ATLANTIC FUTURE SCIENTIFIC PAPER

04

Global Value Chains in the Atlantic Space

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ABSTRACT

Global value chains (GVCs) have revolutionized trade. Countries no longer have to produce a particular product from scratch; all they must do is insert themselves into an existing chain of production that often spreads across several countries. Nevertheless, insertion into a global value chain has become a real challenge. Economies that are not able to successfully insert themselves into multiple GVCs are likely to reduce their opportunities for industrialization and economic growth. The purpose of this paper is to investigate the extent to which countries in the Atlantic Space have inserted. themselves into GVCs in the past two decades. It draws on an original dataset of trade patterns by stage of production and value added that spans from 1995 to 2012, collected from the UN COMTRADE databank and the OECD-WTO Trade in Value Added (TiVA) dataset. It finds that despite some interesting cross-country variation, participation in GVCs is still generally low. The paper proceeds as follows. In Section 2, we review the concept of value chain participation and alternative methodologies for measuring it. Section 3 provides a panoramic view of trade flows in the Atlantic, and Section 4 focuses on empirical evidence of GVC participation in two case studies (Mexico and Brazil). Section 5 briefly assesses the available information on trade in value added in selected countries of the Atlantic space and the last Section concludes.

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1. Introduction

Global value chains (GVCs) have revolutionized trade. Countries no longer have to produce a particular product from scratch; all they must do is insert themselves into an existing chain of production that often spreads across several countries. Fragmentation of production, by which we mean the probability of a product not being produced in a single country but in multiple countries where the necessary skills and materials are available at competitive cost and quality, is becoming the norm in international trade, as globalization, technological changes, and improvements in infrastructure allow for different sets of an operation to be performed all over the world. Nevertheless, insertion into a global value chain has become a real challenge. Economies that are not able to successfully insert themselves into multiple GVCs are likely to reduce their opportunities for industrialization and economic growth.

The purpose of this paper is to investigate the extent to which countries in the Atlantic Space have inserted themselves into GVCs in the past two decades. It draws on an original dataset of trade patterns by stage of production and value added that spans from 1995 to 2012, collected from the UN COMTRADE databank and the OECD-WTO Trade in Value Added (TiVA) dataset. It finds that despite some interesting cross-country variation, participation in GVCs is still generally low. The insights of this research can help spur discussions about the design of public policy aimed at deepening economic relations among Atlantic Space countries.

The paper proceeds as follows. In Section II, we review the concept of value chain participation and alternative methodologies for measuring it. Section III provides a panoramic view of trade flows in the Atlantic, and Section IV focuses on empirical evidence of GVC participation in two case studies (Mexico and Brazil). Section V briefly assesses the available information on trade in value added in selected countries of the Atlantic space and the last Section concludes.

2. Global Value Chains: Concept and Methodology

2.1 Concept

The term "value chain" was popularized in relation to business management by Michael Porter in his 1985 book *Competitive Advantage: Creating and Sustaining Superior Performance.* He observes that firms perform a variety of activities from design, production, marketing, delivery, and support of a product. All of these activities form a value chain. While different firms may have similar chains, the value chain of each competitor may differ because each firm has a competitive advantage in different aspects of a product line (Porter, 2008: 36). Porter argues that firms spend too much time and money performing tasks in which they have no competitive advantage. His advice is that firms should focus on what they do best and outsource the rest (Baldwin, 2013: 27).

The concept of value chains has evolved since then but it can be easily exemplified by looking at the parts and components that make an iPhone 3G. Although the iPhone is assembled in China by FoxConn, it uses parts and components from four different countries. Infineon in Germany produces the camera module and GPS receiver. Samsung in South Korea makes the processor. Toshiba in Japan produces the flash memory and the touchscreen, while Broadcom in the United States makes the Bluetooth. In other words, the production of the iPhone is distinctively fragmented.



Graphic 1. Fragmentation of production: the example of iPhone 3G



...Assembled in China by FoxConn for US\$6.50

Source: (Rassweiler 2009)

This research stems from the observation that outsourcing and super-specialization has become a reality and a necessity for developing and developed countries alike. Technological advances have improved business and infrastructure services, which in turn have allowed the demand for products to become global. Public policies (such as removing tariff barriers) have facilitated international trade. The ever-increasing role of multinational enterprises (MNEs) has stimulated intra-industry trade. With firms introducing new strategies, there has been an increase of trade flows in intermediate goods and a move towards what has been called "vertical specialization." (Balassa 1967, 97).

Countries become vertically integrated when international productive processes prompt them to specialize in particular stages of production rather than a (final) good. A country imports a good from another country, uses that good as input for the production of another product that is then exported to the next country. At each node of integration, some value (capital and labor) is added to the product. A schematic illustration of vertical specialization is shown in Figure 1.

Figure 1: Model of Vertical Specialization



VS share = imported intermediate goods / total exports of intermediate and final goods



Given the current trend in vertical specialization, how strong is the participation of Atlantic Space countries in GVCs? More specifically, what is the map of trade in parts and components between countries in the Atlantic space? Have the patterns of trade in intermediate goods evolved during the 1993-2012 period? What are the main implications of changing patterns of vertical specialization?

2.2 Methodology

In order to answer these questions we followed three steps. First, we operationalized our concept of GVC participation. Second, we created a new dataset of trade patterns by stage of production and value added that spanned from 1995 to 2012,¹ collected from the UN COMTRADE databank² and the OECD-WTO Trade in Value Added (TiVA) dataset.³ The third stage involved an in-depth analysis of selected countries and their involvement in the trade of intermediate (parts and components) goods. The countries studied were chosen based on their prominent regional importance within the Atlantic basin: Argentina and Brazil from South America; Mexico, Canada, and the United States from North America; Morocco, Nigeria, and South Africa from Africa, and Germany, France, Spain, and the United Kingdom in Europe.

Empirically speaking, GVC participation can be observed by looking at the extent to which countries rely on imported inputs for their own exports. Participation in GVCs require that parts, components and semi-finished goods cross borders before a finished (or intermediate) product is produced and exported. The ratio of imported parts and components to total exports can thus serve as a proxy for a country's participation in GVCs (Feenstra 1998; Arndt and Kierzkowski 2001; Calfat and Flôres Jr. 2009).

To classify products according to their stages of production, we used Calfat and Flores' (2009) method of classification. More specifically, we used the Broad Economic Categories (BEC) in the UN COMTRADE databank to classify products into stages of production. Three stages were identified: (a) primary goods (I); (b) intermediate goods, divided into two categories: semi-finished products (II) and parts and components (III); (c) final goods, also split up into two categories: capital goods (IV) and consumption goods (V). Table 1 summarizes this classification. It is important to reiterate that the purpose of this study is to evaluate the degree of Atlantic space countries' participation in GVCs and not their movement between stages of productions (GVC upgrading). Before we can assess where in a chain a country participates, we must first evaluate if there is even some participation.

Table 1: BEC Classification

Stages of Production	BEC Code	BEC Description
	111	Food and beverages mainly for industry
Primary goods (I)	21	Industrial supplies, primary
	31	Fuels and lubricants, primary

¹ The intention was to make it a twenty-year study from 1993 to 2012, however data was only available

http://stats.oecd.org/index.aspx?gueryid=47807#



starting in 1995. ² United Nations Statistics Division – Commodity Trade Statistics Database, http://comtrade.un.org/db/ ³ OECD-WTO Trade in Value Added (TiVA) May 2013, OECD.StatExtracts,

		121	Food and beverages, processed, mainly for industry
	Semi-finished	22	Industrial supplies, processed
Intermediate	gooas (II)	321	Motor spirit
goods		322	Other processed fuels and lubricants
	Parts & components (III)	42	Parts and components of capital goods, except for transport equipment
	··· /·· · ·· ()	53	Parts and components of transport equipment
	Capital goods	41	Capital goods except transport equipment
	(1V)	521	Other industrial transport equipment
		112	Food and beverages, primary, mainly for household consumption
Final goods		122	Food and beverages, processed, for household consumption
3,111	Consumption	51	Passenger motor cars
	goods (V)	522	Other non-industrial transport equipment
		61	Durable consumer goods
		62	Semi-durable consumer goods
		63	Non-durable consumer goods

Albeit a first approximation, the ratio of imported parts and components to total exports is not a perfect proxy for GVC participation. As pointed out by organizations such as the World Trade Organization (WTO), traditional international trade statistics do not adequately describe current trade flows because they lead to the multiple counting of a product's value. Every time a good crosses borders (at different stages of production), existing trade statistics record the full value of the product, including the value of (imported) intermediate inputs. A more accurate measure then requires that we capture the value added by each country that participates in the value chain.

