

Economic Implications of Measures to Bring the Dominican Republic into Compliance with the World Trade Organization (WTO) Rules Concerning the Operation of Free Zones¹

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Abstract

Over the past two decades the Dominican Republic has used free trade zones (FTZs) to develop a very successful institutional environment for the production of manufacturing exports, primarily for the US market.

Through the use of the Free Trade Zones the private sector has developed islands of relatively efficient public administration and modern business practices that are surrounded by a county where the quality of public sector governance has been quite low. The advanced development of the FTZs has created a dual industrial sector in the Dominican Republic. One that is modern, efficient, and outward-looking. The other is operating in the domestic environment of poor governance, inadequate infrastructure (electricity) and limited market horizons.

In summary the businesses operating in the FTZs of the Dominican Republic have enjoyed a complete tax exemption from the payment of corporate income taxes, municipal taxes, import duties (both on capital and intermediate inputs), taxes on exports or re-exports, the ITBIS, and all other minor taxes. In addition, the import and export procedures for the businesses operating in the FTZs were greatly simplified and much less costly to comply with than the procedures that domestic firms had to contend with when importing or exporting.

We proposed some institutional changes to the normal VAT administration. This may help VAT systems to increase its effectiveness although we should note that they should not be assumed as complete solutions. We should keep in mind that although the auditing requirements are greatly reduced, the auditing function of the tax administration needs to be built and maintained.

Keywords: Free trade zone, tax exemption, VAT, WTO, Dominican Republic

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I. Introduction

Over the past two decades the Dominican Republic has used free trade zones (FTZs) to develop a very successful institutional environment for the production of manufacturing exports, primarily for the US market. In 2003 over 84% of all exports from the Dominican Republic came from firms operating within the FTZs. These firms produced total exports of about US\$4.4 billion, creating over US\$1.3 billion of total value added. Garments have historically represented the largest component of these exports but a diverse set of activities take place within the zones.

Through the use of the Free Trade Zones the private sector has developed islands of relatively efficient public administration and modern business practices that are surrounded by a county where the quality of public sector governance has been quite low. Through the legislation and operation of the FTZs a number of ad hoc systems have been developed to facilitate international business transactions by allowing the companies to avoid having any significant contact with an inefficient and corrupt Customs administration, and the poorly administered domestic tax system that does not give refunds to taxpayers when refunds are legally owed to the taxpayer.

The latest innovation in the activities of the FTZs is the special FTZs. These are basically single factories that have decided to become primarily exporters. From our preliminary examination it appears that a number of these firms have in the past produced for the domestic market but now find it advantageous to now concentrate heavily, perhaps exclusively, on the external market. Once they obtain the status of a special FTZ, they no longer are subject to the corporation income tax, the ITIBIS, the foreign exchange commission, and any other taxes that are exempt by virtue of being a FTZ.²

Operations in the zones are free of all income taxes on the companies and all indirect and trade taxes. In addition, procedures and institutional arrangements have been developed to enable cargo to flow smoothly through the ports and customs to the zones and vice versa. This has given the FTZs a great advantage for the exporting firm over what its

² Congress of the Dominican Republic, Law 8-90

situation would have been if it were located in the domestic economy. In summary, the advanced development of the FTZs has created a dual industrial sector in the Dominican Republic. One that is modern, efficient, and outward looking. The other is operating in the domestic environment of poor governance, inadequate infrastructure (electricity) and limited market horizons.

Over the past decade a number of steps have been taken to improve the level of the domestic tax administration, but little has been done, outside of the FTZs, to improve the administration of international trade transactions. For a period significant steps were undertaken to modernize the administration of Customs, but during the past five years it has deteriorated badly. In the last few months steps have been taken to again reverse this trend, but the speed of change has been slow.

Three major changes in the world trading environment have either already started or will come into force in the next three to five years that will alter the way the export sector will operate in the Dominican Republic. First, on January 1, 2005 the world global quotas for the manufacturing of apparel came to an end. As approximately 50 percent of the sales from the zones were in the areas of clothing and textiles, the end of this system that gave preferences to the Dominican Republic will have a major impact on the firms operating the FTZs. Second, in August 2005, the Dominican Republic signed a United- States-Dominican Republic-Central American Free Trade Agreement (US-CAFTA-DR). Third, the rules of the World Trade Organization (WTO) concerning the taxation preferences that are now given to companies because they operated in the FTZs and produce for the export market will come into force in 2007, just two short years away. These changes will not only change the nature of the activities that will be undertaken within these free trade areas, but they will fundamentally change the way that the FTZs will operate in relation to the rest of the economy.

The US- CAFDA-DR free trade agreement signed last year requires that the fiscal system of the Dominican Republic be compatible with the WTO rules. Furthermore, there are considerable potential benefits for businesses operating in the Dominican Republic to be

found in the US-CAFDA-DR free trade agreement that has could substantially offset the losses inflicted by the loss of the global garment quotas.³ As a consequence, the Dominican Republic has little choice but to come into compliance with the WTO rules by December 2007.

In summary the businesses operating in the FTZs of the Dominican Republic have enjoyed a complete tax exemption from the payment of corporate income taxes, municipal taxes, import duties (both on capital and intermediate inputs), taxes on exports or re exports, the ITBIS, and all other minor taxes. In addition, the import and export procedures for the businesses operating in the FTZs were greatly simplified and much less costly to comply with than the procedures that domestic firms had to contend with when importing or exporting.⁴ The firms operating in the FTZs have been able to conduct their business in a very different way than do firms operating outside the Zones. However, the international environment in which the Dominican Republican manufacturing sector has operated is going to go through a fundamental change over the next 5 years.

³ Nathan Associates Inc, Dominican Republic Textile and Apparel Export Competitiveness, USAID, Nov. 2004, pp.34

⁴ Congress of the Dominican Republic, Law 8-90

II. WTO Rules and the operation of the Free Trade Zones

The WTO Rules are expressed in terms of non-discrimination in the application of the fiscal system, both taxation and expenditure, so that production for export is not favored over production for the domestic economy. This will require; (1) the same rate and definition of taxable income tax must be applied to the corporate income of firms producing for the export market, including those exporting from the zones, as is applied to the income of domestic firms selling into the domestic market. (2) Firms producing for export must not obtain a remission or indirect taxes on the production and distribution of exported goods in an amount that exceeds the taxes levied on the production and distribution of similar goods when they are sold in the domestic market. (3) The remission or refund of import duties in an amount that exceeds that levied on imports used in the production of the exported product.⁵

The rule (1) to impose the corporation income tax on the firms exporting from the zones is the one that will create the most economic disruption in its application. It is interesting that the problem in the DR with the issues surrounding rule (2) is not that the amount of remission given for indirect taxes paid on inputs to the firms operating in the FTZs is excessive, but that not enough remission is given to the exporters who operate outside of the zone. As no cash refunds are given to exporters who have a surplus of ITBIS input tax credits, their costs of production will include some value added (ITBIS) taxes. The same comment applies also to the exemption for import duties. Exporters operating outside the zones do not get refund of the import duties paid on inputs used to produce their exports.

By law, the firms operating in the FTZs can sell up to 20 percent of their production to the domestic market.⁶ When they do sell to the domestic market, the full tariff rate applicable to the commodity being sold must be applied. However, very few companies who sell to the international market wish to also sell to the domestic market. The

⁵ Jaime Granados, Export Processing Zones and Other Special Regimes in the Context of Multilateral and Regional Trade Negotiations, Occasional Paper 20, Integration and Regional Programs Department, Inter-American Development Bank, 2003. World Trade Organization, Articles 1 and 3, Agreement on Subsidies and Countervailing Measures.

⁶ Congress of the Dominican Republic, Law 8-90, Article 17 (e).

companies interviewed all said that, if the export market is available to them on a tax free basis, it is too much bother for them to deal with customs, and the domestic taxation authorities that arises by selling to the domestic market. At the present time when a firm in the FTZ wants to buy from the non-FTZ domestic market it can do so on a tax exempt basis as far as ITIBIS is concerned, as long as it has a card that informs the seller that the buyer is eligible to make purchases tax free.

Setting aside for the moment the problem of imposing the general corporation income tax on to the FTZ firms, it seems that the main problem facing the manufacturers in the Dominican Republic is the efficient and ineffective administration of Customs and Taxation. A key element of the problem is the lack of policy leadership in requiring these authorities to develop systems for refunding to exporters both the ITBIS and also import duties collected on the inputs in an efficient and timely fashion. This defect, combined with a bureaucracy that is prone to corruption, has raised the compliance costs for private businesses in their dealings with the public sector. This has made the creation of the FTZs a worthwhile endeavor, as they not only reduced the direct burden of taxes, but they also dramatically lower the compliance costs of dealing with the rules and regulations of Government.

III. Making the design of the corporation income tax comply with the WTO rules

At the present time the corporation income tax applies only to companies operating outside of the FTZs. For the period from 2001 to 2003, the corporation income tax was complemented by a 1.5 withhold tax on all sales (in reality a turnover tax) that could be credited against the corporation income tax liabilities. If the withholding tax was greater than the corporation income taxes due, no refunds are given. Hence, in reality there was very little true taxation of profits as the 1.5 percent withholding tax would get largely passed on into the prices of the items sold. In 2004 the 1.5% withholding tax on business sales was eliminated. Corporations now pay an income tax that is measured as 25 percent

of taxable income. However, it does not apply to firms operating in either the regular or special FTZs.

If it is the welfare of labor that is of concern to policy makers, the present system of corporate income taxation is sound tax policy. Labor income is maximized when the corporation income tax applicable to the firms selling internationally traded manufacturing goods is near zero.

