamma_D = \delta$). It follows that the equilibrium output of a representative firm in country A (or B) is given by $q_\lambda = \gamma(a-c)/(4n+1)$, for $\lambda = A, B, C, D$. In the same manner, the equilibrium output of a representative firm in country C (or D) is given by $q_\lambda = \delta(a-c)/(4n+1)$, for $\lambda = A, B, C, D$. Straightforward computations allow us to write down the equilibrium welfare under free trade as:

$$\begin{aligned} W_\lambda^{*FT} &= \frac{8\gamma n^2(a-c)^2}{(4n+1)^2} + \frac{2n(\gamma+\delta)(a-c)^2}{(4n+1)^2} \\ &= \frac{2n(a-c)^2(\gamma+4n\gamma+\delta)}{(4n+1)^2} \end{aligned}$$

for $\lambda = A, B$, where the first term is consumer surplus and the second is total industry profits. The equilibrium welfare under free trade for country C (or D) is the following:

$$W_k^{*FT} = \frac{2n(a-c)^2(\gamma+4n\delta+\delta)}{(4n+1)^2}$$

for $k = C, D$.

Since we have obtained the equilibrium welfare levels under the double customs union situation, which turns out to be the Nash equilibrium of the above game whenever partners have symmetric partner sizes, we wish to establish whether welfare under free trade exceeds that under a setting with trade agreements. Specifically, country A (or B) will prefer free trade rather than a setting with customs unions if $W_\lambda^{*FT} > \widehat{W}_{AB}^*/2$, that is, if

$$\frac{n(a-c)^2[(3+4n(2+n))\delta-(1+n)(1+4n)\gamma]}{2(1+5n+4n^2)^2} > 0 \tag{3.22}$$

Similarly, country C (or D) will prefer free trade rather than a setting with customs

unions if $W_k^{*FT} > \widehat{W}_{CD}^*/2$, that is, if

$$\frac{n(a-c)^2[(3+4n(2+n))\gamma-(1+n)(1+4n)\delta]}{2(1+5n+4n^2)^2} > 0 \tag{3.23}$$

Both the inequalities (3.22) and (3.23) will be positive as long as the terms in brackets in the numerators be positive. From (3.22) an upper bound on the relative market size ratio γ/δ is obtained whereas a lower bound is found from (3.23). Therefore, *all countries* will be better off under multilateral free trade as long as,

$$\frac{(1+n)(1+4n)}{3+4n(2+n)} < \frac{\gamma}{\delta} < \frac{3+4n(2+n)}{(1+n)(1+4n)} \tag{3.24}$$

It is worth mentioning that such an interval exists. The lower bound is an increasing function in n, which tends to one as n tends to infinity. The upper bound is a decreasing function in n, which tends to one as n tends to infinity.

For the particular case of symmetry in market sizes, $\gamma = \delta$, free trade is always preferred by all.

On the other hand, partners relative market sizes should not be too asymmetric as oligopoly size n gets larger, indeed for highly asymmetric partners market sizes (associated with relatively large oligopoly size), governments will more likely defect from free-trade and prefer joining in a customs union which option is in turn less appealing than tariff-ridden trade.

3.3 A setting with asymmetric costs

We modify the above model to introduce variations in firms constant marginal costs c_λ. Note that:

- costs vary across countries of origin but not across countries within the same industry, i.e. firms within the same industry face identical costs both on local and export

goods, notwithstanding customs tariffs;

- At this stage, we may anticipate that we will need to state further restricting conditions on costs in order to ensure positive outputs (besides $a > c_\lambda$) and take into account how heterogenous costs are.

Let us consider the pre-union equilibrium, say in **market** A.

Here, profits of a representative firm located in country A consist of

$$\Pi_A = (p_A - c_A)q_{AA} + \sum_{\lambda=B,C,D} (p_\lambda - c_A - t_\lambda)q_{A_\lambda}$$

where q_{AA} and q_{A_λ} are outputs of a representative firm from country A in the domestic and foreign markets, respectively (the first subscript indicates where the firm is originated from, the second the market in which that firm operates).

Firms' profit maximization problem in market A is given by

$$\max_{q_{AA}} \Pi_{AA} = (p_A - c_A)q_{AA} = (a - \frac{Q_A}{\gamma_A} - c_A)q_{AA}$$

$$\max_{q_{\lambda A}} \Pi_{\lambda A} = (p_A - c_\lambda - t_A)q_{\lambda A} = (a - \frac{Q_A}{\gamma_A} - c_\lambda - t_A)q_{\lambda A}$$

where $\lambda = B, C, D$, so that in market A there is a cost-asymmetric oligopoly of size $4n$, with n local firms having marginal cost c_A and where foreign firms' marginal cost is augmented by the tariff $(c_\lambda + t_A)$.

As explained in previous settings, solving this maximization problem yields the output equilibrium expressions. As far as outputs are concerned, the tariff t_A enters positively the numerator in q_{AA} and negatively in the remaining three output expressions for $q_{\lambda A}$ (outputs of representative foreign firms in market A). That is

$$q_{AA} = \frac{a - c_A(1 + 4n) + n\sum c_i + 3nt_A}{4n + 1} \tag{3.25}$$

$$q_{\lambda A} = \frac{a - c_\lambda(1 + 4n) + n\sum c_i - (1 + n)t_A}{4n + 1} \tag{3.26}$$

where $\lambda = B, C, D$ and $i = A, B, C, D$. Obviously, the higher marginal cost c_A, the lesser local firms' outputs q_A. Such effect is more visible when applying tariff t_A, as local firms' outputs normally increase with t_A while foreign firms' outputs drop down. Put another way, an increase in local industry costs c_A would partially offset foreign outputs reduction due to imports tariff on foreign goods.

It is also the case (under Cournot assumption), that the above outputs are decreasing with oligopoly size n.

As anticipated, we need to impose non-negativity conditions on equilibrium outputs (which come from the numerator in (3.26)). Therefore for country A we would write, output-related conditions (ORC) as:

$$a + n\sum c_i > \max\{c_\lambda(1+4n) + (1+n)t_A\} \quad \text{for } i = A, B, C, D \text{ and } \lambda = B, C, D.$$

Further note that we should get a similar condition for countries B, C and D, and thus can summarize all the conditions as follows:

$$a + n\sum c_i > \max\{c_j(1+4n) + (1+n)t_k\} \quad \text{for } i, j, k = A, B, C, D, \quad j \neq k \qquad (3.27)$$

There are 3 times 4 conditions. Once substituting for the equilibrium tariff, numerical examples suggest that R.H.S. increases with n; this ultimately imposes higher values for a, other things equal.

For clarity sake, we shall consider **3 different types of costs asymmetries**, setting c_A as a benchmark; the questions we wish to answer being: under what conditions is an efficient country willing to form a CU with a "less efficient" one, and vice-versa, provided that a) non-members are "less efficient"; b) non-members are "more efficient"; or c) potential partners are 'similar' but 'different' from non-members?

In order to do so, should we, for example, wish to study the incentives[18] for country

[18] In this variation of the model with asymmetric costs, we shall consider two types of political arrange-

A to join a "less efficient" country (given that other outsiders are also less efficient), we would set $c_A = c$ and $c_B = c_C = c_D = c + \Delta$, where Δ measures the cost-efficiency gap. From the viewpoint of B, it would imply studying the incentives to join a "more efficient" country.

Alternative self-explanatory possibilities would thus be to set $c_B = c_C = c_D = c - \Delta$ or $c_A = c_B = c$ and $c_C = c_D = c + \Delta$.

Characterizing the incentives to form a CU in those settings would provide an answer about how cost heterogeneous can partners be to join. So let us formally distinguish three cases:

CASE 1: $c_A = c$ and $c_B = c_C = c_D = c + \Delta$

CASE 2: $c_A = c$ and $c_B = c_C = c_D = c - \Delta$

CASE 3: $c_A = c_B = c$ and $c_C = c_D = c + \Delta$.

3.3.1 CASE 1: 1 less cost-efficient country vs 3 more efficient ones

(Case 1) The pre-union situation

Proceeding as usual to obtain our subgame equilibrium in case 1, country A sets the per unit tariff that maximizes national welfare W_A,

$$t_A^* = \frac{(a-c)(1+2n) - (1+2n-2n^2)\Delta}{2+n(7+2n)}$$

which decreases as oligopoly size n or/and c_A increases.

Replacing t_A^* above allows us to write down country A's equilibrium levels for domestic firm's outputs

$$q_{AA}^* = \gamma(n+1)\frac{2(a-c)+3n\Delta}{2+n(7+2n)}$$

ments regarding the distribution of welfare: a "social" political setting with an equal distribution of welfare among members as in previous sections; and a "market-driven" political setting where domestic firms profits stay at home.

All imports expressions are equal and read as follows:

$$q^*_{BA} = q^*_{CA} = q^*_{DA} = \gamma \frac{a - c - (1+n)^2\Delta}{2 + n(7+2n)}$$

From where we may write down the corresponding ORC ensuring positive imports[19]: $\frac{a-c}{\Delta} > (1+n)^2$.

Let's now consider one of the other countries, say **country B**. The equilibrium tariff is:

$$t^*_B = \frac{3(a-c)(1+2n) - 2(1+n)^2\Delta}{6 + 3n(7+2n)}$$

We have to look at a domestic firm's outputs (where the tariff 'helps')

$$q^*_{BB} = \gamma(n+1)\frac{2(a-c) - (n+2)\Delta}{2 + n(7+2n)}$$

imports (where the tariff 'hurts') from similar -i.e. equally efficient- countries

$$q^*_{CB} = q^*_{DB} = \gamma \frac{3(a-c) - (n+1)(n+4)\Delta}{6 + 3n(7+2n)}$$

and from a less efficient foreign firm

$$q^*_{AB} = \gamma \frac{3(a-c) + (2 + 16n + 5n^2)\Delta}{6 + 3n(7+2n)}$$

Once comparing the conditions that ensure positive outputs (looking at the numerators in q^*_{BB} and q^*_{CB}), we verify that the ORC guaranteeing positive equilibrium outputs in all countries, at the pre-union situation, is the same: $\frac{a-c}{\Delta} > (1+n)^2$.

Coming back to **country A's equilibrium levels**, (domestic and foreign) firm's profits in the local market, consumer surplus, tariff revenue[20] allow to yield the equilibrium

[19] That is that for a given oligopoly size, sufficient asymmetry be imposed between profitability margin $(a-c)$ and the cost-efficiency gap (Δ).

[20] Full written expressions and proofs available on request.

national welfare:

$$\begin{aligned} W_A^* &= n\gamma\frac{3(a-c)^2(4+n)(1+2n)(5+2n)+6(a-c)(-2+n(11+4n))\Delta}{6(2+n(7+2n))^2} \\ &\quad +n\gamma\frac{(26+n(227+n(714+n(419+68n))))\Delta^2}{6(2+n(7+2n))^2} \end{aligned} \tag{3.28}$$

The pre-union equilibrium in countries B, C and D is characterized similarly by substituting for the corresponding market sizes and marginal costs.

$$\begin{aligned} W_B^* &= n\gamma\frac{(3(a-c)^2(4+n)(1+2n)(5+2n)-12(a-c)(8+n(21+2n(6+n)))\Delta}{6(2+n(7+2n))} \\ &\quad +n\gamma\frac{(56+n(2+n)(112+n(103+20n)))\Delta^2)}{6(2+n(7+2n))} \end{aligned} \tag{3.29}$$

(Case 1) The single-customs union situation

If A and B form a union, proceeding as before we obtain the equilibrium tariff set so as to maximize W_{AB}:

$$\bar{t}_{AB}^* = \frac{a-c-\Delta}{2(1+n)}$$

The tariffs in C and D remain as before and so do the equilibrium levels in these markets.

From $\bar{t}_{AB}^*$ we obtain equilibrium levels for outputs. With AB union formation, the outputs of firms from A and B will differ from each other only with respect of the marginal costs specific to each country.

$$q_{AU}^* = 2\gamma\frac{(1+2n)(a-c)+(4n+6n^2)\Delta}{(1+n)(1+4n)}$$

$$q_{BU}^* = 2\gamma\frac{(1+2n)(a-c)-(1+3n+n^2)\Delta}{(1+n)(1+4n)}$$

(where $U = AB$ union) As in the pre-union situation, there is an output-related condition on the oligopoly profitability margin to ensure positive equilibrium outputs. The restriction condition has to ensure positive imports and outputs from B. Equilibrium imports levels read as follow:

$$q^*_{CU} = q^*_{DU} = \gamma \frac{(a-c) - (1+2n+2n^2)\Delta}{(1+n)(1+4n)}$$

We saw that the strongest ORC thus far came from country A pre-union. It is no longer the condition. The one that is imposed from the numerator in imports is $\frac{(a-c)}{\Delta} > (1+2n+2n^2)$ and is more limitative than in the pre-union situation.

Proceeding as in previous settings leads us to AB union welfare expression, which can be displayed as follows (See appendix for full expression):

$$\begin{aligned} \bar{W}^*_{AB} &= \overline{CS}_{AB} + \overline{TR}_{AB} + \sum n\bar{\Pi}_{\lambda U} + \sum n\Pi_{\lambda C} + \sum n\Pi_{\lambda D} \\ &= \frac{(Q_{AB})^2}{2\gamma_{AB}} + n\bar{t}^*_{AB}(q_{CU} + q_{DU}) + n\sum(p_\lambda - c_\lambda)q_{\lambda U} \\ &\quad + n\sum(p_C - c_\lambda - t_C)q_{\lambda C} + n\sum(p_D - c_\lambda - t_D)q_{\lambda D} \end{aligned} \tag{3.30}$$

for $\lambda = A, B$.

At this stage, we may carry out some comparisons between the single CU and the pre-union equilibrium levels, starting with tariffs:

$$\begin{aligned} t^*_A - t^*_{AB} &= n\frac{(a-c)(2n-1) + (1+2n+4n^2)\Delta}{2(1+n)(2+n(7+2n))} > 0 \\ t^*_B - t^*_{AB} &= \frac{(a-c)3(2n-1)n + (2+9n-6n^2-4n^3)\Delta}{6(1+n)(2+n(7+2n))} \end{aligned}$$

Result 7 $\bar{t}^*_{AB} < t^*_A$. *Equilibrium tariff with single union formation is lower than in the pre-union situation. As far as* $t^*_B - t^*_{AB}$ *is concerned, the numerator is positive when* $\frac{(a-c)}{\Delta} > \frac{4n^3+6n^2-9n-2}{3n(2n-1)}$. *Since* $ORC > \frac{4n^3+6n^2-9n-2}{3n(2n-1)}$ *the difference is positive. Therefore,* ***no matter whether CU members are more/less efficient than outsiders, their tariffs decrease with union formation.***

What happens to imports? The difference between what a representative $C(D)$ firm

sold pre-union to markets A and B and after the union to market AB is:

$$(q^*_{\lambda A+}q^*_{\lambda B}) - q^*_{\lambda U} = \gamma\frac{(a-c)9n(1+2n) - (1+13n+27n^2+10n^3+4n^4)\Delta}{3(1+n)(1+4n)(2+7n+2n^2)}, \text{ for } \lambda = C, D$$

Since here $\frac{(a-c)}{\Delta} > ORC$, the numerator is positive and therefore **imports from non-members decrease**.

Despite the tariff reduction, union formation has a positive production effect on its members: **total union outputs increase** (unless marginal costs difference is such that $\frac{(a-c)}{|d|} \leqslant \frac{(1+4n)(2+n+2n^2)}{3n(-1+2n)}$).

Given that markets are segmented, profits of any firm in C and D remain the same as in pre-union. It follows that member firms benefit from the union creation while foreign firms suffer profits losses after AB union creation, which seems fairly logical.

AB union consumers obviously benefit from the drop in tariffs and market expansion effect (their consumer surplus improves).

Result 8 *i) Profits of member firms increase following the formation of a union.*
ii) Non-member firms' profits decrease.

Following the formation of the union, AB union joint welfare can be written as

$$\bar{W}^*_{AB} = n\gamma\frac{(a-c)^2(5+4n) - 2(a-c)\Delta(2n+3) + \Delta^2(3+n(7+5n))}{(1+n)(1+4n)} \tag{3.31}$$

which is, as expected, superior to the sum of A and B national welfare prior to the union.

A 'social' political setting

Following the *same political setting regarding welfare distribution as in previous sections*, let us assume that countries A and B agree to merely divide the joint welfare by 2 (introducing, for example, compensation schemes for the less efficient firms).

Under that 'social' political framework, country A would have an incentive to join if $(\bar{W}^*_{AB}/2) - W^*_A > 0$.The difference yields a quadratic convex function in $\frac{a-c}{\Delta}$, solving for roots $S1_A$ and $S1_B$[21], where $S1$ stands for 'social political setting' under 1 single-union situation.

In that case, the constraint line and the $root^+(S1_A)$ line intersect at $n = 7.37$ which implies that country A (the more efficient country) is only willing to join a CU with B when i) $n \geq 8$ or when ii) $n < 8$ and $\frac{a-c}{\Delta} > S1_A$. **If n is less than 8 and $ORC < \frac{a-c}{\Delta} < S1_A$, then country A does not join.**

Regarding country B,the difference $\bar{W}^*_{UB} - W^*_B$ yields a convex quadratic function in $\frac{a-c}{\Delta}$,thus when $\frac{a-c}{\Delta} > root^+(S1_B)$, $(\bar{W}^*_{AB}/2) - W_B > 0$. Since $ORC > S1_B$, we conclude that, **under a political setting guaranteeing an equal distribution of welfare for all, a less efficient country is always willing to form a CU with a more efficient country**.

A 'market-driven ´political setting

However, let us imagine *a different political setting* under which countries A and B are considering signing an agreement allowing domestic firms to retain the benefits from the union (without reverting, say, part of the profits in a regional pool to help less efficient member firms). To construct the unilateral incentive to form a CU we thus need the expressions for both A and B national welfare following the formation of the union ($\bar{W}^*_{UA}$,$\bar{W}^*_{UB}$).

In country A alone,

$$\bar{W}^*_{UA} = n\gamma \frac{(a-c)^2(5+4n) + 2(a-c)\Delta(2n-1) + \Delta^2(1+n(5+9n))}{2(1+n)(1+4n)} \tag{3.32}$$

So, under that 'market-driven' political framework, country A has an incentive to join if $\bar{W}^*_{UA} - W^*_A > 0$.The difference is also a quadratic convex function in $\frac{a-c}{\Delta}$, solving for roots $M1_A$ and $M1_B$, where M1 stands for 'market-driven political setting under 1 single-

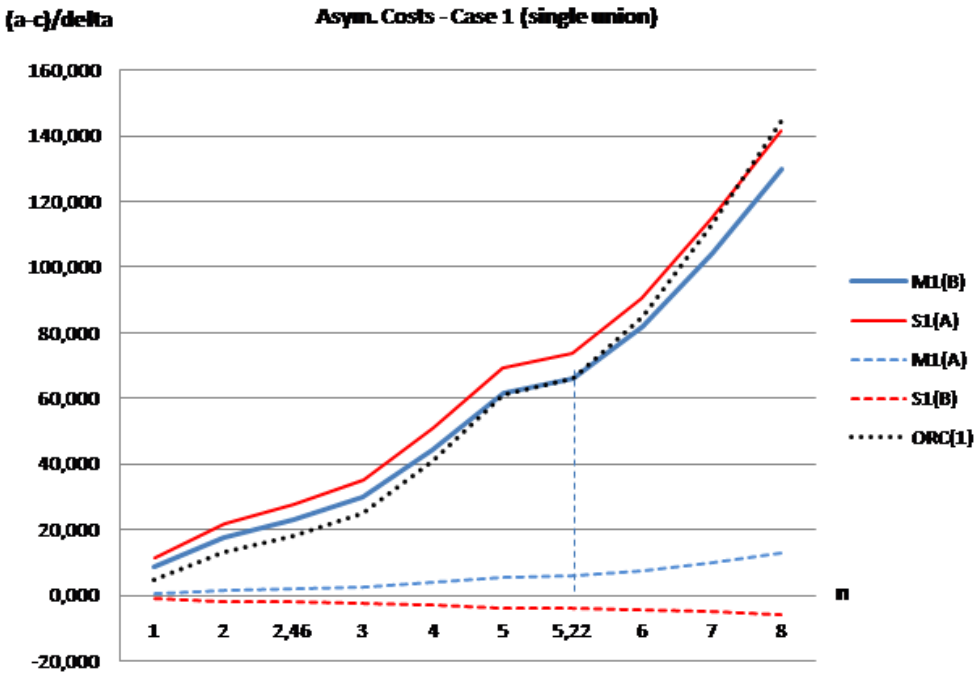
[21] Only positive and applicable roots are taken into consideration

union situation'. When $\frac{a-c}{\Delta} > root^{+}(M1_A)$ then $\bar{W}^{*}_{UA} - W^{*}_{A} > 0$. Since $ORC > M1_A$, we conclude that, under this market-driven political setting, **a more efficient country is always willing to form a CU with a less efficient country**.

Regarding country B,

$$\bar{W}^{*}_{UB} = n\gamma \frac{(a-c)^2(5+4n) - 2(a-c)\Delta(5+6n) + \Delta^2(5+n(9+n))}{2(1+n)(1+4n)}$$

As before, the difference $\bar{W}^{*}_{UB} - W^{*}_{B}$ yields a convex quadratic function in $\frac{a-c}{\Delta}$. One of the roots is inapplicable given the constraint for positive outputs.



The blue line represents the root, $root^{+}(M1_B)$, and the dotted black line depicts the constraint[22]. They intersect at $n = 5.22$. Therefore, country B,the less cost-efficient country is willing to join a CU with A when i) $n \geq 6$ or when ii) $n < 6$ and $\frac{a-c}{\Delta} > root^{+}(M1_B)$. **If n is less than 6 and $ORC < \frac{a-c}{\Delta} < M1_B$, then country B does not**

[22]From this graph is excluded the representation of roots that are either negative or unapplicable.

join.

Altogether we may interpret the following. For a given oligopoly size, oligopoly profitability $(a-c)$ must be sufficiently large relative to cost differences (Δ). In this case with two asymmetric partners, the 'efficient' partner wishes to form a CU. The 'inefficient' partner is happy to join when the market is not too concentrated $(n \geq 6)$. Why? Because the condition for positive outputs imposes quite a gap between $(a-c)$ and Δ. Otherwise, since competition is stronger with fewer firms, the 'inefficient' partner is only willing to join if that gap is a little bit larger (above the blue line), which would compensate for competition in a more concentrated market.

Result 9 *i) Welfare in member countries increases overall:* $\bar{W}^*_{AB} > (W^*_A + W^*_B)$. *However, whether A and B are willing to sign in a union together depends on the regional integration political setting they settle on.*

*- In a '**social' political setting -**guaranteeing an equal distribution of welfare for all member countries**- it is the less efficient country that is always willing to form a CU with a more efficient one.** The more efficient country (A) is willing to join a CU with B when i)* $n \geq 8$ *or when ii)* $n < 8$ *and* $\frac{a-c}{\Delta} > root^+(S1_A)$. *Otherwise, A deter from forming a union.*

*- On the contrary, in a '**market-driven' political setting**, **a more efficient country is always willing to form a CU with a less efficient country**; while the less-efficient country is willing to do so only under the right industrial structure. Specifically, here country B is willing to join a CU with A when i)* $n \geq 6$ *or when ii)* $n < 6$ *and* $\frac{a-c}{\Delta} > root^+(M1_B)$.

ii) In non-member countries, consumer surplus and tariff revenues remain unchanged thus welfare varies with firms profits only and decreases.

Results under the two types of political arrangements are consistent and fairly understandable considering the above findings: the more cost-efficient country is always willing

to join unless it has to share a too large portion of its gain from the union with the new less cost-efficient incomer!

(Case 1) The double-customs union situation

Now assume that countries C and D, also form a union among themselves. The tariff in the union is

$$\hat{t}^*_{CD} = \frac{2(a-c)-\Delta}{4(n+1)}$$

From $\hat{t}^*_{CD}$ we obtain equilibrium levels for outputs. Due to the symmetry in marginal costs, with CD union formation, the outputs of firms from C and D will be equal to one another:

$$q^*_{CU} = q^*_{DU} = \gamma \frac{(-1-2n)(2(a-c)-(2+n))\Delta}{(1+n)(1+4n)}$$

where $U = CD$ union. Equilibrium imports levels read as follow:

$$q^*_{AU} = \gamma \frac{2(a-c)+(1+14n+12n^2)\Delta}{2(1+n)(1+4n)}$$

$$q^*_{BU} = \gamma \frac{2(a-c)-(3+6n+4n^2)\Delta}{2(1+n)(1+4n)}$$

As in the pre-union situation, there is an output-related condition on the oligopoly profitability margin to ensure positive equilibrium outputs.

Here the ORC on $\frac{a-c}{\Delta}$ ratio inherent to the double customs union situation, is more restrictive than in the pre- and single-union situations, and is such that $\frac{(a-c)}{\Delta} > \frac{(3+6n+4n^2)}{2}$, in order to allow for positive imports from B (the ORC allowing for positive outputs from C and D firms being lower, and imports from A being allowed at any $\frac{(a-c)}{\Delta}$ level). Note that this restriction is stricter than the one assumed in previous situations (pre-union and single-union) and therefore will be the one prevailing when comparing equilibrium levels under a double-union situation and previous ones.

As in the case of AB union, comparing to pre-union levels, the formation of CD union leads to **imports from non-members (A and B) to decrease, while member firms (C and D's) increase their outputs**.

Both member and non-member firms' profits increase with a double-CU.

The comparison between A and B firms profits is fairly straightforward: CD union is more profitable to more efficient firms (A's) than to B's. What is less expected is that total profits for AB firms are (still) superior to total profits for CD firms.

As far as welfare is concerned, CD members should see the union joint welfare improve compared to the pre-union levels. CD joint welfare expression now reads as follows:

$$\begin{aligned}\hat{W}^*_{CD} &= n\gamma\frac{4(a-c)^2(3+4n)(2+7n+4n^2)-4(a-c)(11+57n+80n^2+32n^3)\Delta}{4(1+n)^2(1+4n)^2} \\ &\quad +n\gamma\frac{(21+121n+204n^2+132n^3+32n^4)\Delta^2}{4(1+n)^2(1+4n)^2}\end{aligned} \tag{3.33}$$

Compared to the pre-union situation, **CD welfare always increases whenever** $n \geq 3$. With a higher industrial concentration ($n < 3$), CD joint welfare increases only if $\frac{a-c}{\Delta}$ ratio lies above $R2_{CD}$**.**

Outsiders face a similar condition:. Following CD union, AB joint welfare expression now reads as follows:

$$\begin{aligned}\hat{W}^*_{AB} &= n\gamma\frac{4(a-c)^2(3+4n)(2+7n+4n^2)-4(a-c)(1+2n)(7+19n+8n^2)\Delta}{4(1+n)^2(1+4n)^2} \\ &\quad +n\gamma\frac{(17+120n+348n^2+404n^3+160n^4)\Delta^2}{4(1+n)^2(1+4n)^2}\end{aligned} \tag{3.34}$$

The difference $\hat{W}^*_{AB} - (W^*_A + W^*_B)$ yields a quadratic convex function in $\frac{a-c}{\Delta}$ and the positive secondary $root^+(R2_{CD})$ intersects with the ORC at 1.73. Thus, compared to the pre-union situation, **AB welfare improves whenever** $n \geq 2$ or $\frac{a-c}{\Delta} > root^+(R2_{AB})$ for $n < 2$.

Note that countries no longer benefit from the comfortable single-union situation where members' welfare improved no matter what. Now in the face of another existing union, potential partners had rather deter from integration should industrial concentration and oligopoly profitability margin not be favourable.

Result 10 *ii) CD members' welfare increases with respect to the pre-union situation as long as* $n \geq 3$. *For n inferior to 3, it does only if* $\frac{a-c}{\Delta} > root^{+}(R2_{CD})$.
iii) Outsiders face a similar condition: AB's welfare improves with respect to the pre-union situation only when $n > 2$ *or* $\frac{a-c}{\Delta} > root^{+}(R2_{AB})$.

Result 11 *v) Comparing members' and non-members' welfare, we find that, in a double-union situation, AB welfare is superior to CD welfare, the difference between the two unions being that AB union integrates the most efficient country of all four.*

(Case 1) A single-union with symmetric partners (C,D)

Now let us suppose that C **and** D **are considering partnership, while** A and B **decide not to form a union (say** because market conditions do not comply with their basic profitability requirements**).**

In that case, CD union total welfare can be easily computed adding to CD's welfare within the union their (pre-union) profits in markets A and B:

$$\bar{W}^{*}_{CD} = \overline{CS}_{CD} + \overline{TR}_{CD} + \sum n\bar{\Pi}_{\lambda U} + \sum \Pi_{\lambda A} + \sum \Pi_{\lambda B}$$

where $\lambda = C, D$ and $U = CD$ union.

Calculus for the corresponding equilibrium levels encompass the same proceedings as before, thus we may directly state a few results (*full proof available on request).*

No matter whether A and B decide to form a union or not, C and D have relatively similar incentives as in the double-union situation depicted above, that is

Result 12 *i) CD welfare increases with respect to the pre-union situation as long as* $n \geq 2$. *For n inferior to 2, it does only if* $\frac{a-c}{\Delta} > root^{+}(R1_{CD})$.

3.3.2 Case 2: a less cost-efficient country (A) vs more efficient ones (B,C,D)

In this case -again setting $c_A$as a benchmark- we study the incentives for country A to join a "more cost-efficient" country, whereas from the viewpoint of B we study the incentives to join a "less cost-efficient" country, given that non-members are more efficient. We thus set $c_A = c$ and $c_B = c_C = c_D = c - \Delta$.

(Case 2) The pre-union situation

Take **country** A. Regarding the pre-union situation, the equilibrium tariff becomes:

$$t_A^* = \frac{(a-c)(1+2n)+(1+2n-2n^2)\Delta}{2+n(7+2n)}$$

Plugging this in

$$q_{AA}^* = (n+1)\gamma\frac{2(a-c)-3n\Delta}{2+n(7+2n)}$$

and the imports expressions (all are equal)

$$q_{BA}^* = q_{CA}^* = q_{DA}^* = \gamma\frac{a-c+(1+n)^2\Delta}{2+n(7+2n)}$$

From here we get the output-related condition (ORC) for market A: $\frac{a-c}{\Delta} > \frac{3n}{2}$[which ensures positive outputs from firm A and which is above the (negative) imports-related constraint].

Let's now consider one of the other (more cost-efficient) countries, say **country** B. The equilibrium tariff is:

$$t_B^* = \frac{3(a-c)(1+2n)+2(1+n)^2\Delta}{6+3n(7+2n)}$$

. Outputs in B read as follows:

$$q^*_{BB} = (n+1)\gamma \frac{2(a-c)+(2+n)\Delta}{2+n(7+2n)}$$

Hence, B domestic firms outputs are always positive (the tariff helps and now B firms are more efficient than A's) and imports from A, then C and D, respectively are:

$$q^*_{AB} = \gamma \frac{3(a-c)-(2+16n+5n^2)\Delta}{6+3n(7+2n)}$$

$$q^*_{CB} = q^*_{DB} = \gamma \frac{3(a-c)+(n+1)(n+4)\Delta}{6+3n(7+2n)}$$

.

In contrast with case 1, the relevant constraints come from the numerators in A firms outputs: $\frac{a-c}{\Delta} > \max\{\frac{3n}{2}, \frac{2+16n+5n^2}{3}\}$, thus the ORC is $\frac{a-c}{\Delta} > \frac{2+16n+5n^2}{3}$.

(Case 2) The single-(AB) union situation

We now move to countries A and B forming a union. The tariff in AB union (market sizes aggregated) is

$$t^*_{AB} = \frac{a-c+\Delta}{2(n+1)}$$

Looking at AB union's outputs

$$q^*_{AU} = 2\gamma \frac{(a-c)(1+2n)-(2n+3n^2)\Delta}{(1+n)(1+4n)}$$

$$q^*_{BU} = 2\gamma \frac{(a-c)(1+2n)+(1+3n+n^2)\Delta}{(1+n)(1+4n)}$$

and imports,

$$q^*_{CU} = q^*_{DU} = \gamma \frac{(a-c)+(1+2n+2n^2)\Delta}{(1+n)(1+4n)}$$

it seems evident that we have to impose the non-negativity condition on A firms outputs (otherwise trade diversion is "dramatic"), that is $\frac{a-c}{\Delta} > \frac{n(2+3n)}{(1+2n)}$. Nonetheless, the former

(pre-union) ORC being stronger, it shall prevail here. Therefore, we take the ORC as before, i.e. $\frac{a-c}{\Delta} > \frac{2+16n+5n^2}{3}$.

Comparing tariffs:

$$\begin{aligned} t_A^* - t_{AB}^* &= n\frac{(a-c)(2n-1)-(1+2n+4n^2)\Delta}{2(1+n)(2+n(7+2n))} \\ t_B^* - t_{AB}^* &= \frac{(a-c)3(2n-1)n-(2+9n-6n^2-4n^3)\Delta}{6(1+n)(2+n(7+2n))} > 0 \end{aligned}$$

The numerator is positive whenever $\frac{(a-c)}{\Delta} > \frac{4n^2+2n+1}{(2n-1)}$. Since $\frac{2+16n+5n^2}{3} > \frac{4n^2+2n+1}{(2n-1)}$ the difference is positive. Therefore,

Result 13 $t_A^* > t_{AB}^*$, $t_B^* > t_{AB}^*$, *i.e.* ***members' tariffs, no matter whether they are more/less efficient than outsiders, decrease with union formation.***

Imports from non-members decrease, as expected. And also not surprisingly, A and B firm sell more after the union: $q_{AU}^*(q_{BU}^*) > q_{\lambda A}^* + q_{\lambda B}^*$ (where $\lambda = A, B$).

