Can the *maquiladora* industry act as a catalyst for industrial development in Nicaragua? Some thoughts based on the study of Nien Hsing Textile Co.[1]

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Abstract: Nicaragua, the poorest country of Central American, gives shelter to many foreign owned plants in its free trade zones (export processing zones). In December 2006, some 80.000 persons worked in these industrial zones. The great majority of these plants belong to the clothing industry and most of them are of Asian capital. But, does this *maquiladora* industry - an assembly industry of imported intermediate goods that benefits from a preferential tax and tariff treatment - contribute to a genuine industrial development of Nicaragua? This paper tries to give some elements of answer to this question by studying the evolution of a Taiwanese *maquiladora* enterprise assembling jeans and casual wear in Nicaragua: Nien Hsing Textile Co. Our study casts doubts on the contribution of such a foreign enterprise to the development of a perennial local industrial structure: there are no backward linkages, the Nicaraguan employees are not qualified and realise manual and routine tasks, and management is mostly composed of expatriates. Moreover, our comparison between the situation in 2007 and the one in 1998 shows us that there have no been significant changes: the enterprise remains an economic enclave manufacturing a basic or standardized garment whose permanence in the country still depends on specific trade policy advantages (with an expiry date) enjoyed by Nicaragua.

Key words: *Maquila*, export-processing zone, Nicaragua, clothing industry, international subcontracting, foreign investment, economic development.
JEL codes: F23, L67, O14.

"(The foreign enterprises operating in the Nicaraguan free trade zone constitute) the snow that lies on the mountain peak and that, during the thaw, becomes water that aids the valley terrain to become more fertile" (Mr. España Olivero[2], advisor from the Nicaragua Department for Industry and Commerce).

Next to the international airport of Managua, the capital of Nicaragua, lies the free trade zone (export processing zone) "Las Mercedes". In December 2006, some 25,500 people worked there, 64% of which were women (especially young women). Most of the enterprises operating in this zone are of Asian capital, mainly Taiwanese, and they belong to the clothing sector (see Table 4). They are subcontractors, which assemble clothing items for North-American companies (retailers, such as Wal-Mart or JCPenney, and brand name marketers or manufacturers such as VF Jeans, Levi Strauss, Dickies, etc.). The near totality of their production goes to the US market. The free trade zone "Las Mercedes" is one of the many examples of what is called in the Caribbean Basin countries (Mexico, Central America and the Dominican Republic) the *maquiladora* industry[3].

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[2] Cited in Meléndez (2002).
[3] The term *maquila* or *maquiladora* industry is used to refer to an export industry that assembles imported intermediate goods and that enjoys preferential fiscal and tariff treatment (the companies do not pay taxes, nor pay tariffs on the imported intermediate goods).

Are these zones really “zones of hope in the Nicaragua in the new era” as was written in a poster at the entrance of the offices of free trade zone “Las Mercedes”? Or, in other words, does the *maquiladora* industry really contribute to a sustainable (long-term) industrial development of Nicaragua?

In 1998, during a first field research, we observed that the enterprises of the free trade zone “Las Mercedes” formed an enclave. Everything came from the exterior: the material inputs (fabric, thread, buttons, zippers, etc.) were all imported and the enterprises’ managers were expatriates. The enterprises employed Nicaraguan workers mainly to carry out manual and routine tasks on the production line. Furthermore, these enterprises were footloose; they could easily abandon Nicaragua to settle in another country (van Wunnik, 2001).

One argument used then by the defenders of the free trade zones was that the Nicaraguan export industry was still in its first (infant) phase. Gradually, it would, like the Asian emerging economies, upgrade. In other words, progressively, these enterprises would become more embedded in the territory (developing links with local suppliers, employing local managers, etc.) and would carry out activities that are more complex.

To verify the existence of this “upgrading hope”, we realised a new field research in March 2007. We decided to focus our study on the evolution of a Taiwanese *maquiladora* enterprise – Nien Hsing Textile Co. – that manufactures jeans and tweed trousers in Nicaragua for its North-American customers (Levi Strauss, VF Jeans, Tommy Hilfiger Jeans, Wal-Mart, JC Penney, etc.). In 1998, it had three plants in Nicaragua and, in 2007, it had seven (employing a total of 16.200 workers). It is the biggest *maquiladora* enterprise in Nicaragua and three of its plants (the three plants it possessed already in 1998) are in the free trade zone “Las Mercedes”.

We have divided our paper into two parts. The first one is a descriptive part. We present Nien Hsing Textile Co. and the environment in which it operates: the socio-economic context of Nicaragua, the export-oriented industrial policy followed by the Nicaraguan governments with the free trade zones regime, the textile-clothing industry, the past and present international trade agreements that affect the clothing industry in the Caribbean Basin and Nicaragua, etc.

In the second part, basing us on the case study of Nien Hsing Textile Co., we express our doubts about the contribution of this type of export assembly industry to the long-term industrial development of Nicaragua. It is an industry that has all the characteristics of an economic enclave and its permanence in Nicaragua is uncertain as it depends, in large part, on specific trade policy advantages enjoyed by Nicaragua.

PART I: DESCRIPTION

In this descriptive part, we present, in the first section, the economic context of Nicaragua. In the second section, we explain the working of the free trade zones regime in Nicaragua and the arguments used to defend the implantation of such a regime. In the third section, we present the free trade zone “Las Mercedes”. In the fourth section, we describe the (generic) *maquiladora* enterprise of the textile-clothing sector (the textile-clothing value chain and the two subcontracting modalities offered to the customer). In the fifth section, w present the Taiwanese *maquiladora* subsidiary Nien Hsing Textile Co. Finally, in the sixth section, we explain the US trade policy towards Nicaragua; it is the main reason why Asian firms are assembling clothes in Nicaragua for the US market.

1. The Nicaraguan economy

Nicaragua is a Central American country of some 5.75 million inhabitants (as of 2005) (see Figure 1). Its demographic growth is high (between 2.6% and 3% annually between 1995 and 2005). The economic situation of the country is difficult: with a GDP per capita of US$850 in 2005, it is one of the poorest countries in Latin America[4] (Banco Central de Nicaragua, 2007). The situation on the job market is also bad. The economy does not create enough jobs to absorb the many people who arrive year after year on the labour market. It would have to create some 100,000 jobs per year to prevent the labour market situation to worsen[5]. For example, in Managua – the capital – around 41% of the economically active population was either unemployed or underemployed in 2005[6]. All these factors must explain the important emigration experienced by Nicaragua. About 10% of the Nicaraguans reside permanently in another country, mainly in the United States and in Costa Rica (Baumeister, 2006).

As for its interactions with the outside world, Nicaragua is faced with significant imbalances on its trade balance and its current account. In 2005, its merchandises imports represented, in value, almost two times its merchandises exports. The remittances sent by the emigrants partially rebalance its current account. Nevertheless, its current account deficit represented, in 2004, 15.5% of its GDP (Banco Central de Nicaragua, 2007). Nicaragua is heavily indebted to other countries. However, it has been able, thanks to agreements with multilateral institutions and certain creditor countries, to reduce significantly its foreign debt over the course of the last years[7].

Finally, referring to the manufacturing industry, Nicaraguan manufacturing is poorly developed: it has difficulties competing with foreign enterprises, including the Central Americans, in both price and quality of the product. In addition, it depends largely on the import of intermediary inputs and capital goods. The stock of capital goods is old, the domestic entrepreneurs do not invest in the domestic manufacturing industry, and bank credits are scarce and expensive. In addition, the industry has grapple with other important constraints such as a clear deficit of

[4] Due to its recent turbulent history (the Sandinista revolution at the end of the 1970’s, the war against the Contras, the socialization of the economy, the capital flight and the hyper-inflation in the 1980’s, the disapearance of the cotton activity, the difficult transition from a socialist to a market economy at the start of the 1990’s, etc.), Nicaragua’s real GDP in 1999 was 18% lower than it was in 1977 (CADIN, 2001).