Up until very recently, it was difficult to find readily accessible and comparable data on the domestic value added share of exports. Fortunately, in May 2013, the OECD and the WTO released the Trade in Value Added (TiVA) datasets, which are available for OECD and a few selected countries for certain years. A second proxy for participation in GVCs used here is then TiVA's value added export ratio (total domestic value added share of gross exports). We consider higher levels of this ratio to be indicative of lower levels of participation in GVCs.

3. Patterns of Trade Flows in the Atlantic: a Panoramic View

[Annex 1: table 2]



Before delving into the analysis of GVC participation, it is worth taking a brief moment to identify some general patterns in trade flows in order to help us select a few countries in the Atlantic space for a more in-depth evaluation. Tables 2 and 3 show the variation of trade flows of the selected Atlantic countries, according to the classification of stages of production adopted. One of the first observations we see in Table 2, which shows export flows, is that most of these countries exported more semi-finished goods than any other stage of production in the 1990s and early into the millennium. In the cases of Argentina and South Africa, this trend is consistent from 1995 to 2012, with semi-finished goods being the predominant product representing around 40% of total exports. The German case is interesting because in 1995 semi-finished goods represented a significant portion of exports at 51.1%. However with time the proportion of consumption goods exported increased. By 2012, semi-finished goods represented 27.4% of exports and consumption goods stood at 27.1%.

Canada and Brazil are peculiar because both were originally exporters of semi-finished goods, but by 2008 for Canada and 2010 for Brazil, their exports had shifted toward primary goods. In 1995, Canada's exports of primary goods was at 13.4% and by 2012 it represented 30.9%. Brazil's exports went from 15.5% in 1995 to 39.4% in 2012. Nigeria on the other hand has always exported mostly primary goods. In 1996 it represented 98.3% of their total exports and by 2012, 86.9%. The United States started out being an exporter of parts and components, which represented 28.6% of total exports. By 2012, they exported more semi-finished goods, at 31.2%. Finally France, Mexico, Morocco, Spain and the United Kingdom have all been strong exporters of consumption goods in all the years studied.

[Annex 2: table 3]

Table 3 shows the general importation flows of the selected countries. One striking observation is that countries like the United Kingdom, the United States, and to a certain extent, France, all import more consumption goods than anything else. All three countries have been generally consistent in that imports of consumption goods represent between 25-30%. France, however, also imports a significant quantity of semi-finished goods, it represents on average 27% of all their imports. Spain is another country that imports in similar proportions consumption goods and semi-finished goods. In 1998 semi-finished goods represented 28.2% and consumption goods 27.1%. Just one year later, semi-finished goods were 25.7% of all imports and consumption goods were 27.7%. This alternating trend is consistent throughout the study.

Another interesting observation can be seen with South Africa. Up until 2004, their main imports were mostly semi-finished goods and capital goods, between the two representing half of all imports. However, it can be observed that after 2004 all imports became significant and balanced at around 21% each. The only exception seen is in parts and components since they barely rise above 15% on average. On the other hand, Mexico has been a significant importer of parts and components along with semi-finished goods. Both seem to be equally important and they both make up a little over 60% of total imports over the course of the years studied. For Argentina, Brazil, Germany, Morocco, and Nigeria, their most important import is semi-finished goods. In the cases of Argentina, Brazil, and Morocco, these goods represent over 30% of their imports throughout the years. Germany and Nigeria, on the other hand, both have also had years when consumption goods also represent an important percentage in imports. Germany originally was quite equal between the two up until 2004, after which semi-finished goods became more important, and by 2012 they represented 27.8% of all imports. Nigeria, on the contrary started importing more consumption goods over the



years until 2012, when it can be seen that semi-finished goods represented 32.3% of all imports and consumption goods stood at 30.7%.

With this brief analysis of general trade flows we can note that not all countries in the Atlantic space constitute good case studies for analyzing the evolution of GVC participation. Nigeria, for instance, imports mostly semi-finished goods but it exports primary goods, a sign that production in this country is not vertically integrated with production in other countries. Similarly, Canada seems to have shifted from exporting mostly semi-finished goods to primary commodities. Although it is likely that pronounced rises in commodity prices have affected these figures. As a result, we chose Mexico and Brazil for a more detailed analysis of trade flows in parts and components because they have experienced contrasting trends in GVC participation. While the first has systematically strengthened its GVC links in the last twenty years, the latter followed a more erratic pattern of engagement and disengagement during the same period.

4. Fragmentation in the Atlantic: the cases of Mexico and Brazil

4.1 Mexico

It is important now to review Mexico's most important bilateral trade flows in parts and components, as can be expressed by figures 2, 3, 4, and 5. These four images are snapshots of Mexico's trade flows every five years since 1995. The results are impressive, the imports for how much they changed and the exports for how little.

Figure 2: Mexico – Parts and components flows by share (%) of total import and exports, 1995



Source: UN COMTRADE - BEC, 1995



As can be seen in figure 2, the arrows show Mexico's reported imports and exports of parts and components for 1995. We can see that 92% of Mexico's exports of parts and components go to the United States. This is unsurprising as Mexico's trade with the United States is historically its most important. Two other significant export destinations in 1995 included Canada and the European Union with 15 members (EU15). On the other hand, 76.7% of Mexico's import of parts and components came from the United States, equally unsurprising. 9.2% of the total of imports came from the EU15. It should be noted that 4.5% of this sum came from Germany alone. Finally, 7.7% came from Japan. It is important to make note of the significance of Asian imports, as this sum will grow in the following years studied.

Figure 3: Mexico – Parts and components flows by share (%) of total import and exports, 2000



Source: UN COMTRADE - BEC, 2000

Now with figure 3 we move forward five years to 2000 and see little difference. The real powerhouse is still the United States, which receives 93.1% of all exports. Canada and the EU15 also figure in the top 4 receiving 1.3% and 1.2% of all exports respectively. Imports on the other hand have changed slightly. The United States is still the highest source of all parts and components imported by Mexico at 76.9%. Notwithstanding, we also see that the EU15 also sends 7.8%, while Japan sends 5%. By 2000 we note that Canada contributed enough to make the top 4 with 2.2% of imports towards Mexico. As mentioned before, we see an important Asian contribution that will only continue to grow and a Canadian importance should not be underestimated after a few years of NAFTA being in effect.



Figure 4: Mexico – Parts and components flows by share (%) of total import and exports, 2005



Source: UN COMTRADE - BEC, 2005

In yet another five-year leap, in figure 4 we can see the changes to Mexico's trade flows in parts and components by 2005. Immediately it can be seen that Mexico's exports of parts and components has not changed much. It still sends a considerable amount to the United States, 91.6% of all exports. Canada and the now EU25 receive 1.9% and 1.6% of Mexico's exports, respectively. China is climbing up the tables into the top 4, receiving 0.7%. More interesting however is the significant changes in Mexico's imports. While the United States is still Mexico's greatest source of imports, only 47% of parts and components comes from there. The EU25, China, and Japan are responsible for 9.9%, 9.7, and 9.2% of Mexico's imports, respectively. This in noteworthy because Mexico has been turning to Asia for its parts and components needs. However they still see across the Atlantic to Europe's largest countries.

Figure 5: Mexico – Parts and components flows by share (%) of total import and exports, 2010



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Finally, in figure 5 interesting changes to Mexico's trade flow of parts and components have occurred by 2010. Mexico still sends most of its exports to the United States (87.7% of the total). Canada received 3.3%, an important increase from five years prior. This again gives credence to the idea that NAFTA may be an important element that facilitates trade between the three largest countries in North America. 2.5% of Mexico's exports went to the EU27 and 0.8% to Brazil. We can thus see that when it comes to exports, Mexico mainly looks to the north, but a small portion goes across the Atlantic and an even smaller portion goes south.

More importantly however are the changes seen in the imports chart. The United States is the source for only 36.5% of Mexico's imported parts and components, while China climbed to 20.6%. This rise reflects China's influence parallel to China's general growth as an important economic competitor to the United States. The fact that Japan sends 8.6% and South Korea 8.2% also contribute to what was mentioned above regarding Mexico's growing consumption of Asian products. The EU27's contribution dropped to 8.2% in five years, suggesting that Mexico is looking away from the Atlantic towards the Pacific.

4.2 Brazil

We now turn to Brazil, another Latin American country and regional powerhouse. Following the same procedure as with Mexico, figures 6, 7, 8, and 9 show Brazil's most important trade flows in parts and components every five years since 1995. The results are interesting for how they differ from Mexico's, but also for how they are alike.



