

# SAVINGS FUNCTIONS FOR TRINIDAD AND TOBAGO

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E.M. Ekanayake and E.B.A. St. Cyr

## I. INTRODUCTION

This paper investigates the behaviour of savings in Trinidad and Tobago during the period 1955-1987 with a focus on the determinants and impact of savings under different economic conditions. It carries out a comparative analysis of the causes and variations in the savings rate during the pre-boom, the boom and the post-boom periods through an economic investigation. The research is motivated by the external indebtedness and balance of payments deficit facing the country, mainly as a result of current economic recession, and by the emphasis given in recent years to the structural adjustment programmes. These programmes will have to be financed mostly from domestic resources and their success will mainly depend on the level of national savings.

Postwar experience in many developing countries has confirmed the significance of the domestic savings rate for capital accumulation and other goals. Given the close link between savings, capital accumulation and economic growth, the necessity to understand the determinants of savings rates can hardly be exaggerated. In spite of the importance of savings for economic development, the formulation and implementation of policies designed to increase the savings propensity has suffered from a paucity of knowledge regarding the nature of the savings function. Therefore, the formulation of policies designed to raise the level of savings in any economy, as well as the analysis of the importance of the savings effort as an independent determinant of economic progress, requires a theoretical identification of factors which influence savings behaviour.

Taking as given an appreciation of the importance of savings in the economy and knowledge of theoretical perspectives on savings

behaviour, we proceed to present the empirical results of our study and go on to trace the policy implications.

## II. ANALYSIS OF CROSS SECTION DATA: HOUSEHOLD SAVINGS BEHAVIOUR

Household Budget Surveys have been conducted in Trinidad and Tobago in 1957/58, 1971/72, 1975/76, 1981/82 and 1988. The results of the last four surveys are analyzed, the last two from raw data. For purposes of analysis, unpublished data for the 1635 households surveyed in 1981/82 and the 1674 in 1988 were grouped, with outliers removed and the results presented in Table A1, while data for 1971/72 and 1975/76 were taken from summaries given in the Central Statistical Office publications HBS 1-2 of July 1974 and Report No. 2 of 1978 respectively. Data for 1957/58 were not analyzed. In these surveys the reference period is one month with income and expenditure being average monthly income and average monthly expenditure of spending units over a six month period. Since the analysis is based on grouped data (group means), weighted least squares was used, with weights proportional to the square root of the frequency of each income group. Thus in the analysis, savings is measured as the difference between the average monthly reported income for the group and average monthly expenditure. Results are presented in linear, semi-log and quadratic models.

(a) Linear Model:  $S_i = a + bY_i$  ,  $a < 0$  ,  $0 < b < 1$

TABLE 1 : HOUSEHOLD SAVINGS FUNCTIONS

Survey Year	Parameter Estimates for		R <sup>2</sup>	F-ratio	No. of Observations
	a	b			
1981/82	-5892.9* (4.1000)	0.3610* (4.1311)	.32	17.07*	36
1988	-7122.8* (6.1121)	0.2242* (3.2028)	.21	10.27*	36

Note: Figures in parentheses are absolute values for t-ratios.

\* Indicates significance at 1.0 percent level.

The results indicate that all coefficient estimates have correct signs and are therefore consistent with a priori expectations. The value of  $R^2$  indicates that for 1981/82 the model explains 32.0 percent of the variation in savings while for 1988 it explains approximately 21.0 percent of the variation. The applicability of the Durbin Watson statistic is limited in the case of cross-section data and are not reported. Though the computed F-statistics are highly significant, the linear model does not provide a very tight fit to the observed data, as measured by the value of  $R^2$ .

Estimates of the marginal propensity to save of these households in 1981/82 and 1988 are presented in Table 2.