A 'social' political setting

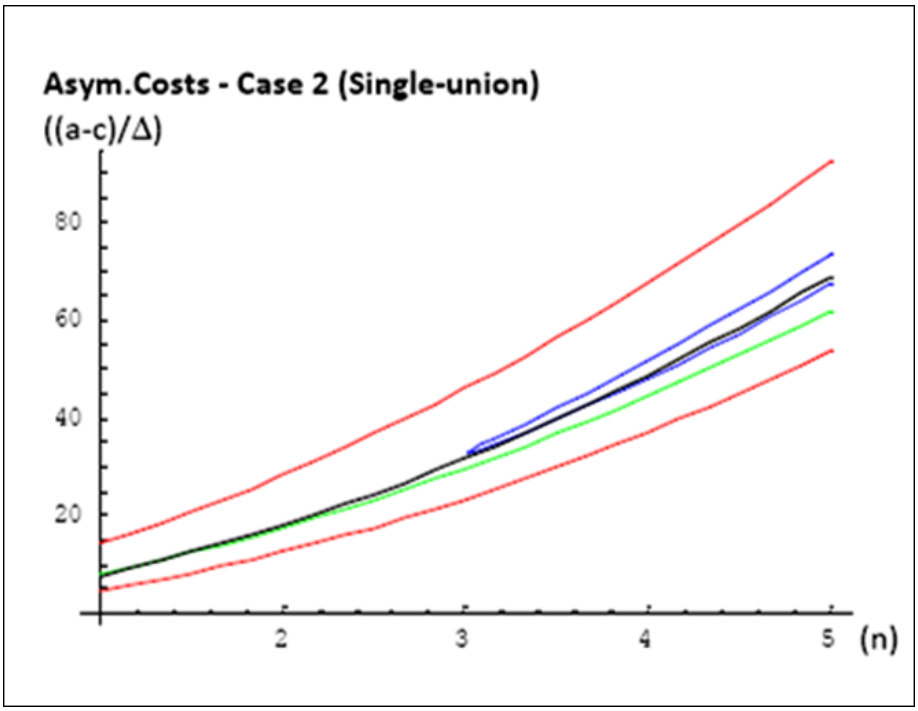
Regarding the unilateral incentives to engage in a union *under a social political setting*, like in case 1, the less efficient country A is always willing to form a union with more efficient B. Indeed, the difference $W_{AB}^*/2 - W_A^*$ yields a quadratic convex polynomial, which has two roots that are real and positive and the constraint $\frac{2+16n+5n^2}{3}$ lies above both roots. (*See graph below: The black line is the constraint for positive output, the two red lines are the upper and lower roots*). As far as B is concerned it will almost always want to form a union with a less efficient partner, unless $n = 1$ and $\frac{2+16n+5n^2}{3} < \frac{(a-c)}{\Delta} < S1_B$ *(See graph below: The green line is the upper root*). It seems that facing efficient outsiders makes B mostly wiling to engage in a CU to benefit from market expansion, no matter how efficient its partner is, except in case of monopolies.

A 'market-driven' political setting

Under a 'market-driven' political setting, the efficient country B **is always willing to form a CU**, as in case 1 **(**since $W_{UB}^* > W_B^*$**)**. In contrast, the difference $W_{UA}^* - W_A^*$

yields a quadratic convex polynomial, with two roots that are real and positive and the ORC intersects with the positive root (M1A). Hence, **country A is willing to form a CU with B when i)** $n \geq 4$ and $\frac{(a-c)}{\Delta} > root^{+}$ **or ii)** $n < 4$ and $\frac{(a-c)}{\Delta} > M1A$ (since $M1A > ORC$) . (*See graph below: The black line is the constraint for positive output, the two blue lines are the upper and lower roots.*)

The major difference here is that $M1_A > S1_B$, i.e. B (the more efficient country) will engage more easily into a union under a social political setting than A (the less efficient country) will under a market-driven political setting. Indeed, A is more reluctant to compete under a market-driven political setting, than B is willing to give up some of its benefits from the CU in favour of A.



Comparing cases 1 and 2 it does make a difference whether non-members are more efficient: it is more difficult to find a CU between A and B when non-members are more efficient. In this case we don't want oligopoly profitability to be too large relative to the cost gap otherwise A welfare decreases with the formation of a union with ('more efficient') B. A firms produce LESS than partner's firms and than non-members', therefore

the gap becomes larger as $(a-c)$ increases, thus the need for A that the cost difference be relatively large compared to oligopoly profitability.

Result 14 *Welfare in member countries increases overall and A and B's incentives to form a union are tied to the RI political setting, as in the previous case.*
The more efficient country is willing to form a CU with a less efficient partner [unless $n < 2$ *and* $\frac{2+16n+5n^2}{3} < \frac{(a-c)}{\Delta} < root^+$ *in a social political setting].*
The less efficient country is willing to do so only if $\frac{2+16n+5n^2}{3} < \frac{(a-c)}{\Delta} < root^+$*, under a social RI policy, and if* ***i)*** $n \geq 4$ *and* $\frac{2+16n+5n^2}{3} < \frac{(a-c)}{\Delta} < root^+$ ***or ii)*** $n < 4$ *and* $\frac{(a-c)}{\Delta}$ *lies between the roots, under a 'market-driven' RI policy -which is a much stricter condition than in case 1.*
Overall, the less efficient country will engage more easily into a union under a social political setting.

(Case 2) A single CD-Union situation: The difference $W^*_{CD}/2 - W^*_{\lambda}$ is always positive (with $\lambda = C, D$), under the compliance of the OCR condition.

(Case 2) The double-union situation

If countries C and D also form a union among themselves, the tariff in the union is now

$$t^*_{CD} = \frac{2(a-c)+\Delta}{4(n+1)}$$

Here the output-related condition is such that $\frac{(a-c)}{\Delta} > (\frac{1}{2}+7n+6n^2)$, which is superior to $\frac{2+16n+5n^2}{3}$ (thus shall be the one prevailing here and for comparison sake with pre-union levels).

As in case 1, the formation of CD union leads to a drop in **imports** from non-members (A and B), while member firms (C and D's) increase their **outputs,** compared to the pre-union situation.

Both member and non-member firms **profits** increase but A's profits exceed B's; and, unlike in case 1, AB profits are inferior to ('more efficient') CD profits.

CD **welfare increases** with the union, compared to the pre-union and single-(AB)union situations.

AB welfare also increases overall (compared to the pre-union level), and again unlike case 1, both A and B's welfare improve (no matter the political setting).

Result 15 *i) Members' welfare increases with respect to the pre-union situation. ii) Outsiders welfare improves.*

As in the previous case, CD welfare increases but is inferior to AB welfare. The difference here lies in the impact magnitude of $\frac{a-c}{\Delta}$ on welfare: in this case, the smaller the profitability margin ratio, the higher the gain margin on AB side; while in case 1, the larger the oligopoly profitability with respect to cost difference, the wider the gap between AB and CD welfare levels. In both cases, such gap also increases with n.

3.3.3 Case 3: 2 more efficient countries vs 2 less efficient ones

(Case 3) The pre-union situation

Here, we study the incentives for country A to join an "equally efficient" country, while the other two outsiders are less efficient, i.e. $c_A = c_B = c$ and $c_C = c_D = c + \Delta$.

Now that countries A and B are similar (have symmetric marginal costs), their tariffs are

$$t_A^* = t_B^* = \frac{3(1+2n)(a-c) - (2+4n-4n^2)\Delta}{6+3n(7+2n)}$$

Thus, A and B firms' outputs are positive and can be written as:

$$q_{AA}^* = q_{BB}^* = \frac{2(1+n)\gamma(a-c+n\Delta)}{2+n(7+2n)}$$

$$q_{AB}^* = q_{BA}^* = \gamma\frac{3(a-c)+2(1+n(5+n))\Delta}{6+3n(7+2n)}$$

. C and D's firms outputs are:

$$q^*_{AC} = q^*_{AD} = q^*_{BC} = q^*_{BD} = \gamma \frac{3(a-c) - (4 + 11n + 4n^2)\Delta}{6 + 3n(7 + 2n)}$$

. So we impose that the output-related condition be $\frac{a-c}{\Delta} > \frac{4+11n+4n^2}{3}$.

(Case 3) The single-union situation

Following CU formation, tariff applied by AB union is the same as in Case 1:

$$t^*_{AB} = \frac{a - c - \Delta}{2(n+1)}$$

Equilibrium imports are

$$q^*_{CU} = q^*_{DU} = \gamma \frac{(a-c) - (1+2n)^2\Delta}{(1+n)(1+4n)}$$

and will be positive as long as $\frac{a-c}{\Delta} > (1+2n)^2$. This condition is stronger than the previous one [$\frac{a-c}{\Delta} > (1+2n)^2 > \frac{4+11n+4n^2}{3}$] and shall prevail here. We may then state a few results.

Result 16 *i) The tariff decreases with the formation of the union.*
ii) Imports from non-members decrease. Outputs from partners go up.

To check the incentives for the potential partners to engage in a union, we just need to look at one of the partners. Halving welfare in the union

$$\hat{W}^*_{AB}/2 = n\gamma \frac{(a-c)^2(5+4n) - 2(a-c)\Delta + (1+2n)^2\Delta^2}{(1+n)(1+4n)}$$

and substracting welfare before the union we get a quadratic convex function of $\frac{a-c}{\Delta}$. The roots are non-real, therefore, **countries A and B are always willing to join when non-members are less efficient.**

Result 17 *In this case, symmetric potential partners are always willing to join when non-members are less efficient.*

A variation on case 3: a single union between less efficient countries

Before considering a double-union situation, let us imagine that instead of being the more efficient countries, A and B are the less efficient pair of countries, i.e. $c_A = c_B = c$ and $c_C = c_D = c - \Delta$.. In this case, the only variant would regard the tariff imposed by AB union. Indeed, in that case the ORC would be $\frac{a-c}{\Delta} > \frac{2(1+n(5+n))}{3}$ and the tariff would decrease when $1 < n$. Otherwise, for $n = 1$, and $ORC < \frac{a-c}{\Delta} < root$, the tariff imposed by the union on imports increases. In other words, in the case of monopolies, profitability margins must be very large or the union shall not reduce their common external tariff.

(Case 3) The double-union situation

If countries C and D form a union among themselves, the tariff in their union is now

$$t^*_{CD} = \frac{(a-c)}{2(n+1)}$$

Here the output-related condition is such that $\frac{(a-c)}{\Delta} > (1+n)$. Since the pre-union ORC is stronger it shall also be the one prevailing here, thus we set $\frac{(a-c)}{\Delta} > (1+2n)^2$.

As in former cases,

Result 18 *Imports from non-members (A and B) decrease, while members' outputs increase.*

To be noted that whenever $\frac{(a-c)}{\Delta} > \frac{1}{2}$, CD members' profits are inferior to outsiders' profits.

Result 19 *Both members' and outsiders' welfare improve, with respect to the pre - union and a single-union situations.*

Note that if $\frac{(a-c)}{\Delta} > \frac{1}{2}$, CD welfare is inferior to ('more efficient') outsiders' welfare, (that is always, since $(1+2n)^2 > \frac{1}{2}$) and the gap increases with the profitability-cost ratio, no matter n.

3.3.4 Solving the game with costs asymmetries

In order to solve the game with 4 countries facing costs asymmetries,we proceed to analyze:

A - the best response for countries A **and** B and state that, whenever countries C and D would NOT form a union, countries A and B have an incentive to do so if:

- $\bar{W}^*_{AB}/2 - W^*_\lambda \geq 0$ $(\lambda = A, B)$ under a 'social' political setting
- $\bar{W}^*_{U\lambda} - W^*_\lambda \geq 0$ $(\lambda = A, B)$ under a 'market-driven' political setting;

Provided that C and D DO form a union, countries A and B have an incentive to do so if:

- $\widehat{W}^*_{AB}/2 - \bar{W}^*_\lambda \geq 0$ $(\lambda = A, B)$ under a 'social' political setting
- $\widehat{W}^*_{U\lambda} - \bar{W}^*_\lambda \geq 0$ $(\lambda = A, B)$ under a 'market-driven' political setting;

B - the best response for countries C **and** D and state that, whenever countries A and B would NOT form a union, countries C and D have an incentive to do so if:

- $\bar{W}^*_{CD}/2 - W^*_\lambda \geq 0$ $(\lambda = C, D)$ under a 'social' political setting
- $\bar{W}^*_{U\lambda} - W^*_\lambda \geq 0$ $(\lambda = C, D)$ under a 'market-driven' political setting.

Provided that A and B DO form a union, countries C and D have an incentive to do so if:

- $\widehat{W}^*_{CD}/2 - \bar{W}^*_\lambda \geq 0$ $(\lambda = C, D)$ under a 'social' political setting
- $\widehat{W}^*_{U\lambda} - \bar{W}^*_\lambda \geq 0$ $(\lambda = C, D)$ under a 'market-driven' political setting;

In the previous sections we have calculated the gains corresponding to each strategy, distinguishing 3 cases, setting c_A as a benchmark for clarity sake. We shall now present the results of the game for each of the 3 different cases.

CASE 1 = one more-efficient country (A) faces less-efficient outsiders

In case 1: $c_A = c$ and $c_B = c_C = c_D = c + \Delta$. All foreign countries have marginal costs superior to country A's; then in order to ensure (positive) imports, Δ must be such that $\frac{(a-c)}{\Delta} > \frac{3+6n+4n^2}{3}$.

Introducing some nuances as in previous sections (regarding welfare distribution policy amongst the two asymmetric partner countries A and B) and differentiating between two sets of regional integration political arrangements, we may state the following:

Provided that C and D join into a union,

- **Under a 'social' political setting**, if $(\hat{W}^*_{AB}/2) - \bar{W}^*_{\lambda} > 0$, then country λ has an incentive to join. In that case, B (the less cost-efficient) will always be willing to join, while for A (the more cost-efficient) to have an incentive to join in with B, there must be an even wider gap between $(a-c)$ and Δ than the ORC; i.e. A benefits from an evenly distributed welfare only when $\frac{a-c}{\Delta} > root^{+}(S2_A)$, knowing that $S2_A > ORC$ and that $S2_A > R2_{AB}$.

- **Under a 'market driven' RI policy,** if $\hat{W}^*_{U\lambda} - \bar{W}^*_{\lambda} > 0$, then country λ has an incentive to join. Here, the more efficient country (A) is always willing to join in a union with the less efficient country (B), as the ORC ensures A's welfare to increase $(ORC > root^{+}(M2_A))$. B on the contrary will be reluctant to join unless $n \geqslant 4$ or if $\frac{a-c}{\Delta} > root^{+}(M2_B)$, whenever $n < 4$.

Note also that, just as in the pre - union situation, A is more 'exquisite'(i.e. requires a larger profitability margin),when deciding over a potential union under a social political setting than B under market - driven conditions $(S2_A > M2_B > ORC)$.

Since C and D display no asymmetries, whether they have an incentive to become union partners, whenever A and B do, is fairly clear, it suffices that $(\hat{W}^*_{CD}/2) - \bar{W}^*_{C(or\ D)} > 0$, which is always the case.

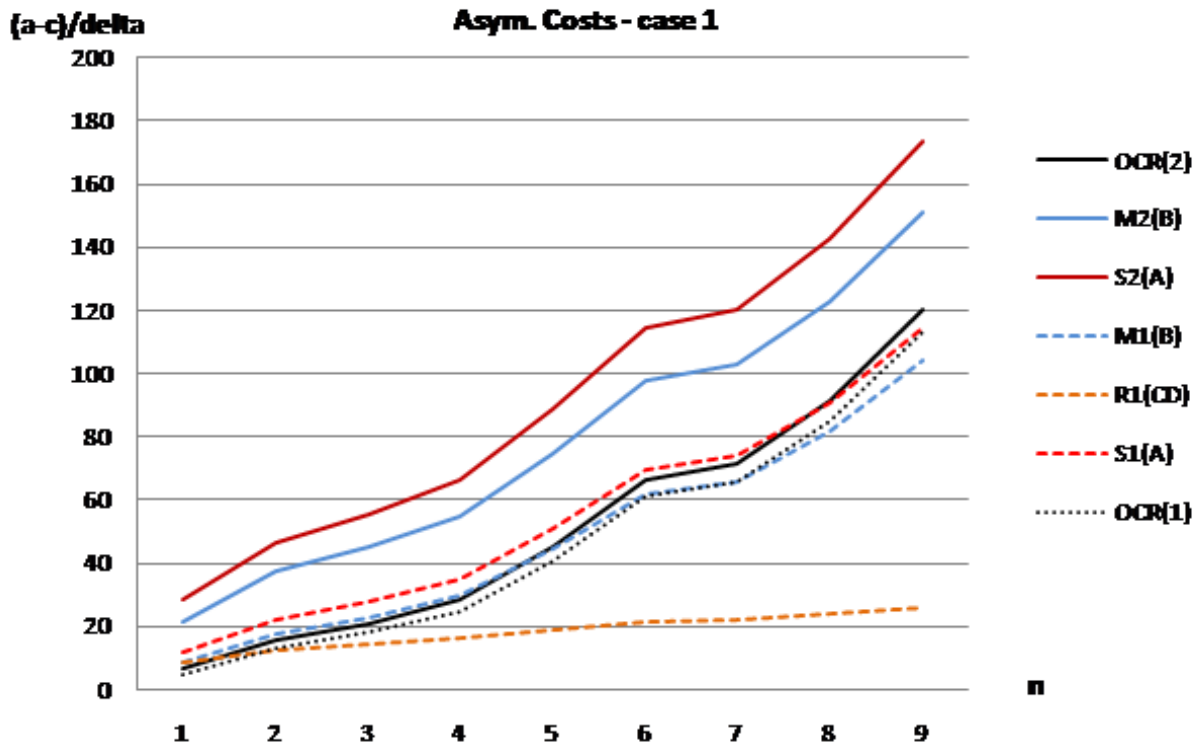
Finally, note that $S2_A > M2_B > R2_{CD}$, thus whenever the $\frac{a-c}{\Delta}$ ratio lies above $S2_A$, all countries are willing to engage in a customs union with their potential partner.

Result 20 *Considering the game where countries A and B on one side, and countries*

C and D on the other, decide simultaneously whether to form a customs union,

- In a 'social' political setting, ***the Nash equilibrium is (U,U) provided the respective output-related conditions hold and that*** $\frac{(a-c)}{\Delta} > root^{+}(S2_A)$.

- Under 'market-driven' political arrangements, ***the Nash equilibrium is (U,U) provided the respective output-related conditions hold and that*** $n \geqslant 4$ *or* $\frac{a-c}{\Delta} > root^{+}(M2_B)$, *whenever* $n < 4$.



A single-union with symmetric partners

Result 21 *i) Should profitability margins not large enough to meet A and B requirements for a potential union, C and D still have the possibility to join in a union of their own, under the same market conditions. Hence,* ***provided the respective output-related conditions hold, the Nash equilibrium is (N,U)****, i.e. A and B have no incentive*

to form a union but C and D do, ***for*** $ORC < \frac{a-c}{\Delta} < S2_A\ (M2_B)$ ***unless*** $n < 2$ ***and*** $\frac{a-c}{\Delta} < R1_{CD}$***.***

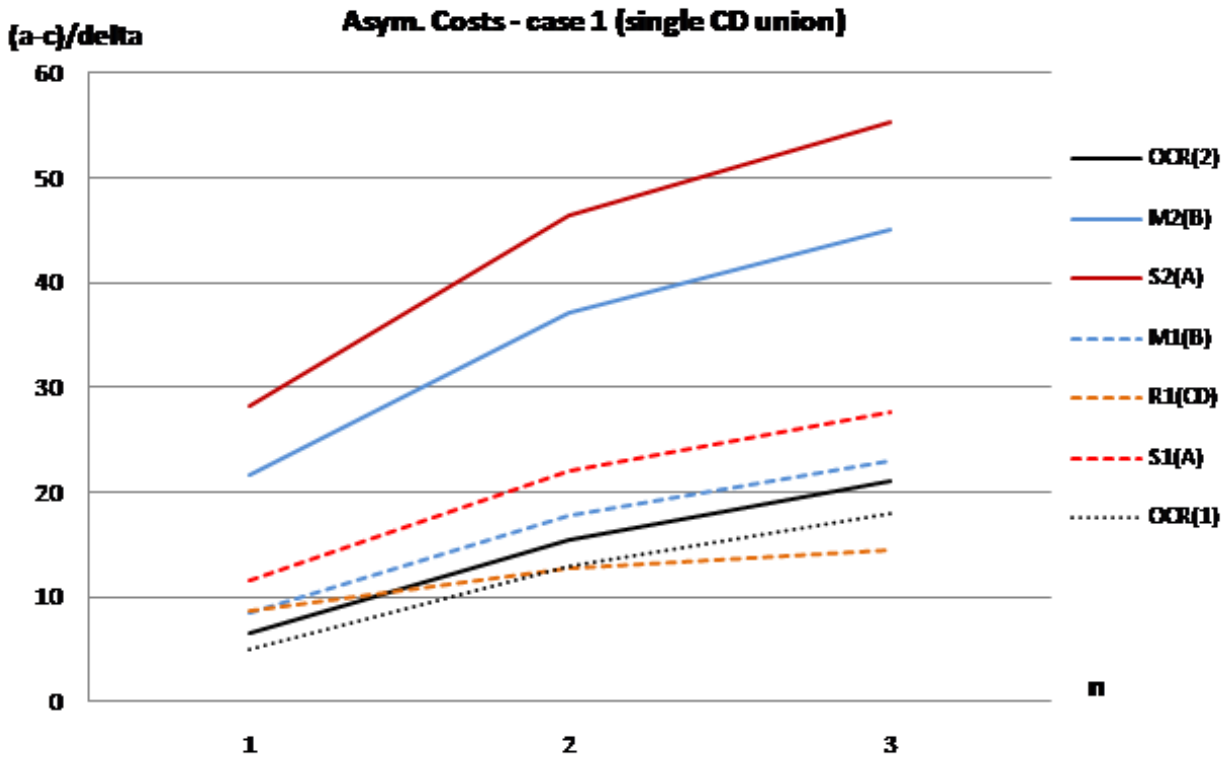
A single-union with asymmetric partners

Result 22 *iii) [In a market-driven political setting,] whenever* $n < 2$ *it happens that* $ORC < M1_B < R1_{CD}$*, thus, should* $M1_B < \frac{a-c}{\Delta} < R1_{CD}$*, and* ***provided the respective output-related conditions hold, the Nash equilibrium is (U,N)*** *i.e. C and D would not form a union but A and B would* (See Single (AB) CU situation in section 4.1.2 above).

NO union

Result 23 *ii) Including when the respective output-related conditions hold, since* $R1_{CD} < S2_A\ (M2_B)$*, whenever* $n < 2$ *and* $\frac{a-c}{\Delta} < R1_{CD}$*,* ***the Nash equilibrium is (N,N)***[23].

[23] *Under these specific profitability margin and industry size conditions, calculations with numerical examples show that in a situation where C and D form a union, welfare losses for more-efficient outsider A would be greater should A join in a union with another country; which confirms that no country would be willing to join in a union.*



Overall, it is noteworthy that the requisites for the formation of a CU between the two cost-asymmetric partners are stricter than for the cost-symmetric ones, to such an extent that there are conditions under which: only 1 union would be formed between the symmetric partners (and still (at least one of) the asymmetric potential partners would decline an agreement); or NO union would be formed at all.

CASE 2 = One less-efficient country A faces three more-efficient ones (B,C,D)

In case 2**:** $c_A = c$ and $c_B = c_C = c_D = c - \Delta$. All countries B,C and D have marginal costs inferior to country A's; then in order to ensure (positive) imports, Δ must be such that $\frac{(a-c)}{\Delta} > \frac{1}{2} + 7n + 6n^2$.

Result 24 *Considering the game where countries A and B on one side, and countries C*

and D on the other, decide simultaneously whether to form a customs union, ***the Nash equilibrium is (U,U) provided the respective output-related conditions hold.***

It seems that facing the formation of a union between two more efficient countries leaves no choice between our two asymmetric countries but to join in a union of their own.

As far as C and D are concerned they are always willing to join in a union with one another.

CASE 3 = Two more-efficient countries vs two less-efficient ones

In case 3: $c_A = c_B = c$ and $c_C = c_D = c + \Delta$. Countries C and D have marginal costs superior to country A and B's; then in order to ensure (positive) outputs, Δ must be such that $\frac{(a-c)}{\Delta} > (1+2n)^2$.

Less efficient countries (C and D here) are always willing to sign in a union together whenever more efficient countries have formed a union of their own (and vice-versa: more efficient countries willing to join in a union together whenever less efficient countries will).

Result 25 *Considering the game where countries A and B on one side, and countries C and D on the other, decide simultaneously whether to form a customs union,* ***the Nash equilibrium is (U,U) provided the respective output-related conditions hold.***

A setting with Free Trade

We solve the game with 4 countries facing costs asymmetries under free-trade, setting tariffs equal to zero for each of the 3 case scenarios. We state that for a given country λ to prefer free-trade over a double-union situation (assuming the favourable market conditions therein), it suffices that:

- $W_\lambda^{*FT} > \widehat{W}_{\lambda\beta}^*/2$ [in a 'social' political setting]; and
- $W_\lambda^{*FT} > \widehat{W}_{\lambda U}^*$ [in a 'market-driven' political setting]

where $W_{\lambda}^{*FT}$is equilibrium welfare for country λ under free trade, while $\widehat{W}_{\lambda\beta}^{*}$ and $\widehat{W}_{\lambda U}^{*}$ respectively are equilibrium welfare for customs union $\lambda\beta$ and country λ under tariff-riden trade when two customs unions are formed.

In **CASE 1**, ($c_A = c$ and $c_B = c_C = c_D = c + \Delta$), the equilibrium welfare under free trade for country A (the most efficient) is as follows:

$$W_{A}^{*FT} = \frac{n\gamma(2(a-c)^2(1+8n) - 12(a-c)n\Delta + 9n(1+2n)\Delta^2)}{2(1+4n)^2}$$

and for country λ ($\lambda = B, C, D$):

$$W_{\lambda}^{*FT} = \frac{n\gamma(2(a-c)^2(1+8n) - 4(a-c)(1+7n)\Delta + (2+n(13+2n))\Delta^2)}{2(1+4n)^2}$$

Note that when tariffs are set to zero, the output-related conditions are less restrictive. In that case, the OCR allowing for imports is $\frac{(a-c)}{\Delta} > (1+n)$.

Under a social political agreement, country A will prefer free trade rather than a setting with customs unions if: $W_{A}^{*FT} - \widehat{W}_{AB}^{*}/2 > 0$, which is not the case. While country B will prefer free trade rather than a setting with customs unions if: $W_{B}^{*FT} - \widehat{W}_{AB}^{*}/2 > 0$, which is not the case. Similarly, a country λ ($\lambda = C, D$) will prefer free trade rather than a setting with customs unions if: $W_{\lambda}^{*FT} - \widehat{W}_{CD}^{*}/2 > 0$, which is not the case either. Thus, under that type of agreement, all 4 countries will deter from free trade.

Under a market-driven political agreement, country A will prefer free trade rather than a setting with customs unions if: $W_{A}^{*FT} - \widehat{W}_{AU}^{*} > 0$, which is not the case. While country B will prefer free trade rather than a setting with customs unions if: $W_{B}^{*FT} - \widehat{W}_{BU}^{*} > 0$, which is the case for $OCR < \frac{(a-c)}{\Delta} < root^{+}$; where $root^{+}$ is the secondary root solving for the concave polynomial expression of $W_{B}^{*FT} - \widehat{W}_{BU}^{*}$.

What the above results imply is that whenever welfare is equally split among partners (under a social political agreement), a double-union situation will always be favoured

over free trade. On the other hand, under a market-driven political agreement, B will always prefer free trade rather than signing in with a more efficient country, unless the profitability margin is very large or the cost asymmetry is very small ($\frac{(a-c)}{\Delta} > root^{+}$). Intuitively, that could be explained by the fact that, under tariff-riden trade, the loss in tariff revenues and the increased competition B experiences when joining in with A is not compensated by the gain in market expansion and consumer surplus. Under free trade however, B's losses in terms of tariff revenues are offset by a greater market expansion (than just AB union's). That is consistent with our previous result under tariff-riden trade, where we established that B had an incentive to form a union with A only when the profitability margin/cost ratio was very large.

Comparing welfare equilibrium levels for B under the different situations, we also find that whenever the cost asymmetry is not too large, B prefers free-trade over signing in with more efficient A but actually prefers tariff-riden trade over free-trade, to protect its market from more efficient firms from A!

Country A, on the other side prefers the double-union situation over tariff-riden trade, which in turn is preferred over free-trade, even though under free trade country A benefits from a higher equilibrium welfare level than less efficient countries: $W_A^{*FT} > W_\lambda^{*FT}$, where $\lambda = B, C, D$.

As far as C and D are concerned, they will prefer free trade rather than a setting with customs unions if: $W_\lambda^{*FT} - \widehat{W}_{\lambda U}^{*} > 0$ (or if $W_\lambda^{*FT} - \widehat{W}_{CD}^{*}/2 > 0$, which is the same in their case). That is not the case, in fact C and D will always have more incentive to form a union together instead of free trade.

Overall, it seems that a less efficient country is happier to form a union with an equally (less) efficient partner rather than with a more efficient one; which is consistent with the literature saying that preferential trade agreements are more likely to happen among similar countries.

In **CASE 2**, ($c_A = c$ and $c_B = c_C = c_D = c - \Delta$), the equilibrium welfare under free

trade for country A (the least efficient) is as follows:

$$W_A^{*FT} = \frac{n\gamma(2(a-c)^2(1+8n) + 12(a-c)n\Delta + 9n(1+2n)\Delta^2)}{2(1+4n)^2}$$

and for country λ ($\lambda = B, C, D$):

$$W_\lambda^{*FT} = \frac{n\gamma(2(a-c)^2(1+8n) + 4(a-c)(1+7n)\Delta + (2+n(13+2n))\Delta^2)}{2(1+4n)^2}$$

(Here, the OCR is $\frac{(a-c)}{\Delta} > 3n$). Proceeding in a similar fashion as in case 1 above, we establish that all 4 countries will prefer a double-union situation over free trade, both under a social political and a market-driven political agreement, since $W_\lambda^{*FT} - \widehat{W}_{\lambda\beta}^*/2 < 0$ and $W_\lambda^{*FT} - \widehat{W}_{\lambda U}^* < 0$.

This time, as can be expected country A benefits from a lower equilibrium welfare level than the other (now more efficient) countries: $W_A^{*FT} < W_\lambda^{*FT}$, where $\lambda = B, C, D$.

The above result suggests that more efficient countries favour the formation of customs unions over multilateral free trade, and that a less efficient minority will have no choice but joining in a union with a more efficient partner. Which is consistent with Das and Gosh's (2006) findings regarding how free trade appear less appealing to North (or more efficient) countries.

In **CASE 3**, ($c_A = c_B = c$ and $c_C = c_D = c + \Delta$), the equilibrium welfare under free trade for country A and B (the most efficient ones) is as follows:

$$W_\lambda^{*FT} = \frac{n\gamma((a-c)^2(1+8n) - (4(a-c)n\Delta + 2n(1+2n)\Delta^2)}{(1+4n)^2}$$

, where $\lambda = A, B$

and for the least efficient countries (C and D):

$$W_{\lambda}^{*FT} = \frac{n\gamma((a-c)^2(1+8n) - 2(a-c)(1+6n)\Delta + (1+6n+4n^2)\Delta^2)}{(1+4n)^2}$$

(The OCR is $\frac{(a-c)}{\Delta} > (1+2n)$).

Under case 3, where 2 equally efficient countries face 2 less efficient ones, we also establish that all 4 countries will prefer a double-union situation over free trade, both under a social political and a market-driven political agreement, since $W_{\lambda}^{*FT} - \widehat{W}_{\lambda\beta}^{*}/2 < 0$ and $W_{\lambda}^{*FT} - \widehat{W}_{\lambda U}^{*} < 0$.

Result 26 *In a setting with free trade and marginal costs asymmetries, a double customs-unions situation is preferred over free trade, except in the case of one country facing three less efficient countries (case 1), under a 'market-driven' political agreement, where the two asymmetric potential partners will deter from joining in a union whenever the profitability margin/cost ratio is not large enough (i.e. for root$^{+} > \frac{(a-c)}{\Delta} > OCR$), in which case the Nash equilibrium is a single union.*

Overall, with the above results we established that equally efficient countries would rather partner up instead of opting for multilateral free trade. In a setting where the majority of countries are rather more efficient than a minority, a double customs unions is the equilibrium outcome, as the less efficient country has no choice but to sign in with a more efficient one. However, in a setting where the majority of countries are less efficient than a more efficient minority, a less efficient country would not sign in with a more efficient partner when their relative marginal costs differ substantially (or if the profitability margin $a - c$ is not significant enough). In contrast, whether the two asymmetric potential partners form a union or not would not affect the rest of less efficient countries, as the latter would still happily form a union of their own.

3.3.5 To summarize

In the previous chapters, we solved a non-zero-sum non-cooperative game where two sets of players (countries) could agree on a joint strategy. Nonetheless, despite the coalitional aspects in the resolution of the game, each player chose their strategies and their potential partner endogenously under conditions applicable to any readily available player. We solved the game in several stages and in the usual backward way, obtaining first markets sub-game equilibrium for firms competing in quantities according to Cournot oligopoly theory, then establishing tariffs set by governments as to maximize national welfare and finally analyzing the optimal political strategy, as, in our basic setting, governments had to choose between: tariff-ridden trade, one customs-union or a two-customs-unions situation.

Compared with Das and Gosh 2006, our model underlines the importance of industrial concentration, relative market size *among partners* and marginal costs asymmetries. In other words, *relative unions size* does not have much influence on governments' decision to form a union or not. Also note that, CPNE (coalition-proof Nash equilibrium) was not applicable here, as we did not allow for players to deviate jointly from a chosen strategy. We also allowed for two different political settings to solve a variation of the model with costs asymmetries and showed that the outcome can vary according to the political setting chosen.

In our basic model, we found that the Nash equilibrium is that all four countries choose to form a union with their partner (thus choosing the double customs-unions situation) unless partners' relative market sizes are highly asymmetric and associated with a low industrial concentration (large number of firms on the market). In which cases, the Nash equilibrium would be either a single union or no customs union at all. It is worth recalling that, in this model, governments are concerned with maximizing "total" national welfare (i.e. the sum of government tariff revenues, consumer surplus and firms profits) and that if they were to consider only producer interests then a double customs unions situation is more unlikely to exist: recall (from Results 2 and 3 above) that while

consumer surplus always increased with the union, firms from both member countries gained only under restricted conditions (high market concentration combined with low market sizes asymmetry).[24]

In a setting with free trade, whenever partners have relative market size symmetry, free trade is preferred to forming a union, while, as we also said earlier on, forming a union is preferred to tariff-ridden trade. However, for highly asymmetric partners market sizes (especially if associated with relatively large oligopoly size), we can say all the contrary: governments will more likely defect from free-trade and prefer joining in a customs union -as we have just suggested- which option is in turn less appealing than tariff-ridden trade. That may be part of the answer to why so many tariff barriers still remain and preferential trade agreements proliferate.

If we allow marginal costs asymmetries from one country to another -whilst keeping symmetric partners market sizes- we find that whether a country is relatively more(less) efficient with respect to its potential partner and the rest of the world does influence its decision to join in a union or not. In order to do so, we isolated three different cost-asymmetry cases and studied the incentives for a country to join with another more(less) efficient one, under two different political settings ('social' or 'market-driven'), while countries in the rest of the world were more(less) efficient. We found that industrial size, relative efficiency and the regional integration political setting play a role in determining welfare gains/losses and ultimately the corresponding Nash equilibrium.

Indeed, although in most cases the NE is that all four countries choose to engage in a union, under certain combinations of industrial size and oligopoly profitability margins, and depending on the political setting chosen, three other possible outcomes emerge. In

[24] Incentives to form a customs union would probably be even larger if we considered the case in which governments can be motivated by other reasons that merely economical ones, as suggested by Whalley 1998, and solved the game to maximize the overall union's welfare, allowing for side-payments within the union.

the case where one country faces three less-efficient outsiders, the NE can either be: i) only ONE UNION among cost-asymmetric partners; or ii) only ONE UNION among cost-symmetric partners; or iii) NO UNION at all.

