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## **Foreign Investment and Economic Development in Costa Rica: The Unrealized Potential**

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# Foreign Investment and Economic Development in Costa Rica: The Unrealized Potential

Jose Cordero

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## **Introduction**

After a long history of dependence on a few traditional exports, followed by import substitution in the 1960s and 1970s, and a debt crisis in the early 1980s, Costa Rica launched an aggressive attempt at diversifying production and exports in 1985. The new approach to development consisted of two main elements: pursuit of free trade agreements and the attraction of foreign direct investment (FDI). Costa Rica has been remarkably successful in attracting FDI. It is the only country in Latin America where most FDI has gone to manufacturing over the last decade, and it stands out even further for its ability to attract FDI in high-tech sectors.

In this article we analyze why Costa Rica was an attractive destination for transnational corporations (TNCs), and the impact FDI has had on economic development in the country. We show that FDI in the Free Zones has had a beneficial impact primarily at the macroeconomic level, through employment and trade balance effects. At the microeconomic level, however, the impact has been rather limited as backward linkages and technological spillovers are small in absolute and relative terms.

The limited extent of backward linkages from FDI is due to the limited potential for spillovers for part of the foreign investment as well as to the limited domestic absorptive capacity for linkages. Ultimately, we argue, the lack of a coherent long-term development strategy has hindered the ability of the country to take more advantage of high tech FDI. On the one hand, the government did not adopt pro-active policies to address existing market failures, which make it difficult for national producers to become competitive input suppliers. And on the other hand, an approach that aims at attracting high tech FDI is not compatible with trade liberalization and provision of tax exemptions to TNCs in the industrial and tourism sectors. By reducing tax revenues, this strategy hurts the government's ability to create and maintain an adequate stock of country-specific assets of the type that are required for the continuous attraction of FDI flows. The lack of government revenue is also hurting the country's ability to protect the national parks and wildlife areas that have been so important in the flow of tourism.

We argue that trade and FDI policies have to be articulated in the context of a larger development strategy that is aimed at expanding the country's knowledge-based assets so as to foster structural change and productivity growth which generate employment and income in higher value added processes and products. Government policies have to adjust the incentive structure which is currently heavily skewed towards foreign investment more towards national producers, so as to provide a more level playing field.

## **Where TNC strategies meet Costa Rica's Location-Specific Assets**

### **Background**

Historically all Latin American countries have depended on a small number of export commodities to generate economic growth. Costa Rica is no exception. In the early 1600s it exported cocoa to South America (Greñas, 1985), and during the late 1700s and into the early 1800s tobacco to Nicaragua, Panama and Mexico (Fonseca, 1998). But it was only with coffee, around 1830, that the country became integrated into the world markets (Acuña and Molina, 1991). In the late 19<sup>th</sup> century, banana production started in the Atlantic region of the country, and for the next 60 years, the country remained dependent on the foreign exchange revenue generated mainly by these two commodities. Towards the end of the nineteenth century, Minor C. Keith won a concession to build a railroad connecting the Central Valley to the port of Limon, in the Atlantic region. The project was completed in 1890 and Keith initiated large scale banana plantations with his United Fruit Company. This was the first time the Costa Rican government pursued the arrival of large scale foreign investment, both for the development of infrastructure and for the exploitation of natural resources.

The history of Costa Rica's development and the nature of its integration into the world economy in the 20<sup>th</sup> century is marked by three major episodes: the abolition of the army and the development of a social democratic model in the late 1940s/early 1950s, the pursuit of import substituting industrialization within the context of the Central American Common Market in 1962, and the structural adjustment policies adopted after 1985 (Cordero, 2004).

The abolition of the army and the introduction of social reforms during the late 1940s and the 1950s provided broad-based access to education and health care, and the creation of a strong institutional framework allowed social and political stability. This system, which made Costa Rica different from most other Latin American nations, was consolidated during the years of the ISI strategy, generating considerable economic growth and structural change during the 1960s and 1970s. With the debt crisis of the early 1980s, however, the limitations of the ISI approach became more evident and the strategy changed, like in many other developing countries.

During the Monge Administration (1982-1986), and especially after the structural adjustment program was signed with the World Bank in 1985, successive Costa Rican governments retrenched from direct involvement in economic production, abdicated pro-active policies and pursued gradual market liberalization across most sectors. The decline of the average tariff rate from slightly over 60 percent in 1985 to 11.7 percent in 1995 and 5.8 percent in 2004 reflects Costa Rica's ever greater integration into the world market (Paus 2005, 138).

Costa Rica's liberalization strategy has had two main goals: (1) increasing the country's participation in international trade and (2) attracting higher quality foreign direct investment (FDI). With respect to the first goal, successive governments sought to improve the conditions under which the country participates in international trade. The distinguishing feature has been the pursuit of a multitude of free trade agreements which, according to national authorities, would mitigate the vulnerability to unfair trade practices. Agreements have been signed with Mexico, Canada, Chile, and the CARICOM. Although the Pacheco Administration (2002-2006) signed the Central American Free Trade Agreement with the United States, at the time of this writing, it is not yet clear whether CAFTA will indeed be ratified. The final fate of CAFTA will be decided by referendum in September 2007.

With respect to the second goal, the focus has been on an increase in the number and quality of foreign investment projects within the industrial sector, and more recently in the service sector. In the expectation that higher-tech FDI in manufacturing would generate considerable development benefits the Costa Rican government established Free Zones (FZs) or Zonas Francas in the early 1980s. These offer producers the possibility to import inputs free of duty and to be exempted from taxes for twelve years; 100 percent for eight years and 50 percent for another four years. In addition, in 1982, U.S.-AID established and funded a foreign investment promotion agency, the Coalición Costarricense de Iniciativas para el Desarrollo (CINDE), the first of its kind in Latin America.

Since its inception in 1982, CINDE has been a private, not-for-profit organization, with no funding from the government. CINDE's independence from the government has the advantage that it can pursue its mission of FDI promotion regardless of the potential vicissitudes of changing governments. The very same independence, however, also reflects less of a commitment by the government. In the 1980s, CINDE had annual budgets between \$ 4 million and \$ 8 million, ran seven international offices in Europe, Asia, and the United States, and employed 400 people at the height of its operations. When Costa Rica no longer qualified for U.S.-AID funding, CINDE's budget was reduced to the interest income from the initial endowment. The Costa Rican government did not compensate for any of the shortfall in funding. In 2006, the organization had an annual budget of slightly more than \$ 1.5 million, a staff of 29 people, and one foreign office (in New York City).

In recent years, tourism has become an increasingly more important aspect of Costa Rica's integration into the world economy. There are special tax incentives for investment in tourism, just as there are tax incentives in the Free Zones. In our discussions below we will discuss tourism separately, not only because it straddles the areas of both trade and FDI, but also because its rapid growth is posing serious challenges to environmental sustainability.

## **FDI Flows**

Although FDI in Costa Rica increased during the 1980s, it was not until the 1990s that it really took off. The average annual inflow of FDI rose from \$ 40 million during the 1980s to \$ 416 million during the period 1990-2004 (see Table 1). During the Nineties, increased FDI in Latin America was often the result of large-scale privatization efforts, particularly utilities. Not so in Costa Rica which stands out as the big exception. Based on available data, it is the only country in Latin America where most FDI went to the manufacturing sector. Between 1996 and 2005, FDI in the manufacturing sector accounted for 68 percent of total FDI inflows. That compares with an FDI share in manufacturing of 21 percent in Argentina, 28 percent in Brazil, 11 percent in Chile, and 48 percent in Mexico (ECLAC 2005, 40). What sets Costa Rica apart even further from most Latin American countries are significant amounts of foreign investment in high-tech industries, namely in electronics and medical instruments.