Figure 6: Brazil – Parts and components flows by share (%) of total import and exports, 1995

Source: UN COMTRADE - BEC, 1995



In figure 6 we see Brazil's four most important trade partners in parts and components for 1995. The first interesting observation is that Brazil imported more from the United States than from the EU15 countries. 15.2% of the products came from Europe and 28.7% from the United States. It should also be mentioned that 13.1% of imports from the EU15 came from Germany alone. The other important countries that send products to Brazil are Japan and Argentina with a proportion of 11.2% and 8.8% respectively. On the other hand, we see that the United States receives the largest proportion of Brazil's exports of parts and components at 34.9%. Interesting though is that the second largest buyer is the EU15 receiving 30.1% (of which 6.2% goes to Germany). Third place is Argentina, who receives 19.2% of products. An interesting observation is how close Brazil is to its neighbor Argentina both in import and export of parts and components. Another interesting find that repeats itself in all of the studies is how important Germany's contribution is to Brazil.



Figure 7: Brazil – Parts and components flows by share (%) of total import and exports, 2000

Source: UN COMTRADE - BEC, 2000

Moving forward five years we see little difference when it comes to Brazil's imports. The four main importers are the United States, the EU15, Japan, and Argentina. The United States sent 33.2% of Brazil's products, whereas the EU15 sent 30.2% (of which 10.1% corresponds to Germany). Japan is still an important contributor, accounting for 10.8% of Brazil's imports. However we see an important dip in what Brazil purchased from Argentina as it now only represents 4.6% of their total. On the other hand, Brazil exports 34.6% of its products to the United States. Another noteworthy observation is that the proportion of parts and components exported is almost the same to Argentina as to the EU15, receiving 17.7% and 17%, respectively. Finally, it is a surprise to note that Mexico makes Brazil's top countries to export to, receiving 3.3% of products sent.



Figure 8: Brazil – Parts and components flows by share (%) of total import and exports, 2005



Source: UN COMTRADE - BEC, 2005

Five years later we see some minor differences in Brazil's trade flows in parts and components. We note that the EU25 sent a high percentage of Brazil's products at 31.1%, whereas Brazil purchased 19.6% of its imports from the United States, a considerable amount less. This could be due to the fact that ten countries entered the EU in this five-year period and this does inflate the proportion. It is also important to note the increase of imports from Asia. China was the source of 9.5% of Brazil's parts and components and Japan sent 9.4%. In terms of what Brazil exports, 29.1% goes to the United States. The EU25 purchased 20.2% of total Brazilian products. So we see that Brazil does have an important eye across the Atlantic in terms of market potential. Finally we note that there is a considerable eye on Latin American countries as markets since 14% goes to Argentina and 8.3% to Mexico.

Figure 9: Brazil – Parts and components flows by share (%) of total import and exports, 2010



Source: UN COMTRADE - BEC, 2010



Finally in figure 9 we see Brazil's trade flows in parts and components in 2010. We immediately note a dip in the proportion of products imported from the United States and the EU27, where each sent 15.4% and 23.9% respectively. On the other hand we see an impressive rise in China's contribution at 21.3%, while Japan remains relatively stable at 8.4%. This clearly shows an increasing dominance of Asian products entering Brazil. In terms of exports, the surprise is the proportion of products that go to Argentina. At 29.8%, more parts and components are exported to Brazil's southern neighbor than to any other country. The United States and the EU27 only received 16.9% and 18.3%, respectively, of Brazilian products. Finally we see that Brazil also exported an important amount to Mexico that corresponds to 7.5% of total exports of parts and components.

5. Trade in Value Added in the Atlantic

Mexico and Brazil fit along a continuum capturing different levels of GVC participation. Although we do not have the space in this paper to perform a detailed analysis of the fragmentation of production in all countries of the Atlantic space, we can briefly highlight a few trends we have identified based on the TiVA data we collected.

In table 4 we can see the total domestic value added as a percentage of total gross exports for ten countries.⁴ The results are impressively high. All ten countries domestically add at least 68% of the value to the products they export, and have done so for the past two decades. This is indicative of low levels of GVC participation. Yet, there is some notable variation across countries. In some countries, like Argentina, France, Germany, Mexico and the United States, their contribution to the value of a product uniformly decreased between 1995 and 2005. Other countries increased the value they add in fifteen years, as can be seen in the United Kingdom who added 79.28% of the value of a product in 1995 to 82.69% in 2009. A third group of countries, like Brazil and Canada, their contribution to the value of a product decreased slightly before picking up again by 2009.

Country	1995	2000	2005	2009
Argentina	91.04	89.93	87.16	87.92
Brazil	90.3	88.54	86.99	90.97
Canada	76.47	69.15	74.87	80.46
France	82.16	75.53	75.18	75.25
Germany	81.31	75.6	74.39	73.36
Mexico	73.46	68.17	69.26	69.67
South Africa	88.25	83.86	83.42	83.51

Table 4: Value Added Export Ratio - total domestic value added share of gross exports, %

⁴ The TiVA datasets are only calculated for OECD members and a select number of non-member economies. For this reason it was not possible to get information for Morocco and Nigeria.



Spain	79.41	72.99	72.23	79.27
United Kingdom	79.28	81.63	79.75	82.69
United States	91.64	91.12	88.88	88.71
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Data extracted on 03 Mar 2014 21:50 UTC (GMT) from OECD.Stat

Table 5: Direct domestic industry value added share of gross exports (1995)

Industry	TOTAL	Agriculture, hunting, forestry and fishing	Food products, beverages and tobacco	Textiles, textile products, leather and footwear	Machinery and equipment, nec	Transport equipment	Manufacturing nec; recycling
Country							
Canada	46.17	46.46	36.93	47.08	49.17	37.29	49.18
France	46.5	55.07	29.4	44.1	41.07	33.23	47.61
Germany	43.09	58.18	29.78	38.81	42.88	36.15	43.51
Mexico	39.17	62.74	33.26	35.04	38.67	30.71	35.9
Spain	45.74	53.41	8.22	32.66	40.97	29.11	36.58
United Kingdom	45.55	50.11	26.06	44.08	43.07	35.13	41.35
United States	52.37	42.98	34.37	43.76	49.47	45.16	54.38
Argentina	44.37	59.55	28.17	37.35	39.98	35.47	44.84
Brazil	38.92	63.18	25.67	34.04	50.35	34.57	42.58
South Africa	49.79	58.91	33.56	37.73	37.63	30.32	50.63

Data extracted on 03 Mar 2014 21:50 UTC (GMT) from OECD.Stat

Table 6: Direct domestic industry value added share of gross exports (2000)

Industry	TOTAL	Agriculture, hunting, forestry and fishing	Food products, beverages and tobacco	Textiles, textile products, leather and footwear	Machinery and equipment, nec	Transport equipment	Manufacturing nec; recycling
Country							
Canada	43.35	24.35	30.76	47.69	48.05	31.69	44.63
France	39.21	50.26	23.27	38.52	40.45	25.19	41.93



Germany	40.49	56.91	30.49	38.4	42.61	27.86	42.16
Mexico	39.82	63.6	39.03	36.88	40.16	33.99	38.86
Spain	42.67	56.58	3.76	30.23	43.08	27.45	35.31
United Kingdom	46.6	50.59	37.48	50.5	43.79	36.73	46.66
United States	52.77	35.91	29.39	60.02	46.47	28.33	50.57
Argentina	45.12	59.25	28.14	37.27	39.58	34.93	44.57
Brazil	29.22	44.8	17.51	23.52	46.52	26.38	28.46
South Africa	48.68	55.2	35.55	40.54	38.59	29.03	32.05

Data extracted on 03 Mar 2014 21:51 UTC (GMT) from OECD.Stat

Table 7: Direct domestic industry value added share of gross exports (2005)

Industry	TOTAL	Agriculture, hunting, forestry and fishing	Food products, beverages and tobacco	Textiles, textile products, leather and footwear	Machinery and equipment, nec	Transport equipment	Manufacturing nec; recycling
Country							
Canada	46.02	14.46	34.89	48.7	47.29	29.35	50.04
France	38.09	47.43	21.19	38.58	38.36	23.12	37.77
Germany	40.17	51.04	33.14	38.72	41.03	28.2	40.96
Mexico	41.12	58.76	40.32	37.92	37.82	35.61	36.77
Spain	41.4	54.21	9.25	29.78	41.13	26.66	32.89
United Kingdom	47.88	45.31	37	44.53	41.49	32.8	43.42
United States	51.96	35.95	26.84	63.25	43.52	32.53	51.02
Argentina	46.23	61.32	28.62	38.06	41.3	36.71	45.57
Brazil	40.5	61.71	27.52	44.32	35.42	26.17	51.28
South Africa	45.1	51.09	33.66	35.1		26.7	47.7

