

# CENTRAL AMERICA MAQUILADORAS AND THEIR IMPACT ON ECONOMIC GROWTH AND EMPLOYMENT

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## ABSTRACT

*The objective of this paper is to analyze the different perspectives of the roles played by the maquiladora in Central America as a lever of economic growth and social development in the region. Maquiladoras are industries that import materials and equipment, perform assembly or manufacturing processes, then re-export the finished goods to other countries. After a brief historical review of the maquiladoras emergence in the Central America region, the context is analyzed to underline the legal regime of temporal import and legal regime of managerial oriented free zone or fiscal precinct. Afterwards, the impacts that the maquiladoras have had in the regional economic growth and employment generation under the variable of the Asian competence is analyzed. After the discussion, prospective scenarios are analyzed and several strategies are recommended, including the promoting and creation of maquiladoras that go beyond the competitive advantage of cheap human labor. The Central America countries must design and implement strategies of diversification of the maquiladora development process in industrial sectors that require greater added value and technological innovation.*

**Key words:** Central America, economic growth, employment, in bound industries.

**JEL:** F14, F23, F43, J71, J81.

## 1. Introduction

The maquila (In bound industry) term etymologically comes from the Arabic term makila as a measurement for capacity used in milling to design the proportional share of grain, flour or oil (AVANCSO, 1994:2). Nowadays, the maquiladora industry is located within the geographical boundaries of a country with facilities in place for international transactions. These territories receive foreign-owned intermediate inputs, carry out some transformation processing, taking advantage of cross-border discontinuities, and later returned the final products to their country of origin. The maquila is a production system based on a form of contract under which, the intermediate inputs and raw materials imported are transformed through processes that add value. Afterwards, the added-value products are outbound and sent back as finished products to the country of origin for marketing. The maquiladora industry activities are possible in those areas that allow process segmentation. Developed countries tend to concentrate on those activities that require technology, innovation and design for sustained growth. On the other hand, the assembly routine, intensive in terms of manpower, tends to take

place in developing countries with lower labor costs as their competitive advantage.

## Theoretical framework

Theoretical studies have determined that some of the benefits of Foreign Direct Investments (FDI) are ownership, location and internalization costs (Caves, 1996). Many of these benefits are provided by the Central American countries. Investors choose to invest in certain areas, mainly focusing on the availability of resources and markets. If foreign investment is seeking resources, it arrives to the locations which have abundant natural resources (Lipsey, 2006). Several analyses of the endogenous determinants of maquiladoras consider both the size of the enterprise and the intensity of research and technological development. The analysis of exogenous determinants of foreign direct investment in the maquiladora plants, takes into account the host country localization advantages, market size and labor costs (Campos, 2008).

Campos (2003) investigated classical factors such as market size, infrastructure, macro-economic environment and institutional factors. Campos inquired about whether the government's structural reforms of the host country play an important role in the attraction of foreign investors. A country's commitment to implement structural and financial reforms, as well as efforts to achieve trade liberalization and privatization, may encourage steady long run foreign direct investment (Forbes, 2006).

Regarding the institutional quality variables, the economic growth literature emphasizes the role of economic institutions in promoting investment and achieving better human development indicators. The institutions provide the local conditions for business operations, but they differ in support of physical and infrastructural factors, such as transport and telecommunications infrastructure. Institutional quality is an important factor to be considered for decision making by foreign investors, to enter directly or as outsourcing (Antras, 2003).

Bengoa and Sanchez-Robles (2003) find that economic freedom level, economic stability, and human capital level are important determinants in foreign direct investment. The determinants of location are the origins of the host country's comparative advantages. The maquiladora companies choose investment in locations which not only minimizes the cost of production but also the relative prices of factors such as natural resources, labor costs, human capital and proximity to market.

Countries that have more development in financial markets are capable of operating more efficiently the direct foreign investment. Foreign direct investment can be attracted by an economy that has more and better liberalized financial market, but at the same time, financial liberalization is encouraged by foreign direct investment. Financial reform is the most important of the structural reforms aimed to accelerate financial development. It is necessary to facilitate financial programs for new productive activities oriented towards exports and to promote business development services.