TABLE 2 : MARGINAL PROPENSITIES TO SAVE IN 1981/82 AND 1988

Survey Year	MPS	95% Confidence Intervals for Estimated MPS
1981/82	0.3610	(0.1886 - 0.5334)
1988	0.2242	(0.0870 - 0.3614)

The estimated values of the MPS indicate that, between these two survey years, the propensity to save by households in Trinidad and Tobago has decreased considerably. The downturn of the economy since 1982 may have partially contributed to the decreased savings habits of households. Falling nominal and real incomes and increasing unemployment have been the major characteristics of the economy during this period. For instance, the rate of unemployment increased from 13.4 percent in 1982 to 22.0 percent in 1988. Similarly, the nominal GDP decreased from TT\$19175.5 million in 1982 to TT\$16607.4 million in 1988. The corresponding constant 1970 price GDP estimates for these years were TT\$2990.2 million and TT\$2083.0 million respectively. These figures suggest that rising

unemployment and falling incomes have contributed adversely to people's ability to save.

The decrease in savings during this period can also be seen clearly from Table A1. In 1981/82 nearly 23.0 percent of households showed positive savings while in 1988 this percentage had declined to 7.3 percent. During this period, household's real monthly income, at which positive savings appears, declined from TT\$2600 in 1981/82 to TT\$2492 in 1988 indicating that households have become poorer.

(b) Semi-log Model:  $S_i = a + b \log Y_i$ ,  $a < 0$ ,  $b > 0$

Since the linear model does not provide a very good fit to the observed data, two other models, viz the semi-log model and the quadratic model, were examined in an attempt to obtain a model that provides a better fit to the data. The estimated results of the semi-log model are presented in Table 3. These results indicate that the semi-log model neither provides correct signs for the estimated coefficients nor fitted the data at all well. The results of the semi-log estimation are not discussed further.

TABLE 3 : HOUSEHOLD SAVINGS FUNCTIONS : SEMI-LOG MODEL

$$S_i = a + b \log Y_i + U_i$$

Survey Year	Parameter Estimates for		R <sup>2</sup>	F-ratio	No. of Observations
	a	b			
1981/82	8081.0* (4.0244)	-195.85* (4.6999)	.38	22.09*	36
1988	3406.1 (2.2955)	-162.08* (5.2704)	.43	27.78*	36

Note: Figures in parentheses are absolute values at t-ratios.

\* Indicates significance at 1.0 percent level.

(c) The Quadratic Model:  $S_i = a + bY_i + cY_i^2$  and  $S_i = d + eY_i^2$

Two forms of quadratic models were estimated and the results given in Table 4(a) and Table 4(b).

TABLE 4(a) :  $S_i = a + bY_i + cY_i^2 + U_i$

Survey Year	Parameter Estimates for			$R^2$	F-ratio	No. of Observations
	a	b	c			
1981/82	-4198.3* (6.4191)	-0.2165* (3.5003)	0.0001* (11.9840)	.87	116.13*	36
1988	-5623.7* (7.8847)	-0.1960** (2.9401)	-0.00001* (7.9957)	.72	46.62*	36

Note: Figures in parentheses are absolute values of t-ratios.

\* Indicates significance at 1.0 percent level.

\*\* Indicates significance at 5.0 percent level.

The results presented in Table 4(a) indicate that the former form of the quadratic model shows improved fit.  $R^2$ , t-ratios and F-ratio suggest a good fit and the signs of the estimated coefficients indicate a u-shaped savings function. The latter form of the quadratic model also fits reasonably well to the data. The estimated models presented in Table 4(b) indicate signs of the parameter estimates more consistent with a priori expectation and are also statistically significant at 1.0 percent level. The values of  $R^2$  and F-ratio suggest that the fit of the model is good. It can be concluded that the quadratic model is superior to the linear model in each of the above cases.