Data extracted on 03 Mar 2014 21:51 UTC (GMT) from OECD.Stat



Industry	TOTAL	Agriculture, hunting, forestry and fishing	Food products, beverages and tobacco	Textiles, textile products, leather and footwear	Machinery and equipment, nec	Transport equipment	Manufacturing nec; recycling
Country							
Canada	49.76	39.33	36	50.24	45.88	32.72	48.85
France	39.32	42.56	27.3	39.06	41.71	21.55	50.06
Germany	36.59	50.74	27.51	35.81	37.27	21.9	43.59
Mexico	40.24	57.59	39.15	39.23	38.57	34.87	37.83
Spain	40.72	59.84	24.35	34.79	37.79	26.98	31.97
United Kingdom	51.75	56.21	43.76	47.96	46.71	37.29	47.48
United States	52.9	39.11	29.56	45.37	46.98	36.83	52.4
Argentina	45.77	61.24	28.91	38.18	41.79	37.37	45.92
Brazil	44.7	61.39	27.01	46.27	40.27	32.27	49.81
South Africa	47.23	51.38	31.53	33.24		25.01	46.59

Table 8: Direct domestic industry value added share of gross exports (2009)

Data extracted on 03 Mar 2014 21:52 UTC (GMT) from OECD.Stat

In tables 5 through 8 we can observe the change overtime in the ten countries of the direct domestic value added by specific industries as a share of the total of gross exports. This differs from indirect domestic value added because during the production of a product a country may be required to import or produce another product. For example in the production of a car door, a company needs to make a machine in charge of painting the door, this machine is an indirect value added, while the paint of the door is a direct value added. For the case if this study, only the direct domestic value will be reviewed.

As can be noted with regards to table 4, the total value added domestically by a country was approximately 70-90%. Of this amount 40-50% of the value of a gross export was a direct value added. This is consistent over the fourteen years studied for all the countries. With regards to what industries contribute a greater share of the value, this varies depending on the country. Mexico, Brazil, and Argentina have had an important contribution through agriculture, hunting, forestry, and fishing. On the other hand, the United Kingdom has had an increasing contribution in the food products, beverages, and tobacco industry, becoming the highest by 2009. Notwithstanding, the industry where they add greater value is in agriculture, yet they are not the highest, as was mentioned above.

Another interesting, but unsurprising, observation is that in the fourteen years studied, the United States added more direct value to a product then any other country. Direct domestic value added was over 50% of total gross exports. The countries with the lowest direct value added varied over time. In 1995, Mexico and Brazil were both at



around 39% of direct domestic value. In 2000, Brazil once again had a low contribution not even clearing 30%. In 2005, France had the lowest contribution at around 38%. Finally in 2009, Germany added the least amount of direct domestic value at around 36%.

Source Country	Total	Canada	France	Germany	Mexico	Spain	United Kingdom	United States	Argentina	Brazil	South Africa
Source Industry											
TOTAL	100	0.18	82.16	3	0.07	0.95	1.43	2.34	0.04	0.16	0.11
Agriculture, hunting, forestry and fishing	4.31	0	3.99	0.02	0	0.01	0.01	0.02	0.01	0.02	0
Food products, beverages and tobacco	2.51	0	2.37	0.02	0	0	0.01	0.01	0	0.01	0
Textiles, textile products, leather and footwear	2.16	0	1.87	0.03	0	0.02	0.02	0.01	0	0	0
Machinery and equipment, nec	3.94	0	3.41	0.17	0	0.03	0.05	0.07	0	0	0
Transport equipment	6.2	0	5.34	0.26	0	0.11	0.07	0.18	0	0	0
Manufacturing nec; recycling	1.15	0	1.08	0.01	0	0	0.01	0	0	0	0

Table 9: Shares of value added embodied in France's gross exports by source country and source industry, % (1995)

Data extracted on 10 Mar 2014 17:55 UTC (GMT) from OECD.Stat

Table 10: Shares of value added embodied in France's gross exports by source country and source industry, % (2000)

Source Country	Total	Canada	France	Germany	Mexico	Spain	United Kingdom	United States	Argentina	Brazil	South Africa
Source Industry											
TOTAL	100	0.29	75.53	3.66	0.09	1.18	2.38	3.51	0.05	0.19	0.12
Agriculture, hunting, forestry and	3.41	0	3.06	0.02	0	0.02	0.01	0.01	0.01	0.02	0



fishing											
Food products, beverages and tobacco	1.88	0	1.7	0.02	0	0	0.02	0.01	0	0.02	0
Textiles, textile products, leather and footwear	2.01	0	1.63	0.03	0	0.03	0.02	0.02	0	0	0
Machinery and equipment, nec	4.2	0.01	3.34	0.2	0	0.04	0.07	0.16	0	0	0
Transport equipment	6.79	0.02	5.49	0.37	0.01	0.16	0.16	0.17	0	0	0
Manufacturing nec; recycling	0.97	0	0.82	0.02	0	0.02	0.01	0.02	0	0	0

Data extracted on 10 Mar 2014 17:51 UTC (GMT) from OECD.Stat

Table 11: Shares of value added embodied in France's gross exports by source country and source industry, % (2005)

Source Country	Total	Canada	France	Germany	Mexico	Spain	United Kingdom	United States	Argentina	Brazil	South Africa
Source Industry											
TOTAL	100	0.28	75.18	3.73	0.07	1.3	2	2.62	0.05	0.24	0.04
Agriculture, hunting, forestry and fishing	3.01	0	2.7	0.01	0	0.01	0.01	0.01	0	0.02	0
Food products, beverages and tobacco	1.64	0	1.47	0.01	0	0	0.02	0.01	0	0.01	0
Textiles, textile products, leather and footwear	1.69	0	1.35	0.02	0	0.02	0.02	0.02	0	0	0
Machinery and equipment, nec	4.11	0	3.27	0.21	0	0.04	0.07	0.11	0	0	0
Transport equipment	6.66	0.02	5.38	0.36	0	0.16	0.16	0.19	0	0.01	0
Manufacturing nec; recycling	1.02	0	0.86	0.02	0	0.02	0.02	0.01	0	0	0



Source Country	Total	Canada	France	Germany	Mexico	Spain	United Kingdom	United States	Argentina	Brazil	South Africa
Source Industry											
TOTAL	100	0.27	75.25	3.81	0.08	1.17	1.12	3.05	0.05	0.22	0.03
Agriculture, hunting, forestry and fishing	3.83	0	3.45	0.02	0	0.02	0	0.01	0.01	0.03	0
Food products, beverages and tobacco	2.88	0	2.64	0.01	0	0.01	0.02	0.01	0.01	0.02	0
Textiles, textile products, leather and footwear	1.42	0	1.06	0.02	0	0.02	0.01	0.01	0	0	0
Machinery and equipment, nec	5.31	0.01	4.11	0.37	0	0.05	0.05	0.11	0	0	0
Transport equipment	5.11	0.01	3.91	0.36	0	0.03	0.02	0.47	0	0	0
Manufacturing nec; recycling	1.18	0	1.04	0.01	0	0.02	0	0.01	0	0	0

Table 12: Shares of value added embodied in France's gross exports by source country and source industry, % (2009)

Data extracted on 10 Mar 2014 17:50 UTC (GMT) from OECD.Stat

It is worth reviewing now the shares of value added embodied in gross exports by source country and source industry indicator for two countries, France and Mexico. The reason is to analyze the value added in bilateral flows for certain industries. In an initial analysis of totals for France, regarding the six industries selected, we note that the transport equipment industry has been the most important representing almost 6% of the total value added in exports. By 2009, we can note the increasing importance of the machinery and equipment industry at 5.31%, above the transport equipment sector.

Regarding the source country of a product, it can be noted that the greatest share of value added is to products coming from within France, representing over 75% in the fourteen years studied. More specifically, yet unsurprisingly, domestic products in the transport equipment and machinery industries are the ones that receive the greatest value added by France. As for products coming from other countries, it can be observed that France adds value to products from Germany and the United States at



above 3% of total value added for each. The main industries for both countries are the transport equipment and machinery industries.