Foreign investors assess and appreciate the host country's financial institutions and their capabilities to allocate efficiently the economic resources, monitoring the maquiladoras, diversifying and sharing risks, and mobilize the

profits. Fewer restrictions to foreign capital imply more foreign capital inflows of FDI. Prasad et al. (2003) argue that absorptive capacity measured by the host country's financial development is a condition for foreign capital inflows to contribute to higher economic growth. The impact of FDI on economic growth is three to six times more efficient than the total investment (De Gregorio, 1992).

The FDI is attracted to countries with stable macroeconomic environment, and better levels of economic development and infrastructure. The risks of investment in terms of political and economic environment also affect the expected return on investment. The economic and political stability of host country attracts more foreign direct investment (Bevan and String, 2000). FDI requires the formulation and implementation of economic policies that promote strategic alliances and joint actions between the foreign direct investors, the domestic private capital and the Nation-State. One strategy implemented to bring down high rates of unemployment and poverty is the attraction of foreign investment by offering tax incentives, along with abundant cheap labor. Another major challenge is the creation of appropriate conditions for attracting investment. The businessmen's sensitivity to political movements limits solid and stable investments.

Maquiladoras as an instrument to achieve economic growth is a diversification dilemma in terms that although they create jobs and contribute to economic growth, however they bring some other side effects harmful to the local economies. To encourage economic growth in Central American countries, the diversification dilemma of maquiladora industry must be resolved and recommendations for improvements integrated into the programs tied to promotional schemes aimed at attracting foreign direct investments. There is a need to renew the instruments of export promotion, to strengthen the competitive advantages created in the region. To this end, it is suggested to design a common strategy of promotional programs to attract foreign direct investment for all Central American countries in order to avoid unfair competition while attracting new maquiladoras.

Coordination of governments' efforts of Central American countries will help to sustain an industrial integration project to boost regional development. In the same way, reforms to the legal framework to extend the scheme to sectors

such as agribusiness, services and supply chain, etc., are necessary. Regarding labor laws and regulations, there must be law and order enforcement and compliance, besides agreements and behavior codes adopted by companies.

There is a need for transparency in all sectors: Auditing organizations in maquiladora industry by requiring independent assessments, monitoring of working conditions, as well as verification of enforcement and compliance with labor rights and behavior codes, conformance with administrative and managerial standards industrial security and accounting, corporate social responsibility, environmental standards, regulations of free trade agreements, governance. There must be greater supervision of human and labor rights by specialists in the field, and greater promotion of social certifications among maquiladoras, particularly SA8000, which assesses the conditions and respect for labor rights and certification of "no sweat" (without holding).

The Central American governments and industry must develop unify criteria, to design strategies and mechanisms to facilitate the negotiation processes, as opposed to relying on the unilateral revision by the United States government of labor rights, management of the environment, expropriation, as well as how to structure and implement programs to coordinate the different economic agents involved in strategic alliances.

A regional economic development strategy must take into consideration growth in employment and production. This can be accomplished by focusing attention on the improvement of the efficient in the maquiladora industrial activities to increase value added in the region. This in turn, requires intermediate inputs to the maquiladora sector in the local regions throughout the Central America countries, subject to supply and demand forces operating in the national and international markets for the factors of production and the final demand for consumer goods and services. Local supply of intermediate inputs to the maquiladoras promotes indirect exports through an open market economy which together with improvements in domestic competitiveness can be transformed into direct exports (Agosin, Gitli and Vargas, 1996). The International Labor Organization (ILO) argues that the maquiladora industry in Central American is moving its full manufacturing processes in a complete package to add economic value. Central American maquiladora industry has to develop

and implement horizontal and vertical strategies to compete with the Asian maquiladoras' production; otherwise the Central American maquiladoras will be left lagging behind. A horizontal strategy to broaden the impact on economic growth, and to generating jobs in the maquiladora industry in Central America, is growing and expanding activities of raw material's suppliers, services and inputs, as well as the expanding distribution networks in local markets.

Economic agents involved in the development processes of the maquiladora industry in Central American countries, government authorities and private sectors, are responsible for designing and implementing strategies for developing industrial activities, around comparative and competitive advantages. Among other advantages offered by the Central American region to foreign direct investment, is the territorial proximity to the world's largest market, infrastructure, and a new labor culture. Offering these advantages reveals the new territorial and spatial restructuring of the maquila, with the creation of new regions which are the foundation of the new production strategy for exporting.