TABLE 4(b) : HOUSEHOLD SAVINGS FUNCTIONS; QUADRATIC MODEL

$$S_i = d + eY_i^2 + U_i$$

Survey Year	Parameter Estimates for			F-ratio	No. of Observations
	$\bar{d}$	e	$R^2$		
1981/82	-5589.9* (6.8686)	$0.8072 \times 10^{-4}$ * (8.9236)	.69	80.17*	36
1988	-7093.8* (11.5370)	$0.4979 \times 10^{-4}$ * (7.3209)	.61	54.87*	36

Note: Figures in parentheses are absolute values of t-ratios.

\* Indicates significance at 1.0 percent level.

The marginal propensities to save (MPS) for the latter quadratic form equations would be given by the equations

$$MPS_i = 0.1614 \times 10^{-3} Y_i \quad \text{for 1981/82}$$

$$\text{and } MPS_i = 0.9958 \times 10^{-4} Y_i \quad \text{for 1988.}$$

Based on these relations, values of the MPS at various levels of income in 1981/82 and 1988 were calculated and are presented in Table 5. The results indicate that the MPS values are generally higher in 1981/82 than in 1988, as was also evident from the values obtained from the linear model. However, the values of the MPS obtained from the quadratic model are generally considerably lower, especially at lower levels of income. Nevertheless, the values of the MPS at the average level of income are closer to those obtained under the linear model, and also lie within their estimated confidence intervals. These estimates also reveal that the MPS for lower income groups is lower than that for high income groups.



TABLE 5 : MARGINAL PROPENSITY TO SAVE AT  
VARIOUS LEVELS OF INCOME 1981/82 AND 1988

Monthly Income (TT Dollars)	MPS Based on 1981/82 HBS Data	MPS Based on 1988 HBS Data
500	0.0807	0.0498
1000	0.1614	0.0996
1200	0.1937	0.1195
1400	0.2260	0.1394
1600	0.2582	0.1593
1800	0.2905	0.1792
2000	0.3228	0.1992
2200	0.3551	0.2191
2400	0.3874	0.2390
2600	0.4196	0.2589
2800	0.4519	0.2788
3000	0.4842	0.2987
Average Income <sup>1</sup>	0.2996	0.1784

<sup>1</sup> The average incomes for the sample of 1981/82 and 1988 households were TT\$1856.1 and TT\$1791.85 respectively.

In addition to the household savings functions estimated based on 1981/82 and 1988 HBS data, similar functions were estimated based on HBS data of 1971/72 and 1975/76. As was the case for the 1981/82 and 1988 data, various models were tested and these tests indicated that a quadratic model of the form  $S_i = a + bY_i^2$  was the preferred model form in both 1971/72 and 1975/76. Though the linear models also fitted fairly well to the data, the values of MPS implied were as high as 0.73 and 0.92. In addition, the signs of the estimated coefficients of the quadratic model  $S_i = a + bY_i + cY_i^2$  were not consistent with a priori expectation. Therefore, the results of the quadratic model of the form  $S_i = a + bY_i^2$  are discussed and presented in Table 6.

Statistically significant t-statistics, F-ratios and high  $R^2$  values suggest that the quadratic form savings models fit well to the data of 1971/72 and 1975/76. These two models together with

models estimated earlier can be used to assess the changes in the MPS over time. The MPS function and its values at the average level of income for the four surveys periods are presented in Table 7.

TABLE 6 : HOUSEHOLD SAVINGS FUNCTIONS: QUADRATIC MODEL

$$S_i = a + bY_i^2 + U_i$$

Survey Year	Parameter Estimates for			F-ratio	No. of Observations
	a	b	R <sup>2</sup>		
1971/72	-769.03 (1.1450)	0.1401 x 10 <sup>-3</sup> * (45.9540)	.99	2042.57*	12
1975/76	-3132.20* (5.7581)	0.1156 x 10 <sup>-3</sup> * (20.5680)	.97	422.11*	13

Note: Figures in parentheses are absolute values of t-ratios.

\* Indicates significance at 1.0 percent level.

