



USAID
FROM THE AMERICAN PEOPLE



EXPORT COMPETITIVENESS STUDY OF THE ELECTRONIC / ELECTRICAL EQUIPMENT INDUSTRY IN THE DOMINICAN REPUBLIC

October 2005

This report was written by Aldo Morri for Chemonics International Inc. under Contract No. PCE-I-830-98-00015-0.

EXPORT COMPETITIVENESS STUDY OF THE ELECTRONIC / ELECTRICAL EQUIPMENT INDUSTRY IN THE DOMINICAN REPUBLIC

DISCLAIMER

The perspectives of the author expressed in this publication do not necessarily reflect the opinions of the United States Agency for International Development or the Government of the United States.

TABLE OF CONTENTS

ACRONIYMS		iii
EXECUTIVE SUMMARY		iv
SECTION I	INTRODUCTION	I-1
SECTION II	OVERVIEW OF DR COMPETITIVENESS	II-1
	A. The Political-Economic Environment	II-2
	B. Infrastructure	II-3
	C. Doing Business in the DR	II-4
SECTION III	DR TRADE ENVIRONMENT	III-1
	A. DR Exports and Trade Agreements	III-2
	B. FDI and Free Trade Zone Regime	III-3
SECTION IV	THE ELECTRONICS / ELECTRICAL EQUIPMENT INDUSTRY	IV-1
	A. Structure of the Industry	IV-2
	B. DR Electronic / Electrical Exports and FDI	IV-7
SECTION V	COMPETITOR AND SWOT ANALYSIS	V-1
	A. DR Electrical / Electronic Export Competitors	V-2
	B. SWOT Analysis	V-4
SECTION VI	CONCLUSIONS, RECOMMENDATIONS AND VISION	VI-1
	A. Near-term Recommendations	VI-2
	B. Long-term Recommendations	VI-3
	C. Vision Statement	VI-5
SECTION VII	BIBLIOGRAPHY	VII-1
ANNEX A	PERSONS CONTACTED	A-1
ANNEX B	LIST OF ELECTRIC/ELECTRONIC COMPANIES OPERATING IN THE DR	B-1
ANNEX C	SCOPE-OF-WORK	C-1

ACRONYMS

ADEEM	Association of Dominican Electronic and Electric Manufacturers
ADOZONA	Dominican Association of Free Trade Zones, Inc.
CAFTA-DR	United States, Central America, Dominican Republic Free Trade Agreement
CARICOM	Caribbean Community and Common Market
CEI-RD	Dominican Center for Exports and Investments
CBERA	Caribbean Basin Economic Recovery Act
CBI	Caribbean Basin Initiative
CBTPA	Caribbean Basin trade partnership Act
CNZFE	National Council for Free Trade Zones
DR	Dominican Republic
EU	European Union
FDI	Foreign Direct Investment
FTZ	Free Trade Zone
GATT	General Agreement on Tariffs and Trade
GDP	Gross Domestic Product
GBTI	General Business, Trade, and Investment component of the Support for Economic Growth and Institutional Reform (SEGIR) Project
GODR	Government of the Dominican Republic
HS	Harmonized System
INFOTEP	National Institute for Technical and Professional Training
IT	Information Technology
ITLA	Technical Institute of the Americas
KWH	Kilowatt Hour
MIGA	Multilateral Investment Guarantee Agency
NAFTA	North American Free Trade Agreement
NCC	National Competitiveness Council
OPIC	Overseas Private Investment Corporation
SEGIR	Support for Economic Growth and Institutional Reform
SOW	Scope of Work
SWOT	Strengths, Weaknesses, Opportunities, Threats
US	United States
USAID	United States Agency for International Development
WTO	World Trade Organization

EXECUTIVE SUMMARY

EXECUTIVE SUMMARY

This study was financed by the United States Agency for International Development (USAID) in collaboration with the National Competitiveness Council (CNC) and the Association of Free Trade Zones of the Dominican Republic (ADOZONA).

The objective of this study is to analyze the potential of the electronics and electrical equipment sector to increase production and exports and become a growth sector for the DR economy. Specifically, the aim of the report is to:

- Examine the opportunities for, and constraints on, the Dominican Republic's competitiveness in the electronic and electric equipment sector; and
- Recommend a strategy with specific initiatives to resolve near-term barriers to growth and set the stage for accelerating industry export development.

Overview of DR Competitiveness

Companies will likely always need some manufacturing capability near US and Latin American markets to diversify Asian-heavy manufacturing portfolios, and to satisfy “just-in-time” customer requirements in the region. New region-leading port facilities, loyal and capable low-wage labor, and a thriving tourism sector -- among other strengths -- gives the DR a chance to compete with Mexico for some share of both “efficiency-seeking” and “market-seeking” foreign direct investment (FDI) for companies that want a presence close to the large US and Latin American markets.

The new Dominican government must succeed in stabilizing the political-economic environment, but there are significant challenges as bank failures and possible economic mismanagement under the prior administration has left the DR with a great deal of international debt, and a reputation for political and macro-economic instability to add to its reputation as a country with rampant “red-tape” and corruption.

The current administration can go a long way toward its goal of attracting FDI if it makes progress on goals to reduce the complications of doing business in the DR, including following through on efforts to eliminate corruption and create a “one-stop-shop” for handling of bureaucratic licensing, customs and other procedures.

The DR Trade Environment

The export sector in the DR, driven largely by preferential trade agreements such as the CBI, has led to economic growth and the standard of living in the DR. Exports from the DR surged during the 1990s when DR exports increased from US\$850 million in 1990

to US\$4.8 billion in 2000. In 2004 DR exports totaled 4.4 billion in all sectors,¹ 82 percent of which were generated from the DR's many FTZs².

Dominican Republic FTZ Exports by Sector

Sector	2001 Exports million US\$	2004 Exports million US\$	2004 Pct of Total Exports
Clothing and Textiles	2274.40	2076.16	47.01
Shoes	286.30	195.59	4.43
Electronics / Electrical	474.10	587.74	13.31
Tobacco	338.70	324.22	7.34
Pharmaceuticals	315.90	347.46	7.87
Jewelry	536.20	556.28	12.60
Other	243.50	329.00	7.45
Total	4469.10	4416.45	100.00

Source: CNZFE, Informe Estadístico del Sector Zonas Francas, 2004

The DR's low-cost and reliable labor pool, proximity to the U.S. market, and participation in several key global and regional trade initiatives – especially the CBI -- have been important factors for growth in DR exports.

The ratified CAFTA-DR trade agreement that will go into effect in January, 2006 will further increase the DR's ties to the US, helping to encourage transparency in the DR, and helping the island attract US market-seeking investment. CAFTA-DR helps the DR's electronic and electric equipment exporters by eliminating remaining US entry duties on the value-added portion of DR electronic and electric exports.

Foreign Direct investment and exports are inextricably entwined in the DR. The country's network of duty-free zones has been one of the most successful in the Caribbean region; Dominican FTZs are estimated to be responsible for only 2.8 percent of total DR GDP³, but over 80 percent of the country's exports are accounted for by companies operating out of the FTZs. Currently over 550 manufacturing and export companies operate in the DR's 55 duty-free zones, employing over 185,000 workers.

But new trade commitments such as those imposed by CAFTA-DR and the WTO create both opportunities and threats for manufacturers in the DR. Under current WTO rules, FTZ benefits are considered export subsidies and must be phased out by 2009 for all countries with a per capita income greater than \$1,000; the uncertainty surrounding future public policy affecting FDI and fiscal incentives is hurting the island's ability to attract foreign investment.

¹ USITC data

² CONSEJO NACIONAL DE ZONAS FRANCAS DE EXPORTACION, Informe Estadístico del Sector Zonas Francas, 2004

³ Ibid

The Electronics and Electric Equipment Industry

The DR's electronic and electric equipment and component manufacturing sector is small by global standards – it has between one and two percent of the US market for Harmonized System (HS) 85 Code products – but it employs nearly 10,000 workers and contributes about 5 percent of total Dominican exports. About 20 percent of the employees are in comparatively higher-paying jobs requiring some advanced skills, such as machine calibration and maintenance, computer and IT, or engineering skills

The electronic / electrical industry in the DR is the largest manufacturing location in the Caribbean region for electronic/electric equipment and is, in short, an important industry for a small economy.

At the HS 6-digit level, the main DR electronic and electric exports are shown below:

DR Exports of Electronic / Electrical Equipment by HS Six Digits Products, 2001 to 2004

Product	Exported Value (US\$1,000)			
	2004	2003	2002	2001
HS 853620 Automatic circuit breakers for voltage not over 1,000 volts	133,738	130,423	99,490	89,058
HS 851750 Apparatus for carrier-current/digital line systems	52,280	19,496	574	29
HS 850440 Static converters, nes	47,014	39,376	15,419	5,467
HS 851190 Parts electrical ignition or starting equip	32,017	27,558	22,480	15,328
HS 850431 Transformers electric power capacity not over 1 KVA, nes	26,583	26,328	23,650	39,893
HS 853190 Parts of electric sound or visual signaling apparatus	25,619	29,297	32,649	25,726
HS 853630 Electrical app for protecting electric circuits	24,656	28,873	27,875	19,526
HS 853649 Electrical relays for a voltage between 60 V to 1,000 volts	24,418	20,202	19,983	19,773
HS 850519 Permanent magnets & articles intended to become permanent magnets, nes	13,218	11,448	7,610	9,421
HS 853180 Electric sound or visual signaling apparatus, nes	12,100	12,407	10,072	10,584

Source: USITC.

The industry has grown in the DR as a result of FDI, nearly 90 percent of which comes from the US (including Puerto Rico); manufacturers have invested in the DR because of its low-cost and reliable labor pool, as well as close proximity to the US headquarter and manufacturing facilities. But the DR's competitive position in the global electronic / electricity industry is eroding quickly as US electronic/electric industry supply chains move rapidly to fast-growing, and efficient Asian markets. The trends are undermining the attractiveness of the DR for both "market-seeking" and "efficiency-seeking" FDI.

Electronic and electric equipment manufacturers in the DR must learn to work together as well as in partnership with the public sector to increase the competitive position of

the industry. Companies in the DR share common needs that they could help each other address, with help from public policy makers, such as:

- Improvement in the quality and cost of electricity supply;
- Assistance with both local and international supply sourcing issues, including possible common import purchasing and horizontal integration for inputs such as fabricated metals and moldings.
- Encouragement of domestic and foreign investment in critical local suppliers in such areas as sheet-metal fabrication, printed circuit boards, transformers, engineering services, IT, data programming, injected moldings, and general electronic component distribution.
- Customs and tax/tariff issues;
- Labor and benefits regulation, including medical access for workers;
- Linkages with universities and training institutions for technically trained and English-capable labor.

Competitor and SWOT Analysis

China and Mexico represent the primary suppliers to the US market for the DR's primary exports of HS 85 Code Products – electronic and electrical equipment; China and Mexico each have about a 20 percent share of those goods compared to the DR's 1 to 2 percent. India, second to China in attracting developing country FDI, and Costa Rica -- a comparatively well-educated and stable country also party to CAFTA-DR -- represent potential future competition to the DR electronic and electrical industry.

Strengths Summary

- The Electronic / Electricity industry in the DR is well established and by far the biggest in the Caribbean region.
- Technical and engineering talent has not been too difficult to find in the DR.
- “Just-in-time” access to the US continues to provide some competitive advantage to the DR.
- CAFTA-DR provides increased advantage, eliminating all remaining tariffs on export value-added in the electronic/electrical equipment industry.
- Current institutional framework for industry investors is in place.
- Low-cost, trainable, and geographically stable labor.
- Comparatively flexible labor regulations.
- Well-developed FTZ and industrial zones with good internal infrastructure.
- New Caucedo port facilities, regionally competitive land and communications costs, and easy air access to US.
- Risk mediation for foreign investors through MIGA and OPIC.
- Desirable living and recreational opportunities for expatriates.
- Bilingual English-Spanish country.