The Central American countries have to formulate and implement strategies to diversify the maquiladora industry aimed to create industries involving higher added value and technological innovation processes, such as automotive or aviation industries. For the future success of the maquila, it is important to strengthen technological innovation to create competitive advantages in the industry. Foreign direct investment has been discerned as an important catalyst for technological development, which is a necessary condition to increase the region's competitiveness in international markets.

This diversification of the maquiladora industry requires technological breakthrough to provide employment for more skilled and specialized workforce, and also to lead to the formation of suppliers groups with more complex technological base. Diversification of the maquiladora industry requires the formulation and implementation of a national development strategy aimed towards and centered on the workforce. The strategy of human capital formation should consider training and developing the workforce for better performance in industrial sectors different from that of the traditional maquiladoras, and in accordance to the life cycles of these industries.

## **Brief History**

Historically, the maquiladora industry's tariff scheme in Mexico was initiated with an export orientation, restricting the sale of the products from the maquiladoras inside the country, except paying import taxes. The design of maquila's regimen was conducted in such a way that increments in competitiveness had no impact on the national process of industrialization and development as in the case of apparel and garment industry (Mortimore y Zamora, 1996). Mexico, followed by Central America countries and some Caribbean countries, has experienced an unusual growth of companies which, under the maquiladora industrial development strategy, link national economies of these countries to the world's most powerful economy, the United States. At the middle of the last century, Central American economies began implementing their industrialization plans. As part of their development strategy, they protected their nascent industries, using an import substitution process. The exception was Panama which was more oriented towards the service sector and finance. The maquiladora industry development in these Central American countries operate separate from the established traditional local economic system, most of the times creating enclaves more than hubs. The policy of tax and credit incentives encouraged and favored foreign investment into the creation of assembly industries oriented towards production for domestic consumption. It was generally believed that foreign direct investment (FDI) is an important channel through which financial globalization would benefit the economy (Prasad, Rogoff, Wei and Kose, 2003). Although, it should be noted that FDI does not necessarily support financial globalization.

Financial globalization involves the differentiation of a set of measurements, ranging from financial development indicators to changes in government policy. Some countries consider that attracting FDI is an important element of economic development, so the factors that attract such investment form the core issue of their development policy. Increasing foreign direct investment has expanded production activities related to the export of agricultural goods besides different manufacturing sectors to different industrialized countries

The maquila represents a form of transnationalization of production factors, which are widespread in industry sectors such as textiles and

apparel, electronics and automotive. Since the seventies, all Central American countries have had legal systems/frameworks for sustaining and promoting the maquiladora industry. Since that time the maquiladora industry has been the main industrial source of a precarious female-employment paying low wages, without deference and respect to labor rights, under appalling working conditions. This condition can hardly be expected to improve in a sector in which the competitive advantage is formed by the reduction of labor costs (Martinez Zabalo Tola and Arena, 2005).

The maquiladora industries take many different forms in terms of their operation, transformation and expansion. These depend, not only on their capital networks, but also on the different types of employment arrangements, on the subcontracting and special interaction with other institutions, regional and local actors. All these elements are part of the structure of the local production chain and its relationship with the world economy. The resulting reconfigurations of the territories in relation to the emergence of the new production chains put the emphasis on production decentralization. These trends or patterns are a result of territorial expansion based on a new regional development model, where the local political elites, and other regional institutions, play an essential economic role (Betancur, 2001; Méndez, 1998).

This paper aims to identify maquiladora's elements in order to contribute to the analysis of links, logic and dynamic relations and to determine the impact on employment creation and economic growth in Central American countries. The paper also analyses the economic context in which the maquiladora operates drawn from propositions of material production in peripheral regional areas, supranational and global levels together with the socio-political relations in the Central America region. Also, this paper searches answers to what has been the impact of maquiladoras on the territorial reconfiguration to shape a territorial development approach, focusing on the industrial paradigm, the strategy of accumulation followed by the regimes and modes of regulation such as free zones.