Though there had been sizeable foreign investments in the electronics sector before, most notably Motorola in the 1970s and DSC Communications Corporation in 1995, the big jump in FDI in electronic equipment came with Intel's \$ 300 million investment in 1997. Intel's decision to build a microchip assembly and testing facility outside of San José played a huge role in the magnitude and nature of foreign investment flows to Costa Rica, as it put the country on the map for transnational corporations in the high-tech sector. In 2006, there were 51 foreign companies

operating in the electronics sector in Costa Rica (CINDE 2006, 8).

**Table 1. Basic Economic Data for Costa Rica: 1970-2004**

	Net FDI Inflows			Investment Rate	Real GDP growth
	Millions of current U.S. \$	% of GDP	% of GFCF	GFCF as a % of GDP	based on constant colones
Average 1970-1979	44	2.3	10.1	22.7	6.4
Average 1980-1989	70	1.8	8.8	20.3	2.2
Average 1980-1989	416	3.1	16.1	19.9	4.7

Source: Calculated based on World Development Indicators, accessed April 25, 2007

And even though Baxter had been operating in Costa Rica since 1987, it was only with Abbot's investment in the late 1990s and the publicity following Intel's investment decision that FDI in the medical-supply sector surged. By 2006, there were 22 foreign producers of medical devices in Costa Rica, including Boston Scientific and Inamed. More than half of them had arrived after 2003 (CINDE 2006, 8).

Between 1997 and 2006, FDI in the manufacturing sector accounted for 54 percent of all FDI inflows (see Table 2). Other important destinations of FDI were the tourism, real estate, and services sectors. Costa Rica has become an increasingly attractive tourist destination, with beautiful beaches on the Pacific and Atlantic and ample opportunities for eco-tourism. That has attracted a considerable amount of FDI in the tourism sector, especially in Guanacaste and Puntarenas. But in recent years, FDI in tourism has been overshadowed by the purchase of real estate by private foreign citizens who want another home in a beautiful spot of the world. Between 2004 and 2006, foreigners' purchases of real estate amounted to a staggering \$ 763 million, 25 percent of total FDI inflows. As a result, real estate prices have skyrocketed, and the challenges to sustainable development are looming increasingly large.

FDI in IT-enabled services has grown substantially over the last few years, primarily in terms of employment though rather than in size of investment. In 2006, foreign companies in the service sector employed 15,000 people, compared to 11,000 in electronics and 6,000 in medical devices (CINDE 2006, 8). The main areas and companies in the service sector are Procter & Gamble (Global Business Services), Baxter (Baxter Americas), and Intel (Intel SSC) in shared business services; Hewlett Packard and IBM in back office services; SYKES, Fujitsu, and People Support in call centers; Cypress Creek and Via Information Tools in software development; and Align Technology, Photocircuits, Holland Roofin, and Gensler in design and R&D.

Although the vast majority of FDI in Costa Rica has been green field investment, there are two notable exceptions. The first one is Heineken's purchase of a stake in the Costa Rican beverage company Florida Bebida in 2002, and the second one is Scotiabank's purchase of Grupo Interfin

in 2006. U.S. corporations have generally been the largest foreign investors, accounting for more than 60 percent of all FDI between 1997 and 2003 (Paus 2005, 144).

### **Costa Rica's Location-Specific Assets**

Given the small size of the Costa Rican market, FDI in manufacturing and IT-enabled services is mostly efficiency-seeking and not market-seeking. So why did Intel decide to build a microchip factory in San Jose rather than somewhere else in Latin America? And - more generally - why has Costa Rica been able to attract efficiency-seeking FDI in electronics, medical devices, and IT-enabled services? The answer is threefold: (1) good fortune, because of the country's location; (2) the legacy of past investments in human capital and infrastructure, and a stable political system, and (3) attractive tax and tariff conditions in the FZs combined with pro-active foreign investment promotion through CINDE.

Costa Rica has a strategic location, as a bridge between the United States and Latin America, as well as the Atlantic and the Pacific. Proximity to the United States reduces the delivery time for goods exported to the US, and it is a strategic asset for nearshoring of IT-enabled services, especially given similar time zones.

Human capital is one of the most important factors in attracting high-tech FDI to a developing country.<sup>1</sup> Thanks to past investment policies in education, Costa Rica's adult literacy rate is close to 100 percent, and primary school enrollment is nearly universal. A considerable number of people have some knowledge of English, a result of the introduction of foreign language instruction in primary schools in 1994 and the prevalence of English-speaking tourists. Costa Rica also provides stability, economically, politically, and with respect to capital-labor relations, again mostly due to the social democratic model and strong institutions developed in the past.

According to the CINDE website (accessed in May 2007) hourly wages in Costa Rica range from \$ 1.80 and \$ 4.11, including fringe benefits. Costa Rica ranks well in labor costs when compared to other Latin American nations, though not so well relative to Asian competitors (see Table 3). So far, the higher wages in lower-tech activities could still be compensated with political stability, health services for workers, infrastructural support to firms (telecommunications, constant and reliable flow of electricity, infrastructure) and often higher labor productivity.

**Table 2. Net foreign investment in Costa Rica by Sector, 1997-2006**

Millions of U.S. \$

	<i>1997</i>	<i>1998</i>	<i>1999</i>	<i>2000</i>	<i>2001</i>	<i>2002</i>	<i>2003</i>	<i>2004</i>	<i>2005</i>	<i>2006*</i>	<i>1997-2006</i>
Agriculture	38.1	41.9	49.9	-11.2	1	-8.6	-36.3	50.6	37.1	37.6	200.1
Agroindustry	6.5	14.7	10.4	11.5	5.2	2.8	8.4	-0.3	29.6	9.4	98.2
Commerce	17.6	39.3	9.2	17.4	8.3	15.2	6	23.9	47.6	45.4	229.9
Industry	270.6	423.5	355.9	296.2	231.4	482.7	386.8	456	344.9	428.7	3676.7
Services	-7.3	6.6	12.7	14.6	57.4	52.8	83.2	17.3	73.3	60.1	370.7
Financial system	-0.2	22.1	93.4	27.1	43.1	17.2	2.2	22.6	40.9	321.6	590
Tourism	79.3	61.4	84.7	52.1	111.5	76	88.3	41.4	53.5	144.1	792.3
Real estate	0	0	0	0	0	21	31	178.4	234.6	350	815
Other	2.3	2.1	3.3	0.9	2.4	0.3	5.6	3.9	-0.5	13.9	34.2
Total	406.9	611.6	619.5	408.6	460.4	659.4	575.1	793.8	861	1,410.80	6807.1
Percentage breakdown	<i>1997</i>	<i>1998</i>	<i>1999</i>	<i>2000</i>	<i>2001</i>	<i>2002</i>	<i>2003</i>	<i>2004</i>	<i>2005</i>	<i>2006*</i>	<i>1997-2006</i>
Agriculture	9.4	6.9	8.1	-2.7	0.2	-1.3	-6.3	6.4	4.3	2.7	2.9
Agroindustry	1.6	2.4	1.7	2.8	1.1	0.4	1.5	0.0	3.4	0.7	1.4
Commerce	4.3	6.4	1.5	4.3	1.8	2.3	1.0	3.0	5.5	3.2	3.4
Industry	66.5	69.2	57.4	72.5	50.3	73.2	67.3	57.4	40.1	30.4	54.0
Services	-1.8	1.1	2.1	3.6	12.5	8.0	14.5	2.2	8.5	4.3	5.4
Financial system	0.0	3.6	15.1	6.6	9.4	2.6	0.4	2.8	4.8	22.8	8.7
Tourism	19.5	10.0	13.7	12.8	24.2	11.5	15.4	5.2	6.2	10.2	11.6
Real estate	0.0	0.0	0.0	0.0	0.0	3.2	5.4	22.5	27.2	24.8	12.0
Other	0.6	0.3	0.5	0.2	0.5	0.0	1.0	0.5	-0.1	1.0	0.5
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