Weaknesses Summary

- Focus on low-value added manual assembly leaves some facilities in the DR vulnerable to shut down.
- Global supply chain moving from US to Asia threatens DR competitiveness.
- Low level of linkages, or “cluster” activities currently between existing electronic/electrical industry manufacturers in the DR.
- Lack of industry expertise in the policy-making and FDI promotion framework.
- No target marketing to potential electronic/electric industry investors is currently done by CEI.
- Heavy reliance on US market exposure for suppliers, investors, and buyers.
- DR image tarnished by volatility earlier in the decade.
- DR has a reputation for bureaucratic “red-tape”, legal and regulatory unpredictability, and corruption.
- Labor pool less educated than other regional competitors such as Costa Rica and Mexico.
- High cost and unreliable electricity supply.
- Unstable trucking/shipping availability
- High transport costs to US market versus Mexico.
- No “one-stop-shop” to streamline licensing and other procedures.
- Out-of-date and sluggish customs bureaucracy.

Opportunities Summary

- Investor risk of “over exposure” to Chinese production facilities.
- CAFTA-DR increases DR regional leadership image.
- DR electronic / electric industry interest in “cluster” activities is increasing in response to increased awareness of threats.
- Increasing institutional focus on electronics/electrical industry in the DR.
- Need for technical talent provides opportunity for countries that invest in human capital (but threat to countries that do not).
- Caucedo Port creates region-leading, large vessel port facilities.
- Possible opening of unlimited DR local market access by FTZ companies as DR government enforces WTO subsidy elimination guidelines.
- DR movement toward “one-stop-shop” to streamline “red-tape.”

Threats Summary

- Uncertain future FTZ fiscal incentives because of WTO requirements to eliminate FTZ trade subsidies by 2009.
- General education level in the DR lower than in Costa Rica and Mexico.
- Shifting supply chain inputs toward Asia attract “efficiency-seeking” FDI to those countries.
- Asian market growth provides incentives for “market-seeking” FDI in those countries.
- East Europe market growth and skills advantage combined with European Community proximity.

- Decreasing trans-pacific shipping costs decrease DR shipping cost advantages versus China to the US market.

Recommendations

Summary of Near-Term Recommendations:

- Expedite WTO and future FTZ fiscal policy to remove uncertainty.
- Create a “one-stop-shop” to streamline “red-tape.”
- Increase image of the DR’s electronics and electrical industry locally.
- Employ or train electronic / electricity industry experts in policy and FDI promotion.
- Implement investor target marketing in CEI-RD promotion mix.
- Build electronic / electric industry-specific support infrastructure for industry investors, including offering investors full pre-, during- and post-investment services and support.
- Decrease “exit” as well as “entry” barriers to increase investor confidence.
- Support industry “cluster” initiatives, including encouragement of horizontal integration, and common purchasing accords.
- Streamline and modernize customs.

Summary of Long-term Recommendations:

- Stabilize perception of country risk and macro-economic volatility.
- Create incentives for investment in critical backward linkages to locally based suppliers.
- Attract BIG businesses with a package of world-class incentives, and by using targeted marketing; this will in turn provide strong impetus for investment in industry supply inputs.
- Position against Mexico as a primary Western Hemisphere location, including focus on lower-cost, more loyal labor.
- Invest in human capital in primary education and in technical, high-tech, IT, and engineering skills.
- Support Industry-University partnerships to increase training, recruiting and research initiatives.
- Improve infrastructure, especially electricity and roads.
- Diversify markets away from the US.

SECTION I

INTRODUCTION

SECTION I

INTRODUCTION

This study was financed by the United States Agency for International Development (USAID) in collaboration with the National Competitiveness Council (CNC) and the Association of Free Trade Zones of the Dominican Republic (ADOZONA).

Sectors that have served as traditional sources of growth in the Dominican economy have matured, creating a need for the identification and promotion of new growth sectors. HS Code 85 products – Electronic and Electrical Equipment -- accounted for US\$453 million in exports in 2004, an increase from US\$347.1 million in 2001.

The objective of this study is to analyze the potential of the electronics and electrical equipment sector to increase production and exports and become a growth sector for the DR economy. Specifically, the aim of the report is to:

- Examine the opportunities for, and constraints on, the Dominican Republic's competitiveness in the electronic and electric equipment sector, and;
- Recommend a strategy with specific initiatives to resolve near-term barriers to growth and set the stage for accelerating industry export development.

Exports have been an important growth sector for the DR; total annual DR exports increased from US\$850 million to US\$4.8 billion from 1990-2000 before flattening. Proximity to the US market, the Free Trade Zones that provided incentives for investment and a textile and apparel quota system that provided market advantage for the DR were important factors driving growth in DR exports.

All legislative bodies in the region have ratified the CAFTA-DR free trade agreement signed on August 5, 2004. CAFTA-DR provides duty free entry to the US market, and is likely to significantly enhance trade between the participating nations, creating both new opportunities and new threats for specific sectors. Also, under WTO rules, FTZ benefits are considered export subsidies and must be phased out by 2009 for all countries with a per capita income greater than \$1,000.

The DR export sector must prepare for these challenges: The Export and Investment Center of the DR (CEI-RD), the Dominican Association of Free Trade Zones (ADOZONA), the National Competitiveness Council (NCC) and USAID/DR have been engaged in discussions on how USAID/DR can assist them in meeting the challenges. CEI-RD, ADOZONA and the NCC will utilize the recommendations developed in this study to implement export development strategies and to address the constraints to growth in the sector. The recommendations may also be used to develop assistance – both donor and public sector – to the industry.

SECTION II

OVERVIEW OF DR COMPETITIVENESS

SECTION II

OVERVIEW OF DR COMPETITIVENESS

A. The Political-Economic Environment

The Dominican Republic ranked among the fastest growing economies in the Latin American and Caribbean region throughout the 1990s; from 1991-2000, the economy grew on average by 5.9 percent per year and per capita income increased by 4.1 percent per year. The sustained economic growth over the last 30 years contributed to poverty reduction, as can be seen in various social indicators:

- Infant mortality decreased from 91 out of 1,000, births in 1970 to 38 out of 1,000 births in 2002.
- Illiteracy rate decreased from 33 out of 1,000 adults in 1970 to 16 out of 1,000 adults 2002.
- Life expectancy jumped from 59 years total in 1970 to 67.2 years in 2002.
- Poverty rate decreased from 33.9 percent in 1992 to 28.6 percent in 1998.

After a decade of fast economic growth, the country's macro-economy and growth prospects severely deteriorated from 2000 to 2004. In April 2003, the economy was shocked by the collapse of a major bank, which triggered other bank failures: the DR lost 20 percent of its GDP, the peso was devalued by more than 200 percent, the external debt doubled to \$US 7.7 billion, and debt servicing soared from 18 percent to 43 percent of GDP, accounting for 40 percent of the 2005 state budget. Salaried purchasing power nearly halved during this period, creating significant social unrest. The DR's strong tourism sector came to the rescue, but the government has been forced to turn to multilateral loan bailouts leaving the DR burdened by high debt.

The DR economy turned around in 2005 when it grew at 4.3 percent in real terms in the first quarter of 2005, compared to -1.4 percent during the first quarter of 2004. The IMF is forecasting 2.5 percent GDP growth for 2005 as a whole, followed by 4.3 percent growth in 2006.

The Government of the Dominican Republic (GODR) spearheaded reforms in the banking and public finance sectors, and initiated a flexible exchange rate regime that now places the DR Peso at an approximately 33 to 1 ratio against the US dollar.

The Dominican Republic should get a boost in exports now that the CAFTA-DR trade agreement signed with the United States has been ratified, and will go into effect in January of 2006. The government hopes that the combination of CAFTA-DR and macroeconomic reform efforts will again attract foreign investment, which has been

critical to the island's export industries. The GODR is also making investments to lay the groundwork for a more educated, higher-tech, and more knowledge-based DR economy.

B. Infrastructure

B1. Energy. The energy sector may perhaps represent the DR's biggest challenge to sustainable development. The cost of power in the DR is now one of the highest in the world, and it is not unusual in some communities to be left without electricity for up to 24 hours. Load shedding is a common practice and virtually all manufacturers must have their own backup power.

Foreign private electricity generators have added new capacity, but soaring demand, poor maintenance of transmission facilities, and a lack of energy conservation efforts have kept electricity capacity at well below peak demand. There are private power suppliers that provide energy to certain areas directly, without the Government intervention. That is the case of the FTZ and two tourism areas: Bavaro-Punta Cana and Romana-Bayahibe. Companies established in these areas have no interruptions, unless there are special situations such as hurricanes.

A recent IMF agreement calls for cutting energy transmission losses to a maximum of 30 percent and increasing rates by 90 percent. The new government is seeking private sector and public-private partnerships agreements to invest in alternative ways to efficiently generate, transmit and distribute electricity to the entire country.

B2. Communications and Transportation. The DR's telecom systems are considered one of the most advanced and cost-competitive in Latin America. This is largely due to extensive foreign investment in the sector by companies like Verizon, Tricom, Orange/France Telecom, Centennial and Cable and Wireless. The cost of a T1, high-speed Internet connection is the lowest in all of Latin America.

The DR's road network needs updating as many of the main roads are in poor and sometimes dangerous conditions, posing obstacles to commercial trucking. A local truck drivers union often strikes and has considerable influence on the price of haulage.

Traffic can pose a major problem in Santo Domingo, whose population accounts for nearly one-third of the island's 8.5 million inhabitants. A proposed metro system for the city will require substantial foreign investment, but the airport system is good by Latin American standards. The DR has seven international airports, mainly serving the tourism industry; four of these -- Santo Domingo, Puerto Plata, Barahona and Samana - - are operated by a foreign consortium. A new international airport was just constructed in Santiago, the country's second largest city, and home to a number of free zone parks. The DR is connected by daily flights to New York and Miami, as well as several other US cities, and there are regular connections with major European destinations and Latin American capitals.

Perhaps the DR's most important new infrastructure venture is the \$300 million mega port facility of Caucedo, located in Santo Domingo, two miles from the international airport. Dubai Ports International (DPI) – the world's leading port facilities manager -- acquired a 35 percent equity share and management control of Caucedo Marine Terminal last February, representing DPI's first port in the Caribbean region. The new port should relieve pressure – and hopefully shipping costs – from the DR's current half dozen operable ports, which lack sufficient draft to accommodate large cargo vessels. The port could also help position the DR as a Caribbean regional hub; port infrastructure in the region – such as those in Kingston, Freeport, and Panama – are operating at capacity, and the regional demand for international container facilities now exceeds supply.

C. Doing Business in the DR

The time, cost, and bureaucratic hurdles involved in starting a business are often a yardstick for how difficult it is to do business in a country. The World Bank aggregates a large set of data on doing business in various countries including the time, and procedures in takes to start a business. The World Bank has developed an index from 0 to 100 to compare labor regulations rigidity in various countries: the lower the score, the less rigid, or cumbersome, the worker hiring or firing process in the country.