TABLE 7: MPS FUNCTIONS AND VALUES OF MPS AT MEAN INCOME LEVELS: 1971/72, 1975/76, 1981/82 AND 1988

Survey Year	MPS Function	MPS at Mean Level of Income	Mean Level of Income (TT\$)
1971/72	$MPS_i = 0.2802 \times 10^{-3}Y_i$	0.097	346.18
1975/76	$MPS_i = 0.2312 \times 10^{-3}Y_i$	0.119	514.71
1981/82	$MPS_i = 0.1614 \times 10^{-3}Y_i$	0.300	1856.41
1988	$MPS_i = 0.0996 \times 10^{-3}Y_i$	0.178	1791.85

The values of estimated MPS presented in Table 7 suggest that the propensity to save by households in Trinidad and Tobago

increased over the period 1971/72 to 1981/82, especially during the boom period. Thereafter, it has dropped significantly.

From the foregoing analysis it seems that the quadratic model is the most appropriate functional form for household savings in Trinidad and Tobago and also that the MPS is higher during the boom period than in the pre-boom (1971/72) and post-boom (1988) periods. It is also apparent that lower income groups generally have negative savings and a gradual decrease in dissavings is apparent as income increases, with the higher income groups always achieving positive savings. This pattern is evident throughout the period under consideration. Since both the marginal and average propensity to save are higher in high income groups, it would appear that any scheme to mobilize household savings should pay greater attention to this group in the society.

### III. ANALYSIS OF TIME SERIES DATA: AGGREGATE SAVINGS FUNCTIONS

The aggregate savings functions discussed in the present paper can be categorized into two major types of savings functions, viz a simultaneous-equation savings model and single equation savings models.

#### (a) A Simultaneous-Equation Model of Savings in Trinidad and Tobago

This is based on a model developed by Leff and Sato (1975) for analysis of savings behaviour in developing countries. The use of a simultaneous-equation model is justified by tests of causality undertaken in this study. These tests indicated that there exists feedback between savings and income but a unidirectional causality from interest rate to savings. Consequently it is necessary to consider the simultaneous determination of savings and investment in order to avoid bias in the parameter estimates of savings

functions. The simultaneous equation model thus specified is given

by the following reduced form equations,<sup>1</sup>

$$SAV_t = (1 - k) SAV_{t-1} + ka \Delta GNP_t + b IR_t$$

$$INV_t = b_0 + b_1 \Delta GNP_{t-1} + b_2 FCI_t + b_3 IR_t$$

$$0 < k < 1, \quad a > 0, \quad b > 0, \quad b_1 > 0, \quad b_2 < 0, \quad b_3 > 0$$

where SAV is gross domestic savings;  $\Delta$  GNP is change in gross national product; IR is the rate of interest; INV is gross domestic investment; FCI is foreign capital inflows; k is the adjustment parameter relating actual to desired savings; and a is the desired asset-income ratio.

The model was estimated using the two-stage least squares method. Model estimation was undertaken for different time periods in order to capture any significant changes in parameter estimates during the pre-boom periods. The estimated parameters indicated

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<sup>1</sup> In the model, actual savings (SAV) and desired savings (SAV\*) is assumed to be given by the following partial adjustment model:

$$SAV_t - SAV_{t-1} = k(SAV_t^* - SAV_{t-1}), \quad 0 < k < 1$$

i.e.  $SAV_t = (1 - k) SAV_{t-1} + k SAV_t^*$

The desired asset-income ratio, 'a', is given by

$$a = \frac{AST^*}{GNP} = \frac{\Delta AST^*}{\Delta GNP} = \frac{SAV^*}{\Delta GNP}$$

where AST\* stands for desired assets and  $\Delta$  denotes the change in the variable. It follows from this relation that

$$SAV^* = a \Delta GNP$$

and substitution for SAV\* in the model provides

$$SAV_t = (1 - k) SAV_{t-1} + ka \Delta GNP$$

An additional variable, viz the rate of interest (IR), is included in this equation providing the model to be estimated as

$$SAV_t = (1 - k) SAV_{t-1} + ka \Delta GNP + bIR_t$$

Out of interest we report the estimated investment equation for the period 1955 to 1987 to be

$$INV_t = -1515.2^* + 0.5803^* \Delta GNP_{t-1} + 0.2790 FCI_t + 428.06^* TDR$$

(3.4120)      (4.0761)      (1.3817)      (5.6691)

where TDR is time deposit rate and figures in parentheses are t-ratios.