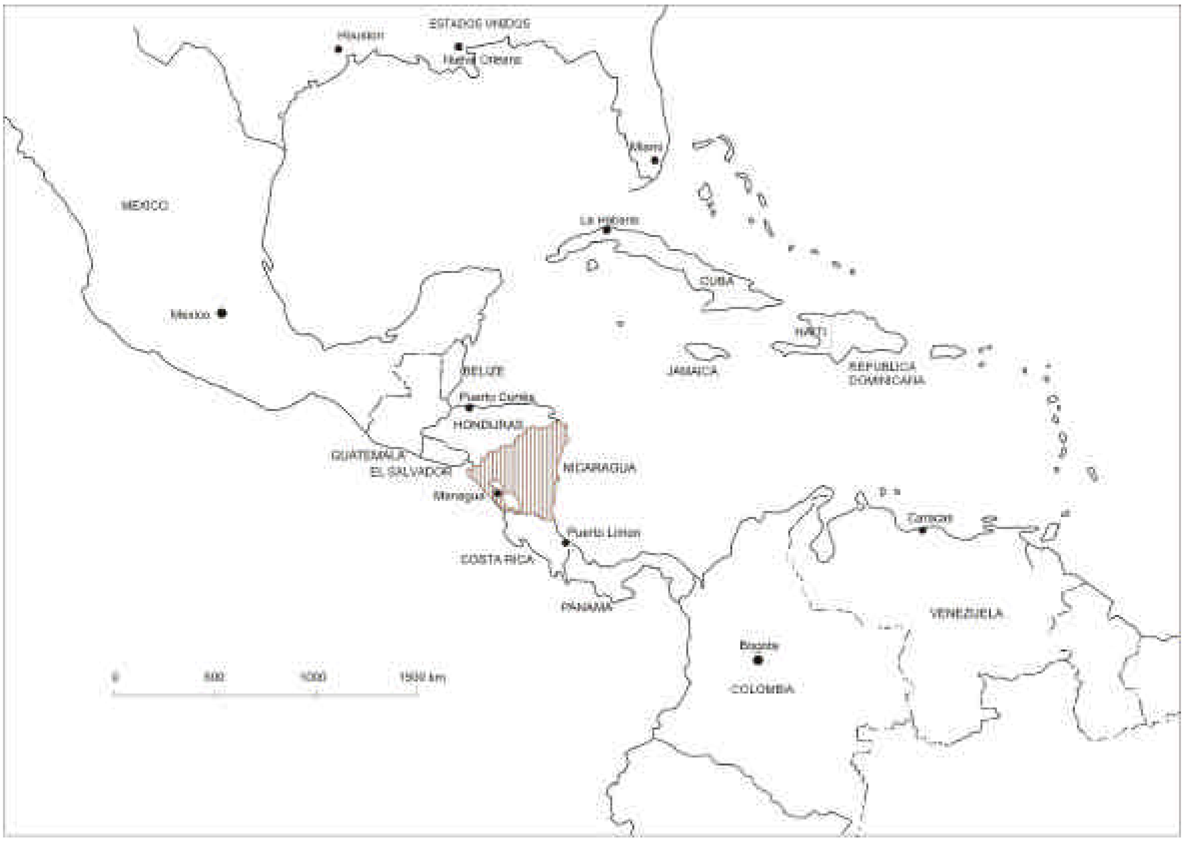
[5] Interview with Roser Solà Montserrat. (At the end of the article, the reader will find the list of the persons interviewed during our field research in Nicaragua.)

[6] *Instituto Nacional de Estadísticas y Censo* (INEC) cited in PEMCE (2006).

[7] Nicaragua is member of the HIPC, *Heavily Indebted Poor Countries*. This is an initiative launched by the International Monetary Fund and the World Bank, which aims to assist the least developed highly indebted countries by reducing their external debt repayments to sustainable levels.

infrastructures (roads, ports, etc.), costly electricity subject to power cuts and voltage drops, and public sector bureaucracy (Amaya, 1998; CADIN, 2001; PEMCE, 2006; World Bank, 2004).

Figure 1: Nicaragua in the Caribbean Basin



2. The free trade zones regime in Nicaragua

Since the beginning of the 1990's, after the Sandinistas abandoned power, the Nicaraguan governing authorities have used the "industrial export free trade zones" (*zonas francas industriales de exportación*) to attract foreign manufacturing investment in the hope that these would create jobs and act as a catalyst for the industrialization of the country. In the framework of the free trade zone regime, the investor (*maquiladora* enterprise) benefits from buildings for rent in a guarded industrial zone, complete tax and customs duties exemption on its activity and the right to repatriate its profits and capital freely (see Table 1 for an explanation of the two actors in the free trade zone regime: the free trade zone (*empresa operadora*) and the *maquiladora* enterprise (*empresa usuaria*)). All the Central American countries offer these types of advantages in the framework of their respective free trade zones.

Over the course of the last decade, the activity of the (*maquiladora*) enterprises operating under the free trade zones regime in Nicaragua has experienced an important expansion. In 1998, these enterprises employed some 18 0000 workers. In December 2006, the number of employees of these enterprises was of the order of 80.000 workers. The activity continued to be, just as in 1998, essentially that of the manufacture of clothing (in 2006, the clothing industry employed more than 85% of the employees of all the enterprises in the free trade zones). In 2006, exports by companies in the free zones (US$680 million) represented 44% of the total exports of Nicaragua. In 2005, local added value, i.e. exports of assembled goods minus imports of intermediary goods, generated by the enterprises of the free trade zones (US$210 million) represented around a quarter of the gross added value of the country's manufacturing industry[8]. The local added value generated by this industry in the totality of the five countries of Central America (Guatemala, Honduras, El Salvador, Nicaragua and Costa Rica) plus the Dominican Republic (the DR-CAFTA zone) was, in 2005, around US$2.5 billion (see Table 2). In the majority of these countries, with the exception of Costa Rica (electronics), the main export product is clothing for the US market (CEPAL, 2007).

Table 1: The two types of enterprises in the Nicaraguan free trade zone regime: the free trade zone and the *maquiladora* enterprise.

The free trade zone *(empresa operadora)*	**The *maquiladora* enterprise** *(empresa usuaria)*
– Runs the free trade zone. – Is the owner of the land, the buildings, and the equipment of the free trade zone. – Rents these facilities to the *maquiladora* enterprises (*empresas usuarias*), including maintenance services and security. – Benefits from tax advantages, such as the exemption from payment of the corporation tax. – The free trade zone can be private or public (such as the free trade zone "Las Mercedes").	– Rents the buildings from the free trade zone (*empresa operadora*)[(a)]. – Carries out the assembly of imported products. – Is the owner of the machines and the other equipment needed for production (sewing machines, washing machines, etc.). – Can freely repatriate both its capital and the profits generated. – Benefits from tax advantages, as may be the exemption from payment of the corporation tax[(b)] as well as from tariffs on imports of intermediary goods, raw materials, machines, etc. – Cannot sell the final products (assembled in Nicaragua) on the domestic market.

Notes: (a) In September 1998, the monthly rent in the free trade zone "Las Mercedes" was US $3.3 per m^2 of industrial roof (m^2 of building). According to the National Commission on the Free Trade Zones, in 2008, rents ranges between US$3,5 and US$4 per m^2 of industrial roof.
(b) The rate of the corporation tax in Nicaragua is in 2008, and was in 1998, 30% of the profits.

Table 2: The *maquiladora* industry or IMANE (*Industria Manufacturera de Exportación* – Export Manufacturing Industry) in the DR-CAFTA zone (2006).

Country	**Employment**	**Exports (US$ millions)**	**Share of exports in total merchandises exports (%)**	**Gross value added (US$ millions)**	**Share in GDP (%)**
Costa Rica	43.060	4.741,30	57,8	1100,2*	5,5*
El Salvador	79.868	1.602,00	45,6	381,40	2,1
Guatemala	144.361	2.601,10	43,2	463	1,3
Honduras	130.145	2.845,60	59,6	596,6	6,5
Nicaragua	80.515	931,9	47,1	250	4,7
Dominican Rep.	148.411	4.553,7	70	...	2,3*
DR-CAFTA	626.360	17.275,6	55,9	...	...

Note: * 2005
Source: CEPAL (2007).

[8] Data from the *Banco Central de Nicaragua* (2007) and the *Comisión Nacional de las Zonas Francas* (a public-sector organization that manages the free trade zone regimes).

The World Trade Organization wants to ban the free trade zones (export processing zones) regimes, because it considers that these zones offer a preferential trade treatment to export enterprises. In other words, the fiscal free trade zones benefits are considered a form of export subsidy. However, it seems that Nicaragua, being a poor country with a GDP per capita below US$1.000, may, in contrast to the majority of the other countries of the Caribbean Basin, maintain its free trade zones regime after 2008 until 2015 (Sánchez y Vos, 2006; WTO, 2007).