Table II-1. "Doing Business" Selected Indicators, 2005

Country	Starting a Business		Labor Difficulty Index	
	# Procedures	Days	Hiring	Firing
Dom Rep	10	75	22	30
Costa Rica	11	77	56	0
Mexico	9	58	33	60
India	11	71	56	90
China	10.8	65.8	11	40

Source: World Bank, Doing Business, 2006

The Dominican Republic compares favorably in terms of “red-tape” in respect to countries that compete for an export share of electronic / electrical equipment into the U.S. market. All of the countries have relatively burdensome procedures for investors wishing to start a business⁴. Investors in the DR take approximately 75 days to sort through 10 separate procedures to start a business; meanwhile the same process takes 65.8 days in China to sort through 12 separate procedures.

Labor regulations are less rigid in the DR compared to competitor countries studied. The DR receives a “difficulty-of-hiring Index” of 22, and a “difficulty-of-firing Index” of 30,

⁴ World Bank's “Doing Business in 2005”

significantly better or equal to all the countries in both categories. Notably, labor regulations in the DR are much more lenient than those of its primary Latin American competitor – Mexico -- which has stringent hiring and firing rules. The DR apparently has a strong labor market advantage compared to Mexico if you combine this with Mexico's reputation for very high labor turnover in the US border "Maquiladora" zones, and a higher Mexican per-hour wage compared to the DR.

The increasing business-friendly DR government claims to be constantly benchmarking its legal framework in comparison with other countries, and looking for ways to improve investor rights. A team within CEI-RD is reportedly looking at ways to improve the legal framework of the free zone network, including laying plans to copy other countries and create a "one-stop-shop" for foreign investors; all government agencies will be able to channel their bureaucratic procedures, such as licensing and permits, into the "shop" with a view to shortening the approval process.

Corruption, admits the DR government, remains a serious problem in the DR. Transparency International ranks the Dominican Republic behind countries such as Mongolia and Senegal with a 2.9 score on the agency's corruption index (with 10 representing "squeaky clean," and 0 "highly corrupt"). According to Heritage Foundation research, the DR is characterized by overall lack of transparency and confidence in public sector institutions, high levels of corruption, lack of respect for the rule of law, and high transaction costs. The report also says that the DR serves as a major transit route for cocaine, and that interdiction of this flow has been hampered by a lack of training and funding for security forces, as well as corruption.

Corruption will likely remain widespread in the DR for some time. Recent efforts to reform the police force have yet to produce results. The justice system is heavily affected by continuous migration from Haiti with its attendant problems of unemployment, violence, human trafficking and corruption. However, there has been improvement under the present Government. Judicial reforms are helping to improve the country's notoriously inefficient courts and provide more transparent, open trials.

The GODR has made a point of promoting transparency at all levels of government. The President set up a National Commission for Ethics and Corruption earlier this year by decree; the agency is made up of representatives of the government and private sector, as well as authorities from the still influential Catholic Church, who will be tasked with formulating proposals and drawing up a plan of action to fight corruption. The President has also sent a bill to Congress to ratify the UN's anti-corruption convention.

SECTION III

DR TRADE ENVIRONMENT

SECTION III

DR TRADE ENVIRONMENT

A. DR Exports and Trade Agreements

Exports from the DR surged during the 1990s when DR exports increased from US\$850 million in 1990 to US\$4.8 billion in 2000. In 2004 DR exports totaled 4.4 billion in all sectors,⁵ 82 percent⁶ of which were generated from the DR's many FTZs (Table III-1).

Table III-1. Dominican Republic FTZ Exports by Sector

Sector	2001 Exports million US\$	2004 Exports million US\$	2004 Pct of Total Exports
Clothing and Textiles	2274.40	2076.16	47.01
Shoes	286.30	195.59	4.43
Electronics / Electrical	474.10	587.74	13.31
Tobacco	338.70	324.22	7.34
Pharmaceuticals	315.90	347.46	7.87
Jewelry	536.20	556.28	12.60
Other	243.50	329.00	7.45
Total	4469.10	4416.45	100.00

Source: CNZFE, Informe Estadístico del Sector Zonas Francas, 2004

Important factors for growth in DR exports have included the country's low-cost and reliable labor pool, proximity to the U.S. market, and participation in several key global and regional trade initiatives. A signatory to the Uruguay Round of Negotiations of the General Agreement on Tariffs and Trade (GATT) and member of the World Trade Organization (WTO), the Dominican Republic's economy is guided by the principles and guidelines adopted by the WTO to liberalize world trade. In doing so, the DR has worked to adapt its legal and economic framework to meet WTO rules so that the country may position itself to play a role in the global economic value chain.

Regional initiatives have including the Caribbean Community (CARICOM) free trade agreement, the Free Trade Agreement with Central America, and -- most importantly -- the Caribbean Basin Initiative (CBI) signed between the U.S. and the DR in 1983. The CBI agreement has been slowly strengthened and modified over the years so that nearly 80% of DR exports to the U.S. now enter duty-free. The recently approved CAFTA-DR agreement will eliminate remaining duties on the value-added portion of exports from the DR to the U.S. market.

⁵ USITC data

⁶ CONSEJO NACIONAL DE ZONAS FRANCAS DE EXPORTACION, Informe Estadístico del Sector Zonas Francas, 2004

B. FDI and Free Trade Zone (FTZ) Regime

The Dominican Republic foreign investment law underwent a major overhaul 10 years ago to improve treatment to foreign investors. There are no limits on foreign control of businesses or screening of foreign investment, but investments must be registered with the Central Bank of the Dominican Republic. The U.S. Department of Commerce reports that foreign investment is permitted in nearly all sectors. The International Monetary Fund reports that both residents and non-residents may hold foreign exchange accounts. Payments and transfers are subject to documentation requirements. Some capital transactions are subject to approval, documentation, or reporting requirements.

Foreign Direct investment and exports are inextricably entwined in the DR. The DR's network of duty-free zones has been one of the most successful in the Caribbean region. Dominican FTZs are estimated to be responsible for only 2.8 percent of total DR GDP⁷, but over 80 percent of the island's exports are accounted for by companies operating out of the FTZs. Currently over 550 manufacturing and export companies operate in the DR's 55 duty-free zones, employing over 185,000 workers. About half of the companies are headquartered in the US (including Puerto Rico), about 30 percent are Dominican-based, and the rest Asian – particularly South Korean – or European.

The DR's Free Zone regime provides a strong support infrastructure for businesses wishing to avail themselves of tax-free incentives to set up in the country. While the incentives have come under WTO scrutiny, the current DR law allows business parks near Santo Domingo or Santiago to offer a 20-year exemption on income tax, while those in rural areas can apply for an exemption of 25 years or longer. Land prices range from \$US 7.00⁸ and up per square foot per year, but prices decline in relation to the amount of space required.

Textiles account for about 50 percent⁹ of businesses and export value out of the free zones, but the DR has been shifting its emphasis in recent years in response to CAFTA-DR and globalization trends. Investment promotion and DR infrastructure development is now shifting away from traditional textiles, footwear, and agricultural products -- such as tobacco, sugar and rum -- and into comparative high-tech areas such as medical devices, information technology, and electronics / electrical industries.

According to the U.S. Trade Representative, Dominican legislation does not contain effective procedures for settling disputes arising from Dominican government actions, and Dominican expropriation standards are not consistent with international law standards. Nonetheless, the DR claims to operate what is probably one of the

⁷ CONSEJO NACIONAL DE ZONAS FRANCAS DE EXPORTACION, Informe Estadístico del Sector Zonas Francas, 2004

⁸ FDI, Foreign Direct Investment Magazine, June / July 2006.

⁹ CONSEJO NACIONAL DE ZONAS FRANCAS DE EXPORTACION, Informe Estadístico del Sector Zonas Francas, 2004

Caribbean region's most liberal and attractive legal frameworks for foreign investors willing to export at least 80 percent of their production. The law places no restriction on repatriation of capital and dividends. Investors have free access to currency through the Central Bank and local banks.

The legal framework also provides guarantees against political and expropriation risks through the US Government's Overseas Private Investment Corporation (OPIC). The DR is also a participant in the World Bank's Multilateral Investment Guarantee Agency, which provides investor protection from losses arising from currency inconvertibility and expropriation, as well as the risk of non-compliance of government contracts, and wars and civil disturbances.

SECTION IV

THE ELECTRONICS / ELECTRICAL EQUIPMENT INDUSTRY

SECTION IV

THE ELECTRONICS / ELECTRICAL EQUIPMENT INDUSTRY

A. Structure of the Industry

Although dwarfed by the DR's apparel and textile operations, the electronics / electrical equipment industry in the DR joins with the medical devices and pharmaceuticals industry as one of the country's top manufacturing sectors – one that the country can ill afford to lose to globalization.

Over thirty companies in the DR manufacture electrical and electronic equipment. They are primarily focused on the assembly of a wide variety of either electronic (having some silicon components) or electrical sub-components that are re-exported for incorporation into one of the investors' products. Most of the products assembled in the DR are circuit breakers, switches, capacitors, inverters, and a slew of connective and protective circuits: plugs, wiring or other components that attach to wires and wire harnesses, including fiber-optic cables.

All of the companies operate in the FTZs, representing just over 5 percent of all companies operating in the FTZs. These companies (list appears in Annex B) generate all DR exports in the industry.

A1. Labor Cost and Availability. The DR electronic / electrical industry employs about 9,420 workers¹⁰ in mostly low-wage, manual assembly operations. The industry also employs about 1,000 higher-paid technical employees requiring advanced machine set-up and maintenance skills, or engineering employees requiring advanced industrial design capabilities and supervisory skills. The industry also employs about 1,000 administrative and "back-office" personnel – accounting and payroll, for instance – in jobs requiring computer and information technology skills.

Along with proximity to the U.S. market, most of the companies said that they were originally attracted to the DR because of the low-wage environment. Estimates of current hourly wages are provided below on Table IV-1 for selected countries.

Guatemala, Honduras and Nicaragua have competitively low labor rates per hour, but they are not currently considered a competitive threat to the Dominican Republic because all three countries lack a secure environment.

¹⁰ Data from the Consejo Nacional de Zonas Francas de Exportación (CNZFE); Informe Estadístico del Sector Zona Franca 2005 (preliminary data).

Table IV-1. Country Estimates- Wages per Hour

Country	Wages U.S. dollars/Hour
Dominican Republic	\$1.80
Mexico	>\$2.75
U.S.	\$22.00
Puerto Rico	\$12-\$15
Canada	\$17.00
Costa Rica	\$3.00
Ireland	\$ 19.00
Singapore	> \$20.00
China	< \$1.00
Japan	>\$26.00
Korea	\$10.00
Taiwan	\$ 6.00
Guatemala	<\$1.50
Honduras	<\$1.50
Nicaragua	<\$1.50

Sources: U.S. Dept of Labor; DeRoyal International; CNZFE.

Interviewed companies in the DR reported that they pay anywhere from US\$0.50 per hour to over \$4.00 per hour for fully-loaded¹¹ line workers. One company interviewed said that they employed about 750 total workers, and that their employee structure and pay scale ranges were as follows:

- 550-570 Line workers being paid US\$0.57 to US\$1.00 per hour (not-loaded), depending on the shift¹² and the experience of the worker.
- 80 Administrative/Accounting personnel paid US\$2.42 to \$2.76 per hour.
- 67 Technicians paid US\$1.36 to \$1.66 per hour.
- 30 Supervisors/ Engineers – US\$4.39 to \$5.45 per hour.

The company also reported that fully loaded wages were approximately double the hourly wages shown above.

Some of the electronic and electric manufacturers now operating in the DR moved from operations in Puerto Rico, where labor rates are now comparatively expensive as the country's ties to the US economy has grown. A number of the companies also moved from Mexican operations, while some simultaneously currently operate facilities both in Mexico and the DR.