If a corporation income tax were imposed on the companies operating within the FTZs there is almost no likelihood that the investors in the companies would end up bearing any of the additional tax by accepting a lower net rate of tax return. For firms operating in extremely competitive market such clothing and electronics, where they are receiving world prices for the items they are selling, there is no possibility of passing any additional corporation income tax on to foreign the consumers. Second, the foreign investors in the FTZs will not be willing to accept a lower rate of return to capital just because the Dominican Republic has imposed a corporation income tax on their operations. A number of firms would decide to relocate elsewhere and this process will continue until the wage rates paid to the workers in the FTZ fall by enough so that the reduction in the wag bill is approximately equal to the corporation income tax paid on these business activities⁷.

A serious consequence of imposing the corporation income tax on the FTZ is that the income to labor will fall not only in the FTZs but also across the entire labor market that employs workers of a similar type or are substitutes for the categories of labor skills employed by the FTZs.

There are some circumstances when this conclusion may not hold. If the foreign investors in the Dominican Republic tend to be from countries that have a foreign tax credit mechanism, such as the United States, Japan and the UK, then the additional taxes being

⁷ Arnold C. Harberger, "Tax Policy in a Small Open, Developing Economy" in M.B. Connolly, *The Economics of the Caribbean Basin*, New York; Eastbourne, England: Praeger., 1995.

paid in the Dominican Republic might be used as a tax credit to offset the taxes owed to the United States on this foreign source income.⁸

Estimation of Corporation Income Tax Revenues from FTZs

At the present time the tax base for the corporation income tax is not available for the firms operating in the FTZs. Hence, we have had to estimate the tax base indirectly. This is done by first measuring the gross value added of the sector by taking the total value of exports for each year and deducting the value of imports, and the cost of inputs purchased in the local market. This is shown in rows 1 to 7 of table 1. In order to obtain the net value added of capital in the year we then need to deduct both the value added of labor, and depreciation expense for the year. This is done in rows 8 and 10 to give us an estimate of the net value added of capital after depreciation expense as shown in row 11. In order to estimate the amount of taxable income that would have existed in years 2001, 2002 and 2003 we then need to estimate the amount of interest expense incurred in each of these years. For multinational firms the amount of interest expense allocated to the operations of any single country is usually based on what amount will minimize the overall income tax burden of the firm's international operations. Hence, we do a sensitivity analysis of the impact on the tax base and hence tax revenues, if the interest expense (tax shield) is either 50 percent or 70 percent of gross income before interest and taxes. The estimated taxable income for the firms operating in the zones, using a tax shield of 50 percent of income before interest expenses, is US\$218 million in 2001, in 2002 it is US\$262 million, and in 2003 it is US\$318 million.

⁸ The United States is the home country for 47 percent of the firms operating in the FTZs. Firms owned by residents of the Dominican Republic make up about 34 percent of the total, with the remainder spread over a wide range of countries. National Council of Export Free Zones, Annual Report 2003

Table 1

Base Case of Estimation of Potential Corporation Tax Revenue on Free Zone Activities (millions of US\$ in Current Values)

S.No.	Year →	2001 (1)	2002 (2)	2003 (3)
1	EXPORTS	4,482	4,317	4,399
2	(-) IMPORTS	2,826	2,600	2,618
3	(-) IMPORTS of COMMERCIAL SERVICES	30	25	25
4	(-) INPUTS from LOCAL MARKET	46	47	72
5	(-) SERVICES from LOCAL MARKET	241	230	237
6	(-) OTHER LOCAL COSTS	124	105	105
7	GROSS VALUE ADDED	1,214	1,311	1,343
8	(-) VALUE ADDED of LABOR ^a	488	439	284
9	GROSS VALUE ADDED of CAPITAL	726	872	1,058
10	(-) DEPRECIATION EXPENSE ^b	290	349	423
11	VA of CAPITAL after DEP.	436	523	635
12	(-) INTEREST EXPENSE ^c	218	262	318
13	TAXABLE INCOME ^d	218	262	318
14	CORPORATE TAX Level 1@25%	54	65	79
15	Level 2@20%	44	52	64
16	Level 3@15%	33	39	48
17	Level 4@10%	22	26	32
18	CORPORATE TAX as % of Exports Level 1@25%	1.22%	1.52%	1.80%
19	Level 2@20%	0.97%	1.21%	1.44%
20	Level 3@15%	0.73%	0.91%	1.08%
21	Level 4@10%	0.49%	0.61%	0.72%
22	CORPORATE TAX as % of VA of LABOR Level 1@25%	11.16%	14.91%	27.94%
23	Level 2@20%	8.93%	11.93%	22.35%
24	Level 3@15%	6.70%	8.95%	16.77%
25	Level 4@10%	4.46%	5.96%	11.18%
26	CORPORATE TAX per WORKER ^e (US\$) Level 1@25%	311	383	458
27	Level 2@20%	249	306	366
28	Level 3@15%	187	230	275
29	Level 4@10%	124	153	183
a. Value added of labor is estimated by taking the values of employment in the zones and multiplying by the average wage paid (Source: Free Zone National Council, www.cnzfe.do) b. Depreciation expens are estimated to be equal to 40 percent of the gross value added of capital. c. In the base case it is assumed that of interest expense for firms will be 50 percent of IBIT d. Taxable income is row 9 minus rows 10 and 12 e. Estimated by dividing rows 14,15,16,17 by the number of employees working in the FTZ during 2001,2002,2003				

Using these values for taxable income we can then estimate the tax liabilities that would have existed in 2001, 2002 and 2003 with the existing corporation income tax rate of 25 percent as being US\$54 million, US\$65 million, and US\$79 million, respectively, table 1,

row 14. This table also shows the estimated tax revenues if the tax rate were reduced to 20, 15 or 10 percent. As we would expect, the estimated tax revenues decline proportionally with the reduction in the tax rates. When the amount of interest expense used to deduct from the estimated income-before-interest-and- taxes (IBIT) for the calculation of taxable income is increased to 70 percent of IBIT, we find in table 2, row 14 that the estimated corporation income taxes falls to US\$33 million, US\$39 million, and US\$48 million for years 2001, 2002 and 2003, respectively.

Table 2
Low Estimate of Potential Corporation Tax Revenue on Free Zone Activities^a
(millions of US\$ in Current Values)

S.No.	Year →	2001	2002	2003
		(1)	(2)	(3)
1	EXPORTS	4,482	4,317	4,399
2	(-) IMPORTS	2,826	2,600	2,618
3	(-) IMPORTS of COMMERCIAL SERVICES	30	25	25
4	(-) INPUTS from LOCAL MARKET	46	47	72
5	(-) SERVICES from LOCAL MARKET	241	230	237
6	(-) OTHER LOCAL COSTS	124	105	105
7	GROSS VALUE ADDED	1,214	1,311	1,343
8	(-) VALUE ADDED of LABOR ^b	488	439	284
9	GROSS VALUE ADDED of CAPITAL	726	872	1,058
10	(-) DEPRECIATION EXPENSE ^c	290	349	423
11	VA of CAPITAL after DEP.	436	523	635
12	(-) INTEREST EXPENSE ^d	305	366	445
13	TAXABLE INCOME ^e	131	157	191
	CORPORATE TAX			
14	Level 1@25%	33	39	48
15	Level 2@20%	26	31	38
16	Level 3@15%	20	24	29
17	Level 4@10%	13	16	19
	CORPORATE TAX as % of Exports			
18	Level 1@25%	0.73%	0.91%	1.08%
19	Level 2@20%	0.58%	0.73%	0.87%
20	Level 3@15%	0.44%	0.55%	0.65%
21	Level 4@10%	0.29%	0.36%	0.43%
	CORPORATE TAX as % of VA of LABOR			
22	Level 1@25%	6.70%	8.95%	16.77%
23	Level 2@20%	5.36%	7.16%	13.41%
24	Level 3@15%	4.02%	5.37%	10.06%
25	Level 4@10%	2.68%	3.58%	6.71%
	CORPORATE TAX per WORKER ^f (US\$)			
26	Level 1@25%	187	230	275
27	Level 2@20%	149	184	220
28	Level 3@15%	112	138	165
29	Level 4@10%	75	92	110

a. In the base case it is assumed that interest expense for firms will be 70 percent of IBIT

b. Value added of labor is estimated by taking the values of employment in the zones and multiplying by the average wage paid (Source: Free Zone National Council, www.cnzfe.do)

c. Depreciation expens are estimated to be equal to 40 percent of the gross value added of capital.

d. In the base case it is assumed that of interest expense for firms will be 50 percent of IBIT

e. Taxable income is row 9 minus rows 10 and 12

f. Estimated by dividing rows 14,15,16,17 by the number of employees working in the FTZ during 2001,2002,2003

In table 1, row 18, the potential corporate income tax revenues estimated on the basis of a 25 percent tax rate are expressed as a percentage of gross exports. We find that they amount to 1.22%, 1.52% and 1.80% for the years 2001, 2002, and 2003 respectively. These percentages are close to the rate of 1.5% of gross sales that was used until 2004 as the withholding tax for the corporation income tax.

In table 1, rows 22 to 25, the estimated corporation income taxes are expressed as a percentage of the wages earned by labor in the FTZs. It is interesting to note that the estimated corporation income tax at a rate of 25 percent would have amounted to 11.2% of the total value added of labor in 2001, rising to 14.9% in 2002 and 27.9% in 2003. On a per worker basis the amount of estimated tax is shown in table 1, row 26. The amount per worker per year ranges from US\$311 to US\$458. When 70 percent of the income from capital is shielded from the corporate income tax by interest expense deductions, then we find in table 2 row 26 that the corporate income tax due ranges from US\$187 to US\$ 275 per year per worker employed. These values of the corporate income taxes due per worker employed indicates the amount that the annual real wages would have to fall in the FTZs before investors would willing to remain operating in the FTZs after the corporation income tax is imposed.