Further note that, under this cost-asymmetric setting, whenever "social" RI political arrangements are chosen (i.e. where the union joint welfare gains would be equally shared between two cost-asymmetric partners), the efficient country would usually be more reluctant to join in. We verify once again that producers interests hardly match other domestic agents': in case of high industrial concentration (fewer firms), producers having relatively high marginal costs (compared to their foreign counterparts) had rather belong to a customs union to face cheaper foreign goods; with a relatively large industrial size, i.e. more firms on the market, producers had rather deter from customs union formation. To be noted also that whenever foreign marginal costs are inferior, consumer surplus (and hence welfare) at home improve more (than if foreign marginal costs were superior), thus the appeal for less-cost efficient countries to join in a union with a relatively more efficient one, under ´social´ RI political arrangements.

In a setting with free trade and marginal costs asymmetries, even when partners have relative market size symmetry, we established that equally efficient countries would rather partner up instead of opting for multilateral free trade. In a setting where the majority of countries are rather more efficient than a minority, a double customs unions is the equilibrium outcome, as the less efficient country has no choice but to sign in with a more efficient one. However, in a setting where the majority of countries are less efficient than a more efficient minority, a less efficient country would not sign in with a more efficient partner when their relative marginal costs differ substantially (or if the profitability margin $a - c$ is not significant enough), and would also favour free-trade over tariff-ridden trade (in turn favoured over customs union). In contrast, whether the two asymmetric potential partners form a union or not would not affect the rest of less efficient countries, as the latter would still happily form a union of their own.

As far as world welfare is concerned, its increase slows down with the number of

customs unions formed. Constructing an n-country model under the same settings, we could follow Krugman's and Andriamananjara's intuitions, with a sequential formation of customs unions (up to n/μ customs unions) where μ varies according to the number of members we wish to define for each union (for bilateral agreements, μ=2).

Customs union formation appears as the 'second best' option, (that is after free-trade but before tariff-ridden trade) whenever partners have similar market sizes. However, in the face of marginal costs asymmetries from one country to another, equally (or similarly) cost-efficient partners had rather partner up than allowing for free-trade. We observe furthermore that customs unions benefit most to monopolies/duopolies and consumers, while large industries or relatively less-efficient industries had rather their governments defect from customs union and apply customs tariffs. Therefore, be it market, industrial or cost-wise, partner size does matter, albeit in a different manner whether from the viewpoint of industries´ or consumers´ interests.

Chapter 4

Empirical Study on the Impact of the CARIFORUM-UE EPA on the French Caribbean Outermost Regions

4.1 Introduction

Context

After several years of negotiations, on October 15, 2008, 15 CARIFORUM States – except for Guyana and Haiti[1] - signed an Economic Partnership Agreement with the 27 EU Member countries : The CARIFORUM-EU EPA.[2] The fundamental objectives encompassed in this agreement include the Caribbean regional integration and economic development (cf Article I of the EPA). However, even before its ratification by all the signatories, this agreement has already induced many controversies, especially regarding

[1] Guyana signed one week later and Haiti on December 10, 2009.

[2] CARIFORUM signatories to the EPA: Antigua & Barbuda, Bahamas, Barbados, Belize, Dominica, the Dominican Republic, Grenada, Guyana, Haiti, Jamaica, St Kitts & Nevis, St Lucia, St Vincent & the Grenadines, Suriname, Trinidad & Tobago.

the relevance of this new tool as a mean to achieve the objectives laid out in the text.

The EPA is in fact considered to be the first North-South agreement the most complete and ambitious, not only because it covers both trade in commodity and services, as well as investments, but also because it encloses dispositions to support the regional integration process and promote sustainable development and poverty eradication in the region. One of the main mechanisms included under the EPA is to progressively eliminate the non-reciprocal preferential treatment previously granted to ACP countries, which will have to open up their markets progressively to European goods.

The 3 French Caribbean Outermost Regions are directly concerned by the EPA, first because they belong to the EU – as European outermost regions – and second because they geographically pertain to the Caribbean region, and thus are close neighbors to the CARIFORUM countries. Be them locals, nationals or EU policy-makers, all agree to say that the FCORs development depends on a deeper integration within their regional environment.[3] The EPA actually encompasses specific dispositions regarding the FCORs. This agreement appears then as a warrant for new opportunities granted in favor the FCORs trade and economic development: the valorization of French Guianese and Antillean private sector assets to enhance their exports of goods and services towards the Caribbean markets; the diversification of supplying sources and a simultaneous reduction of some type of dependency vis-à-vis the metropolis, inter alia.

Nevertheless, even before the signing of the agreement, the FCORs socio-economic actors feared that the EPA might open the gate to a fierce Caribbean competition. Until today, however, trade between the FCORs and the CARIFORUM have been very limited because/due to numerous obstacles and non-tariff barriers (cultural, transport costs and limited routes, scarce experience on international markets) as well as other relatively high barriers to entry on CARICOM markets. Those who advocate in favor of the EPA hope thus that the CARIFORUM progressive tariff liberalization process (sequenced over 25

[3]This political will was once more on the table during the Etats Généraux de l'Outre-mer that took place in 2009, as well as during the Outermost Regions Forum organised by the European Commission in May 2010.

years) may generate positive changes in the FCORs-CARIFORUM trade relations and even between the FCORs and CARIFORUM towards third countries from outside the region.

It seems then necessary to undertake the follow-up of the EPA impact on the FCORs in order to gauge the potential repercussions of the agreement on trade between the FCORs and the CARIFORUM, and whenever possible on the FCORs economies.

Numerous impact studies and various mechanisms have been set up to follow up the implementation of the EPA in CARIFORUM countries. However as far as the FCORs are concerned, there are currently very few similar initiatives, except for a study conducted by the IEDOM in 2011 and some consultancy works on trade development opportunities for the FCORs under the EPA,[4] requested by the EC and the CARIFORUM/DOM/OCT Taskforce on Trade and Investment. The need for a follow-up mechanism has been expressed by several policy-makers,[5] with the purpose of drafting corrective measures and policy adjustments whenever necessary.

It is in this context that the French Development Agency (AFD) requested the CEREGMIA[6] to design a follow-up instrument to the EPA implementation in order to shed some light on the impacts of this agreement on the FCORs trade relations with their Caribbean neighbors.

A follow-up mechanism to measure the impact of the EPA on the FCORs?

A review of the above-mentioned studies and follow-up mechanisms on the impact of

[4] Angelo-Lesales-Salmon (2008), inter alia.

[5] ACP countries on their part have formulated the need for a monitoring system on the EPA implementation at the CARIFORUM region level. Moreover, upon CARICOM countries request, the regional negotiating machinery (CRNM) has been integrated under the CARICOM Secretariat since 2009 as the Office of Trade Negotiations (OTN). The CARICOM Secretariat is the institution assuming the global responsibility of the EPA implementation and the OTN monitors implementation-related issues under certain areas. Regarding the FCORs, the OCT/OR/CARIFORUM Taskforce on Investment and Trade assumes those functions.

[6] We have undertaken the present research as a Temporary Researcher and Teaching Assistant at the CEREGMIA (University of Antilles Guyane, Martinique) with the valuable collaboration of two students from the Master in Management, for the collection and formatting of statistical data.

the EPA reveals that most of the works on the subject regard CARIFORUM (and ACP) countries and are not readily applicable to the FCORs (cf this chapter's section 1). During our research on the topic, we have come to realize that applying similar exercises to the FCORs can only focus, for now, on the EPA component regarding commodity trade. The impact of trade on countries growth and development in itself having been the subject of previous studies,[7] we shall present our results on the such regarding the FCORs under our sub-section 2.1.4, on the basis of calculations carried out by the INSEE (French, National Institute of Statistics and Economic Studies); with a purpose to justify further the relevance of a follow-up mechanism of EPA impact on the FCORs focusing on commodity trade.

It has nonetheless also seemed relevant to us to undertake in parallel consultations among sociopolitical representatives from the public sector potentially interested and involved in the implementation of a mechanism to follow up the EPA impact on the FCORs, as well as surveys among private sector operators.

Our proceedings

Traditionally (over the past 50 years approximately), studies on the impact of preferential or regional trade agreements have been conducted following two types of approaches, either:

- Ex-ante analysis, using general or partial equilibrium modeling; or
- Ex-post analysis, using gravity models mainly.

(Under our section 4), we shall present a theoretical and practical *justification for the use of a gravity model* to study the EPA impact on the FCORs. To be noted that at the moment, we have no knowledge of a general or partial equilibrium model applicable to the FCORs and thus no theoretical reference as of the causal relationship between

[7] One may refer to the CEPII studies, among which, those conducted by Thierry Mayer, in line with the literature about the New Economic Geography studying the long-term positive impact of markets (and trade in particular) on the returns on factors (and hence per capita income).

traditional macroeconomic indicators applied to these economies.[8]

Several recent empirical studies emphasize the importance of a *macro- and microeconomic integrated approach* for lesser developed countries (LDCs). Thus, in addition to the econometric analysis (gravity model) and statistical study of a sample of indicators, it seems appropriate to conduct surveys at the microeconomic level. Using such an approach, we provide complementary and qualitative explanations stemming from surveys conducted among enterprises in all 3 FCORs.

We proceed then in the following manner:

1. *A statistical analysis of the FCORs trade panorama* – we present descriptive statistics on FCORs trade between them, the CARIFORUM and the rest of the world.

2. *An econometric analysis of a gravity model* on FCORs commodity trade – we present an estimates coefficients to analyse the impact of explanatory variables for FCORs exports and imports, vis-a-vis the EPA in particular.

3. *Consultations among relevant economic operators* – we present the results of consultations conducted among public and private sector representatives from the 3 FCORs

4.2 CARIFORUM-EU EPA follow-up mechanisms and impact studies

4.2.1 EPA Implementation Units in the CARIFORUM

The EPA Implementation Units (EPA IU) established in CARIFORUM countries have the main purpose of facilitating the achievement of the six main objectives of the EPA, beyond the mere progressive trade liberalization scheduled over 25 years:

1) Contribute to the reduction and eventual eradication of poverty by the mean of a trade agreement consistent with the Millenium development objectives and the Cotonou

[8] We ought to mention nevertheless the pioneering works on a CGE model for Guadeloupe currently conducted by a team of researchers among whom: Sébastien MATHOURAPARSAD, Alain MAURIN, Jean-Gabriel MONTAUBAN (LEAD-UAG) and Eric MORIAME (INSEE).

agreement;

2) Promote regional integration, economic cooperation and good governance by implementing a suitable regional regulatory framework to facilitate trade and investment. One of the objectives pursued is the progressive external tariff harmonization for CARIFORUM and free movement of commodity in the region;

3) Promote the progressive integration of CARIFORUM States into the world economy;

4) Improve CARIFORUM States capabilities in terms of trade policy and trade-related issues;

5) Promote investment and private sector initiatives, and improve supply capacities, competitiveness and economic growth in the CARIFORUM region;

6) Strengthen the relationship between CARIFORUM and the EU on the basis of solidarity and mutual interest. To do so, the agreement lays out new principles for trade through progressive (and asymmetric) liberalization between both parties, jointly with deeper and more extensive cooperation in all areas related to trade and investment.

Beside those objectives, which scope go beyond other North-South agreements, the CARIFORUM-EU EPA covers also a wider span of activities : trade in commodity and services; public markets; innovation and intellectual property; competition policy; cultural cooperation; aid for cooperation and development.

The CARIFORUM-EU EPA IUs have a mandate to both monitor and draft strategies for an optimal implementation of the dispositions encompassed under the agreement. They promote studies to evaluate the (observed and expected) impact of the EPA, as well as the opportunities, obstacles and levers to eliminate such barriers and strengthen institutional and production capacities.

On behalf of the CARIFORUM Heads of States, in 2009, the CARICOM Secretariat has set up an EPA coordination unit to cover 16 national IUs;[9] although to date not all

[9]Currently, this coordination unit is managed by Branford Isaacs, Trade specialist and Advisor to the General-Secretariat in charge of the EPA implementation.

CARIFORUM countries have set up their owns. Among the most advanced EPA IU are to be mentioned those in the Dominican Republic and Barbados, which already register some visible repercussions on their respective economies.

Dominican Republic EPA IU

A few months prior to the signature of the EPA, the Dominican government installed a mechanism for the follow-up of regional integration under two institutions:

- DICOEX (Directorate of External Trade) and

- CNNC/SEREX (National Council for Trade Negotiations / Secretary of State for Foreign Affairs)

These structures are in charge of the implementation of the *Program for the Institutional Support to Regional Integration (ISPRI)* launched in June 2008, with the objective to promote regional integration and strengthen the Dominican Republic competitiveness.

It is under this program that the *CARIFORU-EU EPA National Implementation Plan* was designed and adopted in February 2010.

The ISPRI lays out the following activities managed under the two afore-mentioned institutions:

■ *ISPRI-CNNC/SEREX IU*: 25 projects covering mostly actions related to communication, analysis, evaluation and the formulation of strategies.

■ *ISPRI-DICOEX IU*: 40 projects covering actions organized under 5 main objectives :

1- Strengthening of institutional capabilities for EPA implementation

2- Strengthening of institutional capabilities on sanitary and phytosanitary issues

3- Strengthening of (public- and private-sector) capacities for the implementation of the EPA trade-related aspects

4- Improving competitiveness through the application of quality standards (ISO norms, packaging, ..)

5- Activities directly related to the National Coordinator management policy and

Monitoring and measuring the EPA implementation impact	**Strengthening institutional capabilities and private firms competitiveness**
1. Follow-up of EPA implementation	1. Address short-, medium- and long-term challenges to benefit from the EPA
2. Measure its impact on growth and development	2. Strengthening of institutional capacities and adjustment of the legal and regulatory framework;
3. Formulate recommendations and draft development programs and strategies	3. Enhancing firms competitiveness
4. Every 5-year reviews	4. Liaison with European and regional institutions

Figure 4-1: EPA ICU action plan

ISPRI promotion.

The short-term immediate effects on the private sector were new export lines and entry onto new European markets. It was the case for agriculture and agrofood products, especially due to the installation of agro-export platforms facilitating international trade for Dominican SMEs in those sectors of activity.

Barbados EPA ICU

Similarly, in Barbados, the EPA Implementation and Coordination Unit is in charge of drafting strategies and programs to strengthen public institutions capabilities to implement the EPA and private firms capacities to benefit from the advantages granted through the agreement.

The ICU action plan is organized around 2 main objectives, following a similar logic as in the Dominican Republic:

- Monitoring and measuring the impact of the EPA implementation;
- Strengthening institutional capabilities and private firms competitiveness.

Activities undertaken in that regards encompass:

- Designing a roadmap coordinating the actions related to administrative, legal and regulatory reforms, institutional strengthening, business climate enhancement;

- The publication of information and awareness-raising booklets on the opportunities to be seized under the EPA by policy-makers and private operators;

- The networking of public and private sector organs to implement any relevant actions related the EPA implementation, especially regarding aid for development;

- Liaising with European and regional institutions managing development aid.

On-the-ground surveys are also planned in order to assess Barbadian industries needs so they can benefit fully from the EPA.

We may finally note that the Barbadian ICU is also in charge of identifying indicators and thresholds to measure how the current dispositions of the agreement actually sustain its objectives (in terms of development, etc.) and design corrective measures whenever necessary.

4.2.2 Empirical and theoretical models to measure the EPA impact

Among the theoretical studies carried out on the specific modeling of the CARIFORUM-EU EPA impact, we may mention the following three:

- « Une étude d'impact des Accords de Partenariat Economique (APE) entre l'UE et les six régions ACP » by L. FONTAGNÉ, D. LABORDE and C. MITARITONNA, CEPII (Paris), 2008.[10]

- « CARIFORUM-EU Economic Partnership Agreement : the Welfare Impact and Implications for Policy in T&T » by R. HOSEIN, UWI Department of Economics (Trinidad), 2007

[10] A new version of the study was under preparation at the time of the present research. It takes into account the dispositions actually agreed upon under the CARIFORUM-EU EPA signed in 2008 and presents substantially the same results.

- « Echanges régionaux des Départements français d'Amérique : identification des facteurs de frein et des éléments de soutien à l'aide d'un modèle de gravité », Les Notes de l'institut d'Emission, IEDOM Paris, juillet 2011.

The CEPII Impact Study

While the EPA negotiations were still under course, the CEPII (Centre for Prospective Studies and International Information, Paris) designed a dynamic partial equilibrium model to simulate the impact of the agreement on the 6 ACP regions. This detailed analysis (at the commodity-level) and demand-based, simulates the impact of a 90% tariff liberalization of trade between ACP countries and the UE (over a 15 year-period).

The CEPII researchers estimated that the expected effects would be the following:

- A 10% increment in ACP exports to the EU.

- 70% loss in terms of tariff revenues on European products. However, since products originated from other parts of the world would still bare taxes, and taking into account the sensitive products exclusion list, the global loss in tariff revenues would range from 19 to 26%.

- An impact on the economies varying according to the weight of tariff revenues in national budgets, potential compensation mechanisms and in the longer term on fiscal policy reforms.

One of the interesting aspects of this model is that it presents two different scenari according to the *selection of sensitive products* the ACP would settle for:

- Scenario H1: selected products are essentially politically-sensitive agriculture products;

- Scenario H2: sensitive products selected are those minimizing tariff revenues losses.

Selected indicators for the model include:

- Variations in exports

- Variations in imports

- Tariff revenues

- Current accounts

One of the limits of the model is that it implies an unlimited productive capacity in ACP countries, thus infinite elasticity of supply, and that EU and ACP products are substantially different, thus less substitutable.

UWI Impact Study

The study conducted by Prof. Roger Hosein (at the University of West Indies in Trinidad) to estimate the impact of the EPA on small Caribbean economies (such as Trinidad & Tobago) was also published prior to the signature of the CARIFORUM-EU EPA. R. Hosein estimated a partial equilibrium model to show the EPA potential advantages and drawbacks for CARIFORUM countries.[11]

Hosein proceeds first to review the literature on the effects of regional trade agreements and points out that beside the usual potential benefits (for instance, regarding the gains from trade creation and economies of scale), it is essential to estimate changes in domestic income as well as the changes in the payment accounts incurred following the implementation of the agreement.[12]

As far as the CARIFORUM signatories of the EPA are concerned, according to Hosein, it is convenient to study the different options related to the reallocation of resources at the regional level, especially with a potential increment in foreign direct investments from the EU or intra-regional partnerships and investments from regional firms looking at exploiting higher competitiveness in regional partner countries.

Hosein draws a special attention to Trinidad & Tobago's imports and tariff revenues variations, following the EPA. To that purpose, he assumes that the commodities traded are not perfect substitutes and may be differentiated on the ground of their origin.

His study provides less dramatic results than other previous studies, as far as tariff revenue losses are concerned. One of the reasons for that being the differentiation of

[11] Original model designed by Greenaway and Milner in 2003.

[12] Indeed, even if member countries may benefit from trade creation at the expense of third countries, local demand for local products may drop and imports (from partner country) increase.

imported products, based on their origin, which revealed that some of the products originated from third countries (and hence subject to tariffs) cannot be substituted by partner countries imports (it is the case for some oil derivatives for instance).

Hosein also formulates some recommendations regarding T&T trade policy so the country may reap greater benefits from adhering to the agreement: lobbying towards obtaining substantial EU funding to enhance public infrastructures, research and economic analysis capabilities, as well as to give greater support to the most vulnerable companies in the face of the structural adjustments required following the signature of the agreement.

The IEDOM Gravity Model

In 2011, the French Overseas Central Bank (IEDOM)[13] undertook to study the FCORs trade potentials vis-à-vis their CARIFORUM trade partners, following the signing of the EPA. To that purpose they carried out an ex-ante analysis of structural factors likely to enhance or hinder trade between the FCORs and the CARIFORUM. The recent signature of the agreement and the trade database spanning a period up to 2009 did not allow otherwise.

Under this study, the IEDOM thus proceeds to review the FCORs regional integration process and their trade relationships with other Caribbean countries and territories, before designing a gravity model to estimate the determinants of trade between them. The IEDOM characterizes the FCORs trade panorama as relatively limited, poorly diversified and concentrated on a few countries in the region, as well as highly dependent on trade in oil products and derivatives. This study also emphasizes that, despite their common traits with their Caribbean neighbors, the FCORs trade relations remain closely related

[13]The Institut d'Émission des Départements d'Outre-mer (IEDOM), created in 1959, is the decentralized French Central Bank for Overseas Departements and Territories and belongs to the Eurosystem made of the European Central Bank and national central banks.

The IEDOM is in charge of ensuring territorial continuity monetary-wise and acting on behalf of the French Central Bank Banque within the 5 French Overseas Departments and territories of Saint-Pierre-asnd-Miquelon, Saint-Barthelemy and Saint-Martin.

to their institutional links with France and the European Union. This is illustrated in particular by the fact that the EU is the FCORs first trade partner (the latter operating limited trade with North America).

The IEDOM gravity model estimations reveal nonetheless a high potential for regional trade based on relatively short distances within the region, knowing that FCORs trade flows look highly sensitive to this variable. The current state of regional transport infrastructures represents however an obstacle to trade. They also show that another potential factor in favor of trade is the level of economic development registered in several countries of the region. They also note however that the poor diversification of trade does not allow to fully benefit from such factor. Regarding the real potential of those two positive factors, the IEDOM chooses to remain optimistic on the basis of previous studies conducted on the FCORs regional trade potential.[14]

We ought nevertheless to mention a few limitations of this model, the first one being that the IEDOM treat trade flows globally – i.e. without differentiating between imports and exports – which, in the case of the FCORs and other small net-importers, implies a certain difficulty to read the results of the econometric estimations.

Moreover, the authors of this study adopt GDP as the sole proxy for market sizes, and geodesic distances as the proxy for transaction costs. They thus expect that trade be highly positively correlated to market sizes (GDP) and negatively to transaction costs (distances).

Finally, their trade data covers a relatively short period (1998-2009) and does not account for trade in services; which is most likely due to several reasons among which that the INSEE introduced new trade data treatments from 98 onwards (which renders data harmonization over a longer period more difficult) and that there is virtually is no official statistics collection on trade in services other than in tourism and (some) financial transactions.

[14] Angelo et al (2009), Watson-Angelo (2010) .

4.3 Economic and trade context

In order to design an analytical tool for the follow-up of the EPA effects on the FCORs, we ought to review the economic and trade context of the latter, along with a review of relevant policy-makers and economic operators' expectations.

Under the following section, we thus introduce a review of the FCORs trade and economic panorama before presenting the results of our consultations among relevant public and private sector representatives (under section 4.4). The results of the survey among enterprises are fully reported under Annex B.

4.3.1 FCORs Economic and Trade Context

Preliminary notes regarding our data collection[15]

In addition to a relatively high volatility displayed by FCORs trade data, we ought to point out different collection and/or treatment methods employed by the institutions in charge of compiling those statistics, which we had to take into account in order to build our database (both for sections 2 and 4). We may mention a few here:

• Most of the FCORs *trade statistics* presented under this section 2 are computed on the basis of aggregated figures from the INSEE (as those were immediately available to start with) and cover time series dating back to year 2000, arranged by geographic areas and by product categories.

• Another part of the FCORs trade statistics (cf table 2.4) were collected, treated and analyzed from statistics issued by the FCORs regional Customs administration.[16] They encompass 'raw' trade statistics -based on exporters/ importers customs declarations-

[15] **We have undertaken the present research as a Temporary Researcher and Teaching Assistant at the CEREGMIA (University of Antilles Guyane, Martinique) with the valuable collaboration of two students from the Master in Management, for the collection and formatting of statistical data.**

[16] To be noted that only trade data for the 3 last years prior to the request are available through the regional customs administration. For longer time series, data are not immediately available –nor free- and have to be requested through the French central Customs administration.

disaggregated at the 8-digit level of the Harmonised System (HS8), for each FCOR.

They differ substantially – be it at the disaggregated or aggregated levels – from the statistics treated and published by the national central Customs administration, DNSCE, (lekiosque.finances.gouv.fr>statistiques>regionales>...) and those treated and published by the INSEE (insee.fr>régions>...).

• The FCORs *trade statistics* presented under section 4 come from the INSEE regional services and the central Customs administration (DNSCE). However, even statistics obtained through the INSEE (or DNSCE) vary from one table to the other (and/or from a period to the other), for various reasons.

For instance, on some aggregated data including statistics on trade, GDP and different components of the GDP (such as Gross Fixed Capital Formation, GFCF, etc.), the INSEE applied a 'territorial correction' whereby trade exports collected from Customs are adjusted on the basis of surveys conducted by the INSEE among private companies and upon cross-checking with companies tax-declaration.

Some of the HS8 disaggregated trade statistics received from the regional Customs, DNSCE and the INSEE differed from one institution and period to the other, as in some cases some trade flows were reported for countries of origin and in others for countries of provenance, and both cases had to be told apart through cross-checking with mirror statistics and trade data from the different institutions. This type of problem is fairly common in FCORs trade statistics as many imports and exports from third countries transit through mainland France and French import/export platforms.

• Also to be noted is that the INSEE computation of *final consumption* (as a GDP component), includes both goods and services (such as education, health, housing, etc.).

Panorama of FCORs global trade

Globally, FCORs trade mostly with France (mainland and other FCORs), Europe and to a lesser extent with North-America and their Caribbean neighbors (see graphs 2.2, 2.5 and 2.8). FCORs' main partners are indeed: mainland France (in 2009, 31.1% of

Martinique exports and 57.4% of its imports[17]) ; the other FCORs (61% of Martinique exports go to Guadeloupe and French Guiana) ; and other EU[18] mostly in terms of imports (13% of Martinique imports).

A second straightforward observation regards the structural deficit displayed by all 3 FCORs trade accounts (see tables 2.1, 2.2 and 2.3) and low coverage of imports by exports (on average between 2000 and 2009: 15.9%, 8.6% and 24.5% respectively for Martinique, Guadeloupe and French Guiana[19]). The latter characteristic being closely related to the former, it also conveys serious implications for local consumers: a high dependence vis-à-vis imports from mainland France both in terms of products varieties and prices; due among other things to a quasi-monopolistic distribution network in place locally.

Another significant characteristic of FCORs trade –especially regarding exports flows- is their high volatility, for several reasons: climatic changes, social ups-and-downs or external economic shocks (variations in oil price for e.g.). Under section 2.1.3, the 18x18 matrix of FCOR-CARIFORUM trade and other export statistics reported under this section show how some important flows may vanish from one year to the other (also see graphs 2.2, 2.5 and 2.8).

Finally, though they seem fairly obvious, we ought to recall some characteristics of the FCORs, determinants for their trade statistics, and linked to the fact that they are small insular economies: limited local markets size, high transport costs, high similitude between the FCORs (and Caribbean economies to some extent) productive structures, etc. However, if we look at (goods and services) exports shares of GDP, compared to their Caribbean neighbors, Guadeloupe and Martinique register lower exports shares of GDP (around 5%), while 13 Caribbean small states, as aggregated under the World Bank database register an average of 51% export shares of GDP (over 2006 to 2009).[20]

[17] Source INSEE, TER 2009.

[18] Especially the UK, Italy and Germany.

[19] Source : computations Angelo/CEREGMIA, from Regional Customs and INSEE trade data.

[20] Source : World Development Indicators,World Bank. **Caribbean small states aggregate** includes Antigua and Barbuda, The Bahamas, Barbados, Belize, Guyana, Suriname, Dominica, Grenada,

Over a 10 year-period (2000-2009), commodity trade for all 3 FCORs generally evolved as the world global trends except for a few particularities.

Indeed, if FCORs trade follow the 2006 world growth pattern (both in imports and exports), it diverges from the 2004 trade growth. Such divergence may stem from the negative impacts on imports and exports of the 2004 FCORs social turmoil (the same will happen in 2009). In 2007, it was hurricane Dean that deeply affected FCORs agro exports.

Both in Guadeloupe and Martinique, 2007 imports accounted for approximately 33% of GDP, while exports only accounted for 2.5% in Guadeloupe and 5% in Martinique, with imports coverage of exports scoring 8.6% and 16% respectively.[21]

In 2009, Martinique and Guadeloupe scored an average trade deficit of 1.8 billion Euros, which is a relative improvement with respect to previous years (2.3, 2.2 and 2.4 € billions in 2006, 2007 and 2008), not accounting for tourism.[22] However this trade balance improvement is to be attributed to a series of conjunctions: the world economic crisis coupled with a global rise in oil prices which incremented FCORs exports values in the oil sector and the FCORs social crisis which reduced considerably the FCORs imports. Actually, in 2009, Martinique registered a significant drop in exports (-27%), in line with world trends, while Guadeloupean and French Guianese exports values incremented (+1% and +20% respectively, cf graph 2.0 hereafter).

Another characteristic of FCORs trade, over the 2000-2009, period is that fluctuations in their exports trends are more frequent than those displayed by their imports trends. (Although exports and imports curves coefficients of variations oscillate around 0.16 over the whole period, one can easily appreciate the difference in frequencies on graphs 2.2, 2.5 and 2.8 below).

Jamaica, St. Kitts and Nevis, St. Lucia, St. Vincent and the Grenadines, and Trinidad and Tobago.

[21] In 2007, Guadeloupe registered both a 4.6% increase in imports volumes and a -2.7% decrease in exports; Martinique registered a dramatic drop in exports (-29.3%), due to the hurricane Dean effects on agriculture and a simultaneous pause in the oil refinery activities. Source : INSEE, « Les comptes économiques de la Martinique », « Les comptes économiques de la Guadeloupe », 2008.

[22] Source : INSEE, « Les comptes économiques de la Martinique » ; « Les comptes économiques de la Guadeloupe », 2006, 2007, 2008, 2009.

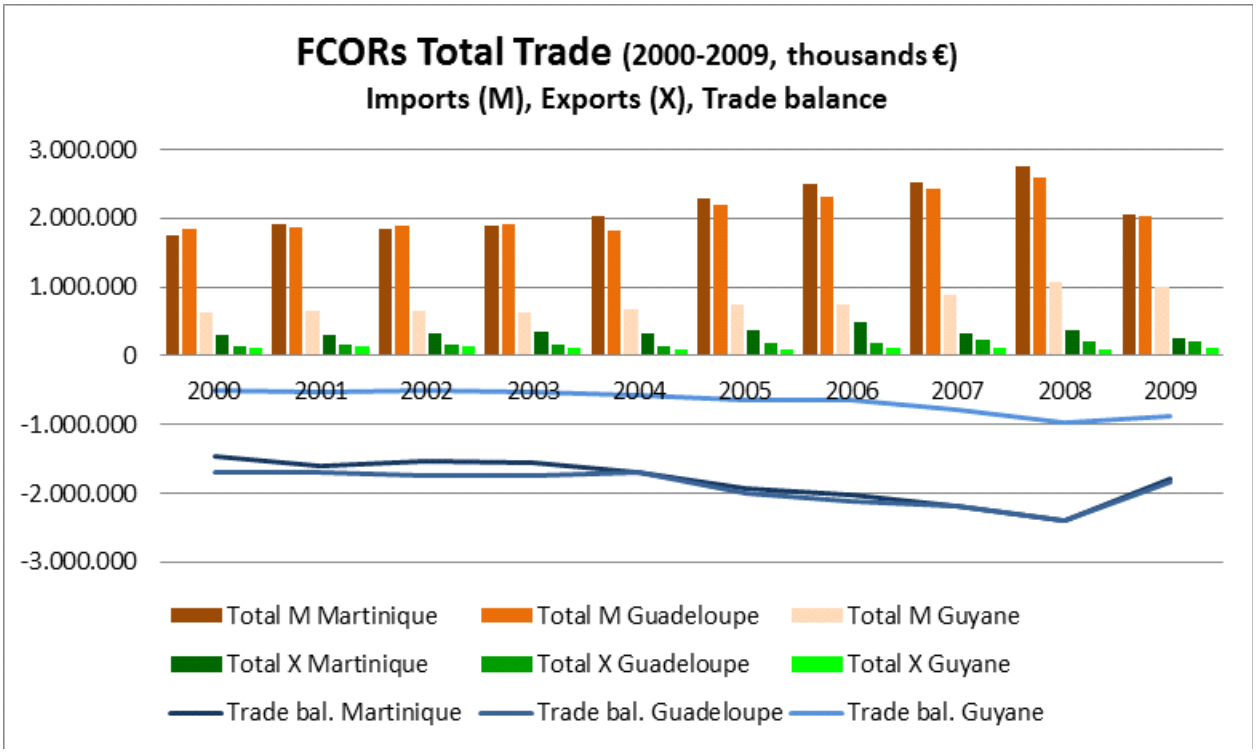


Figure 4-2: FCORs total trade

Under the remainder of this section, we shall present FCORs trade by geographic areas (origins and destinations) and by sector of activity, in order to illustrate some remarkable traits and general trends that may prove useful for our general study.

Martinique

Vis-a-vis the majority of its trade partners, except for Guadeloupe and French Guiana, Martinique registered a trade deficit over the whole 2000-2009 period (see table 2.1 hereunder) with a record high in 2008 (-2.4 billion Euros approximately).

Most of Martinique trade is operated with 2 or 3 main trade partners. Not surprisingly, imports from mainland France are largely predominant over the total trade both with mainland France and other trade partners.(Source : Treatment ANGELO / Figures from regional Customs, the INSEE)

From 2000 to 2009, Martiniquan imports originate from mainland France (59.5%), the EU (19%) and Asia (5.5%). As far as exports are concerned, over the same period, they are directed mainly towards mainland France (49%), Guadeloupe (28%) and French Guiana (6,5%) (see graph 2.1 hereunder).

(Source : Treatment ANGELO / Figures from regional Customs, the INSEE)

We note however a slowdown in the transactions with mainland France (graph 2.2 hereunder), and in parallel a wider openness of Martiniquan trade with other partners, such as North-America, Asia and Non-EU Europe.

That phenomenon is especially remarkable in 2006, with a significant 55% drop (in value) of Martinique exports to mainland France jointly with a dramatic increase in exports to Guadeloupe and to a lesser extent towards North-America and the CARIFORUM (both of the latter registering exports levels close to mainland-France destination). A plausible explanation for that lies in a dramatic reduction of agriculture exports (for which mainland France is traditionally the main client) coupled with a record growth in equipment goods and oil products exports (see graph 2.3).