\*preliminary

Source: Grupo Interinstitucional de Inversión Extranjera Directa (2007, 2006)

**Table 3. Comparison of Relative Gross Wages (2002)**

Country	Laborer		Professionals		Management	
	General	Skilled	Junior	Senior	Lower Middle	Upper Middle
India	32	36	27	30	30	41
Philippines	44	47	34	38	36	48
Malaysia	60	64	47	52	49	66
China	50	58	47	56	58	85
Costa Rica	100	100	100	100	100	100
Chile	118	113	87	97	93	114
Mexico	169	137	101	107	97	136
Panama	119	181	116	128	99	123
Singapore	174	173	120	123	109	136
Ireland	333	288	173	161	121	137
U.S.A./	306	292	194	192	164	197

Source: CINDE, <http://www.cinde.org/eng-recursohumano.shtml>

Last, but not least, Costa Rica has the longest standing institution in Latin America charged with marketing the country to foreign investors. Initially, CINDE went after any investment it could attract. The main response came from clothing companies due to the tariff advantages under the Caribbean Basin Initiative and U.S tariff provision HTS 9802. By the early 1990s, however, Costa Rica was losing competitiveness in clothing to other countries in the Caribbean and, in addition, CINDE lost an important portion of its funding coming from the USAID (Rodriguez-Clare, 2001). As a result, CINDE decided to concentrate efforts only in the sectors in which Costa Rica was thought to have greater advantages: first the electronics sector, then medical devices, and currently also IT-enabled services.

It was CINDE's focus on the electronics sector and its pursuit of Intel which led to an Intel presentation at CINDE headquarters in November 1995 and subsequent visits by Intel teams to Costa Rica. According to Rodriguez-Clare (2001), the country, which was originally not in the long list of possible candidates, became a top contender after Intel's visit in 1996. The company's interest in diversifying locations eliminated the Asian nations from the list, and the final options were reduced to Chile, Brazil, Mexico, and Costa Rica. The final choice was based on the availability of human capital, the lack of labor unions in the private sector, the interest in the promotion of the electronics sector, and the fact that a well defined set of incentives for Intel and other TNCs already existed within the context of the FZ system.

But of critical importance for Intel's final decision was the personal involvement of then President Figueres. After the first encounter with representatives from Intel, Figueres appointed Jose Rossi, Minister of Foreign Trade, as the point person to coordinate all efforts needed to satisfy Intel's demands and tilt the TNC's decision in favor of Costa Rica. The small size of the

country turned out to be an advantage, as it allowed for quick integrated, collective action, once the political will and the necessary power to enforce it were there. The Minister of Foreign Trade brought together the heads of the Ministry for Environment and Energy, ICE (the Costa Rican Electric Utility Company), the Ministry for Transport and Public Works, the Ministry of Finance, the Ministry of Science and Technology, the Ministry for Education, and the Technical Institute of Costa Rica (Spar 1998, 17). And it was this cooperation and concerted effort which allowed the Costa Rican government to address successfully Intel's concerns about infrastructure (improved road access to the airport and uninterrupted access to electricity at reasonable prices), about education (availability of a sufficiently large labor force with the requisite technical skills), and about financial incentives (applicability of 1 percent tax on assets on corporations in the Free Zones).

The Intel case makes very clear the possibilities and limitations of CINDE. The agency was instrumental in getting Costa Rica on Intel's radar screen and in coordinating the first steps with other institutions, once the TNC showed a clear interest in investing in the country. But it did not have the political muscle to do what in the end needed to be done, and was done, by an institution closer to the higher echelons of political power.

Bringing Intel to Costa Rica should not be seen in hindsight as the result of a long-planned strategy that finally bore fruit, as some analysts of the time portray it. Clearly there were planning elements involved, but what was important in the end was the coming together of somewhat autonomous elements due to very strong individual efforts and cooperation among key agencies. From Costa Rica's perspective, Intel's arrival was the outcome of a fortuitous set of circumstances, where the President's involvement and his directives to make things happen were critical. But unfortunately, the grand collective effort faded away, once Figueres left office in 1998.

The process leading up to Intel's investment in Costa Rica provided an ideal opportunity to institutionalize modes of cooperation and an agreed upon division of labor among different institutions and ministries to define in a systematic way FDI's role in Costa Rica's economic development and the role of different players, public and private, to ensure that the potential development benefits of FDI would materialize. Unfortunately, it was a lost opportunity. There were elements of a strategy and efforts by different actors, but never a coherent, well-coordinated, coherent strategy.

### **The FDI-Development Nexus**

When analyzing the impact of FDI on development, economists typically distinguish between effects at the macroeconomic level and effects at the microeconomic level. At the macro level, FDI helps mitigate the foreign exchange constraint and allows more flexibility in handling the current account deficit, contributes to more stable prices and foreign exchange markets, increases investment, and creates more employment opportunities. At the micro level, FDI's largest potential contribution to development lies in the advancement of domestic knowledge-based assets through spillovers.

In the case of Costa Rica we find that the most important benefits from FDI have been on the macro side, with a positive contribution to investment, the balance of trade, employment, and wages. With respect to the promotion of knowledge-based assets, however, the benefits have been small so far. Though there have been some important learning spillovers, backward linkages

have been very limited, and we have seen little movement up the value chain by the TNCs in Costa Rica. Rather, among the large TNCs in high-tech production in Costa Rica the trend has been to diversify into IT-enabled services rather than into more advanced production activities.

While the size of the country imposes inherent limitations on the degree and breadth of domestic sourcing, we argue that the main reason for the lack of greater advancement in backward linkages and in movements up the value chain is the absence of an integrated development strategy. Free trade and FDI inflows do not make a development strategy. When domestic linkage capability is insufficient due to widespread market failures, targeted government intervention is needed to raise that capacity so that domestic companies can reap knowledge spillovers from FDI.

## **Macroeconomic impacts of FDI**

### Investment

At the macro level, one would expect FDI flows to have a favorable impact on investment rates in the recipient country. With the increase in FDI, TNCs have become much more important for investment and economic growth in Costa Rica. While the average investment ratio during the period 1990-2004 was slightly below the average rate in the 1980s, the share of FDI in gross fixed capital formation nearly doubled, from 8.8 percent to 16.1 percent (see Table 1). In spite of the data, it is unlikely that FDI has crowded out national investment. Correlation is not causality.<sup>ii</sup> But it is clear that the accumulation of domestic capital has not kept pace with economic growth: in 1985 (the year the structural adjustment program was signed with the World Bank), private capital formation represented 22.8 percent of GDP, while public capital formation represented 4.7 percent of GDP. In 2005, these figures had gone down to 15.9 percent and 3.1 percent, respectively.<sup>iii</sup>

### Balance of Trade

To assess the impact of FDI on Costa Rica's balance of trade, we look at the trade performance of the Free Zones, as Costa Rican authorities keep detailed separate data on companies in the Zona Franca Regime, but not on TNCs overall. Even though only about 45 percent of TNC output comes from the Zona Franca (Monge et al. 2004, 15), ZF performance is an acceptable proxy for TNC performance in the higher tech sectors, since most of the foreign investment in manufacturing and IT-enabled services is in the Zona Franca.