The amounts of adjustment required by the workers are similar in percentage terms to what they experienced from the second quarter of 2003 to the third quarter of 2004.⁹ However, by the fourth quarter of 2004 the real wages were again back up to approximately the same real rate as they were 16 months earlier. The imposition of a corporation income tax will require something quite different. In this case so long as the corporation income tax payments are a positive amount, the drop in real wages will be reflected in a permanent lowering of the profile of expected real wages over time.

⁹ Nathan Associates Inc., op.cit, pp 14, table 3-1

At this point we want to turn to examining what the likely effects of this reduction in wages in the FTZs will have on the income earned by labor and the net distributional impacts of the wage and price changes that occur as a consequence of these policies.

In table 3 the labor force of the Dominican Republic is shown for the years 2001, 2002 and 2003 by sector. From row 3 we see that there is approximately 3 million in total in the labor force. Out of this total, we find in row 8 that between 170 thousand and 175 thousand workers are employed by the firms in the FTZs. From table 3, row 8, columns 5, 6, and 7 we find that the employment in the FTZ represents approximately 6 percent of the total employment in the country. Column 1 of the table indicates whether the sector is currently subject to corporation income tax (T), or is not taxed (NT). Certain firms within some of the sectors that are indicated in the table as being not subject to taxation, may in fact be taxed, however, these firms are not likely to dominate the sector.

Table 3
Number and Distribution of Employment by Sector

S.No.	Sectors	Year →	(1)	2001	2002	2003	2001	2002	2003
		Tax status ^a	Number	(2)	(3)	(4)	(5)	(6)	(7)
1	Public administration	NT		143,617	156,771	137,736	0.05	0.05	0.05
2	Agriculture	NT		427,871	475,058	413,396	0.15	0.16	0.14
3	Construction	NT		197,651	182,225	218,408	0.07	0.06	0.07
4	Transportation	NT		170,450	163,724	170,283	0.06	0.05	0.06
5	Services	NT		618,838	675,087	706,757	0.21	0.22	0.23
6	Bars and Restaurants	NT		90,768	93,340	69,432	0.03	0.03	0.02
7	Wholesale trade and Retailer	NT		627,276	638,602	617,397	0.21	0.21	0.20
8	Manufacturing in FTZ	NT		175,078	170,833	173,367	0.06	0.06	0.06
9	Manufacturing Domestic Non-traded	NT		99,762	102,937	104,149	0.03	0.03	0.03
	Sub-Total			2,551,309	2,658,575	2,610,925	0.87	0.87	0.86
10	Manufacturing Domestic Traded	T		183,558	165,331	174,025	0.06	0.05	0.06
11	Mining	T		5,498	7,079	7,266	0.00	0.00	0.00
12	Tourist and Business Hotels	T		71,156	73,318	94,191	0.02	0.02	0.03
13	Financial intermediaries	T		53,549	62,132	62,212	0.02	0.02	0.02
14	Utilities and Communication	T		84,214	90,148.50	95,530.00	0.03	0.03	0.03
	Sub-Total			397,975	398,008	433,224	0.13	0.13	0.14
	Grand Total			2,949,283	3,056,583	3,044,149	1.00	1.00	1.00

^a NT = Currently not subject to Corporate Income Tax, T = Currently subject to Corporate Income Tax

The wage rates of different professions and skills that are not very substitutable may be set largely independent of each other. For a large number of workers, however, jobs within the FTZs or outside the zones are simply two parts of the same labor market demanding their services. Different working conditions or systems of compensation that

might make the wage rates different between the FTZs and outside the zones. These equalizing differences, however, do not break the link between the labour market of the FTZ and the labour market in the rest of the economy. In such cases if the wage rate within the FTZ is depressed due to the imposition of the corporate income tax, then the wage rates outside of the FTZ will also be depressed. In table 4, a set of estimates are made of the total loss in wages that would arise from the ripple effect across the economy of a lowering of the wages paid inside the FTZs. If the labor not working in the FTZs were perfectly substitutable in terms of their skills with the workers inside the FTZs, then the total loss in wages for a 25 percent tax rate on corporate income in the FTZ would be US\$ 917 in year 2001, US\$1,171 in 2002 and US\$1,394 in 2003 as shown in table 4 row 1, columns 1, 2 and 3 for the base case estimate of taxable income. Taking the labor force as a whole this would represent a fall in incomes of workers of about 8 percent in 2001 and a fall in real wages of up to 21 percent overall in 2003, see table 4, row 5. Of course, as the corporate tax rate is reduced from 25 percent to 10 percent then the required fall in wages is reduced to 3, 4 and 8 percent in the three years being examined.

Table 4
Base Case of Potential Impact of Corporate Tax on FTZ firms on Labor Income for Country

S.No.	Year →	Reduction of Labor Income in Total Economy			
			2001	2002	2003
			(1)	(2)	(3)
1	Corporate Tax on FTZ firms @25%		917	1,171	1,394
2	Corporate Tax on FTZ firms @20%		734	937	1,115
3	Corporate Tax on FTZ firms @15%		550	702	836
4	Corporate Tax on FTZ firms @10%		367	468	558
		Potential Change in Labor Income / Total Labor Co			
	Year →		2001	2002	2003
			(1)	(2)	(3)
5	Corporate Tax on FTZ firms @25%		(0.08)	(0.10)	(0.21)
6	Corporate Tax on FTZ firms @20%		(0.06)	(0.08)	(0.17)
7	Corporate Tax on FTZ firms @15%		(0.05)	(0.06)	(0.13)
8	Corporate Tax on FTZ firms @10%		(0.03)	(0.04)	(0.08)
9	Total Impact on Labor Income / CIT from the FTZ		(16.8)	(17.9)	(17.6)

In table 5 these same estimates are presented for the low estimate case of taxable income where it is assumed that 70 percent of the net value added of capital is deducted in the

estimation of taxable income. In this case the fall in real wages that could occur because of the corporation tax on the FTZs ranges from 5 to 13 percent with a 25 per corporation income tax to between 2 and 5 percent when the corporation income tax is only 10 percent. However, a critical result is reported in row 9 of both tables 4 and 5. It shows that the reduction of wages in the economy could be up to 17.6 times as great as the increased corporation income tax revenue gained from taxing the FTZs.

Table 5
Low Estimate of Potential Impact of Corporate Tax on FTZ firms on
Labor Income for Country

S.No.	Year →	Reduction of Labor Income in Total Economy		
		2001	2002	2003
		(1)	(2)	(3)
1	Corporate Tax on FTZ firms @25%	550	702	836
2	Corporate Tax on FTZ firms @20%	440	562	669
3	Corporate Tax on FTZ firms @15%	330	421	502
4	Corporate Tax on FTZ firms @10%	220	281	335
	Year →	Potential Change in Labor Income / Total Labor Cor		
		2001	2002	2003
		(1)	(2)	(3)
5	Corporate Tax on FTZ firms @25%	(0.05)	(0.06)	(0.13)
6	Corporate Tax on FTZ firms @20%	(0.04)	(0.05)	(0.10)
7	Corporate Tax on FTZ firms @15%	(0.03)	(0.04)	(0.08)
8	Corporate Tax on FTZ firms @10%	(0.02)	(0.02)	(0.05)
9	Total Impact on Labor Income / CIT from the FTZ	(16.8)	(17.9)	(17.6)

These results are clearly extreme values as some labor markets in the Dominican Republic are likely to be unaffected by any changes in the wage rates paid to labor in the FTZs. In order to see what is likely to be the minimum impact of such a reduction in wage rates would be we have included in the labor market impact only those sectors where the labor would have similar skills to those working in the FTZs. These sectors are transportation, services, wholesale and retail trade, domestic manufacturing, the manufacturing in the FTZ and those working in the tourist and business hotels. The ratio of the total loss of wages to the additional corporation income tax paid by the companies in the FTZs is now as reported in Table 6 row 2. The result is that the loss in wages would be equal to over 8 times the revenue collected through the corporation income tax.

This represents about half of the wage loss that was projected previously, but still dramatically greater than any additional corporation income tax paid.

Table 6
Impact on Labor Income as a relative to the Revenues of CIT from the FTZ

S.No.	Year →	2001	2002	2003
		(1)	(2)	(3)
1	If economy wide labour market (base case)	(16.8)	(17.9)	(17.6)
2	If labour market is segmented	(8.05)	(8.46)	(8.61)

The reduction in wages paid to labor is also going to have an impact on the prices and the competitiveness of other sectors. The first impact will be that the manufacturing firms outside of the FTZ who produce tradable goods and who are now taxed will become more competitive and will be able to expand. The costs of the services in the wholesale and retail trade sectors will fall and hence the real prices of goods and services will fall. This same pattern should carry over to services in general, bars and restaurants, and tourist and business hotels.

In the DR labor receives in wages approximately 56 percent of total value added. The owners of capital receive approximately 45 percent. Hence, we would expect that labor will benefit from approximately half of the reductions in the prices of the non-traded goods created by the reduction in the costs of their production. To the degree that the prices of such things as tourist hotels and domestic manufacturing are set internationally, then labor will not benefit from any price reductions. It would appear that labor would benefit through lower prices on their expenditures of domestic goods and services, not more than half of the loss they suffer from the reduction in wages. Hence, instead of labor losing about 8 times the amount of additional corporation income tax collected, it losses about 4 times of the reduction in wages, with the owners of capital receiving benefits through lower prices on their consumption expenditures equal to about four times the additional taxes collected by the government through the income taxes on the FTZ companies. This is hardly a desirable result in terms of the distribution of income,

however, it is nothing new for the workers to suffer protracted income losses because of the bad economic and tax policies of governments.