Notably, the companies say that doing business in the DR compares favorably to Mexico. Some companies interviewed said that they had very high labor turnover in their Mexican "Maquiladora" operations. One company -- an important US manufacture

¹¹ Fully-loaded labor rates collected varied widely as different companies calculated the rate based on varying criteria; some include overhead and fixed costs in their calculations.

¹² Most companies interviewed operate two or three shifts, and wages increase for later shifts.

of electrical breakers and other equipment – estimated that labor turnover in its Mexican border operations was close to 14 percent per year, compared to only 3 percent in the DR¹³. While this labor turnover issue may represent a competitive advantage for the DR over Mexico, it should be noted that DR managers interviewed with experience in both countries said that Mexican labor turnover problems are relegated to the US-Mexican border zones; “Maquiladora” workers have a great deal of incentive to switch employers to get higher wages, and these workers often keep their jobs just long enough to save enough to emigrate to the U.S.

An owner of a contract manufacturer in the DR who had worked in Mexico for many years also noted that Mexican management is less US-friendly than in the DR, and that Mexican business owner/partners expect higher profits than in the DR. Another company said that the DR compares favorably in terms of the availability of management talent compared to Mexico, where, according to the company, US investors are forced to provide more expatriate management.

Although foreign investors cite Dominican labor as competitive in terms of cost, Dominican workers possess largely only basic skill, posing little quality advantage over most competitors. Moreover, the average skills profile falls short of the demands of higher value-added service and manufacturing industries that pay higher wages. Greater availability of skilled workers would create incentives for firms to invest in new technologies that are skill-intensive, but filling this supply gap would necessitate better skills and extensive educational improvements, including achieving full access to education at the secondary level¹⁴.

Electronic and Electric companies interviewed reported mixed results in terms of finding adequately trained labor in the DR. Some mentioned that it was very difficult to find workers with adequate literacy, while others said that computer literacy was not adequate.

The companies also reported mixed results at efforts to work with local universities and training institutes. One said that they had had a very good experience in working with INFOTEP (National Institute for Professional and Technical Training) to create a special training program for computer-related job functions. The company said that this was especially pleasing because DR manufacturers pay a percentage of wages to the government to fund INFOTEP. Another DR manufacturer reported good results with recruiting and training initiatives with several DR universities. However, one interviewee said that his company’s efforts to work with ITLA (Technical Institute of the Americas) on specific technical training programs had been “a waste of time.” Several companies mentioned that while the Fernandez administration has said that ITLA is a very important initiative for the country, the rhetoric has thus far “not been supported with enough action.”

¹³ Interview with Easton, (Cutler & Hammer division) in the DR November 2005.

¹⁴ Dominican Republic Review of Trade and Labor Competitiveness; World Bank Group, Caribbean Country Management Unit, March 28, 2005.

A2. Value-Added and CAFTA. It is difficult to calculate the value-added by the industry in the DR; there are a variety of products and manual as well as some automated processes in the factories. The high-percentage of low-wage labor assembly activities and the low-level of locally sourced inputs would imply low value-added by the industry – one consultant placed the estimate for the DR industry as a whole at no more than 7 percent¹⁵.

However, based on pre-import versus export invoice pricing, many of the companies interviewed report value-added of anywhere from 10 percent to 60 percent – very high, in other words. One company reported value-added of near 60 percent said that CAFTA would make his operations significantly more competitive because under the current CBI, the company must pay tariffs on the value-added component of his shipment back to the U.S.

The DR electronics and electrical industry has made very little progress creating backward linkages to supply chains in the local Dominican economy. Estimates place local sourcing share at less than 5 percent of total inputs, with most inputs currently coming from the US. This is one of the prime threats to the industry; the competitiveness of the DR is eroding rapidly as supply input industries, such as sheet metal fabrication, move from the US to Asia¹⁶. The largest industry investor in the DR now estimates that approximately 80 percent of its supply inputs are currently sourced from the US, but US input sourcing is projected to decrease to less than 50 percent over the next five years.¹⁷

According to DR electronic / electric manufacturers, vital support industries that would increase competitiveness and local value added include sheet-metal fabricators, printed circuit board manufacturers, transformers, engineering services, IT, data programmers, injected moldings, wire suppliers, and general electronic component distributors. Companies reported that they were pleased with local packaging and labeling capabilities on the island, and that there was no pressing need for improvement in this area; most companies are able to use the same packaging materials in which inputs arrived to box outgoing products.

A3. “Cluster” Linkages, and Industry Needs. Few linkages currently exist between the companies in the DR electronic / electric industry, though committees have been set up through ADOZONA (the Dominican Association of Free Trade Zones) for each of the manufacturing sectors. Companies reported that the ADOZONA Electronic / Electric committee was largely dormant; few companies were able to report any meaningful interactions through the committee in recent years. The companies said that they were much more likely to participate in organized activities of mutual benefit through groups organized by their FTZ park, though these were not industry-specific activities. These organizations normally hold monthly meetings to discuss issues revolving invariably

¹⁵ Gokul Araguala who conducted some interviews and research in the DR.

¹⁶ Industry interviews in the DR, November, 2005.

¹⁷ Presentation by Brad Godfrey, President *Power One, Inc.*, November 11, 2005.

around electricity supply, as well as customs/shipping issues, labor benefits and other human resource and safety issues.

Nearly all of the companies interviewed for this report said that they would commit both time and resources to a meaningful DR Electronic / Electric industry “Association” of some kind. Nearly all felt that the industry could work together and with government to create an environment with “clearer and more stable rules.” Nearly all interviewees mentioned that companies in the industry shared common needs that they could help each other address, such as:

- Negotiations with government on electricity supply;
- Assistance with both local and international supply sourcing issues, including possible common import purchasing and horizontal integration for inputs such as fabricated metals and moldings;
- Customs and tax/tariff issues;
- Labor and benefits regulation, including medical access;
- Linkages with universities and training institutions for technically trained labor, and English speaking workers (discussed in labor section);
- Comparing of best practices and helping each other be more efficient.

A4. Electricity: Along with the lack of local sourcing inputs (described in section above) electricity supply and reliability is nearly always the first complaint of all of the companies interviewed. In the better industrial parks, such as the ITABO FTZ park near Santo Domingo, electricity is provided at wholesale cost by the park owner, resulting in better pricing and provisioning. Nonetheless, all companies have their own generation capability as well as specialized machinery to regulate electricity power fluctuations that could damage equipment and work flow.

A5. Supply Co-operation: Some companies suggested that DR electronics / electrical companies could consider pooling their purchasing capabilities and buying power to get more cost-efficient purchasing on some common inputs such as wire, solder, glues, etc. Rather than sourcing some things from Asia, such as fabricated metal and moldings, some companies have vertically integrated their operations. Some, such as *Meilink* in Santiago, have excess metal fabrication capacity that could supply other companies in the DR¹⁸.

A6. Customs Bureaucracy: Companies also complained of varying degrees of problems related to bureaucracy. One company noted that customs offices are not opened long enough; in some countries in which the company operates, according to the interviewee, customs are much more modernized and offices are open 24 hours. Companies complained that customs paperwork and “red-tape” were so onerous that they have found it more efficient to outsource customs paperwork to FTZ-based service providers. As an island, DR officials must realize that this problem must be addressed if the DR is to remain competitive.

¹⁸ According to Mike Hirata, Vice President Meilink World Holdings, Inc.

A7. Labor and Benefits Framework and Efficacy: Companies complained about a number of benefit and social security issues saying that while they paid for benefits, such as medical care, the companies still had to pay extra to provide private medical care for sick employees to keep them working.

B. DR Electronic/Electrical Exports and FDI

B1. Exports. The current law governing FTZ operations in the DR requires that 80 percent of products manufactured under the FTZ regime must be exported. USITC statistics compiled from COMTRADE data place total HS code 85 product exports from the DR at US\$453 million in 2004, an increase from US\$347.1 million in 2001.

The global electronic and electrical components and equipment industry is made up of a value chain of literally tens of thousands of components and sub-components; the end-use consumer market for finished electronic equipment alone (not including electrical) was over US\$1,400 billion¹⁹ globally in 2004.

The major export products categories for the industry at the HS 4-digit level are:

- HS Code 8536, electrical appliances for switching (fuses, switches, etc.) not exceeding 1000 volts (2004 exports of US\$210.5 million);
- HS Code 8504, electrical transformers or static converters (US\$84.6 million);
- HS Code 8517, electrical appliances for line telephony (US\$56.4 million);
- HS Code 8531, electrical ignition/starting equipment for autos (US\$45.4 million);
- HS Code 8511, electrical ignition/starting equipment (US\$32.1 million) for automotive applications: spark plugs, fuses, etc.;
- HS Code 8505, electro-and other magnetic products (US\$13.6 million).

Table IV-2. DR Electronic, Electrical Equipment Exports to the US, 2004.

HS #	Product	Value 2004 US\$1,000	% Annual Growth 2000-2004	% Annual Growth 2003-2004
8504	Electric transformers, static converters	84,615	3	16
8505	Magnets: electro, permanent, chucks, etc.	13,556	56	18
8511	Electric ignition, start equipment (plugs, starter motors, etc.)	32,138	47	16
8517	Electric appliances for line telephony	56,448	322	160
8531	Electric sound/visual signals (bell, siren, alarm, etc.)	45,390	-3	-12
8536	Electric appliance for switching (fuse, switches, etc.) not exceeding 1000 volts	210,487	3	-13

Source: USITC.

¹⁹ Electronics Business Magazine.

The six product categories above represent about 98 percent of total DR electronic/electrical exports to the United States market (including Puerto Rico), which absorbs about 82 percent of worldwide DR exports from the sector.

At the HS 6-digit level, the main DR electronic and electric exports are shown below:

Table IV-2. DR Exports of Electronic / Electrical Equipment by HS Six Digits Products, 2001 to 2004

Product	Exported Value (US\$1,000)			
	2004	2003	2002	2001
HS 853620 Automatic circuit breakers for voltage not over 1,000 volts	133,738	130,423	99,490	89,058
HS 851750 Apparatus for carrier-current/digital line systems	52,280	19,496	574	29
HS 850440 Static converters, nes	47,014	39,376	15,419	5,467
HS 851190 Parts electrical ignition or starting equip	32,017	27,558	22,480	15,328
HS 850431 Transformers electric power capacity not over 1 KVA, nes	26,583	26,328	23,650	39,893
HS 853190 Parts of electric sound or visual signaling apparatus	25,619	29,297	32,649	25,726
HS 853630 Electrical app for protecting electric circuits	24,656	28,873	27,875	19,526
HS 853649 Electrical relays for a voltage between 60 V to 1,000 volts	24,418	20,202	19,983	19,773
HS 850519 Permanent magnets & articles intended to become permanent magnets, nes	13,218	11,448	7,610	9,421
HS 853180 Electric sound or visual signaling apparatus, nes	12,100	12,407	10,072	10,584

Source: USITC.

The following charts below, derived from USITC data, reflect a detailed analysis of the main DR electronic and electrical exports at the HS 6-digit product code level from 2000 to 2004, and by selected primary export markets.

Table IV-3. Product : 853620 Automatic circuit breakers for a voltage not exceeding 1,000 volts

Importers	Exported Value in US\$1,000				
	2004	2003	2002	2001	2000
Total	133,738	130,423	99,490	89,058	91,025
USA	111,591	101,196	86,703	79,891	82,971
United Kingdom	10,303	18,384	3,047	0	0
Canada	9,944	9,141	8,669	7,574	7,528
Mexico	508	311	359	332	176

Source: USITC.