3. The free trade zone "Las Mercedes" (June 1998 vs. December 2006)

In June 1998, the 15 establishments of the free trade zone "Las Mercedes" employed around 14,000 workers (essentially young women). The vast majority of these establishments belonged to the clothing industry (13 establishments) and were of foreign capital (Asia, United States and Italian) (14 establishments) (see Table 3). The clothing industry establishments were subcontractors, which carried out the assembly of clothing for US customers.

Eight and a half years later, the main activity of the establishments of the free trade zone remains unchanged: they are still essentially subcontracted enterprises of the clothing industry. Nor has the origin of these enterprises changed: they are still foreign capital enterprises. The number of workers of the establishments of the zone has increased significantly: it has risen to approximately 25.500 workers (see Table 4).

Compared to 1998, six establishments left the zone (Confenic, Cupid, Ecconic, Hope, Jem III, Mil Colours, Nicseda). Ecconic and Mil Colores went to another free trade zone in Nicaragua. Two establishments changed their name: Chentex is now called Henry Garments and Ronaco DyM[9]. Seven new establishments established in the zone.

[9] It seems that the *maquiladora* enterprises have the tendency to change the name of their enterprise after 10 years of presence in Nicaragua so as to be able to continue to benefit from the 100% corporate tax exemption. The law governing the free trade zones authorizes a 100% exemption only over the course of the first ten years of operation of the enterprise, starting as of the eleventh year it becomes a 60% exemption.

Table 3: Establishments in the free trade zone “Las Mercedes” in June 1998.

Establishment	Capital nationality	Activity	Manufactured items	Jobs (Jun-98) number	Jobs (Jun-98) %	Industrial roof (m^2) (jun-98)	Costumers	Installation date
Confenic	Nicaragua	Clothing	Women's underwear	200	1,42%	2.423	Sara Lee Knits	Dec-94
Cupido	Korea	Handcraft	Artificial flowers	45	0,32%	370		Jun-94
Chentex	Taiwan	Clothing	Jeans (pants, shorts)	1.715	12,15%	13.301	Bugle Boy	Jun-95
Chih Hsing	Taiwan	Clothing	Trousers, shorts	2.211	15,66%	20.130		May-97
China United	Taiwan	Clothing	Tee-shirts, Shirts	1.310	9,28%	11.173	Tommy Hilfiger, Perry Ellis	Jan-96
Ecconic	Italy	Footwear	Footwear	234	1,66%	3.600		Jan-92
Esperanza	Korea	Clothing	Tee-shirts	476	3,37%	2.438		Apr-97
Fortex	Taiwan	Clothing	Pants, shorts, shirts	1.551	10,99%	7.200	JC Penney, Kmart, Montgomery Ward	Aug-92
Istmo	Korea	Clothing	Shirts, trousers	1.255	8,89%	9.276	Sears Roebuck, Casual corner, JC Penney, etc.	Nov-93
Jem III	USA	Clothing	Shirts, chaquetas	365	2,59%	3.630		Dec-97
Metro Garments	Hong Kong	Clothing	Knit-shirts (Tee-shirts)	549	3,89%	3.640		Aug-95
Mil Colores	USA	Clothing	Trousers, shirts	838	5,94%	4.800		Aug-97
Nicseda	Korea	Clothing	Knit-polo, T-shirts, Turtleneck shirts		0,00%	2.454	Eskay&Co., Gabtee Inc.	Nov-93
Nien Hsing	Taiwan	Clothing	Jeans (pants, shorts)	1.687	11,95%	12.511	Bugle Boy, Lee Cooper, Río, Bill Blas, C&Y, etc.	Mar-94
Rocedes	USA	Clothing	Jeans (pants, shorts)	1.313	9,30%	6.597	Montgomery Ward, Wal-Mart, JC Penney, etc.	Jul-93
Ronaco	USA	Clothing	Pants, shorts, shirts	369	2,61%	1.600	Eddy Haggar, Ocean Pacific,Lee Thomas Inc.	Nov-91
				14.118	**100%**	**105.143**		

Sources: *Corporación de las Zonas Francas*, Gerencia Normativa & Control (1998) and Marschall (1998)

Table 4: Establishments in the free trade zone “Las Mercedes” in December 2006.

Establishment	Capital nationality	Activity	Approbation date	Date beginning of operations	Employed workers (Dec-06) Men	Women	TOTAL	%	Industrial roof m² (Dec-06)
Henry Garments, S.A.	Taiwan	Clothing	5-Apr-02	1-Jul-05	1.022	1.845	2.867	11,25%	16.932
Chih Hsing Garments	Taiwan	Clothing	25-Feb-97	1-may-97	821	1.963	2.784	10,93%	16.767
China United Internacional	Taiwan	Clothing	28-Nov-05	28-Nov-05	420	1.372	1.792	7,03%	21.528
China Unique Garments MFG	Taiwan	Clothing	1-Jan-02	1-Aug-02	263	608	871	3,42%	9.415
Formosa Textil, S.A.	Taiwan	Clothing	6-may-98	16-mar-99	245	1.387	1.632	6,41%	17.024
Fortex Industrial Nic., S.A.	Taiwan	Clothing	1-Aug-92	1-Aug-92	230	646	876	3,44%	10.114
Hansae Nicaragua, S.A.	Korea	Clothing	16-Dec-99	1-Jan-00	1.786	2.358	4.144	16,27%	27.758
Istmo textil Nicaragua S, A	Korea	Clothing	24-Feb-05	24-Feb-05	1.347	1.731	3.078	12,08%	25.445
Metro Garments, S.A.	Hong Kong	Clothing	1-Jun-95	17-Aug-95	442	305	747	2,93%	8.611
Nien Hsing Garments, S.A.	Taiwan	Clothing	22-Dec-03	22-Dec-03	633	2.409	3.042	11,94%	12.511
Ropa de las Mercedes, S.A. (Rocedes)	U.S.A	Clothing	9-Feb-93	13-Jul-93	1.393	663	2.056	8,07%	14.037
Maquiladora D & M, S.A.	El Salvador	Clothing	1-Nov-91	1-Nov-91	272	215	487	1,91%	2.200
Sinonica Industrial, S.A.	Taiwan	Clothing	24-Aug-00	1-sep-00	348	721	1.069	4,20%	7.998
Sun Star Nicaragua S.A.	Korea	Spare parts	15-Oct-04	30-Nov-05	2	1	3	0,01%	360
Command Medical Nicaragua S.A.	U.S.A	Medical acc.	24-Feb-05	15-Oct-05	3	8	11	0,04%	818
Finotex S.A.	Honduras	Labels	22-Aug-05	15-Oct-05	2	0	2	0,01%	100
Rocedes Apparel, S.A.	U.S.A	Clothing	29-Jun-00	18-Aug-00	14	0	14	0,05%	0
Nassa	U.S.A	Clothing	15-Oct-04	15-Oct-04	0	0	0	0,00%	0
Sinai	El Salvador	Spare parts	11-Oct-05	30-Nov-05	2	1	3	0,01%	30
Dasoltex S.A.	Korea	Clothing	21-Dec-06	21-Dec-06					3.642
Bun-Ter Company S.A.	Hong Kong	Clothing	21-Dec-06	21-Dec-06					4.404
					9.245	**16.233**	**25.478**	**100%**	**199.693**