To this point the analysis has been one of extending the corporate income tax to the FTZs. The objective is to raise revenue from this sector and hence put the exporting companies on an equal basis or equal tax treatment with the firms producing for the domestic economy. However, the exporting firms have a number of ways to avoid this corporation tax, but they can not avoid dealing with an income tax administration that has a reputation for being neither user friendly or efficient. In terms of tax avoidance, the use of transfer pricing to move the profits of the company from the Dominican Republic to a lower taxed jurisdiction is perhaps the most likely action that will take place. Alternatively, firms can structure their financing to allocate sufficient interest expense from their world wide operations to eliminate any taxable income that might be generated by the activities in a specific jurisdiction. Hence, it is likely that the tax revenues obtained from attempting to tax the firms that choose to operate in the FTZs would be even smaller than that which was estimated previously in this report. However, the cost of complying with the requirements of the tax administration, including the fear of unjust harassment is a cost that is difficult to measure. We now turn to some options of how the Dominican Republic might wish to adjust to the fact that they must become compliant with the WTO rules before 2007.

Corporation Income Tax Options for complying with the WTO rules.

There are basically three options for bringing the corporate income tax system into compliance with the WTO rules by 2007. They are as follows:

1. Select the export sectors where the amount of production activity outside of the zones is very small and then exempt the entire sector from the corporation income tax. At the present time this would mean exempting textiles, clothing and cigar manufacturing.

2. Another alternative is lower the corporation income tax rate to a rate of 10 or 15 percent on all industries in the Dominican Republic and make it a final tax.
3. Reduce the corporation income tax to 10 percent, and also adjust the advanced corporation tax so to accommodate the lower rate of corporation income tax. At the same time impose a deemed dividend tax rule so that all retained earnings are taxed within three years.

Discussion

Option 1. Exempt sectors that are largely exporters from being subject to the corporation income tax. While this option would relieve most of the immediate problems facing exporters now operating in the FTZs of the DR, it will create many new problems though time. First, it would penalize firms that are mainly domestic from undertaking exports because they are likely to be a small part of the overall industry. In the short run it might not appear to be worthwhile to exempt a whole sector from the tax because one or two firms want to engage in exporting., However, it may be the case that a long term opportunity is being lost to develop a major export sector.

It is almost impossible to predict which will be the sectors that will grow and develop into major exporters. Who would predict that Indonesia would become the largest producer of sporting equipment in the world?

Second, if one or two sectors are tax exempt and the rest of the economy is subject to full taxation (at least in theory) then there will be a lot of tax avoidance activity in order to change the nature of the income in order that revenues accrue in the tax exempt sector and expenses are taken in the taxable sectors. At best this is a short-term option that will need to be changed quickly if it is not to hinder the development of new export industries.

Third, because it is such a transparent policy to give preferential treatment for the main exports of the Dominican Republic, it might be subject to challenge as being discriminatory.

Option 2. Lower the rate of corporation income tax. The second option is the one that has been picked by several other Central American countries. This option might work reasonably well in a country such as Costa Rica where there has been a long term practice to eliminate most of corporate taxable income through thin capitalization schemes via the financial institutions located in Panama. The net result is that there has been a substantial loss in revenue in the non-FTZ sectors, and very little prospect of gaining revenue from the taxation of the exporting firms. The exporting firms will simply make sure that the income from these activities is reported in another lower income tax jurisdiction.

The decision in 2004 to eliminate the 1.5 percent withholding tax was essentially a decision to eliminate approximately three quarters of the corporation income tax revenues collected from domestic firms. In order to estimate this revenue impact we took the 2002 sample of firms (the latest data available) and re-estimated how much corporation income tax would be owed if there would have been a zero rate of withholding tax. From table 7 row 1 we see that the corporation income tax was about US\$ 279 million, and would have been only about US\$ 65.7 if the 1.5% withholding tax had not been in place. This policy change created a bigger revenue loss than the revenue loss that would be created by now lowering the rate of tax from 25 percent to 10 percent.

Another major problem that arises from lowering the corporation income tax rate below the highest rate on personal income is that for small and medium businesses there will be a huge incentive for the owners not to pay wages and salaries but to pay the owners of the company dividends, on which there would be no further income taxes owed.

Table 7
Corporate Income Tax Revenue with and without 1.5% withholding and
with alternative tax rates (thousands of US\$)

S.No.	Year →	2002
1	TOTAL FROM ALL TAX PAYERS WITH 25% CIT AND 1.5% WITHHOLDING	279,417
	ESTIMATED COLLECTION OF CIT FROM ALL TAX PAYERS WITHOUT 1.5 % WITHHOLDING	
2	Level 1@25%	65,734
3	Level 2@20%	41,706
4	Level 3@15%	33,862
5	Level 4@10%	31,848
	CHANGE IN COLLECTION OF CIT FROM ALL TAX PAYERS	
6	Loss in Revenue from Elimination of 1.5% Withholding Tax	-213,684
7	Loss in Revenue from Reducing Tax Rate from 25% to 20%	-24,027
8	Loss in Revenue from Reducing Tax Rate from 25% to 15%	-31,872
9	Loss in Revenue from Reducing Tax Rate from 25% to 10%	-33,885

Option 3 Reduce the corporation income tax to 10 percent, and also adjust the advanced corporation tax so to accommodate the lower rate of corporation income tax. We recommend this option and propose that the rate of corporation income tax be lowered to 10 percent. At the same time the advanced corporation tax should remain at 25 percent as long as the top rate of personal income tax is 25 percent. While the credit given to the individual for the ACT on dividends would remain at 25 percent the credit given to the corporation to offset future corporation income taxes would be reduced to 2/5 of the tax withheld, or 10 percent. In order to avoid companies simply retaining the dividends forever in the company and thus never paying more than 10 percent tax, it is recommended that a deemed dividend provision be introduced in the tax code. Under this provision, a corporation will be required to pay the ACT on retained earnings that have not been paid out as dividends within 3 years of the income being earned. Subsequently when the retained earnings are paid out as dividends no ACT would be levied on the dividends on which the ACT had already been paid.

For dividends paid to foreign shareholders, only a 10 percent rate of ACT would be levied and a credit would be given to the company for this amount of ACT to be used in the future to offset corporation income tax liabilities.

Except for the dividends paid to foreign shareholders, the overall rate of tax imposed on the income of corporations would remain at 25 percent or the individual's personal rate of tax, whichever is lower. As we can see from table 7 rows 5 and 2. The initial income tax collected at the 10 percent rate would be approximately US\$31.8 million. However, a further amount would be captured within three years to bring the total up to the 25 percent rate for shareholders who were residents of the DR and 10 percent for foreign shareholders. From our preliminary analysis of the foreign ownership of firms subject to corporation income tax it would appear that about 40 percent of the firms (in terms of capital) have a significant amount of foreign ownership. Hence, the overall effective tax rate would be somewhat reduced with the split rate system of withholding on deemed payment of dividends.

This proposal is structured (in theory at least) so that foreign investors are taxed at a rate of 10 percent on their earnings while domestic investors are taxed as whatever is their rate of personal income tax. However, from the analysis contained above it is clear that the enthusiasm to levy taxes on foreign investors in the manufactured sector should be tempered by the prospect that this will bring about a loss of income to labor through a reduction in real wages. For those who can use the US foreign tax credit, then a 10 percent tax rate on corporate profits is likely to be very acceptable. However, shareholders from countries without a foreign tax credit mechanism, will have an incentive to either engage in transfer pricing or thin capitalization strategies in order to minimize the taxes paid in the Dominican Republic. These practices, certainly result in a lower amount of revenue being collected. At the same time they eliminate the need for wages to fall over large segments of the country in order to accommodate the additional tax on the firms producing internationally traded goods in the economy. The net result is that domestic shareholders will pay the normal rate of personal income on the income they receive from their investments, foreign investors would pay no tax, or at most 10 percent on the income they earn from businesses in the DR, and

the workers will be affected only in a minimal negative way by the corporation income tax.

The Refundability of ITBIS for Exporters

Much of the extensive development of the FTZs in the Dominican Republic and their extension to special free trade zones rather than the evolution of the system of FTZs into tax duty suspense systems can be traced to two factors. First, there has been a need to have a system that physically removes the control of the goods from an incompetent and corrupt customs department. Second, the policy of governments historically has been to never give a cash refund to anyone who has over paid their taxes. This means that the ITBIS can never be made to run properly. In order to get the right results of not having any cost of the ITBIS included in the final cost of exports, the firms must first make sure that they do not pay any ITBIS on their purchases. To get this result they need to operate within the legislature of the FTZs or the special FTZs, and second they must not attempt to produce both for the domestic market and the export market simultaneously.

This forces the costs of the producers to be higher than they need be for two reasons. First, operating within the framework of the FTZs is not cheap as compared to an efficient system of duty and tax relief based on accounts systems. Second, this means that either separate plants have to be set up to produce for the local market, or the local market is serviced by importing from third countries. This results in additional transportation costs and all the costs associated with importing and customs processing of goods brought from abroad.

While this is not specifically a WTO issue, as the relief given to the FTZs is not bigger than the indirect taxes that would be paid on such inputs if the goods were being produced for sale in the domestic market. However, there is discrimination between the firms operating in the FTZs and firms located outside of the FTZs and also producing for the export market.

