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A Program for Reform

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This Volume is Dedicated
to the Memory
of

Dr. Aston Preston,

Chairman of the Tax Reform Committee
and
Vice Chancellor of the University of the West Indies

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A Program for Reform

James Alm, Roy Bahl, Matthew Murray and Bruce Riddle

The Government undertook a far-reaching revision of the individual income tax in January 1986. The purpose here is to present the analysis that led to the reform, to review and evaluate selected elements of the reform, and to report the results of the first year's experience with the new system. This chapter closes with an agenda of unfinished business, i.e., a statement of what is yet to be done to complete the structural reform of the individual income tax.

The Problems

The analysis reported in Chapter 3 points up several clear conclusions regarding the problems with individual income taxation in Jamaica prior to the reform. The first is that the income tax base was narrowed dramatically by the *de facto* exclusion of allowances and the *de jure* exclusion of interest income, by the preferential treatment of overtime income, and (as shown in Chapter 5) by outright evasion. We estimate that elimination of the preferential tax treatment of overtime and allowances, and a vigorous enforcement program, could have increased the income tax base by more than one-third. The full taxation of allowances and unreported income had the potential for doubling the level of individual income tax collections under the pre-reform system. Base-broadening was clearly at the top of the reform agenda for 1986.

The second conclusion is that the pre-reform income tax system was less progressive than its statutory rate structure would seem to suggest. We demonstrate this in Table 4-1, where the income classes on the left include only taxable income as defined in 1983.[1] Column (3) shows the distribution of tax burdens under the pre-reform system. The tax burdens in column (4) reflect the same taxes payable and the same credits in the numerator, but the denominator includes statutory income, interest income and an estimated amount for *both* allowances and unreported (and underreported) income. This is the best estimate we can make of the effective tax rates on comprehensive income tax prior to its reform in 1986. In other words, the average taxpayer with a 1983 statutory income of J$15,000 would pay taxes equal to 25.9 percent of statutory income, but this would be equivalent to only 18.4 percent of "comprehensive income" earned by individuals in this statutory income class. If the income tax were fully assessed and collected, the distribution of effective rates would be as shown in column (5), e.g., the average taxpayer in the J$15,000 income class would pay 30 percent of income and total revenues would be nearly 80 percent higher. A comparison of the graduation in effective rates in columns (4) and (5) depicts a rather dramatic difference between the progressivity of the Jamaican income tax in theory and that which exists in practice.

Based in part on James Alm and Roy Bahl, "An Evaluation of the Structure of the Jamaican Personal Income Tax," Jamaica Tax Structure Examination Project Staff Paper No. 15, Metropolitan Studies Program, The Maxwell School (Syracuse, NY: Syracuse University, December 1984 [Revised March 1985]) and the Jamaica Tax Structure Examination Project, "Comprehensive Tax Reform for Jamaica," Jamaica Tax Structure Examination Project Staff Paper No. 17, Metropolitan Studies Program, The Maxwell School (Syracuse, NY: Syracuse University, April 1985).

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1 We hold to this grouping of individuals throughout this chapter.

TABLE 4-1
NOMINAL AND ACTUAL DISTRIBUTION OF TAX BURDENS IN 1983[a]

Statutory Income Class (1)	Number of Taxpayers (2)	Actual Burden on Statutory Income (3)	Actual Burden on Comprehensive Income (4)	"Fully Taxed" Burden of Tax on Comprehensive Income (5)
Under J$2,000	26,640	.000	.000	.000
J$ 2,001 - 4,000	44,365	.000	.000	.000
4,001 - 6,000	58,097	.010	.008	.019
6,001 - 8,000	49,300	.094	.079	.119
8,001 - 10,000	37,469	.148	.123	.168
10,001 - 12,000	28,157	.185	.153	.212
12,001 - 14,000	15,922	.222	.169	.252
14,001 - 16,000	7,973	.259	.184	.300
16,001 - 18,000	5,284	.285	.188	.319
18,001 - 20,000	4,411	.318	.189	.333
20,001 - 25,000	4,735	.342	.198	.371
25,001 - 30,000	1,691	.393	.166	.358
30,001 - 50,000	1,243	.401	.111	.331
Over J$50,000	583	.462	.094	.327
Total Taxpayers	285,867	---	---	---
Average Rate		.167	.116	.206
Total Revenue (in J$ millions)		363.8	363.8	645.5

[a] 1984 Rate Structure

SOURCE: Computed from JTSEP sample of personal income tax returns for 1983.

These results reinforce a third conclusion: that prior to 1986 the Jamaican income tax was fraught with horizontal inequities. Private sector workers paid less tax on average than did public sector workers who earned the same level of income. Private sector workers also earned more overtime, had a greater allowance share in total compensation, and evaded to a greater degree. Horizontal inequities were not restricted to differences between public and private sector workers: those who had access to overtime compensation paid a lower rate of tax than those who did not, workers who received a greater fraction of income in allowances paid a lower rate of tax on their total compensation, the self-employed evaded more easily than PAYE taxpayers, etc. The extent of the horizontal inequity is illustrated by reading across any row in Table 4-1. Jamaican taxpayers paid the average rate on statutory income described in column (3). Hidden in this average are substantial horizontal inequities, reflecting a differential ability to hide income and to capture larger shares of allowances within income classes. For example, while the average tax rate on those with statutory incomes above J$50,000 averaged about 46 percent for those who paid the tax (see column (3) in Table 1-1), the average rate was only 9 percent when total income is taken into account (see column (4)).[2]

A fourth conclusion is that inflation has steadily raised effective tax rates via "bracket creep." Inflation compromised the equity of the income tax because the value of credits declined in real terms (harming low income taxpayers) and because the increasing average tax rate has very likely stimulated increased evasion, allowances and overtime, all of which favor higher-income groups.

A fifth conclusion (really more of a hypothesis) is that the present high marginal tax rates have discouraged initiative, investment, and work effort, and consequently have slowed the rate of economic growth. Our analysis does not directly study the determinants of work effort and investment, hence we may not support this view beyond a retelling of what standard economic theory would suggest. We can add to this story, however, by noting that we found evidence that higher marginal tax rates encouraged tax evasion, the receipt of untaxed allowances, and overtime

[2] Those who evaded all taxes, the nonfilers, are not counted in column (2) and their income is not included in the denominator of column (3) of Table 4-1, but their income is included in the denominator in columns (4) and (5).

work effort.[3] It is therefore quite plausible that these same high tax rates discourage economic activity.

The Reform Program

The proposed income tax reform program went through a number of iterations before reaching the structure that was adopted in January 1986. The initial analysis and evaluation of the reform options was completed by the summer of 1985. The Government's policy paper released in June outlined the general format for the reform and gave a menu of alternative rate structures.[4] The Tax Reform Committee accepted these in principle but recommended an even further expansion of the base to include interest income and a greater reduction of tax rates.[5] The Prime Minister and the Cabinet generally accepted these proposals, but made some modifications in the proposed treatment of fringe benefits, the level of the tax rates and the income exemption level.[6]

It should be noted that the Government imposed the constraint that the reform program should be approximately revenue neutral. The Prime Minister instructed the Tax Reform Committee that the first year revenue loss should be no more than J$40 to J$60 million.[7] This constraint allowed the income tax research to focus on structural reform. The essential question was how to alter the rates and base of the Jamaican income tax so as to improve national welfare. Still, even this relatively relaxed revenue constraint seemed binding at the time the work was underway. In the course of the quantitative analysis of reform options it appeared that some desirable reforms would have to be sacrificed in order to meet revenue targets.

The key elements of the 1986 reform program are:

1. The credit system was replaced by a standard deduction of J$8,580.
2. A flat rate tax of 33 1/3 percent replaced the progressive rate structure.
3. Fringe-benefit type allowances were made taxable as ordinary income, with some exceptions.
4. The preferential treatment of overtime income was eliminated.
5. Interest income, above a certain level, was made taxable.

There are two important qualifications to consider in evaluating this reform. First, it is important to note that this is a *package* of reforms and that the individual pieces make little sense when viewed in isolation. For example, for political reasons it would not have been possible to tax or eliminate the overtime preference without reducing the marginal tax rates. Second, none of this program works without major improvements in the administration of the tax. It would be unrealistic to expect that an announced change in the tax status of allowances and lower marginal tax rates would in and of themselves bring on a significant broadening of the income tax base.

Broadening the Tax Base

The Government decided to take three steps to broaden the income tax base: to tax allowances, to treat overtime income and regular income the same for tax purposes, and to tax interest income on bank deposits in the same way as other individual income. While these measures significantly expanded the concept of taxable income in Jamaica, there were some last minute compromises that eroded some of these gains.

Interest Income. The 1986 amendment to the income tax act mandates "that any prescribed

[3] For a systematic exposition of these effects, see Roy Bahl and Matthew Murray, "Income Tax Evasion in Jamaica," Jamaica Tax Structure Examination Project Staff Paper No. 31, Metropolitan Studies Program, The Maxwell School (Syracuse, NY: Syracuse University, November 1986).

[4] Government of Jamaica, Board of Revenue, *Comprehensive Tax Reform*, Parts I and II (Kingston: Revenue Board, 1985).

[5] "Report of the Tax Reform (Successor) Committee 1985," Kingston, January 2, 1986. (Mimeographed)

[6] Government of Jamaica, Ministry of Finance and Planning, "Comprehensive Tax Reform: Phase I (Individual Income Taxation)," Ministry Paper No. 8, 1986.