The Zona Franca regime was created in order to promote rapid export growth. And it has succeeded in doing so. According to data from the Central Bank, in 1991, traditional products (coffee, banana, sugar) accounted for 40 percent of Costa Rican exports, while the Zona Franca accounted for only 13 percent. In 2005, however, the Zona Franca exported \$ 3.7 billion, more than half of the country's export revenue, while the share of traditional exports had dropped to a little over 11 percent of the total. Exports of electrical machinery have been the main force behind the huge increase in ZF exports (see Table 4). And Intel has been responsible for most of these exports. Between 2001 and 2006, Intel accounted for 39 percent of Zona Franca exports and 20 percent of Costa Rica's total exports.<sup>iv</sup>

**Table 4: Value Added and Exports in the Zona Franca\***

	Value Added in Millions of U.S. \$					
	2001	2002	2003	2004	2005	2006
Machinery, electrical materials & components	309	358	321	387	449	422
Precision instruments & medical equipment	207	198	292	330	266	100
Agroindustry	91	116	125	135	101	70
Textiles, clothing, leather, and shoes	102	145	143	120	115	103
Services	27	116	153	224	322	329
Plastic, rubber & their manufactures	33	52	53	70	85	43
Chemical and pharmaceutical products	18	13	3	5	40	3
Metal products	14	11	16	18	22	15
Agriculture and livestock	16	19	23	1	1	2
<b>TOTAL</b>	<b>936</b>	<b>1157</b>	<b>1269</b>	<b>1404</b>	<b>1472</b>	<b>1100</b>

	Exports in Millions of U.S. \$					
	2001	2002	2003	2004	2005	2006
Machinery, electrical materials & components	1218	1256	1789	1560	1878	2305
Precision instruments & medical equipment	330	412	529	541	585	676
Agroindustry	97	204	246	307	336	337
Textiles, clothing, leather, and shoes	404	425	347	334	328	306
Services	106	128	143	147	172	222
Plastic, rubber & their manufactures	67	81	93	139	163	189
Chemical and pharmaceutical products	40	39	51	68	68	67
Metal products	33	30	34	48	57	76
Agriculture and livestock	18	21	27	25	23	20
<b>TOTAL</b>	<b>2381</b>	<b>2665</b>	<b>3327</b>	<b>3242</b>	<b>3699</b>	<b>4314</b>

	Value Added as a percentage of Exports					
	2001	2002	2003	2004	2005	2006
Machinery, electrical materials & components	25.4	28.5	17.9	24.8	23.9	18.3
Precision instruments & medical equipment	62.7	48.0	55.2	60.9	45.5	14.8
Agroindustry	93.5	57.0	50.7	43.9	30.2	20.7
Textiles, clothing, leather, and shoes	25.3	34.1	41.1	35.9	35.1	33.7
Services	25.5	90.5	106.9	152.3	187.3	148.1

	Value Added as a percentage of Exports					
	2001	2002	2003	2004	2005	2006
Chemical and pharmaceutical products	45.2	33.4	5.2	8.1	59.1	4.2
Metal products	44.0	35.6	48.2	38.1	37.6	19.3
Agriculture and livestock	86.7	92.6	83.7	4.3	3.0	9.6
TOTAL	39.3	43.4	38.1	43.3	39.8	25.5

\*Value added = exports - imports + change in inventories - remittances - taxes - consultancy fees abroad

Source: Procomer

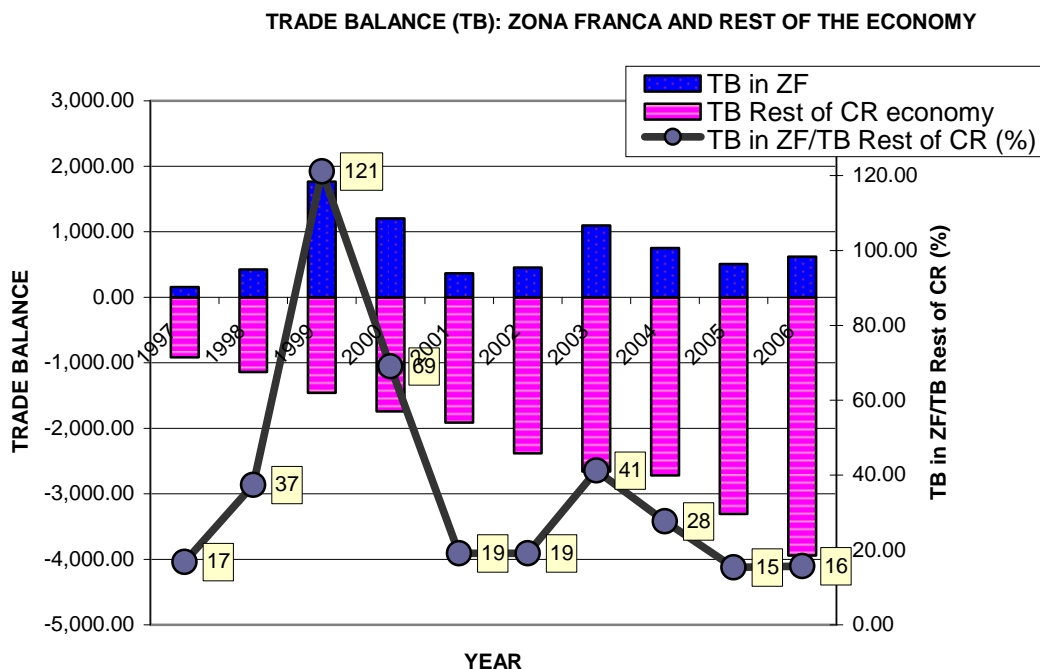
But it is in the nature of the FZ system that producers not only export a lot, but also import a lot. The reason is that most TNCs set up operations in free zones in order to take advantage of low labor costs: there are no duties on imports, so they import the vast majority of all their parts and components from more advanced nations, and put them together by means of relatively labor-intensive assembly processes. In addition, at this juncture some of the key inputs that are outsourced cannot be produced in Costa Rica. As a result, the impact of the ZF on the balance of payments is substantially smaller than indicated by the large export figures and shares. Still, over the last 10 years, the FZ has always had a trade surplus, while the nation's trade deficit has been growing consistently (see Chart 1). The ratio of the trade balance in ZF to the trade balance in the rest of the economy has ranged from 121 percent in 1999 to 16 percent in 2006.<sup>v</sup>

### Taxes

Since the early 1980s, the Costa Rican approach to development has been based on two pillars: the attraction of high tech FDI along with the promotion of tourism, and the pursuit of trade agreements with other countries or regions. In the long run, it is difficult to attain these goals at the same time. As highlighted earlier, human capital is one of the most important factors in the decisions of high-tech TNCs to relocate production to a developing country. Other important factors include a continuing and stable provision of electricity and an advanced telecommunications system. These location-specific assets are provided in Costa Rica by state universities and state enterprises. Investments in these institutions to improve the quality of the services provided depend heavily on the tax revenue collected by the central government. Since tourism is also an important part of the picture, the preservation of national parks, biodiversity and wildlife available in the country also becomes a critical task. But again, these location-specific assets are maintained and protected through the tax revenue raised by the state.

However, trade liberalization, along with the participation in various trade agreements, has caused a significant decline in the tax revenue from foreign trade. Central Bank data show that the share of tax revenue from international trade went from 35 percent in 1987 to 24 percent in 1995 and 8 percent in 2004. In addition, the FZ system provides TNCs with tax exemptions on nearly all their activities. The Law of Incentives for Tourism Development also provides firms in

**Chart 1**



Source: PROCOMER and Central Bank.

that sector with various tax exemptions and favorable treatment regarding income tax. This situation has made it increasingly difficult to raise tax revenues. In 2004, the tax ratio (the ratio of total tax revenue to GDP) was only slightly above 13 percent (see Table 5). Such a low tax ratio considerably reduces the government’s ability to improve education and infrastructure, both for local development purposes and for the attraction and upgrading of FDI.