Options and Discussion

In the case of suppliers to the domestic market, most countries specify that the VAT input tax credits are to be used immediately to offset taxes due on sales; or if there is an excess of credits, they are to be carried forward to offset taxes due in the future. If the tax credits continue to be in excess of taxes owed for a specified period of time, usually a provision is available to refund the excess tax credits in cash. For businesses selling to the domestic market, the need for cash refunds of excess credits is a relatively infrequent event. The situation is very different in the case of major exporters. For example, in Uruguay, which exports very few manufactured items, the refunds given to exporters accounted for over 80 percent of all refunds (Barreix, 1999). Here the excess credits will exist from before start-up and will accumulate. In order to avoid placing the exporters at a competitive disadvantage, they need a mechanism to turn quickly the tax credits from input purchases into cash.

Some people target the refund system to engage in fraud. For example, firms claiming to be exporters may apply for excessive refunds on the basis of fake invoices of input purchases, and fake documentation of export sales, including customs verification of exports. This has been a serious problem in the administration of the VAT system in Thailand. Cases of such fraud have been reported in Uruguay, Mexico, and Indonesia (Flatters, 1996). The administrative issues become even more complicated and fraud is made easier in the regional duty-free trading zones, such as the Common Market for Eastern and Southern Africa (Glenday, 1996), and Mercosur (Barreix, 1999).

Most of the exporters would like to get their refunds quickly from the government in order to reduce their net cash outflows and thereby lower their cost of doing business. The government may also have a policy to help businesses by speeding up the payment of refunds. In such a situation, the tax refund administrators find themselves facing a dilemma. Will they process the refunds quickly and face the risk of approving fraudulent claims? Or will they audit every claim and, as a result, delay the payment of refunds to everyone?

A computerized VAT administration information system with data on both the taxes paid on inputs and the volume of domestic and export sales is essential to give the tax refund administrators comfort that they are not sending a check to someone engaged in fraud. In many developing countries, such an information system does not exist or it focuses on the amounts of tax collected and not on the amounts of tax credits being claimed. The result is often the worst of all possible scenarios. Due to a lack of information the refund administrators hesitate to approve the payment of refunds. Delays result and the legitimate exporters start to bribe or “tip” the tax officials to receive the refunds due to them. If they take bribes to speed up the administrative processing of refunds to true exporters, the tax administrator faces little risk of rebuke.¹⁰ However, if he processes a fraudulent claim there is a risk that eventually it will become known.¹¹

The process of making bribes to speed up the administration process attracts the dishonest bureaucrat who is more willing accept bribes for processing fraudulent claims as well. Because of this lucrative administrative situation, a substantial number the tax auditors generally are assigned and/or are attracted to managing the export refund system. The end result is that the tax administrators receive substantial amounts of side payments, they pay more fraudulent refund claims, and the legitimate exporters get far less than they are entitled to. In this case the lack of information by the tax administration creates the conditions for the incubation of bribery and corruption. Both the legitimate exporter and the fraudulent claimant have an incentive to bribe both honest and dishonest tax administrators to get payments from the government. We examine current practice in a wide range of countries to see how they cope with this problem. Three “innovations” are found that show considerable promise, and at least one that appears never to work.

First, the innovation that shows little or no promise is creating a new agency separated from the VAT and customs administrations, such as an export promotion agency, to administer refunds. Massive fraud is the usual result. The Philippines has recently experienced such fraud; and Indonesia with its B4KPM office experienced similar

¹⁰ Corruption appears to cause further corruption (Lambsdorf, 2002).

¹¹ For example, in the case of Thailand the amount of reported exports was not consistent with the foreign exchange position of the country.

difficulties in the early 1990s. These agencies never had the necessary information or technical skills to determine whether a claim was legitimate or fraudulent. Furthermore, such agencies do not have the safeguarding of the integrity of the fiscal system as their mandate; they exist primarily to promote exports. Even fraudulent export documentation often improves the short run official statistics on export growth.

In contrast, our studies revealed that requiring fiscal bonds from those claiming export refunds has speeded up the payment of refunds. We will see later in this report that this is the system still being used today in Taiwan. With this innovation, the government requires taxpayers who apply for tax refunds to obtain a customs bond, or a deposit some percentage of the amount in a special bank account until the tax authority has decided if it is going to audit the claim. The claims, however, are paid immediately after the request is made. The tax authority is required to give final approval or conduct an audit within a prescribed time period.

This scheme can apply to exporters as well as local firms requesting tax refunds. Firms that have developed a proven track record of honesty might be allowed to maintain a bank guarantee for a smaller percentage of the outstanding claims. This innovation places a tighter degree of control on excess input tax credits under the VAT system. Such a system was implemented in Taiwan during the early years of export expansion with great success (Kuo, 1998). The government of Mexico has been implementing a similar but not so tightly structured scheme since 1999 (Kuo, 1999). While this system has resulted in a much faster refund of the input tax credits, it does cost the exporter an extra amount to obtain either a bond or a bank guarantee. These costs will offset some of the benefits of obtaining the tax refunds faster and with fewer administrative hassles.

The second innovation with demonstrated success in speeding up the payment of refunds is to have tax refunds claims certified by chartered accounting firms or certified public accountants. This allows taxpayers to use the recognized accountant firms to verify the financial statement and a claim for input tax credits, thereby placing the responsibility of tax liability on both the taxpayers and accountants. This option should eliminate most of

the fraudulent claims and, hence, reduce the government's administrative costs. After Kenya introduced this system, the number of export tax credit refunds for VAT dropped by over 40 percent (Terkper, 1999b). Clearly, many firms had been submitting refund claims for VAT that did not stand up to the scrutiny of financial auditors. Such a system also frees foreign-owned firms from dealing with local tax officers,¹² thereby reducing their compliance costs. Although the local accounting firms charge for their services, the service charge is well worth the cost, especially for large claims. In order not to place a financial burden on those requesting small refunds, a size threshold for the claims should be given to allow small claims to be made without the certification from an accounting firm.

The third innovation for speeding up payment of refunds is not to impose VAT on business purchases at the time of importation. Taiwan has implemented this practice.¹³ More recently a version of this approach also has been introduced in Singapore (Jenkins and Khadka, 1998). The tax is automatically deferred until either the imported goods are resold or until the goods produced by using the imported inputs are sold. As no VAT is paid on imported inputs when they enter the country, the tax refunds for manufactured exports will be reduced. Hence, making imported inputs for export production VAT-exempt, or taxed at a lower rate at the time of importation, can substantially reduce the VAT input tax credits and claims for refunds by exporters. In Mexico, the government taxes import transactions at a lower rate when they are destined for the industrial zones along the Mexico-USA border. This has lowered the financial burden of the cumulated excess tax credits (Kuo, 1999b).

This option, however, may also create other problems. If the importers cease operation or no longer file tax returns after bringing a consignment of goods into the country, the government may never collect the taxes due on their domestic sale. This can be significant in less developed countries where the informal sectors are relatively large. It

¹² For example, some foreign firms in China have experienced a great deal of difficulties in getting input tax credits. These firms often have to deal with local authorities that have different interpretations of the tax laws.

¹³ In the case of goods imported by individuals or non-registrants, the VAT is collected at the Customs in Taiwan (Kuo, 1998).

may also increase the administration costs for the government by breaking the invoice-tax-credit chain in the production and distribution process under the VAT. However, under a tightly administered VAT system, these untaxed imports should be subject to VAT on their first sale within the country.

To reduce the incentive for fraud and to increase the compliance in the tax withholding system for the income and social security tax systems, a country might wish to issue tax credit certificates to the exporting firms instead of cash payments to cover the VAT refunds. This system is being used in Uruguay with considerable success, although some fraud still has taken place (Barreix, 1999). Virtually all firms will have withholding tax obligations that are substantial in the area of payroll and social security taxes. It is likely that the VAT tax credits that need to be refunded to exporters will be less than those withholding obligations that these same firms should be paying. Hence, by integrating the administration of the refund system for VAT with the withholding tax system for wages and salaries, both systems might be strengthened.

Nothing in tax administration is automatic. The government needs to audit the tax credit certificates to determine if they are legitimate is essential. At least the completely fraudulent claimant is likely to be restrained, because the tax credit certificate has value only if the firm also has employees and wage withholding obligations. There may be cases where the firm's withholding obligations are less than its excess VAT input tax credits. Provisions are necessary to issue cash refunds in these cases; however, the number of such cases will be few as compared to the total that would exist if the tax credit certificate system were not employed.

The tax credit certificates should not be tradable (at least initially) between enterprises in order to avoid the fraudulent duplication of certificates. If the trading of tax certificates is allowed, the purchaser of the tax credit must be made liable if the tax certificate is not legitimate. In this case it is likely that the major purchasers of the tax credit certificates will be major firms who have the technical capacity to determine at the lowest cost if the tax certificate is legitimate or not (Barreix, 1999b). The cost of this audit by the purchaser

of the tax certificate will be reflected in the amount that the certificates are discounted when traded.

Three of the four administrative innovations described above are using a market mechanism rather than the information maintained by the tax administration to separate the legitimate claimants for a VAT refunds from fraudulent ones. As compared to bona fide export firms, it is relatively costly for crooks to get a large accounting firm to certify the legitimacy of their claims, particularly if the auditing firm is going to be held liable when the fraud is discovered. It is also relatively costly for them to obtain a bank guarantee, if most of their transactions will be fraudulent. Similarly, tax credit certificates are not of much use to them as they are unlikely to be paying significant amounts of other taxes. If they try to sell tax certificates that were obtained fraudulently, it is less likely that they will get them past the scrutiny of the due diligence undertaken by the purchasers of the tax credit certificates.

These proposed institutional changes to the normal VAT administration can help to increase the effectiveness of the VAT systems, but they do not make a complete solution. Although the auditing requirements are greatly reduced, the auditing function of the tax administration needs to be built and maintained. When this component of the tax administration is weak, it is unlikely to be able to police even its private agents.¹⁴

Refunding or Exempting Imported Inputs from Tariffs

As discussed above, if exports are zero-rated under a consumption type VAT (ITBIS), all exported goods or services can, in theory, be sold free of domestic value added taxes.