Source Country	Total	Canada	France	Germany	Mexico	Spain	United Kingdom	United States	Argentina	Brazil	South Africa
Source Industry											
TOTAL	100	0.54	0.55	1.05	73.46	0.2	0.39	18.13	0.05	0.22	0.05
Agriculture, hunting, forestry and fishing	4.04	0.02	0	0	3.73	0	0	0.2	0	0	0
Food products, beverages and tobacco	1.59	0	0	0.01	1.46	0	0	0.08	0	0	0
Textiles, textile products, leather and footwear	4.18	0.01	0	0.01	3.46	0	0	0.58	0	0	0
Machinery and equipment, nec	1.61	0.01	0.02	0.07	0.8	0.01	0.01	0.56	0	0.01	0
Transport equipment	7.64	0	0.02	0.13	6.69	0.01	0.01	0.55	0	0.01	0
Manufacturing nec; recycling	1.87	0	0	0.01	1.8	0	0	0.04	0	0	0

Table 13: Shares of value added embodied in Mexico's gross exports by source country and source industry, % (1995)

Data extracted on 10 Mar 2014 18:14 UTC (GMT) from OECD.Stat

Table 14: Shares of value added embodied in Mexico's gross exports by source country and source industry, % (2000)

Source Country	Total	Canada	France	Germany	Mexico	Spain	United Kingdom	United States	Argentina	Brazil	South Africa
Source Industry											
TOTAL	100	0.72	0.38	1.15	68.17	0.2	0.46	23.7	0.04	0.25	0.04
Agriculture, hunting, forestry and fishing	2.61	0.01	0	0	2.37	0	0	0.13	0	0.01	0



Food products, beverages and tobacco	1.47	0	0	0	1.37	0	0	0.05	0	0	0
Textiles, textile products, leather and footwear	5.36	0.02	0.01	0.01	4.01	0.01	0.01	1.13	0	0	0
Machinery and equipment, nec	1.48	0.02	0.01	0.05	0.8	0.01	0.01	0.44	0	0.01	0
Transport equipment	9.8	0.08	0.02	0.21	8.1	0.01	0.02	1.07	0	0.03	0
Manufacturing nec; recycling	1.96	0	0	0.01	1.8	0	0	0.1	0	0	0

Data extracted on 10 Mar 2014 18:13 UTC (GMT) from OECD.Stat

Table 15: Shares of value added embodied in Mexico's gross exports by source country and source industry, % (2005)

Source Country	Total	Canada	France	Germany	Mexico	Spain	United Kingdom	United States	Argentina	Brazil	South Africa
Source Industry											
TOTAL	100	0.84	0.53	1.4	69.26	0.33	0.5	15.32	0.07	0.58	0.03
Agriculture, hunting, forestry and fishing	2.37	0.01	0	0	2.04	0	0	0.12	0.01	0.01	0
Food products, beverages and tobacco	1.62	0.01	0	0	1.5	0	0	0.05	0	0	0
Textiles, textile products, leather and footwear	3.67	0.02	0	0.01	2.58	0.01	0.01	0.8	0.01	0.01	0
Machinery and equipment, nec	1.7	0.02	0.02	0.06	0.97	0.01	0.02	0.38	0	0.01	0
Transport equipment	9.28	0.04	0.02	0.15	7.72	0.02	0.02	0.95	0.01	0.08	0
Manufacturing nec; recycling	1.8	0	0	0.01	1.57	0.01	0	0.1	0	0	0

Data extracted on 10 Mar 2014 18:12 UTC (GMT) from OECD.Stat



Source Country	Total	Canada	France	Germany	Mexico	Spain	United Kingdom	United States	Argentina	Brazil	South Africa
Source Industry											
TOTAL	100	0.88	0.38	1.34	69.67	0.26	0.43	12.97	0.06	0.23	0.03
Agriculture, hunting, forestry and fishing	3	0.03	0	0	2.55	0	0	0.18	0	0.01	0
Food products, beverages and tobacco	2.24	0	0	0	2.07	0	0	0.08	0	0	0
Textiles, textile products, leather and footwear	2.26	0.01	0	0	1.78	0.01	0	0.27	0.01	0.01	0
Machinery and equipment, nec	2.03	0.02	0.02	0.08	1.28	0.01	0.02	0.32	0	0.01	0
Transport equipment	8.3	0.02	0.01	0.17	7.52	0	0.01	0.22	0	0.01	0
Manufacturing nec; recycling	1.73	0.01	0	0.01	1.46	0	0	0.11	0	0	0

Table 16: Shares of value added embodied in Mexico's gross exports by source country and source industry, % (2009)

Data extracted on 10 Mar 2014 18:09 UTC (GMT) from OECD.Stat

As for the second case, Mexico, its most significant of the six industries has been transport equipment, having ranged from 7.64% to 9.8% in the fourteen years studied of the 100% of value added to product exports. Most interesting however is that Mexico contributes greater value to products coming from the United States than any other after those of domestic origin. Between 1995 and 2009, in 2000, products from the United States represented 23.7% of the share of the total of value added to exports. Notwithstanding, by 2009, this share had decreased to 12.97%. An interesting observation however is that the value added to products from the United States was not just concentrated to the transport equipment industry. As can be seen, the value added to products in the textiles and machinery industry is of equal significance than the transport equipment industry.

6. Conclusion

In conclusion we found from the UN Comtrade general tables of the trade flows of selected countries that on balance, most import and export consumption and semi-



finished goods. Some minor exceptions included Nigeria, who exported mostly primary goods, and Mexico, who also imports a considerable amount of parts and components. Parts and components are not the most important goods in international trade for the selected countries, which suggests that the levels of GVC participation in the Atlantic are still low.

In a brief analysis of two countries we had some interesting findings. The United States is Mexico's dominant export partner, receiving an average of 90% of total exports. This is unsurprising as the US is Mexico's direct neighbor to the north and a very large market. Imports are slightly more diversified. The United States is an important contributor to Mexico's parts and components needs, although Japan and China have increasingly penetrated the Mexican market. This Asian incursion is important to note because this means that while Mexico is seeking to diversify away from the United States, it is looking more across the Pacific than to the Atlantic. An interesting consideration though is Canada's survival among Mexico's top 4 trading partners. This gives credence to the idea that NAFTA is having some effect on the Mexican and Canadian markets.

On the other hand, after analyzing the Brazilian trade flows we found that the main players have consistently been the United States, the European Union, and Argentina. Originally Brazil exported more to the first two, but over the time studied, more products were exported to Argentina. The main players were the EU, the United States, and Japan, with minor appearances by Mexico, as an important recipient of Brazilian products and China as a minor contributor. This is interesting because Brazil, as opposed to Mexico, does live up to its reputation as a regional powerhouse, especially to the other regional leaders like Argentina and Mexico. Brazil also has a stronger foothold into the European market, which is a positive note for trade in the Atlantic.

Finally, after reviewing several value added datasets, we found that the percentage value added to gross exports from countries is rather high, averaging between 75-80% of the total of an export, corroborating our finding that GVC participation is not high. With the direct domestic value added share of gross exports dataset we could review which industries directly contributed to the value of a product in each of the ten countries studied. The total value added domestically by a country was found to be between 70-90%. Of this amount 40-50% of the value of a gross export was a direct value added. However, which industries contributed more depended on the country. The final sets reviewed were the shares of value added embodied in Mexico and France's gross exports by source country and source industry. The results were interesting because it corroborates Mexico's very close relationship with the United States and France's ties with Germany and the United States, specifically in the transport industry.

Overall, this research highlights the need for Atlantic space countries to design public policies that can promote greater participation in GVC. If countries want to reap the benefits of value chain participation they should continue to remove tariff and non-tariff barriers that restrict the flow of goods, services and capital. The adoption of more predictable and transparent trade and investment regimes should also invite greater exchange among foreign suppliers, international investors, and domestic producers in the Atlantic space. The creation of trade alliances can also help.



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ANNEX 1

Table 1: Selected countries in the Atlantic – Export by stage of production; 1993-2012