Table 2.1	Martinique relations with its main trading partners (2000-2009)					
	Trade balance (€ thousands)	Exports, Imports relative weight / bilateral trade		Exports, Imports relative weight / total trade		
Geographic regions	(Xi-Mi)	Xi/(Xi+Mi)	Mi/(Xi+Mi)	Xi/(X+M)	Mi/(X+M)	(Xi+Mi)/(X+M)
Africa	**- 2.501,60**	0,384	0,616	0,002	0,003	0,004
North-America	**- 71.386,10**	0,166	0,834	0,007	0,036	0,043
South-America (excl. Guyana and Suriname)	**- 96.861,60**	0,005	0,995	0,000	0,039	0,039
Asia	**- 113.785,50**	0,003	0,997	0,000	0,046	0,046
Caribbean (excl. CARIFORUM)	**- 33.817,70**	0,075	0,925	0,001	0,015	0,016
CARIFORUM	**- 40.385,10**	**0,188**	**0,812**	**0,005**	**0,021**	**0,026**
DOM/COM (excl. FCORs)	**- 194,30**	0,382	0,618	0,000	0,000	0,000
Europe EU (excl. France)	**- 392.299,10**	0,032	0,968	0,005	0,162	0,167
Europe excl. EU	**- 20.007,30**	0,011	0,989	0,000	0,008	0,008
Mainland France	**- 1.115.288,10**	**0,116**	**0,884**	**0,067**	**0,513**	**0,581**
Guadeloupe	**56.979,20**	**0,714**	**0,286**	**0,038**	**0,015**	**0,053**
French Guiana	**17.291,30**	**0,813**	**0,187**	**0,009**	**0,002**	**0,011**
Rest of the World	**- 4.734,30**	0,329	0,671	0,002	0,004	0,006
Total	**- 1.816.991,00**	0,137	0,863	0,137	0,863	1,000

Figure 4-3: Martinique: relations with main trading partners

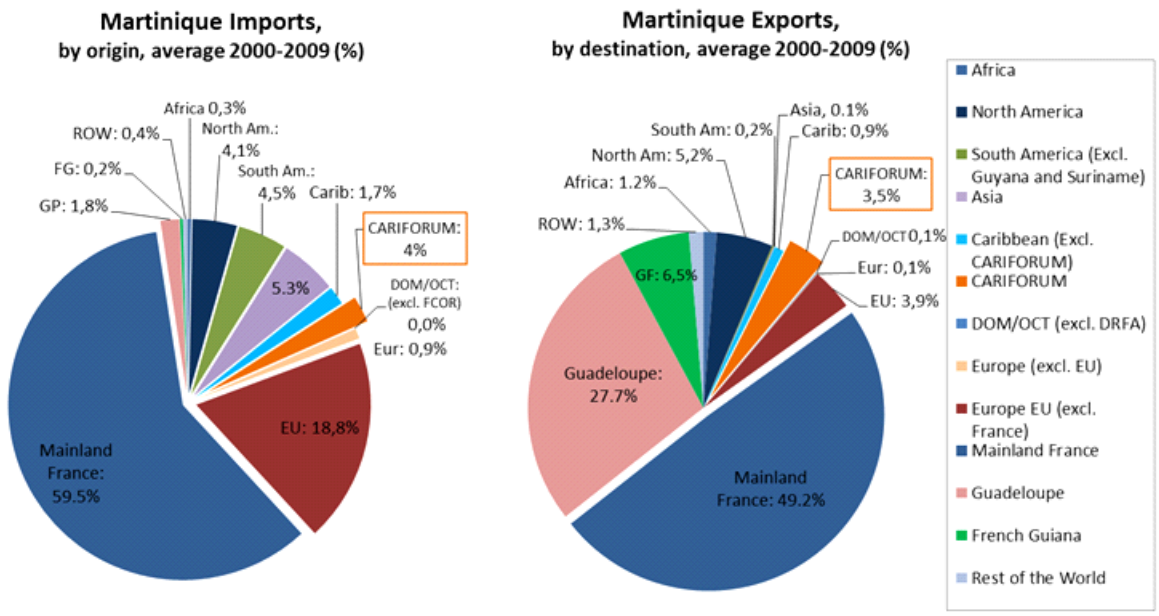


Figure 4-4: Geographical structure of Martinique trade from 2000 to 2009

Graph 2.2 (Source : Treatment ANGELO / Figures from regional Customs, the INSEE)

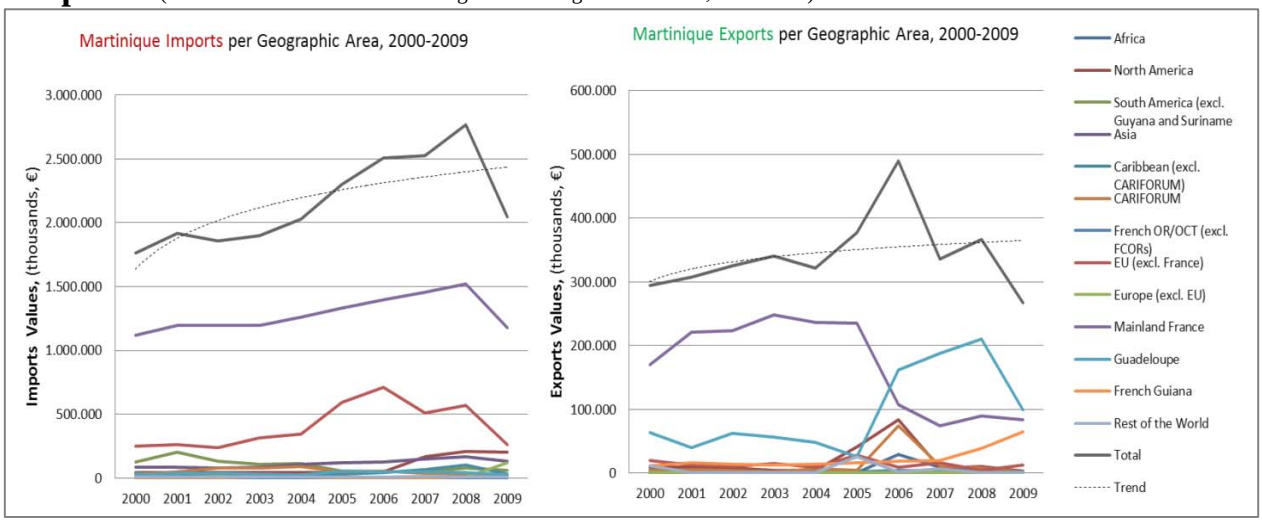


Figure 4-5: Martinique: trade per geographic area

Year 2008 registers a new (9.5%) increment in imports values, up to 2.8 billion Euros, following a rise in oil products, industrial and intermediate goods prices. Martiniquan exports also rise over the same year (9.2% more than in 2007, with up to 367 million Euros sales in refined oil products and agriculture). The trade deficit still remains very high though.

In 2009, imports from the EU decrease in more than half their past values, while those from the rest of Europe are multiplied by 11, which may imply that Martiniquan importers have switched to more competitive European suppliers, outside the EU zone.

The 2006 and 2008 record exports growth (in value) can be directly attributed to the crude oil Brent inflation in international markets and the standardization of the SARA oil refinery,[23] while in 2007 and 2009, not only did oil exports register much lower figures (in 2007, the SARA had to close their installations for an upgrade, and in 2009 the Brent dropped), but as mentioned earlier, 2007 hurricane Dean hit Martinique agro production hard. Exports figures regarding the latter were worsened by the fact that banana had just experienced a substantial price reduction in international markets, the year before.

Guadeloupe

Guadeloupe registers the lowest exports/imports coverage of the FCORs (8,6%) and a trade deficit vis-a-vis most of its trade partners -except French Guiana and other FCORs/OCTs- with a record high in 2008 (around -2,4 billion Euros). As is the case for Martinique, Guadeloupe imports mostly from mainland France (58,3%), the EU (14,3%) and Asia (7,1%), while 85,2% of its exports go to mainland France and other FCORs (cf graph hereafter). The share of Guadeloupe main partners in its total trade varies little over the period, except in the case of mainland France.[24] Mainland France's share has nonetheless diminished (and so has CARIFORUM's share to a lesser extent), while the Asian and North-American have increased (cf graph 2.5). (Source : Treatment ANGELO / Figures from regional Customs, the INSEE)

[23] Martinique oil refinery, owned by Total 50%, Rubis 24%, ExxonMobil 14.5%, and Chevron 11.5%.

[24] Over the 10-year period, mainland France still retains 60% of Guadeloupe total trade on average ((Xi+Mi)/(X+M)). It is followed by the EU (13,6%) and Martinique (5,9%).

Graph 2.3 (Source : Treatment ANGELO / Figures from regional Customs, the INSEE)

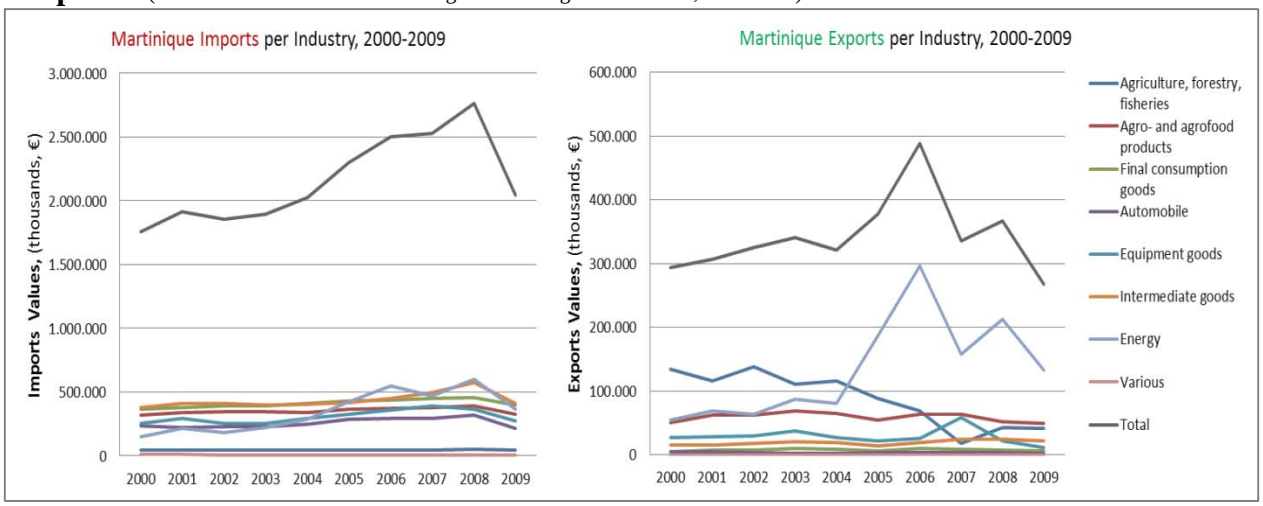


Figure 4-6: Martinique: trade per industry

In 2007, Guadeloupe also experienced a significant drop in agro exports following hurricane Dean, but in 2008 the slowdown hits Guadeloupe overall exports (13% lower than in 2007), due inter alia to a reduction in refined oil re-exportations. At the same time, total imports increased by 7%, up to 2.6 billion Euros, which induced them to account for 30 times more than exports, while the trade deficit reached 2.4 billion Euros (i.e. 9% higher than in 2007).

The terms of trade deterioration is mainly due to the Brent inflation, as energy accounts for a 460 million Euros deficit, against a 320 M€ in the agrofood industry. Energy aside, Guadeloupe exports of intermediate goods have increased (+71% in 2008) and so have agro exports (+18%), while its equipment and agrofood exports have diminished (-20% and -16%).

In the 2009 global recession context, Guadeloupe commodity imports were globally reduced by 28% (in value)[25] ,with the exception of an increment in imports from North

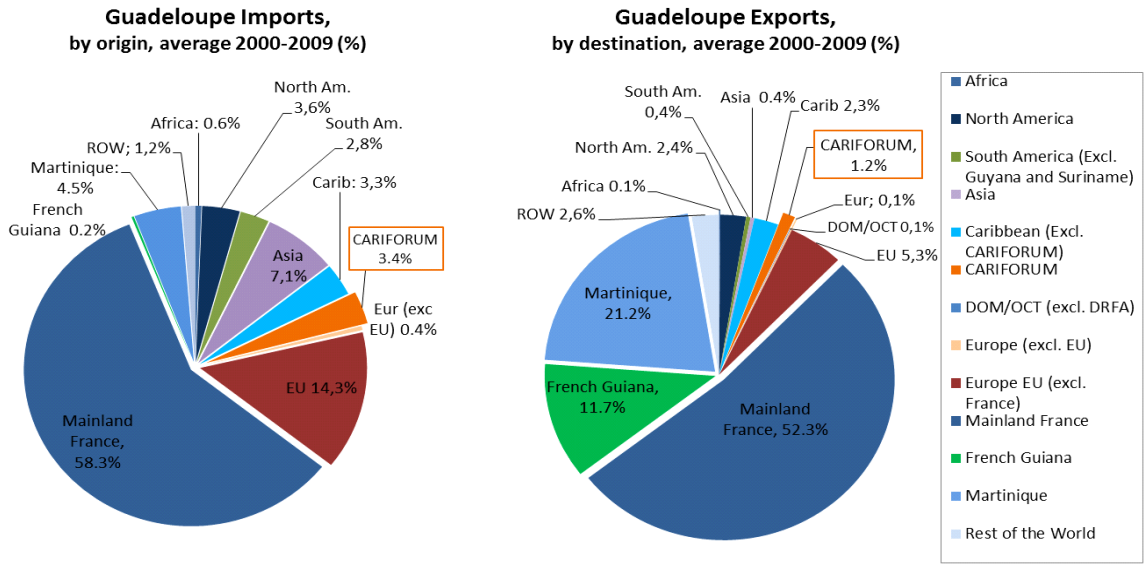
[25] The 40% reduction in imports value is due to the oil world price reduction.

Table 2.2	Guadeloupe relations with its main trading partners (2000-2009)					
	Trade balance (€ thousands)	Exports, Imports relative weight / bilateral trade		Exports, Imports relative weight / total trade		
Geographic regions	(Xi-Mi)	Xi/(Xi+Mi)	Mi/(Xi+Mi)	Xi/(X+M)	Mi/(X+M)	(Xi+Mi)/(X+M)
Africa	- **12.419,10**	0,018	0,982	0,000	0,006	0,006
North-America	- **71.818,00**	0,054	0,946	0,002	0,034	0,035
South-America (excl. Guyana and Suriname)	- **58.189,70**	0,012	0,988	0,000	0,026	0,026
Asia	- **148.650,00**	0,004	0,996	0,000	0,066	0,066
Caribbean (excl. CARIFORUM)	- **65.251,30**	0,056	0,944	0,002	0,031	0,032
CARIFORUM	- **68.172,20**	**0,029**	**0,971**	**0,001**	**0,031**	**0,032**
DOM/COM (excl. FCORs)	**81,60**	0,738	0,262	0,000	0,000	0,000
Europe EU (excl. France)	- **8.785,00**	0,027	0,973	0,000	0,004	0,004
Europe excl. EU	- **289.765,00**	0,031	0,969	0,004	0,132	0,136
Mainland France	- **1.125.541,20**	**0,071**	**0,929**	**0,041**	**0,537**	**0,579**
Guadeloupe	**16.214,80**	**0,817**	**0,183**	**0,009**	**0,002**	**0,011**
French Guiana	- **56.979,20**	**0,286**	**0,714**	**0,017**	**0,042**	**0,059**
Rest of the World	- **21.499,40**	0,150	0,850	0,002	0,012	0,014
Total	- **21.498,40**	0,079	0,921	0,079	0,921	1,000

(Source : Treatment ANGELO / Figures from regional Customs, the INSEE)

Figure 4-7: Guadeloupe: relations with main trading partners

Graph 2.4 : Geographical structure of Guadeloupe trade from 2000 to 2009



(Source : Treatment ANGELO / Figures from regional Customs, the INSEE)

Figure 4-8: Geographical structure of Guadeloupe trade from 2000 to 2009

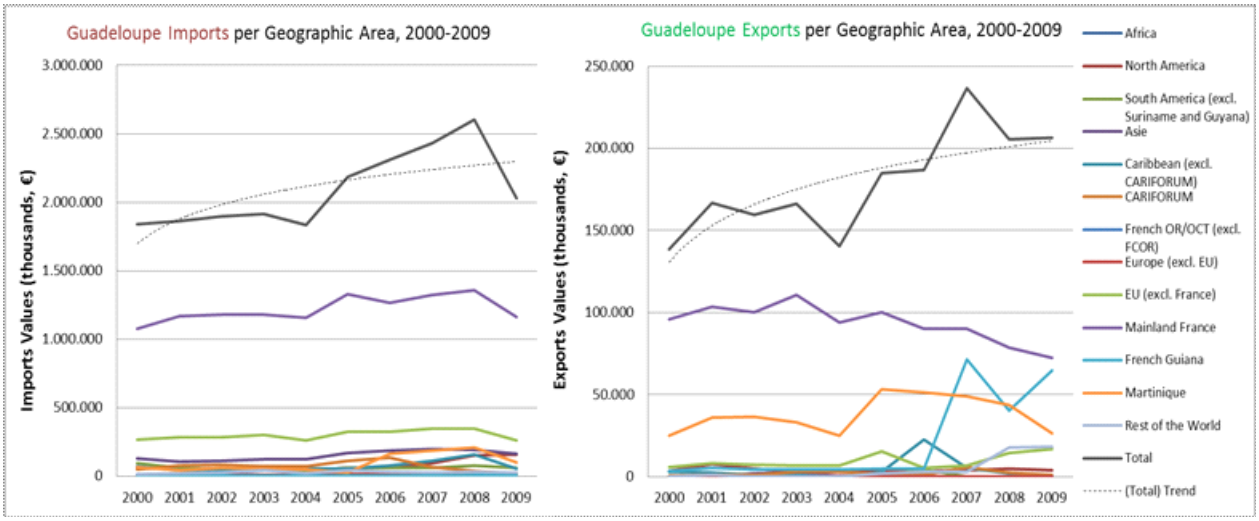


Figure 4-9: Imports and exports in Guadeloupe

Graph 2.6 (Source : Treatment ANGELO / Figures from regional Customs, the INSEE)

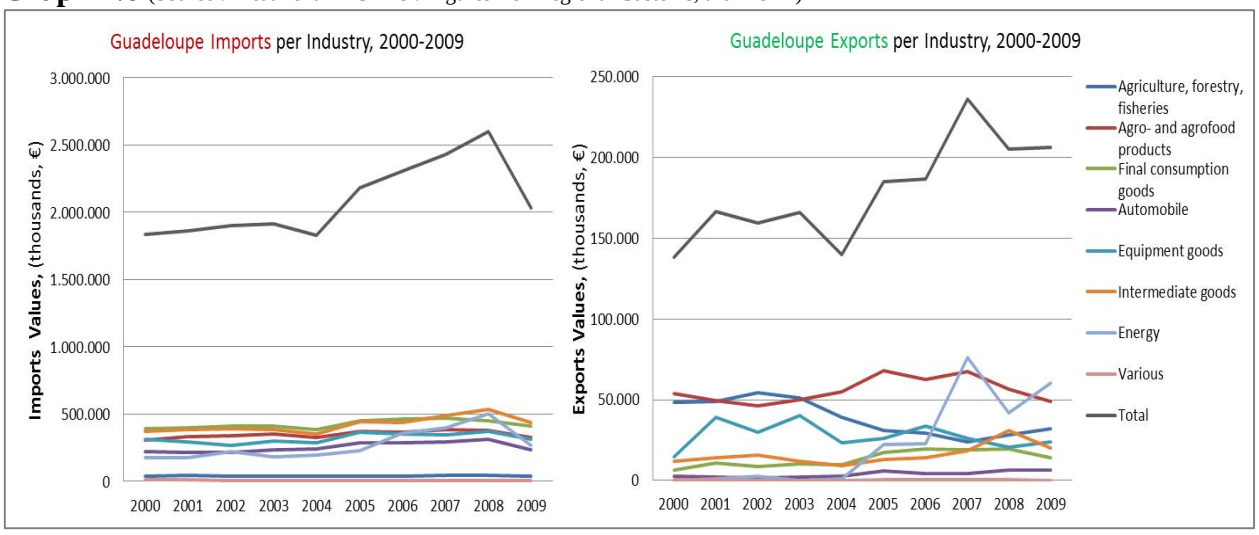


Figure 4-10: Guadeloupe trade per industry

America, but its exports rose by 0.5%, partly because of refined oil re-exported towards French Guiana (cf graphs 2.5 and 2.6).

Guadeloupe *main imports* over the period are: oil and energy products, intermediate goods, vehicles; and its *main exports* : agro and agrofood products, equipment and intermediate goods, various final consumption goods. Overall, the Guadeloupean industries experiencing the highest fluctuations over the 2000-2009 period are the energy sector (the 2007 and 2009 high scores are linked to refined oil re-exportations to French Guiana), equipment and intermediate goods, as well as agro products.

French Guiana

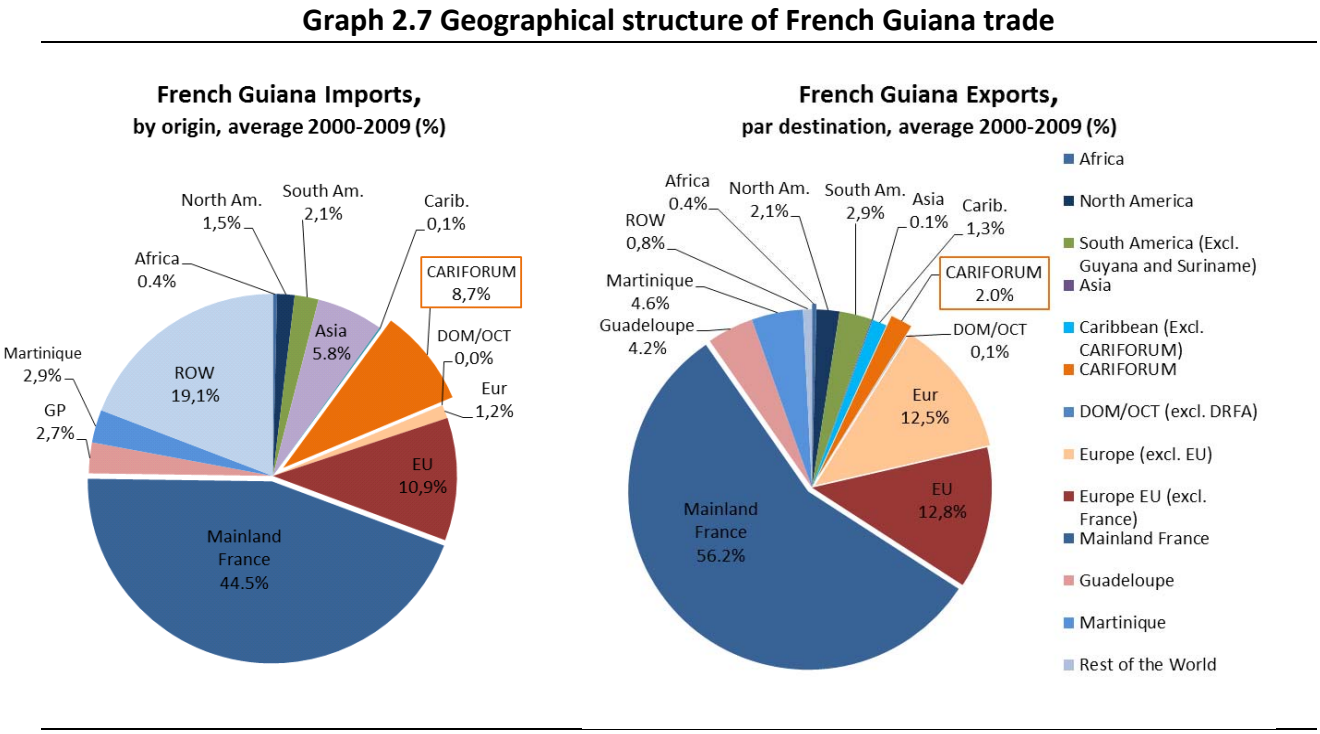
French Guiana trade panorama is similar to the other FCORs, except on a few specific characteristics most likely related to its geographical situation and particularities.

It is noteworthy that, from 2000 to 2009, CARIFORUM countries belong to French Guianese main trade partners – though not to the Antillean. (Cf table 2.3, graph 2.7).Over that period, French Guiana imports of commodity grew in a similar fashion as

Table 2.3 :	F. Guiana relations with its main trading partners (2000-2009)					
	Trade balance (€ thousands)	Exports, Imports relative weight / bilateral trade		Exports, Imports relative weight / total trade		
Geographic regions	(Xi-Mi)	Xi/(Xi+Mi)	Mi/(Xi+Mi)	Xi/(X+M)	Mi/(X+M)	(Xi+Mi)/(X+M)
Africa	**- 2.366,60**	0,204	0,796	0,001	0,003	0,004
North-America	**- 9.420,30**	0,229	0,771	0,004	0,012	0,016
South-America (excl. Guyana and Suriname)	**- 12.846,70**	0,232	0,768	0,005	0,017	0,022
Asia	**- 44.666,80**	0,093	0,907	0,005	0,047	0,052
Caribbean (excl. CARIFORUM)	**410,60**	0,597	0,403	0,002	0,001	0,003
CARIFORUM	**- 64.259,90**	**0,117**	**0,883**	**0,009**	**0,070**	**0,079**
DOM/COM (excl. FCORs)	**12,80**	0,576	0,424	0,000	0,000	0,000
Europe EU (excl. France)	**4.820,10**	0,619	0,381	0,016	0,010	0,025
Europe excl. EU	**- 69.278,30**	0,213	0,787	0,024	0,088	0,111
Mainland France	**- 278.446,50**	**0,221**	**0,779**	**0,101**	**0,357**	**0,458**
Guadeloupe	**- 16.214,80**	**0,245**	**0,755**	**0,007**	**0,022**	**0,029**
French Guiana	**- 17.291,30**	**0,248**	**0,752**	**0,008**	**0,024**	**0,031**
Rest of the World	**- 145.705,80**	0,096	0,904	0,016	0,154	0,170

(Source : Traitement ANGELO / Chiffres Douanes, the INSEE)

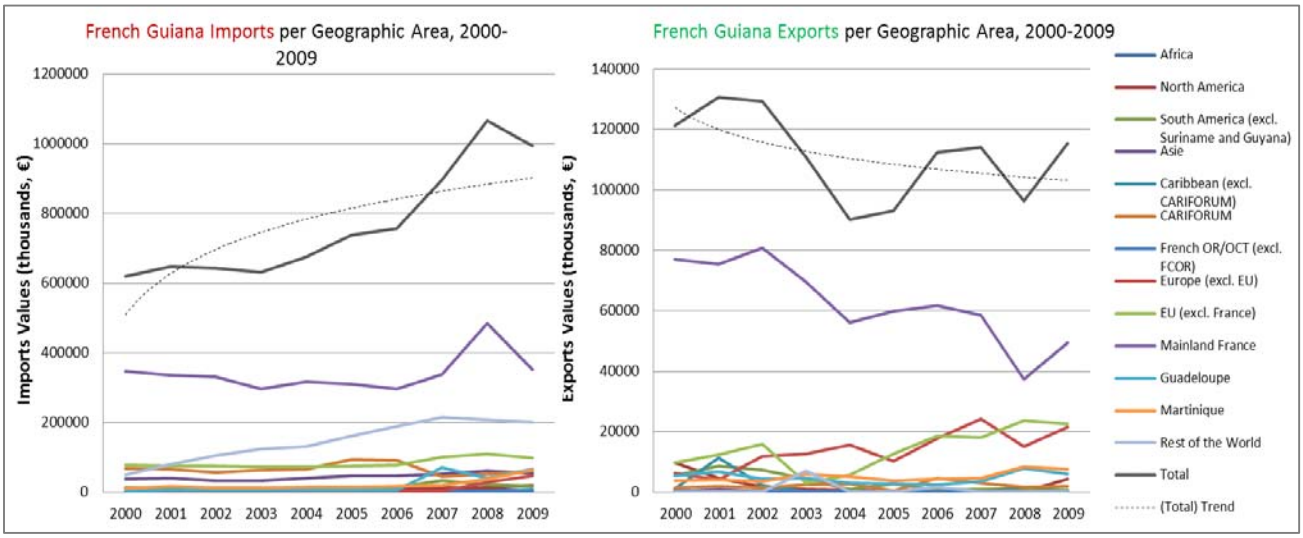
Figure 4-11: French Guiana: trade with main trading partners



(Source : Treatment ANGELO / Figures from regional Customs, the INSEE)

Figure 4-12: Geographical structure of French Guiana trade from 2000 to 2009

Graph 2.8 Imports and exports in French Guiana



(Source: Treatment ANGELO/Figures from regional Customs, the INSEE)

Figure 4-13: French Guiana: trade per geographic area

for the other FCORs, i.e. with a record high in 2008, up to 1.06 billion Euros (that is 72% more than in 2000) and a dramatic fall back to under the billion Euros, in 2009 (cf graph 2.8). The 2008 growth (19% more than in 2007) was due to the growing demand for equipment (+30% in 2007 and +40% in 2008) and intermediate goods (+24% in 2008), mainly from private companies (cf graph 2.9).

As far as French Guiana exports are concerned, in 2008, they fall by 16% (that is 96 million Euros less), mainly due to lower gold sales (-27%) which usually hold a fair share of French Guianese exports (37% of 2008 total exports and around 50% in 2007). Agrofood exports also dropped (by 6%) in 2008.

Logically, lower exports and higher imports increase French Guiana trade deficit (+24%) up to approximately 1 billion Euros. In 2009, however, unlike Martinique or Guadeloupe, French Guiana scored a net exports progression (cf graph 2.8 hereunder).

Graph 2.9 ((Source : Treatment ANGELO / Figures from regional Customs, the INSEE)

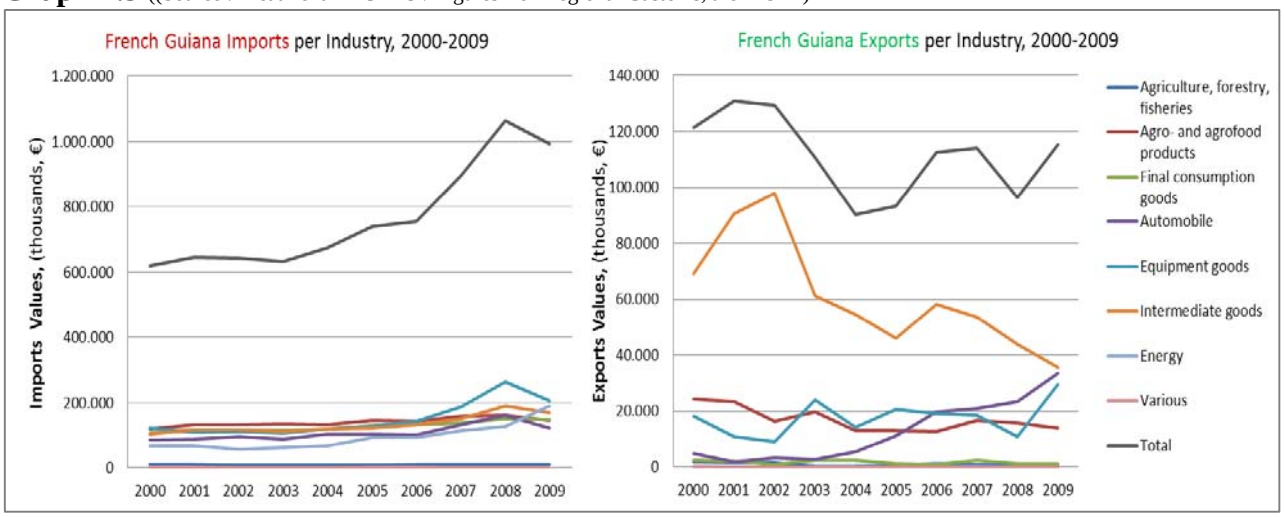


Figure 4-14: French Guiana: trade per industry

FCORs Regional Trade

As can be gathered from our previous section, trade between the FCORs and the CARIFORUM are rather limited overall. This low degree of regional integration depicted in the FCORs seemingly stands in competition with the FCORs trade reliance on mainland France and Europe (cf graphs 2.10, 2.11 and 2.12).

FCORs trade with the rest of the world -Caribbean countries included- display a general trend of low exports/imports coverage (cf graph 2.0) and remain fairly marginal[26] and poorly diversified geographically.

Regarding FCORs trade with the Great Caribbean[27] region, 75% of Guadeloupe regional imports, for instance, actually originate from the US (Porto-Rico and the US Virgin Islands included) and Aruba; while over 80% of its regional exports go to three main regional destinations: the US (Porto-Rico inc.), the Dominican Republic and Aruba.

[26] In 2008, only 4.3% of Guadeloupe exports and 15.1% of its imports go to / come from the region, with a 2.3% imports/exports coverage (FCORs excluded), or 13.8% (FCORs included). Guadeloupe trade deficit vis-a-vis the region totals 516 million Euros. Source : INSEE, TER 2008.

[27] The Great Caribbean region is defined as all territories lying within or bering the Caribbean Sea.

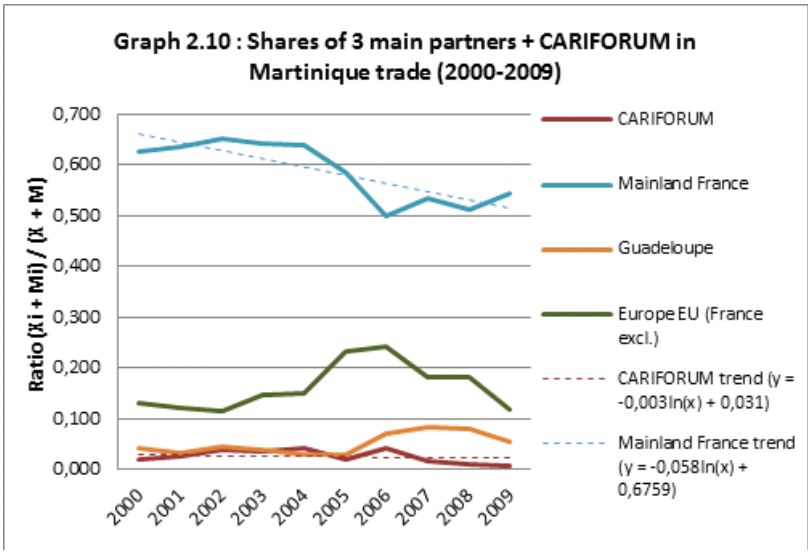


Figure 4-15: Three main partners+CARIFORUM in Martinique trade

The scarce geographical diversification is directly related to the type of trade. Guadeloupe regional imports (outside the FCORs) are made mostly of energy products such as refined oil (77%) and intermediate goods (construction materials); energy products (15%) and equipment (IT, industrial machinery, ..) are also a major part of its regional exports.

Regarding FCORs trade with the CARIFORUM, it only accounts for 3.2% of Guadeloupean total trade, over the 2000-2009 period (table 2.2).

Martinique is actually the FCOR exporting the most to its Caribbean neighbors: over 40% of its overall exports outside mainland France (oil derivatives, gravel, cement and electrical engines exported towards St Lucia, Trinidad & Tobago and the Netherland Antilles).

However, the share of CARIFORUM trade in Martinique total trade is the lowest of all FCORs (2.6%, table 2.1)[28], and a closer look at the share of its exports and imports with the CARIFORUM shows a remarkable difference between the former (0.18) and the latter (0.81); i.e. Martinique imports much more than it exports to the CARIFORUM (cf

[28] Against 58.1% for mainland France, 16.7% for the rest of the EU and over 4% for Asia and North-America.