[7] At the 1985 level of individual income tax collections, this equaled approximately 9 percent of revenues.

person who pays or credits any person with interest shall withhold on behalf of the Commissioner of Income Tax, 33 1/3 percent of the interest."[8] A "prescribed person" is defined as:

- a commercial bank;
- a building society;
- an institution defined in the Protection of Depositors Act., i.e., trust companies and merchant banks;
- a credit union.

A "person" is defined in the Principal Act and relates to any individual or entity who is subject to the income tax. However, according to Section 9 of the amendment, deposits of a "prescribed person" with another "prescribed person" are not subject to withholding of tax on interest earned.

Originally, it was proposed that all taxable interest income be subject to a 33 1/3 percent withholding tax with the banks acting as the collection agent. Under this scheme, taxpayers who had not made use of their entire J$8,580 exemption could apply for a refund. There was substantial popular resentment of this, because of what was seen as an onerous tax burden on small savers and on pensioners. As a result, interest earned on all accounts under J$2,000 was made exempt from the withholding tax. Moreover, the income tax reform led to an increase in the personal exemption to over J$23,000 for those above age 65. These changes defused the complaints about the interest tax on pensioners.

Allowances. The tax reform reaffirmed the taxable status of allowances. The intention was both to broaden the base so that the tax rate could be reduced and to close off a loophole that gave certain groups of taxpayers a decided advantage over others. The Project recommended taxing most personal allowances,[9] and requiring receipts to document legitimate deductible business expenses. The logic was clear: if a perquisite option were left open, there would be migration to this opening and some degree of base erosion would take place. Though the Tax Reform Committee and the Revenue Board took note of the importance of closing off the allowance loophole, some important openings were left in transportation, housing and uniforms. The political considerations that lead to these loopholes are clear: the economic and emotional attachments to housing, transportation and uniform allowances were too strong to permit their complete abolition in one fell swoop.

As a result, three important allowance loopholes remain open. First, housing allowances are taxable only up to a certain limit. Second, the maximum income that must be reported for use of an employer-owned automobile is set at J$8,000. (The actual monetary benefit from the automobile perquisite could be five or six times as much.) Finally, the uniform allowance has been substantially broadened in its use, and the allowable amount has been increased to J$1,600 per year for purchase of the uniform and J$1,820 for a laundry allowance. The income tax reform placed the burden of determining what was an "appropriate uniform" on the Income Tax Commissioner.

Overtime. The pre-reform system provided a preferential tax treatment for overtime work. This was billed as an inducement to employers to encourage increased work effort, but as shown above it apparently was used as a loophole and it opened the door for taxpayer abuse. An employer could report overtime on behalf of an employee when there was none, and thereby reduce his net payment to labor, and/or buy considerable goodwill from the labor force. The Income Tax Department did not police the overtime claims, and there were no clear instructions on how overtime income was to be reported. As regards impact, the preferential treatment of overtime had a revenue cost, and it may also have cost additional jobs.

The basic intent of the overtime legislation appears to have been less to stimulate overtime hours than to find a way around the high marginal tax rates that were discouraging work effort. The correct solution to the abuse, then, is to lower the marginal tax rates and eliminate the need for an "overtime" preference. The 1986 reform

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[8] Income Tax Amendment of 1986, Sec. 31A.

[9] The exception was *essential* unifoms such as for firemen, policemen, etc.

abolished the overtime provision. In a sense it had become almost redundant because the reformed income tax rate was only 3 1/3 percentage points above the preferential overtime rate. Some argued to retain the preference, perhaps by lowering the overtime rate to 20 percent. But this would have opened the door for more evasion, and would have given a special treatment to those workers who could take advantage of overtime, who tend to be higher income workers. If the problem is that the marginal rates are too high, why not lower them for everyone and not only for a few? It is not just overtime, but total work effort in the economy that needs to be stimulated. In the end, this reasoning won the day.

Rate Structure, Credits and Deductions

The reform abolished the system of tax credits and replaced it with a uniform standard deduction (or income exemption level) of J$8,580 per year. The progressive rate structure was replaced by a flat rate tax of 33 1/3 percent, and the preferential rate schedule for those with incomes below J$7,000 was abolished. These reforms had to be evaluated and introduced as a package. So long as a graduated rate structure was in existence, the move from a credit system to a standard deduction would reduce the progressivity of the tax system.[10] Once the decision was made to move to a flat rate tax, the way was open to replace the complicated credit system with a uniform standard deduction or income exemption level. By the same token, setting the standard deduction as high as J$8,580 made the low income preferential rate schedule redundant, hence it could be stricken from the law.

The Flat Rate. The most difficult part of the reform program to "sell" was the flat rate tax. The initial response of those representatives of lower income taxpaying Jamaicans—including the unions—and of those with a philosophical leaning toward progressivity initially saw this as a "big man's" reform. On the other hand, the business community argued that the high marginal tax rates were choking off the investment initiative that could lead to more employment generation. The solution to this disagreement was to raise the standard deduction to a high enough level to be of substantial benefit to lower income workers, to meet the demands for improved relative progressivity by taxing allowances, and to satisfy higher income tax payers by flattening the rate structure.

Politics aside, the Government of Jamaica and the Tax Reform Committee recognized and accepted several very powerful arguments in support of a flat rate structure for Jamaica:

- It is simple and understandable: the tax is 33 1/3 cents on the dollar above the standard deduction. In terms of administration, the withholding process is easier for enterprises, and the Income Tax Department has a simpler job.
- The flat rate tax system gives fewer options for future "tinkering" with the income tax structure. Under progressive rate systems one can single out the high rate group or the middle rate group for special treatment, the number of rates can be changed, the brackets can be widened or narrowed. A flat rate income tax means that any adjustment made in the system affects all taxpayers, and it becomes harder to pick out a special interest group to favor with adjustments in the tax rate or base.
- The flat rate tax can be better harmonized with the withholding tax on interest and the corporation tax rate. For example, under a graduated rate structure, the 33 1/3 percent withholding tax on interest income would be too high for those in lower brackets and too low for those in the higher brackets. Either a complicated rebate/additional payment system would have to be established or the interest tax would have introduced new horizontal inequities. The same is true with respect to the relative levels of the corporate and individual tax rates.

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[10] This is because the value of a deduction varies with the level of the marginal rate, whereas the value of a credit is independent of the marginal rate.

- The flat rate tax provides a partial indexing for inflation; complete indexing would be achieved if the standard deduction were included. Under a flat tax, the maximum marginal rate is 33 1/3 percent, no matter what the increase in income. The flat rate tax eliminates "bracket creep" except for those who are bumped from a 0 to a 33 1/3 percent rate.

- The lower, flat rate avoids the undesirable economic efficiency effects of the progressive rate structure and the higher marginal rates. These include the disincentives to work, save, invest, and comply with the income tax laws.

- The flat tax gives some progressivity in effective average rates, because the first J$8,580 is tax free. As noted above, this is probably not much less progressive than was the old system.

The Standard Deduction. The recommendation of an income exemption level that does not recognize family size, income level and other characteristics was debated by the Government of Jamaica and the Tax Reform Committee. It was finally accepted for three reasons. First, the level of the standard deduction was high enough to eliminate over 100,000 individuals from the income tax rolls. Since these are the lowest income taxpayers and presumably most in need of protection with a family size allowance, the equity objections to a uniform exemption level are less strong. Second, the tax credits were never indexed and their real value had been eroded to a point where there was relatively little to protect. Third, the income tax administration was widely recognized as inefficient, so that declared family characteristics could not be adequately policed in any case. To administer properly a system that recognizes family and individual need characteristics would require siphoning off scarce administrative resources from other important base-broadening activities, such as assessing the self-employed.

Choosing the Rate and the Deduction Level. The most crucial element of this proposed reform program was the setting of the exact rate schedule. Estimation of how far the rates could be lowered became guesswork in some sense, because there was no up-to-date information on the distribution of taxable income, credits, and taxes payable. The approach taken was to simulate the 1986-1989 tax yields from the 1983 taxpayers' distributions (reported in Chapter 3) under a variety of assumptions about the growth in the labor force and in statutory income.

Even with these simulations, there is no unique rate and standard deduction level that satisfies all the conditions: a single rate, a single exemption level, and a revenue target. There were many different opinions about the "right" way to go. Those representing lower income taxpayers argued for a higher standard deduction, which would have called for a higher tax rate. Higher income taxpayers—who would be hardest hit by the loss of non-taxable perquisites and by the taxation of interest income—would benefit more from a lower tax rate and, by implication, a lower income exemption level.

In fact, the revenue elasticity, revenue yield, and distribution of tax burdens of about 100 rate-base combinations were evaluated. An examination of the estimated revenue and tax burden impact of each reform and a process of political negotiation led to the final choices of a 33 1/3 percent rate and an J$8,580 standard deduction level.[11]

Analyzing the Impacts

One approach to estimating the structural impacts of the reform program is to make use of historical data. The hypothetical question we would ask is this: what would have happened had these reforms been put in place in 1983? This proposal was evaluated in terms of effects on the distribution of tax burdens, revenue yield and the revenue-income elasticity. These results also allow us to speculate about the potential effects on compliance.