Source: *Comisión Nacional de las Zonas Francas.*

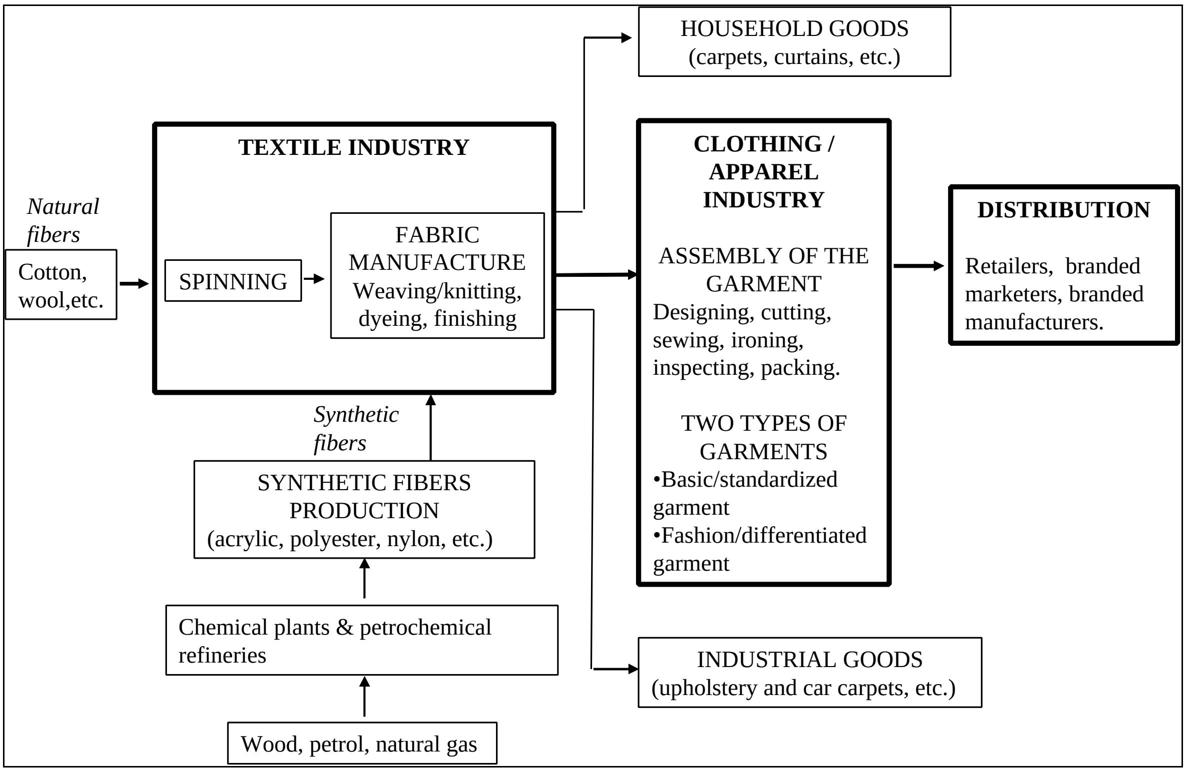
4. The *maquiladora* enterprise

In this section, we focus on the description of the (generic) *maquiladora* enterprise of the clothing industry. Firstly, we present some characteristics of the activity undertaken by this enterprise: the assembly of clothing. Secondly, we explain the two subcontracting modalities offered by these *maquiladora* enterprises to their customers.

4.1. *The assembly of clothing in the textile-clothing value chain*

We can distinguish three segments in the textile-clothing value chain: the fabrication of the thread and fabric, the assembly of the garment and the distribution (see Figure 2).

Figure 2: The textile-clothing value chain



Source: Based on Dicken (1998).

The segment of garment assembly consists mainly of the sewing of different pieces of fabric or other material (leather, plastic) to obtain the finished garment. This segment is labour intensive[10] and employs low skilled workers that can be quickly trained for the job. In addition, this segment can be geographically separated from the other segments of the value chain. That is why the low labour costs are one of the fundamental localization determinants of the clothing industry. The technology used is simple and does not require large capital investments. It is a segment where barriers to entry are low. Accordingly, virtually any country, even with a low development level, can carry out this activity.

[10] As D. Green (1998: 7) writes: "Clothing production has resisted automation more than many other industries, as machines have so far failed to match the human hand in manipulating cloth during the sewing stage."

On the contrary, textile production (spinning and weaving) is far more capital intensive and the management of its production process is more complex. It also requires a production location where infrastructure and basic services (electricity, water) are developed (Gereffi, 1994; ILO, 1997; Gereffi and Memedovic, 2003; Dicken, 2007: Abernathy *et al.*, 2005).

Two general garment types can be distinguished according to the rate of product turnover (Dicken, 2007; OIT, 1997; Dimitrakou, 2007; Gereffi and Memedovic, 2003):

– The basic or standardised garments: They are garments that are kept in the collections for many years, such as the classic black pants or simple jeans. Their style is basic and constant, without changes from season to season. Its assembly is simple, they are produced in large series, and competition on the market is mainly based on prices. Examples of such garments are men’s dress shirts or pants, underwear, blue jeans, jogging suits, etc.

– The fashion or differentiated garments: They are garments with a shorter product cycle (less than 20 weeks), which require a short lead-time of the manufacturers. They are characterized by being very seasonal and with a constantly changing style. It is difficult to make accurate demand predictions since their demand tends to be very volatile. Furthermore, in the higher range, the garments are more complex to assemble.

In the geographical location of the clothing industry, the type of garment that is manufactured plays an important role. For the basic or standardized garments, production locations have to offer two types of advantages: low labour costs and trade barriers (of the United States and the European Union) avoidance. For the fashion or differentiated garments, additional location determinants are looked after: the proximity to the market and, for the higher range garments, the ability to manufacture a sophisticated product (Dicken, 2007; OIT, 1997; Gereffi and Memedovic, 2003; Gereffi, 1994).

Figure 3 shows the main exporting countries of clothing to the United States in 2006. The weight of the Caribbean Basin countries is relatively important. Why? Chiefly, because these countries benefit from preferential trade agreements with the United States (see section 6). Within the Caribbean Basin, the largest exporters of clothing are Honduras, Guatemala, and the Dominican Republic (see Figure 4).

The last segment of the textile-clothing value chain is the distribution of the finished garment. Here we find brand name enterprises (Tommy Hilfiger, Nike, Levi Strauss, VF Jeans, etc.) or retailers (Wal-Mart, JC Penney, The Gap, etc.). This segment is highly concentrated because high barriers to entry exist. The access to the final customers market is hard because the enterprise needs to possess a network of department stores or a recognized brand name.

Because of the uneven existence of barriers to entry along the different segments of the textile-clothing value chain, market power on the market of the garment assembly service (where subcontractors (*maquiladora* enterprises) and retailers or brand name enterprises meet) is on the side of the buyer.

Figure 3: The leading exporters of clothing to the United States (by value) (2006)

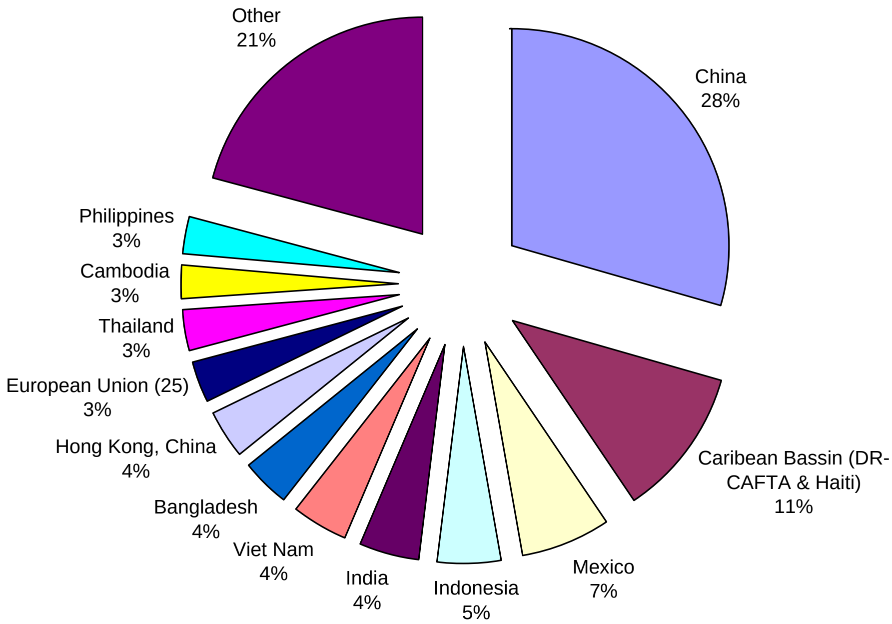
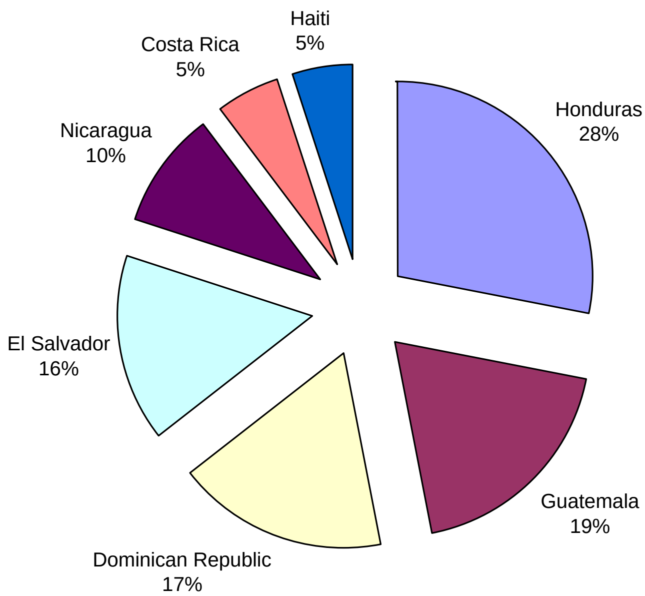


Figure 4: Main clothing exporters to the United States from the Caribbean Basin (by value) (2006) (100% represents the total clothing exports from Central America, Dominican Republic and Haiti to the United States)



Source: International trade statistics 2007, Merchandise trade by product, World Trade Organisation {http://www.wto.org/english/res_e/statis_e/its2007_e/its07_merch_trade_product_e.htm}.