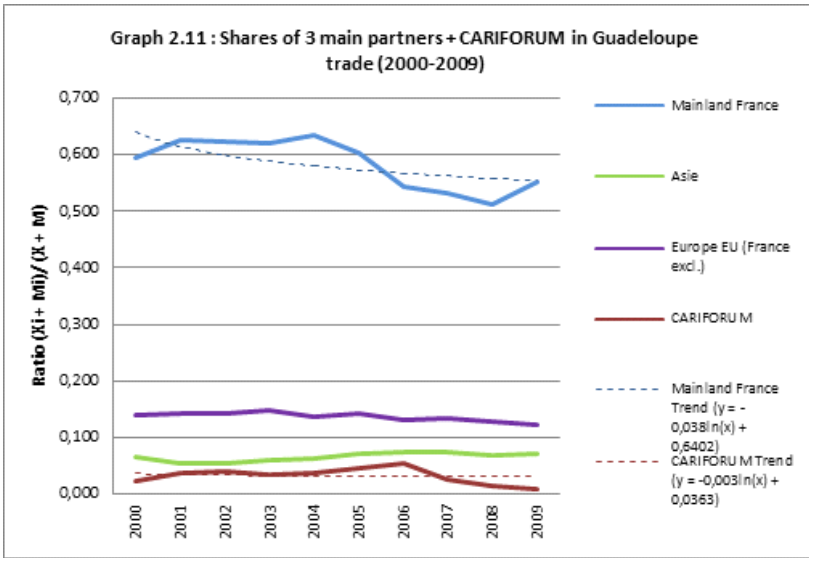


Figure 4-16: Three main partners+CARIFORUM in Guadeloupe trade

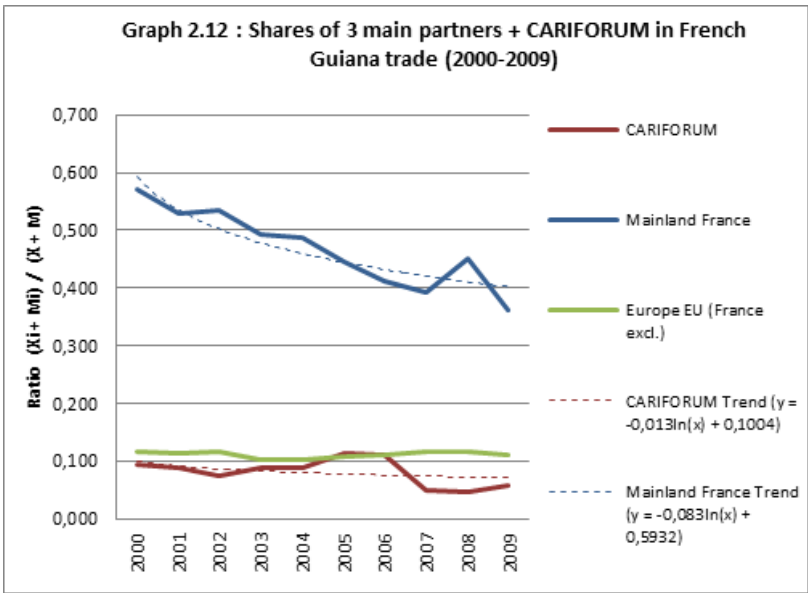


Figure 4-17: Three main partners+CARIFORUM in French Guiana trade

Graph

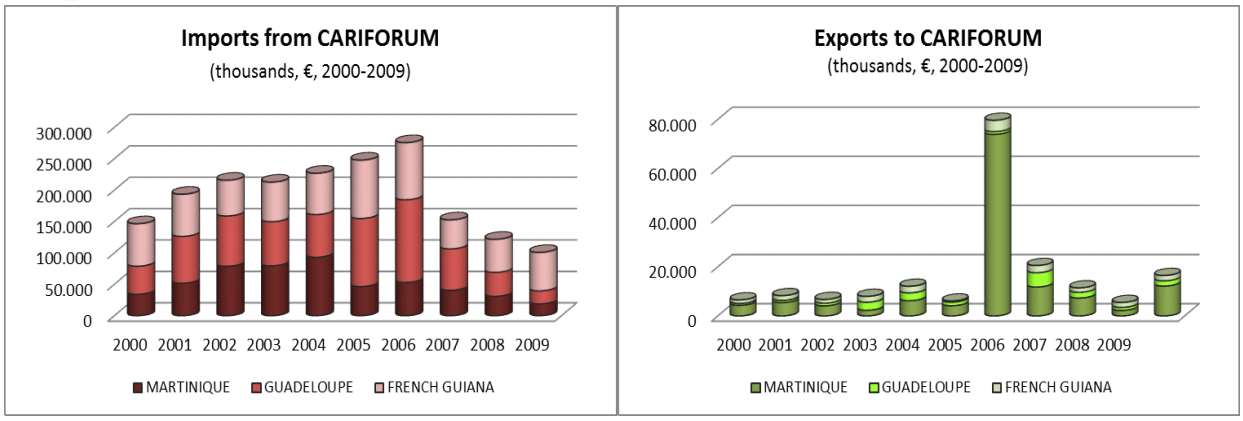


Figure 4-18: Trade with CARIFORUM

graph 2.10). No doubt that significant volumes of oil products imported from Trinidad &Tobago, as well as energy price inflation play a major role in that.

In the case of French Guiana, as mentioned earlier, it is the only FCOR registering the CARIFORUM among its three main trading partners, with a share of almost 8% of its total trade, although alike the other FCORs its imports from those countries largely dominate French Guiana-CARIFORUM trade (88% of imports shares of bilateral trade against 12% of exports shares).Overall, if over the 2000-2009 period FCORs-CARIFORUM trade followed a general downward trend, it did less so than compared with trade with mainland France. It seems opportune to watch the evolution of the relative weight of CARIFORUM trade in the FCORs bilateral and total trade, during the years following the implementation of the EPA. Moreover, even though for now most of FCORs regional trade takes place with only a few regional partners, it is nevertheless interesting to see that such trade takes place in most product categories of the HS nomenclature, though volumes fluctuate significantly from one year to the other. We provide an illustration of this under table 2.4 (over a 3 year-period, 2006 to 2008). This high volatility shall have to be taken into account when evaluating the trade impact of

the EPA, which will have to be dissociated from external or internal shocks affecting the FCORs economies. As far as trade in *services* (tourism aside) is concerned, few studies have been conducted on the matter[29] but they typically reveal a lack of openness of the FCORs towards regional markets, in spite of the dynamism displayed in local FCOR markets.[30] In Martinique, added value in non-financial services has followed a growing trend (though slower in the last years of the period studied: +9.4% in 2006, +1.9% in 2008). In the non-banking sector, it is worth mentioning education, health, social services as well as the positioning of small enterprises in leisure, well-being, culture and sports on the local market, either to corporate clients[31] or individuals.

In terms of capital and labor mobility between the FCORs and the region, the general trend is similar to the one observed for general trade: the flows remain very limited. There are several reasons for this, among which transport networks that are essentially oriented from the FCORs towards Europe and CARIFORUM nationals limited access to the FCORs. Even though, since the signature of the EPA, several CARIFORUM countries have been granted visa-waivers to the entry into the FCORs, it generally proves easier for Commonwealth nationals to travel to the UK or Brussels.[32] Other reasons are linked to: the lack of English- (on the FCORs side) and French- (on the CARIFORUM side) proficiency; a monetary and tax policy hardly adapted to international transactions ; industrial concentration dominated by small-and medium-sized firms; FCOR operators

[29] Usually by institutions, such as INSEE, conducting surveys among firms and consumers, upon requests from policy-makers or private operators. To the best of our knowledge, no official institution is actually collecting statistics on trade in services in the FCORs, except in the case of tourism and (some) financial transactions. Such statistics are however available in Caribbean independent countries.

[30] Sources: Etudes INSEE, TER 2007-2008 / VEV-Consulting, for Martinique Regional Council, March 2007.

[31] Services provided to companies are mainly : rentals (vehicles, machinery, equipment, ...), human resources selection and temping, surveys, cleaning, administrative works and translation, call centers, event organization, sewage and waste management, ..., and more generally, services related to productive processes, real-estate, consulting.

[32] Even though the FCORs belong to the EU and have the statute of Outermost Regions -like the Canaries or the Acores- they do not belong to the Schengen area.

Table 2.4 - 2006 (Source : Treatment ANGELO/CEREGMIA ; Figures from regional Customs Antilles Guyane)

EXPORTERS/IMPORTERS	Fr. Guiana	Guadeloupe	Martinique	Ant&Bar	Bahamas	Barbados	Belize	Dominica	Dom Rep	Grenada	Guyana	Haiti	Jamaica	SKN	StLucia	StVin&Gren	Suriname	T&T
French Guiana					0	0	0	0	0	0	0	99.856	0	0	0	3.532.443	0	986.895
Guadeloupe						0	0	520.879	399.776	2.055	0	11.058	0	4.563	98.485	0	0	64.300
Martinique				7.373.40	0	0	341504	106394	95.513	76.916	0	1.817.460	0	20.372	61.572.987	809.850	809.850	1.779.365
Antigua&Barbuda	0	190.035	316.578															
Bahamas	0	0	39.196															
Barbados	16.499	373.152	354.156															
Belize	0	44.087	103.052															
Dominica	0	2.046.334	81.653															
Dominican Rep.	238.195	2.336.435	1.203.761															
Grenada	0	448	1.285.344															
Guyana	386	750.716	644.723															
Haiti	9.843	133.665	56.773															
Jamaica	108.129	1.235.159	3.106.824															
StKitts&Nevis	0	110.576	0															
StLucia	22.619	52.486.672	1.756.618															
StVincent&Grenadines	0	2.390	61.446															
Suriname	0	0	0															
Trinidad&Tobago	90.036.300	72.167.400	42.942.838															

2007

EXPORTERS/IMPORTERS	Fr. Guiana	Guadeloupe	Martinique	Ant&Barb	Bahamas	Barbados	Belize	Dominica	Dom Rep	Grenada	Guyana	Haiti	Jamaica	SKN	StLucia	StVin&Gren	Suriname	T&T
French Guiana					0	0	0	0	0	0	0	176.140	0	0	0	0	1.328.159	1.451.702
Guadeloupe				29.75	28.953	1.473	0	1.584.600	167.942	3.955	0	121.871	0	63.208	92.969	4.035	46.519	3.676.135
Martinique				28.02	0	19.195	0	9.323	360.896	93.926	0	14.822	0	0	9.925.785	654.738	0	644.931
Antigua&Barbuda	11.982	360.377	167.675															
Bahamas	0	22.438	5.316															
Barbados	0	394.643	236.415															
Belize	0	3.951	0						5.331.250									
Dominica	0	2.602.525	67.018															
Dom Rep	1.386.906	3.988.171	2.170.741															
Grenada	0	1.044	764.430															
Guyana	0	0	0															
Haiti	0	97.812	75.530															
Jamaica	166.830	838.192	2.255.902															
StKitts&Nevis	0	61.820	0															
StLucia	1.047	17.276.099	4.902.790															
StVincent&Grenadines	0	8.782	13.272															
Suriname	0	0	0															
Trinidad&Tobago	44.016.458	39.301.078	26.579.057						417.523.803									

2008

EXPORTERS/IMPORTERS	Fr. Guiana	Guadeloupe	Martinique	Ant&Barb	Bahamas	Barbados	Belize	Dominica	Dom Rep	Grenada	Guyana	Haiti	Jamaica	SKN	StLucia	StVin&Gren	Suriname	T&T
French Guiana					0	0	0	0	4.998	0	0	200.243	474.339	0	0	0	255.387	563.370
Guadeloupe				14.01	0	23.176	0	347.726	1.477.488	0	0	132.451	37.174	12.862	12.909	0	113.473	2.644
Martinique				4.471.50	0	36.487	0	734.961	2.111	7.428	0	102.256	134.839	0	705.308	563.890	77.667	568.242
Antigua&Barbuda	0	2.427.309	67.506															
Bahamas	0	0	11.454															
Barbados	26.498	3.055.614	433.398															
Belize	0	0	0															
Dominica	1.875	3.041.366	489.439															
Dom Rep	716.579	2.441.789	1.848.202															
Grenada	0	0	703.283															
Guyana	6.198	963.794	534.506															
Haiti	7.330	112.019	42.067															
Jamaica	193.588	779.100	42.067															
StKitts&Nevis	0	30.203	0															
StLucia	7.018	89.594	523.641															
StVincent&Grenadines	25.197	169	30.855															
Suriname	0	0	0															
Trinidad&Tobago	51.382.504	24.083.272	22.548.858															

lacking of experience (and sometimes interest) in international markets; few clusters and (local and international) joint-ventures.[33]

Trade contribution to growth

Economic trends

Overall, we may say that the FCORs economic picture is none of the most buoyant ones (low economic growth, high unemployment rates,...) especially if regarded from the prism of European economic convergence objectives. The global crisis in the background did not help to improve local conjunctures, except maybe in that it might have had a cataleptic effect to impulse the use of local (human and financial) resources towards economic reforms. The recent *Etats Généraux d'Outre-Mer* (public consultations undertaken in the FCORs) may have given that impression, but even though they helped to acknowledge the fact that the FCORs should open further internationally and readjust their productive apparatus to fulfil that purpose, a long and bumpy road of awareness-raising and adjustments is still ahead of local public and private operators.

Despite their geographical situation, the status of French –and European- outermost regions implies that the FCORs must endeavor to attain a certain degree of economic convergence within the EU. In that sense, the EC supports financially the development of infrastructures and innovation strategies for each European outermost region.

That surely represents one of the singularities of the FCORs when compared to their Caribbean neighbors. However, although they enjoy relatively high levels of GDP, the FCORs are very small comparatively to some regional giants such as the Dominican Republic (the three FCORs GDP added together amount for less than 80% of Dominican Republic GDP and the population of all three put together is approximately 10 times less numerous).

Guadeloupe, one of the 5 richest islands in the region in terms of per capita income (along with Martinique, Bahamas, Porto-Rico and Antigua & Barbuda), owes approxi-

[33] Cf. Vaugirard (2007) ; Angelo-Lesales-Salmon (2009).

mately 70% of its incomes to services (especially in real estate), trade (15%) and construction (8.5%). The latter actually concentrates 20% of Guadeloupe small firms.

Agriculture on the other hand has experienced a significant slowdown over the past decade, especially with drastic reductions in the number of farms (-40%), labor (-61%) and agrarian areas (-70% in land dedicated to banana crop for instance).

As far as infrastructures are concerned, Guadeloupe concentrates its main industries in the Jarry industrial zone (ZI), under the CECA (Euro-Caribbean Center) which comprises an international trade zone, a World Trade Center, an EC Free-Zone and the port. The latter has recently overcome major enlargement and modernization works with the purpose of becoming a hub-port in this part of the Caribbean. Jarry ZI is one of the three main industrial zones in France (with over 3500 firms) and has contributed to 80% of employment growth over the last 10 years.[34] Finally, Guadeloupe disposes of the largest airport in the FCORs (ranking 9th nationally in terms of passenger transit), but it mainly connects travelers to and from Mainland France.

Martinique main sectors of activities are: trade and services related to trade (50%), public administration (50%), industry (8%) and construction (6%).

The industrial and tertiary sectors seemingly offer a real potential for growth, especially due to the installation of national and regional institutes to promote innovation inter alia.

The island hosts 5 industrial zones – but most Martiniquan firms are very small in size, 3/4 of them being self-employed enterprises – an international airport and a merchant port (for freight as well as cruise ships and inter-island passenger transportation) managed by the Chamber of Commerce and Industry.

French Guiana differs substantially from the other two FCORs in that it is situated on the American continent, shares a land border with a CARIFORUM country and is as large, surface-wise, as Portugal (93,534 km2, i.e. 1/6th of Mainland France). Moreover, most of its territory (around 90%) is covered by the tropical amazon forest and 58% of

[34] Cf fiche de synthèse « La Guadeloupe », DRCE Antilles-Guyane, January 2009.

its population only inhabits 6% of the territory, mainly on the Atlantic coast and the Amazon river border.

French Guiana is also, however, the poorest FCOR.[35] In 2006, its GDP per capita amounted to approximately 13,900€ (against 15,900€ in Guadeloupe and 17,300€ in Martinique). The French Guianese economy depends mostly on public construction works and, alike Martinique, most of its companies are very small (in 2009, only 40 of them employed more than 50 workers). The main industries accounted for are gold mining, fisheries, rice, livestock, wood, tourism and the aerospace industry.

Despite its geographical situation, French Guiana has a similar trade structure as the other FCORs. In 2007 for instance, French Guiana registered approximately 740 million Euros in imports (1/7 of which in oil products) for less than 95 million in exports (1/3 of which in raw gold).

Transportation networks connecting with French Guiana are fairly costly; hence the low competitiveness of French Guianese primary goods and manufactures on international markets (agriculture, fisheries, wood, handcraft, etc.).

Nevertheless, French Guiana has been betting on several of its assets (especially in services) and has set up several ambitious programs to foster innovation and development, in particular through the creation of Guyane Technopole.

Trade contribution to growth

The analysis we conduct under this study[36] focuses on the trade impact of the EPA, thus why it seems opportune to verify the relevance of the trade-growth (or export-led growth) theory.

Before studying trade contribution to the FCORs GDP growth, if we look at the world commodities trade trends and GDP from 2000 to 2009, we observe a high correlation between both variables. That does not seemingly contradict the principle according to

[35] Source world statistics, in Fiche synthétique Guyane 2008, DRCE Antilles-Guyane.

[36] The INSEE « territorial correction » is applied on the calculations of the trade statistics presented under this section, Source : Treatment ANGELO / Figures INSEE.

which trade promotes productivity and thus economic growth:

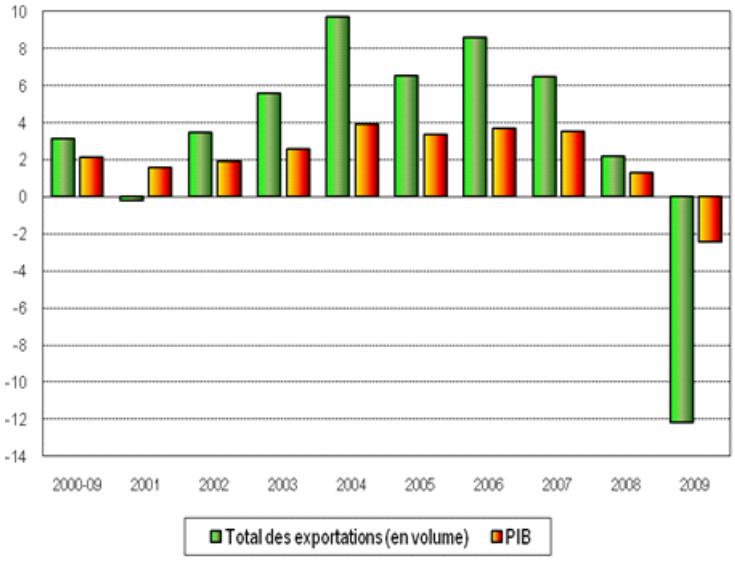
• Through exports: satisfying consumers demand and increasing supplies thus incomes and growth;

• Through imports:

- Providing a greater variety of final goods and reduced consumption prices which improve welfare, purchasing power and thus households consumption, hence a stimulus for trade partners economies;

- Providing a greater variety and reducing prices of intermediate goods, hence promoting productivity which is a growth factor.

• Through international specialization, hence optimizing international production according to classical and neo-classical trade theories.



World commodity exports and GDP,2000-2009

Globally, over that decade, world trade in commodities experienced more fluctuations than world production, which indicates an increment in the degree of openness of international markets, mainly in industrialized countries manufactures (approximately

70% of trade). We may also see the impact of the global financial crisis from 2007 onwards (slower demand and funding for international transactions, high degree of markets integration,...). For the remainder of this section, we consider GDP as the following composite[37]:

$GDP(Y) =$ final consumption(C)+$GFCF(I)$+inventory variation(ΔS)+exports $(X)-$imports $(M$

For all 3 FCORs, we easily observe a *high correlation between GDP growth and final consumption* (0.997 for Martinique and Guadeloupe, 0.991 for French Guiana), followed closely by GFCF.

If we look at the weight of commodity imports in final consumption and the correlation between imports and GDP, we observe a significant difference between the 2 islands and French Guiana:

In the islands, imports represent on average less than a third of final consumption and are highly correlated to GDP; while in French Guiana more than 64% of final consumption is made of imports, the latter displaying a low correlation to GDP.

The above illustrates the *importance of services in Martinique and Guadeloupe*, while in French Guiana, it was only from 2003 that the sector of services started to grow significantly.

[37] GFCF : Gross Fixed Capital Formation. For simplicity sake, we take GFCF as a proxy for investment.

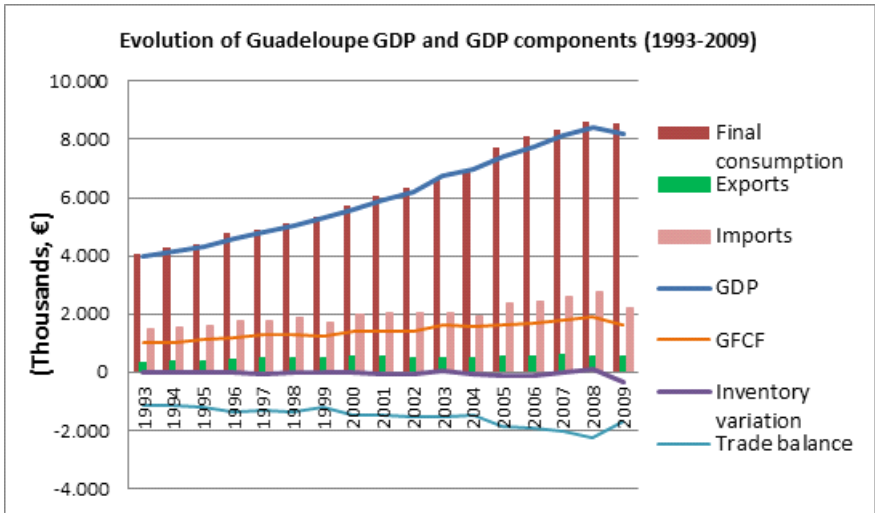
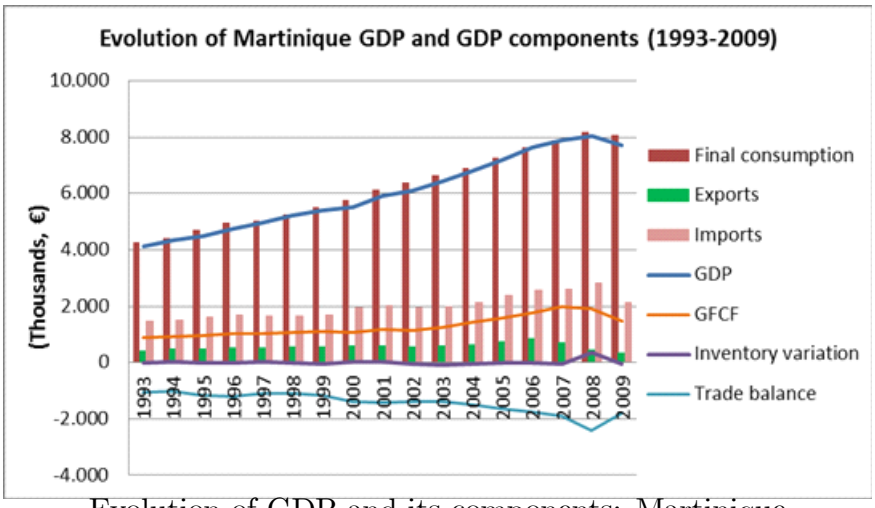


Figure 4-19: Evolution of GDP and its components: Guadeloupe



Evolution of GDP and its components: Martinique

At this stage, we ought to remember that the relative magnitude of the different components of the GDP (as illustrated in graphs 2.15 supra), does not necessarily correspond to the relative contribution of each of them to the GDP growth rate.

We can measure this contribution by estimating the causal relation between the variables and the relation between the different components of the GDP may be characterized as follows:

$Y_t + M_t = C_t + I_t + X_t$

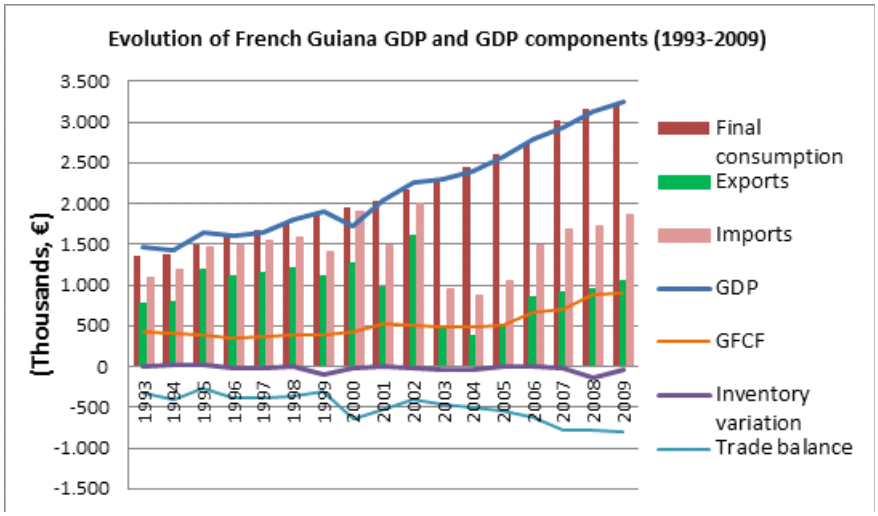


Figure 4-20: Evolution of GDP and its components: French Guiana

$M_t = C_t.X_t - \Delta S_t$

$I_t = b_1 M_t + b_2 Y_{t-1} + b_3$; where t represents the current period and $t-1$ the previous one.

We illustrate hereunder the (weighted) variations of the GDP components compared to GDP variations, and may visualize the relative contribution of each variable to GDP

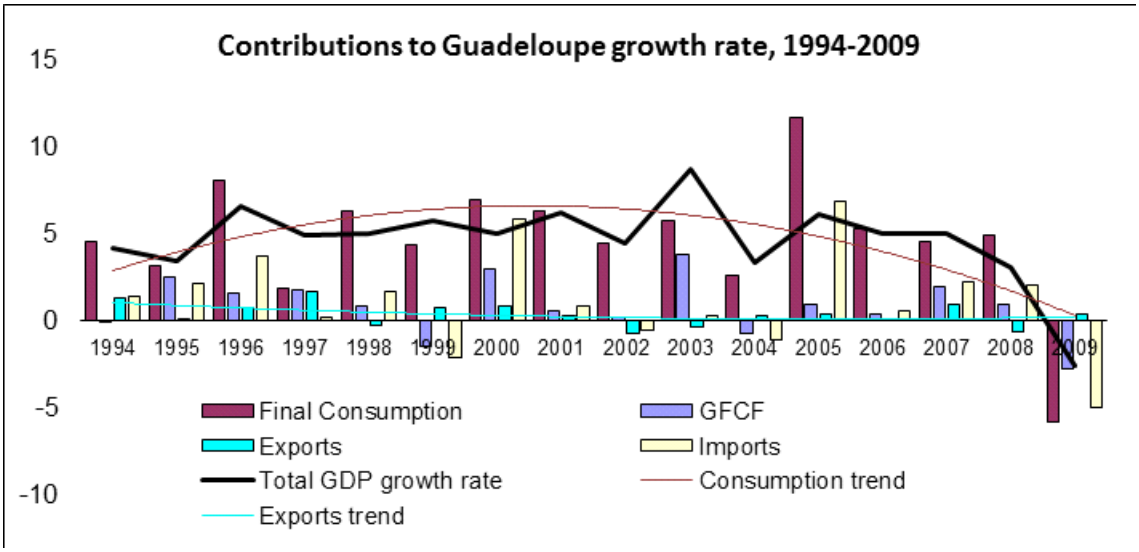
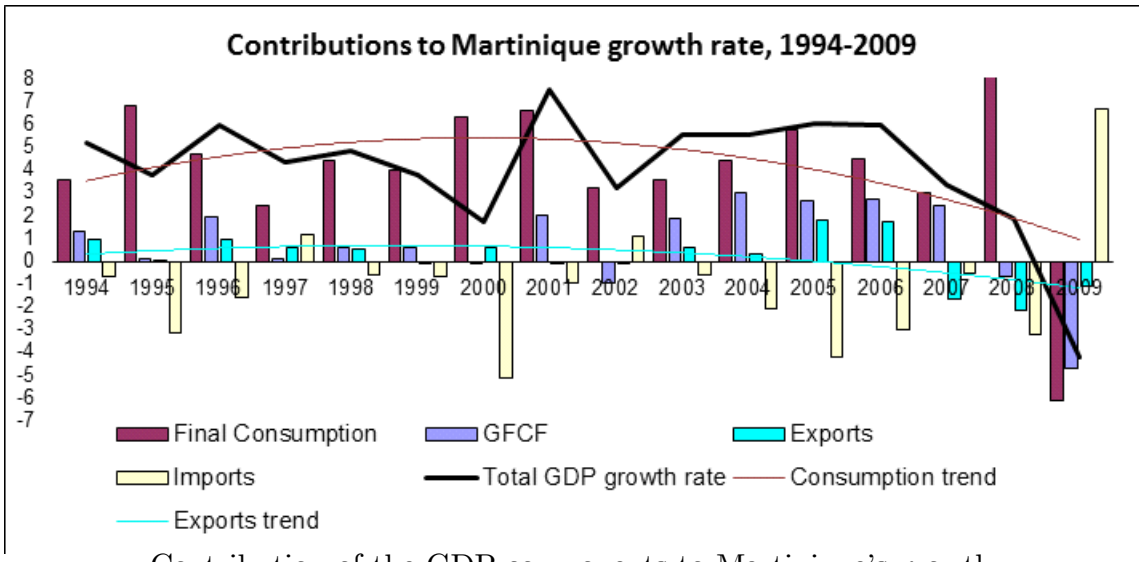


Figure 4-21: Contribution of the GDP components to Guadeloupe's growth

growth, for each FCOR:



Contribution of the GDP components to Martinique's growth

We observe that trade contribution to FCORs growth is relatively random from one year to the other. An analysis of exports trends within the main sectors of activity

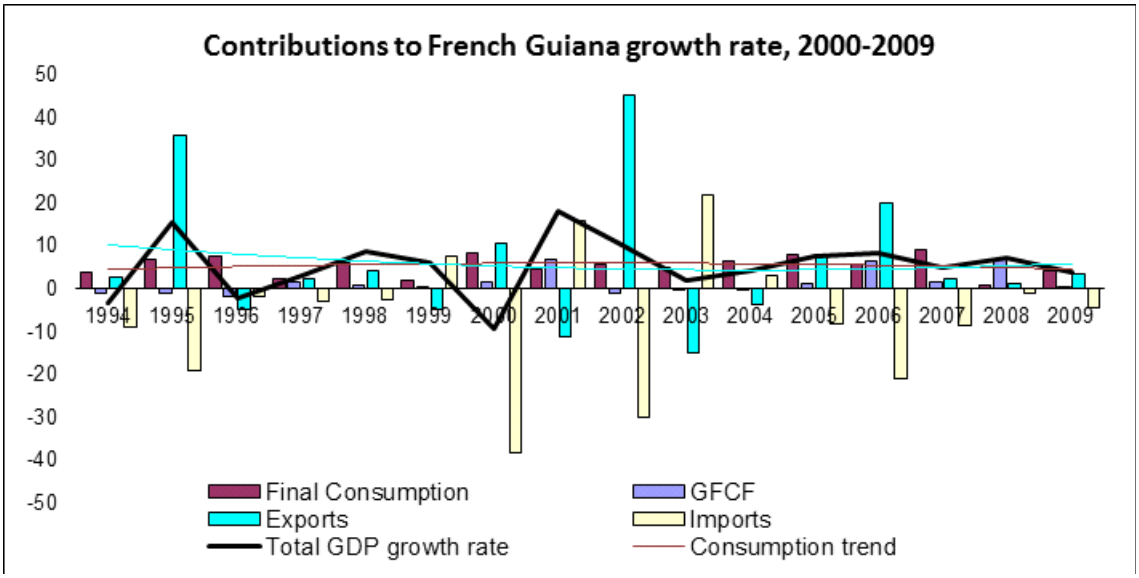


Figure 4-22: Contribution of the GDP components to French Guiana's growth

(cf our section 2.1.2 supra) shows indeed a high volatility in most industries.[38] As an example, in the midst of the global recession, the only FCOR registering a positive GDP growth (+3.6%) in 2009 was French Guiana, but mainly thanks to exports revenues generated through the aerospace industry (and partly to the re-exportation of vehicles and equipment).

For all 3 FCORs, it is the GFCF growth rate which is more correlated to the GDP growth rate (0.88, 0.66 and 0.38 for Martinique, Guadeloupe and French Guiana, respectively).[39] Final consumption growth rates rank second. As far as exports are concerned, they come third in French Guiana, while in Martinique both imports and exports contribute in a similar degree to growth (0.611 and 0.614 respectively) and in Guadeloupe imports contribute substantially more to growth (coefficient estimate: 0.55) than exports (0.02). In the case of French Guiana, since the high correlation observed between exports

[38] The same type of measure can be applied to a more disaggregated level of products to allow a prediction of disaggregated trade impacts on the GDP and its components.

[39] According to INSEE and IEDOM, a recent example was given in 2009 by a 6.5% fall in Martinique GDP attributed essentially to the plummeting of investment (23.6% less than in 2008).

growth and GDP growth is not reflected in the coefficient estimates measuring correlation between GDP and exports levels, there likely is a delayed effect of exports growth on GDP levels.

Changes occurred since the signature of the EPA

The year following the signature of the EPA, FCORs trade was characterized by a significant slowdown –like world trends were- with a dramatic reduction of Martiniquan exports and a slowdown in Guadeloupe and French Guiana trade flows. The causes behind those tendencies are multiple but the international financial crisis and local social upheavals are among the most likely.

FCORs trade with the CARIFORUM followed the same path, except in the case of French Guiana which registered an increase in both exports and imports to and from the CARIFORUM.

At this stage, it seems relevant to recall the geographical proximity (and common land border) between French Guiana and its CARIFORUM closest neighbors, as well as the transition under course at the time in the continental FCOR: an increment in services supply and demand, in intermediate goods imports, and thus the inception of a new industrial phase with increased exports of manufactured goods, progressively replacing the French Guianese traditional pattern of exporting mostly intermediate goods and low-value added products.

This French Guiana tendency to open up to its CARIFORUM neighbors preceded the signature of the agreement, but the latter provides yet another instrument to facilitate trade between them.

Regarding possible direct effects following the EPA implementation, we are aware that, at the time we are conducting this study, it is hardly possible to measure the direct impact of the agreement on trade. The fact being that we dispose of trade statistics up to year 2010 (included) and that the first CARIFORUM countries that ratified the agreement actually launched the implementation of the progressive tariff liberalization

schedule on January 2011 (it is the case of Antigua & Barbuda, Belize, Dominica, the Dominican Republic and Guyana). By July 2012, 8 CARIFORUM countries had still not ratified the agreement and hence not initiated the tariff liberalization process agreed upon.[40]

Our purpose here is to initiate a follow-up and analytical process, renewable whenever deemed necessary, to observe the evolution of FCOR-CARIFORUM trade. In order to do so, we proceed first (under section 4) to study the past 20-year trade patterns, on the basis of disaggregated trade statistics, so to establish the potential impact of changes in tariffs on FCOR-CARIFORUM trade.