Some people have argued that this problem can be solved with higher economic growth. But that will not work in Costa Rica to the extent that higher growth is driven by activities that benefit from tax exemptions or reductions. Under these circumstances higher GDP growth will not lead to a commensurate increase in taxes and the tax ratio. In 1997 and 1998, GDP increased by more than seven percent per year; but that success did not translate into a higher tax ratio (see Table 5). Not only did the tax ratio not increase when production rose, but the rates themselves are too low.

Agosin, Machado and Nazal (2004) show that in the mid-1990s, Costa Rica’s tax ratio should have been 20.6 percent, given the level of its GDP per capita. The observed value, however, was only 12 percent. Turkey, one of the most underdeveloped countries of the OECD, had a tax ratio of 16 percent in 1975, higher than Costa Rica’s tax burden. By 1990, Turkey reached 20 percent, and in 2004 the ratio passed 30 percent. In 2004, Finland, Sweden and Denmark registered tax ratios of 44 percent, 51 percent and 50 percent, respectively.<sup>vi</sup>

It is clear that the tax structure does not mirror the changes the economy has experienced in recent years. As different activities have become dynamic, their contribution to tax revenue has not changed in any significant way. For example, in spite of huge real estate purchases by

foreigners and infrastructure development in the Guanacaste region, the province's share in total tax collection is the same as it was in 2002 (Leiton, 2007).<sup>vii</sup>

**Table 5. Costa Rica's Tax Ratio, 1987 – 2004.**

Year	Total tax income/GDP* (%)
1987	11.22
1988	10.97
1989	11.03
1990	10.81
1991	11.30
1992	11.88
1993	11.99
1994	11.59
1995	12.34
1996	12.55
1997	12.53
1998	12.56
1999	11.94
2000	12.29
2001	13.22
2002	13.22
2003	13.35
2004	13.36

\*Total income as a percentage of GDP

Source: Ministerio de Hacienda and Banco Central de Costa Rica

The decision to offer tax exemptions to corporations in the FZ has been very important in persuading TNCs to invest in Costa Rica. These corporations demand and use extensively the resources provided by the public sector (human capital, electricity, and telecommunications), but give little in return to contribute to the continuation and expansion of those resources. It is thus clear that the first and second goals of the Costa Rican approach to economic development are difficult to reconcile (Cordero, 2006).

As we will argue later, it has been difficult to reap the benefits of technological externalities from FDI in Costa Rica: backward linkages and technological spillovers have been limited. Under such

conditions, one needs to re-evaluate whether the tax exemptions for foreign investors are justified. It is clear that the lack of tax revenue is hurting the capacity of the government to sustain the country specific assets that the TNCs are looking for. Investments in electricity, for example, which had been programmed very carefully until the late 1990s, are lagging behind the growth of demand.<sup>viii</sup> And although the country's literacy rates continue to be high for Latin American standards, literacy alone will not be enough to promote the development of a high tech FDI sector. Public spending in social areas has also lagged behind the needs of the population. Poverty rates have not declined significantly for more than a decade (Sauma 2005, Trejos 2004). And the distribution of income has deteriorated considerably, with the Gini coefficient rising from 0.37 in 1990 to 0.42 in 2004.

### Employment and Value Added

Employment in the Zona Franca more than doubled between 1997 and 2005, from 16,677 to 39,009 (see Table 6). Out of the three sectors with the most FDI, employment in electrical equipment has been rather stagnant since the beginning of this century. In contrast, employment in the medical equipment industry has been rising at a steady pace. But the service sector, mainly IT-enabled services, has provided the largest increases in employment. Employment in the clothing industry, which – like the service sector – is very labor-intensive, has continued to decline, as the industry is becoming increasingly less competitive compared to other Central American countries and key competitors in Asia.

Relative to Costa Rica's total labor force of 1,903,068 in 2005, 39,000 jobs amount to 'only' 2.3 percent. But in addition to the creation of gainful employment, the employment component of the FZ is important for the local economy for a number of other reasons. First, it is through income taxes on these workers, that the FZ, indirectly, has an impact on the government budget. Second, wages and working conditions in the Free Zones often tend to be better than in nationally-owned companies. According to Monge et al. (2004, 24), between 1999 and 2004, the average salary in the Zona Franca was 20 percent higher than the average in the Costa Rican-owned manufacturing sector.

Higher wages and rising employment in the Zona Franca should be reflected in growing value added. But the data show that that has not necessarily been the case. Based on Procomer's definition of value added, value added for the Zona Franca as a whole increased from 2001 till 2005, but dropped significantly in 2006, even though exports kept growing (see Table 4 again). Whatever the explanation for the drop in 2006 is, the important point is that value added as percentage of exports has remained pretty much unchanged since the turn of the century.

**Table 6. Sectoral Distribution of Employment in the Zona Franca**

SECTOR	1997	1998	1999	2000	2001	2002	2003	2004	2005
Machinery, electronic materials & components	2,625	6,837	7,319	9,729	9,637	9,096	8,034	10,643	9,081
Services	3,654	4,186	1,320	1,372	2,631	3,922	5,463	6,985	8,577
Textil, design, leather & shoe	8,296	9,887	11,331	9,086	12,211	11,963	9,718	7,689	7,517
Precision instruments & medical equipment	135	212	1,576	2,101	2,678	3,512	4,063	2,371	5,113
Agroindustry	454	683	1,072	1,841	2,459	2,512	2,632	2,982	3,171
Plastic, rubber & their manuf	65	223	967	1,009	887	977	1,003	1,568	1,593
Metal manufactures	22	397	416	363	755	384	650	740	893
Agriculture & cattle		3	20	45	467	509	698	749	776
Chemical & pharmaceutical products	102	113	137	129	148	94	87	114	136
Others	1,324	1,745	2,203	2,515	2,211	2,085	1,956	1,772	2,152
TOTAL									

Source: PROCOMER.

### **FDI and the Limited Upgrading of National Knowledge-Based Assets**

The most important potential contribution that TNCs can make to the advancement of a developing country is at the microeconomic level. Through spillovers and linkages FDI can expand the technological, production, and marketing capabilities of national producers thus increasing their competitiveness and ability to move up the value chain. However, such spillovers do not happen automatically. The empirical evidence on positive spillovers from FDI in different countries of the world is inconclusive. Some studies find positive spillovers (e.g., Kokko 1996, Sjoeholm 1999, and Haskel et al. 2002), other studies find negative spillovers (e.g., Aitken and Harrison 1999, Konings 2000), and yet other studies find no statistically significant spillovers in one direction or the other.

The competition effect is not an important channel for technological improvements in Costa Rica, since most FDI in manufacturing, especially in the high-tech sectors, is in the production of parts or finished goods which have not been produced in the country previously. In small

developing countries, where FDI in manufacturing and IT-enabled services is mainly efficiency-seeking, the primary potential channels for spillovers are backward linkages, and training and education. We find that - to date - backward linkages have been very limited in Costa Rica, but that there have been positive effects through the training channel and the impact on curriculum development in the educational system.