[11] The exact amount of J$8,580 was chosen for administrative reasons, i.e., it is divisible by 52.

The Interest Tax[12]

A first question to ask is how does the taxation of interest affect revenue yield, revenue elasticity and tax burdens? Data for 1986—the first year of the interest tax—show a revenue yield of J$270 million, or approximately 30 percent of total individual income tax collections. While there is no question that the interest tax has been very revenue-productive, there is some question about how it affected the overall distribution of tax burdens under the Jamaican income tax.

One way to support the argument that an interest tax adds to the progressivity of the system is to ask how the taxation of interest would have affected the distribution of tax burdens had the tax been levied in 1983. The assumptions required to get an empirical answer to this question are oversimplified, but the results do give some indication of the impact of the interest tax. The estimation required six steps:

1. From Bank of Jamaica data we computed average deposits held in
   (a) commercial banks
   (b) building societies
   (c) credit unions
   (d) trust companies
   (e) merchant banks.

Commercial bank deposits held by other financial institutions were excluded since interest on these deposits is not taxed.

2. From these data we estimated the extent to which these deposits are held by individuals. In the case of commercial bank deposits this information could be obtained directly from Bank of Jamaica data. We assumed that 50 percent of building society deposits, all credit union deposits, and none of trust company or merchant bank deposits are held by individuals.

3. Using the average, end-of-quarter commercial bank weighted deposit rates, we calculated both the amount of interest income attributed to individuals and total interest income.

4. The proportion of untaxed interest income was computed as follows (dollar amounts in millions of J$):

Estimated Total Interest Income	= J$1,104.6
Actual Interest Tax Collections in 1986	= J$ 270.3
Interest Income Subject to Tax in 1986 = J$270.3 x 3	= J$ 810.9
Interest Income Not Subject to Tax in 1986 = J$1,104.6 - J$810.9	= J$ 293.7
Proportion of Untaxed Interest Income = J$293.7/J$1,104.6	= 0.266
Proportion of Total Interest Income Subject to Tax	= 0.734

5. We allocated untaxed interest income fully to individuals, recognizing that deposit accounts below J$2,000 are not subject to tax and assuming that institutions do not hold accounts below J$2,000.

6. The tax on interest income was then computed as one-third of interest income.

The resulting estimates we derived of total interest income earned by individuals are J$263.3 million in 1983 and J$667.8 million in 1986. An increase of this magnitude is to be expected since interest rates increased from 13 to 18 percent over this period and commercial bank deposits just about doubled.

The next step is to estimate the distribution of the burden of interest tax across individuals. Wasylenko has estimated the distribution of interest income by income class,[13] as shown in column (2) of Table 4-2; for example, those in the J$20,000 to J$25,000 statutory income class are estimated to have received 5.83 percent of all interest income. We make provision for the fact that those with deposit accounts less than J$2,000 are exempt, and estimate the distribution of tax payments as shown in column (3) and the pattern of effective tax rates against comprehensive income as shown in column (4). For example, those in the J$20,000 to J$25,000 income class are estimated to pay 6.4 percent of the total

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12 At the time of the design work, we made estimates of first year revenue yield but did not develop the more detailed projections printed in this chapter.

13 Michael Wasylenko, "Tax Burden in Jamaica Before and After Reform," Jamaica Tax Structure Examination Project Staff Paper No. 37, Metropolitan Studies Program, The Maxwell School (Syracuse, NY: Syracuse University, October 1987).

TABLE 4-2
THE ESTIMATED DISTRIBUTION OF THE BURDEN OF THE TAX ON INTEREST INCOME: HYPOTHETICAL RESULTS FOR 1983
(in percent)

Statutory Income Class (1)	Distribution of Total Interest Income[a] (2)	Distribution of Total Interest Tax[b] (3)	Effective Rate of Interest Tax on Total Income (4)
Under J$2,000	0.22	0.0	0.00
J$ 2,001 - 4,000	1.54	0.0	0.00
4,001 - 6,000	2.53	0.0	0.00
6,001 - 8,000	2.97	0.0	0.00
8,001 - 10,000	4.45	3.3	0.40
10,001 - 12,000	3.09	3.4	0.50
12,001 - 14,000	5.83	6.4	1.30
14,001 - 16,000	3.08	3.4	1.20
16,001 - 18,000	4.93	5.4	2.30
18,001 - 20,000	5.99	6.6	2.90
20,001 - 25,000	5.83	6.4	2.30
25,001 - 30,000	7.30	8.0	5.90
30,001 - 50,000	18.01	19.7	11.80
Over J$50,000	34.21	37.4	16.80
Total	99.98	100.0	

[a] Estimated total taxable interest income received by individuals is J$263.3 million.

[b] Estimated total interest tax on individuals is J$49.5 million.

SOURCE: Computed from JTSEP sample of personal income tax returns for 1983, and from Michael Wasylenko, "Tax Burden in Jamaica Before and After Reform," Jamaica Tax Structure Examination Project Staff Paper No. 37, Metropolitan Studies Program, The Maxwell School (Syracuse, NY: Syracuse University, October 1987).

interest tax and to pay 2.3 percent of their total income in interest tax.[14] A comparison of the data presented in column (4) of Table 4-2 with column (5) of Table 4-1 shows that the taxation of interest would have increased the progressivity of the pre-reform system.

Tax Burden Effects

Suppose the entire reform program, including the interest tax, had been enacted in 1983. The revenue yield and the effects on the distribution of tax burdens are described in Table 4-3. So that comparisons can be properly made, the statutory income classes on the far left have been held constant according to legally taxable income in 1983; that is, taxpayers are grouped according to income that was taxed under the pre-reform system. The effective tax rates reported in the tables, however, reflect the full amount of income that is subject to tax under the new system: regular income, overtime income, allowances, and all interest income.

Column (1) of Table 4-3 shows results for the pre-reform system.[15] Two sets of results are presented for the reformed system in columns (3) and (4). Column (3) shows the amount of revenue that would be paid under the new system by those who paid regular income taxes in 1983. The results in column (4) demonstrate that even those who successfully evade the income tax proper would be caught by the withholding tax on interest.

[14] We include evaders in this computation and use "comprehensive" income in the denominator because even those who successfully evade the regular income tax would be captured by the withholding tax on interest income.

[15] The difference between column (2) of Table 4-3 and column (4) of Table 4-1 is that the denominator of the former includes the interest income received by those who paid the regular income tax on wages, salaries and unearned income in 1983.

TABLE 4-3
TAX BURDEN EFFECTS OF INCOME TAX
REFORM: 1983 SIMULATION

Statutory Income Class (1)	Pre-Reform System (2)	Effective Tax Rates: Reformed System Excluding Evaders Interest Tax (3)	Effective Tax Rates: Reformed System Including Evaders Interest Tax (4)
Under J$2,000	.000	.000	.000
J$ 2,001 - 4,000	.000	.000	.000
4,001 - 6,000	.009	.000	.000
6,001 - 8,000	.087	.000	.000
8,001 - 10,000	.134	.042	.042
10,001 - 12,000	.165	.100	.100
12,001 - 14,000	.189	.146	.147
14,001 - 16,000	.216	.174	.175
16,001 - 18,000	.222	.201	.203
18,001 - 20,000	.245	.217	.220
20,001 - 25,000	.258	.235	.236
25,001 - 30,000	.291	.255	.261
30,001 - 50,000	.278	.279	.290
Over J$50,000	.296	.310	.318
Average Rate	.1448	.0982	.1043
Total Revenue (in J$ millions)	363.8	246.6	268.7

SOURCE: Computed from JTSEP sample of personal income tax returns for 1983.

The results indicate that the proposed system would have led to a reduction in the average rate of taxation from 14.48 percent to 9.82 percent of taxable income for those who actually paid income taxes in 1983. The distribution of tax burdens would have become more progressive, because the burden of the interest tax, the taxation of allowances on higher income taxpayers, and the standard deduction of J$8,580 would have offset the effects of the lower nominal rates. This progressivity is strengthened and the average rate of taxation increased to 10.4 percent when the taxation of "evader's interest" is taken into account (see column (4)). We estimate that the enactment of the full program would have led to a revenue loss of J$95.1 million or about 26 percent.

Revenue Elasticity and Inflation

Another issue is whether the revenue-income elasticity of the reformed system is significantly less than that of the pre-reform system, and whether inflation is as hard on taxpayers under the new rate and base structure. To estimate this, we again use the 1983 data to simulate the effects of a 10 percent increase in taxable income under two systems. The results are reported in Table 4-4.

One might expect that the revenue elasticity would be significantly dampened by the new, flatter rate structure. The results do not show this. A 10 percent inflation rate would have caused income tax revenues to rise by 24.8 percent (J$90.3 million) under the old system in 1983. The increase would be 22.4 percent under the reformed system. The proposed system, even with the flatter rate structure, would have had a high elasticity if it had been enacted in 1983.