													Expor	t (in %)								
Country	Stage of production*		199 3	199 4	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
	Primary	I			24.5			25.3	24.9	28.3	29.2	28.3	28.4	26.6	25.8	22.7	23.4	23.5	18.6	23.1	24.0	24.7
		П			39.1			35.5	38.9	38.5	39.1	42.5	44.1	43.7	41.7	42.6	42.3	42.6	45.3	42.2	41.9	40.3
	Intermediate				5.8			4.9	5.7	5.2	4.5	4.5	4.1	4.5	5.0	4.9	4.8	4.4	4.2	4.1	3.7	3.9
		IV			4.3			5.9	5.1	6.1	5.8	4.8	3.9	3.9	5.4	6.5	6.6	7.0	6.6	7.2	7.5	8.4
	Final	V			26.3			28.4	25.4	21.8	21.4	19.9	19.5	21.3	22.1	23.3	22.8	22.5	25.3	23.5	22.9	22.7
Argentin a	All of the above (billions of US\$)				20.81			25.67	22.06	24.75	24.98	24.04	27.42	31.90	36.49	42.70	51.69	65.66	53.15	65.50	80.89	76.07
	Primary	1			15.5	16.0		19.0	17.4	16.2	17.9	19.5	19.9	19.8	20.4	22.4	24.5	29.1	31.5	37.1	41.3	39.4
		11			46.0	43.6		36.3	38.1	36.2	34.3	35.1	36.8	35.5	34.5	35.0	33.2	31.6	32.6	30.1	29.0	29.7
	Intermediate				11.0	11.3		11.4	10.6	10.7	10.2	9.9	9.8	9.2	9.6	9.6	8.8	8.5	7.4	7.1	7.0	6.9
		IV			8.3	8.5		11.8	12.3	15.6	14.7	13.0	11.1	13.6	14.0	13.1	12.9	12.4	9.2	8.6	8.0	9.1
	Final	V			19.2	20.7		21.5	21.6	21.3	22.9	22.5	22.5	21.9	21.5	20.0	20.7	18.5	19.3	17.2	14.8	14.8
Brazil	All of the above (billions of US\$)				45.65	47.0 0		49.97	47.23	53.34	55.93	57.55	70.48	93.54	113.6 6	132.81	150.80	189.12	147.14	194.14	247.08	230.88
	Primary	I			13.4			12.5	11.7	15.1	16.2	14.9	18.4	18.9	22.1	22.5	23.6	31.5	27.6	27.6	30.9	30.9
		П			36.7			33.0	31.1	30.3	30.1	30.1	29.6	31.3	30.9	32.2	32.5	30.8	29.5	32.5	31.2	28.7
	Intermediate	111			14.8			16.5	16.2	16.0	15.4	15.6	14.3	13.6	13.2	12.7	12.4	10.9	11.7	10.8	10.1	10.9
		IV			13.2			14.5	15.7	15.6	14.5	14.3	13.9	12.6	12.6	12.4	11.9	10.0	11.2	8.9	8.4	8.4
Canada	Final	V			21.9			23.5	25.3	22.9	23.7	25.2	23.7	23.6	21.3	20.3	19.4	16.8	19.9	20.3	19.4	21.2

-			 			-		-		-		-	-			1	r				
	All of the above (billions of US\$)			182.3 3			200.1 5	222.2 3	255.6 7	240.5 8	231.2 1	251.3 7	294.4 4	332.8 7	362.57	393.65	422.00	290.07	362.61	413.99	414.29
	Primary	1		4.4			3.6	3.6	3.4	3.1	3.2	3.4	3.5	3.7	4.0	4.2	4.8	4.3	4.7	5.5	5.0
		11		29.2			26.3	26.1	26.2	25.6	25.5	25.5	25.6	26.0	26.2	27.2	27.1	24.7	24.8	26.0	25.0
	Intermediate	111		18.4			20.4	20.6	20.7	20.1	19.3	18.8	19.1	18.8	19.1	19.3	19.0	18.9	19.5	19.1	18.7
		IV		18.0			19.7	19.5	20.3	20.1	18.7	18.3	17.8	18.1	19.1	18.3	18.5	18.2	19.5	18.8	20.2
	Final	V		29.9			30.0	30.2	29.3	31.1	33.3	34.0	34.0	33.4	31.5	31.1	30.6	33.8	31.4	30.6	31.1
France	All of the above (billions of US\$)			277.1 7			289.4 4	287.0 4	285.0 3	278.6 5	294.6 2	345.0 0	398.7 3	415.4 0	454.60	513.80	563.40	438.50	481.40	549.20	524.70
	Primary	1		1.5			2.0	1.8	2.0	2.0	2.0	2.0	2.1	2.0	2.2	2.1	2.3	2.1	2.5	2.9	2.9
		П		52.1			29.7	28.3	28.5	26.8	27.5	27.0	27.1	27.5	28.2	28.7	29.2	27.4	28.0	28.2	27.4
	Intermediate	111		14.5			19.8	20.4	21.2	20.8	20.2	21.1	20.8	20.5	20.6	20.3	20.0	20.5	20.9	20.8	20.3
		IV		15.3			23.1	23.2	23.4	23.8	23.3	22.0	23.4	23.4	23.2	22.5	22.6	21.9	21.1	21.5	22.2
	Final	V		16.6			25.4	26.3	24.9	26.6	27.1	27.8	26.6	26.6	25.9	26.4	25.9	28.1	27.5	26.6	27.1
German y	All of the above (billions of US\$)			724.9 8			519.6 0	509.7 0	504.4 0	538.2 0	597.6 0	685.6 0	836.1 0	931.4 0	1,066.4 0	1,224.2 0	1,349.6 0	1,029.0 0	1,185.1 0	1,396.8 0	1,330.3 0
	Primary	I		12.9			7.5	8.6	10.8	9.0	9.5	11.8	12.9	15.0	16.1	16.6	17.5	13.5	14.3	16.9	15.7
		11		20.0			16.5	15.1	14.7	14.2	14.0	14.3	15.3	16.2	15.8	16.5	16.2	16.0	16.0	16.8	16.6
	Intermediate			20.8			23.1	23.9	23.1	22.3	23.3	22.7	22.6	21.9	20.4	18.9	17.9	17.4	18.5	18.2	19.9
		IV		16.8			20.0	22.0	22.1	24.6	23.3	23.3	23.0	21.6	21.2	20.4	20.8	23.5	23.6	22.6	23.5
	Final	V		29.4			32.8	30.5	29.3	29.9	29.9	27.9	26.2	25.3	26.5	27.6	27.6	29.5	27.6	25.6	24.5
Mexico	All of the above (billions of US\$)			79.67			116.6 5	134.1 6	164.5 5	157.0 3	158.5 5	162.9 0	185.5 7	209.6 4	245.32	259.26	284.16	223.67	292.46	341.21	362.24
Morocco	Primary	1		11.0	12.1	14.2	9.9	9.1	8.2	7.9	7.7	7.2	8.2	8.7	9.2	9.4	14.8	7.5	10.5	12.1	11.8

		11		34.4	33.9	34.4	21.6	23.0	25.4	27.4	24.3	24.8	27.5	29.1	29.6	32.2	37.8	27.5	33.8	35.7	34.1
	Intermediate			1.4	1.1	1.1	6.9	8.6	8.2	7.1	8.7	9.6	9.7	10.2	10.5	9.3	8.5	12.0	13.8	12.8	12.1
		IV		0.9	0.8	0.6	1.4	1.1	1.0	1.4	1.3	1.2	1.1	1.0	1.7	1.8	1.4	2.5	2.2	1.3	2.2
	Final	V		52.4	52.1	49.7	60.1	58.2	57.1	56.2	58.0	57.2	53.5	51.1	48.9	47.4	37.5	50.4	39.7	38.1	39.7
	All of the above (billions of US\$)			4.73	4.73	4.70	7.07	7.48	7.47	7.14	7.62	8.70	9.71	10.82	12.37	14.22	19.84	13.68	17.43	21.02	20.60
	Primary	1			98.3	95.5	97.8	99.3	99.5	98.3	89.8	96.6	0.0	0.0	98.6	95.9	93.3	88.8	84.0	90.3	86.9
		11			1.1	1.8	1.0	0.3	0.4	1.6	6.2	1.7	0.0	0.0	0.3	2.5	2.9	8.6	12.7	7.5	9.5
	Intermediate	111			0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.3	0.0	0.0	0.0	0.0	0.2	0.5	0.6	0.1	0.1
		IV			0.1	2.7	0.7	0.2	0.1	0.1	3.1	1.3	0.0	0.0	0.8	0.4	2.3	0.4	0.8	1.2	1.3
	Final	V			0.4	0.0	0.5	0.1	0.0	0.0	0.7	0.1	0.0	0.0	0.2	1.2	1.3	1.8	1.9	0.9	2.2
Nigeria	All of the above (billions of US\$)				11.5 2	11.5 6	6.88	16.15	27.17	18.31	18.99	23.81	0.00	0.00	56.02	53.05	81.79	49.55	77.25	111.90	130.72
	Primary	1							22.5	20.6	23.4	18.4	17.7	20.5	20.6	22.4	23.9	26.2	27.9	30.3	28.9
									42.2	46.0	37.8	46.3	49.5	47.4	47.7	47.2	45.1	41.1	42.1	43.4	42.4
	Intermediate	111							7.1	6.2	7.6	6.8	6.9	6.2	6.2	6.1	5.8	5.9	5.6	4.9	5.5
		IV							10.0	9.9	10.1	8.8	8.2	9.7	11.5	11.8	10.9	9.9	8.7	8.6	10.1
	Final	V							18.2	17.2	21.1	19.7	17.8	16.2	14.0	12.5	14.2	16.8	15.7	12.7	13.2
South Africa	All of the above (billions of US\$)								21.52	24.66	22.12	30.82	38.93	45.28	51.27	62.45	72.22	52.52	70.12	91.47	84.34
	Primary	1		1.8			1.9	1.9	2.0	2.1	2.4	2.1	2.1	1.9	1.9	2.2	2.2	2.3	3.0	3.5	3.7
		II		29.3			26.6	26.2	27.1	27.0	26.5	26.3	27.1	28.1	28.8	29.8	30.7	28.0	30.3	31.7	31.6
	Intermediate	111		14.0			16.2	16.3	16.2	15.9	15.4	16.0	16.3	16.4	16.4	15.8	15.5	14.8	14.8	15.0	14.9
Spain	Final	IV		11.8			12.8	13.1	12.3	11.5	11.1	10.9	11.5	12.3	12.9	12.1	11.2	10.8	10.5	11.0	10.6