Table IV-4. Product : 851750 Apparatus for carrier-current/digital line systems

Importers	Exported Value in US\$1,000				
	2004	2003	2002	2001	2000
Total	52,280	19,496	574	29	202
USA	50,441	19,407	11	0	57
Canada	11,469	9,163	9,228	7,574	7,528
Mexico	821	314	363	332	176
Australia	358	688	196	736	28
Brazil	332	325	198	345	79

Source: USITC.

Table IV-5. Product : 850440 Static converters, nes

Importers	Exported Value in US\$1,000				
	2004	2003	2002	2001	2000
Total	47,014	39,376	15,419	5,467	49,473
USA	33,696	26,319	11,981	2,862	48,759
Canada	5,940	4,776	1,509	1,184	563
China	1,850	873	141	0	0
Hong Kong (SARC)	1,640	807	0	0	0
Mexico	1,583	82	202	1,154	38

Source: USITC.

Table IV-6. Product : 851190 Parts of electrical ignition or starting equipment

Importers	Exported Value in US\$1,000				
	2004	2003	2002	2001	2000
Total	32,017	27,558	22,480	15,328	6,224
USA	32,017	27,558	22,480	15,328	6,224

Source: USITC.

Table IV-7. Product : 850431 Transformers electric power handling capacity not exceeding 1 KVA, nes

Importers	Exported Value in US\$1,000				
	2004	2003	2002	2001	2000
Total	26,583	26,328	23,650	39,893	29,387
USA	26,150	26,171	23,546	39,623	29,381
Canada	167	89	53	111	1
Mexico	136	1	0	0	0

Source: USITC.

Table IV-8. Product : 853190 Parts for electric sound or visual signaling

Importers	Exported Value in US\$1,000				
	2004	2003	2002	2001	2000
Total	25,619	29,297	32,649	25,726	26,525
USA	19,630	22,334	25,363	17,675	16,995
Germany	4,513	4,515	4,176	4,873	5,273
Canada	496	887	510	195	316
Argentina	337	159	33	472	657
United Kingdom	126	23	0	1,001	0
Colombia	106	0	0	0	19
Mexico	66	51	86	35	86

Source: USITC.

Table IV-9. Product : 853630 Electrical app for protecting electric circuits

Importers	Exported Value in US\$1,000				
	2004	2003	2002	2001	2000
Total	24,656	28,873	27,875	19,526	9,296
USA	11,421	24,418	26,772	18,880	9,233
United Kingdom	6,281	90	4	0	0
Mexico	5,067	2,400	905	466	52
Canada	1,821	1,345	194	86	6

Source: USITC.

Table IV-10. Product : 853649 Electrical relays for a voltage exceeding 60 V but not exceeding 1,000 volts

Importers	Exported Value in US\$1,000				
	2004	2003	2002	2001	2000
Total	24,418	20,202	19,983	19,773	24,211
USA	22,554	18,643	18,080	17,803	22,529
Canada	1,465	1,231	1,659	1,528	1,309
Mexico	152	111	60	100	51

Source: USITC.

Table IV-11. Product : 850519 Permanent magnets & articles intended to become permanent magnets, nes

Importers	Exported Value in US\$1,000				
	2004	2003	2002	2001	2000
Total	13,218	11,448	7,610	9,421	1,613
USA	12,878	11,400	7,582	9,404	1,592
Mexico	286	1	9	0	0
Canada	42	30	16	17	0

Source: USITC.

Table IV-12. Product : 853180 Electric sound or visual signaling apparatus, nes

Importers	Exported Value in US\$1,000				
	2004	2003	2002	2001	2000
Total	12,100	12,407	10,072	10,584	11,331
USA	11,831	10,156	9,311	8,491	11,315
Mexico	109	11	1	6	0
Canada	108	88	11	2	2
Chile	23	0	0	0	0

Source: USITC.

As can be seen in the tables, the US is by far the most important export market for DR products; with rare exception the US represents over 90 percent of exports for each of the main product categories. Canada and Mexico provide very distant second and tertiary markets for DR electronic and electric exports.

B2. FDI. The 30 HS Code 85 manufacturing companies have invested over US\$190 million into the DR's FTZs. Ninety percent of total investment in the FTZ electronic/electrical sector is from U.S.-based companies; 76 percent of investing companies are from the US (including 10 percent from Puerto Rico), while 17 percent of investors are Dominican. The remaining investment is split evenly among investors from Italy, Israel, France, and the UK²⁰.

Foreign investors use the DR as an offshore assembly location similar to "Maquiladora" US border operations in Mexico; the DR represents a nearby source of low-labor cost production facilities for US manufacturers, while some other investors have sought out the location because of the DRs proximity to the large US market.

The electronic and electrical products made and exported from the DR do not appear to imply any specific competitive strength the island offers for these particular product niches; the main products exported come mainly from a small group of manufacturers in the DR implying that DR export product strengths are due to the companies' internal value chain setup – happenstance, in other words. One company is responsible for nearly all of the exports of HS Code 8536 fuses and switches, for example.

While several of the DR's 30 electronic and electrical manufacturers perform "contract manufacturing" that requires some marketing efforts, most of the companies do not have any export marketing or promotional operations. Increasing DR exports from the electronic / electrical industry will mostly be driven by increasing FDI into the sector

²⁰ CONSEJO NACIONAL DE ZONAS FRANCAS DE EXPORTACION, Informe Estadístico del Sector Zonas Francas, 2004

rather than growing export markets for the specific products. Strategies to increase exports must therefore focus on strategies to attract FDI²¹.

²¹ See World Bank's Foreign Investment Advisory Service (FIAS) "Marketing a Country: Promotion as a tool for attracting foreign investment."

SECTION V

COMPETITOR AND SWOT ANALYSIS

SECTION V

COMPETITOR AND SWOT ANALYSIS

A. DR Electronic, Electrical Export Competitors

There are a number of suppliers to the US market of the main DR electronic and electrical product exports. Competition is strong with products coming into the US from low-wage countries such as China, Mexico and Malaysia; middle-income countries such as S. Korea and Taiwan; and even high-wage countries such as Japan, Canada and Germany (Table V-1).

Table V-1. US Import Analysis of Electronic, Electrical Equipment HS Codes 8504, 8505, 8511, 8517, 8531, 8536

Product	Total 2004 US Imports MI US\$	DR Competitor US Market Shares of HS 85 Code Products									
		China (and Hong Kong)	Mexico	Japan	Canada	Germany	Taiwan	Malaysia	S. Korea	DR	Others
HS 8504	7,619	33	20	6	7	3	5	2	2	1	21
HS 8505	643	22	13	23	6	9	2	0	4	2	19
HS 8511	2,451	6	23	0	3	9	3	0	6	1	60
HS 8517	15,098	23	20	5	11	1	3	16	1	0	20
HS 8351	635	32	12	12	9	2	14	2	4	2	11
HS 8536	6,492	14	32	14	4	8	4	1	2	2	19
Total	32,938	21.7	20.0	10.0	6.7	5.3	5.2	3.5	3.2	1.3	25.0

Source: USITC.

China, with a 21.7 percent share, and Mexico, with a 20 percent share, combine to provide the bulk of US imports of electronic and electrical equipment. Japan is a distant 3rd supplier with 10 percent of total US import market share in the sector. Though dwarfed by comparison, the DR's 1.3 percent share of US imports is significant considering the comparatively small size of the Dominican economy, and the absence of significant US market share by any other low-wage CAFTA or North America Free Trade Agreement (NAFTA) country other than Mexico.

The DR must compete for electronic and electrical industry export market share and FDI with a number of countries with macroeconomic, political, and sector strengths and weaknesses in comparison to the DR. Five countries²² were selected for this report for purposes of benchmarking DR competitiveness:

²² Cuba, though not compared in this report, was highlighted by DR executives as a source of future competition. Many expect the island to make a strong movement toward re-developing a market economy after the departure of Castro and his administration. A great many of the Cuban Diaspora in the US reportedly harbor a strong desire to participate in Cuban development and modernization, representing a potential source of investment and management skills.

- **China:** China has over 21 percent share of the US market for electronic and electric equipment imports. China not only represents the single most attractive growth market for “market-seeking” FDI, it is also increasingly attracting supporting input industries – such as metal working, plastic moldings, etc – making it overall the most attractive market for developing-country FDI.
- **Mexico:** Mexico represents a close second in US import market share with 20 percent of US electronic and electrical equipment imports. A NAFTA country, the CAFTA-DR agreement will now put the DR on par with Mexico for shipments into the US market. As a low-wage, nearby production alternative for US investors, Mexico provides the primary regional competition for DR exports and investor attention.
- **Costa Rica:** Though not currently a competitor for US market share in the electronic/electrical equipment sector, Costa Rica is also a signatory to the CAFTA-DR agreement. Known as the most developed and stable country in Central America, the country was highlighted by several industry executives²³ as a possible future threat to the DR in the electronic sector, largely because of its comparatively highly educated population.
- **India:** India is also a fast growing and immense economy that is attracting the second highest amount of FDI in the developing world after China. English language skills, and a thriving electronic sector make India a potential future competitor to DR electronic/electrical exports, though the country has only a fractional share of current US imports.

The Index of Economic Freedom – produced by the Heritage Foundation, a Washington, D.C. think tank – is a frequently cited source of political and economic risk rankings. The Heritage Foundation ranks 154 countries in ten economic areas: 1) trade, 2) taxation, 3) government consumption, 4) monetary policy, 5) foreign investment, 6) banking, 7) wages/prices, 8) property rights, 9) regulation, and 10) black markets. A score of 1 to 5 is possible for each category, with an aggregate score of 1 representing a totally “free” and unencumbered economy, and 5 representing a totally un-free economy.

Table V-2. Heritage Foundation Economic Freedom Rankings, 2005

Overall Score	Country	Trade	Fiscal Burden	Govt Intervention	Monetary Policy	Foreign Invstmt	Banking/ Finance	Wages/ Prices	Property Rights	Regulation	Black Market
2.76	Costa Rica	3	3.6	2	3	2	3	2	3	3	3
2.89	Mexico	3	3.9	3.5	2	3	2	2	3	3	3.5
3.46	China	4	4.1	3	1	4	4	3	4	4	3.5
3.53	India	5	4.3	3	2	3	4	3	3	4	4
3.54	Dom Rep	4	3.4	1.5	4	3	4	4	4	4	3.5

Source: The Heritage Foundation, Index of Economic Freedom

²³ Industry interviews conducted in the DR in November, 2005.

Of the five countries examined above, the Dominican Republic currently represents the least “free” economy for foreign investment with a total aggregate score of 3.54 in the Heritage Foundation rankings. However, it is important to note that the Heritage rankings rated the DR at about 3 overall in 2000, before the DR’s recent period of macro-economic volatility. It is reasonable to assume that government efforts aimed at stabilization of the DR will improve the DR’s overall rankings in the coming years.

B. SWOT Analysis

Classic strengths, weaknesses, opportunities and threats (SWOT) analysis is a strategy analysis framework that helps managers, and policy makers, build a business or sector strategy. Strengths are also known as *core competencies*. Strength is an internal company or sector condition that provides clear advantage over competitors, while a weakness is a condition that can lead to deteriorating performance. Opportunities, meanwhile, are current or future conditions in the environment that a company might turn to its advantage, while threats are current or future conditions in the environment that might harm a company.