There are two, related reasons why the revenue-income elasticity of the flat rate tax is this high. First, it is not really a flat rate tax but a two-rate tax—0 percent and 33 1/3 percent—and income growth brings a substantial number of

TABLE 4-4
HYPOTHETICAL EFFECTS OF 10 PERCENT INCREASE IN INCOME UNDER THE PRE-REFORM AND REFORMED SYSTEMS: 1983 ESTIMATES

Statutory Income Class	Change in Effective Tax Rate: Pre-Reform	Reform
Under J$2,000	.000	.000
J$ 2,001 - 4,000	.000	.000
4,001 - 6,000	.021	.000
6,001 - 8,000	.034	.007
8,001 - 10,000	.021	.027
10,001 - 12,000	.022	.021
12,001 - 14,000	.021	.017
14,001 - 16,000	.021	.015
16,001 - 18,000	.018	.011
18,001 - 20,000	.016	.010
20,001 - 25,000	.013	.009
25,001 - 30,000	.010	.007
30,001 - 50,000	.005	.004
Over J$50,000	.001	.001
Average Rate	.019	.012
Revenue-Taxable Income Elasticity	2.48	2.24
Increase in Revenue Yield (in millions of J$)	90.3	60.1

SOURCE: Computed from JTSEP sample of personal income tax returns for 1983.

workers into the 33 1/3 rate class. Second, the standard deduction of J$8,580 is not indexed, hence average tax rates for all taxpayers rise with income increases.[16]

The data in Table 4-4 also show how the pattern of effective tax rates would have changed under 10 percent inflation. The average rate would have risen more under the old system (1.9 versus 1.2 percent of income), but in both cases the system would have become less progressive owing to the fact that neither credits nor the standard deduction are indexed and both weigh heavier in the tax calculus for lower income taxpayers.

These elasticity calculations are based on a simplifying assumption that all components of income increase at the same rate. In fact, however, recent history in Jamaica has shown that the growth in interest income has been more volatile than the growth in the wages and salary component of the tax base. This means that the inclusion of interest in the taxed base is likely to make revenue yield from the individual income tax more unstable and countercyclical: revenue bonuses when the economy goes well but hard-to-handle shortfalls during economic contractions.

This high elasticity of the reformed system poses a problem. Those in the 0 rate bracket can be pushed into the taxpaying population even though their real income has not increased. Moreover, the tax payment made by all taxpayers will rise as the value of the J$8,580 standard deduction is eroded by inflation. To be sure, bracket creep is more of a problem under a progressive rate structure where inflation also drives up effective tax rates, but it is still present under Jamaica's flat tax.

One way to deal with this is to index the standard deduction to the rate of inflation. In the hypothetical 10 percent case above, assume that the full increase is due to inflation. If the standard

16 If the standard deduction were indexed for inflation, the revenue increase would have been J$30 million and the revenue-income elasticity would be unity.

deduction is indexed, it would rise to J$9,438 and those initially earning less than J$8,580 would have their zero tax status unaffected. Those with higher levels of income would pay additional tax, as long as their inflationary increase in income is greater than J$858. A simulation of such indexing shows that the revenue-income elasticity would be unity and the revenue increase would be J$30 million as compared with 2.24 and J$63 million for the reformed system (Table 4-5).

The Impact of Reform: Projections

The simulations above are illustrative of the structural effects of the reform program. But it is also necessary to make out-year projections of the full impact of the reform on revenues and burdens. After all, between 1983 and 1986 the labor force grew, the distribution of taxpayers and the distribution of income changed, and the efficiency of income tax administration may have changed. Because of these possible structural differences, the actual impact of the reform when implemented in 1986 would be different from that estimated above. It is the 1986 and 1987 impacts that we want to simulate, but 1983 is the most recent year for which we have estimates on the distribution of taxable income and income taxpayers. This means that we must use the baseline 1983 data to project the distribution of taxpayers and taxpayer characteristics to the initial years of the reform (1986 and 1987).[17]

Projected impacts of the reform must be compared against what would have happened in its absence, i.e., against projections of the performance of the pre-reform system. In doing this comparative analysis we make the obviously unrealistic assumption that GNP, the ultimate base of the income tax, would have grown to the same extent under either income tax system. A reasonable proposition is that this assumption surely understates the relative growth of the tax base under the reformed system. However, because there is no econometric model to estimate the impact of the tax system on the Jamaican economy, there is no good alternative to this assumption.

Projections of the Tax Base

Projections of taxable income, except for interest income, are based on the 1983 distributions for the self-employed and PAYE taxpayers. There is no economic projection model that the Government of Jamaica officially or unofficially uses, hence there is no objective basis for establishing the forecast parameters. Instead, we have relied on the considered judgment of the Chairman of the Revenue Board and his top level staff. One would expect the normal bias of such government officials to be on the conservative side, and hindsight confirms this in the case of Jamaican officials.

TABLE 4-5
HYPOTHETICAL EFFECTS OF 10 PERCENT INFLATION, INDEXATION VS. NONINDEXATION OF STANDARD DEDUCTION
(amounts in millions of Jamaican dollars)

	Nonindexation	Indexation
Revenue (Uninflated)	J$298.7	J$298.7
Revenue (Inflated)	362.0	328.8
Change in Revenue Yield	63.3	30.1
Revenue Elasticity	2.119	1.008

SOURCE: Computed from JTSEP sample of personal income tax returns for 1983.

[17] The reader will remember that these projections were developed in early 1985, before the reform was enacted. They have been somewhat modified here, based on more recently available data. To repeat what was noted above, we originally made no out-year projections of interest tax revenues.

The first step in the projection exercise is to move these distributions from 1983 to 1984 levels, because some preliminary estimates for 1984 were available and we wanted to make use of this evidence. It is assumed that the number of taxpayers covered under the PAYE system increased by about 18,000, an amount roughly equivalent to the total labor force increase in that year.[18] It was also assumed that there was no change in the credits claimed, no change in rates or in the tax base, and a 15 percent increase in all elements of total compensation except interest. This roughly approximates the conditions that actually held in 1983-1984.

The second step is to bring this distribution forward to 1985, 1986, and 1987 to form a baseline against which to measure the impact of the reform. For these projections, we make the following conservative assumptions (see also Table 4-6):

- Taxable income, excluding interest and allowances, will increase by 10 percent per year in nominal terms.
- Allowances will hold constant at their 1984 level. The Government of Jamaica announced that it was seriously considering elimination of allowances, hence it seems reasonable to assume that there would be no further increases.
- The number of taxpayers will remain constant.
- The percentage of "overtime" income in total statutory income will remain constant.
- Those who presently evade taxes will experience this same income growth but there will be no change in the rate of compliance.

TABLE 4-6
PROJECTION ASSUMPTIONS AND ACTUAL
PERFORMANCE OF JAMAICAN ECONOMY

	Percent Increase			
	1983	1984	1985	1986
Number of PAYE Taxpayers				
Baseline Assumption	6.25[a]	0.00[a]	0.00	0.00
Actual Growth in Employed PAYE Labor Force	1.21[b]	1.21[b]	-5.66[b]	7.10
Revised Assumption	1.21	1.21	-5.66	7.10
Number of Self-Employed Taxpayers				
Baseline Assumption	0.00[a]	0.00[a]	0.00	0.00
Actual Growth of Self-Employed in Labor Force	1.99	1.99	8.29	2.63
Revised Assumption	1.99	1.99	8.29	2.63
Taxable Income (Other than Interest)				
Baseline Assumption	15.00	10.00	10.00	10.00
Revised Assumption	12.70	21.70	12.90	17.80
Interest Income	N.A.	50.40	50.00	13.50
Consumer Price Index	11.30	27.80	26.00	14.80
Compensation of Employees	12.70	21.70	12.90	17.80
Interest Rate	12.90	14.80	18.50	18.00

[a] 1983-1984 average.
[b] Assumed to be distributed in the under J$7,000 income class.
[c] Average annual rate on commercial bank deposits.
SOURCE: Authors' calculations as noted in text.

[18] These 18,000 new taxpayers were assumed to be distributed in the same way as were all taxpayers in 1983.

The projections of total interest income and total interest tax are made using the methodology outlined in the section above.[19] The projected rates of increase during the 1983-1986 period are shown in the bottom panel of Table 4-6. Note that the 1986 interest tax collections are actual amounts and the growth in deposits and the interest rate between 1983 and 1986 closely approximates what actually occurred.

The initial projections were done at a time when only preliminary 1984 data were available and—apart from the interest income projections reported here—were the basis of the policy reforms. More recently available data enable the introduction of a revised set of assumptions based on the actual performance of the Jamaican economy between 1984 and 1986, also reported in Table 4-6.

Results for the Pre-Reform System

Baseline projections for the pre-reform system are presented in Table 4-7. Revenues are projected to nearly double over this four-year period and the average tax rate will increase from 14.1 percent in 1983 to 22.4 percent in 1987.[20] The pattern of effective tax rates— an inverted U-shape—is not projected to change by very much, though the distribution of taxpayers moves significantly toward the higher tax brackets:by 1987, 38 percent of all taxpayers were projected to reach the top marginal rate bracket, by comparison with 14 percent in 1984. These projections of the pre-reform Jamaican income tax suggested the inevitability of some type of rate structure reform. An average increase in the effective rate of 8 percent in four years would simply not be acceptable. Such an increase would almost certainly be avoided through allowance schemes, noncompliance and discretionary relief that would further compromise the horizontal equity of the system. These projections clearly demonstrate the instability of the pre-reform system, and make the choices clear. The issue became whether there would be a

TABLE 4-7

BASELINE PROJECTIONS OF REVENUES AND EFFECTIVE TAX RATES UNDER THE PRE-REFORM SYSTEM

Statutory Income Class	1984	1985	1986	1987
		Effective Tax Rates		
Under J$2,000	.000	.000	.000	.000
2,001 - 4,000	.000	.000	.000	.006
4,001 - 6,000	.012	.052	.090	.126
6,001 - 8,000	.105	.149	.170	.190
8,001 - 10,000	.148	.177	.197	.217
10,001 - 12,000	.180	.209	.230	.253
12,001 - 14,000	.198	.227	.249	.268
14,001 - 16,000	.226	.253	.272	.288
16,001 - 18,000	.239	.257	.271	.283
18,001 - 20,000	.243	.255	.265	.273
20,001 - 25,000	.277	.288	.298	.305
25,001 - 30,000	.269	.262	.265	.265
30,001 - 50,000	.259	.231	.228	.221
Over J$50,000	.221	.175	.167	.156
Total	.170	.193	.209	.224
Revenues (in J$ millions)	527.5	706.6	849.7	1,012.4

SOURCE: Computed from JTSEP sample of personal income tax returns for 1983 and assumptions reported in Table 4-6.