that the fit of the model with real data was not as good as that with nominal data. Therefore, the parameter estimates obtained using nominal data are discussed here. Because inclusion of the rate of interest variable in the savings function produced insignificant parameter estimates with incorrect signs, it was dropped from the savings model in the final analysis. The

parameter estimates of the savings function under different time periods are presented in Table 8.

TABLE 8 : LIFE-CYCLE SAVINGS EQUATIONS FOR  
TRINIDAD AND TOBAGO

$$SAV = (1 - k) SAV_{-1} + ka \Delta GNP + U$$

Period	Parameter Estimates for			Implied Values for	
	(1-k)	ka	D-W	k	a
1955-87	0.6654* (7.5501)	0.8978* (4.4214)	1.60	0.3346	2.6832
1955-73	0.8238* (4.2889)	0.5860*** (1.7971)	2.74	0.1762	3.3258
1974-82	0.4052 (1.4140)	1.1061** (2.2661)	2.28	0.5948	1.8596
1983-87	0.9330* (5.3633)	0.8650** (2.1381)	2.11	0.0670	12.9104

Note: Figures in parentheses are absolute values of t-ratios.

- \* Indicates significance at 1.0 percent level,
- \*\* at 5.0 percent and
- \*\*\* at 10.0 percent.

The parameter estimates indicate that signs of the coefficients are consistent with a priori expectations and that both variables are statistically significant for all the periods under study except the period 1974-82. The implied value for k, the adjustment parameter, indicates a relatively slow adjustment of

actual savings to desired savings; period 1974-82, the boom period, shows the highest adjustment parameter while the lowest adjustment rate occurs in 1983-87. The coefficient of the  $\Delta$  GNP term suggests an income-elastic response of savings of a relatively large magnitude for all periods under study. The implied value for 'a' suggests relatively high desired asset-income ratios for all periods except the period 1974-82. Its high value indicates that people in Trinidad and Tobago desire to hold a relatively large proportions of their income in financial assets.

The estimated savings function can be further analyzed for its implications for economic development. Our estimates are used to check the prospects for raising the aggregate savings ratio in Trinidad and Tobago. According to Leff and Sato (1975), in a steady-state growth path, the savings function, the results of which are presented in Table 8, can be rewritten as:

$$\frac{S}{Y} = \frac{kag}{(g+k)}$$

where  $g = \Delta \text{GNP}/\text{GNP}_{-1}$ . The steady-state net savings ratios for Trinidad and Tobago are presented in Table 9.

TABLE 9 : STEADY-STATE AGGREGATE SAVINGS RATIOS FOR  
DIFFERENT RATES OF INCOME GROWTH (%)

Growth Rate of Income (g) (%)	Savings Ratio (S/Y) (%)
0.5	1.3
1.0	2.6
1.5	3.9
2.0	5.1
2.5	6.2
3.0	7.4
3.5	8.9
4.0	9.6
4.5	10.6
5.0	11.9

Though these estimates indicate that there are prospects for increasing savings ratios, they are not really as encouraging as might appear to be. This is because our sample in fact experienced a negative growth rate during the post-1982 period, though it was relatively high during the boom period. Rising aggregate savings ratios might occur as a result of an upward shift in the savings function over time. An upward shift may occur as a result of attitude changes or institutional changes in the course of the development process.

(b) **Single Equation Models of Savings for Trinidad and Tobago**

The major objective of the estimation of alternative single equation models of savings behaviour is to test the influence of different economic variables upon savings and to see whether such a function can adequately describe savings behaviour in Trinidad and Tobago. A single equation multiple regression model is applied to time series data for testing different functions.