		V	43.1	42	.6 42	.4 42.	4 43.5	44.7	44.6	43.1	41.3	40.0	40.1	40.4	44.1	41.5	38.7	39.3
	All of the above (billions of US\$)		88.51	105	.5 106 9	.6 106. 2	B 111.0 6 4	121.1 6	150.1 9	174.5 2	181.8 4	201.54	240.00	257.86	208.91	229.98	273.09	255.50
	Primary	I	7.6	5	8 7	.2 10.	4 8.8	9.8	10.1	10.3	10.2	10.2	11.3	13.3	10.8	12.6	13.1	13.8
		11	29.4	21	.7 20	.4 20.	3 20.5	20.1	21.4	22.4	22.0	20.8	24.5	24.9	24.2	23.7	24.9	24.5
	Intermediate		19.6	24	.4 24	.7 22.	8 23.7	22.3	20.7	20.1	19.0	18.1	18.1	16.9	17.9	17.0	16.6	16.3
		IV	20.7	22	.7 21	.8 22.	3 22.0	20.5	18.5	17.4	20.2	24.8	15.5	15.2	14.5	14.5	14.4	13.9
	Final	V	22.7	25	2 25	.8 24.	3 25.1	27.3	29.3	29.9	28.6	26.1	30.6	29.8	32.6	32.3	31.0	31.5
United Kingdo m	All of the above (billions of US\$)		254.9 7	257	.6 255 8	.1 259. 3	0 249.2 6 1	260.1 0	284.9 6	318.5 6	351.7 5	409.34	398.75	409.00	312.83	359.80	415.90	410.30
	Primary	I	8.4	5	.5 5	.0 4.	9 5.2	5.4	6.2	6.4	6.3	6.7	7.9	9.5	9.4	10.0	11.2	9.7
		11	24.9	23	.6 23	.2 23.	5 23.5	24.6	25.4	26.4	26.4	26.6	26.4	28.3	29.5	31.0	31.1	31.2
	Intermediate		28.6	31	.7 31	.8 33.	2 31.8	31.7	30.3	29.2	28.6	26.8	25.5	23.2	21.8	21.2	20.0	20.1
		IV	21.5	24	.0 24	.6 23.	8 23.6	22.1	21.1	21.7	21.8	23.0	23.1	21.5	19.5	19.2	19.5	20.0
	Final	V	16.5	15	.3 15	.5 14.	3 15.9	16.2	17.0	16.2	16.9	16.9	17.1	17.5	19.7	18.6	18.2	18.9
United States	All of the above (billions of US\$)		553.1 5	653	.9 663 0	.8 741. 0	6 703.6 0 0	669.4 0	688.7 0	777.9 0	858.8 0	969.10	1,096.3 0	1,206.9 0	9,115.0 0	1,106.0 0	1,269.4 0	1,302.6 0

* I: Primary goods; Intermediate goods: II: Semi-finished products, III: Parts and Components; Final Goods: IV: Capital goods, V: Consumption goods. Source: UN COMTRADE – BEC Databank

													Imports	(in %)								
Country	Stage of productio n*		199 3	199 4	1995	1996	199 7	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
	Primary	I			4.0			3.3	2.8	3.7	3.9	5.5	4.8	4.6	5.0	4.7	4.8	6.3	3.8	4.0	4.5	5.0
	Intermediat	II			35.0			30.1	31.7	32.4	35.2	47.5	43.5	37.1	34.7	34.2	34.1	33.3	32.2	32.5	32.6	33.7
	e	III			17.4			18.7	17.2	18.9	17.6	17.7	16.9	16.9	18.0	19.2	18.8	18.4	19.9	21.3	21.9	22.9
		IV			24.1			27.8	27.2	23.8	21.0	14.5	18.0	24.2	25.2	24.2	23.9	23.2	23.2	21.3	20.9	18.5
	Final	۷			19.5			20.1	21.1	21.2	22.4	14.7	16.8	17.2	17.0	17.7	18.4	18.8	20.8	20.8	20.2	20.0
Argentin a	All of the above (billions of US\$)				20.14			30.94	25.02	24.86	19.94	8.81	13.61	21.86	27.75	33.42	43.10	54.39	36.63	53.90	67.99	63.35
	Primary	I			11.2	14.1		10.0	11.2	12.5	11.6	13.9	16.2	18.1	17.8	18.2	18.8	17.7	13.6	12.1	13.3	12.4
	Intermediat				33.0	33.0		30.0	30.9	31.5	32.5	33.0	34.1	33.8	31.6	31.2	34.7	33.4	31.7	33.4	32.9	32.9
	е				16.5	17.8		20.6	23.2	25.6	24.7	24.0	24.5	25.3	25.8	24.5	18.6	20.8	21.0	20.9	20.5	21.2
		IV			18.6	19.2		22.1	21.6	19.2	20.5	18.9	15.4	13.7	15.3	15.2	15.7	16.6	18.5	18.1	17.0	17.6
	Final	V			20.8	15.9		17.3	13.1	11.2	10.8	10.3	9.8	9.2	9.6	10.9	12.1	11.5	15.2	15.6	16.2	15.9
Brazil	All of the above (billions of US\$)				53.29	56.7 4		57.90	49.09	52.03	52.70	45.48	46.88	60.37	69.90	87.49	106.22	163.37	123.90	167.85	209.43	207.53
	Primary	I			5.8			5.0	4.8	6.5	6.6	6.4	7.4	8.0	9.4	9.6	10.0	12.4	10.0	10.3	11.1	10.5
	Intermediat	II			22.5			22.7	22.0	22.0	22.6	22.4	22.2	23.4	23.5	23.6	23.2	23.6	23.2	24.5	24.7	23.8
	е				30.1			30.2	31.4	30.3	27.5	26.3	24.7	24.3	23.0	21.6	20.4	18.7	18.7	18.6	18.2	18.8
		IV			19.1			19.9	19.6	19.3	19.3	18.6	18.7	18.3	18.7	19.2	19.0	18.5	18.7	19.2	20.1	20.2
Canada	Final	V			22.5			22.3	22.2	21.8	24.1	26.2	26.8	26.0	25.4	26.0	27.3	26.9	29.3	27.4	26.0	26.7

Table 2: Selected countries in the Atlantic – Import by stage of production; 1993-2012

	All of the above (billions of US\$)		15	i9.6 4	195.4 6	210.0 8	234.14	214.31	216.68	234.68	267.22	304.47	338.36	367.61	390.20	309.40	375.40	423.00	435.80
	Primary	I		7.7	 6.7	6.8	9.5	8.9	8.3	9.0	9.8	11.3	12.4	11.4	14.3	10.7	10.8	13.0	12.9
	Intermediat	11	3	2.6	 29.8	28.4	28.4	28.4	28.5	28.3	27.8	27.6	27.5	28.8	27.8	27.1	28.2	27.9	27.7
	e		1	5.3	19.1	18.8	19.2	18.5	17.8	17.7	17.4	16.7	16.2	16.1	15.5	15.5	15.8	15.1	15.3
		IV	1	5.1	15.8	16.5	15.8	15.9	15.1	14.3	14.8	14.6	15.0	14.0	13.4	13.6	14.4	14.5	14.8
	Final	V	2	9.2	 28.7	29.5	27.2	28.2	30.2	30.8	30.3	29.7	28.9	29.7	29.0	33.1	30.9	29.5	29.3
France	All of the above (billions of US\$)		27	'3.8 3	283.3 0	282.4 0	297.10	286.40	297.70	356.70	419.60	460.20	506.40	591.50	664.50	522.30	576.50	663.30	626.30
	Primary	I		7.3	8.0	8.0	10.6	9.9	9.9	10.5	11.1	12.5	13.6	13.3	16.1	13.2	13.5	15.1	16.9
	Intermediat	11	2	7.7	 28.4	26.5	26.3	27.0	26.6	25.2	26.3	27.1	27.9	30.0	29.4	27.5	28.3	29.0	27.8
	e	111	1	1.9	17.8	19.1	19.7	20.0	19.8	20.6	20.0	19.4	19.1	19.2	18.3	18.4	19.7	18.8	18.0
		IV		9.6	16.5	17.2	17.8	17.0	16.2	15.9	16.4	16.4	16.5	14.3	14.3	14.8	15.4	14.3	14.1
	Final	V	2	23.5	29.2	29.2	25.6	26.0	27.5	27.8	26.1	24.6	22.9	23.1	21.9	26.0	23.1	22.9	23.2
German y	All of the above (billions of US\$)		63	0.1 0	437.5 0	429.8 0	431.80	459.20	469.10	534.80	634.30	731.90	858.90	936.70	1,070.3 0	841.90	964.90	1,161.6 0	1,058.9 0
	Primary	I		5.2	4.5	3.8	3.6	3.8	4.1	4.8	5.1	4.6	4.5	4.7	5.9	4.8	4.7	5.6	4.4
	Intermediat	11	3	5.7	32.2	32.0	31.4	30.3	30.6	31.9	31.9	32.3	31.9	32.7	31.6	30.4	30.6	31.2	31.3
	e	111	2	27.7	30.1	31.6	32.3	32.1	31.3	30.4	30.4	29.7	29.6	27.0	28.5	30.9	32.6	31.7	32.1
		IV	1	6.8	18.3	18.6	18.8	18.6	17.3	16.8	17.6	18.0	18.7	20.2	19.6	19.2	18.1	18.2	19.2
	Final	V	1	4.6	14.9	14.0	13.9	15.2	16.7	16.1	15.1	15.4	15.3	15.3	14.3	14.7	14.0	13.3	13.1
Mexico	All of the above (billions of		67	.17	119.4 1	136.2 1	166.93	165.21	163.19	167.63	190.85	211.95	243.62	251.46	283.77	217.00	276.03	315.61	332.91