## **2. Context of maquiladora industry in Central America region**

The Central America region extends over an area of 509,000 km<sup>2</sup>, equivalent to one quarter of the area of the Mexican territory. Its production represents 3% of the Latin America region and

13% of Mexico. Guatemala has achieved the highest gross domestic product (GDP) in the region, about 32,000 million dollars. Costa Rica and Honduras are the countries that have exhibited the greater stability indicators and annual growth. However, Honduras has experienced political unrest during the last two years (2009-2010). Since 2000 and until 2008, Honduras and Costa Rica have been attracting the highest foreign direct investment (FDI). Costa Rica is the country with the best quality of life and competitiveness in the region. Currently, just about half (45 to 60%) of the Central America maquiladoras are owned by local capitalist investors. Also FDI tend to be concentrated mainly in services and maquila sectors. The accumulated investments due to the maquila during the period 2003-2005 for U.S. were \$ 1,754 million.

The maquiladora industry in Central America region focuses on the textile sector, clothing, metalworking, electronics and footwear. The out of region exports of the maquiladora industries are concentrated in manufactured goods and food, which represent just 28% of total exports. The number of Maquiladoras, percentage added value has increased. In some Centro American countries the number of direct jobs created has grown on the average 25% annually. All of the above had led to better supply chains and diversified production capacity (Acevedo, 2008).

### **3. Impact on regional economic growth**

The International Labor Organizations Report of 1997 (OIT, 1997) estimated that contribution of the maquila sector to the value added and exported to be about 20% for the Central America region. However, it must be remembered that statistics of maquiladora industry confuses value added with national content value because most of the inputs are imported. The ILO Report (OIT, 1997) estimated that over 90% of the sales of the Central America maquiladora industry are accounted for by United States. From this fact, it can be drawn a proposition that Central American countries are highly dependent on United States economy.

The maquila industry has increased its value to achieve almost 50 % in relation to total exports of the Central American Countries. Currently, over half of all exports in the region come from the maquiladora industry. Some researchers (OIT, 1997) have documented the

weak connection between maquiladora industry and the other's national economic sectors. Most of the maquiladoras are economic enclaves of transnational corporations which are taking only advantage of cheap labor and some specific raw materials. Most of their inputs are supplied from abroad, from their parent companies and there is little room for local companies, in such a way that maquiladoras are not acting as economic hubs for the local business. The weight of Maquila in industrial production is not relevant when we take into consideration the contributions of small and medium-sized enterprises.

The output of the Clothing and apparel industry represents an important part of the maquiladora industry in Central American countries. Mexico which is the main competitor in the region has benefited from the North American Free Trade Agreement (NAFTA) (Campos, 2008). Less than 20% of apparel products manufactured in Central American countries are bound to the United States under the maquila's regimen and about 80% enter under the custom's regime of production – sharing. The residual production is integrated by the Asian clothing maquila. Some of the implications are that the maquiladoras prefer to manufacture goods under a regime that give more incentives, such as not paying or paying the lower level of taxes to the host country, receiving subsidies, etc., which in turn their contribution for local economic development is low.

Companies' investments in advanced technology are low, compared with traditional investment flow which is still occurring in free zones. There is no evidence that maquiladora industry's technological complexity has a direct impact both in economic development and generation of well remunerated employment. Productive activities and development taking advantage of maquiladora industrialization are highly dependent both on demands' elasticity of final product and industrial differentiation's activities, but not on technological innovation and sophistication (OIT, 1997).

Although this economic phenomenon is common for Mexico and Central American countries, however, it has been fostered by local governments under specific development plans. The Puebla Panama (PPP) Plan proposal is totally opposed to endogenous development's dynamic advocated by both regional indigenous townships and social organizations. This is the main reason for rejecting the totality of the Plan initiatives,

although it is recognized Meso-American region's economic vocation and local industries, besides their interest in development of instruments and local institutions promoting local and regional progress. Simultaneously, it is defined, and in practice imposed, the outward dominant development's vision toward exports. Impulse given to maquiladoras in the Southern-Southeast Mexican region, promotion of mega tourist projects or infrastructure serving to foreign trade become essential pillars of this kind of "development." Not all the existing maquiladora's infrastructure in Central America region is planned to generate an export processes platform.