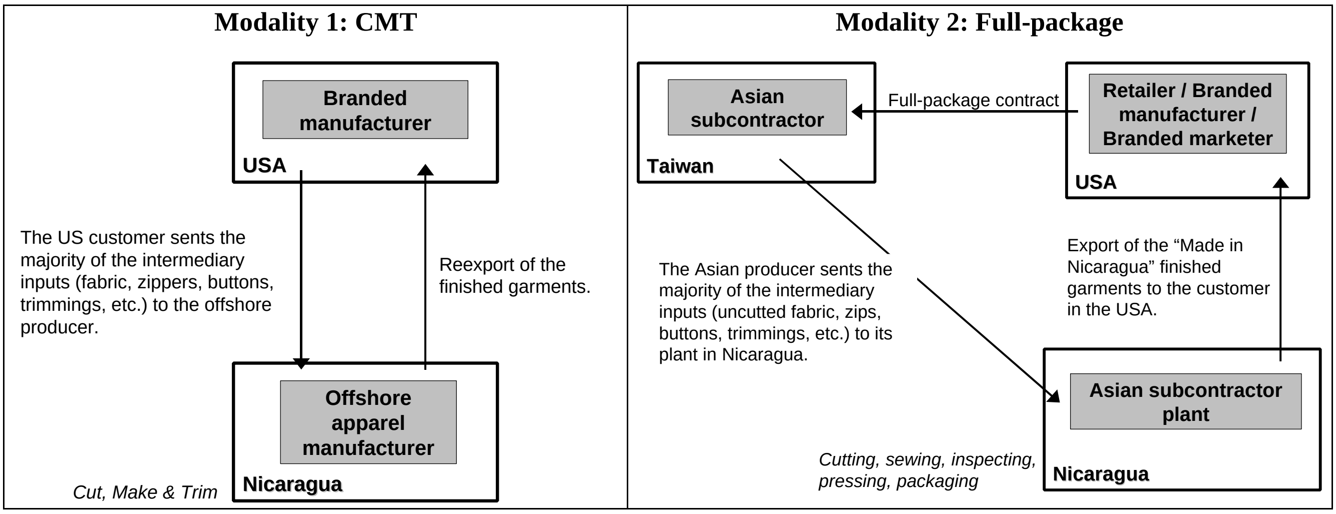
4.2. *The two subcontracting modalities: CMT and full-package*

The *maquiladora* enterprises can offer two types of subcontracting to its customer: CMT (Cut, Make and Trim) and full-package.

In the first modality (CMT), the customer sends all the intermediary inputs (fabric, buttons, zippers, thread, etc.) to the *maquiladora* enterprise, and the latter limits itself to the assembly of the garment according to the design given by the customer: cut the fabric (according to the pattern sent by the customer), sew and trim. Once finished, the garment is re-exported to the customer. In this modality, the *maquiladora* enterprise only brings the manpower and the machinery needed for assembly. Rocedes, one US enterprise in the free trade zone "Las Mercedes", offers this subcontracting modality to its customers (the most important one is Dickies) (see Figure 5).

In the second modality (full-package), the *maquiladora* enterprise carries out the whole production process of its customer's garment. It receives the design from the customer, it manufactures or buys to third parties the necessary intermediary inputs (fabric, buttons, zippers, thread, etc.), it cuts the fabric, sews the garment, packages it, and exports it to the customer (Gereffi, 1999; PEMCE, 2006). Nien Hsing Textile Co., as the other enterprises of Asian capital in the free trade zone "Las Mercedes", offers this full-package service to its customers (see Figure 5).

Figure 5: The two subcontracting modalities: CMT and full-package



The *maquiladora* enterprises in Nicaragua offer the assembly or manufacture of standardized or basic garments. Customers' orders are executed in large batches. Competition between the subcontractors is fierce and is based essentially on price: there are large numbers of suppliers and few buyers of this clothing manufacture service[11]. As G. Wong[12] (former executive secretary of the *Corporación de las Zonas Francas*) noted: "(usually) the customer comes with a previously established price and if you don't accept it, as a subcontractor, he tells you that he has another subcontractor in Honduras that would gladly accept its offer."

Consequently, the profit margin made by the *maquiladora* enterprises is small. Profits are made on sales volume. This renders the *maquiladora* enterprise vulnerable to small variations in

[11] According to the Nien Hsing Textile Co. spokewoman (interview), there are some 300 suppliers in the world that offer the assembly of jeans garments.
[12] Interview.

labour costs, intermediary inputs and raw materials costs, and in the price of the subcontracting service offered[13].

This fierce competition, the suppression of the Multi-Fibre Arrangement (see section 6) and the entry of ever more (poor) countries into the clothing industry (Cambodia, Haiti, etc.) cause prices to fall (see Table 5). For example, according to the spokeswoman of a *maquiladora* enterprise (Nien Hsing Textile Co.), in 1998, the price of one pair of trousers (jeans or tweed), in the full-package modality, hovered around US$8-9 (see Table 6). In 2007, this price had decreased to of US$6-7 per pair. The same happened to the CMT price, according to a North-American enterprise (Rocedes), it also lowered over the last 10 years and was, in 2007, US$1,5 per pair of trousers assembled[14].

Table 5: Unit price of apparel exports to the US Market 1992-2007[(a)]

Country	**1992**	**1994**	**1996**	**1998**	**2000**	**2002**	**2004**	**2006**	**2007**	**% change 92 - 07**	**% change 98 - 07**
World	3,77	3,73	3,77	3,74	3,57	3,30	3,25	3,18	3,17	-16,06%	-15,27%
China	3,59	3,84	4,37	4,74	4,84	3,57	3,00	2,85	2,83	-21,24%	-40,23%
Honduras	3,11	3,02	2,32	2,34	2,26	2,24	2,23	2,15	2,05	-34,00%	-12,40%
Mexico	3,38	3,31	3,24	3,27	3,33	3,44	3,53	3,59	3,74	10,61%	14,21%
Indonesia	3,64	3,65	4,02	3,82	3,94	3,43	3,42	3,62	3,74	2,71%	-2,18%
Cambodia	1,32	5,06	0,99	3,44	3,19	2,37	2,25	2,53	2,80	111,97%	-18,60%
El Salvador	2,78	2,46	2,51	2,43	2,20	2,16	2,02	1,95	1,83	-34,05%	-24,36%
Guatemala	3,52	3,68	3,92	4,05	4,13	3,99	3,90	3,92	3,86	9,71%	-4,76%
Dominican Republic	2,87	2,88	2,68	2,82	2,90	2,96	2,70	2,65	2,76	-3,77%	-1,86%
Nicaragua	**3,85**	**3,47**	**3,82**	**4,16**	**4,06**	**3,60**	**3,39**	**3,49**	**3,39**	**-11,78%**	**-18,41%**
Haiti	1,73	1,78	1,74	1,93	2,01	1,99	2,11	1,79	1,83	5,80%	-5,03%

Notes: (a) Dollar value of apparel imports divided by square meters equivalent of apparel imports.
Source: Value and volume imports data from the Office of Textiles and Apparel Major Shippers Report {http://otexa.ita.doc.gov/msrpoint.htm}.

Table 6: Cost structure of a single pair of men's jeans assembled in Nicaragua (around year 2000-2001) (in US$)

Total fabric cost	$ 4,23
Trim cost (incl. pocketing, thread)	$ 1,10
Labour Cost (Cut, Make, Finish)	$ 2,17
Profit per garment	$ 0,75
FOB Cost	$ 8,25
Shipping cost per garment	$ 0,07
Total manufacturing & Shipping	$ 8,32

Source: O'Rourke Group 2002 cited in Abernathy *et al.* (2005).

13 According to the manager of a *maquiladora* enterprise offering the CMT service (interview), a difference superior to 10 US cents in production costs will occasion the relocation of production.

14 The cost structure of a full-package jeans is approximately 50% fabric, 25% assembly and 25% the rest (trim cost, transport, depreciation, profit margin, etc.).