B1. Strengths (Core Competencies)

B1a. Industry-Specific Strengths:

- **Established DR industry:** Electronics/electrical manufacture in the Dominican Republic is small by global standards, but large by Caribbean and Central American standards, establishing the industry as a “core manufacturing competency” for the island.
- **Technical and Engineering talent:** Availability of technically trained or trainable employees, supervisors and engineers, including accessibility to local engineering and technical schools. Some current bi-lateral company-school partnerships to train employees through local universities and technical training institutions exist.
- **“Just-in-time” access to the US:** Proximity, shipping and time zone advantages to the U.S. market creates lead-time -- if not cost -- advantages over China, India and other Asian countries. Shipping from the DR to the US takes 48 hours to one week, while shipping from Asia requires 48 hours to 8 weeks. Customer cycles in the industry tend to about 4 weeks total from order to delivery in the industry.²⁴ (Note that this strength is becoming a weakness/threat as critical industry suppliers move from the US to China).
- **Tariff-free US market access:** Preferential access to the US market, including the new CAFTA-DR agreement that will reduce all remaining tariffs on export value-added in the electronic/electrical equipment industry.

²⁴ According to company interviews in the DR, November, 2005.

- **Institutional framework for foreign investors:** Though currently focused mostly on textiles, a government, policy, and promotional institutional framework is in place to address current electronic / electricity investor issues and provide potential investor promotion, start-up assistance, and support.

B1b. Other Country Strengths

- **Labor cost and reliability:** Low-cost, trainable, and geographically stable labor force known for both cost and turnover advantages over Mexican “Maquiladora” locations.
- **Comparatively flexible labor regulations:** Less rigid and bureaucratic labor hiring- and firing- procedures than China, and Mexico (but not Costa Rica).
- **Free-Trade Zones regime:** Well-developed FTZ and industrial zones with good internal infrastructure (providing shared electricity at reduced wholesale costs).
- **Bilingual English-Spanish country:** High-level of bi-lingual Spanish-English capability generally and among managerial class, and widely US-educated DR Diaspora (such as President Fernandez himself).
- **Infrastructure:** New Caucedo port facilities provide region-leading, large-vessel port. Also, regionally competitive land and communications costs, and easy air access to US market and suppliers.
- **Risk mediation for foreign investors:** DR participates in both the World Bank’s Multi-lateral Guarantee Agency (MIGA) as well as the US Government’s Overseas Private Investment Corporation (OPIC), which help to insure investor assets.
- **Desirable living and recreational opportunities:** High “quality-of-life” considerations, including desirable living and recreational facilities for expatriates.

B2. Weaknesses

B2a. Industry-Specific Weaknesses

- **Focus on low-value added manual assembly:** Low-value added electronic/electric processes in some DR companies that are focused on labor-intensive manual assembly leaving them vulnerable to management pullout.
- **Global supply chain moving east:** Lack of availability of local suppliers, particularly in the areas of sheet-metal fabricators, printed circuit board manufacturers, transformers, engineering services, IT, data programmers, injected moldings, wire suppliers, and general electronic component distributors. Lack of local suppliers

means the DR is losing competitiveness as suppliers increasingly move to Asia from the US.²⁵

- **Few industry linkages.** Low level of linkages, or “cluster” activities currently between existing electronic/electrical industry manufacturers in the DR.
- **Lack of industry expertise in the institutional framework:** There is a lack of electronic / electricity industry expertise among policy-making and FDI / Export promotional institutions (CEI-RD). There is little CEI-RD experience in direct target marketing of electronic/electrical investment.
- **No target marketing to potential investors:** Possible lack of target marketing focus and skills at CEI-RD as the textile and others industries tend to overshadow the electronics and electrical industry.
- **US market reliance:** Heavy reliance on US market exposure for suppliers, investors, and buyers makes the industry extremely vulnerable to US business cycles.

B2b. Other Country Weaknesses

- **Country image:** Political-economic image tarnished by macro-economic fundamental deterioration since 2000 -- including high-country debt, inflation concerns, and currency volatility – and by relented concerns over corruption.
- **Bureaucracy.** The DR has a reputation for bureaucratic “red-tape”, legal and regulatory unpredictability, and corruption.
- **General education level:** Labor pool less educated than other regional competitors such as Costa Rica and Mexico.
- **Poor electricity supply:** High cost and inconsistent supply of electricity is a major concern mentioned by everyone in the country. Electronics and electricity equipment manufacturers rely on a great deal of electricity supply.
- **Unstable trucking/shipping:** Unpredictable trucking availability due to union activities, heavy traffic in major metropolitan areas -- including Santo Domingo -- and poor highway network quality outside of industrial zones.
- **High transport costs versus Mexico:** Though the DR has advantages being near the US, being an island adds shipping/transport costs compared to the main competition -- Mexico.

²⁵ Per presentation by Brad Godfrey, President of Power-One Limited, the Dominican Republic.

- **No “one-stop-shop”:** Currently, the DR has no “one-stop-shop” facility, as is available in many countries, for expediting paperwork and bureaucratic procedures for business licensing, permits, and customs.
- **Shipping stoppages:** Bureaucratic customs procedures, and sporadic shipping shortages and stoppages as custom officials have the authority to stop shipping to force procedural compliance.

B3. Opportunities

- **Chinese FDI overexposure:** Perceived global investor risk of increasingly “over exposure” to Chinese production facilities.
- **CAFTA-DR and regional leadership:** The DR’s Caribbean-Central American regional sector leadership image could improve with CAFTA-DR.
- **Industry interest in “cluster” activities:** Increasing awareness of threats, and lack of inter-company competition in the DR, has created an increasing desire for collaborative efforts – or “cluster” activities -- among electronic and electric industry companies.
- **Increasing institutional focus on Electronics/Electrical:** Increasing focus on electronic/electrical industry across policy-making nodes is improving the visibility and support of electronic/electrical industry “cluster” cooperation and development.
- **Need for technical talent:** Increasing global need for technical and engineering expertise provides opportunity for competitive advantage for countries that invest in high-tech technician and engineering training (but this trend also creates a major threat to countries that do not invest in high-tech talent).
- **Caucedo Port:** Region-leading port facilities at Caucedo in Santo Domingo could position the DR as a hub for distribution to the Caribbean and Latin American regions.
- **Future domestic market access.** Possible opening of unlimited DR local market access to FTZ companies as DR government enforces WTO subsidy elimination guidelines.
- **DR movement toward “one-stop-shop:”** The DR government is studying the formation of “one-stop-shop” facility for FTZ companies to expedite paperwork and bureaucratic procedures for business licensing, permits, customs, etc.

B4. Threats

- **Uncertain future FTZ fiscal incentive policy:** There is a great deal of current uncertainty surrounding necessary changes in the FTZ and tax regime as WTO

enforces trade subsidy elimination by 2009. Possible DR investors may delay investment commitments in the DR as the government's policy regarding future FTZ fiscal incentives is accessed.

- **Education level in the DR:** Increasing global investor need for well-educated workers will erode the competitive position of countries that fail to invest in human capital, particular in technical and engineering skills.
- **Shifting supply chain:** Movement of sourcing inputs -- including critical metal fabricating and injection molding industries -- from the US to China, India, and other Asian locations is increasingly attracting "efficiency-seeking" FDI to those countries.
- **Asian market growth:** Growth of Chinese, Indian and other Asian markets provides incentives for "market-seeking" FDI in those countries.
- **East Europe market growth and skills advantage:** Growth in Eastern European manufacturing driven by low-cost labor, comparatively high technical/engineering skills and education, and European Community proximity.
- **Decreasing shipping costs:** Decreasing trans-pacific shipping costs decrease DR shipping cost advantages to the US market.

SECTION VI

CONCLUSION, RECOMMENDATIONS AND VISION

SECTION VI

CONCLUSION, RECOMMENDATIONS AND VISION

Foreign investment – overwhelmingly from the US -- has positioned the DR as a leading Caribbean /Central American exporter of electronic and electrical equipment. US investors have set up offshore assembly facilities in the DR to take advantage of low-wage labor near its shores -- similarly to US manufacturing operations in the Mexican “Maquiladora” manufacturing zones. The DR will therefore need to attract more FDI into the sector to increase electronic and electrical exports.

The DR’s competitiveness in the electronic and electrical sector is threatened by a number of local, regional, and global trends, but the island economy stands a good chance of competing with Mexico for some share of foreign investment because:

- Investors prefer to diversify manufacturing portfolio risk, and the DR offers a stable Western Hemisphere locations close to the large US market;
- The DR still offers competitive wage labor; and
- Modernized port facilities in the DR should position the country as a cost-effective distribution hub to compete with Mexico’s low transport costs with the US.

The DR can improve the competitiveness of its electronic and electrical industry by pursuing the following near-term and long-term goals:

A. Near-term Recommendations:

- **Remove WTO and future FTZ fiscal uncertainty:** Expedite the policy-making process regarding WTO export subsidy elimination to address potential investor uncertainties, and to maintain current investor confidence.
- **Create a “one-stop-shop:”** Minimize “red-tape” by proceeding aggressively with current initiatives to create a streamlined “one-stop-shop” for FTZ investors to navigate business startup, implementation, and customs procedures and paperwork.
- **Increase image of the DR’s electronics and electrical industry:** The DR government and policy institutions could help support the electronic/electric industry publicly by increasing its image throughout the Dominican business, economic and policy-making community.
- **Employ industry experts in policy and promotion:** Industry institutions, particularly the CEI, could be strengthen industry investment, promotion and support activities by hiring or training electronic/electric industry savvy personnel in key policy-making and promotional activities.

- **Use investor target marketing for FDI promotion:** Improve and increase industry-specific CEI-RD target marketing to potential investors: hire experienced marketing personnel to create industry-specific marketing materials, identify and contact potential investors, and provide consistent follow-up marketing and contact database management²⁶.
- **Build support infrastructure for industry investors:** Create effective, reliable, and visible support infrastructure for investors. Ideally the CEI-RD should ensure that it offers investors full pre-, during- and post-investment services and support for electronic and electric industry investors.²⁷
- **Decrease “exit” as well as “entry” barriers:** Investors are more confident committing to countries where it is comparatively easy to harvest investments should they perceive that they have made a mistake. The DR should adopt measures to decrease exit, as well as entry barriers, to doing business in the DR, including seeking to streamline labor-firing regulations. The CEI-RD could go so far as to offer investor exit support in the event that it becomes necessary. The CEI should also promote investor guarantees and asset protection schemes, such as those available through MIGA and OPIC.
- **Support “cluster” initiatives.** The DR government should support industry inter-company “cluster” initiatives with resources, access to policy groups, and compelling informational offerings, such as presentations by global industry consultants, policy-makers or experts. DR policy institutions should encourage inter-company business relationships -- including horizontal integration of supply inputs such as sheet metal and injected moldings -- that represent vertically integrated processes for some DR companies.
- **Streamline and modernize customs.** Customs authorities must improve process times through modernization and IT automation, and should not, under any circumstances, interrupt shipping that interrupts the supply-chain. High-level government authorities must prioritize the streamlining of customs procedures, and remove the authority of any single individual to arbitrarily disrupt customs proceedings. Procedures for efficient customs grievance arbitrations and dispute settlement should be adopted.

B. Long-term Recommendations:

- **Stabilize perception of country risk.** Perhaps the most important thing that the DR can do to improve competitiveness across all its manufacturing and export sectors is to strengthen the policy framework and institutions that undermined the island’s political-economy, and eroded investor confidence earlier in the decade. Further

²⁶ See World Bank’s Foreign Investment Advisory Service (FIAS) “Marketing a Country: Promotion as a tool for attracting foreign investment.”

²⁷ Ibid

volatility in inflation and exchange rates will prevent significant new investments across industries.