To summarize, maquiladora industry's development in Central America countries is based more on reduction of production costs generated by cheap labor. On other way, technological innovation has not been a uniform process that benefits all economic sectors. The trend towards relocation of the maquiladora industry in Mexico and Central America region encourage participation of foreign direct investment. This investment together with domestic capital create value adding productive inter-related structures or development chains. Thus, both local and regional industry clusters interact to integrate the economic development processes.

#### **4. Impact on the employment**

According to research from the Union Federations of Central American Countries, the population of the entire region is close to 34 million. From this total, 21 million are in age economically active, and only 12 million have jobs, from that, 8 million are men and 4 million are women (Orellana, 2007). Employment generating by maquila industry is the main source of jobs for women, who account for up to 87% of the total.

Lack of clearness in the maquila concept affects employment estimates. In a situation where the economy grows without generating employment, strengthening and expansion of maquiladora industry activity is suppose to move towards creating a more flexible labor market. Instead, the implementation strategies and general practices make for even more precarious the living conditions of population. The trend of the process oriented to making flexible the industrial labor relationship, introduces changes into the work's organization systems, through many mechanisms such as to transfer fixed costs to variable costs and

to externalize costs and responsibilities assumed by outsourcing in situations which allow subcontracting. To externalize costs and responsibilities means for the maquiladoras to transfer them to other institutions such as governments, civil society, etc., as for example the case of social security, welfare, pollution to the environment, corporate responsibilities, etc.

Some of the problems hindering development are the non-observances of labor rights and high turnover of workforce. The turnover of workforce is due partly to cultural differences in labor relationships. But in general these two reasons explain why employment generated by maquiladora industry is highly volatile and of poor quality. The lack of both a policy and a national development strategy for labor force development, protection and supply leave the maquila at the mercy of foreign capital investors, who take advantage of the cheap local labor; and exploit guarantees established by government, such as tax exemptions. Maquila companies violate workers' rights, taking advantage of national laws that have relaxed labor rules. These kinds of laws make it difficult for governments to enforce the worker's rights.

In 1996 there were in Central American countries about one quarter of million people employed by the maquiladora industry, which represented approximately 25-30 percent of the workforce employed in industry (ILO, 1997). Altenburg (1995) estimated that maquiladora industry had created about 15% indirect jobs.

Production output and employment in the maquiladora industry are linked to economic cycles. When the economy goes into recession, the maquiladora industry comes to a standstill; workers are fired leading to employment instability and allowing greater turnover in response to down turns in the economy and labor contradictions. Wolf Herrera, Bernal Mármol and Martínez (2003) reported in their research several incidents in which were an expression of a new collective force's consciousness that had put in danger governance, although workers are not allowed to join unions or to file grievances to local labor authorities.

It has been argued that greater job stability affects labor costs because it results in better labor conditions and improvement in the competitiveness and productivity of the workers. While firing workers saves costs of unproductive labor, however, in the long-run productivity decreases due to the turnover in employment (the

recruitment of new and inexperienced workers). Low labor cost is one of the factors attracting for foreign investment to the maquiladoras. Industry labor costs are about 65 percent of operational costs. For example, the average wage for a worker in free zones in Nicaragua is three times lower than the average salary in Costa Rica. This competitive advantage is translated into lower remuneration and consequently into a lower living standards and limited potential for both economic and social development.

Women, on average 20 years old and predominantly single mothers, make up as much 80 percent of labor force of the maquiladora industry in Central American. The average salary of a female worker in a maquiladora plant is about 68% of a male worker. The salary earned by a single mother is not sufficient to cover the living expenses of the household. Moreover, the burden of domestic work and responsibilities at home, make it difficult for women to do other economic activities that would allow them to increase their income. According to a report published in 1992, in Guatemala wages are one half of the required income to get out from extreme poverty, (La Estrella de Panamá, 1992). For 2007, Orellana (2007) reported average salaries of \$133 dollars, with extreme cases of \$ 50 dollars per month per worker. It should be noted that in the Guatemalan case the wages paid in activities considered typically female employment is below the generally lower than subsistence wages earned by the average worker.