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19 A slightly different method was followed for the 1987 projections, because incomplete data were available.

20 To make comparisons between the reformed and the pre-reform systems, we include interest income in the denominator here.

general reform or another set of piecemeal reforms designed to provide relief to particular groups of taxpayers.

Results for the Reformed System

Projections for the reformed system—assuming it had been implemented in 1984—are presented in Table 4-8. A comparison of these results with those presented in Table 4-7 give an estimate of the impact of the reform. Two questions are at issue: revenue yield effects and tax burden implications. The comparative revenue impact is summarized in the bottom panel of Table 4-8. It is most important to note that the reform program was not projected to be revenue-neutral, i.e., it was estimated to yield 8.4 and 7.3 percent less than the old system would have in 1986 and 1987, respectively.

These results can also be used to suggest the potential change in the distribution of tax burdens. Whereas the average tax rate would have risen to above 22 percent by 1987 under the old system, it would reach about 17 percent under the reform program. The progressivity in effective rates would be greater under the reformed system than under the 1983 system. This happens in spite of the fact that the marginal rates of taxation before reform stretched from 30 to 57.5 percent whereas there is no graduation in nominal rates under the reformed system. The reason is primarily that interest income and allowances, which are heavily concentrated in the upper brackets, are taxed under the reform and that the new standard deduction of J$8,580 removes many lower income Jamaicans from the taxpaying population. Those in the over-J$50,000 income class will face an estimated effective rate of 32.5 percent in 1987 under the reformed system—about twice the effective rate they would have paid under the pre-reform system.

TABLE 4-8
PROJECTED IMPACTS OF THE PROPOSED REFORM PROGRAM

Statutory Income Class	Effective Tax Rates 1984	1985	1986	1987
Under J$2,000	.000	.000	.000	.000
2,001 - 4,000	.000	.000	.000	.000
4,001 - 6,000	.000	.000	.000	.001
6,001 - 8,000	.000	.009	.027	.052
8,001 - 10,000	.043	.082	.106	.127
10,001 - 12,000	.095	.128	.147	.164
12,001 - 14,000	.137	.166	.182	.196
14,001 - 16,000	.167	.192	.205	.217
16,001 - 18,000	.194	.216	.228	.238
18,001 - 20,000	.214	.234	.244	.253
20,001 - 25,000	.232	.248	.256	.264
25,001 - 30,000	.258	.273	.279	.285
30,001 - 50,000	.284	.296	.301	.305
Over J$50,000	.318	.323	.324	.325
Total	.118	.142	.156	.169
Total Revenue[a] (in J$ millions)	467.1	655.6	778.0	938.6
	Comparative Revenue Impact			
Pre-Reform (in J$ millions)	527.5	706.6	849.7	1,012.4
Difference (in J$ millions)	60.4	51.0	71.7	73.8
Percent Difference	11.4	7.2	8.4	7.3

[a] Including revenue from the tax on interest income of institutions.

SOURCE: Computed from JTSEP sample of personal income tax returns for 1983 and assumptions reported in Table 4-6.

This increased progressivity is an unexpected bonus from the flat tax. Does this violate the objective of reducing the marginal tax rate on productive activities? In fact, the increased marginal rates on higher income taxpayers is primarily due to the tax on interest. The effective tax rate on earnings actually drops in the top income brackets. Those who would emphasize the potential economic impacts of lower marginal rates on higher income taxpayers will applaud this change in the taxation of earned income. Those who look to the tax system to reduce disparities in the distribution of income will be less pleased with the reduction in the tax burden in earnings in the top brackets. Yet, there are reasons why the top bracket rate reductions may be acceptable even to those who place heavy weight on distributional implications. For one, the pre-reform system was not so progressive as its nominal rates suggest because of evasion, overtime, and the exclusion of allowances and interest income from the tax base. Second, we propose elsewhere (see Chapter 24) that income tax reduction be accompanied by property tax increases which will fall heavily on the higher income.[21]

Economic Effects

Can this income tax reform induce significant economic effects on investment, saving and work effort? Even if the price elasticities of work effort, savings and compliance are very low (as we suspect they are), the impact could be substantial because the marginal tax rates were reduced so dramatically. Though no solid evidence is available, it would not seem far-fetched to argue that the after-tax return to investors and to increased work effort will be significantly increased. Under the proposed new 33 1/3 percent flat rate schedule, the *incremental* tax cost of increased investment is much less than before.

Another possible economic effect of the reform grows out of its giving taxpayers less incentive for avoidance and evasion. The value of non-taxable forms of compensation such as perquisites is diminished with the marginal rate reduction, hence taxpayers should be less interested in bargaining for fringe benefits that would allow them to escape taxation. The benefits of outright evasion will also be lessened, and a well-structured enforcement program might therefore be more successful than with the higher marginal rates. Finally, one might expect reform to enhance compliance to the extent that taxpayers perceive a more equitable tax structure. However, it is important to remember that a lower marginal rate may not be sufficient to draw the self-employed into the tax net. If they have successfully evaded a 57 1/2 percent marginal rate, why should they voluntarily agree to pay a 33 1/3 percent rate?

Finally, there is the question of how the tax reform will affect savings. Because interest is brought into the tax base and one-third of the gross return on savings accounts is taxed away, there will be a reduction in the demand for commercial bank savings deposits relative to investment in equities. Moreover, other preferential tax treatments of favored investments are removed with elimination of the income tax credit for the purchase of life insurance premiums and unit trust shares. These changes should have the effect of putting all types of investment on a more equal footing[22] and *ceteris paribus* improving the relative attractiveness of purchasing stocks. Perhaps more important, the top marginal tax rate on income from all investments other than savings accounts will fall from 57 1/2 percent to 33 1/3 percent. The problem with the interest tax is that it may encourage avoidance via capital flight, a shift to consumption or a shift in investments to the more lightly taxed real estate sector.

First Year Results of the Reform

The individual income tax reform was enacted in January 1986 and by May 1986 it was believed

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[21] To get a better feel for how taxpayers at various income levels would fare under this system, we also have taken a "representative taxpayer" approach. We considered the impacts of the reform on tax burdens for 66 "representative" situations in both the public and private sectors: 132 cases in all. The results are fully described in Alm and Bahl, "An Evaluation of the Structure of the Jamaican Personal Income Tax."

[22] However, dividends are still taxed as part of corporate profits and as personal income.

that most withholding firms had made the transition to the new system. Unfortunately, a systematic program to monitor the tax reform was not put in place, so it is not possible to give an exact accounting of the response.[23] Moreover, the first year is a transition period and may not be fully representative in any case. Nevertheless, there is some evidence of response in three areas: the revenue performance of the Jamaican income tax since January of 1986, the initial response of PAYE workers based on a 1987 survey, and the performance of the Jamaican economy in 1986 and 1987. While these data do suggest a successful first year performance of the new system, all conclusions have to be qualified because full adjustment to the new system had not yet been worked out in 1986 and early 1987, and because this analysis does not hold constant all other factors.

Revenue Performance

How does one estimate the revenue impact of the reform? There are a number of ways to approach this. Probably the best comparison is the difference between what the new system actually yields and what the old system would have yielded. The top panel in Table 4-9 shows actual revenue performance through calendar 1987. Revenue projections of the pre-reform system to 1987, using the baseline assumptions, are shown in the second panel. It is immediately clear from Table 4-9 that the projected 1985 amounts for the old system are well above actual levels in 1985 (before the reform took place). This error is due to an underestimate of 1983 base year revenues at the time the projections were developed.[24] For this reason we emphasize comparison of 1985/1986 and 1986/1987 increases in the right side columns of Table 4-9. For 1985/1986, the results show an expected increase (in the income tax proper) of J$143.1 million had the old system remained in effect versus an actual increase of only J$28.5 in the transition year. In other words it is projected that the increase in income tax payments (excluding interest) would have been J$114.6 (13 percent) higher if the old system had been kept in place (assuming compliance rates remained as they were, and if no additional allowances were taken).[25] However, the interest tax yielded J$270 million in 1986, nearly doubling the increase that might have been expected under the pre-reform system. These comparisons are spurious because the baseline assumptions were overly conservative about the performance of the Jamaican economy. The more realistic, "revised" assumptions (the fourth panel in Table 4-9) would project the old system to yield an increase only 10 percent below the actual increase between 1985 and 1986. In its first full year, 1987, the new system yielded about a 20 percent increase but this was well below the 35 percent that the old system would have yielded (panel 4 of Table 4-9) or the 37 percent we expected from the reformed system (panel 5) under the revised assumptions.