(i) The Keynesian Absolute Income Model

The Keynesian absolute income hypothesis asserts that the absolute level of current income is the most powerful explanatory variable for current savings. The results of the estimated simple Keynesian model are given in Table 10. The function fits the data reasonably well for both the aggregate and per capita data.

At both levels, the estimated coefficient of the income variable is found to be statistically significant for all periods except for the period 1983-87. However, the intercept term,  $a$ , is found to be insignificant for almost all the periods and also has incorrect sign for the periods 1955-87 and 1974-82. The aggregate savings equation suggests an MPS of 0.189 while the per capita savings function suggests an MPS of 0.199 for the period 1955-87. In both cases, the MPS in the post-boom period 1983-87 is found to be larger than that in other periods. The results also indicate that the derived MPS varies between 0.18 and 0.43. The value of the average propensity to save (APS) varies between 0.12 and 0.32. At the aggregate level, the value of APS is not uniformly less than MPS as suggested by the Keynesian theory. However, at the per capita level, the values of MPS and APS are very close to each other suggesting a close-to-zero intercept term. Contrary to the pattern implied at the aggregate level, the estimated values of APS at the per capita level suggest that the APS for Trinidad and Tobago is rising over time, from 0.23 in 1955-73 to 0.32 in 1983-87.



TABLE 10 : KEYNESIAN SAVINGS FUNCTIONS FOR  
TRINIDAD AND TOBAGO

$$\text{GNS} = a + b \text{ GNP} + U$$

Period	Parameter Estimates for		APS	R <sup>2</sup>	D-W	F-ratio
	a	b				
AGGREGATE:						
1955-87	176.9900 (0.9006)	0.1893* (8.9252)	0.219	.71	1.49	79.7*
1955-73	-49.0270 (1.9103)	0.2223* (11.6840)	0.177	.88	-1.90	136.5*
1974-82	817.1500 (1.2661)	0.2284* (3.9914)	0.304	.65	1.71	15.9**
1983-87	-5254.7000 (1.4191)	0.4321 (2.0898)	0.125	.46	2.86	4.4
PER CAPITA:						
1955-87	0.1268 (0.6901)	0.1987* (8.8599)	0.199	.71	1.49	74.4*
1955-73	-0.0664** (2.1836)	0.2325* (10.6690)	0.232	.86	2.00	25.1*
1974-82	0.7852 (1.2588)	0.2226* (3.7997)	0.223	.63	1.72	14.4**
1983-87	-2.8030 (1.2059)	0.3232 (2.1159)	0.323	.47	2.76	4.5

Notes: Figures in parentheses are absolute values of t-ratios.

\* Indicates significance at 1.0 percent and  
\*\* at 5.0 percent level.

The model was also tested using gross domestic savings in place of gross national savings as well as with the personal

disposable income, and with gross domestic product in place of gross national product. Of all these, the gross national savings and personal disposable income pair were found to fit reasonably well. These results indicate that the marginal propensity to save out of personal disposable income is greater than that out of national income, for all periods concerned, except for the period 1983-87. This finding is consistent with Williamson (1968) and Gupta (1970). However, in this case too, contrary to the Keynesian hypothesis, the MPS is not uniformly greater than the corresponding APS. At both aggregate and per capita levels, the derived MPS varies between 0.21 and 0.30 while the APS varies between 0.16 and 0.34.

Attempts were made to test the model using constant price observations. The results obtained were not impressive and therefore are not reported here. However, it was observed that the value of the MPS is relatively higher than that obtained using current price values.

The Keynesian absolute income model was also used to analyze the two major components of aggregate savings, viz private savings (personal savings plus corporate savings) and government savings. Private savings functions were estimated by regressing per capita private savings (PPRS) on per capita private disposable income (PPRDI) and the results are presented in Table 11.