In general, wages in the Central America's maquila are lower than those paid in Mexican maquiladoras. If it is calculated the wage gap in Central American countries, those which have the highest labor costs, are at disadvantage compared to those whose have lower labor costs for the same work units. By the same reason, this situation represents a comparative advantage for countries that have the lower labor costs. Costa Rica and Salvador have the highest labor costs, and also they have the highest levels of productivity and quality (Fernández, 2002). It may not be paradoxical, because lower money cost per factor unit does not necessarily mean lower real cost. Labor relationships between maquiladoras and workers have been a grievous story. Unfortunately, actions of human rights agencies on labor issues that are clearly related have prevented any understanding of the real situation. In the garment industry most of the maquiladoras are owned by Asian capital, mainly Korean capital investors. As a result they experience many labor

problems due to cultural differences between the foreign management and their local partners and workers. Several studies on labor rights violations in Central American's maquiladoras have been sponsored by international advocacy agencies for the rights of women workers. Studies conducted by Oxfam International (2002), Ramírez and Martínez (2001), Tinoco (2002), Ramos and Vargas (2002) have established a relationship between origin of capital and companies attitudes with respect to certain labor rights. But regardless of the origin of capital, there is a clear tendency towards anti union policies formulated and implemented by the maquiladoras being manifested in decisions to allow their workers to join trade unions. In a total of 1,212 enterprises just 45 had union in the year 2003 (ASEPROLA, 2003).

Women workers in Central American's maquiladoras denounced the poor working conditions, discrimination through pregnancy's test practices; job insecurity and unsafe working conditions; violations of the workers' dignity and personal integrity; absence of health care; lack of pensions' plans and the breach of collective contracts, according to research from trade union federations in Central American's countries (Orellana, 2007).

In general, women bore the burden of retrenchment in the sector. When maquiladoras close plants, the trend is that women workers are who most suffer the consequences of these layoffs. Research with focus on women workers in maquiladoras plants shows that these women far from feeling exploited, prefer working in maquilas rather than being domestic workers. They see for themselves the opportunity to experience a situation of emancipation and liberation from submission to patriarchal authority, because it them with purchasing power that allows them some independence from parents or mate. Despite low wages paid by maquiladora industries, workers and families achieve better living standard. For example, maquiladora's women workers of peasant origins, earn some revenue to be shared with their families for improving welfare and living standards. Moreover employment generates structural changes in the future economic and social development of Central American society, stressing the important role that women play.

## 5. Discussion

The analysis about the logic of capital accumulation and wealth creation derived from the production of maquiladoras is full of internal contradictions. The implementation of structural adjustment policies in a new economy environment focusing on a competitive market orientation implies the need for profound changes, both in labor relations, and in spaces and union behavior. The processes of economic globalization require that the liberalization of markets aim at increasing productivity while in a race to the bottom based on the lowering of production and distribution costs.

Changes in a country's competitiveness occurred subject to a new international division of labor, in an environment where economic globalization processes, which have led towards a race to the bottom on the development of productive activities may not necessarily be sustainable in places where the costs of labor are lower. Critics believe that under the current economic policies, regional economies have reduced agricultural production and industrial bases, and have increased external dependence.

The current legal regimes in Central American countries related to maquiladora industry programs, generate both confusions and administrative rigidities. In all Central American countries, there are no criteria for homologation of promotional schemes for the maquiladora industry. And what is more absurd is that there is not a clear understanding about the role that this type of industry is playing in economic growth and national development. The lack of transparency in incentive programs and the tax benefits of export promotion schemes call into question the real scope of the benefits of trade liberalization.

Despite the outcome generated by the sophisticated maquiladora industry and its impact on economic development, modernization, and welfare of working population, there are doubts about its multiplier effects and the real impacts on economic growth and the generation of significant remunerative jobs. International maquiladora's knowledge on technology and innovation about and around the region is not homogeneous, since they have some specific differentiations. Development processes facilitated by maquila industry in Central America, has been uneven. The lack of uniform indicators makes it difficult to analyze the impact of the maquiladora industry on both regional economic growth and employment generation.

Wolf Herrera, Bernal Mármol and Martínez (2003) concluded that the persistence of poor working conditions and violations of labor rights in the maquila sector is due to the lack of political will, on the part of governments, to enforcing respect for existing laws. One of the biggest challenges is the enforcement and fulfillment of labor rights.