	US\$)																				
	Primary	I		25.6	25.5	25.4	16.5	19.0	23.7	23.4	21.6	17.1	20.2	24.3	21.6	22.5	24.6	16.4	19.5	22.0	24.1
	Intermediat	II		41.0	39.8	40.1	43.7	40.3	39.2	41.6	41.4	43.2	40.1	38.0	40.5	39.0	37.7	38.7	39.6	41.4	39.4
	e	111		5.5	6.4	6.2	10.1	9.8	7.5	7.6	7.6	8.5	9.0	8.0	7.3	9.0	9.0	10.8	10.2	10.4	9.5
		IV		17.5	16.6	15.8	17.5	18.6	18.1	14.6	16.2	17.1	16.7	16.2	16.7	15.9	16.3	18.4	15.8	12.5	12.6
	Final	V		10.4	11.6	12.4	12.2	12.3	11.4	12.8	13.1	14.0	13.9	13.5	13.9	13.6	12.3	15.7	14.9	13.7	14.4
Morocc o	All of the above (billions of US\$)			8.51	8.27	7.84	10.30	10.76	11.53	11.03	11.71	13.54	17.34	20.18	22.40	30.17	39.80	30.47	32.28	40.38	39.84
	Primary	I			7.4	8.4	7.4	12.4	5.9	7.8	5.4	4.3	0.0	0.0	7.9	7.9	3.6	4.8	3.3	13.6	6.0
	Intermediat e	Ш			42.4	39.3	40.1	39.9	40.1	38.3	37.6	35.6	0.0	0.0	37.5	40.6	37.8	32.3	31.9	28.2	32.3
		Ш			13.5	12.6	12.9	9.2	9.0	7.6	10.1	16.7	0.0	0.0	10.9	8.6	11.2	15.4	16.4	10.5	10.2
		IV			19.7	21.1	19.6	16.3	19.4	17.7	23.5	23.6	0.0	0.0	26.1	20.9	28.6	23.6	24.0	17.3	20.7
	Final	V			17.0	18.6	19.9	22.3	25.7	28.6	23.3	19.8	0.0	0.0	17.7	21.9	18.7	24.0	24.6	30.4	30.7
Nigeria	All of the above (billions of US\$)				5.28	6.21	5.71	4.47	5.79	7.87	8.68	13.06	0.00	0.00	21.67	32.03	27.58	33.11	43.41	58.29	35.29
	Primary	I							18.5	18.0	17.3	16.9	18.5	17.6	19.6	19.6	23.7	20.3	18.1	19.1	20.7
	Intermediat	II							25.3	24.6	26.0	24.6	22.6	21.4	22.4	22.9	22.7	23.2	23.5	23.9	22.5
	e								15.2	15.2	15.3	15.2	14.3	14.0	14.1	13.5	13.5	14.4	14.0	13.0	12.5
		IV							24.1	25.6	24.8	25.3	24.4	24.7	22.7	23.8	23.6	21.9	22.4	23.0	22.5
	Final	V							16.9	16.6	16.5	18.0	20.1	22.3	21.3	20.2	16.5	20.2	22.0	21.0	21.8
South Africa	All of the above (billions of US\$)								24.34	23.04	23.51	30.83	42.56	48.16	60.48	70.31	76.77	57.10	71.34	87.84	88.98
Spain	Primary	I		13.3			10.6	10.1	13.8	12.4	12.1	11.1	11.6	13.5	14.7	14.1	17.2	14.9	17.2	20.4	24.1

	Intermediat	II	3	0.6		28.2	25.7	25.8	26.4	26.8	26.8	26.2	25.6	26.6	27.0	27.2	27.0	27.0	27.3	26.6
	e	III	1	7.8		18.7	19.1	18.1	17.3	17.5	17.4	16.7	15.0	15.2	16.2	16.5	15.2	15.0	14.4	13.7
		IV	1	3.3		15.4	17.4	16.3	15.3	14.3	14.3	14.6	15.7	14.6	13.7	11.7	11.0	10.7	9.4	8.7
	Final	V	2	5.0		27.1	27.7	26.0	28.6	29.3	30.4	30.8	30.2	28.9	29.0	27.4	31.8	30.2	28.5	26.9
	All of the above (billions of US\$)		11	4.1 4		133.5 5	146.4 8	148.93	150.24	160.16	201.66	251.00	280.40	314.80	376.20	398.90	275.60	300.50	340.90	305.90
	Primary	1		6.4		5.3	5.6	7.1	5.3	6.1	6.4	7.6	9.3	10.0	9.1	13.3	10.5	11.3	13.5	13.8
	Intermediat	II	3	2.6		23.6	21.9	21.7	22.0	21.9	22.2	22.5	22.0	22.4	25.0	23.5	23.3	24.8	24.5	25.5
	е	Ш	1	8.4		21.0	21.7	21.8	19.9	18.0	17.2	16.5	15.9	15.4	15.5	14.8	14.3	14.3	14.3	13.8
		IV	1	6.9		19.2	18.8	18.3	17.6	16.2	16.2	16.5	16.8	17.9	14.6	13.9	13.9	14.1	13.4	13.2
	Final	V	2	5.7		30.9	32.0	31.2	35.1	37.7	38.0	36.9	35.9	34.3	35.8	34.5	38.0	35.5	34.3	33.8
United Kingdo m	All of the above (billions of US\$)		28	2.4 3		305.2 5	309.2 7	316.72	301.12	322.04	365.22	436.90	465.40	514.50	581.40	582.30	441.10	517.70	585.60	588.30
	Primary	1		8.7		7.1	7.7	10.0	10.1	9.7	11.8	12.6	15.0	16.0	16.3	21.1	15.7	16.8	18.9	17.0
	Intermediat	Ш	2	2.0		20.9	19.7	19.6	19.9	19.2	19.6	21.4	21.0	21.2	20.7	20.7	19.1	19.4	20.3	20.1
	е	111	2	1.5		20.1	20.7	19.8	18.1	16.9	15.7	15.8	15.5	15.1	14.9	13.5	14.6	15.2	15.1	15.7
		IV	1	8.1		19.4	19.1	19.1	18.5	18.0	18.1	17.8	17.6	17.2	17.4	16.4	18.9	18.2	18.0	18.7
	Final	V	2	9.6		32.4	32.9	31.4	33.5	36.1	34.7	32.4	30.9	30.5	30.8	28.3	31.7	30.4	27.7	28.6
United States	All of the above (billions of US\$)		75	6.4 0		890.0 0	996.9 0	1,164.7 0	1,103.5 0	1,128.6 0	1,229.7 0	1,419.9 0	1,612.4 0	1,783.3 0	1,883.4 0	2,001.8 0	1,490.2 0	1,843.0 0	2,113.8 0	2,169.4 0

* I: Primary goods; Intermediate goods: II: Semi-finished products, III: Parts and Components; Final Goods: IV: Capital goods, V: Consumption goods. Source: UN COMTRADE – BEC Databank