4.4 Consultations

4.4.1 Consultations with public and private sector representatives in Guadeloupe, French Guiana and Martinique

As mentioned in our introduction, it seemed essential, during the first phase of the study, to consult with the relevant local actors who may be interested in a mechanism to follow up the impact of the EPA. [41]We thus collected comments and suggestions from said actors, not only on the follow-up *scope* (to identify the suitable indicators for the agreement implementation impact follow-up), but also the *institutional framework* and the *protocol* (steering committee, funding, etc.) that could be adopted and implemented. A summary of the interviews we conducted is presented hereafter.

Relevant actors identified and consulted:

- Regional Council Authorities (Conseils Régionaux)
- Chambers of Commerce

[40]In June 2012, the European Community even considered initiating a dispute settlement procedure that would have possibly incurred sanctions for those 8 CARIFORUM countries. However, at the same time, only 5 (out of the EU27) European members had ratified the agreement: Malta, Slovenia, Spain, Sweden and Great-Britain.

[41]Detailed report of the consultations available on request.

- French Foreign Trade Advisor (CCEF)

- Other private-sector representatives (CGPME, MEDEF, AMPI, ..)

- Lecturers and researchers

- (Other members of the) CARIFORUM-DOM-OCT-EC Taskforce on Commerce and Investment

Conclusions from the consultations:

The consultations conducted in Guadeloupe, French Guiana and Martinique helped us identify the key issues and indicators local policy-makers and private operators wished to observe in order to estimate the impact the EPA may have on local economies.

It is noteworthy however, that at the time we were conducting the consultations, *French Guiana* seemed less interested than the other FCORs in assessing and following-up the impact of the EPA, as French Guiana was actively orienting its efforts towards the Brazilian market and MERCOSUR in general. This tendency to open up to South American markets has been marked by recent initiatives in trade negotiations and the development of road infrastructures to facilitate trade with Brazil -and Suriname to a lesser extent- even though Brazil is not part of the EPA and Suriname has not ratified the agreement yet.

The EPA seemed thus to occupy a secondary place on French Guianese economic operators agendas. In any case, local policy-makers were sensitive to the fact that some EPA Caribbean neighbors –such as Trinidad & Tobago- may show a growing interest towards French Guiana market and industries. They thus agree that it would be useful to set up a follow-up instrument allowing them to assess the potential evolution of trade and economic and financial relations with neighboring signatories of the EPA.

In comparison to French Guiana, *Martinique* appears more interested in a follow-up mechanism, although without targeting any particular country, despite being situated between two CARIFORUM countries, Dominica and Saint-Lucia.

Some local policy-makers see the need for an assessment tool that may help define some warning thresholds in order to activate the safeguard clause if ever necessary. They

suggest that relevant thresholds be adopted upon the safeguard criteria defined by the WTO. Some of these interviewees also expressed their wish to complement this study with a simulation of the impact of the elimination of the *Octroi de Mer* on local economies, in case the CARIFORUM would eventually win their plea against this FCOR tax, on occasion of the next revision of the Agreement (scheduled every 5 years). They also suggest that an assessment of the compliance with rules of origin may help identify potential tariff revenue losses caused by the importation of goods not falling under the agreement as such.

They finally warn about the difficulty we may encounter at collecting certain information, especially among private companies.[42]

Guadeloupean interviewees positively welcomed the undertaking of this study and envisioned the uses of an EPA follow-up mechanism, among which the adjustment of the criteria to activate the Agreement safeguard clauses. They also expressed their concern over the foreseen revision of the *Octroi de Mer*[43] and suggested to integrate results from previous studies to simulate the effects of a potential suppression of the tax.

Some operators emphasized the fact that it was still early to assess the impact of the EPA and that it would prove difficult to define adequate indicators to do so. In that regards, according to them, customs data are only partly reliable due to the existence of large volumes of informal trade, oil imports and re-exportations. They also pre-suppose that indicators based on surveys conducted among private operators would be difficult to assess.

The French Foreign Trade Advisors (FFTA) alert on the fact that they are still rarely consulted by private operators, the latter also calling little on the relevant institutions,

[42] As previously mentioned under this chapter we have indeed experimented great difficulties collecting data, be it through public or private institutions though.

[43] Octroi de Mer: Despite its denomination and the fact it is been collected through FCORs Customs, the Octroi de Mer is a tax applied both on local and imported products. Legally speaking, it cannot be considered as an import tax or customs tariff but the existence of a differential between rates applied on imported commodities and those on local products justifies to study its impact on FCOR external trade. The EU authorities have actually requested this tax regime to be reviewed and made more WTO-compatible.

thus many trade missions or transactions taking place may remain unknown.

Visa issuance is another possible indicator that was often mentioned by interviewees, although they also admit that visa requests may just indicate first-stage prospections. Moreover, since December 2009, several CARIFORUM countries have been granted visa-waivers.

Legal and institutional hurdles, along with the lack of business law harmonization (across the region) are also identified as barriers to regional trade, especially in services. Such obstacles are also seen as possible impediments to a proper evaluation of the EPA impact on services.

Several operators (among which FFTAs and DRCE, Regional Directorate of Foreign Trade) also made specific suggestions for the assessment of the EPA on FCORs: calibrate effective sensors to measure the entry and export of goods and services; call on corporate groups able to facilitate public-private dialogue on EPA implementation; tools to measure the impact of trade missions.

Finally, Guadeloupean operators foresee the EPA as a framework to be used towards the implementation of cooperation projects with other Caribbean institutions through joint EDF-ERDF funding. They reckon that the forthcoming installation of the Endogenous Development Commissioner should also be taken into account, as he/she would be in charge of promoting regional integration.

4.4.2 Surveys among private firms in Guadeloupe, French Guiana and Martinique

Methodology

■ Questionnaires[44] were sent via email to selected firms and business associations/BSOs[45] in all 3 FCORs. A total of 271 questionnaires were sent to private companies either di-

[44] Detailed survey report available on request.

[45] Firms were selected with the support of corporate associations/BSOs. The diffusion and treatment of the questionnaires were undertaken by a private independent firm, Cabinet Julie Pluton, which was recruited for that purpose.

rectly or through BSOs; of which 25 questionnaires were completed and returned.

■ A hyperlink to the questionnaire was also published though the Martinique Chamber of Commerce and Industry's newsletter. 10 questionnaires were completed and returned that way.

Sample

Thus out of 271 questionnaires sent, 35 were returned, which represents a response rate of 12.9%.

Survey results

Despite a relatively limited sample, the surveys conducted among FCOR private firms reveal a few interesting facts:

- During the two years following the signing of the EPA, some FCORs companies have registered new suppliers and clients from the region (CARIFORUM and other countries in the region), which depicts a wider openness to the region;

- Some FCORs firms claim they already feel the pressure some CARIFORUM competitors have been exerted on local markets. It has been the case for the wood and wooden products sector in French Guiana, Barbadian competitors in Martinique (manufactures), price reduction in fisheries, etc..

- Some firms also perceive changes that are not necessarily directly related to the EPA but may have a positive or negative influence on its implementation and deserve to be taken into account: changes in legal frameworks and procedures or other political measures that may affect regional trade.

4.5 Econometric analysis

4.5.1 Theoretical foundations of the gravity model

"Gravity equations now benefit from well-established theoretical foundations and minimal requirements in terms of data, and have become one of the most popular instruments for international trade analysis" (Fontagné, Pajot & Pasteels, 2002).

As Fontagné (2002b) recalls, gravity models applied to international trade used to receive many criticisms for their lack of theoretical foundations but they now are the subject of an abundant theoretical literature. One may refer to various literature reviews among which J. E. Anderson and Van Wincoop (2003) or De Benedictis and Taglioni (2011).

The application of gravity models to international trade appeared in the pioneering works of Tinbergen (1962), Poyhonen (1963), Linneman (1966) and Leamer & Stern (1970). Derived from the Newton's gravitational theory, the *basic gravity model* proportionally links bilateral trade flows to the product of partner countries incomes. The basic equation can be written as follows:

$X_{ij} = A \times Y_i \times Y_j$

where X_{ij} represents country i exports towards country j ;

and $Y_i,\ Y_j$ the weight of their respective economies (traditionally their GDPs).

The model formulated on those premices highlights the attraction forces (the countries 'economic weight') determining trade flows between countries. To these attraction forces are added resistance forces (obstacles to trade) affecting such trade flows.

Anderson (1979) contributed to provide the model with *armingtonian microeconomic foundations*, which were reviewed by Krugman and Helpman (1980, 1985), Bergstrand (incorporating factor endowment effects on bilateral trade; 1985, 1989) and Deardoff (1995, 1998), among others. From the Armingtonian hypothesis on product differentiation (at the firm- or country-level), they introduced obstacles to trade under imperfect competition models following a Heckscher-Ohlin type logic.

This type of model was 'refined' later with space economy principles (cf for instance Frankel 1997, Baier and Bergstrand 2002), with the purpose to take into account other variables likely to have strong influences on trade flows: level of development, cultural factors, trade preferences and various potential obstacles to trade (distance, tariff or non-tariff barriers,...) with a special attention given to transport costs. We may mention the works of J. Anderson and van Wincoop (2003) and Baier and Bergstrand – incorporating

transport costs and customs tariffs – based on a monopolistic competition model where firms attempt to maximize their profits and consumers their utility (under Dixit-Stiglitz preferences).

Provided with sound microeconomic basis, the quantitative gravity model also benefits from significant contributions made by Eaton-Kortum (2002), Anderson-VanWincoop (2003), inter alia, to show the importance of transport costs and the difficulties to obtain reliable estimates of the same and of economic and trade indicators. It is precisely the difficulty in achieving reliable measures and econometric estimates that justify the abundance of the theoretical and empirical literature on gravity models.

In that regards, let us refer to Arkolakis-Costinot-Rodríguez (2011) and Baier-Bergstrand (2012) works highlighting the need to take into account multilateral price-resistance (Bergstraand et al.)[46] and estimate the variable "trade-cost" elasticity (Arkolakis et al.). The latter provide a possible simplification of the computation of welfare gains from trade, solving for a function of 1 variable and 1 parameter:

$d \ln W_{jt} = \frac{1}{\varepsilon} d \ln \lambda_{jt}$

where W_{jt} is country j welfare in period t and λ the share of expenditure on domestic goods, (λ = 1 - Import Penetration Ratio).

4.5.2 Our gravity model

Description of the model

■ Gravity modeling

We conduct our econometric analysis on the basis of panel data treatment using the following model:[47]

[46] After several papers by Bergstrand in which he makes use of current prices to incorporate the resistance-multilateral price (cf Bergtrand 1985, 1989, 1990), het alerts on the risk of using only this variable and proposed a new methodology for the estimation of the resistance-price and the cost elasticity of trade (cf more recent work such as Baier-Bergstrand 2010).

[47] A description of the variables is provided under sub-section 4.2.2

$$\text{Log } X_{ijt} = \alpha + \beta_1 \log Y_{it} + \beta_2 \log Y_{jt} + \beta_3 \log POPji + \beta_4 \log D_{ij} + \beta_5 C_{ij} + \beta_6 PTA_{ijt} (\log T_{ijt}) + \beta_7 \log \$_{ijt} + \beta_8 \log OIL_t + \beta_9 \log FRET_{UE} + \beta_{10} EU + \beta_{11} CF + \beta_{14} ISLAND + \beta_{15} LAND + \varepsilon_{ijt} \quad (4.1)$$

$$\text{Log } M_{ijt} = \alpha + \beta_1 \log Y_{it} + \beta_2 \log Y_{jt} + \beta_3 \log y_{it} + \beta_4 \log y_{jt} + \beta_5 \log POPji + \beta_6 \log D_{ij} + \beta_7 C_{ij} + \beta_8 \log PTA_{ijt} (OM_{ijt}) + \beta_9 \log \$_{ijt} + \beta_{10} OIL_t + \beta_{11} EU + \beta_{12} CF + \beta_{13} FRET_{UE} \beta_{14} ISLAND + \beta_{15} LAND + \varepsilon_{ijt} \quad (4.2)$$

■ **Objective**: Estimation of the variables elasticities determining FCORs trade - in particular with CARIFORUM countries.

■ **Collection of data** obtained through public institutions from the 3 FCORs, the CARIFORUM and other international organizations, a detail of which is provided under sub-section 4.3 :

- Customs statistics disaggregated at the HS8 level ;

- Customs tariffs (CARICOM CET and exclusions lists, tariffs from the Bahamas and the Dominican Republic, FCORs Octroi de Mer rates and tariffs from all trade partners);

- CEPII relative distance and common traits measures (transport, language, political and historical links, currency, ...);

- Other economic variables (GDP, exchange rates, oil price, ...) from different sources.

Dependent variables

Variables	Description
$\mathbf{X_{ijt}}$	Exports values from domestic country i to country j, for year t (1993-2010)
$\mathbf{M_{ijt}}$	Imports values by domestic country i from country j, for year t (1993-2010)

Explanatory variables

Variables	Description	Expected effect
$\mathbf{Y_{it}}$ $\mathbf{Y_{jt}}$	GDP (for domestic country i and foreign country j) in current prices for year t **(1993-2010)**	Positive
$\mathbf{POP_{it}}$, $\mathbf{POP_{jt}}$	Population (for domestic country i and foreign country j) in year t	Positive
$\mathbf{D_{ij}}$	Geodesic distances from domestic to foreign capital cities (in km)	Negative
$\mathbf{C_{ij}}$	Vector of binary variables capturing common traits between countries i and j, encompassing*: common languages, political- and historical-links, geographical traits (island vs landlocked),…*	Positive (ambiguous for geographical trait)
$\mathbf{PTA_{ijt}}$	- Binary variable (=1, if i and j integrate the same preferential trade agreement, or else =0) in year t.	Positive
$\mathbf{T_{ijt}}$	- Numeric variable (customs tariffs) for each country and product line at the HS-8 and HS-4 level, in year t.	Negative
$\mathbf{OM_{ijt}}$	- Numeric variable (octroi de mer) for each country and product line at the HS4 level, in year t	Negative
$\mathbf{\$_{ijt}}$	Bilateral currency rates variable (j→i)	Negative (export)
$\mathbf{OIL_t}$	Oil price variable	Negative
$\mathbf{FRET_{UE}}$	Numeric variable, Europe-FCORs freight cost (incl. CAF+IFP) **(2000-2010)**	Negative for the EU Ambiguous for other countries
EU	- Dummy capturing membership to the EU (1) or not (0)	Positive
CF	- Dummy capturing membership to CARIFORUM (1) or not (0)	Positive
DEXV	- Dummy (0,1) : 1 for positive exports or imports flows, or else 0.	

Figure 4-23: Dependent and explanatory variables

Data sources:

Data description	Level of agregation	Distribution	Period	Source	Computation
World trade	Per industrial sector	Per geographic area and country (excl. FCORs)	1950-2010	▪WTO	WTO World Trade Reports
Bilateral trade in values and volumes	HS 8	Per FCOR and trade partner	1900 -2010	▪Customs (DNSCE), ▪Antilles-Guyane Customs, ▪the INSEE	Based on raw customs statistics and the INSEE treatments
Customs tariffs	HS 8	Per trade partner	1996-2010	▪WTO CARICOM ▪the INSEE	Averaged per industrial sector (SH4)
Octroi de Mer	HS 8	Per FCOR		▪Antilles-Guyane Customs	Averaged per industrial sector (SH4)
Trade contribution to GDP, in values	-	Per FCOR and per GDP component	1993 -2007	▪the INSEE	'territorial' and 're-exports' corrections applied
Price index	-	Per FCOR	1998 -2010	▪the INSEE	
Oil Price (Brent)	-	Per ton	1950 -2010	▪the INSEE ▪WTO, WB	-
Geodesic distance	Km	Between each FCOR and each trade partner	1990 -2010	▪CEPII	Between capital cities
Common traits		Between each FCOR and each trade partner	1990 -2010	▪GeoDist (CEPII)	Several traits were agregated into a composite dummy
Fret price	20' container	Between the EU and the FCORs		▪AMPI ▪the INSEE	-
Currency rates	-	Per currency zone and country		▪WTO ▪CRAM	-

Figure 4-24: Data sources

The variables (and expected effects)

4.6 Database construction and treatment

4.6.1 Data collection and construction of variables

To be noted that it took several years to obtain and harmonize the above-mentioned data,[48] as they varied in terms of format, collection and computation methods from one institution to the other, and sometimes even within the same institution, from one time period to the other. We give hereafter a few examples of the protocol we followed for some data:

■ Regarding *commodities trade statistics*, several sources were called upon, as listed in the table above. Commodities trade flows were registered in values and volumes, over a 21-year period overall (1990-2010) and classified under different degrees of aggregation of the Harmonized System (HS8, HS6, HS4). The original files encompassed tables accounting on average 20 columns and 800,000 rows of data for each year and per FCOR.

We homogenized the raw data - received in .CSV, .TXT ou .XLS formats and converted into .XLS and for panel data treatment under Excel, SAS and Eviews. To be noted that the raw data were received not only in different formats (different code structures for countries, products and other chains of characters) but were also the result of different types of collection and computations applied by the source institutions. We also applied a 'zero-treatment' to allow computations in Log, etc.

Regarding imports statistics, over certain periods, we also had to discriminate between countries of origin and countries of provenance by cross-checking different sources of data (and chose origin over provenance, whenever possible).

■ *Customs tariffs* were collected from two main sources: the CARICOM Secretariat and the WTO (IDB Tariffs Database).

[48] Though it is not specific to international trade transactions, the Octroi de Mer tax is collected through local Customs, both on local and imported products.

Regarding tariffs from the IDB online database, it is noteworthy that the tariff-code concordance table available online is merely informative and code conversions cannot be applied automatically over long time series with codes changing across different periods of time, unless dealing with a high level of product-codes aggregation (HS1 or HS2). At a more disaggregated level (e.g. HS6), some codes in 2002 (HS02) disappear or/and are converted into several distinct codes in 2007. On the contrary, some codes are gathered under a reduced number of pre-existing or new codes. In those cases, it is impossible to analyze the evolution of trade for the commodities affected by those code changes, at a high level of disaggregation and for long periods of time (over 5 years).

Treatment: We therefore had to omit those codes from our trade and tariffs database, since we were operating with product lines disaggregated at levels HS8 and HS4 (for the latter we applied our own computations of average weighted tariffs). As far as code conversion is concerned, we adopted the 2007 HS nomenclature and converted old codes into HS07.[49]

Regarding CARICOM tariffs, we discriminated and extracted ad valorem tariffs from the other types of tariffs and adjusted them the CARIFORUM progressive tariff liberalization schedules negotiated separately by each CARIFORUM countries and for each type of product.

■ *The Octroi de Mer (OM) rates* were calculated from the INSEE trade database. Following the INSEE staff recommendations, we calculated the rates actually applied to imports, dividing imports values by the amounts of Octroi de Mer paid (for each product line, per trimester and year and for each company SIREN code).[50] When aggregating Customs imports statistics (to HS4), we calculated the average OM rates, adding rates applied and dividing them by the number of product lines belonging to that level of aggregation. That implies however that for specific products/years, an apparent tax reduction is sometimes actually due to an exceptional exemption given to a specific

[49] As mentioned supra, selecting the 'HS07' option in the IDB database provides an annexed concordance table but in the main table tariffs are still registered under their codes of origin.

[50] SIREN codes are given to French businesses by INSEE, the French National Statistics Institute.

company, on a specific product and for a specific year, and not because of a change in the global tax regime.

■ *Variable of common traits (Cij)*:

We have adopted two components of the CEPII GeoDist database - geo_cepii.xls and dist_cepii.xls – selecting the most relevant variables for our model, redefining some of them and creating a composite dummy gathering several of these variables: common languages, political- and historical-links, geographical traits (island vs landlocked),...

Here, we shall only mention a few changes we made to some of the CEPII variables.

Common language: our variable COMLANG_ETHNO differs slightly from the CEPII, as under the latter the CEPII captured the second common language (or dialect) between trade partners. Moreover, even considering the second common language only, the CEPII ignores some common dialects between our traders of interest (e.g. Creole is spoken in French Guiana too, like in the Antilles).

Political/historical links: We have spotted some apparent inconsistencies in the CEPII's treatment of a variable related to the past or present colonial relations (SMCTRY). According to the description provided by the CEPII and their source (www.worlstatesmen.org), the variable SMCTRY should highlight the relations between countries/colonies which have, in the past or currently, been part of the same country.

However, the CEPII links for instance French Guadeloupe and British Commonwealth Grenada together, like Martinique and Guadeloupe are (rightfully) linked, but disregards French Guiana, the Reunion and all the other French overseas territories! Furthermore, according to the CEPII's description of the variable, Burkina Faso, Algeria and other former French colonies in Africa, the Caribbean and Asia should also be linked together with the French Antilles, since they were French colonies for at least 50 years during the XX century, but it was not reflected as such in their database.

4.6.2 About the countries sampling

Out of 200 FCOR trade partners, 159 were selected for each FCOR, on the criteria of the availability of the statistics required to solve our gravity model: GDP, distances, population, currency exchange rates, etc.

Countries regrouping:

We proceeded to group and aggregate statistics regarding several countries which political statute had evolved or due to a high volatility of trade with some neighboring European countries:

AZ URSS-3 : Armenia, Azerbaidjan, Georgia

BE Benelux : Belgium, Netherlands, Luxemburg

BY URSS-2 : Belarus, Moldova, Ukraine

CZ Ex Czechoslovakia: Tchequia, Slovaquia

LT URSS-1 : Estonia, Latvia, Lithuania

RU URSS-4 : Kazakhstan, Kyrgyzstan, Russia, Tajikistan, Turkmenistan,

YU Ex-Yugoslavia : Bosnia-Herzegovina, Croatia, Kosovo, Macedonia, Montenegro, Serbia, Slovenia, Yugoslavia.

For the purpose of this study and in order to construct the corresponding variables, we have identified the following *regional agreements/currency zones:*

• *CARIFORUM (variable CF)* : Antigua & Barbuda, Bahamas, Barbados, Belize, Dominica, Grenada, Guyana, Haiti, Jamaica, the Dominican Republic , St Kitts & Nevis, Saint-Lucia, Saint Vincent & the Grenadines, Suriname, Trinidad & Tobago

• *Europe (variable EU)* : 27 EU members + 8 countries;[51] i.e.

- countries integrating the European common market (EC) in 1993;

- the Principality of Monaco, San Marino, Andorra, and Turkey, since they form a customs union with the EC.[52]

[51] To be noted that even though France belongs the EU customs union, its OCTs remain excluded and benefit from special trade arrangements. The FCORs belong to the EU customs union.

[52] The Turkish-European agreement was signed in 1995. It endorsed the customs union with the EC but excludes however certain agricultural products as well as the coal and steel products.

- Switzerland, Island, Liechtenstein and Norway do not belong to the customs union since their free trade agreements with the EU exclude primary agriculture products. Here, we choose to include them under countries benefitting from a preferential trade agreement with the EU.

To be noted that the EU is not treated as a group - each EU member country is treated separately, except of course in the case of countries listed supra under 'Countries Regrouping'.

• *Eurozone* (17 countries)

The Principality of Monaco and Andorra fall under this category since they use the Euro.

4.6.3 Approaches adopted to circumvent some classical difficulties in gravity model estimations

It is a common practice to use proxys for data not readily available or quantifiable: relative 'distances' for example can be estimated through kilometric distances, fret routes, CIF/FOB transport costs or a weighting composite of several of those.

The same occurs for many variables of interest and the difficulty lies in adjusting closely the choice of proxys and methods of data treatment. We review hereafter some of the choices we made in that regards.

Definition of commodities flows and data treatment under panels with more than 3 dimensions - Upon professors Mañez and Sanchis 's[53] advice, trade flows should be differentiated and identified not only on the basis of the product codification but also on the basis of their origins and destinations. Thus, in our disaggregated trade matrices, each product is allocated a new code constructed as follows: HS CODE + FCOR CODE + PARTNER COUNTRY CODE. For example, lace leather shoes exported from Guadeloupe to Spain (XXXXXX_GP_ES) imply a different trade flow than the same product

[53] J. Mañez and J. Sanchis, Professors in Applied Economics, University of Valencia.

being exported from Martinique to Spain (XXXX_MQ_ES).

Subsequently, though we are operating on the basis of 780 products exported/imported by each FCOR, the number of commodities trade flows we will treat varies between 750 and 780 from one FCOR to the other (and thus between 750x3 and 780x3 in total), in order to treat simultaneously different dimensions, such as flows values, countries of origin, destination countries, time periods.

Market sizes and factor endowments – In order to measure country sizes and economic weights (fundamental in gravity models), we use GDP and/or (more rarely) population. We disregarded the GDP per capita as a proxy for factor endowment, due to its too high a correlation with GDP and population, and also because of its weak approximation of countries sizes and weights.

Multilateral price resistance – Following Baldwin-Taglioni (2006)'s logics, we use nominal effective exchange rates (NEER) – because of the nominal character of other explanatory variables – and disregard the use of world GDP,[54] since the NEER already captures the relative weights of countries in the world market. Finally, we also incorporate individual fixed effects when estimating our regressions. For a detailed justification of this technique, one may refer to Anderson-Wincoop (2003), Baldwin-Taglioni (2006), Gauto (2012), Shepherd (2008), inter alia.

Zero-trade problem – the specialized literature offers various treatment methods for the 'zero'-trade problem, or the existence of null flows in the trade matrix, especially if they are numerous (which is unfortunately the case for FCOR trade). We may mention Helpman-Melitz-Rubinstein (2005, 2008), Baldwin-Taglioni (2006), etc.

We had first considered using a sophisticated method in 2 steps following Heckman's selection model (as suggested in Helpman-Melitz-Rubinstein (2005, 2008) and adopted on several occasions by Gil-Llorca-Martinez), in order to circumvent completely the presence of null flows through an 'improved' logit-probit-type method.

We had also studied the possibility to use another technic often proposed in recent

[54] We only include country-level GDPs under our GDP variable.

years, which is the Poisson pseudo-maximum likelihood (PPML) estimation, as in Silva-Tenreyro (2006).[55]

We nonetheless disregarded them, for three reasons mainly:

- Baldwin-Taglioni (2006) suggest that null flows should be kept in order to take into account the influence of factors that may cause the inexistence of trade;

- We nevertheless substitute zeros for infinitesimal values (following an Ad Hoc method applied by several authors, such as Shepherd 2009) in order to run our regressions with the Log of the variables.

- We also introduce 2 dummies (DEXV, DIMV) taking the value 1 for trade flow values ■ 0,001 and 0 otherwise, which allows to discriminate null flows whenever necessary.

Notwithstanding the above and in accordance with the product definition as proposed by Mañez and Sanchis, we exclude nonetheless from our trade matrix flows that are :

■ Null for all 3 FCORs, over the whole period ; and

■ Null for a specific FCOR and a specific product over the whole period and/or for all trade partners, while keeping the same product for other FCORs whenever it displays positive trade flows (thus asymmetric trade matrices).

Attraction – We have built a composite binary variable C_{ij}, adding up dummies extracted from the CEPII GeoDist database, to capture various common traits between countries (common border, language, political/historical relation,...). We nevertheless kept apart the variables capturing important geographical parameters (Island, Landlocked) since our domestic economies are either islands or territory with a maritime façade.

Transport costs and obstacles to trade – As proxys for general distances and technical obstacles to trade, we use both geodesic distances (in km) and average transatlantic fret cost for 20" containers (in order to estimate the evolution of international commodity transport cost over the period chosen). As far as tariff barriers are concerned, when running our regressions on disaggregated trade data, we incorporate ad valorem customs

[55] A comparison of these two methods to treat the zero problem is proposed by Gauto (2012).

tariffs and FCOR Octroi de Mer tax rates.

Measuring the impact of preferential trade agreements – we introduce dummies capturing the membership (or not) to different types of agreements (PTA, for membership to a customs union or a FTA, in general; CF, membership to CARIFORUM ; UE, membership to the European Union) et re-parameterize our model with 'difference-in-difference' estimations, which allows us to discriminate differences between specific occurrences. We follow in that regards one of the three methods reviewed by Gauto (2012) to assess the impact of MERCOSUR on Paraguay trade.

Flows direction – To the contrary of previous works conducted by the IEDOM (2011), we differentiate EXPORTS from IMPORTS, not only in line with the relevant literature for this type of estimation (cf Baldwin-Taglioni (2006), Shepherd (2008), etc.) but also considering the structure of FCORs trade (displaying very low levels of exports/imports coverage).

Treatment software – Once tested several of them (STATA, SAS, R, E-Views), the software that seemed the most adapted to our needs was E-Views, since it offered not only the capacity to handle swiftly large files (of hundreds of Mb), the ability to convert easily files under different formats and a 'user-friendly' interface.

4.7 Resolution of the gravity model

As announced earlier, we conduct our econometric analysis on the basis of panel data treatment using the model specified by (4.1)-(4.2).

4.7.1 Econometric estimation method

Traditionally, gravity model estimations are conducted through successive stages, under which the equation specification varies gradually with the addition/suppression of explanatory variables:

a) Our basic equation: incorporates variables capturing the economic dimension of

domestic and foreign countries (GDP and/ or population) and geodesic distances.

b) Addition of variables of interest (PTA, Tariff, OM, APE) capturing the effects of the membership or not to preferential trade agreements.

b) Addition of variables capturing cultural, historical and geopolitical affinities or differences (Island, Landlocked, C [language, historical/political links,...], ..

c) Addition of variables capturing the evolution of the purchasing power on international markets (exchange rates, oil Brent price) and obstacles to trade related to transport costs liés (Fret-UE).

The coefficient of determination[56] , R^2, usually increases with the addition of explanatory variables and we also consider the adjusted R^2 (controlling for the degrees of freedom) to assess the adjustment of our regressions.

Whenever possible, we take the log of dependent and explanatory variables (to account for the effect of their evolution (and not just their static effect).

This will apply for different levels of trade disaggregation (first on total aggregated exports/imports then by HS4 product lines). We study the relevance of our model and the weight of the explanatory variables, starting with the most aggregated level of data, and we estimate the model from its most basic form (a) to the most sophisticated.

The basic method used for each of the regressions, on different data samples is:

- least square (LSM) on panel data ;

- least square on panel data with individual/cross fixed effects (whenever possible) and more rarely time fixed effects. The use of fixed effects on panel data allows to adjust the estimation of our variables of interest in the gravity equation. Not surprisingly, in that case the R^2 increases substantially.

[56]The coefficient of determination (R^2) measures what part of the variance of the dependent variable is predicted by the variance of the explanatory variables. A value close to 0 (1) implies a weak (strong) explanatory power of the explanatory variables.

4.7.2 Main results

We present hereafter the results of the regressions conducted following the above described method. Our objective is to isolate in priority the coefficients of the explanatory variables of interest (PTA, TARIFF, OM, EPA), while shedding light on the effects of other explanatory variables on FCOR trade.

Furthermore, we estimate the parameters establishing a causal relation between trade and economic growth in the FCORs (i.e. the effects on GDP) and study the indirect effect of trade agreements to which the FCORs belong (in particular the EPA) and their economic impact.

1./ TOTAL EXPORTED – for all 3 FCORs and 185 trade partners, over 21 years.

The LSM regressions on the total FCORs exports panel show a fairly satisfactory adjustment of our model (R^2 between 0.24 and 0.39) and confirm the expected effects of the majority of explanatory variables under the different specifications of the equation. The *importance of target market sizes* is revealed through the explanatory variables related to trade partners GDP and demographic size (coefficients of the respective logs between 0.57 and 1.02 and between 0.17 and 0.51).

Introducing cross fixed effects, we obtain less 'stable' results for the GDPj (decreasing substantially with the addition of explanatory variables) and an average of 0.4 for the population of trade partners.

Regarding *obstacles to trade*, the variables Log(DIST) and Log(Fret_UE) return the negative signs expected, the coefficients associated to geodesic distances oscillating between -3.1 and -0.8 approximately. Landlocked destinations also return negative estimates (-1.9 on average).

As far as the *attractiveness* of similar trade partners is concerned, the variable C_DOM (composite of common traits between the FCORs and their trade partners) displays positive estimates (0.6 to 1.2). The insular character also appears as a factor of attraction for the FCORs, but we should keep in mind that the FCORs do trade a lot with each

other.

Estimates for our variables of interest (*PTA, EU, CF*) display positive signs and PTA in particular return high coefficients (4.96 to 7.27). It is less the case for the variable EU, unless we introduce a 2-year lag on EU, which seems to reveal the positive dynamic effect of successive enlargements of the EU. Otherwise, despite relatively small trade flows with Caribbean neighbors, estimates for the variable CF display relatively high coefficients (1.66 to 3.30).

2/ TOTAL EXPORTED – per FCOR, to 185 trade partners, over 21 years.

The LSM regressions on total exports panel for each FCOR also show a relatively well-adjusted equation (average R^2 , for all 3 FCORs, from 0.35 to 0.44)[57] and the effects expected for the majority of explanatory variables under the different specifications of the equation.

The coefficients of *(log)* GDP_j oscillate:

- for Guadeloupe, between 1 and 1.24 (and with cross-fixed effects, from 0.34 to 0.9);
- for Martinique between 1.3 and 1.9 (and with cross-fixed effects, from 0.63 to 0.69);

The coefficients for the (log) *POPULATION* of trade partners is however 'unstable' (either negative or positive) for Guadeloupe and (not so surprisingly) negative for Martinique (between -0.95 and 0.5; and between -2.9 and -1.8 with cross-fixed effects), which could be due the importance of Martinique exports towards other FCORs over most of the period.

Regarding *obstacles to trade*, estimates of Log(DIST) and Log(Fret_UE) display the expexted negative signs, the absolute values of coefficients associated distance being especially high (on average between -3.45 and -3.2 for both islands). To be noted also that for Guadeloupe, we obtain stable estimates for transport costs (around -0.2) and landlocked destinations (around -0.9).

As for the *attractiveness* of similar trade partners, C_DOM displays again positive

[57] R^2 with cross-fixed effects : 0.63 on average for all 3 FCORs.

estimates for each FCOR (Guadeloupe : 1.66-1.78 / Martinique : 1.33-1.77 ; and for Guadeloupe in particular up to 6 to 6.62 with cross-fixed effects).

As far as preferential trade arrangements are concerned, the *variable of interest PTA* presents positive signs: Guadeloupe from 4 to 7 approximately, but only 0.1 to 0.8 with cross-fixed effects; and Martinique around 7, and 1.6 with cross-fixed effects).

3/ EXPORTS by PRODUCT – for 780 products (HS4 level of desagregation), 46 trade partners, over 15 years.

We have conducted regressions on a sample of:

- 780 products selected from the all export values statistics, over 15 years, on the criteria of the availability of consistent tariff data over that period. As mentioned in a previous section, we have for instance excluded products which were subject to complex code conversions which rendered virtually impossible the traceability of their trade flows over the whole period.

- 46 partner countries (17 EU, 8 CARIFORUM, 17 ROW) selected on the basis of existing trade flows for at least 1 FCOR over the whole period.