To get the same result for trade taxes, the government should either exempt or refund the import duties imposed on business inputs. This would, in effect, remove the tax burden

¹⁴ For example, Uruguay, which has a fairly good VAT tax administration, has approximately 50,000 VAT taxpayers and 70 full time auditors. By comparison, Sri Lanka, which has 15,000 VAT taxpayers, has only 12 auditors (Barreix, 1999a). Sri Lanka is trying to operate with about 60 percent of the auditing strength of Uruguay. Hence, we should not be surprised when we find that Sri Lanka has experienced both delays and fraud in its VAT refund system (Barreix, 1999a).

that is embodied in the cost of inputs used to produce exports. For this to happen, the government needs to remove import duties not only from goods directly imported and used in the production of exported goods, but also from the cost of local goods that, in turn, use imported inputs in their production.¹⁵ The government should credit or refund the import duties embodied in the cost of the domestic inputs in order not to penalize exports that use such goods.¹⁶ Unfortunately, in order to refund these hidden taxes, the administration must perform a series of calculations that involve tracing through the backward linkages of the production process, and are extremely difficult to estimate.

Moreover, imported machinery and equipment, if they are to be used in the production of exports, should also enter the country duty free in the same manner as raw materials. Since capital goods are often used to produce both taxable (including exported and domestically taxable goods) and exempt products, the government may find it once again administratively cumbersome to separate the two uses in order to estimate the correct amount of rebate. In addition, manufacturers use capital goods over a long period of time and it is very difficult to forecast whether firms will continue using the capital items to produce for export into the future. Again it is often cumbersome to calculate the portion of import duties levied on capital goods used only in the production of exports.

The entire process of calculating and verifying the amounts of import duties that should be exempted or refunded is greatly facilitated by a simple set of tariff rates. The ideal for this purpose is single rate of tariff. Chile was the first country to implement such a single rate tariff system. It is the only country in our study where we found a duty drawback system working reasonably well. In the case of Chile most of its exports are of an agricultural or agro-processed nature, so the problem of tariff refunds on imported inputs is much smaller for exporters as compared to the situation with export oriented manufactured products.

¹⁵ See Glenday and Ndii, 1999; Maxwell, 1998 and 1999. In the case of India, with its central excise tax system and its state level sales taxes, a situation is created where it is virtually impossible to determine the amount of sales and excise taxes embodied in the cost of producing exports.

¹⁶ As demonstrated by Maxwell, there always exists some kind of hidden tax on exports so long as there are duties imposed on imported goods for the purpose of protection (Maxwell, 1998).

Options and Discussion

If it is the government's objective to provide tariff relief for imported inputs used to produce exports, several alternative approaches are available to deal with this issue. They include systems for duty drawback and duty exemption (or suspension) of import duties, and export-processing zones.

Duty Drawback System

The duty drawback system is the classical and the most common method of providing relief from import duties imposed on goods used for the production of exports. Virtually all countries that provide incentives to export-oriented firms have a duty drawback system. Because the duties are paid upon importation, importers, exporters, or manufacturers of exported goods may claim refunds. Firms must meet several conditions before the government can refund duties (Jenkins, Kuo and Sun, 2003). First, the firms must have paid the import duties. Second, the firms had to have exported the final products. Third, an estimate needs to be made of the amount of duty drawback paid on the imported inputs used in export production. The imported goods eligible for duty drawback are usually only raw materials. Sometimes the list of eligible inputs may be extended to include fuel, packaging materials, machinery and equipment.

Domestic manufacturers who produce goods and services used by exporters should also be eligible for the duty drawback on the tariffs they pay for imported inputs. These producers are indirect exporters. A difficult question arises as to the number of prior stages of manufacture should be allowed before the final export is made.¹⁷ Korea, Taiwan, Mexico and Kenya are all examples of countries, which have allowed indirect exporters to claim duty-exempt imports (Kuo, 1998, 1999a, 1999b). The most difficult issue becomes calculating the refund on import duties to indirect exporters. In the case of Taiwan, a sophisticated input-output coefficient was developed and calculated for each line of production. This ensured the precise amount of hidden tax in the exported goods

¹⁷ In the case of Kenya, the back linkage may go back two stages of production.

but it was undoubtedly cumbersome and the government had to employ a great number of personnel to deal with this program.¹⁸ In the other extreme, Kenya adopted a single fixed coefficient for all goods for the sake of simplicity. But inequities among goods became obvious and it was eventually forced to change its system.

The system of duty drawbacks is the most information intensive system available to provide exporters relief from duties on imported inputs. The process is triggered by the act of exporting with the information being assembled by moving backward through the production and input purchasing stages of the activity. First, it requires knowledge of the input-output technical coefficients that are used in the production of the export to identify and quantify the types of inputs used. Second, it requires information on the sources, quantities, prices, and tariffs paid on the inputs used for each specific set of exported goods or services. Finally, it requires information on the financial transactions of the business in order for audits are to be conducted of the payments made through this scheme.

Corruption is a universal theme surrounding the administration of a duty drawback system in almost every country. The nature of the problem that a duty drawback is supposed to address, and the administrative procedures it entails, incubates corruption. There are several reasons for this. First, when the goods are first imported, there is no information recorded by the Customs Administration that these items will be used to produce exports and a duty drawback is expected in the future. In most countries it is difficult for Customs to trace the actual import entry of the items that are embodied in the items being exported. Generally, the duty drawback administration will have to rely on customs documents that the exporter provides at some later date. Hence, there is usually an ample opportunity for the exporter, perhaps with the collusion of some customs officers, to exaggerate the amount of duties actually paid at the time of importation.

¹⁸ When the duty drawback system involves parties such as importers, exporters and manufacturers of exporters, the applicant for tax refunds in Taiwan has to obtain a letter of consent from the other parties who are involved and do not file for refunds. This makes the system even more cumbersome administratively.

Second, only the exporters know the quantities of materials used in the production processes. Due to differences in models, sizes, and quality of the items being produced, the duty drawback administration will have to either take the exporters values for the inputs used, negotiate the quantities, or specify arbitrary (and usually inaccurate) input-output coefficients for each item produced. These input-output coefficients are derived on an ad hoc basis as through a process of negotiations between the producers and customs officials in the audience of a few engineers.

In the industrialized countries, the solution to the above two problems is to have a system of professional audits of the books and records of the exporting firm, combined with sound technical information on the manufacturing processes. Unfortunately, the usual recommendation made by advisors from advanced industrialized countries for such a detailed auditing system for the duty drawback administration in developing countries is not implementable. Developing countries do not have the available professional auditors, nor is the government able to pay wages competitive with the private sector for such skills. Even if they could obtain professional auditors, they would most likely be needed in areas of greater priority. When one finds professional auditors working in the duty drawback area, it is often because they are attracted to the area by the amount of bribes they expect to receive.

The third reason for the failure in implementation of duty drawback systems is because there is a great reluctance on the part of Customs to return the duties paid. The revenue administrators, especially Customs, have no incentive to refund duties in a timely fashion, since refunding this money makes it harder for them to meet their revenue targets. As a consequence, many governments do not treat duty drawbacks as a reduction in revenue, but as an explicit expenditure item in the budget. Unfortunately, this procedure puts the duty drawback refunds under the same constraints and uncertainties as all other discretionary budgetary expenditures.

Due to the likely disputes over the amounts of drawback refunds that are to be properly refunded, and the risk of error that might prove embarrassing to the administration, the

usual reaction is to delay payments. In order to overcome the reluctance of the bureaucracy to actually make the refunds legitimate, exporters make side payments to the duty drawback administrators. Once the payment of bribes by legitimate exporters becomes a “normal” operating procedure in order to obtain tax refunds, the administration of the duty drawback system usually becomes an arbitrary process.¹⁹ All aspects of the duty drawback refund system, from the amount of inputs used, the amount of tariffs paid on the imported input, and the amount of goods actually exported, is subject to the influence of bribes and negotiation.²⁰

Duty Exemption System

As the compliance costs mount, it becomes obvious that the duty drawback system is not an effective way to relieve exports from the duties paid on their imported inputs. As a consequence, other ways of providing duty relief need to be substituted for a duty drawback system. A common characteristic of these alternative methods is for exporter to make no payment to Customs at the time the imports initially enter the country and no refund is made later.

In the duty exemption schemes, the government sets up an account-offset system so that import duties can be held in suspense as a liability. The liability is then cancelled upon export. Because the specific importer accounts for the liability, the importer himself can only claim the account-offset. Usually, an importer applies for such an account to be set up for his firm with the Department of Customs even before the inputs are imported. Upon the exportation of the finished products, the refundable amount is credited to the payer’s account. In order to make this offsetting entry with accuracy the relationship between the use of inputs and the amount of exports must be established.

¹⁹ Lambsdorff, 2002b.

²⁰ In Vietnam it has been calculated that the present value of the costs of the delays in the refund of taxes and tariffs on leather shoe exports was equal to 17 percent of the initial investment costs in setting up the facilities. For the apparel sector it was equal to 77 percent of the initial investment costs. These values were significantly greater than any of the other hidden costs associated with operating in that country. See Le, 2003.

Both the duty drawback and the exemption systems operated concurrently in Taiwan, but the exemption scheme has been the instrument that has been more important since the 1970s. This is also the case in Malawi where the duty drawback program did not work well because the government delayed refunding the import duties and surtax imposed on imported and domestically purchased inputs, creating a cash flow problem (Gray, 1999).