At one level the conclusion is clearly that the reform has been a revenue success. Even with a downward reduction in rates and with transition problems, income tax revenues were up over 1985 and the interest tax added a virtual fiscal bonanza. Moreover, the revenue increase was nearly 20 percent in 1987. Still, as noted above, actual revenues did not match projection expectations in 1987, and hence we would do well to dig a bit more deeply into the determinants of this revenue performance.

Why did the new system not perform up to expectations (compare panels 1, 3 and 5 of Table

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23 USAID had allocated the funds to conduct this monitoring as part of a Phase II Jamaica tax project, but these plans were canceled in 1987.

24 When we originally constructed the base year data for the PAYE projections, the sample data had to be weighted to reflect the population. Moreover, we chose to weight the sample so that the implied revenues were consistent with estimates of actual revenues. At the time we built the projection model, the final estimates for revenues in 1983 were not yet available and, as it turned out, the Government's estimates were well below the actual yield. As a result, there is a downward bias in our projections. However, it can be shown that the bias does not extend to the increase stimulated by any given change in the tax base. Therefore, we feel comfortable with comparisons of the *increase* under the baseline, projected and actual systems. For more details see Alm and Bahl, "An Evaluation of the Structure of the Jamaican Personal Income Tax."

25 Particularly, the assumption of no change in perquisites is unrealistic and the "gap" would surely be narrower than this amount.

TABLE 4-9
PROJECTED AND ACTUAL REVENUES FROM THE INDIVIDUAL INCOME TAX

	1985	1986	1987	1985-1986 Increase		1986-1987 Increase	
				Amount	Percent	Amount	Percent
Actual Revenues (1)							
Income Tax	J$606.2	J$ 634.7	J$ 756.9	J$ 28.5	4.7%	J$122.2	19.3%
Interest Tax	0	270.3	326.5	270.3	--	56.2	20.8
Total	606.2	905.0	1,083.4	298.8	49.2	178.4	19.7
Pre-Reform System (2) *(Baseline Assumptions)*							
Income Tax	706.6	849.7	1,012.4	143.1	20.3	162.7	19.1
Interest Tax	0	0	0	0	--	--	--
Total	706.6	849.7	1,012.4	143.1	20.3	162.7	19.1
Reformed System (3) *(Baseline Assumptions)*							
Income Tax	n.a.	507.8	612.3	90.2	21.6	104.5	20.6
Interest Tax	n.a.	270.3	326.5	--	--	56.2	20.8
Total	n.a.	778.1	938.8	--	--	160.7	20.7
Pre-Reform System (4) *(Revised Assumptions*							
Income Tax	697.0	1,008.3	1,366.3	311.3	44.7	358.0	35.5
Interest Tax	0	0	0	0	--	--	--
Total	697.0	1,008.3	1,366.3	311.3	44.7	358.0	35.5
Reformed System (5) *(Revised Assumptions)*							
Income Tax	n.a.	626.1	859.8	200.8	47.2	233.7	37.3
Interest Tax	n.a.	270.3	326.5	--	--	56.2	20.8
Total	n.a.	896.4	1,186.3	--	--	289.9	32.3

n.a. = not applicable
[a]Calendar year

SOURCE: Derived from Tables 4-6 and 4-8.

4-9)? One possibility is simply that 1986 was the first year of the reform and there were adjustments to be made by each withholding firm. The data seem to bear this out. Comparing the second quarter in the first year of the reform (1986) with 1985, PAYE collections were up only 1.3 percent; but in 1987, the same comparison of the April-August period shows a 10 percent increase over 1986 (see Table 4-10). The budget for FY 1988 calls for a 15 percent increase in PAYE income tax revenues over 1987.

Another reason why projected revenues are above the actual performance of the reformed system is that the projections overestimated the extent to which the taxation of allowances would increase the base. Whereas the Revenue Board survey led us to choose a 15 percent ratio for allowances to regular compensation, a more accurate estimate would be about 7 percent (see Chapter 6). On the other hand, one factor that may make our projections artificially low is a lack of recognition of changes in administration effort. Estimations of the separate revenue effects of this structural reform are made more difficult because, concurrent with the introduction of the new system, there was a significant improvement in the income tax administration. Undoubtedly, this contributed to the revenue performance of the income tax.

We can conclude three things from this analysis of revenue performance of the reformed system. First, the reform has been very revenue productive, but it is not a tax increase in disguise. The old system would have yielded more too, barring some discretionary reductions. Second, the reformed system has yielded more than the baseline model projected but this is only because the underlying economic assumptions were too conservative. Third, when the right underlying assumptions are made, the actual revenue performance falls short of projections. For example, the income tax proper should have yielded a projected J$237 million increase between 1986 and 1987, by comparison with an actual increase of only J$122 million. The substantial projected increase comes about because the approximately 20 percent increase in income in 1987 drives many new taxpayers into the system and significantly increases the average rate for those already in the system. Why this did not happen in actual practice is an important question to answer.

Adjustments in Compensation

The income tax reform should have resulted in a significant adjustment in the compensation package for PAYE employees—away from allowances and toward wages and salaries. However, as pointed out above, some loopholes were left open as regards uniform, housing and automobile allowances, and these apparently dampened the propensity to convert allowances to wages. Unfortunately, there are no readily available data that will enable us to test these hypotheses.

To study the initial compensation adjustments, we drew a 5 percent sample of PAYE firms and government agencies, and then sampled 20 percent of the employees in these firms. An inspection team headed by a senior auditor visited each firm/agency and recorded the wage and allowance particulars for each sampled employee. The data were taken for November 1985, before the reform was enacted, and May 1986, after firms had converted to the new system. The results of this sample survey are revealing.[26]

- Before reform, allowances were equivalent to an average of about 22 percent of total compensation. However, the tax reform will lead to a base expansion of only about 7 percent because some allowances remain untaxed.

- An initial adjustment to the reform was for allowances to migrate to the uniform and "other" categories.

- During the adjustment period, average wages increased by 19.9 percent, average

[26] These results are discussed in detail in Michael Wasylenko and Bruce Riddle, "Payroll Tax Reform in Jamaica," Jamaica Tax Structure Examination Project Staff Paper No. 35, Metropolitan Studies Program, The Maxwell School (Syracuse, NY: Syracuse University, July 1987), pp. 32-51.

TABLE 4-10
REVENUE COLLECTIONS FROM THE INDIVIDUAL INCOME TAX[a]
(amounts in millions of Jamaican dollars)

Fiscal Year	Total	PAYE	Self-Employed	Interest	Percent Increase in Collections: Nominal	Percent Increase in Collections: Real[c]	Collections as a Percent of GDP
1984	J$ 442	J$412	J$ 30	J$ 0	n.a.	n.a.	4.7
1985	547	512	35	0	23.8	-1.8	4.9
1986	623	582	41	270	13.9	-2.1	4.7
1987[b]	903	629	40	274	44.9	37.6	6.1[e]
1988[d]	1,151	722	46	383	27.5	n.a.	n.a.
April-June 1985	148.9	138.4	0	0	n.a.	n.a.	1.3
April-June 1986	228.6	140.2	75.4	n.a.	53.5	32.0	1.7
April-June 1987	298.5	165.1	120.4	n.a.	30.6	24.0	2.0
Exhibit							
April-August 1986	381.0	250.6	112.6	n.a.	n.a.	n.a.	2.9
April-August 1987[b]	454.8	275.3	158.7	n.a.	19.4	13.3	3.1

[a] Fiscal year data.
[b] Preliminary.
[c] Based on Implicit GDP Deflator.
[d] Budgeted.
[e] Projected GDP J$14,800.6 million (J$1,989.1 million at constant 1974 prices) for fiscal year 1987/88, based on Planning Institute of Jamaica projections published in their Quarterly Economic Report, June 1987. All other years are calendar year GDP.

SOURCE: Income Tax Department, unpublished Summary of Operation reports for 1984-1987.

allowances by 17.4 percent, and inflation by 11.6 percent.

One might discount these results on grounds that May 1986 was too soon to measure the impact of the reform, since neither firms nor the income tax administration had adjusted. The other possibility is that these data tell the true story—that allowances will not be brought fully into the base until the loopholes are closed off. Whichever interpretation is chosen, it would seem clear that base broadening alone does not explain the substantial revenue increase during 1986 and 1987.

Administrative Dimensions

One tenet of the reform program was that a simpler income tax structure would make administrative improvements more feasible, and that the reduced rates would remove some of the rewards for evasion and avoidance. The data in Table 4-11 provide a summary of certain income tax administration activities during the 1985-1987 period. These data do not show a significant broadening of the tax base by adding new PAYE employers to the tax rolls, but they do show a significant improvement in audit and inspection activities.

Economic Effects

Has the tax structure reform led directly to an improvement in the performance of the Jamaican economy? The fact is that the economy has performed far better than expected. Corporate profits are up—through August 1987 the 16 largest listed companies reported post-tax profits 84 percent higher than the same period last year. The Jamaican stock exchange had record growth during 1986 and 1987. The market index went from 941.5 at the end of 1985, to 1,499.8 at the end of 1986, to 1,757.7 in September 1987.