5. Nien Hsing Textile Co. in Nicaragua

In this section, we present the corporation Nien Hsing Textile Co., the plants this corporation possesses in Nicaragua and one of its plants (Chih Hsing).

5.1. *Nien Hsing Textile Co. group*

Nien Hsing Textile Co. carries out the production of denim fabric and the manufacture of jean and tweed trousers. It offers to its clients the "full-package" subcontracting modality. According to the company's brochure, in 2006, it was the largest "full-package" jeans manufacturer and the sixth largest denim fabric manufacturer in the world. The company has among its clients Levi Strauss, VF Jeans (Lee, Wrangler), Tommy Hilfiger Jeans, Wal-Mart and JC Penney. Outside Taiwan, the company possesses, apart from its plants in Nicaragua, plants in Mexico and in Lesotho[15] (see Table 7). On a world scale, Nien Hsing Textile Co. had, in 2007, more than 60.000 employees.

Table 7: Nien Hsing Textile Co. in the world (2004)

Production Area	Locations	Capacity
Taiwan	Miao Li H.Q. and Hou Long Denim Mill	About 2.6 million yards per month.
	Taipei Office	
	Patterning and Developing Center	
Nicaragua	Garment Factories-Jeans	Three factories with about 1.5 million dozens per year altogether.
	Garment Factories-Casual wears	Two factories with about 800 thousand dozens per year altogether.
	Dyeing Mill	Fully Automated facility with about 36 millions yards per year.
Lesotho	Garment Factories	Three garment factories.
	Denim Mill	About 13 million yards per year.
	Ring Spinning Mill	About 35,000 rings yarn.
Mexico	Denim Mill	About 26 millions yards per year.
	Garment Factories	About 0.4 million dozens per year.

Source: Nien Hsing Textile Co. Ltd. {http://www.nht.com.tw}.

The production of jeans (*High Sierra Jeans*) for a North American chain of stores, in March 2007, permits us to illustrate the full-package subcontracting offered by Nien Hsing Textile Co. The jeans were sold to the client at US$6 per pair (who then sold them to the North American end-consumer, at least according to the label that the trousers carried, for US$28 per pair). Nien Hsing Textile Co. produced the denim fabric in its Taiwanese factory. It sent the fabric by boat to Nicaragua to undertake manufacture of the jeans (cutting of the fabric, sewing, washing, drying, buttoning, ironing, labelling and packaging) in one of its plants in Nicaragua (Chih Hsing). This plant received the garment design via email and the pattern was simply printed out on a big printer. Once printed, it was cut out and sent to the fabric-cutting division where the manufacturing process commenced. Once produced, the jeans were sent by lorry to Puerto

[15] Lesotho, just like Nicaragua, has preferential access (without customs duties) to the US market for apparel items (manufactured with Asian fabric) to which it exports 85% of its production. One finds there also, just as in Nicaragua, a significant concentration of Taiwanese companies (*The Economist*, 2007).

Cortés (an Honduran port on the Caribbean Sea) to be loaded onto a ship to the United States (Miami, Houston) (see Figure 1)[16].

5.2. *Nien Hsing Textile Co. in Nicaragua*

In 1998, Nien Hsing Textile Co. possessed three establishments dedicated to the assembly of trousers in the free trade zone "Las Mercedes". These plants employed, in total, some 5.600 workers (40% of workers of all the workers in the zone) (see Table 8).

In 2007, the presence of Nien Hsing Textile Co. in Nicaragua had increased significantly: to the three plants of the "Las Mercedes" zone, had been added four new plants in other free trade zones (two garment factories, one card board manufacturer factory, and one dyeing mill). These plants employed, in total, some 16.000 workers (see Table 9).

Table 8: Nien Hsing Textile Co. in Nicaragua (June 1998)

	Chentex	**Chih Hsing**	**Nien Hsing**
Products	Pants, shorts	Pants, shorts	Pants, shorts
Jobs (June 1998)	1.715	2.211	1.687
Date of setting-up	1995	1997	1994

Sources: *Corporación de las Zonas Francas* and Marschall (1998).

Table 9: Nien Hsing Textile Co. in Nicaragua (December 2006)

Nien Hsing Textile Co. plants in the free trade zone "Las Mercedes"				
	Henry Garments[(a)]	**Chih Hsing**	**Nien Hsing**	
Products	Pants, shorts	Pants, shorts	Pants, shorts	
Jobs (December 2006)	2.867	2.784	3.042	
Date of setting-up	2005	1997	2003	
Nien Hsing Textile Co. plants outside the free trade zone "Las Mercedes"				
	Chao Hsing	**John Garments**	**Cartonera industrial**	**Alpha Textil**
Products	Pants, shorts	Pants, shorts	Cardboard boxes	Dyeing and stamping of the fabric
Jobs (December 2006)	3 412	3 856	97	238
Date of setting-up	1999	2001	2002	2002

Note: (a) Chentex changed its name for Henry Garments, but it is the same factory.
Source: *Comisión Nacional de Zonas Francas.*

5.3. *Chih Hsing in 2007*

In 2007, the Chih Hsing plant belonging to Nien Hsing Textile Co. had some 3.000 employees and its daily output was around 23.000 to 26.000 pairs of jeans (trousers or shorts). The management posts in production (plant production manager, division managers, line managers

[16] It takes about one day's journey by road from Managua to Puerto Cortés. Three days are then necessary for sea transport of the merchandise to the port of Miami (information obtained on the Web site of Rocedes S.A. (http://www.rocedes.com.ni)).

(*jefes de línea*)) were occupied by expatriates (Taiwanese and mainland Chinese[17]). The director of the plant is Taiwanese and, in the rest of the administration (accounting, human resources management, and export), there are around thirty employees, half of which are expatriates.

The jobs created (for the Nicaraguan employees) are manual, segmented, and monotonous jobs, that do not require previous qualifications (shop floor worker and supervisor). Each worker is assigned a specific and simple task (cutting the fabric, sewing the lateral seam of the trousers, sewing the pocket of the trousers, sewing zippers, putting buttons, ironing, carrying out the final inspection, etc.) (see Figure 6). Work conditions are hard: long work days (often 10-12 hours per day), fast work pace, heat, noise, risks incurred during fabric cutting[18] or during buttoning, exposure to plush or to chemical substances (significant incidence of respiratory and allergy-related illnesses), etc. (see Lara, 2002; MEC, 2003).

Labour turnover is very high: in January 2007, 10% of the employees of Chih Hsing were replaced. This is a generalized phenomenon within the Nicaraguan *maquiladora* industry. Such large turnover of the workforce is possible thanks to the job characteristics (simple, manual job) as well as to the low costs associated with layoffs (see MEC, 2003). Given that the workers continually change plants, the new employee of the plant generally has already a prior experience and needs no initial training.

The same situation concerning the job characteristics seems to exist in the other Nicaraguan plants owned by Nien Hsing Textile Co.

The material inputs (fabric, buttons, zippers, thread, etc.) used by Chih Hsing and the other four Nien Hsing plants that assemble trousers in Nicaragua, are, with the exception of the pumice stone[19] and the cardboard boxes, all imported. The cardboard boxes are manufactured by Nien Hsing in its plant Cartonera Industrial. There is no process subcontracting (sewing, washing, ironing or packaging) done by local enterprises or family workshops. On occasion "sub-subcontracting" of one part of an order to another *maquiladora* enterprise occurs when Nien Hsing Textile Co. has difficulties meeting the delivery delays fixed in the contract with the customer.

[17] As the manager of one North American *maquiladora* enterprise remarked, this access to (mainland) Chinese personnel permits Tawainese companies to employ expatriate personnel at low wages to occupy middle-management and technician (machine repair and maintenance) posts.

[18] Fabric cutting is performed with manual electric saws.

[19] The pumice stone is a white volcanic stone that serves to discolour and "age" the jeans. It comes from a volcanic region of Nicaragua.

Figure 6: The assembly of a pair of jeans in Chih Hsing

FABRIC CUTTING	*Mixed*	The pattern is sent via internet from the central office in Taiwan directly to the office in Chih Hsing Nicaragua, where 4 to 5 people work. This patterns is then printed with a plotter. Fabric cutting is done according to this pattern.
GARMENT SEWING	*Mainly women*	•The worker carries out the same task during the whole working day (sewing of the lateral seam, sewing of the hem, etc.) •On each sewing machine (Brother or Singer) there is a red light: when it is switched on, it indicates that there is a problem with the machine and a technician comes.
WASHING	*Mainly men*	
DRYING	*Mainly men*	During the drying pumice stone are added in the drying machines to “wear out” and “age” artificially the trousers or shorts.
BUTONNING	*Mainly women*	The button is inserted by two workers. The first introduces the button in the machine. The second puts the garment underneath the machine and presses a pedal to insert it.
IRONING	*Mainly men*	Ironing is done with home-like irons.
FINAL INSPECTION	*Mainly women*	Inspection to separate the trousers and shorts with a defect from the good ones.
PACKAGING	*Mainly men*	Worker puts the etiquette for the US consumer, that is, with the final price in US$. The trousers are than packed in cardboard boxes and loaded onto a lorry.