The LSM regressions on our exports panel for each product show a fairly satisfactory adjustment of our model whenever we discriminate null flows using the dummy *DEXV*. When keeping all null flows, the R2 is close to zero and otherwise, around 0.77 (and on average from 0.84 to 0.92 with cross-fixed effects).

We verify the expected effect for our variable of interest *LOG (TARIFF)*, under the diverse specifications of the equation, which is fairly self-explanatory for trade at the product-level. The coefficients for Log (TARIFF) obtain similar negative values under the standard LSM treatment (around -1.7) and under a treatment with cross-fixed effects (around -1.6). To be noted that the introduction of the *currency rate* variable reduces the protagonism of LOG(TARIFF), which is also fairly self-explanatory.

The Log (GDP_j) returns very low estimates (around 0), hence possibly revealing that the choice of target markets for specific products is not really influenced by the level of

trade partners GDP progression.

4/ TOTAL IMPORTED – for all 3 FCORs and all countries of origin, over 19 years

The LSM regressions on the total FCORs imports panel show a fair adjustment of our model (R^2 between 0.29 and 0.57)[58] and illustrate globally, as expected, that the *demographic growth*, across all 3 FCORs jointly, is a determining factor for import flows into the FCORs. The estimates for Log(POP_DOM) vary between 2.53 and 10.57 (and increasingly with the addition of other explanatory variables), under the various specifications of the equation.

The same can be said, to a lesser extent, regarding *trade partner sizes*, as the Log (GDPj) estimates oscillate around 1.8. Trade partner populations display a similar pattern but hardly significant (and reducing substantially the adjusted R^2) thus disregarded.

FCORs Log(GDP) is on the contrary negatively correlated to imports growth, even when shifting Log (GDP_DOM) ahead of several years, which may suggest that FCORs imports do not have a clear direct impact on local added values, in the short- and medium-term, and that imports generally address local final consumption (which is consistent overall with FCORs statistics on trade-growth effects, and supports the importance of FCORs demographic factor).

Also without much surprise, classical *obstacles to trade* -such as fret average cost and distances- negatively impact FCORs imports. We nevertheless observe that Fret costs play a much more significant role (Log (Fret) estimates range from -0.6 to -2.95) than distances (on average -0.0000!).

Regarding the attractiveness of trade partners, *C-DOM* displays positive coefficients (from 0.26 to 0.78) and the *insular character* of trade partners also plays a positive and relatively determining role on the magnitude of imports, though we ought to recall again that the other FCORs are privileged trade partners. To be noted that coefficients

[58] Introducing our dummy DIMV with all variables, i..e taking into account positive flows only, we obtain very high R^2, between 0.92 and 0.97, which is not surprising.

for ISLAND diminish with the introduction of LAND (negatively correlated to FCORs imports flows) which is consistent.

Estimates for our *variables of interest (PTA, CF, EU)* provide the following information: generally the membership of a FCOR to a PTA is a major factor influencing their imports. *PTA* coefficients oscillate between 4.49 and 5.46. Introducing lags up to 3 years on PTA, we also observe an even stronger dynamic effect of PTA arrangements.

Introducing the variable *EU* together with PTA yields ambiguous results (resting protagonism to EU) but with 'difference-in-difference"-type regressions, the FCORs membership to the EU seems to be a significant determinant of FCORs imports flows (and even more so adding up to 2 year-lags to EU).

Surprisingly enough, imports from *CARIFORUM* seem to play an important role in FCORs trade flows, even when controlling for imports from Trinidad & Tobago (their main regional trade partner, mainly because of oil products imports) and reducing the sample of CARIFORUM countries to 8 (instead of 15). Estimates for CF oscillate between 5.51 and 6.62. We ought to recall however, from our analysis of FCOR-CARIFORUM trade statistics that imports from the region display less volatility than FCOR regional exports.

Similarly, when estimating the *EPA* impact –through difference-in-difference regressions across CF and PTA variables- yields high positive coefficients: 2.4 (and 6.6 on real flows, i.e. controlling for null flows with our dummy DIMV). It is in itself rather surprising, since our database includes sets of data for two years only after the signature of the agreement. However, we also have to take into account the effect of the global recession -initiating roughly at the same time of the entry into the force of the EPA- which affected more FCORs trade with its traditional major trade partners and less so its regional trade (as seen earlier under our section 2).

Estimations with fixed effects

As we already know, the R^2 adjustment is increased with fixed effects (here the

R^2 reaches on average from 0.74 to 0.97 with the progressive addition of explanatory variables).

With the introduction of fixed effects, we also verify to a lesser extent that the variable of *domestic POPULATION* is more significant than GDP_DOM (and each one is significant only when controlling for the other), thus here we retain the domestic population variable (Log (POP_DOM)) as the proxy for variations in terms of FCORs market sizes.

With cross-fixed effects and controlling for zero-trade flows, all time invariants remain highly significant and with the expected correlation to import flows: the common traits variable (*C_DOM*) as well as *PTA* (even more so if 2-year lagged) display positive signs. This time however, the *EPA* effect is ambiguous and returns negative estimates.[59]

5/ TOTAL IMPORTED – per FCOR, for all countries of origin, over 21 years.

The regressions carried out on *Guadeloupe* import flows confirm the general results yielded for all 3 FCORs together (except for what regards the POP_DOM variable, probably due to the lack of corrections for re-exportations between FCORs).

The same applies to *Martinique*, at least on real (or positives) import flows, which is consistent with the high volatility displayed by Martinique trade flows.

French Guiana however registers fairly high coefficients for the regional integration variables (PTA, CF and EU) in particular. A possible explanation to that may be its geographic proximity and landborder with some CARIFORUM countries (especially Suriname, Guyana and Trinidad & Tobago), as well as its maritime connections with Europe, either directly, through the other FCORs or through Brazil.

6/ IMPORTS by PRODUCT - per FCOR, for all countries of origin, over 15 years.

When estimating our equation for each FCOR and at a sectorial level (between 750 and 780 products), we observe a few particularities from FCOR to the other:

[59] We could not apply the difference-in-difference treatment here (to control for PTA and CF).

- Regarding the influence of *FCORs GDP* evolution on imports: though Guadeloupe and French Guiana display a positive correlation between their GDP and imports progressions, it is not the case for Martinique.

- On the contrary, *trade partners GDP* remain a force of attraction (i.e. FCORs tend to import more from larger economies)

- French Guiana imports values are clearly more impacted and negatively by the *insular character* of their trade partners, and despite its privileged trade relations with the French Antillean islands! French Guiana seems to have more consistent import flows from continental partners, which seems logical due to its geographical situation (its proximity to Brazil and Surinamen, inter alia) in addition to direct flight and various shipping connections with Europe.

For all 3 FCORs, geodesic *distances* remain an obstacle to import flows, with low coefficients though.

Interestingly enough, at a suctorial level, estimations for Fret costs yield ambiguous results. A detailed examination product by product would help to determine if variations in Fret costs affect the choice to import more product than the other and if imports of specific products are more resilient to changes in *Fret* costs.

Coefficients for the variable of interest *PTA* display the expected positive signs, even more so for Martinique than Guadeloupe and, in turn, more significantly for Guadeloupe than French Guiana. To be noted however that estimations for that variable yield lower coefficients at the suctorial level (than at the aggregated level of imports), thus PTA does not seem to determine so much imports from one product to the other. Actually, even though it plays an important role in French Guiana total imports, it does not seem to affect significantly its choice of the type of products imported.

4.8 Conclusions

This set of analysis aimed at coming further to grips with the reality of the French Caribbean Outermost Regions trade characteristics and in particular vis-à-vis their CARIFORUM trade partners, under the context of the CARIFORUM-EU Economic Partnership Agreement. However, *in the current context, it is still early to assess the impact of this agreement on the FCORs economies and it also proves difficult to set up follow-up mechanisms such as those existing in CARIFORUM countries, to study the EPA impact.*

Indeed, the current economic and administrative context prevailing in the FCORs does not for instance allow to readily assess the impact of the EPA on a key economic sector such as services. Moreover, as far as commodities trade is concerned, the lack of public access to information related to production, (actual) price formation mechanisms and private firms' behaviors renders extremely tedious the task of attempting to study the global behavior of local economic operators. In addition to that last observation, the official statistics available differ across the institutions, due to the (not always documented) differences in treatment and calculations applied from one institution to the other. For the purpose of the works presented here, the mere collection and harmonization of statistic data -to cover a representative-enough period of time- requested several years of great efforts.

The general results we obtained shed some light on the impact of preferential trade arrangements (EPA included) on the FCORs trade and indirectly on their economies – although we acknowledge the need for a more adjusted (partial or general) equilibrium model, such as those undertaken at the UAG.[60]

Overall, the recent signing of the EPA (October 2008) and partial entry into force (January 2009 for the general framework, January 2011 for some tariff liberalization in the CARIFORUM countries having ratified the agreement) do not allow to actually register remarkable changes as yet in the FCORs-CARIFORUM trade relations.

[60] Now UA (Université des Antilles) with campuses in Guadeloupe and Martinique.

Moreover, the signature of the EPA coincided with one of the deepest global trade recessions, which affected not only productive and exports capacities but most likely also the ability to envision new trade relations (for instance imports shifting to cheaper suppliers). This general conjuncture makes it thus harder currently to assess the (potential) effects of this agreement on the parties involved.

Notwithstanding the above, we have nevertheless perceived *a few signs of changes in the FCORs trade relations with their Caribbean neighbors* (be them however attributed to the EPA or the general economic context).

First of all, a look at customs statistics on commodities trade shows that trade between French Guiana and its CARIFORUM neighbors tend to increase even in the midst of most world economies being negatively affected by the world financial and trade crisis. Another interesting fact is that FCORs imports from their CARIFORUM neighbors experienced a lower slowdown than imports from other major trade partners, in the context of this world crisis and the simultaneous entry into force of the EPA. Local FCORs policy-makers should not necessarily read into this the prevailing of the EPA impact –i.e. benefitting CARIFORUM competitors- since FCORs (alike the EU) markets were already granting a privileged access to most CARIFORUM commodities, prior to the signature of the EPA. What this may in fact reveal is FCORs turning to cheaper regional suppliers for specific goods, in this context of global crisis, but admittedly also that the signing of the EPA probably contributed to stretch the relations between regional partners that did not use to pay a great attention to each other.

Actually, the results of the survey we conducted among FCORs private firms, reveal a few interesting facts (despite a relatively reduced sample) :

- During the two years following the signature of the EPA, some FCORs firms signed up with new suppliers and clients from the Caribbean (CARIFORUM countries and others), which denotes a wider openness to regional trade;

- Some FCORs firms claim they already feel the pressure some CARIFORUM competitors have been exerted on local markets. It has been the case for the wood and wooden

products sector in French Guiana, Barbadian competitors in Martinique (manufactures), price reduction in fisheries, etc..

- Some firms also perceive changes that are not necessarily directly related to the EPA but may have a positive or negative influence on its implementation and deserve to be taken into account: changes in legal frameworks and procedures or other political measures that may affect regional trade.

It seems thus opportune to *replicate the consultations and trade analysis over various intervals of time*, in the forthcoming years. It seems appropriate to study the evolution of trade between the FCORs and the CARIFORUM, in particular regarding:

• The evolution of imports in intermediate goods and final consumption goods from CARIFORUM and the evolution of the FCORs price index;

• The evolution of exports in equipment goods and machinery to the CARIFORUM;

• The evolution of exports in agrofood products as well as services towards intra- and inter-regional trade partners ;

• The degree of regional trade integration between the FCORs and their CARIFORUM trade partners (using the Anderson-Norheim index[61] for instance);

• A comparative analysis of FCORs and CARIFORUM trade performance indexes (using TPI designed by Fontagné et al. for instance).

The logistical and methodological difficulties encountered through the collection and treatment of the relevant statistics deserve to be addressed in order to achieve a relevant and manageable analytical tool for the follow-up of the EPA impact on FCORs economies. It would be desirable among other things:

- To obtain disaggregated statistics on commodities trade allowing to cross-check trade flows at a product level with trade operators (at a sector-level);

- To homogenize raw data according to common calculation methods or to be able to apply a concordance filter across different sources ;

[61] Anderson-Norhheim Index: relation between the share of exports of a country i toward a country j on the share of country j in world imports.

- That the relevant FCORs institutions keep raising awareness among the private sector on the existence of this agreement and the relevance of its implementation follow-up, so to take appropriate actions whenever necessary and participate actively in the reviews of the agreement every 5 years;

- That a relevant institution in each FCOR take the lead of the EPA impact assessment and follow-up in general and ensure the restitution of the results to public institutions and private sector operators. Such institution could be *ADEM* (Agence pour le Développement Economique de la Martinique), *Guadeloupe Expansion* or *Guyane Développement*, under the umbrella of their respective Regional Council authorities.

The works carried out here only pretend to offer some premises for the drafting of a real analytical tool for the follow-up and assess the impact of the CARIOFUMR-EU EPA implementation on the FCORs economies. For now, we observed that, even though it is still early to measure the effects of the EPA on the FCORs, this agreement has at the very least contributed to (re)position the FCORs on the Caribbean map, from the perspective of their regional neighbors. We acknowledge that, on several occasions, several CARIFORUM countries have expressed their intentions to do more business with the FCORs (regarding trade in commodities and services but also investments).

ANNEX C : Selected regressions

TOTAL EXPORTS - 3 FCORS

Dependent Variable: LOG(EXVAL) Method: Panel Least Squares Sample (adjusted): 1992 2010 Cross-sections included: 555		Periods included: 19 Total panel (unbalanced) observations: 10529						
Variable	Coefficient	Std. Error	t-Statistic	Prob.	Coefficient	Std. Error	t-Statistic	Prob.
C	1.571290	0.832866	1.886605	0.0592	-19.52810	2.658657	-7.345100	0.0000
LOG(GDP_J)	0.576097	0.034501	16.69781	0.0000	0.574803	0.034389	16.71451	0.0000
LOG(DIST)	-3.123119	0.067152	-46.50817	0.0000	-3.088447	0.067062	-46.05355	0.0000
LOG(POPJ)	0.510178	0.042329	12.05256	0.0000	0.507327	0.042193	12.02393	0.0000
PTA	4.965772	0.298698	16.62473	0.0000	4.982884	0.297733	16.73608	0.0000
EU(-2)	2.913886	0.347463	8.386179	0.0000	2.846872	0.346425	8.217856	0.0000
C_DOM	1.248294	0.055033	22.68284	0.0000	1.258149	0.054866	22.93125	0.0000
ISLAND	2.557168	0.164608	15.53493	0.0000	2.565645	0.164075	15.63701	0.0000
LANDLOCKED	-1.896794	0.182552	-10.39043	0.0000	-1.912738	0.181968	-10.51139	0.0000
CURRENCY_EU	0.277123	0.052862	5.242355	0.0000	0.280079	0.052692	5.315453	0.0000
FRET_EU	-0.000202	0.000148	-1.359701	0.1740	-0.000762	0.000162	-4.691971	0.0000
LOG(GDP_I)					0.981164	0.117451	8.353788	0.0000
R2	0.394604	Mean dependent var		-2.657438	0.398595	Mean dependent var		-2.657438
Adjusted R2	0.394029	S.D. dependent var		7.892608	0.397966	S.D. dependent var		7.892608
S.E. of regression	6.143935	Akaike info criterion		6.469852	6.123943	Akaike info criterion		6.463428
Sum squared resid	397032.8	Schwarz criterion		6.477439	394415.6	Schwarz criterion		6.471705
Log likelihood	-34049.54	Hannan-Quinn criter.		6.472414	-34014.72	Hannan-Quinn criter.		6.466223
F-statistic	685.5758	Durbin-Watson stat		0.975565	633.6708	Durbin-Watson stat		0.984294
Prob(F-statistic)	0.000000				0.000000			

Dependent Variable: LOG(EXVAL) Method: Panel Least Squares **Cross-section fixed (dummy variables)** Sample (adjusted): 1991 2010 Cross-sections included: 555		Periods included: 20 Total panel (unbalanced) observations: 11083			Dependent Variable: LOG(EXVAL) Method: Panel Least Squares **Cross-section fixed (dummy variables)** Periods included: 21 Total panel (unbalanced) observations: 11637		Cross-sections included: 555	
Variable	Coefficient	Std. Error	t-Statistic	Prob.	Coefficient	Std. Error	t-Statistic	Prob.
C	-7.769125	1.292270	-6.011997	0.0000	-7.893572	1.257848	-6.275458	0.0000
LOG(GDP_J)	-0.141113	0.011764	-11.99502	0.0000	-0.035225	0.010329	-3.410448	0.0007
LOG(GDP_J)*DEXV	0.409476	0.013605	30.09806	0.0000	0.127326	0.012890	9.878140	0.0000
PTA	-0.997207	0.114178	-8.733788	0.0000	-0.192591	0.099891	-1.928005	0.0539
PTA*DEXV	2.012232	0.143169	14.05496	0.0000	0.340791	0.124117	2.745721	0.0060
EU	1.121837	0.131324	8.542508	0.0000	0.192349	0.112609	1.708106	0.0876
EU*DEXV	-2.288014	0.230668	-9.919060	0.0000	-0.299267	0.137213	-2.181042	0.0292
EU(-1)*DEXV	0.492199	0.174593	2.819114	0.0048				
LOG(POPJ)	0.300072	0.089181	3.364752	0.0008	0.294729	0.095943	3.071898	0.0021
LOG(POPJ)*DEXV	0.436423	0.020329	21.46748	0.0000	0.028566	0.018958	1.506762	0.1319
CURRENCY_EU	-0.409723	0.046137	-8.880658	0.0000	-0.222949	0.039231	-5.682915	0.0000
CURRENCY_EU*DEXV	0.429525	0.046839	9.170308	0.0000	0.222554	0.039906	5.576929	0.0000
LOG(FRET_EU)					-0.313099	0.040518	-7.727372	0.0000
LOG(FRET_EU)*DEXV					1.826003	0.033489	54.52485	0.0000
R2	0.983228	Mean dependent var		-2.723966	0.986904	Mean dependent var		-2.773029
Adjusted R2	0.982327	S.D. dependent var		7.844496	0.986235	S.D. dependent var		7.808742
S.E. of regression	1.042845	Akaike info criterion		2.971501	0.916158	Akaike info criterion		2.710242
Sum squared resid	11437.50	Schwarz criterion		3.344979	9291.563	Schwarz criterion		3.068945
Log likelihood	-15900.57	Hannan-Quinn criter.		3.097277	-15202.54	Hannan-Quinn criter.		2.830751
F-statistic	1091.226	Durbin-Watson stat		1.707729	1473.952	Durbin-Watson stat		1.736528
Prob(F-statistic)	0.000000				0.000000			

TOTAL EXPORTS per FCOR (GUADELOUPE)

Dependent Variable: LOG(EXVAL)

Method: Panel Least Squares | Sample: 1990 2010 | Periods included: 21 | Cross-sections included: 185 | Total panel (unbalanced) observations: 3881

Variable	Coefficient	Std. Error	t-Statistic	Prob.	Coefficient	Std. Error	t-Statistic	Prob.	Coefficient	Std. Error	t-Statistic	Prob.
C	1.308766	1.233756	1.060798	0.2888	2.258585	1.239823	1.821699	0.0686	-1.641449	2.558568	-0.641550	0.5212
LOG(GDP_J)	1.236737	0.068140	18.14996	0.0000	1.066345	0.074081	14.39439	0.0000	1.076005	0.074160	14.50927	0.0000
LOG(DIST)	-3.212842	0.100010	-32.12536	0.0000	-3.169015	0.099893	-31.72400	0.0000	-2.986806	0.100677	-29.66716	0.0000
PTA	5.065734	0.362299	13.98218	0.0000	4.912608	0.361804	13.57808	0.0000	5.058730	0.358810	14.09863	0.0000
LOG(POPJ)	-0.357689	0.069608	-5.138620	0.0000	-0.140815	0.078967	-1.783201	0.0746	0.053081	0.081418	0.651953	0.5145
C_DOM	1.665112	0.115084	14.46872	0.0000	1.783957	0.116471	15.31670	0.0000	1.743767	0.115280	15.12632	0.0000
LOG(CURRENCY_EU)					0.228029	0.039762	5.734833	0.0000	0.202501	0.039620	5.111105	0.0000
LOG(FRET_EU)									-0.223420	0.320555	-0.696978	0.4859
ISLAND									2.394497	0.254683	9.401877	0.0000
R-squared	0.399742	Mean dependent var		-2.452917	0.404795	Mean dependent var		-2.452917	0.418109	Mean dependent var		-2.452917
Adjusted R-squared	0.398967	S.D. dependent var		7.838025	0.403873	S.D. dependent var		7.838025	0.416907	S.D. dependent var		7.838025
S.E. of regression	6.076532	Akaike info criterion		6.448290	6.051682	Akaike info criterion		6.440352	5.985159	Akaike info criterion		6.418759
Sum squared resid	143081.4	Schwarz criterion		6.457974	141877.0	Schwarz criterion		6.451650	138703.3	Schwarz criterion		6.433285
Log likelihood	-12506.91	Hannan-Quinn criter.		6.451728	-12490.50	Hannan-Quinn criter.		6.444363	-12446.60	Hannan-Quinn criter.		6.423916
F-statistic	516.1106	Durbin-Watson stat		1.041976	439.1129	Durbin-Watson stat		1.050096	347.7708	Durbin-Watson stat		1.074047
Prob(F-statistic)	0.000000				0.000000				0.000000			

Method: Panel Least Squares

Cross-section fixed (dummy variables)

Variable	Coefficient	Std. Error	t-Statistic	Prob.	Coefficient	Std. Error	t-Statistic	Prob.
C	-50.41519	10.43043	-4.833473	0.0000	-50.91019	10.43176	-4.880306	0.0000
LOG(GDP_J)	0.511968	0.238292	2.148490	0.0317	0.512976	0.238231	2.153271	0.0314
PTA	0.784077	0.497291	1.576697	0.1150	0.774093	0.497197	1.556915	0.1196
LOG(POPJ)	2.181683	0.887524	2.458170	0.0140	2.209888	0.887448	2.490161	0.0128
C_DOM	6.624257	3.526352	1.878502	0.0604	6.622032	3.525439	1.878357	0.0604
CURRENCY_EU					0.134535	0.078841	1.706396	0.0880
R-squared	0.633286	Mean dependent var		-2.452917	0.633575	Mean dependent var		-2.452917
Adjusted R-squared	0.614612	S.D. dependent var		7.838025	0.614812	S.D. dependent var		7.838025
S.E. of regression	4.865815	Akaike info criterion		6.049819	4.864556	Akaike info criterion		6.049545
Sum squared resid	87412.36	Schwarz criterion		6.354860	87343.46	Schwarz criterion		6.356201
Log likelihood	-11550.67	Hannan-Quinn criter.		6.158114	-11549.14	Hannan-Quinn criter.		6.158414
F-statistic	33.91374	Durbin-Watson stat		1.684443	33.76718	Durbin-Watson stat		1.681763
Prob(F-statistic)	0.000000				0.000000			

EXPORTS (BY HS4 PRODUCT)

Dependent Variable: LOG(EXVAL)					Method: Panel Least Squares				**Cross-section fixed (dummy variables)**			
Method: Panel Least Squares												
Cross-sections included: 90804			Sample: 1996 2010		Cross-sections included: 90804			Sample: 1996 2010	Cross-sections included: 90708			Sample (adjusted): 1997 2010
Total panel (unbalanced) obs: 1357167			Periods included: 15		Total panel (unbalanced) obs: 1357167			Periods included: 15	Total panel (unbalanced) obs: 1266363			Periods included: 14
Variable	Coefficient	Std. Error	t-Statistic	Prob.	Coefficient	Std. Error	t-Statistic	Prob.	Coefficient	Std. Error	t-Statistic	Prob.
C	-6.883411	0.007377	-933.0458	0.0000	-6.855896	0.066184	-103.5886	0.0000	-7.052686	0.051083	-138.0639	0.0000
LOG(GDP_J)	0.000910	0.000307	2.965529	0.0030	0.000929	0.002682	0.346271	0.7291	0.007839	0.002066	3.794887	0.0001
LOG(TARIFF)	0.008026	0.000154	52.27092	0.0000	0.006138	0.000485	12.65768	0.0000	0.000390	0.000354	1.103662	0.2697
LOG(TARIFF)*DEXV	-1.706430	0.000804	-2122.603	0.0000	-1.596446	0.000973	-1640.484	0.0000	-0.177992	0.009411	-18.91273	0.0000
LOG(TARIFF(-1))*DEXV									0.301947	0.009372	32.21878	0.0000
CURRENCY_EU	0.060183	0.001902	31.63814	0.0000	0.004107	0.003234	1.270107	0.2040	-0.054235	0.002386	-22.72877	0.0000
CURRENCY_EU*DEXV									17.14232	0.014866	1153.136	0.0000
R-squared	0.770893	Mean dependent var		-6.720244	0.842095	Mean dependent var		-6.720244	0.927522	Mean dependent var		-6.721388
Adjusted R-squared	0.770892	S.D. dependent var		1.755671	0.830772	S.D. dependent var		1.755671	0.921929	S.D. dependent var		1.750954
S.E. of regression	0.840356	Akaike info criterion		2.490021	0.722236	Akaike info criterion		2.251637	0.489237	Akaike info criterion		1.476998
Sum squared resid	958425.0	Schwarz criterion		2.490066	660564.6	Schwarz criterion		3.062647	281394.6	Schwarz criterion		2.340300
Log likelihood	-1689682.	Hannan-Quinn criter.		2.490033	-1437116.	Hannan-Quinn criter.		2.472127	-844493.7	Hannan-Quinn criter.		1.712348
F-statistic	1141634.	Durbin-Watson stat		1.256759	74.37085	Durbin-Watson stat		1.802752	165.8532	Durbin-Watson stat		1.796090
Prob(F-statistic)	0.000000				0.000000				0.000000			

TOTAL IMPORTS

Dependent Variable: LOG(IMVAL)									Dependent Variable: LOG(IMVAL)*DIMV				
Method: Panel Least Squares	Sample: 1990 2010												
Cross-sections included: 505					Sample (adjusted): 1992 2010				Sample (adjusted): 1991 2010				
Total panel (unbalanced) observations: 9194					Total panel (unbalanced) observations: 8186				Total panel (unbalanced) observations: 8690				
Variable	**Coefficient**	**Std. Error**	**t-Statistic**	**Prob.**	**Coefficient**	**Std. Error**	**t-Statistic**	**Prob.**	**Variable**	**Coefficient**	**Std. Error**	**t-Statistic**	**Prob.**
C	-60.67207	3.077156	-19.71693	0.0000	-73.97706	5.260344	-14.06316	0.0000	C	-0.009011	0.031607	-0.285096	0.7756
LOG(GDP_I)	1.257702	0.136444	9.217716	0.0000	0.081895	0.744780	0.109958	0.9124	LOG(GDP_I)*DIMV	-1.919113	0.145924	-13.15149	0.0000
LOG(GDP)	1.730296	0.029675	58.30834	0.0000	1.871604	0.031688	59.06344	0.0000	LOG(GDP)*DIMV	0.658387	0.010461	62.93600	0.0000
DIST	-0.000260	1.81E-05	-14.42341	0.0000	-5.22E-05	2.02E-05	-2.584742	0.0098	DIST*DIMV	-4.81E-05	5.84E-06	-8.231606	0.0000
PTA	4.120637	0.230554	17.87272	0.0000	2.650563	0.980275	2.703899	0.0069	PTA*DIMV	1.787315	0.195069	9.162497	0.0000
PTA(-1)					5.588508	1.009760	5.534494	0.0000	CF*DIMV	2.024241	0.100428	20.15611	0.0000
LOG(POP_DOM)					3.583508	0.927548	3.863420	0.0001	LOG(POP_DOM)*DIMV	3.481605	0.205250	16.96276	0.0000
CF					7.428622	0.357185	20.79771	0.0000	CF*PTA*DIMV	-1.925119	0.311592	-6.178333	0.0000
CF*PTA					-7.253617	1.058436	-6.853150	0.0000	EU*DIMV	0.316869	0.111083	2.852546	0.0043
EU					4.145101	0.428965	9.663036	0.0000	EU*PTA*DIMV	-1.456230	0.378319	-3.849210	0.0001
EU*PTA(-2)					-7.445139	0.687526	-10.82889	0.0000	EU*PTA(-1)*DIMV	1.279719	0.312183	4.099265	0.0000
C_DOM					0.801200	0.073521	10.89756	0.0000	C_DOM*DIMV	0.237148	0.022217	10.67433	0.0000
LAND					-5.235090	0.236173	-22.16630	0.0000	LAND*DIMV	-1.436287	0.085805	-16.73905	0.0000
LOG(FRET_EU(-2))					-1.071815	0.452431	-2.369010	0.0179	LOG(FRET_EU)*DIMV	-0.938467	0.130132	-7.211647	0.0000
LOG(OIL)					-1.053061	0.287022	-3.668925	0.0002	LOG(OIL)*DIMV	0.605022	0.053697	11.26739	0.0000
CURRENCY					-0.740661	0.095708	-7.738735	0.0000	CURRENCY*DIMV	-0.023932	0.025586	-0.935358	0.3496
R-squared	0.328416	Mean dependent var		5.661436	0.434738	Mean dependent var		5.676243	R-squared	0.926143	Mean dependent var		8.083862
Adjusted R-squared	0.328124	S.D. dependent var		9.570245	0.433701	S.D. dependent var		9.599076	Adjusted R-squared	0.926015	S.D. dependent var		6.455463
S.E. of regression	7.844543	Akaike info criterion		6.958057	7.223580	Akaike info criterion		6.794531	S.E. of regression	1.755897	Akaike info criterion		3.965676
Sum squared resid	565462.2	Schwarz criterion		6.961933	426311.5	Schwarz criterion		6.808233	Sum squared resid	26743.45	Schwarz criterion		3.978693
Log likelihood	-31981.19	Hannan-Quinn criter.		6.959374	-27794.02	Hannan-Quinn criter.		6.799216	Log likelihood	-17214.86	Hannan-Quinn criter.		3.970113
F-statistic	1123.395	Durbin-Watson stat		0.680599	418.8989	Durbin-Watson stat		0.736300	F-statistic	7251.256	Durbin-Watson stat		0.616096
Prob(F-statistic)	0.000000				0.000000				Prob(F-statistic)	0.000000			

Dependent Variable: LOG(IMVAL)					Dependent Variable: LOG(IMVAL)*DIMV								
Method: Panel Least Squares					Method: Panel Least Squares								
Cross-section fixed (dummy variables)					**Cross-section fixed (dummy variables)**								
Cross-sections included: 505	Sample (adjusted): 1992 2010				Cross-sections included: 505	Sample: 1990 2010							
Total panel (unbalanced) observations: 8186					Total panel (unbalanced) observations: 9194								
Variable	**Coefficient**	**Std. Error**	**t-Statistic**	**Prob.**	**Variable**	**Coefficient**	**Std. Error**	**t-Statistic**	**Prob.**	**Coefficient**	**Std. Error**	**t-Statistic**	**Prob.**
C	-9.316123	5.500445	-1.693703	0.0904	C	1.707961	0.032144	53.13481	0.0000	1.800532	0.030640	58.76352	0.0000
LOG(GDP)	0.059579	0.055237	1.078619	0.2808	LOG(GDP)*DIMV	0.141183	0.011836	11.92871	0.0000	0.147134	0.011857	12.40926	0.0000
LOG(POP_DOM)	1.076381	0.447746	2.404001	0.0162	LOG(POP_DOM)*DIMV	0.339355	0.032205	10.53736	0.0000	0.379133	0.033101	11.45383	0.0000
PTA	-0.807055	0.419327	-1.924641	0.0543	PTA*DIMV	1.349484	0.198992	6.781591	0.0000				
PTA(-2)	1.484244	0.537720	2.760253	0.0058	EU*DIMV	1.322988	0.144955	9.126899	0.0000	0.602395	0.080342	7.497902	0.0000
					EU*PTA*DIMV	-1.073009	0.217604	-4.931013	0.0000				
					CF*DIMV	0.504052	0.155830	3.234617	0.0012	-0.096673	0.170390	-0.567362	0.5705
					CF*PTA*DIMV	-2.015963	0.244087	-8.259206	0.0000	-0.670408	0.143354	-4.676586	0.0000
					LOG(FRET_EU)*DIMV	0.225119	0.050427	4.464220	0.0000	0.217248	0.050546	4.298037	0.0000
					ISLAND*DIMV	0.468421	0.095416	4.909241	0.0000	0.593182	0.094483	6.278173	0.0000
					DIST*DIMV					-5.29E-05	1.00E-05	-5.295831	0.0000
R-squared	0.758193	Mean dependent var		5.676243	R-squared	0.976067	Mean dependent var		8.077140	0.975801	Mean dependent var		8.077140
Adjusted R-squared	0.742192	S.D. dependent var		9.599076	Adjusted R-squared	0.974653	S.D. dependent var		6.438742	0.974374	S.D. dependent var		6.438742
S.E. of regression	4.873913	Akaike info criterion		6.065833	S.E. of regression	1.025096	Akaike info criterion		2.941732	1.030717	Akaike info criterion		2.952566
Sum squared resid	182367.3	Schwarz criterion		6.501722	Sum squared resid	9121.133	Schwarz criterion		3.340135	9222.491	Schwarz criterion		3.350194
Log likelihood	-24318.46	Hannan-Quinn criter.		6.214859	Log likelihood	-13009.14	Hannan-Quinn criter.		3.077154	-13059.94	Hannan-Quinn criter.		3.087725
F-statistic	47.38466	Durbin-Watson stat		1.629226	F-statistic	690.0692	Durbin-Watson stat		1.267573	683.7105	Durbin-Watson stat		1.249175
Prob(F-statistic)	0.000000				Prob(F-statistic)	0.000000				0.000000			

HS4 IMPORTS per FCOR

Dependent Variable: LOG(IMVAL)*GP
Method: Panel Least Squares
Sample: 1990 2010 Periods included: 21
Cross-sections included: 505
Total panel (unbalanced) observations: 9194

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.001336	0.056344	0.023715	0.9811
LOG(GDP_I)*GP	-1.287299	0.030201	-42.62440	0.0000
LOG(GDP)*GP	1.534590	0.027963	54.87997	0.0000
DIST*GP	-0.000119	2.02E-05	-5.900789	0.0000
PTA*GP	4.943769	0.230588	21.43983	0.0000
CF*GP	5.909236	0.349438	16.91068	0.0000

R-squared	0.481252	Mean dependent var	2.139158
Adjusted R-squared	0.480970	S.D. dependent var	6.176242
S.E. of regression	4.449596	Akaike info criterion	5.824156
Sum squared resid	181912.3	Schwarz criterion	5.828807
Log likelihood	-26767.64	Hannan-Quinn criter.	5.825737
F-statistic	1704.777	Durbin-Watson stat	0.666387
Prob(F-statistic)	0.000000		