The estimated coefficients of the income variable is highly significant for most of the periods and the model fits reasonably well for all periods except 1983-87.

TABLE 11 : PRIVATE SAVINGS FUNCTIONS FOR  
TRINIDAD AND TOBAGO

$$\text{PPRS} = a + b \text{ PPRDI} + U$$

Period	Parameter Estimates for		R <sup>2</sup>	D-W	F-ratio
	a	b			
1955-87	0.0112 (0.1081)	0.1230* (6.3609)	.54	2.06	38.1*
1955-73	-0.1271* (3.1704)	0.2455* (5.7371)	.64	1.56	32.9*
1974-82	0.2357 (1.0945)	0.1305* (3.9590)	.65	1.96	15.7**
1988-87	0.3113 (0.6227)	0.0592 (1.1500)	.85	2.42	19.7**

Note: Figures in parentheses are absolute values of t-ratios.

\* Indicates significance at 1.0 percent and  
\*\* at 5.0 percent level.

In the case of government savings, the main difficulty was to find a suitable explanatory variable. Experiments with several variables such as gross national product, current government revenue, and government revenue from taxation indicated that current government revenue (GOVR) appeared to provide the best results. These are presented in Table 12. The regressions were carried out on a per capita basis.

TABLE 12 : GOVERNMENT SAVINGS FUNCTIONS FOR  
TRINIDAD AND TOBAGO

$$\text{PGOVS} = a + b \text{ PGVR} + U$$

Period	Parameter Estimates for		R <sup>2</sup>	D-W	F-ratio
	a	b			
1955-87	-1.4528 (1.1543)	0.2677* (4.4071)	.39	1.71	19.4*
1955-73	-0.0597* (4.9726)	0.1599* (3.2637)	.35	1.42	10.7*
1974-82	0.3807 (0.7851)	0.2693*** (2.1665)	.32	1.88	4.7
1983-87	-4.4918* (10.5680)	0.3476* (10.1440)	.96	2.65	24.3**

Notes: Figures in parentheses are absolute values of t-ratios.

- \* Indicates significance at 1.0 percent,
- \*\* at 5.0 percent and
- \*\*\* at 10.0 percent level.

The estimated coefficients are found to be significant and their signs to be consistent with a priori expectation for almost all the periods under study. However, the value of R<sup>2</sup> is relatively low. The positive value of the intercept for the period 1974-82 and the negative values for the other periods suggest that there may be some tendency for the government to save relatively more when government revenue is high.

The results presented in Tables 11 and 12 suggest that the MPS of the private sector declined over time while that of the government sector increased. It also appears that by and large the MPS of the government sector is high relative to that of the private sector.

(ii) **The Relative Income Model of Savings**

Following Duesenberry (1949), the relative income model of savings estimated in this paper takes the following form:

$$\frac{S_t}{Y_t} = a + b \frac{Y_t}{Y_0}, \quad b > 0$$

where  $S_t$  is savings,  $Y_t$  is current income in year  $t$ , and  $Y_0$  is the previous peak income. The national income statistics of Trinidad and Tobago indicate that the peak income level during the period under study was achieved in 1982. National income has followed a negative trend since 1982 and therefore, the income level in 1982 can be considered as the peak previous income for the period 1982-87. The estimated relative income savings functions for this period are presented in Table 13.

The results indicate that none of the models tested fit the data well. The main reason for the poor fit may be the very small sample size. The coefficient on the relative income variable is barely significant in two of the model forms tested. In all other cases, the coefficient is insignificant even though its sign is correct.

The relative income hypothesis is further examined with the help of another equation which was estimated to see whether there is any international demonstration effect. The results of this exercise are presented in Table 14. In estimating this model it is assumed that the consumption of the USA is a proxy for consumption in developed countries. Further, in estimating the model, all variables were expressed in US dollar terms. The official exchange rates were used for this purpose.