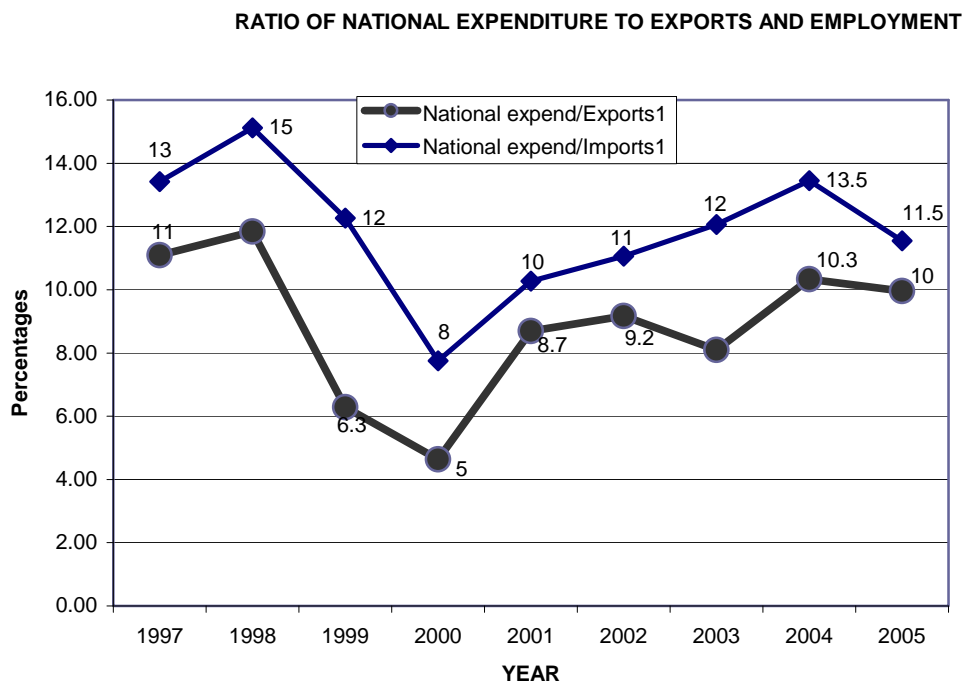
### Backward Linkages

Backward linkages between TNCs and input suppliers in Costa Rica have been very limited to date. Although TNC purchases of domestic goods and services have grown in absolute terms, they have declined in relative terms. Between 1997 and 2005, TNCs' expenditures on national goods and services nearly quadrupled, from \$ 99 million to \$ 368 million (see Table 7). In relative terms, however, the picture shows very little progress: as a share of imports, national expenditures were 13 percent in 1997 and 12 percent in 2005; and as a share of exports they were 11 percent in 1997 and 10 percent in 2005 (see Chart 2).

**Table 7: National Expenditure by Companies in the Zona Franca Regime**

	1997	1998	1999	2000	2001	2002	2003	2004	2005
Total (Mill. of U.S.\$)	98.9	232.7	228	139.1	206.9	244.5	269.3	335	368.3
National expenditures as a % of imports									
Total	11.8	13.1	10.9	7.2	9.3	10.0	10.8	11.9	10.4
Machinery, electrical materials & comp.	6.6	5.8	4.4	2.7	3.1	2.4	2.6	2.6	2.0
Precision instruments & med.equipment	5.7	10.8	8.1	8.4	4.0	5.0	6.1	6.0	7.8
Agroindustry	63.0	64.1	44.7	74.3	82.7	77.7	86.2	84.0	78.1
Textiles, clothing, leather & shoes	5.4	12.0	15.3	4.7	6.2	5.7	5.5	7.6	6.0
Services	17.9	18.7	13.3	10.8	20.6	17.6	25.5	24.0	25.8
Plastic, rubber & their manufactures	15.7	33.7	27.3	33.4	25.2	27.4	15.5	24.4	24.7
Chemical & pharmaceutical prod.	54.8	34.2	32.2	30.4	36	28.3	41.4	47.2	23.3
Metal products	33.2	6.0	1.4	1.9	7.0	7.8	14.9	37.9	41.0
Agriculture, life stock	0	0	0	4.5	97.6	97.8	96.7	97.2	90.6

Chart 2



Source: PROCOMER.

The sectors with the largest amounts of FDI, the electronics industry and medical instruments, are also the sectors with the most limited development of backward linkages. In 2005, national expenditures accounted for two percent of imports in machinery and electrical equipment, and 7.8 percent in medical instruments.<sup>ix</sup> And even those figures overestimate the use of purchases from national producers and service providers, since the data do not distinguish between national producers and foreign input suppliers located in Costa Rica. Available evidence suggests that TNCs' sourcing from national enterprises in Costa Rica is limited to printing, packing, and services. Only a few Costa Rican companies have managed to become competitive material input suppliers to TNCs, mainly of plastic and metal parts. Foreign investment in natural resource intensive sectors, i.e. agriculture and agro industry, has very high ratios of national expenditures to imports. But these are not the sectors with potentially dynamic high-tech activities.

The limited extent of backward linkages from FDI is due to limited potential for spillovers for part of the foreign investment and to insufficient domestic absorptive capacity for linkages. All foreign investments do not have the same potential to generate domestic linkages (Paus 2005). While FDI in high-tech products, theoretically, holds out greater potential for spillovers than FDI in low-tech products, in the case of Costa Rica, that potential is reduced considerably for two main reasons. First, most of the high-tech FDI is at the low end of the spectrum of technology intensity, involving assembly type jobs, though in the case of Intel, testing and assembly of microchips is substantially more involved than 'assembly' would suggest. Second, the large high-tech TNCs in Costa Rica (Intel, Abbot, Baxter) source the major inputs from the company-internal global network, i.e. a lot of the production is internalized among the affiliates spanning the globe. In addition, many of the key inputs that are outsourced cannot be produced in Costa

Rica at this juncture, either because the requisite scale is too large or the technology is too sophisticated.

In contrast to the large high-tech TNCs, however, many of the small and medium-sized TNCs in Costa Rica are eager to buy inputs domestically. For many of them, the investment in Costa Rica was their first investment abroad. Smaller TNCs do not have the global reach to internalize production across many borders. Thus, they have great interest in achieving cost reductions through local sourcing, as long as technological sophistication, quality, and scale permit it.

Unfortunately, even in areas where scale requirements did not constitute an obstacle to local supply provisions, Costa Rica's absorption capability for spillovers via input supply has generally not been sufficient. One of the reasons is that, under ISI, companies were protected by tariffs, but no reciprocal control mechanisms were in place to require producers to become internationally competitive. The experience of the successful Asian Tigers shows that control mechanisms involving export requirements were particularly effective. When the Costa Rican economy opened up in the 1980s, domestic producers turned out not to be competitive suppliers for TNCs. But the pervasiveness of market failures made it unlikely that they would become competitive on their own. Many had imperfect information about needed technology and quality, and faced high financial costs because of underdeveloped capital markets and high risks because of the uncertain outcomes in the new competitive environment.

Most potential domestic input suppliers have been unable to meet quality expectations; they do not have the necessary technological know-how or meet minimum quality standards like ISO certification. Others have not attempted to become TNC input suppliers, as it is a high-risk undertaking, requiring investments in new machinery and technology with no guarantee of success. The demands on entrepreneurship are different in the highly competitive environment of a liberalized economy in the early 21<sup>st</sup> century, compared to the demands in the less competitive context of ISI.

The very existence of CINDE is based on the recognition of market failures, i.e. information and coordination failures. Advertising the virtues of Costa Rica as a desirable investment location presumes that TNCs do not have sufficient information about the country's location-specific assets. And targeting foreign companies in prioritized areas reflects the belief that coordination failures are important, i.e. that cluster formation in key areas will not happen on its own, but that it is desirable because of possible agglomeration effects.