- **Create incentives for critical backward linkages to locally based suppliers.** Create incentives and promotional campaigns – both within the DR and externally -- for establishment of suppliers vital to the DR’s electronic and electric industry competitiveness. For instance, DR policy makers might consider offering fiscal or other financial incentives for new investments in vital electronic industry supply operations: sheet-metal fabricators, printed circuit board manufacturers, transformers, engineering services, IT, data programmers, injected moldings, wire suppliers, and general electronic component distributors.
- **Attract BIG businesses.** Related to the above point, the DR should consider a bold package of “world class” incentives – such as Costa Rica has done with Intel -- to attract a very large international electronic/electric industry player to the island that will create significant demand incentives for supplier startups.
- **Position against Mexico as a primary Western Hemisphere location.** Mexico is the DR’s largest competitor in relation to electronic and electrical equipment exports to the US. The DR should benchmark against Mexico and promote the DR as not only a US market-access location, but as a deep-water, large-vessel port location serving the Caribbean and entire Latin American region. Lower wage and more reliable labor, combined with a more flexible labor regulation regime, represents one of the DR’s primary advantages over Mexico; Mexican “Maquiladora” operations are notorious for disruptively high labor turnover.
- **Invest in human capital.** The availability of local skills has clearly increased in importance as a variable that attracts FDI in foreign countries.²⁸ The DR should invest heavily in human capital development, including basic education and high-tech skills training, to increase employee productivity and skills throughout the production chain.
- **Support Industry-University partnerships.** The DR government and policy community should support electronic / electricity industry-specific efforts to improve technical and engineering skill training – such as electronic/electric machine calibration, CAD/CAM and maintenance skills – through the network of universities

²⁸ **“Determinants of FDI in Developing Countries: Has Globalization Changed the Rules of the Game?,”** by Peter Nunnenkamp, and Borensztein, Eduardo R., José De Gregorio, Kiel Institute of World Economics, Working Paper No. 1122, July 2002.

“How Does Foreign Direct Investment Affect Economic Growth?” Jong-Wha Lee (1998); *Journal of International Economics* 45 (1): 115–135. and

“Human Capital Formation and Foreign Direct Investment in Developing Countries,” by Koji Miyamoto, OECD Development Centre, Working Paper number 211, July 2003.

and training institutions. Industry, government and schools should collaborate to develop research bases and company-school recruiting channels.

- **Improve infrastructure.** The government should act to solve the DR's enormous electricity supply and cost problem, and improve other infrastructure impediments, such as road networks into and out of the industrial zones.
- **Diversify markets.** The DR should attempt to diversify away from US market reliance by extending CEI-RD industry targeted promotional efforts to Europe and Asia.

C. Vision Statement²⁹

The Dominican Republic is a business-friendly country making rapid development progress. The island's close proximity to the US's southern border near Florida, and the recently ratified CAFTA-DR now offers electronic and electrical industry manufacturers duty-free, "just-in-time" access to the US market -- maritime shipments between the DR and the US take just two to seven days. Investors in the sector seeking a combination of portfolio and manufacturing diversification from Asian markets, and a reliable, long-term Western Hemisphere location, will find the Dominican Republic a competitive, safe, efficient and hospitable alternative to Mexico.

The world-class Caucedo port facilities offer the region's best large vessel infrastructure. Combined with a region-leading communications and FTZ park infrastructure, Caucedo positions the DR as the leading distribution hub for electronic and electric equipment throughout the Caribbean, as well as a leader in the entire Latin American region.

The DR is known for its region-leading low-cost, reliable and loyal workforce; electronic and electrical companies operating in the DR enjoy much lower labor turnover compared to Mexico's Maquiladora zones. The DR is committed to further investments in human capital as the country strives to be the high-tech center of the Caribbean. Electronic and electrical equipment investors will find eager and trained technical and engineering talent, as well as IT and business administration staff, through a network of private and public universities and training institutions. Skilled, bi-lingual Dominican management talent -- often educated in the US -- is also available to investors.

Electronic and electrical industry companies in the DR will also find a cooperative and organized institutional framework -- both public and private -- to help with business startup, implementation, and on-going support and advocacy. The DR is party to nearly all major UN conventions regarding investor asset protection -- including intellectual property protection -- and participates in both the World Bank's Multi-lateral Guarantee Agency (MIGA) as well as the US Government's Overseas Private Investment Corporation (OPIC). The business-friendly administration is implementing a "one-stop-

²⁹ This section includes forward-looking statements that may not be true as of this writing; it is intended as a visionary map of an ideal future state.

shop” to centralize and expedite business and customs procedures. The recently created Association of Dominican Electronic and Electronic Manufacturers (ADEEM)³⁰ presents a forum for discussion of industry-wide issues, and will interface with other government and private policy making groups to pursue measures and policies that increase industry productivity and competitiveness.

A beautiful Caribbean location, well-known to tourists from all over the world, the DR offers a high quality lifestyle with access to world-class recreational facilities – including its renowned white-sand beaches and resorts – and pleasant living and educational facilities for expatriates and their families.

³⁰ Suggested name for the emerging “cluster-based” organization.

SECTION VII

BIBLIOGRAPHY

SECTION VII

BIBLIOGRAPHY

“Benchmarking FDI Climate in the Caribbean;” Foreign Investment Advisory Service (FIAS), The World Bank Group, June 2004.

CIA World Fact book, U.S. State Department.

Country Assistance Strategy for the Dominican Republic; IBRD and IFC report number 31627- DO, May 19, 2005.

“Determinants of FDI in Developing Countries: Has Globalization Changed the Rules of the Game?” by Peter Nunnenkamp and Eduardo R. Borensztein., José De Gregorio: Kiel Institute of World Economics, Working Paper No. 1122, July 2002.

“Doing Business in 2005” and “Doing Business in 2006,” World Bank Group.

Dominican Republic Review of Trade and Labor Competitiveness; World Bank Group, Caribbean Country Management Unit, March 28, 2005.

“The Dominican Republic: Economic Perspectives for Next Decade.”
Presentation by Lic. Frederic Emam-Zadé Gerardino, Director of Economic Development, at the Conference: Dominican-American Relations: Building Bridges for Development, the Institute of Latin American Studies at Columbia University, 2003.

“The Economics of Foreign Direct Investment,” by Magnus Blomstrom & Ari Kokko, Stockholm School of Economics, Working Paper 168, January, 2003.

Electronics Business Magazine.

FDI, Foreign Direct Investment Magazine, June / July 2006.

“FDI Confidence Index 2005.” The Global Business Policy Council, AT Kearney.

“FDI Trends: Looking Beyond the Gloom in Developing Countries,” World Bank Group, Private Sector Development Presidency, Policy Number 273, September 2004.

“Foreign Direct Investment in Developing Countries: What Economists (Don’t) Know and What Policy Makers Should (Not) Do!,” Monographs on Investment and Competition Policy #11, by Peter Nunnenkamp, published by Center for Trade, Economics and Environment (CUTS), Japan, India, 2002.

“Good Governance in Investment Promotion,” United Nations Conference on Trade and Development (UNCTAD), Geneva, 1–3 November 2004.

Global Competitiveness Rankings, 2004, World Economic Forum.

“How Does Foreign Direct Investment Affect Economic Growth?” Jong-Wha Lee (1998): *Journal of International Economics* 45 (1): 115–135.

“Human Capital Formation and Foreign Direct Investment in Developing Countries,” by Koji Miyamoto, OECD Development Centre, Working Paper number 211, July 2003.

“The Impact of the Caribbean Basin Economic Recovery Act, 2003-2004;” United States International Trade Commission (USITC), Investigation 332-227, USITC Publication 3804, September 2005.

“Index of Economic Freedom, 2005,” The Heritage Foundation.

“Informe Estadístico del Sector Zonas Francas, February, 2005 (preliminary data),” CONSEJO NACIONAL DE ZONAS FRANCA DE EXPORTACION (CNZFE).

“Informe Estadístico del Sector Zonas Francas, 2004,” CONSEJO NACIONAL DE ZONAS FRANCA DE EXPORTACION (CNZFE).

“Marketing a Country: Promotion as a tool for attracting foreign investment, Revised Edition, March 2001,” World Bank Group’s Foreign Investment Advisory Service (FIAS).

Presentation by Brad Godfrey, President *Power One, Inc.*, November 11, 2005.

Trade Policy Review on Dominican Republic, World Trade Organization (WTO), Report by the Secretariat WT/TPR/S/105, September 9, 2002.

USAID Country Web Page, The Dominican Republic.

ANEX A

PERSONS CONTACTED

ANEX A

PERSONS CONTACTED

Chemonics International

Ruben Nunez
Operations Manager
Santo Domingo, Dominican Republic

Consejo Nacional de Competitividad (National Competitiveness Council)

Lynette Batista
Asesora de Manufactura y
Capacidad Comercial
Santo Domingo, Republica Dominicana

CEI-RD

Centro de Exportación E Inversión (Export and Investment Center)

Santo Domingo, Dominican Republic
Horacio F. Martínez Thormann
Investment Promotion Director, Manufacture and Services
Jacqueline Canaan
Investment Promotion Specialist

ADOZONA

Asociación Dominicana de Zonas Francas, Inc. (Dominican Association of Free Trade Zones)

Santo Domingo, Dominican Republic and Miami, Florida
Arturo Peguero
Presidente Ejecutivo
José Ml. Torres
Director Ejecutivo

Consejo Nacional de Zonas Francas de Exportación (National Free Zone Council)

Santo Domingo, Dominican Republic
Lic. Daniel Liranzo
Sub-Director Ejecutivo

OEM (Offshore Electronic Manufacturing)

Santiago de los Caballeros, Dominican Republic
Rita and Robert Langley
Presidents

Meilink World Holdings, Inc.

Santiago, Dominican Republic
Mike Hirata
Vice-President

Power One Corporation

Santo Domingo, Dominican Republic
Camarillo, CA (Corp. Offices)
Victor Mendez
Vice President
Manufacturing CAPS

Signal Dominicana, S.A.

Subsidiary of Signal Transformer Co., Inc.
Santo Domingo, Dominican Republic
Franz Reinhold
General Manager

Corning Cable Systems

Haina, San Cristobal; Dominican Republic
Osiris Salcedo
Plant Manager

EATON Electrical

Haina, Dominican Republic
Osiris Martinez
Plant Manager

First Technology

Santo Domingo, Dominican Republic
Jose Miguel Ricardo
Plant Manager

ANEX B

LIST OF ELECTRIC/ELECTRONIC COMPANIES OPERATING IN
THE DR

ANEX B

LIST OF ELECTRIC/ELECTRONIC COMPANIES OPERATING IN THE DR

Company	Category
Excel Electrónica S.A.	Electronics
American Contract Electronic, S.A.	Electronics
C&S Industries	Components and/or Household Equipment
R.E. Phelon Company (D.R.) GMBH	Electronics
RD Caribbean Stitches, S.A.	Equipment and Machinery
Hopper Dominicana, S.A.	Electric Products
Componentes Hoteleria Dominicana, CXA (Friusa)	Equipment and Machinery
In Alert Manufacturing, Inc.	Electronics
Checkpoint Caribbean, Inc.	Electronics
Interelectronics, S.A.	Electronics
Meilink World Holdings, Inc.	Electronics
Souriau Dominican Republic, LTD.	Electronics
Offshore Electronic Manufacturing, Inc.	Electronics
IMPOMAG, S.A.	Electronic Equipment
Global Machinery Group, LTD.	Parts for machines
Industrias N y J, S.A.	Electric Products
Ensambladora del Caribe, S.A.	Reconst./Rep. Motorcycles and vehicles
Auto Terminal de las Ameritas, S.A.	Reconst./Rep. Motorcycles and vehicles
Nacional Components Industries, Inc.	Electronics
Power-One Limited	Electronics
Rockwell Automation Technology, Inc.	Electronics
Manufacturing Technology Serv. D.R. Corp. (MTS)	Electronics
Techno Services, M.H. CxA	Electronics
I.C. Assemblies Caribe, S.A.	
Napco Alarm Lock Grupo Internacional, S.A.	Electronics
Pacific Assemblies, Inc.	Electric Products
Corning Cable System	Parts for phone systems, Connectors for fiber optics o copper for communication in general
Cutler Hammer	Breakers y Connectors
Avatar Electronics	

Company	Category
First Technology	Auto electronic parts
Johanson	Electronic Capacitors (Air Ceramic Metals And Capacitors)
Signal	Transformers
Beltronic, S.A.	Electric Products
Florida Elements, S.A.	Electric Products
Jonson Electrodomeestic, S.A.	Electric Products
Caribbean Technologies MFG, S.A.	Electronics
K & L Microwave, DR. Inc.	Electronics
Prime Technology, Inc.	Electronics
Sec II (Sensormatic)	Electronic Security
Smart Modular Technologies	Electronics / Data processing equipment (Subcontractor of HP)
Remacell	Cell Phones repairs
Hirel Systems International, LLC.	Electronics
Souriau Dominican Republic, LTD.	Electronics
Gudisa, Inc.	Equipment and Machinery

Source: CEI-RD.