5.4. *The unchanged nature of Nien Hsing Textile Co. (1998 – 2007)*

Nine years have not succeeded in changing significantly the nature of the *maquiladora* subsidiary Nien Hsing Textile Co. Just as in 1998 (see Marschall, 1998; van Wunnik, 2001; Amaya y Chavarría, 1996), everything continues to come from outside: the brand name, the design, the material inputs and the managers. The garments produced by Nien Hsing are still standard or basic articles subject to fierce price competition and that are delivered in large batches. The Nicaraguan employees continue to fill the same type of manual and routine jobs. The only small change is in the two plants owned by the Nien Hsing Textile Co.: Alpha Textil (dyeing and stamping of the fabric) and Cartonera Industrial (cardboard boxes). They indicate a certain enlargement of the activities beyond the simple manufacture of garments carried out by Nien Hsing Textile Co. in Nicaragua.

6. The main motivation for the installation of Nien Hsing Textile Co. in Nicaragua

Just like the other Asian *maquiladora* enterprises, Nien Hsing Textile Co. is in Nicaragua, essentially, to circumvent North American trade barriers[20]. Labour costs – the most important

[20] In all likelihood, the fact of being one of the few countries with diplomatic relations with Taiwan must also go some way to explaining the significant concentration of Taiwanese clothing enterprises in Nicaragua.

production location determinant for basic or standardized garments – are generally lower in Asia (see Table 10).

Table 10: Average monthly wages (US$) in the garment industry in some countries (2006)

Country	**Average monthly wage (2006, US$)**
Cambodia	65
China	120
Vietnam	65
Mexico	466
Honduras	233
Nicaragua	153

Source: Data provided by Nien Hsing Textile Co[21].

In 1998, Nien Hsing Textile Co. was manufacturing in Nicaragua in order to evade the North American import quotas established in the framework of the Multi-Fibre Arrangement[22] (OIT, 1997). Contrary to numerous Asian countries (China, Vietnam, etc.), clothing coming from Nicaragua was not subject to import quotas by the United States. Nicaragua benefited, as did, in a lesser degree, the other countries of the Caribbean Basin (Central America and some Caribbean islands), from a preferential trade agreement with the United States[23].

In 2005, the quota exemption advantage that Nicaragua had: quotas on clothing articles were eliminated with the end of the Multi-Fibre Arrangement. However, another international trade policy advantage was given to Nicaragua: the TPLs (Trade Preferential Levels). In the framework of the free trade agreement between the United States, Central America, and the Dominican Republic (the DR-CAFTA), Nicaragua is the only country of the six that may export a share of its clothing items to the United States without having to respect the rule of origin[24]. That is, a share of its clothing items may use Asian fabric (up to 100 million square metres per year) without having to pay tariffs on the value of this fabric when it enters the United States[25]. These TPLs will last 10 years and disappear in 2016 (PEMCE, 2006; Hernández, 2007; Sánchez y Vos, 2006). Another location advantage of Nicaragua is that, according to the World Trade Organisation agreements, it will be, as poorest country in the region (GDP per capita inferior than US$1.000), the only one that will be allowed to maintain its free trade zones regime after 2008 (see section 4).

These specific policy advantages possessed by Nicaragua must be the reason why it is the only country of the DR-CAFTA zone that saw its clothing exports to the US rise in 2005 and 2006 after the end of the Multi-Fibre Arrangement (CEPAL, 2007) (see Table 11).

21 According to the CEPAL (2007), the average monthly wage in the industrial free trade zones of Nicaragua was US$86 in 2006.

22 The Multi-Fiber Arrangement was an international trade regulation of the clothing-textile industry. Until January 1, 2005, this arrangement authorized import countries of textile-clothing products to use quotas as a trade barrier.

23 Nicaragua was the only country of the "Caribbean Basin Initiative" that was totally exempted from import quotas on its garment products.

24 In fact, the DR-CAFTA is a collection of specific bilateral trade agreements (involving each country with the United States) and not, as the name seems to indicate, a customs union between the seven countries. The free trade agreement between the United States and Nicaragua entered into force in April 2006.

25 In the « *full-package* » version, the cost of the fabric represents around half of the production costs of a pair of trousers (PANTS) (including within production costs the transport costs which the , dans ces coûts de production, les coûts de transport que supporte l'entreprise *maquiladora*).

Table 11: Apparel exports to the United States in US$ millions (1998-2007): Nicaragua vs. DR-CAFTA

	1998	2000	2002	2004	2005	2006	2007
DR-CAFTA	7.573,3	8.973,0	9.092,5	9.509,5	9.104,1	8.406,2	7.895,0
Nicaragua	232,0	335,6	432,9	594,7	715,6	879,3	967,8
% Nicaragua	3,06%	3,74%	4,76%	6,25%	7,86%	10,46%	12,26%

Source: Value imports data from the Office of Textiles and Apparel Major Shippers Report {http://otexa.ita.doc.gov/msrpoint.htm}

PART II: SOME DOUBTS

Can the *maquiladora* industry act as a catalyst for industrial development in Nicaragua? Are we, as P. Romer (1993: 564-565) asserts about the export processing zones in Mauritius, in the presence of free trade zone where foreign investors contribute to this development "not because of the financial resources that they (bring) to the (country), but rather because of the knowledge they possess"?

In order to study this question, we analyse, for the *maquiladora* subsidiary Nien Hsing Textile Co., three specific (sub)questions:

1/ The technology transfer from the subsidiary;
2/ The mobility potential of the subsidiary's manufacturing activities;
3/ The upgrading of the subsidiary over time.

We conclude this paper by confronting the two scenarios concerning the export-oriented industrialization of developing countries: the optimistic "industrial upgrading" scenario and the pessimistic "race to the bottom" scenario.

1. An absence of technological transfer

By technology, we refer to "any type of useful economic knowledge" (Krugman and Obstfeld, 1997: 171). We can distinguish three possible technology transfer conduits from the foreign capital *maquiladora* enterprise to the Nicaraguan agents (see, among others, Saggi, 2000; Kokko *et al*., 1996; Perez, 1998):

– *Labour force rotation*: the training received and the experience acquired by the subsidiary's employees (both manual workers and managers) can be transmitted to the host economy when these change employer or set up their own enterprise (*spin-offs*)[26].

– *Backward linkages*: The supplier requirements of the subsidiary, in terms of product price, product quality and delivery time, can spur the local supplier on to a higher efficiency level. In addition, the presence of *maquiladora* subsidiaries in the host country can generate a new demand for goods and services (intermediate goods, capital goods, services to enterprises) in the host economy. This may "push" total demand for some goods and services beyond a critical threshold, which will enable their production to be profitable in this economy[27].

– *The demonstration effects*: The arrival of foreign enterprises can inject new ideas – from the outside – to local company directors and other local managers. These can launch the same kind of businesses; can imitate certain aspects of the production organization of the foreign plant, etc.

[26] Two kinds of skills can be distinguished: technical skills and managerial skills. Managerial skills are generally less specific to one particular field of production than technical skills. The first can thus be used more easily in other contexts. This renders them more easily "appropriable" by the host economy (Blomström and Kokko, 1997).
[27] As R. Caves (1996: 232) has written: "(...) many cells in the input-output table of a developing country are empty (...). Encourages by a specific demand for an output (coming from subsidiaries of multinational enterprises) (...), a viable activity may spring up (and in that way fill some empty cells of the input-output table)."

In the case of Nien Hsing Textile Co. we are unable to perceive any significant technology transfers to the agents of the Nicaraguan economy.

The *maquiladora* subsidiary did not employ local qualified personnel (nearly all the managers were expatriates). Its Nicaraguan employees, who worked on the production line, acquired a simple and fragmented technical skill that was of no great use for the local industry. The same situation, with regard to employment, existed in the Nicaraguan installations owned by other *maquiladora* enterprises of Asian capital (see MEC, 2003; Bilbao, 2006). As J.-L. Rocha (2006) wrote ironically, on the subject of Elena, a shop floor worker in the final inspection division of a *maquiladora* factory:

"Elena learned to better observe the clothes that she bought and to be a little sharper in spotting dropped stitches and poor sewing work. There was a transfer of technology in the area of the detection of defective finishing."