But the recognition of market failures did not carry over to the development of national linkage capability, at least not in any significant and systematic way. Over the years, there have been several incipient pro-active moves toward linkage creation in Costa Rica. At one point in the second half of the 1990s, there were at least three different programs. But they were partly competing with one another, they were not coordinated, and they were mostly paper tigers. So they did not last long.

The establishment of Costa Rica Provee (CRP) in 2001 is the most promising attempt to date to promote indigenous linkage capability. CPR's formal integration into PROCOMER in 2004 is an important step towards the institutionalization of linkage promotion. CRP has been an effective match maker between national input suppliers and TNCs operating in Costa Rica., with the number of facilitated linkages increasing from 18 in 2003 to 140 in 2006. The value of first-time linkage contracts was \$ 3.2 million in 2006.

Nonetheless, without greater resources – in terms of budget and human capital - CPR cannot bring about a qualitative jump in domestic linkage capability. In 2007, CPR had a staff of seven people and a budget of \$ 275,000.<sup>x</sup> Furthermore, CPR provides training and consulting, but no access to financing. Access to credit at reasonable interest rates is still a hurdle for many small companies, who do not have the collateral needed for bank loans.

Here, again, the need for more decisive and direct guidance from the government is crucial. Most of the business relationships that would entail the kind of technological externalities associated with FDI presuppose the existence of a minimum stock of assets and strengths in the areas that are more likely to attract the attention of foreign firms. Unfortunately, there has been no strategy in this area for a long time, and the promotion efforts of CINDE do not find the feedback and support that are required from the national authorities. The absence of a national strategy in these areas is partly the result of a severe lack of institutional coordination in areas related to science and technology. There is very little that Costa Rica Provee can do (on a significant scale) as long as the country does not have a strategy to create strengths in areas in which successful business initiatives might be developed.

### Training and Learning Spillovers

Although high-tech FDI in Costa Rica has not induced many knowledge spillovers through backward linkages, it has generated some spillovers through training and education. High-tech producers in Costa Rica employ a larger percentage of skilled workers which offers the potential for greater knowledge spillovers. At times, foreign companies provide training in skill areas that are not widely available in the host country, e.g. in computer numerical control. Labor mobility will ensure that such knowledge then spreads more broadly. A 2004 survey of local input suppliers to TNCs showed that 6.2 percent of their managers, 27.6 percent of their engineers, and 31 percent of their technicians had previously worked for a transnational corporation (Monge et al., 2004).

In addition to the accumulation of skills and knowledge in the production process and the positive spillovers that come with labor mobility, foreign high-tech companies have had an important impact on upgrading the technical curriculum at Costa Rica's universities. That is particularly true for Intel. Both the engineering school at the University of Costa Rica and the Technological Institute of Costa Rica have contracts with Intel to collaborate on the development of curricula for technical careers. The goal is to provide the most up-to-date skills and knowledge needed at different levels, from technicians to engineers, which would support an expansion of the sector and –potentially - a move up the value chain within the sector as well.

### **Tourism**

One of the areas which has been heavily promoted in recent years is the development of the tourism sector. It is seen as a very important part of the development process as it brings foreign exchange and purchasing capacity to the rural areas of the country.

The most important steps in this area were taken in the early 1990s, when a strong effort was made to promote Costa Rica as a nation with a strong commitment to protecting tropical forests,

wildlife, and biodiversity. The goal was to attract tourists to the country's natural beauty in a setting in which the most attractive places at the various beaches and mountains were still unexploited from the commercial point of view. The keyword was "ecotourism."

This approach rendered very favorable results: from 1995 to 2005 the number of tourists visiting Costa Rica more than doubled, from 785,000 to almost 1.7 million visitors. The number of foreigners visiting national parks also more than doubled in the same period, and the foreign exchange revenue generated by tourism increased from \$660 millions in 1995 to almost 1.6 billion dollars in 2005. This number represents, in 2005, twice the value of traditional exports (which include coffee, bananas, and sugar, among others), and more than half the value of exports from the FZ system.<sup>xi</sup> As the industry flourished, several hotel developments sprang up everywhere, especially in the coastal areas. As an example, just in the Papagayo peninsula area 23 concessions were granted between 1991 and 1999.<sup>xii</sup> These developments were stimulated by the incentives resulting from the Law of Incentives for Tourism Development.<sup>xiii</sup> This law declares tourism to be of public usefulness and lists the incentives provided to firms operating in the sector. The incentives are granted under a "tourist contract" and include various tax exemptions.

Just as human capital is critical for the attraction of high tech FDI, natural capital is crucial for the attraction of tourism. The aim of most visitors to Costa Rica is to learn about and enjoy the beauty of the beaches, tropical forests and biodiversity. But the government is finding it increasingly difficult to preserve these assets adequately, and to keep illegal hunters away from wildlife reserves and refuges. The reason: insufficient government revenue, which leads to an inability to enforce the existing regulations.

But there is yet another aspect of the inconsistency of the country's approach to development: the arrival of tourists has put severe pressure on the airports, on the roads and highway system, and on security. The capacity of the country's main airport had already collapsed in the early Nineties; the number of passengers using this airport increased from 1.8 million in 1995 to 3.2 million in 2005. The pressure on roads has also been growing: the number of vehicles in circulation rose from nearly half a million in the mid- 1990s to almost 1.5 million units in 2005. Investments on roads and highway expansions remain problematic, however, due to the budget constraints that the government faces.

The development of tourist activities with new hotels in coastal and mountain areas is increasing the pressure on the environment. The national plan for tourist development (2002-12) foresees the creation of 1800 new hotel rooms per year. But as indicated in the XXII Report on the State of the Nation, no assessment is available on the potential impact of this development, particularly in terms of the social and environmental impact.<sup>xiv</sup>

## **Conclusions and Policy Suggestions**

In this article we have analyzed the evolution of FDI in Costa Rica and its relation to economic development. FDI has had an important impact on Costa Rica's broad macroeconomic aggregates: it has contributed to the financing of the trade deficit (and thus indirectly to foreign exchange and price stability), it has countered the decline in national investment; and it has generated export growth and employment.

However, to date, FDI has not contributed greatly to the advancement of the country's knowledge-based assets. Even though there have been positive effects through training and the impact on technical curricula at some of the main universities, backward linkages and the integration of national producers into global value chains have been very limited. The ratio of national expenditure to imports and exports has remained virtually stagnant since 1997.

The development of backward linkages is conditioned by the confluence of FDI spillover potential through domestic sourcing on the one hand and domestic linkage capability, the country's absorptive capacity, on the other hand. While both sides play a role in explaining the scant development of linkages, we argue that the country's insufficient linkage capability has ultimately been the more limiting constraint.

In the presence of widespread market failures, most prominently imperfect information and coordination failures, together with high risk and high capital costs, it is not surprising that national absorption capabilities have generally been too low. Against the backdrop of the Washington Consensus, Costa Rican governments did not pursue proactive policies to work with private producers to overcome these market failures. One of the main reasons why the development potential of high-tech FDI has mostly gone unrealized so far is the glaring absence of a development strategy: a development strategy that would map out priorities and the role of different sectors and actors in achieving these priorities.

That has not happened in Costa Rica since the early 1980s, individual efforts and initiatives notwithstanding. Pursuit of free trade and attraction of FDI policies do not constitute such a strategy. There now exists a vast literature on the development failures of the Washington Consensus, including a critical assessment by key World Bank economists (2005). Rodrik (2001), among many others, has argued persuasively that we need a 'trade policy as if development mattered.' Trade and FDI policies have to be articulated in the context of a larger development strategy that is aimed at expanding the country's knowledge-based assets so as to enable structural change and productivity growth which generate employment and income in higher value added processes and products (e.g. Abugattas and Paus 2006, Paus and Shapiro 2007). Government policies have to adjust the incentive structure which is currently heavily skewed towards foreign investment more towards domestic producers, so as to provide a somewhat more level playing field.