Of course, the tax reform has been only one of a number of positive factors affecting the Jamaican economy. The nominal interest rate dropped from 23 percent at the beginning of 1986 to 16.7 percent in the fall of 1987, perhaps due in part to the reduction in marginal tax rates; but most important, oil prices were down. The real growth in exports was up by 10.3 percent in 1986 over the 1980-1986 period average. Real GNP increased by 2.1 percent in 1986. The rate of inflation declined from 25.7 percent for all of 1985 to 15.1 percent for 1986, and was about 7 percent for 1987. There was, therefore, some increase in the real rate of interest. On the basis of available evidence, no one could argue the extent to which these changes are due to the individual and company tax reform, but many, including the Prime Minister, would be prepared to argue that so favorable a performance of the Jamaican economy could not have taken place under the old regime.[27]

To the extent that the income tax reform has stimulated economic growth, one would look to three areas. First, by increasing the revenue flow it reduced the fiscal deficit, relieved some of the pressure from the International Monetary Fund (IMF) and World Bank, and perhaps increased the overall level of confidence in the Government. The facts are clear that the deficit has been reduced in 1986 and 1987, and the Government of Jamaica did pass its IMF fiscal tests in 1987. The "confidence factor" is not measurable, but it is important.

A second possible effect is an increased work effort and an increased propensity to invest and to take risks. These changes would be a partial response to the lower marginal tax rates. However, there is no way to measure or even estimate this with available data, although the small increase in the number of taxpayers (see Table 4-11) suggests no significant movement from the informal to the formal sector.

Third, one might expect some portfolio adjustments to the reform. The 33 1/3 percent tax on deposit interest on accounts over J$2,000 should have stimulated activity in the stock market, in direct investment and perhaps in real estate. The aggregate effect on the savings rate is unclear. On the one hand a lower marginal tax rate in the top bracket should stimulate savings, but on the other hand, the tax on interest and removal of the savings credits under the income tax might dampen the savings rate.

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[27] Prime Minister Seaga is quoted in *The Daily Gleaner*, October 10, 1987.

TABLE 4-11
INDIVIDUAL INCOME TAX ADMINISTRATION ACTIVITIES

Activity	January to June 1985	January to June 1986	January to June 1987	Change 1985-1986	Change 1986-1987
New Taxpayers (Employers) Enrolled	---	1,809	1,158	---	- 651
Returns Filed					
PAYE (Employers)	7,580	12,196	9,096	4,616	- 3,100
Individual[a]	9,417	6,525	5,421	- 2,892	- 1,104
P-35 Files Examined	1,244	1,831	11,362	587	9,531
Delinquency Forms Issued[b]	361	2,146	1,991	1,785	- 155
PAYE Refunds					
Number[c]	1,336	3,241	1,237	1,905	- 2,004
Amount[d]	J$ 0.691	J$ 2.4	J$ 1.6	J$ 1.709	-J$ 0.8
Audit Activities					
Additional Taxes[d,e]	J$ 2.35	J$ 0.424	J$ 4.2	-J$ 1.926	J$ 3.776
Tax per Case	J$ 2,270	J$ 8,317	J$ 2,984	J$ 6,047	-J$ 5,333
PAYE Returns Examined	28,006	6,389	3,572	- 21,617	- 2,817
Special Investigation					
Additional Tax[d]	J$ 2.4	J$ 4.2	J$ 8.3	J$ 1.8	J$ 4.1
Additonal Tax per Case	J$61,974	J$107,692	J$438,578	J$45,718	J$330,881

[a]Final and estimated.

[b]Years of assessment, for individuals

[c]Individuals and PAYE.

[d]Millions of Jamaican dollars.

[e]From audit and adjustment.

SOURCE: Income Tax Department, unpublished summary of operation reports for 1984-1987.

The Unfinished Reform Agenda

The individual income tax reform is a substantial policy achievement for Jamaica. It greatly simplifies the administration of the system and makes compliance easier, it removes many tax distortions, and by broadening the tax base it significantly lowers the high marginal income tax rate that was seen as a major disincentive to investment, work effort, and full compliance with the tax law. The new system also improves horizontal equity by the elimination of perquisites and credits, and the taxation of interest income and allowances has made the income tax more vertically equitable. The bonus that came to the Government as a result of the tax reform was a strong revenue performance, some new-found investor confidence in the Government's policies, and apparently a widespread political acceptance of the reform.

The Jamaican income tax reform, though it went much further than most tax structure revisions, has left some needed structural changes undone. Unless these issues are addressed, some of the important gains from the reform may be eroded. Moreover, there are the inevitable problems that creep into any reformed system in its first years of operation: administrative difficulties, ambiguities in the legislation, and loopholes that taxpayers are far more adept at identifying than are the tax reform designers.

The major structural problem with the Jamaican reform is that it leaves open some perquisite loopholes. The treatment of nontaxable allowances for automobiles, housing, and especially uniforms and laundry gives away too much in some cases and is unclear in others. There is already evidence of abuse. A lesson that should have been taken from the experience in the late 1970s and early 1980s is that income taxpayers will take advantage of any loophole, and there will be a migration of "legal allowances" to these categories. Predictably, our sample survey taken in the first year of the reform showed a substantial increase in the amount of uniform allowance claimed. There are legitimate cases for uniform and laundry allowances where uniforms cannot be worn outside work. But the business suits of hotel managers and the regular clothing of government workers carries the allowance too far. The Government should rescind its own liberal policy of granting uniform allowances and should pass detailed regulations that leave little room for discretion.

The housing and automobile (traveling) allowances are potentially greater loopholes because their benefits accrue disproportionately to the higher income classes and because the amounts involved can be quite large. The ceilings on the amount of taxable housing and automobile allowances are currently very low. The Government should move quickly to close these loopholes. In the case of travel, only those expenses that are directly related to earning income, and only those that can be verified by receipt should be allowed. The regular journey to work is not a legitimate (or administrable) deduction and should not be allowed. The assignment of company cars should be fully taxed and the valuation should reflect the market value of the automobile. Travel allowances are a problem that many countries around the world grapple with, and there is a rich experience on which the Government of Jamaica may draw. In the case of housing, the ceiling should be removed, and all in-kind housing and housing allowances should be treated as ordinary income and taxed accordingly.

These are tough reforms and they call for taking the final steps in revoking preferential treatments that have been given to certain Jamaicans. Still, the basic premise of the tax reform is to be fair by providing the same treatment to all taxpayers, and there is no room for such arbitrary preferential treatments. It is also important that methods of doing business not be guided by the tax system, e.g., requiring uniforms to take advantage of a uniform allowance, providing more company cars, making special lease-rental arrangements to qualify for a preferential tax treatment of housing, etc. In implementing a tighter policy for allowances, the Government could take three steps:

- Allow the Income Tax Commissioner less discretion in deciding what will be a taxable allowance and what will not be. The present situation puts the Commissioner in an impossible situation, and it makes the income tax more arbitrary than it should be. Regulations should be rewritten to make it quite clear what is eligible for tax relief and what is not.

- Perquisites should be disallowed as deductions in computing the company income tax liability. The exception here would be legitimate costs of doing business that can be verified by receipt.
- The elimination of relief for perquisites should be accompanied by other tax reforms to soften the pain, such as the removal of the Education Tax and an increase in the standard deduction above J$8,580.

Tax Rates and Standard Deduction

The reformed individual income tax is too income elastic, since its revenues automatically increase at about twice the rate at which income increases. This situation poses a dilemma. On the one hand the Government is a beneficiary of a substantial revenue increase. So long as one believes that government investment is an appropriate route to economic development, the high elasticity may pose no great problem. On the other hand, a high income elasticity means that the income tax burden will automatically increase. If this is seen as an unwanted drain on the private sector and a hardship on individuals, then there will be pressure to enact discretionary changes to bring about tax relief. These discretionary changes, inevitably year to year and *ad hoc*, could eventually compromise the achievements of the reform program.

The Government could follow one of two courses of action in dealing with this problem. First, and probably best, the standard deduction could be indexed to the rate of inflation. This would get around the problem of having to make a discretionary adjustment in the standard deduction every year, it would hold down the increase in the tax burden to match the growth in GNP, and it would derail the demand for discretionary adjustments in the tax structure. More important, it would hold harmless from tax increases those lower income Jamaicans who have experienced no increase in their real income position.[28] The biggest problems with this proposal are (a) that it would slow the automatic revenue growth so that the Government could not spend at the same rate as it presently can, and (b) that it would be difficult to update the inflation factor for indexation.

The second alternative is to make discretionary adjustments in the standard deduction and to lower the general rate of tax to below 33 1/3 percent. This also is feasible, and can achieve many of the same advantages as above. Moreover, it could have a greater stimulative effect on the economy because of the lowering of the marginal tax rate. It also has disadvantages. One is that there will have to be a discretionary adjustment and a political argument—every year—about how to alter the rate and the standard deduction level. This may politicize revisions in the tax structure to a much greater extent than ought to be the case. Another problem is that with reductions in the flat rate tax, there will be pressures to reduce the rate of corporation taxation below 33 1/3 percent. These problems might be overcome by the appointment of a semi-permanent Tax Reform Committee to review the situation every year and make recommendations to the Government.