With the duty exemption system, the administration's problem of determining what has been imported, and what duties have been suspended, is usually solved by the normal entry procedures of customs. The abuses of the system occur when exporters do not export the goods produced by the inputs and at the same time are not voluntarily prepared to pay the duties that were suspended. Alternatively, they may resell the inputs in the domestic market without paying the tariffs. To prevent this form of fraud under the suspense system, the importer is normally required to supply the government with a guarantee. Common forms of such a guarantee are the purchase by the exporter of government bonds or negotiable securities approved by the Ministry of Finance, or bank drafts issued by a financial institution in the amount equal to the duty payable. In this way, the government is assured of receiving the revenues it is owed, while at the same time the firm will receive an interest rate on the amount of funds it invests in government bonds. Alternatively, if the firm purchases a bank guarantee, it will incur its cost that is a percentage of the amount of the bond. This was the system undertaken in Taiwan and became very popular especially for large businesses.²¹ Taiwan has carried this system one step further and has accepted promissory notes from companies with a proven track record of compliance. As a result most of Taiwan's exports are produced under such duty suspense schemes.

In Mexico, the suspense or exemption system was adopted but it was widely abused initially because there was no requirement for customs bonds or bank guarantees. As a result, the government of Mexico introduced a system of Customs Bank Accounts in 1999. Under this new system, the direct and indirect exporters are required to deposit an

²¹ In late 1970s, the amount of tax relief using the suspense scheme accounted for approximately 80% of all duties on imported inputs used to manufacture exports in Taiwan (Kuo, 1998).

amount of funds equal to the taxes under suspense in interest bearing accounts in banks. The Customs Authority will release the funds back to the firms upon approval of claim for duty remission on the inputs used to produce exports. A duty exemption scheme was also adopted in Korea in specific locations such as export processing zones and bonded warehouses or factories.

Corruption has been much less prevalent in duty exemption systems. This is due to the fact that a record of the transaction is captured by Customs for the purpose of the duty exemption system, right at the point when the imported inputs enter the country. At this point the information can be captured for future use in an almost costless fashion. When an accounting entry is made by both the firm as well as the customs system at the beginning of the process, without money having to change hands, the purpose of the importation becomes much more transparent. Often the duty exemption is given only if the firm already has an export order for the items being produced. The interest bearing bank deposits or guarantees reduce the incentive and scope for the private sector to pay bribes to the administration officials to condone fraud. At the same time, the involvement of the banks that are often working with the businesses in much more important ways, such as the financing of firm's investments, reduces the incentives for the firm and the government officials to engage in corrupt practices. Simply put, the duty exemption system drastically reduces the power of the government officials over the resources of the firm, and also reduces the financial stakes for the firm and its incentive to pay facilitation payments.

Taiwan has been an example of many countries to follow in terms of developing the appropriate institutions to facilitate the rapid expansion of their production for export. Taiwan is also a member country of the WTO, hence, we are including in this report a detailed description of the duty relief mechanisms used by Taiwan.

Duty Relief Mechanisms for Exports in Taiwan

The tax relief system was widely believed to be one of the most important policy instruments for export expansion and economic development in Taiwan.

There are generally two systems to get relief of import duty imposed on imported goods used in the production of exported goods. One is import duty drawback and the other is the account-offset system or the tax exemption system. The former is an importer who pays import duty first and then claims a refund later, once the finished products are exported. The latter is an importer who may not pay import duty right at the time of import, but final relief is obtained through offsetting accounts. In other words, the importer shall apply for a record of accounts with a government department. Upon the exportation of the finished products, the refundable amount is credited to the payer's account.

The duty drawback system was first adopted in 1951 only to refund import duty imposed on thrown paper yarn to be used in the production of exported hat bodies. The system was then extended to other taxes including commodity tax (similar to excise tax), harbor construction dues, the salt tax, and the slaughter tax. At present, only custom duty and commodity tax are refundable where the commodity tax is collected by the Customs on behalf of the Internal Revenue Service. The other system, the offsetting accounts, was introduced in mid-1960s to help simplify the mounting number of cases to be processed under the refund mechanism. Since that time these two systems have been operating concurrently until today. Nevertheless, both systems use the same application form and the same criteria for the amount of tax relief.

Duty Drawback System

To claim the refund of custom duty and other taxes, imported raw materials must be used to produce exported products. As such, the raw materials must be imported from abroad; the custom duty and other taxes must have been paid. Furthermore and imported raw

materials must be processed into finished products for export before a claim can be made for duty drawback.

The claimants for drawback can be the importer of the raw materials, a manufacturer or an exporter of finished products. Because customs duty and other taxes have already been paid the mechanism works so long as a consensus is reached among the relevant parties. In any case, the application for refunds has to be filed within one and a half years from the date of release of imported raw materials. Exports are defined to include goods sold to diplomats, bonded factories, export processing zones, and science-based industrial parks.

While applying for duty drawback, the following procedures must be followed:

1. The application form for duty drawback is sent to the Department of Bonding and Drawbacks, Directorate General of Customs, Ministry of Finance.
2. The raw materials that can be refundable must be within the list of imported commodities. The list can be found in the Regulation of Classification of Imported Commodities.
3. Refunds for the case where the amount of refunds is less than 1% of the f.o.b. value of the exported goods are disallowed. This is calculated from the information obtained in the application form for duty drawback.
4. The documents submitted for the application of duty drawback are described below:²²
 - a. Three application forms (A, B, & C) for drawback must be filed.²³ Form A contains information such as the name of raw materials, specified size and its format, name of ship carrying the materials, date of release of imported goods, name of importer, the amount of materials used in the production of exported product including percentage wasted,²⁴ imported duty and tax

²² Details can also be found in Ministry of Finance, Department of Customs, “Brief Notes of the Duty Drawback Operation”, in Mandarin (September 2002).

²³ See Ministry of Finance, Department of Customs, Application Form of Duty Drawback and its explanatory notes, in Mandarin, (September 2002).

²⁴ The percentage wasted for the production of each finished products is described by the Industrial Development Bureau, the Department of Economic Affairs.

paid per unit of raw materials, and the amount claimed to be refunded. Form B contains the name of exporters, classified number of exported products, date of release of exported goods, detailed specification of the exported product by commodity, the amount of raw materials claimed to be refundable, and f.o.b. price of the exported goods. Form C contains statistics of the f.o.b. price of exported products and the amount of refunds claimed by commodity code.

- b. Certified photocopies of import declaration duplicate No. 3 must be provided.
 - c. Finished products made from imported raw materials must have been exported and the export clearance procedure must have been completed. Certified duplicate No. 3 of export declarations along with the information about the importer and the amount of detailed raw materials used in the production of the exports must be supplied.
 - d. In the case where the duty drawback system involves parties such as importers, exporters, and manufacturers of exported products, and if they are not the same firm, the applicant for tax refunds must obtain a letter of consent from the other parties involved.
 - e. Prior to the application for drawback, the firm must apply to the head office or a branch office of the Bank of Taiwan for a drawback account number and the duplicate of the application should be sent to the Department of Bonding and Drawbacks, Directorate General of Customs, Ministry of Finance. The account is provided to the government for directly depositing the payment for the duty drawback once it is approved.
5. Duty Drawback Criteria: There is a duty drawback criterion that is standard for imported raw materials or semi-finished products used to make each exported product. They are determined on the basis of normal quantities used in various products. These criteria are provided by Industrial Development Bureau (IDB) of the Ministry of Economic Affairs. The criteria issued include general duty drawback criteria and exclusive duty drawback criteria:

- a. General Criteria: this refers to the criteria for drawback applicable to the firms of the same categories and products of the same kind. It contains details of raw materials or semi-products contained in each of the specific finished products. They have a validity period of five years. Beyond which, the firm shall apply to the IDB for new criteria.
- b. Exclusive Criteria: This applies to a specific firm or specific products of the same kind. They are effective for three years. Beyond which, the firm shall apply to the IDB for new criteria.

With the above information, the total amount of duty drawback can be calculated including the amount wasted during the manufacturing of the finished products.²⁵ In case the f.o.b. price of the exported products is lower than the c.i.f. price of the raw materials, the amount of drawback shall be claimed on the basis of the rates of f.o.b. to the c.i.f. prices.

- 6. The administrative procedures of processing the duty drawback are described below:
 - a. Receiving Drawback Claims: checking required documents; stamping the receiving date on the application for refund and numbering the cases; endorsing if the receiving copy of application for refund matches the original.
 - b. Computer Processing: key in the data; checking the export and import data thereby checking applicable drawback criteria and time limit for drawback claim and required documents; random rechecking by computer and manual recheck.

²⁵ The government used to charge an administrative fee for processing the duty relief measures. The fee was based on 0.5% of the duty relief given.

- c. Issuing Cash Refund: issuing cash refund by computer, filing the case; notifying Taipei Customs Bureau and the Bank of Taiwan to deposit the cash refund to the drawback claimant's account; as well as notifying the drawback claimant of the depositing of his cash refund.
 - d. Filing the cases.
7. The government will make the decision on the application for duty drawback in 50 days from the date of application.
 8. If the finished products are sold at the domestic markets, the duties paid on the imported materials are denied for relief. In other words, imported inputs used to produce the domestic goods are subject to the tariff rate.²⁶

The duty drawback system was initially subject to corruption in Taiwan. Hence, the government set up an Accounts Offset System. This system quickly became the preferred way to deal with the problem. For every year since 1967 the export processing zones have never been responsible for more than 9.03% of total exports from the country, see table 9.

Account Offset System

The account offset system is the case in which an importer does not pay import duty at the time of import.²⁷ Final relief is obtained through offsetting accounts when the procedures to claim an exemption from the duty have been followed.