ANEX C

SCOPE OF WORK

SCOPE OF WORK

**United States Agency for International Development (USAID)
Dominican Republic**

Chemonics International, Contract No. PCE-1-830-98-00015-0

**Scope of Work
Export Competitiveness Study on Harmonized System Code 85 Products –
Electrical, Electronic Equipment**

This Scope of Work (SOW) provides the background and specific tasks required to contract a consultant to prepare a strategic report on the HS Code 85 products in the Dominican Republic (DR), examining the opportunities for and constraints on the Dominican Republic's competitiveness in this sector, and recommending a strategy with specific initiatives to resolve near-term barriers to growth and set the stage for accelerating industry export development.

BACKGROUND

The export sector has been an important source of growth for the DR. Over the 1990-2000 decade, DR exports increased from US\$850 million to US\$4.8 billion. Three important factors influencing the growth in exports were the proximity to the US market, the Free Trade Zones that provided incentives for investment in the DR, and the textile and apparel quota system that provided market advantage to the DR.

The Central America, United States (US), DR Free Trade Agreement (CAFTA-DR) was signed on August 5, 2004, and will probably be ratified by all the legislative bodies in every country during 2005. This provides duty free entry to the US market, subject to some constraints. The Agreement is likely to significantly enhance trade between the participating nations, creating new opportunities, as well as possible threats for specific sectors.

The Free Trade Zone (FTZ) system will change significantly. Under current WTO rules, FTZ benefits are considered export subsidies and must be phased out by 2009 for all countries with a per capita income greater than \$1,000 (a formula has been established to adjust the threshold income level, originally set in 1994, to account for inflation), including the DR.

The DR export sector must prepare for these challenges. The Export and Investment Center of the DR (CEI-RD), the Dominican Association of Free Trade Zones

(ADOZON), the National Competitiveness Council (NCC) Secretariat and USAID/DR have been engaged in discussions on how USAID/DR can assist them in meeting the challenges facing the sector.

The activity described below will assist the above organizations to collaborate in the development and implementation of strategies to address these challenges. The objective is to analyze the potential of the HC Code 85 Products export sub-sector to increase production and exports and become a leading growth sector for the DR economy. As part of the analysis of export growth potential, the Consultant will identify the constraints, domestic or foreign, that must be addressed for the sub-sector to fulfill that role, and recommend actions to be taken to address the constraints. These recommendations will be utilized by CEI-RD, ADOZONA and the NCC Secretariat to implement export development strategies necessary to accelerate export growth in the HC Code 85 Products sub-sector and to address the constraints to accelerated growth in the sector. They may also be used to develop and conceptualize assistance – both donor and public sector – to the industry.

As sectors that have served as traditional sources of growth in the Dominican economy mature, there is a need for the identification and promotion of new growth sectors that will serve as growth poles. The DR is fortunate to have several sectors which appear to have rapid growth potential. What is required is an analysis of their growth prospects, the sources of competition and the policy or other constraints that could limit that growth.

The export of HS Products Code 85 – Electrical, Electronic Equipment accounted for US\$347.1 million of DR exports in 2001. The overall growth in the annual value of Dominican exports from this product group was 2% over the 1997-2001 period, while the annual growth in world exports of these goods increased 7%. Thus, the Dominican Republic failed to take full advantage of what was a growing trade opportunity. Table 1 presents the value of exports and growth rates for the five principal product groups at the 4-Digit HS Code level for Electrical, Electronic Equipment. The total exports of these five product groups totaled US\$309.1 million, or 89% of the 2-Digit HS Code 85 exports.

Table 1. Dominican Republic Exports of Electrical, Electronic Equipment at the 4-Digit HS Code Level for the Five Principal Product Groups in 2001

HS Code	Product Group	Value of Exports from the DR in 2001 (Thousands of US\$)	Annual Growth in Value of Exports from the DR between 1997-2001 (%)	Annual Growth of World Exports between 1997-2001 (%)
8504	Electronic transformer, static converter (for example rectifiers)	49,863	26	
8505	Electro-magnets; permanent magnets; magnetic chucks; etc	9,421	N.A.	
8511	Electrical ignition/starting equip (spark plugs/starter motors)	15,329	32	
8531	Electric sound/visual signallg			

	app (e.g. bell/siren, fire alarms)	45,393	- 8	
8536	Electrical app for switching (ex fuse, switches, etc.)not exceeding 1000 volt	189,146	3	6
	Total	309,152		

Two of the five product groups showed rapid export growth over the 1997-2001 period, one group (HS 8505) did not show a number for annual export growth from the Dominican Republic for the period under review, while one group reported negative growth and one, the largest product group reported positive but modest export growth from the Dominican Republic. Given the growth pattern exhibited at the 4-Digit HS Code level. It is worth examining the five groups in more detail. Table 2 presents the export performance for the product groups broken-out at the 6-Digit HS Code. The total value of exports from the eight product groups in Table 2 is US\$255,858, which is 74% of the electrical, electronic equipment exports in 2001.

The eight product groups in Table 2 reveal significant differences in export performance over the 1997-2001 period, with annual value of export growth varying from a positive 146% to a negative 17%. Four of the product groups reported positive annual value of export growth and four revealed negative annual value of export growth. The numbers suggest that as of 2001 several of the product groups had real potential for export growth, particularly HS 850431, HS 853620, HS 853630 and HS 853649. However, it is worth noting that for three of these four product groups, Dominican export growth has been substantially above the growth in world trade in these products. For example in the case of HS 850431, the Dominican Republic is ranked number three in level of imports of these products to the U.S.A., and Dominican exports in 2001 supplied 8% of U.S.A. imports for that product group. As a consequence it may be harder to increase market share. Likewise for HS 853620, the Dominican Republic is ranked number three in imports to the U.S.A. market and has 18% of U.S.A. imports.

Table 2. Dominican Republic Electrical, Electronic Equipment Exports in 2001 at the 6-Digit HS Code for the Principal Products

HS Code	Product Group	Value of Exports from the DR in 2001(Thousands of US\$)	Annual Growth in Value of Exports from the DR between 1997-2001 (%)	Annual Growth of World Exports between 1997-2001 (%)
850431	Transformers, electric power handling capacity not exceeding 1 KVA nes	39,891	146	2
853180	Electric sound or visual signaling apparatus, nes	10,576	-17	6
853190	Parts of electric sound or visual signaling apparatus	25,719	- 5	2
853620	Automatic circuit breakers for a voltage not exceeding 1000 volts	89,062	13	2
853630	Electric app f protectg electr circuits, for voltage	19,523	11	2
853649	Electrical relays for a voltage			

	exceed 60 V but not exceeding 1000 volts	19,778	3	4
853669	Electrical plugs and sockets for a voltage not exceeding 1000 volts	20,962	- 3	8
853690	Electrical app for switchg/protec elec circuits, not exceed 1000 V, nes	30,347	- 8	8
	Total	255,858		

The aggregate export figures suggest that there are products in the group in which the DR is competitive and gaining market share. The differing growth rates suggest that the export growth potential of products in the group varies and it is not clear the export potential of the products in the group. The Consultant will prepare a report on the export growth potential of the various products in the sector. The report will examine the opportunities for and constraints on the future competitiveness of the DR in the export of the various products. The report will recommend areas on which to focus and recommend a strategy with specific initiatives, as appropriate, to resolve near term barriers and accelerate export growth.

OBJECTIVE

The objective of this study is to prepare a strategic report on the HS Code 85 Products sector in the DR, in the form of a SWOT analysis (strengths, weaknesses, opportunities, and threats) that will present to public sector and industry leaders a clear picture of where the DR is positioned at this time to compete in the global market place (including niches, competitors in these niches). The consultant will outline steps required to enhance this competition at both a macro level but also concrete steps that can be taken over the short run. In effect, the consultant will recommend a strategy with specific initiatives to resolve near-term barriers to growth and set the stage for accelerating industry export development.

TASKS

The Consultant will perform the following tasks:

- Interview key stakeholders in the DR, such as the CNC, ADOZONA, CEI-RD, and companies operating in the DR in this sector.
- Analyze the potential of the export sub-sectors (niches) in the HC Code 85 Products to increase production and exports and become a leading growth sector for the DR economy.
- Based on available data and the consultant's knowledge of the industry provide benchmarking background on leading competitors, including their own strengths and weaknesses, for example, known incentives provided by countries to attract foreign direct investment (FDI) in the industry.
- Describe the role that FDI plays in the industry of leading competitors. If FDI is essential to building a successful industry, what steps must the DR take to generate it?

- Identify the constraints and threats, domestic or foreign that must be addressed for the sub-sector to fulfill that role, and recommend actions to be taken to address the constraints.
- Present a draft report to the Competitiveness and Policy Program (CPP).
- Incorporate observations made by report reviewers.

DELIVERABLES AND OUTCOMES

The Consultant will deliver to USAID/DR:

- a) A strategic report/SWOT analysis on the sector of HS Code 85 Products in the DR examining the opportunities for and constraints on the Dominican Republic's competitiveness in this industry, and recommending a strategy with specific initiatives to resolve near-term barriers to growth, provide a long-term vision, and set the stage for accelerating industry export development.
- b) The report will be delivered in Microsoft Word (Arial 12) in digital form and hardcopy. English is acceptable.

Intellectual property rights of the reports, presentations, research, data and work produced by the consultant is of Chemonics. All the drafts and materials obtained during the consultancy must be delivered to Chemonics upon completion. The consultant agrees not to publish or make any other use of the materials without previous written approval from Chemonics and USAID.

IMPLEMENTATION OF THE TECHNICAL ASSISTANCE

The consultant will be contracted by Chemonics International under a task order from USAID, and will work directly with the CPP. Lic. Lynnette Batista from the CNC will coordinate and supervise the work of the Consultant; and Dr. Rubén D. Núñez will have the same responsibility from the CPP.

LEVEL OF EFFORT

The level of effort is estimated in 20 person days. Time in and out of the country will be agreed upon between the consultant and Chemonics.

REQUIRED QUALIFICATIONS

The Consultant will have the following qualifications:

- Proven, excellent, first hand knowledge of the markets of HS Code 85 Products, mainly what is produced in FTZs around the world and market niches where the DR competes.
- A minimum of 5 years related industry experience in academia, private industry and, preferably, a combination of both.

- Knowledge of the DR HS Code 85 Products industry (highly preferred).
- Excellent oral communications skills and ability to conceptualize and identify market opportunities.
- Excellent writing skills and ability to produce a good written report and a power point presentation.