Payroll Taxes

As noted in Chapter 6 in this volume, the payroll tax system has not been restructured. Reform in this area is imperative for several reasons. First, with base broadening under the income tax, there is an automatic increase in the burden of payroll taxes. Is such an increase warranted? The desired increase in the support for the pension and housing benefit programs depends on the objectives of these programs and their actuarial positions. This set of programs is in need of review. A second reason is that some of the

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[28] Those with high incomes are not held harmless in the same way. Assume a person with income (Y) and tax (T), i.e., $T = .333(Y - J\$8{,}580)$. After tax income ($Y^*$), then, is $Y^* = Y - T = .667Y - J\$2{,}859$. If income in period $t+1$ increases by r due to inflation and if the standard deduction is indexed, then taxes are $T_{t+1} = .333(1 + r)(Y - J\$8{,}580)$ and after tax income $Y^*_{t+1} = (1 + r)[y - .333(y - J\$8{,}580)]$. If a taxpayer has income of J$8,580 or less, $Y^*_{t+1} = (1 + r)Y^*_t$ and there is no change in the real income position. If pre-inflation income is greater than J$8,580, then real income is reduced by $(1 + r)(.333Y - J\$2{,}859)$.

goals of the income tax reform may be compromised by keeping the present payroll system intact. For example, payroll taxes impose a substantial average rate on employees and employers and may undermine some of the rate cutting objectives of the reform.

A separate issue is those payroll taxes that are more in the vein of income tax surcharges, i.e., the Education Tax and the Human Employment and Resource Training (HEART) tax. These should be abolished as separate taxes. They are nothing more than a surcharge on the wage portion of income taxes, and in effect represent a second income tax but one with a different base and rate structure. The Education Tax, since it supports no particular service, should be merged with the general income tax. Similarly, there is no good reason why the HEART program support could not be raised from the general income tax.[29] All of these recommendations are taken up in more detail in Chapter 6.

Dividends

Dividends are still taxed twice under the reform system. They are taxed as personal income when received and are taxed in their undistributed form as company profits. Why does this create a problem? Some would argue that this inhibits the full development of a capital market in Jamaica and denies Jamaican firms a source of investment capital. Moreover, there has been discriminatory treatment of dividend income in the past. The taxation of interest removes some of the disparity between returns from bank deposits and dividends, but exemption of dividends from personal income taxation would bring about a full parity.

The integration of company and personal taxes with an exemption of dividends from the personal income tax might also be argued on defensive grounds. At the margin it would discourage capital flight and encourage income tax compliance. It would head off well-meaning but ill-conceived schemes to provide dividend tax relief or compensating tax credits that might have a deleterious effect on another part of the system. Finally, it would set the stage for a proper treatment of dividend income in the future, and this action might boost general investor confidence in Jamaica.

The revenue loss from dropping the personal tax on dividends is inconsequential, and so—we would have to admit—are the induced allocative effects. Still, it would seem better to get the prices right now than at a later time when the larger amounts involved would make the issue more controversial. The argument against detaxing dividends starts with the small amounts involved, i.e., there is little to be gained in the short run. It weighs this against the political cost of detaxing a "big man's income" while taxing a "small man's income" (interest). Integration is a difficult concept to sell to the general public. Despite these problems, there are many good reasons for the Government to reconsider its position on the taxation of dividends.

Administration

A basic tenet of the Jamaica tax reform was to begin by getting the tax structure "right" and then moving to a comprehensive reform of the administration. The tax structure is now significantly better, and major improvements have already been made in the administration of the system. A training program for revenue agents and line officers has been established, most procedures are under review, and a computer center with the capacity to modernize the assessment, collection and audit functions is now in place. Despite these major gains, much is to be done.

Without question, the top priority for administrative reform is to reach the self-employed, or the "hard-to-tax." To bring this group fully into the income taxpaying population would provide enough base expansion to drop the tax rate to well below 30 percent. A first step in this direction is to register the self-employed. Since we know this will not come about voluntarily, a program to use "third party information"—other evidence of their income level, such as real property ownership or even a driver's license—must be aggressively implemented. In this connection, the

[29] There is a benefit argument for financing the HEART (employment training) program with a tax on wages paid by employers. This is taken up in Chapter 6 in this volume.

Government still does not have a unique business and individual taxpayer identification numbering system in place. Until this is accomplished, it is not possible to tie data bases together and use third party information to expand the size of the tax base.

Even with a good data base, there is the question of the skill of government assessors, the procedures for going after evaders, and the will of the Government to enforce the income tax. An adequate training program is underway and will put government examiners and auditors on a technical par with even the larger evaders, and modern procedures for assessment of the self-employed are being developed within the Jamaican Income Tax Department. Whether the Government will tax and penalize many of its leading businessmen and professionals remains to be seen.

One cannot overestimate the importance of administrative improvements. There are probably few government investments in Jamaica that could yield any greater return than a program to bring the self-employed into the tax base.

Timing

It is important that the Government act quickly to close off the loopholes it has left open in the tax reform, to finish the business of structural reform, and to bring the self-employed into the tax net. As Jamaica and many other countries have learned, tax preferences become entrenched and the resistance to removing them grows with time. It will be difficult to "get back" the housing, automobile, and uniform allowances without making great concessions and/or paying a heavy political price. The longer the Government waits to solve this problem, the worse it will become and the more politically difficult it will be to deal with.

There also is something to be said for the introduction of another reform *package*, as opposed to *individual* measures. The payroll tax adjustments—especially abolition of the education tax—can bring considerable relief and satisfaction to Jamaican taxpayers, as could an indexed standard deduction. These changes plus a rate reduction would create a setting where the elimination of the remaining allowance loopholes and the exemption of dividends could have a good chance of political acceptance.

It should be emphasized that tax reform is a continuing process. In the case of Jamaica, a major problem promises to arise in connection with the failure to index the standard deduction. If an indexation procedure is not put in place, then it is imperative to examine carefully the options for reform in the rate and base structure on a periodic basis. To take on *ad hoc*, piecemeal reforms at budget time every year is to invite a compromise of what is now a rational income tax system in favor of special interests. Perhaps a better way to do things would be to call for a biennial review of the need for rate and base adjustment, and perhaps to appoint a private sector advisory body to make recommendations. One lesson from the income tax reform of 1986 was that such an advisory body could play a very productive role.

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There also is something to be said for the introduction of smaller reform packages, as opposed to "wholesale" reforms. The payroll tax adjustments—especially abolition of the education tax—[illegible] considerations, then add some [illegible] to Jamaican taxpayers, as would an indexed standard deduction. These changes plus a rate reduction would create a setting where the elimination of the allowances [illegible] and the exemption of [illegible] could have a good chance of political acceptance.

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Appendix 4
Estimation of the Tax on Interest Income for Calendar Year 1987

We begin with data on deposits in financial institutions over the period January-May and data on the interest tax over the period January-November. Certain assumptions are then made that enable us to repeat the process described in the chapter.

Income Tax Revenues 1987
(amounts in millions of Jamaican dollars)

	January to March 1987	January to November 1987
Banks & Trust Companies	J$ ---	J$ ---
Bauxite Companies		
Other companies	278.2	516.9
Individual PAYE	198.7	649.5
Individual Other	11.9	44.3
Interest Income	62.6	299.3

SOURCE: Revenue Board (preliminary, unpublished).

Assume that Tax on Interest Income Jan-Dec 1987 =(J$299.3 x 12)/11 = J$326.51 million.

Assume that commercial banks deposits attain their average values in May and trust companies and merchant banks attain their average in June. These data can be obtained from the *Statistical Digest and Economic Bulletin* of the Bank of Jamaica.

Assume that Credit Union deposit growth rate falls by about 3 percent per year.

Growth Rate

1983 = 21.1
1984 = 18.0
1985 = 13.1
1986 = 10.1

Imputed Growth Rate in 1987=7.0

Credit Union Deposits in 1987 =

1.07 x J$363.1=J$388.5 million

Assume that the quarterly growth in building society deposits stays constant in the first two quarters of 1987. Also assume that building society deposits attain their average in June.

Quarterly Growth in Deposits

Q3 1986 = 8.94
Q4 1986 = 7.44
Q1 1987 = 7.04

Given that building society deposits at

March 1987 = J$1,046.103, then
June 1987 = 1.07 x J$1,046.103 = J$1,119.3 million

Amount of untaxed interest in 1987 =

J$1,182.614 - J$979.527 = J$203,087 million

We allocate all untaxed interest to individuals.

Therefore, taxed interest income of individuals =

J$666.27 - J$203.087 = J$463.183 million

Commercial Bank Deposits	J$5,358.765 million
CB Deposits held by Individuals	3,584.284
Building Society Deposits	1,119.330
BS Deposits held by Individuals	559.665
Credit Union Deposits	388.5
Merchant Bank Time Deposits	392.8
Deposits Held in Trust Companies	785.6
Total Deposits in Tax Base	8,044.995
Total Deposits of Individuals	4,532.449
Average CB Interest Rate (%)	14.7
Total Interest Income	1,182.614
Interest Income of Individuals	666.270

__Scenario 2__

Taxed Interest Income	J$979.527 million
Taxed interest Income/Individuals	463.183
Total Tax on Interest Income	326.509
Tax on Individual Interest Income	154.394

SOURCE: Bank of Jamaica, *Statistical Digest* (various years); Bank of Jamaica, *Annual Report 1986*; Bank of Jamaica, *Economic Bulletin*, June 1987.