Dependent Variable: LOG(IMVAL)*GP

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.000943	0.056228	0.016765	0.9866
LOG(GDP_I)*GP	-1.315274	0.032105	-40.96784	0.0000
LOG(GDP)*GP	1.541144	0.029662	51.95748	0.0000
DIST*GP	-0.000105	2.03E-05	-5.167821	0.0000
PTA*GP	3.758200	0.369733	10.16462	0.0000
CF*GP	6.363834	0.356789	17.83643	0.0000
EU*GP	1.355925	0.372587	3.639216	0.0003
C_DOM*GP	0.387144	0.071086	5.446145	0.0000

R-squared	0.483494	Mean dependent var	2.139158
Adjusted R-squared	0.483100	S.D. dependent var	6.176242
S.E. of regression	4.440454	Akaike info criterion	5.820260
Sum squared resid	181126.2	Schwarz criterion	5.826461
Log likelihood	-26747.74	Hannan-Quinn criter.	5.822368
F-statistic	1228.412	Durbin-Watson stat	0.664483
Prob(F-statistic)	0.000000		

Sample (adjusted): 1992 2010 Periods included: 19
Total panel (unbalanced) observations: 8186

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	6.33E-07	0.055327	1.14E-05	1.0000
LOG(GDP_I)*GP	-1.023226	0.121143	-8.446408	0.0000
LOG(GDP)*GP	1.616242	0.032000	50.50766	0.0000
DIST*GP	-0.000120	2.06E-05	-5.858836	0.0000
PTA*GP	16.04913	0.724920	22.13917	0.0000
CF*GP	6.651746	0.392583	16.94353	0.0000
EU*GP	5.656714	0.474860	11.91239	0.0000
C_DOM*GP	0.682192	0.075040	9.091093	0.0000
ISLAND*GP	-0.429129	0.219226	-1.957478	0.0503
LAND*GP	-5.648066	0.253774	-22.25629	0.0000
CF*PTA*GP	-19.30478	1.112080	-17.35917	0.0000
EU*PTA*GP	-15.96180	0.888912	-17.95656	0.0000
LOG(FRET_EU(-2))*GP	-0.946569	0.359685	-2.631660	0.0085
CURRENCY*GP	-2.685155	0.175133	-15.33213	0.0000

R-squared	0.553091	Mean dependent var	2.140566
Adjusted R-squared	0.552380	S.D. dependent var	6.175177
S.E. of regression	4.131464	Akaike info criterion	5.676849
Sum squared resid	139487.8	Schwarz criterion	5.688839
Log likelihood	-23221.34	Hannan-Quinn criter.	5.680948
F-statistic	777.9703	Durbin-Watson stat	0.668829
Prob(F-statistic)	0.000000		

Dependent Variable: LOG(IMVAL)
Sample (adjusted): 1993 2010 Periods included: 18
Total panel (unbalanced) observations: 7682

Variable	Coefficient	Std. Error	t-Statistic	Prob.	Prob.
C	-8.273950	8.841057	-0.935855	0.3494	0.1196
LOG(GDP_I)*GP	3.795564	2.477925	1.531751	0.1256	0.3109
LOG(GDP_I(-1))*GP	-4.210465	2.275084	-1.850685	0.0643	0.1178
LOG(GDP)*GP	1.590044	0.053299	29.83262	0.0000	0.1852
DIST*GP	-0.000135	3.57E-05	-3.777506	0.0002	0.0117
PTA*GP	16.23453	1.273294	12.75002	0.0000	0.5890
CF*GP	5.905449	0.655604	9.007646	0.0000	0.0019
EU*GP	5.619063	0.875917	6.415065	0.0000	0.0047
C_DOM*GP	0.655429	0.131943	4.967505	0.0000	0.0143
LAND*GP	-6.130365	0.462657	-13.25033	0.0000	0.0020
CF*PTA*GP	-19.08054	1.925237	-9.910749	0.0000	0.0478
EU*PTA*GP	-16.13877	1.582178	-10.20035	0.0000	0.0000
LOG(FRET_EU(-2))*GP	-1.632196	0.731850	-2.230232	0.0258	0.0073
CURRENCY*GP	-2.866528	0.312879	-9.161790	0.0000	0.0302
LAND*GDP*GP	1.62E-11	5.22E-12	3.107610	0.0019	0.0095
LOG(GDP_I(-1))*MQ	4.055932	2.551721	1.589489	0.1120	0.0426
LOG(GDP_I(-2))*MQ	-5.599451	2.424090	-2.309919	0.0209	
LOG(GDP)*MQ	2.550078	0.064756	39.37967	0.0000	
DIST*MQ	-0.000120	3.53E-05	-3.392115	0.0007	8.120468
PTA*MQ	5.879592	1.194231	4.923329	0.0000	6.489094
CF*MQ	10.81078	0.659387	16.39519	0.0000	4.990113
EU*MQ	4.387180	0.876011	5.008133	0.0000	5.488436
C_DOM*MQ	0.763043	0.132458	5.760656	0.0000	5.161611
LAND*MQ	-5.060546	0.452942	-11.17261	0.0000	1.673815
CF*PTA*MQ	-7.473417	1.878321	-3.978775	0.0001	
EU*PTA*MQ	-7.182259	1.506321	-4.768081	0.0000	
LOG(FRET_EU(-3))*MQ	-1.362098	0.696489	-1.955665	0.0505	
CURRENCY*MQ	-1.679641	0.304925	-5.508374	0.0000	
LAND*GDP*MQ	1.10E-11	5.24E-12	2.101704	0.0356	
LOG(GDP_I)*GF	-1.798879	0.584073	-3.079887	0.0021	
LOG(GDP)*GF	1.734251	0.053833	32.21552	0.0000	
DIST*GF	5.53E-05	3.48E-05	1.587940	0.1123	
PTA*GF	9.236565	1.196419	7.720173	0.0000	
CF*GF	5.664777	0.573673	9.874569	0.0000	
EU*GF	5.247263	0.727649	7.211253	0.0000	
C_DOM*GF	0.706440	0.124546	5.672112	0.0000	
LAND*GF	-6.237365	0.442296	-14.10225	0.0000	
CF*PTA*GF	-10.11145	1.856945	-5.445209	0.0000	
EU*PTA*GF	-8.689992	1.439455	-6.037003	0.0000	
LOG(FRET_EU(-1))*GF	1.217065	0.765084	1.590759	0.1117	
CURRENCY*GF	-0.319548	0.105102	-3.040369	0.0024	
LAND*GDP*GF	2.59E-11	4.90E-12	5.282902	0.0000	

R-squared	0.469275	Mean dependent var	5.674220
Adjusted R-squared	0.466426	S.D. dependent var	9.614603
S.E. of regression	7.023094	Akaike info criterion	6.741737
Sum squared resid	376834.2	Schwarz criterion	6.779717
Log likelihood	-25853.01	Hannan-Quinn criter.	6.754763
F-statistic	164.7657	Durbin-Watson stat	0.756235
Prob(F-statistic)	0.000000		

HS4 PRODUCTS IMPORTS Guadeloupe

Dependent Variable: LOG(IMVAL)
Method: Panel Least Squares
Sample: 1996 2010
Periods included: 15
Cross-sections included: 124292
Total panel (unbalanced) observations: 1863608

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	11.13604	0.074480	149.5179	0.0000
LOG(GDP_GPE)	0.099261	0.003291	30.15723	0.0000
LOG(GDP)	0.021959	0.000251	87.34050	0.0000
LOG(OM)	1.495425	0.000384	3895.867	0.0000
DIST	-0.012761	0.000711	-17.94557	0.0000
PTA	0.166799	0.001954	85.37310	0.0000

R-squared	0.899367	Mean dependent var	-6.287210
Adjusted R-squared	0.899366	S.D. dependent var	3.186357
S.E. of regression	1.010801	Akaike info criterion	2.859367
Sum squared resid	1904077.	Schwarz criterion	2.859407
Log likelihood	-2664363.	Hannan-Quinn criter.	2.859377
F-statistic	3331030.	Durbin-Watson stat	1.205517
Prob(F-statistic)	0.000000		

Dependent Variable: LOG(IMVAL)
Method: Panel Least Squares Sample (adjusted): 1996 2009
Cross-sections included: 124292
Total panel (unbalanced) observations: 1739316

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	11.46480	0.205537	55.77982	0.0000
LOG(GDP_I)	-0.134818	0.019403	-6.948329	0.0000
LOG(GDP_I(1))	0.207186	0.016987	12.19651	0.0000
LOG(GDP)	0.021926	0.000269	81.56982	0.0000
LOG(OM)	1.490444	0.000369	4043.137	0.0000
DIST	-0.006943	0.000734	-9.459711	0.0000
PTA	0.115890	0.001990	58.24167	0.0000
LOG(CURRENCY)	0.011906	0.000264	45.07678	0.0000
ISLAND	-0.030805	0.001899	-16.22254	0.0000
C_DOM	0.069657	0.000652	106.7728	0.0000
LOG(FRET_EU)	0.029902	0.005525	5.411684	0.0000
LOG(OIL)	-0.016522	0.003813	-4.333567	0.0000
LAND	-0.091034	0.002216	-41.07726	0.0000

R-squared	0.913328	Mean dependent var	-6.297321
Adjusted R-squared	0.913327	S.D. dependent var	3.166642
S.E. of regression	0.932268	Akaike info criterion	2.697614
Sum squared resid	1511668.	Schwarz criterion	2.697706
Log likelihood	-2345989.	Hannan-Quinn criter.	2.697639
F-statistic	1527356.	Durbin-Watson stat	0.991362
Prob(F-statistic)	0.000000		

Cross-section fixed (dummy variables)
Sample (adjusted): 1996 2009
Periods included: 14
Cross-sections included: 124292
Total panel (unbalanced) observations: 1739316

Variable	**Coefficient**	**Std. Error**	**t-Statistic**	**Prob.**
C	9.300399	0.058509	158.9556	0.0000
LOG(GDP_I)	-0.057270	0.012996	-4.406933	0.0000
LOG(GDP_I(1))	0.142993	0.013086	10.92731	0.0000
LOG(GDPj)	0.001258	0.000489	2.571475	0.0101
LOG(OM)	1.307235	0.000464	2818.129	0.0000

R-squared	0.951629	Mean dependent var	-6.297321
Adjusted R-squared	0.947907	S.D. dependent var	3.166642
S.E. of regression	0.722753	Akaike info criterion	2.257281
Sum squared resid	843640.4	Schwarz criterion	3.141202
Log likelihood	-1838767.	Hannan-Quinn criter.	2.495262
F-statistic	255.6295	Durbin-Watson stat	1.578412
Prob(F-statistic)	0.000000		

HS4 PRODUCTS IMPORTS Martinique

Dependent Variable: LOG(IMVAL)
Method: Panel Least Squares
Sample: 1996 2010 Periods included: 15
Cross-sections included: 63827 Total panel (unbalanced) observations: 957399

Variable	Coefficient	Std. Error	t-Statistic	Prob.	Coefficient	Std. Error	t-Statistic	Prob.	Coefficient	Std. Error	t-Statistic	Prob.
C	-8.574611	0.284739	-30.11391	0.0000	-8.982476	0.280656	-32.00524	0.0000	-9.105289	0.280478	-32.46346	0.0000
LOG(GDP)	0.205378	0.001289	159.3043	0.0000	0.256165	0.001252	204.5808	0.0000	0.272221	0.001300	209.4627	0.0000
LOG(GDP_I)	-0.126220	0.012679	-9.954948	0.0000	-0.179004	0.012501	-14.31962	0.0000	-0.189553	0.012489	-15.17811	0.0000
PTA	0.879199	0.007126	123.3847	0.0000	0.770587	0.006784	113.5817	0.0000	0.717458	0.007065	101.5547	0.0000
OM	112.1250	0.120337	931.7550	0.0000	109.8720	0.119365	920.4721	0.0000	109.7860	0.119309	920.1852	0.0000
DIST	-1.68E-05	6.65E-07	-25.25691	0.0000					-4.80E-06	6.99E-07	-6.865827	0.0000
ISLAND	0.045465	0.006715	6.770336	0.0000	0.281315	0.006452	43.59854	0.0000				
LAND	-0.209697	0.007619	-27.52186	0.0000	-0.187900	0.007494	-25.07434	0.0000				
C_DOM					0.351776	0.002074	169.6310	0.0000	0.360959	0.002087	172.9181	0.0000
CF									0.532737	0.009413	56.59454	0.0000
R-squared	0.542880	Mean dependent var		-6.122871	0.555922	Mean dependent var		-6.122871	0.556489	Mean dependent var		-6.122871
Adjusted R-squared	0.542877	S.D. dependent var		3.600316	0.555919	S.D. dependent var		3.600316	0.556486	S.D. dependent var		3.600316
S.E. of regression	2.434206	Akaike info criterion		4.617127	2.399229	Akaike info criterion		4.588180	2.397698	Akaike info criterion		4.586904
Sum squared resid	5672885.	Schwarz criterion		4.617225	5511030.	Schwarz criterion		4.588279	5503999.	Schwarz criterion		4.587002
Log likelihood	-2210208.	Hannan-Quinn criter.		4.617154	-2196352.	Hannan-Quinn criter.		4.588207	-2195741.	Hannan-Quinn criter.		4.586931
F-statistic	162429.5	Durbin-Watson stat		0.920527	171216.9	Durbin-Watson stat		0.933175	171610.3	Durbin-Watson stat		0.933560
Prob(F-statistic)	0.000000				0.000000				0.000000			

Cross-section fixed (dummy variables)

Periods included: 12 Sample (adjusted): 1999 2010
Cross-sections included: 63827
Total panel (unbalanced) observations: 765918

Variable	Coefficient	Std. Error	t-Statistic	Prob.	Coefficient	Std. Error	t-Statistic	Prob.
C	-9.528219	0.207346	-45.95334	0.0000	3.722467	0.698296	5.330789	0.0000
LOG(GDP)	0.141950	0.007993	17.75956	0.0000	0.075799	0.010167	7.455138	0.0000
LOG(GDP_I)	-0.009599	0.013854	-0.692867	0.4884	-0.730087	0.033267	-21.94602	0.0000
PTA	0.019042	0.010871	1.751633	0.0798				
PTA(-3)					0.034671	0.020357	1.703153	0.0885
OM	71.02277	0.110508	642.6954	0.0000	75.14805	0.131533	571.3257	0.0000
LOG(FRET_EU)					0.514555	0.016296	31.57513	0.0000
LOG(OIL)					0.210268	0.012602	16.68486	0.0000
LOG(CURRENCY)					-0.006570	0.002238	-2.936209	0.0033
R-squared	0.796721	Mean dependent var		-6.122871	0.802571	Mean dependent var		-6.137374
Adjusted R-squared	0.782200	S.D. dependent var		3.600316	0.784621	S.D. dependent var		3.579353
S.E. of regression	1.680233	Akaike info criterion		3.940087	1.661139	Akaike info criterion		3.932548
Sum squared resid	2522707.	Schwarz criterion		4.724940	1937317.	Schwarz criterion		4.895063
Log likelihood	-1822287.	Hannan-Quinn criter.		4.156453	-1442171.	Hannan-Quinn criter.		4.200296
F-statistic	54.86760	Durbin-Watson stat		1.678810	44.71133	Durbin-Watson stat		1.664005
Prob(F-statistic)	0.000000				0.000000			

HS4 PRODUCTS IMPORTS (French Guiana)

Dependent Variable: LOG(IMVAL)					Sample (adjusted): 1996 2009			
Method: Panel Least Squares		Sample: 1996 2010			Periods included: 14			
Cross-sections included: 105362		Periods included: 15			Cross-sections included: 105362			
Total panel (unbalanced) observations: 1579670					Total panel (unbalanced) observations: 1474310			
Variable	Coefficient	Std. Error	t-Statistic	Prob.	Coefficient	Std. Error	t-Statistic	Prob.
C	-14.72400	0.094413	-155.9531	0.0000	9.649762	0.089488	107.8327	0.0000
LOG(GDP)	0.055302	0.000416	133.0462	0.0000	0.019325	0.000311	62.23631	0.0000
LOG(GDP_I)	0.304320	0.004378	69.51808	0.0000	-0.074348	0.016324	-4.554366	0.0000
LOG(GDP_I(1))					0.224802	0.016733	13.43450	0.0000
OM	104.9632	0.071348	1471.140	0.0000	1.425789	0.000541	2636.627	0.0000
PTA	0.367355	0.003264	112.5445	0.0000	0.049236	0.007539	6.530372	0.0000
DIST	-6.13E-06	2.60E-07	-23.61325	0.0000	-0.041943	0.001426	-29.42012	0.0000
C_DOM	0.136954	0.001075	127.4051	0.0000	0.059135	0.000731	80.89725	0.0000
ISLAND	-0.005543	0.002971	-1.865647	0.0621	0.030169	0.002149	14.04124	0.0000
LAND	-0.166410	0.003761	-44.25197	0.0000	-0.071766	0.002508	-28.61856	0.0000
LOG(FRET_EU)					-0.029159	0.006065	-4.807451	0.0000
CF					-0.026017	0.003911	-6.652638	0.0000
EU					0.039078	0.004447	8.788025	0.0000
CF*PTA					-0.085055	0.012127	-7.013413	0.0000
EU*PTA					0.056524	0.008949	6.316301	0.0000
CURRENCY					0.004896	0.000525	9.329919	0.0000
R-squared	0.607980	Mean dependent var		-6.574442	0.837261	Mean dependent var		-6.590825
Adjusted R-squared	0.607978	S.D. dependent var		2.344474	0.837259	S.D. dependent var		2.293450
S.E. of regression	1.467914	Akaike info criterion		3.605568	0.925205	Akaike info criterion		2.682408
Sum squared resid	3403810.	Schwarz criterion		3.605638	1262001.	Schwarz criterion		2.682540
Log likelihood	-2847795.	Hannan-Quinn criter.		3.605587	-1977334.	Hannan-Quinn criter.		2.682444
F-statistic	306234.8	Durbin-Watson stat		0.975719	505662.4	Durbin-Watson stat		1.067010
Prob(F-statistic)	0.000000				0.000000			

Cross-section fixed (dummy variables)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-15.49589	0.101738	-152.3121	0.0000
LOG(GDP_I)	0.395124	0.006507	60.72451	0.0000
LOG(GDP)	0.004618	0.000799	5.782235	0.0000
OM	83.73842	0.073045	1146.396	0.0000
PTA	-0.097436	0.006432	-15.14934	0.0000
LOG(FRET_EU)	0.020621	0.007057	2.921878	0.0035

R-squared	0.759677	Mean dependent var	-6.574442
Adjusted R-squared	0.742502	S.D. dependent var	2.344474
S.E. of regression	1.189686	Akaike info criterion	3.249629
Sum squared resid	2086659.	Schwarz criterion	4.068243
Log likelihood	-2461304.	Hannan-Quinn criter.	3.470859
F-statistic	44.23039	Durbin-Watson stat	1.430126
Prob(F-statistic)	0.000000		

Chapter 5

Overall conclusions

As described in this doctoral dissertation, the regionalization-globalization phenomenon observed in the fifties, and more markedly in the nineties, raises a number of questions that have been addressed in the received literature. Such questions refer to their impact in the world trade liberalization process, as well as their impact on global welfare and at the country level – with particular relevance for developing economies.

We have presented a detailed study about the formation of regional trade agreements and their impact throughout three chapters:

- The second chapter has reviewed the stylized facts of the globalization-regionalization of trade with a focus on the small Caribbean economies;

- Chapter three has developed a formal and rigorous analysis of customs union formation in a strategic setting;

- The fourth chapter has provided an empirical study of the effects derived from the AAE/EPA Cariforum-UE agreement on peripheral European regions in the Caribbean.

The initial chapter offers a discussion about the pros and cons of regionalism, and their effects on welfare together with the world trade liberalization process. A review of the evolution of trade exchanges has been provided according to the (neo)classical fundamentals of GATT liberalization; besides, we have noted the perspectives for trade policies in Caribbean economies.

The project of regional integration in the Caribbean, in a context of regionalization and globalization of world trade, faced, since its inception, several major challenges inherent to the characteristics of such small economies; economies that are vulnerable to external shocks and highly dependent on larger economies , i.e. their former metropolis and North American countries. The difficult path to regional integration is now beginning to take form and seems to become a solid process that is backed by institutions of leading countries in the area; there is a change in the paradigm towards an open regionalism based on functional intra-regional as well as public-private cooperation. Economies are now opening to the neighboring Latin-American countries, not giving up the opportunities offered by a "full" North-South agreement with the EU and other large economies. The objective for the Caribbean region is to achieve both a larger degree of regional integration to get a better positioning in the global market and maybe move from being a poke region to being a hub region.

In chapter three, we have analyzed the effects that follow the strategic formation of custom union agreements. The chapter notes the effects on welfare – for signatory and non-signatory countries – in an international oligopoly model; the analysis accounts for asymmetries in the market size of countries and also for asymmetries in firm costs.

We have developed a model with four countries in which governments choose their welfare maximizing tariffs. Initially countries have not signed any trade agreement so that tariffs are set non-cooperatively before oligopolistic firms compete in quantities. The other two scenarios examined are one in which two countries form a customs union and so set a common external tariff cooperatively; in another scenarios the other two countries also sign a customs union agreement and so there are two trade agreements in place. The free trade equilibrium is also characterized. Our analysis confirms that customs union formation generates positive effects on consumers and, under certain conditions, on producers within the union, while it has a negative impact on the rest of the world. We also identify conditions under which all countries may improve with several customs union formation. This exercise provides a simple yet direct explanation to the proliferation of

trade agreements when these occur in waves. It is shown that under tariff-ridden trade-the Nash equilibrium usually (but not always) entails two customs unions formation between similar countries and under specific market conditions. However, whenever possible free trade remains the preferred option.

Finally, the fourth chapter undertakes a novel research exercise and proposes a methodology to follow the impact of a specific free trade agreement, the AAE/EPA Cariforo-UE agreement, on ultra-periphery regions in the French Caribbean economies. We have applied a multi-modal model that can be consistently replicated by:

- The collection of qualitative and quantitative data, at the firm level and representative public and private institutions, by using surveys and interviews;

- The collection and treatment of union statistics and other data related with trade and macroeconomic information;

As expected, the short period since the signing of the agreement until the present study, along with its actual implementation (at least regarding the progressive dismantling of tariffs)) by most of the Cariforo countries do not allow us to establish any clear impact of the AAE on ultra-periphery regions according to our econometric estimates. However, preliminary results suggest that the impact is positive. That is grounded on the surveys and interviews that have been carried out with economic agents on the ground; as earlier noted, the agreement has the merit of having brought ultra-periphery regions closer to their Caribbean neighbours and has awakened renewed interest in intra-regional businesses. The research that we have developed in this doctoral dissertation provides new considerations regarding regional integration processes of small countries with particular characteristics. Our findings confirm that, in addition to the various factors put forward by the theory of international trade for small economies, the idiosyncratic features of these economies – their economic and political context and their regional environment – are key determinants in shaping the policies and strategies of governments. They also highlight that, before opposing views in favour of multilateralism or against regionalism, the solution might be an alternative and creative path between them.

Chapter 6

Conclusiones generales

Como lo expusimos en esa tesis, el fenómeno de regionalización-globalización observado desde los años 50 y de forma más aguda desde los 90s plantea una serie de cuestionamientos en la literatura especializada acerca de sus impactos sobre: el proceso mundial de liberalización comercial; y el bienestar global y a nivel nacional (en especial en el caso de países menos desarrollados).

Hemos presentado un estudio de la formación y de los impactos de acuerdos regionales preferenciales bajo tres grandes capítulos:

- Un capítulo repasando hechos estilizados del fenómeno de globalización-regionalización del comercio con un foque especial sobre las pequeñas economías caribeñas;

- Otro capítulo proponiendo un análisis teórico de la formación de uniones aduaneras;

- Y un último capítulo presentando un estudio empírico de los efectos del acuerdo AAE/EPA Cariforum-UE sobre las regiones ultra periféricas europeas del Caribe.

Nuestro segundo capítulo, ofrece: una discusión sobre las tesis a favor o en contra del regionalismo y sus efectos sobre el bienestar y el proceso global de liberalización del comercio; un repaso de la evolución de los intercambios comerciales desde la perspectiva de los fundamentos (neo) clásicos de liberalización del GATT; y las perspectivas de políticas comerciales para los países caribeños.

El proyecto de integración regional caribeño, en un contexto de regionalización y glob-

alización del comercio mundial, se enfrentó desde un principio a varios desafíos mayores inherentes a las características de esas (pequeñas) economías vulnerables a choques externos y dependientes de grandes economías (sus antiguas metrópolis o América del norte). Observamos como el arduo proceso de integración caribeño da ahora muestras de afianzamiento en instituciones regionales respaldadas por los líderes de la región, con un cambio de paradigma hacia un regionalismo abierto basado en: una mayor cooperación funcional entra-regional y público-privada; una apertura a la región vecina latino-americana; sin desechar las oportunidades brindadas por un acuerdo Norte-Sur 'completo' firmado con los países de la UE y otros acuerdos con grandes naciones. El objetivo para la región Caribe es lograr a la vez una mayor integración regional de sus procesos productivos para un mejor posicionamiento en los mercados globales y tal vez llegar a pasar de región 'poke' (periférica) a región 'hub' (céntrica).

En nuestro tercer capítulo, analizamos los efectos de la formación de uniones aduaneras sobre el bienestar doméstico (de países miembros y excluidos) en un contexto de competencia oligopolistica, tomando en cuenta tanto los tamaños de los mercados, como la concentración industrial (el número de empresas) y costes marginales.

Construimos a esos efectos un modelo de optimización arancelaria, con cuatro países, y resolvemos un juego no cooperativo en varias etapas para analizar los efectos sobre el bienestar (de miembros y no-miembros) al pasar de una situación de comercio con aranceles a la formación de una sola unión aduanera entre dos países, y luego a la formación de dos uniones aduaneras. También analizamos los efectos de optar por el libre comercio. Mostramos que en una situación de comercio sujeto a aranceles, el equilibrio de Nash suele residir en la formación de dos uniones aduaneras entre países similares y bajo determinadas condiciones. No obstante, la opción del libre comercio sigue siendo la estrategia favorita cuando es factible.

Nuestro análisis pone en evidencia la importancia de factores (como los tamaños de los mercados, la concentración industrial y la productividad) sobre si un país será aceptado o no por otro, como candidato a la formación de una unión aduanera. Confirma además

que la formación de uniones aduaneras genera impactos positivos en los excedentes del consumidor y, bajo ciertas condiciones, en los beneficios de las empresas de la unión. Mientras que tiene unos impactos negativos sobre el resto del mundo. Identificamos también condiciones en las cuales, todos los países podrían beneficiarse de la formación de varias aduaneras, lo cual proporciona una explicación posible para la proliferación de acuerdos regionales.

Finalmente, emprendemos el ejercicio novedoso de estudiar y proponer una metodología de seguimiento del impacto del acuerdo de libre comercio AAE/EPA Cariforo-UE sobre el comercio de las regiones ultra periféricas europeas (RUPs) del Caribe francés. Procedimos a aplicar un modelo (multi-modal) de seguimiento replicable periódicamente, mediante:

- La recolección de informaciones cualitativas y cuantitativas a nivel de empresas e instituciones públicas y privadas representativas, mediante encuestas y entrevistas;

- La recolección y el tratamiento de estadísticas aduaneras y demás estadísticas relativas al comercio y a las economías estudiadas;

Como cabía esperar, el periodo corto trascurrido desde la firma del AAE hasta la realización de ese primer estudio, así como su falta de implementación real (al menos en cuanto a las reducciones arancelarias) por parte de la mayoría de los países del Cariforo no permiten aún observar unos impactos claros del AAE en las RUPs francesas en las estimaciones econométricas. Sin embargo, unos resultados preliminares se pudieran apreciar esencialmente a raíz de las encuestas y entrevistas realizadas en el terreno con los operadores económicos concernidos, ya que, como evocamos más arriba, el AAE tiene al menos el mérito de haber acercado las RUPs a sus vecinos caribeños y despertado nuevos intereses de negocio intra-regional.

Los trabajos que realizamos en el marco de esa tesis doctoral aportan nuevas consideraciones referente a los procesos de integración regional de países pequeños. Confirman que frente a las teorías del comercio internacional enfocadas a las pequeñas economías, la realidad de las características propias de cada economía así como el contexto económico,

político y entorno regional son los grandes determinantes de las políticas y estrategias de integración adoptadas por los gobiernos. También muestran que ante posiciones antagónicas pro-multilateralismo o pro-regionalismo, la solución puede ser una vía alternativa y creativa entre ambas.

Part I

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ACRONYMS

ACP	African, Caribbean, Pacific States
ADEM	Agency for the Economic Development of Martinique
AFD	French Development Agency
AMPI	Association of Small and Medium-Sized Industries
BEI	European Investment Bank
BSO	Business Support Organization
CARICOM	Caribbean Community
CARIFORUM	Forum of the Caribbean Group of ACP States
CCI	Chamber of Commerce and Industry
CECA	Euro-Caribbean Center (Guadeloupe)
CEPII	Centre for Prospective Studies and International Information
CEREGMIA	Centre for Research in Economics, Management, Modeling and Applied Informatics (University of Antilles and French Guiana)
CIF	Cost, Insurance and Freight
CF	CARIFORUM
CGPME	General Confederation of Small and Medium-Sized Enterprises
CNAV	French National Retirement Fund (Caisse National d'Assurance Vieillesse)
CNNC	National Trade Negotiations Commission (Dominican Republic)
CRNM	Caribbean Regional Negotiating Machinery
CRPM	Regional Committee on Sea Fisheries
DDE	Departmental Directorate for Equipement (French Antilles)
DICOEX	Directorate of Foreign Trade and Administration of External Trade Agreements
DNSCE	Direction nationale des statistiques et du commerce extérieur (Administration Générale des Douanes)
DOM	French Overseas Department
DRAC	Regional Directorate for Cultural Affairs
DRCE	(French) Regional Directorate of Foreign Trade
DRIRE	Regional Directorate for Industry, Research and Environment
EC	European Commission
EDF	European Development Fund
EPA	Economic Partnership Agreement
EPA IU	EPA Implementation Unit
ERDF	European Regional Development Fund
EU	European Union
FCOR	French Caribbean Outermost Region
FFTA	French Foreign Trade Advisor (CCEF, in French)
FTA	Free Trade Agreement
FOB	Free On Board

GFCF	Gross Fixed Capital Formation
HS	(Customs) Harmonized System Nomenclature
IEDOM	Institut d'Emission des Départements d'Outre-Mer (French Overseas Central Bank)
the INSEE	(French) National Institute of Statistics and Economic Studies
ISPRI	Institutional Support Programme for Regional Integration (Dominican Republic)
LDCs	Lesser developed countries
LSM	Least Square Method
MEDEF	French Business Organization
NEER	Nominal effective exchange rates
OCT	Overseas Countries and Territories
OECS	Organization of Eastern Caribbean States
OHADAC	Caribbean Organization for the Harmonization of Business Law
OR	(European) Outermost Regions
OTN	Office of Trade Negotiations of the CARICOM Secretariat
PAF	French Border Police
PNI EPA	National Plan for the CARIFORUM-EU EPA implementation (Dominican Republic)
ROW	Rest of the World
RUP	Région Ultrapériphérique (European Outermost Region)
SARA	Société Anonyme Raffinerie des Antilles (Martinique oil refinery)
SIREN	French business reference code (Système Informatique du Répertoire des Entreprises)
SGAR	General Secretariat for Regional Affaurs (French Prefecture)
UAG	Université des Antilles et de la Guyane
UBIFRANCE	French Agency for the international business development
UWI	University of West Indies
VIE	(French) International Business Volunteer
WB	World Bank
WTO	World Trade Organization
Z.I.	Industrial zone

ANNEX A

Convention between the EEC/EU and the AASM/ACP	
Year	Convention
1963	Yaoundé I: Agreement between the EEC and 18 former, francophone African colonies, providing the colonies with commercial advantages and financial aid.
1969	Yaoundé II: Renewal of Yaoundé I, including Kenya, Tanzania and Uganda, introducing preferential trade arrangements for developing countries and access to raw materials for the EEC.
1975	Lome I: Convention included preferential trade agreements on most ACP products, each individual state having the right to decide on its policies, a cooperation system ensuring the security of relations, impartiality, respect for sovereignty, common interests and interdependence existing and the STABEX system for stabilization of agricultural export earnings as well as direct development aid.
1979	Lome II: SYSMIN system providing stabilization aid to mining industries in ACP countries.
1984	Lome III: Attention shifts from industrial development towards food security and self-reliance.
1990	Lome IV: Focus on structural adjustment and crosscutting themes such as the encouragement of democracy, good governance, human rights; fortifying women's' roles; environmental safety; intensified regional cooperation and a greater role of the private sector in response to debt crises and famines.
1995	Lome IVrev: Underlining the importance of human rights, democracy and good governance, as well as regional cooperation. Decentralized cooperation via participatory partnerships was also fostered, with the inclusion of an assortment of civil society actors.
2000	Cotonou: Removal of most tariffs on imports from ACP group with sugar, beef and veal to be covered by proposed REPAs, and a new tariff only banana regime, to be phased in. Shift towards participatory development paradigm.
2001	EBA: Immediate removal of all tariffs on all imports from LDCs except arms, with 3-stage removal of tariff and quotas on sugar, rice and bananas.
Source: Hosein (2001), European Commission (2001).	

ANNEX B : OPERATORS INTERVIEWED

Guadeloupe

Christophe WACHTER
(AMPI, General Secretary)

Claudy ALIE
Naïka PICHI
(CCI Pointe-à-Pitre)

Joël-André ARCONTE
(Consultant)

Fred RENO
(Laboratoire CAGI, University Antilles-Guyane, Projet OCICAR)

Agathe VINCENOT
(Head of Regional Cooperation Division, Regional Council of Guadeloupe)

Jacques CHOURAKI
Eve-Lyne MARTIN-BRIERE
(OHADAC, Attorney)

Thierry NOGLOTE
(French Foreign Trade Advisors, CCEF)

Christian BENOIT
(ex-DRCE)

French Guiana

Philippe BOBRIE
Germain LABONNE (project assistant)
(CCEF)

Eric MADELEINE
(Tourism Committee French Guiana, Director)

Isabelle CORTANA
(Regional Council of French Guiana, Head of Regional Economic Initiatives Division)

Keita STEPHENSON
(CCIG Cayenne, Head of International Division)

Thomas BOURGUIGNON
(MPI Guyane)

Daniel PERI
(SGAR of French Guiana Prefecture)

Martinique

Bruno BRIVAL
(ADEM, General Delegate)

Richard CRESTOR
(AMPI, General Secretary)

Francette ROSAMONT
(President CCEF Martinique, CGPME, Interentreprises.com)

Marie-Noëlle CATAYEE
(CCIM, Head of the International Division)

Karine GALY
(Director European Affairs and RegionalCooperation, Regional Council of Martinique)

Maguy MARIE-JEANNE
(Head of Regional Cooperation Division, Regional Council of Martinique)

Gérard HIERSO
(Head of Economic Division, Interregional Customs Administration Antilles-Guyane)

Jean-Max CHARLERY-ADÈLE
(DRIRE, Deputy Departmental Manager)

Gérard FORGEOT
(the INSEE Martinique, Deputy Director)