There are two ways to have duty and tax relief on imported raw materials on account when producing exports. Recorded on account under guarantee and recorded on account under self-executed bond:

²⁶ The treatment is different from the case where imported materials are used in the bonded areas including bonded factories, export processing zones and science-based industrial parks.

²⁷ In the bonded areas such as bonded factory, export processing zones, and science-based industrial parks, only the offsetting accounts system is used.

1. Recorded on Account under Guarantee: Prior to his importation of goods, the importer must supply the government with a guarantee by providing the government bonds or negotiable securities approved by the Ministry of Finance or bank drafts issued by a financial institution in the amount equal to the duty payable.
2. Recorded on Account under Self-Executed Bond: This is a system where an account could be credited under a self-executed bond in which an export firm was able to provide the Customs with a self-executed bond as well as to satisfy the following requirements set up by the Customs:
 - a. Over the past two years, the average annual amount of exports must be at least NT\$60 million or the amount of duty refund and offset is NT\$30 million or more per year.
 - b. Over the past three years, the average annual amount of exports must be at least NT\$40 million or the amount of duty refund and offset is NT\$20 million or more per year.
 - c. Over the past four years, the average annual amount of exports must be at least NT\$20 million or the amount of duty refund and offset is NT\$10 million or more per year.

In order to be qualified for having recorded on account under self-executed bond, the firm must not run an operating loss during the said respective period nor has it evaded any taxes more than NT\$0.5 million.²⁸

²⁸ The self-executed bond for a firm with the amount of tax evasion more than NT\$0.5 million will be suspended. The period of suspension depends upon the amount of tax evasion, ranging from 6 months to three years.

To claim duty relief, the following procedures should be followed:

1. The importer shall apply for a record of accounts with the Department of Customs. Upon the exportation of the finished products, the refundable amount will be credited to the payers' account.
2. Like the duty drawback system, the firm must submit the same application form and follow the same procedure for approval as it does under the duty drawback system. See Section II, items No. 4 and No. 6. However, instead of providing to the Customs the claimant's account number in the Bank of Taiwan, the firm shall identify in the application form the financial institution with 4-digit code in which the imported duty and tax imposed on raw materials were not paid but guaranteed by the institution in question. In the case of "Recorded on Account under Self-Executed Bond", the firm should supply the promissory note with 4-digit code.
3. Once the amount of claimed duty and tax relief is approved, the account is offset and a letter is issued that discharges the responsibility of the guarantee by the financial institution.
4. The duration from the importation of raw materials to the termination of offsetting the record of the accounts is one and a half years, the same as that under the duty drawback system. Failure to offset the account in the above described period, the firm must pay the government the amount of duty and tax payable as well as a fee of 0.05% per day on that amount from the second day of setting up the offset-account.
5. Unlike the duty drawback system, this system is applicable only to those importing raw materials directly, since customs duty and tax are not paid when goods are imported.

6. If the finished products are sold at the domestic markets, they are subject to import duty according to the tariff rate of the finished products while keeping the imported raw materials duty exempted.²⁹

It should be noted that the account offset system also applies to goods imported to bonded areas, including bonded factories, export processing zones, and science-based industrial parks. No officials are stationing in the bonded areas but the procedures and administration of the accounting are the same as what has been described above.³⁰ However, the Department of Customs will audit the claims and accounts through random sampling. The duration from the importation of raw materials to the termination of offsetting the record of the accounts is limited in two years for those in the bonded factories. In the case of export processing zones and science-based industrial parks, the restriction is three years; beyond three years it should reapply as to how long the accounts should be offset.

Administrative Personnel

The duty drawback and account offset systems in the past imposed an enormous administrative burden on the Department of Customs for refunds or tax exemption. The Industrial Development Bureau of the Ministry of Economic Affairs also had to issue hundreds of drawback or tax relief rulings and regulations each year to keep the process functioning properly. The number of customs personnel handling duty relief systems amounted to 219 person-years in 1983. The transaction costs for taxpayers were also substantial. Today the number of personnel at the Customs is been reduced to 25 person-years because of the trade liberalization and tariff reduction since 1980s.

²⁹ In the case of Science-based industrial Parks, the same rule applies to goods sold at the domestic markets if such finished products cannot be produced domestically. However, if the product can also be produced domestically, the tax payable be calculated in the amount of tariff levied on the product in excess of 30% of tariff on its raw materials. See Ministry of Finance, Department of Customs at Taipei Office, “The Brief Note of the Business Operation of the Science-based industrial Parks”, (September 2004), p.3.

³⁰ See, e.g., Ministry of Finance, Department of Customs at Taipei Office, “The Brief Note of the Business Operation of the Bonded Factory”, (September 2004); Ministry of Finance, Department of Customs at Taipei Office, “The Brief Note of the Business Operation of the Science-Based Industrial Parks”, (September 2004). The inventory has to be counted once a year, but not shorter than 10 months and no longer than 14 months from the date of the previous accounting time.

Table 8 shows that the amount of duty relief increased substantially to almost NT\$30 billion per year in 1979 and 1980 and then declined to slightly more than NT\$4 million in 2003.

Table 8: Duty and Tax Relief for Exports by Mechanism

Year	Number of Refunds	Amount of Relief		
		Refunds (NT\$000s)	Accounts Offset (NT\$000s)	Total
1967	23,189	300,685	1,250,897	1,551,582
1968	29,067	352,687	1,724,751	2,077,438
1969	68,241	423,455	2,901,801	3,325,256
1970	208,834	977,983	5,923,351	6,901,334
1971	205,602	1,169,179	7,406,267	8,575,446
1972	258,913	1,624,022	10,745,146	12,369,168
1973	308,300	2,035,524	10,728,299	12,763,823
1974	323,398	2,366,621	13,766,253	16,132,874
1975	287,000	2,183,168	11,074,480	13,257,648
1976	400,705	2,898,619	15,642,673	18,541,292
1977	477,992	3,601,657	16,983,202	20,585,859
1978	545,032	5,389,532	14,758,448	21,147,980
1979	718,115	8,635,532	21,231,174	29,866,706
1980	665,367	9,632,334	20,186,387	29,818,721
1981	637,244	9,741,034	14,450,888	24,191,922
1982	729,598	11,356,202	14,432,091	25,788,293
1983	675,662	9,310,096	12,669,148	21,979,244
1984	661,481	10,853,821	17,781,339	28,635,160
1985	565,332	10,967,146	15,347,343	26,314,489
1986	551,075	9,722,984	10,665,202	20,388,186
1987	648,655	10,708,098	9,949,287	20,657,385
1988	559,878	8,453,650	6,122,761	14,576,411
1989	309,036	4,107,172	3,176,328	7,283,500
1990	208,466	2,878,327	2,122,026	5,000,353
1991	175,847	2,493,815	1,699,923	4,163,738
1992	181,543	2,753,561	1,358,522	4,112,083
1993	156,715	2,581,070	1,170,528	3,751,598
1994	n/a	2,482,493	1,027,840	3,510,333
1995	n/a	3,198,730	975,524	4,174,254
1996	n/a	3,617,336	1,360,553	4,977,889
1997	n/a	3,391,871	1,121,031	4,512,902
1998	n/a	3,075,875	1,220,896	4,296,771
1999	n/a	2,800,379	966,595	3,766,974
2000	n/a	3,036,859	1,013,527	4,050,386
2001	n/a	2,695,397	925,314	3,620,711
2002	n/a	3,057,496	826,164	3,883,660
2003	n/a	3,600,280	649,276	4,249,556

Sources: Ministry of Finance, Department of Customs, Annual Report of the Customs, (July 2004).

Table 9: The Relative Importance of Export Processing Zones

Year	Exports from EPZs (US\$m)				Exports for the Nation (US\$m)	Export Ratio of EPZs to the Nation (percent)
	Kaohsiung	Nantze	Taichung	Total		
1967	7	n/a	n/a	7	641	1.09
1968	27	n/a	n/a	27	789	3.42
1969	62	n/a	n/a	62	1,049	5.91
1970	109	n/a	n/a	109	1,481	7.36
1971	156	2	5	163	2,060	7.91
1972	196	16	16	228	2,988	7.63
1973	282	54	40	376	4,483	8.39
1974	348	92	69	509	5,639	9.03
1975	290	92	71	453	5,309	8.53
1976	393	146	137	676	8,166	8.28
1977	417	166	167	750	9,361	8.01
1978	473	227	206	906	12,687	7.14
1979	602	325	278	1,205	16,103	7.48
1980	685	402	337	1,424	19,811	7.19
1981	821	432	426	1,679	22,611	7.43
1982	724	493	408	1,625	22,204	7.32
1983	750	475	396	1,621	25,123	6.45
1984	938	629	470	2,037	30,456	6.69
1985	872	635	365	1,872	30,726	6.09
1986	949	1,010	444	2,403	39,862	6.03
1987	1,244	1,400	530	3,174	53,679	5.91
1988	1,356	1,773	637	3,766	60,667	6.21
1989	1,397	1,948	664	4,009	66,304	6.05
1990	1,026	1,921	578	3,525	67,214	5.24
1991	1,094	2,198	678	3,970	76,178	5.21
1992	1,217	2,279	674	4,170	81,470	5.12
1993	1,107	2,628	591	4,326	85,092	5.08
1994	1,156	2,956	668	4,780	93,049	5.14
1995	1,447	4,025	800	6,272	111,659	5.62
1996	1,484	4,579	834	6,897	115,942	5.95
1997	1,545	5,421	969	7,935	122,081	6.50
1998	1,280	4,122	692	6,094	110,582	5.51

Sources: Ministry of Economic Affairs, Export Processing Zones, Monthly Statistical Reports, (1998); Council for Economic Planning and Development, Taiwan Statistical Data Book, 1999.

Note: n/a means not applicable.

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