As for spin-offs, it is difficult for them to occur. There are very few local managers in the *maquiladora* subsidiary that could create their own business by taking advantage of their accumulated experience.

In the same way, the *maquiladora* subsidiary had practically no ties with local suppliers of material inputs (all the material inputs, except the pumice stone were imported), neither with local enterprises or workshops to outsource some of its processes (drying, ironing, etc.). This absence of linkages with local enterprises characterizes the whole *maquiladora* manufacturing industry in Nicaragua (see Bilbao, 2003).

Why do the *maquiladora* enterprises have no relations with local (non-*maquiladora*) enterprises?

Firstly, the international subcontracting system in which the *maquiladora* enterprise participates forms a barrier to maintain linkages with local enterprises. In the CMT subcontracting modality, it is difficult for the enterprise to use locally produced intermediate goods (cut fabric, buttons, zippers), since the customer supplies them. In the full-package subcontracting modality, the *maquiladora* enterprise is responsible for obtaining the intermediate goods. There are thus more opportunities for a local supply of these goods, provided, of course, there are local suppliers and that they are sufficiently competitive (see Gereffi and Memedovic, 2003). However, as J. Bair and E. Dussel Peters (2006) observed, the foreign capital aspect of the *maquiladora* enterprise offering full-package, can form a barrier to its embededdness in the host economy. Decision-making concerning the purchasing of intermediate goods generally takes place in the headquarters, Taiwanese managers in Nicaragua know very little about the local manufacturing enterprises and prefer to buy their intermediate inputs to known and trustworthy suppliers.

Secondly, the weak development of the Nicaraguan manufacturing industry forms an impediment to the establishment of relations between the *maquiladora* subsidiary and local enterprises or family workshops. Process (sub)subcontracting is limited by quality problems. Local enterprises or family workshops are unable to respond to the requirements in terms of quality and delivery delays. And most of the material inputs needed (fabric, zippers, thread, etc.) are simply not produced in Nicaragua and, when they are, the local suppliers do not offer the necessary requirements in terms of quality and delivery.

In Nicaragua, the *maquiladora* companies are in their vast majority of foreign capital. The presence of these foreign companies seems not (yet?) to have encouraged local entrepreneurs to engage in the clothing *maquiladora* industry (in December 2006, 5 out of the 56 *maquiladora* establishments in the clothing sector are of Nicaraguan capital and they employ only 1.400 of the 69.070 workers of these clothing industry establishments (2%)[28]). In this aspect, Nicaragua is different from the other DR-CAFTA countries where the presence of national *maquiladora* enterprises in the clothing industry is relatively more important (CEPAL, 2007; OIT, 1997).

2. The "swallow enterprise" (*empresa golondrina*)

The question of the mobility potential of the foreign enterprises' seems important to us, because it can counter the insertion of its production facility (the subsidiary) into the host economy. This affects, in consequence, negatively its economic impact. The foreign enterprise that wishes to maintain its mobility capacity has what H. Krifa and F. Héran (1999) call a "passive approach to the territory": it limits itself to exploiting the available useful resources in the territory. It has no interest in building up resources in the territory – "the active approach to the territory" – such as, for example, training workers exhaustively or collaborating with local suppliers.

The *maquiladora* subsidiary offers a perfect illustration of this passive approach to the territory (see also Mortimore, 2003): it rents buildings in the free trade zone[29], it uses easily-transportable, rapidly depreciated and old equipment goods, it has no relationships with local suppliers, it employs expatriate managers and poorly-qualified local personnel, as a general rule, it does not train Nicaraguan workers and, finally, labour turnover is high[30]. Therefore, the *maquiladora* enterprise can, if it wishes, easily fly off to other horizons. There are many other countries eager to welcome it. That is why in Central America, the *maquiladora* enterprise is often called the "swallow enterprise" (*empresa golondrina*).

This mobility capacity gives it moreover an important bargaining power in its negotiations with worker representatives, who must limit their demands, and with the country's authorities, which are forced to offer all of the advantages of a free trade zone in order that the foreign investor deigns to come to, and stay in, the country. As J. Bilbao (2003) writes:

"With this "we go" threat, (the managers of the *maquiladora* enterprises operating in Nicaragua) won in all the conflicts (and in all the negotiations)."

3. The subsidiary's upgrading myth

If the foreign *maquiladora* investment that Nicaragua can attract, in the first instance, is an unstable investment with a low potential for technology transfer, there still remains the hope of the gradual upgrading of the subsidiary over time: it will perform increasingly complex activities and will become progressively more embedded in the territory. If such an upgrading comes about, the subsidiary will gradually become a better knowledge transmitter.

The Nien Hsing Textile Co. case shows that the upgrading of the manufacturing subsidiary over time is in no way guaranteed. Fundamentally, the *maquiladora* subsidiary in 2007 was in the same situation as it was in 1998. It continued to be characterized by an absence of integration

[28] Data of the *Comsión Nacional de las Zonas Francas*.

[29] As the former executive secretary of the *Corporación de las Zonas Francas* remarked laconically (interview), it is necessary to offer the buildings in the free trade zones for rent to the foreign *maquiladoras* enterprises because otherwise they wouldn't come: "the building cannot be brought along (to another place), the machines can."

[30] Note that at the more general level the demand for poorly-qualified work to perform manual and repetitive tasks may also constitute a factor slowing down training of the workforce of the territory, from the point of view of the own incentives of the worker. Indeed, why do you need to train if the *maquiladora* enterprise does not look after trained employees and the 'best' employment position you can get access to is the one of supervisor or *jefe de línea*?

into the host economy. The subsidiary, just as all the other *maquiladora* plants set up in Nicaragua, continued to manufacture basic or standard garments. It had not evolved towards the manufacture of higher-range fashion or differentiated garments. This is a pity, because such an evolution would have allowed Nicaragua to benefit from another location advantage: its proximity to the United States vis-à-vis the Asian countries, and not to depend solely on a precarious trade policy location advantage. Indeed, the manufacture of this type of garment requires a short lead time on the part of the manufacturer to the customers' orders which favours geographical proximity between the assembly location and the market (Abernathy *et al.*, 2005, OIT, 1997; *The Economist*, 2004)[31].

4. The evolution of the *maquiladora* industry: Industrial upgrading or race to the bottom?

Two points of view exist about the process triggered by the *maquiladora* industry or export oriented manufacturing.

In the optimistic scenario, assembly of basic or standard garments or shoes is the first step of the industrialization of the country. This low wages export manufacturing industry places the host country on the road to industrialization (see, for example, Romer, 1993; *The Economist*, 1998). As S. Radelet (1999: 31-32) asserts: "a country assembling shoes is not likely to get stuck at that stage; experience, education, and further physical investments will lead from footwear to electronics assembly, and from electronics assembly to more sophisticated consumer goods, and from there to automotive components, heavy machinery, and perhaps on to high-technology goods."

In the pessimistic scenario, the fact that more and more countries are entering into the assembly for export manufacturing will cause a decline of the remuneration of this assembly service for the host economy. More specifically, the real wages (the most important component of the national value added) could be forced to fall to continue to attract the mobile *maquiladora* activity toward the country (see Kaplinsky, 1993; Mortimore, 2003).

We do not know the answer but we would lean more towards the pessimistic scenario. The nature of the *maquiladora* industry in Nicaragua does not seem to have experienced a significant change. Like in 1998, the Asian clothing *maquiladora* enterprises assemble basic or standardized products, employ poorly qualified personnel, its managers are expatriates, it does not have linkages with local enterprises, and its permanence in Nicaragua depends on a trade policy advantage offered by the United States with an expiry date. In addition, there are very few clothing *maquiladora* enterprises of national origin. Finally, the price in US$ of the product offered by the *maquiladora* enterprise has been falling in the last years.

So, does the *maquiladora* industry really contribute to a sustainable (long-term) industrial development of Nicaragua? We do not think so. It seems more like a "*pan para hoy, hambre para mañana*" (bread for today, hunger for tomorrow) manufacturing enclave.

[31] For example, Zara stores receive their clothing with new designs every two weeks. This means that Inditex (the Spanish group to which Zara belongs) must manufacture two-thirds of its articles in Spain and in other countries close to its market, such as Portugal, Morocco and Turkey (Rohwedder and Johnson, 2008).

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