As global competition continues to intensify, especially with the rise of China and India, it is absolutely critical that the Costa Rican government articulates and follows a development strategy, which lays out priorities, formulates requisite policies and indicates a coherent, multi-agency approach towards implementation. The government in close interaction with the private sector (Rodrik, 2004; Hausman and Rodrik, 2003) needs to embark on a process of discovery of those activities that have the highest potential for successful interaction with FDI.

A new development strategy can only be achieved, when the political factions in Costa Rica arrive at a new sustainable coalition that can and will sustain such a project politically, as analyzed splendidly by Sánchez Ancochea (2004). Forging a new political coalition is not the only challenge though. It is absolutely critical that the tax ratio be raised to allow for needed investment in education, infrastructure and social services. We have argued in this paper that the liberalization policy with respect to FDI, tourism and trade has led to a reduction in the tax ratio which makes it hard to finance the very public investment needed to advance development and

set in motion a virtuous cycle of FDI-domestic linkages-higher value added FDI-higher value added national production, etc.

When Intel-Costa Rica celebrated 10 years of operations in Costa Rica in March 2007, Intel president Craig Barrett criticized the lack of technological advancements in the country and the insufficient attention to progress in education (La República, 2007). School completion and enrolment rates have become a growing of concern; and education of more engineers in a broader number of fields as well as greater availability of English-speaking employees are becoming increasingly important bottlenecks for further expansion of foreign investment in the IT-based services sector and for FDI in Costa Rica to move higher up the value. In the mid-1990s, only 18 percent of Costa Rican students in tertiary education were in the sciences, compared to 43 percent in Chile and 30 percent in Argentina (UNDP 2004, 176).

It is ironic, of course, that the very tax exemptions granted to Intel and other TNCs under the rules of the Zona Franca, means that these companies do not directly contribute to an increase in the tax revenue needed for significant improvements in infrastructure and education that they benefit from. It is unfortunate that these companies do not appreciate the need to contribute to the generation of the country specific assets they are looking for. But it is even more unfortunate that the government does not recognize the need for such a contribution either. The tax reform attempts that have been sent to the congress only timidly open up the possibility of taxes on TNCs, and with the fear that perhaps these firms will decide to leave the country, in search for more favorable treatment in other developing countries. Of course, these fears are well grounded as firms (like the comments by Intel above) have made it very clear that they do not want to be taxed.

But it seems that policy makers have lost sight of the fact that the corporations operating in the FZ will only leave the nation if they can find another country in which lower wages and tax rates compensate for the higher productivity of the Costa Rican workers and the stability of the social and political system. The fact that special treatment for exports, e.g. tax exemptions for the Free Zones, will have to be eliminated by the end of 2008 provides a great opportunity for the Costa Rican authorities to establish a positive effective tax rate that will strike the right balance between generating revenue and not driving foreign investors away. And if the government wants to use tax reductions as a way to achieve targeted goals, then they should be linked explicitly to the advancement of the country's knowledge-based assets.

Stopping the tax rate race to the bottom among developing countries ultimately requires the imposition of tax floors at a global level, a formidable challenge. The example of the Scandinavian countries shows that there is no necessary trade-off between taxes and competitiveness. In 2004, Finland, Sweden and Denmark reached tax ratios of 44 percent, 51 percent, and 50 percent, respectively. These nations ranked first, third and fourth in the competitiveness report of the World Economic Forum for 2005 (EurActive.com, 2006).

Insufficient tax revenue also makes it very difficult to sustain the natural and environmental capital that make the country so attractive to high tech multinationals and tourists. In the tourist sector we find the same limitations as in the Zona Franca system: it is not clear which sectors are reaping the benefits of ecotourism, and there is no information on the environmental impact of hotel developments in protected areas. Like in the case of the FZ the institutions in charge lack a clear vision of where they want to go, and thus do not even generate the data that are required to assess the impact of their actions.

The Costa Rican government needs to define a coherent development strategy that takes into account the social and economic realities of the country in a global context of growing competitive pressures. The core of such a strategy has to be the advancement of the country's knowledge-based assets. And it is in that context that the role of FDI and particularly high-tech FDI has to be specified.

Important elements for the advancement of knowledge-based assets and a more lasting positive impact of FDI are an increase in tax revenues and a more fairly distributed tax burden. Since TNCs feed on the characteristics and specific assets of the local economy, the country needs to enhance all those features that have turned it into an attractive destination for high tech FDI flows: political and social stability, a well defined institutional framework, an educated labor force, and beautiful and well preserved natural areas.

This will only be possible through more and better investment in human capital, social programs for the disadvantaged, and active government-private sector collaboration to identify and promote the most profitable and viable activities. Such a process will lead to the definition of the specific microeconomic policies required for a more dynamic local economy, and for a closer interaction between national producers and TNCs.

The national system of science and technology has to be redefined, so as to attain a closer link between the needs of producers (local and foreign) and the development and improvement of location-specific assets. In this framework the actions of an agency like CINDE have to cohere with the national development objectives, and the efforts of a better equipped CRP program will be more likely to bring about a quantum leap in the country's linkage and absorption capabilities.

Finally, more resources are needed for the creation and maintenance of a reliable data base with information on the evolution of the FZ (e.g. linkages, local purchases, types of workers hired or required), the evolution of the tourist sector, and the condition of the national parks. This information will allow policy makers to assess the results of different microeconomic policies and investment projects and make the necessary adjustments in a flexible and speedy fashion, as internal and external conditions keep changing.

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<sup>i</sup> In an empirical study, Noorbakhsh, Paloni and Ali (2001) show that human capital is a statistically significant determinant of FDI, that it is one of the most important determinants of FDI, and that its relevance has increased over time. Miyamoto (2003) argues that human capital becomes especially important when FDI is efficiency seeking, rather than market seeking.

<sup>ii</sup> Cordero (2000) raises the same concern, even though his econometric work shows a statistically significant negative relationship between FDI and national investment.

<sup>iii</sup> Computations based on Central Bank data.

<sup>iv</sup> Calculated based on data from Intel, Central Bank of Costa Rica, and Procomer.

<sup>v</sup> Taking into account profit repatriation, Paus (2005, 147) estimates that the Special Export Regimes generated nearly \$ 5 billion in net foreign exchange between 1991 and 2003.

<sup>vi</sup> Data on the tax burden in OECD countries are from the OECD web site.

<sup>vii</sup> Leiton (2007) argues that taxes on real estate activities are very low, and the ones that exist can be evaded easily.

<sup>viii</sup> Villasuso (2007) provides a historical account of how government budget regulations have hampered the ability of ICE to undertake the needed investments in new capacity. The way in which general guidelines on the budget deficit have caused severe delays in ICE's investments had been documented in Cordero (2000).

<sup>ix</sup> The same trend is found if we use ratios of national expenditures to exports)

<sup>x</sup> Roberto Calvo from Costa Rica Provee kindly provided the data regarding CRP.

<sup>xi</sup> Data from the Compendio Estadístico, XII Informe Estado de la Nación, Programa Estado de la Nación (2006).

<sup>xii</sup> Website at the Instituto Costarricense de Turismo, <http://www.visitcostarica.com/ict/paginas/ictnotaict.asp?idnota=341>, accessed May 23<sup>rd</sup>, 2007.

<sup>xiii</sup> Law number 6990, July 1985 and amendments in 1992 and 2001.

<sup>xiv</sup> Programa Estado de la Nacion (2006).