## **6. Prospective scenarios**

The future of maquiladora exports is uncertain due to the fact that the World Trade Organization (WTO) has eliminated production subsidies granted by local governments to incentive exports, in accordance with obligations of the World Trade Organization (WTO) regulatory framework. The Puebla Panama Plan designed to foster economic growth and social development in Central American countries, favored mainly infrastructure projects and employment generation in maquiladoras located on the territory from the Southern and Southeast Mexico to Republic of Panama. This development strategy was based on a policy that was to exploit cheap labor as a competitive advantage. Increasing of the maquiladora plants in situ will contribute within certain limits to the creation of employment and thus to related welfare.

The connectivity logic of the maquiladora industries also serves to consolidate a regional approach to development in Central America. The maquiladora approach to development has the effect of serving to contain migration from Meso American countries to United States and defining the region as an assembly area. To achieve this, the Central America region promotes attractive tax incentives for businesses, cheap labor force, and the imminent possibility of reducing transportation costs through the construction of dry channels and seaports that favor the transferring of goods from domestic to export to foreign markets.

The emphasis towards increasing the focus on attaining a greater comparative advantage requires learning about the development of the maquiladora industry. It facilitates the convergence of more sophisticated maquiladora activities. This convergence requires scientific and technological training of workers that result in new transformation processes and regional technological innovation.

Adherence to codes of conduct by trade organizations belonging to the maquiladoras, in

order to obtain certification for respectful human and labor rights, in most cases will continue to be a simple showcase, in the middle of a market of certification companies and independent monitoring from nongovernmental organizations (NGOs). Environmental and social responsibilities are also among these types of certifications.

## 7. Recommendations

To increase exports of maquila's industrial sector and value added is a tough challenge for local economies open to global markets. The challenge to increase the level of exports and improve competitiveness through an export strategy focused on maquila operations requires the establishment of a free trade area, and the abandonment of the economic model based on industrialization by import substitution. However, the opening of free trade areas and further more the opening of the local economies through both, the consolidation and expansion of access to the U.S. market, and negotiations with the European Union, the model of production based on maquiladoras is on the rise. Thus, free trade agreements are already required to expand and diversify markets of the maquiladora industry products, and to balance the strong dependence on the U.S. market.

To improve the economic development and social welfare, the maquiladora's industry should pursue a strategy to induce the investment of higher value-added businesses, such as aerospace, instead of large-scale assembly plants. An economic policy that offers to the foreign direct investors some incentives and tax exemptions, facilitates easiness of administrative procedures, a cheap workforce and raw materials, etc., all these factors could lead to greater affluence of maquiladora plants in Central America.

An important challenge for economic growth in the Central American region is to develop competitive advantages different from those related to labor costs, such as technological innovation companies that require more specialized labor that has more sophisticated technological capabilities to generate greater added value. Moreover, the high-tech maquiladora industry interacts with research and development centers. This will expand the supplier base through the formation of clusters, networks and industrial associations. The development of these local and regional clusters and networks with greater involvement of local and domestic capital can help to accelerate the process of economic

integration with the support of foreign direct investment.

The strategy implemented by the regional maquiladora industry to quickly achieve levels of innovation, quality and competitiveness required by the regional industrial modernization process has to be supported by strategic alliances with foreign companies. The activity of assembling high-tech products is a facilitator of potentialities for both employing human resources with higher levels of professional training and for investments in human capital. The orientation towards the promotion of foreign direct investment for the creation of the maquiladora industry of high technology, such as electronics, biotechnology, etc., to displace the low-tech maquiladora industry, will allow Central American countries to achieve higher levels of competitiveness and quality to increase participation in market shares under processes of economic globalization.

The challenge is to formulate and implement an industrial policy combining different industrial schemes involving local, regional and global supply chains to produce non-traditional exports and maquila. Government policies should be focused on achieving labor stability, quality jobs, and democratic governance for the estimated 500 000 workers seeking better living conditions and to live with dignity. The implementation of training programs and job training will help strengthen the competitiveness and productivity, as well as improve the living conditions of the workforce.

The trend is towards an increase in the maquiladora industries in Central America countries, which would bring increases in rates of employment and exports, but the challenge is to ensure that these increases also enhance economic development and social welfare for the region.

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