TABLE 13 : RELATIVE INCOME SAVINGS FUNCTIONS FOR  
TRINIDAD AND TOBAGO, 1982-1987

					R <sup>2</sup>	D-W	F-ratio	
(1)	$\frac{GNS_t}{GDP_t}$	=	-0.0602 + (0.3889)	0.2290 (1.3323)	$\frac{GNP_t}{GNP_{1982}}$	.13	2.69	1.78
(2)	$\frac{GNS_t}{GDP_t}$	=	-0.2535 + (1.4314)	0.4227* (2.2562)	$\frac{GDP_t}{GDP_{1982}}$	.45	2.94	5.09
(3)	$\frac{GNS_t}{GDP_t}$	=	0.0849 + (0.7889)	0.2590* (2.1766)	$\frac{PDI_t}{PDI_{1982}}$	.43	3.03	4.74
(4)	$\frac{GNS_t}{GNP_t}$	=	-0.0192 + (0.1005)	0.1507 (0.7110)	$\frac{GNP_t}{GNP_{1982}}$	.11	2.46	0.51
(5)	$\frac{GNS_t}{GNP_t}$	=	-0.2623 + (1.2960)	0.4416 (2.0622)	$\frac{GDP_t}{GDP_{1982}}$	.39	2.95	4.25
(6)	$\frac{GNS_t}{GNP_t}$	=	-0.0696 + (0.5406)	0.2520 (1.7467)	$\frac{PDI_t}{PDI_{1982}}$	.29	2.88	3.05

GNS = gross national savings; GNP gross national product; GDP = gross domestic product; PDI = personal disposable income; and the subscript 1982 indicates the value of relevant variable in 1982.

Note: Figures in parentheses are absolute values of t-ratios.

\* Indicates significance at 10.0 percent level.

TABLE 14 : RELATIVE INCOME SAVINGS FUNCTIONS FOR  
TRINIDAD AND TOBAGO, 1955-1987

$$\text{CON}_t^{\text{TT}} = a_0 + a_1 \text{GNP}_t^{\text{TT}} + a_2 \text{CON}_t^{\text{US}} + U_t$$

Period	Parameter Estimates for			R <sup>2</sup>	D-W	R-ratio
	a <sub>0</sub>	a <sub>1</sub>	a <sub>2</sub>			
1955-87	-24.8540 (0.2255)	0.5224* (13.9630)	0.1549 (1.3750)	.94	1.38	232.3*
1955-73	54.0850 (2.4834)	0.6013* (5.6229)	-0.4121 (0.2781)	.94	1.86	143.3*
1974-82	-170.0600 (0.2641)	0.5784** (3.1496)	0.0521 (0.0537)	.98	1.86	199.3*
1983-87	4410.7000 (3.0658)	0.4282* (5.6567)	-1.2301* (3.2373)	.99	2.49	998.7*

Note: Figures in parentheses are absolute values of t-ratios.

CON<sup>TT</sup> = consumption in Trinidad and Tobago;  
GNP<sup>TT</sup> = gross national product of Trinidad and Tobago; and  
CON<sup>US</sup> = consumption in the USA.

\* Indicates significance at 1.0 percent level  
\*\* Indicates significance at 5.0 percent level.

The results presented in Table 14 indicate that the function fits reasonably well for all time periods. Though the estimated coefficient of the income variable turns out to be highly significant for all periods, that of the US consumption variable is significant only for the period 1983-1987. The positive value of the estimated coefficient of the US consumption variable for the periods 1955-1987 and 1974-1982 confirms the international demonstration effect. However, there is no indication for such an effect during the pre-boom and the post-boom periods.

The marginal propensity to consume implied by the model is relatively low suggesting high marginal propensity to save. The

marginal propensity to save is increasing over time from 0.40 in 1955-73 to 0.57 in 1983-87. These estimates are considerably higher than those obtained under the Keynesian absolute income model.

(iii) The Permanent Income Model of Savings

The permanent income model, in its most simple form, can be expressed in the following linear form.

$$S_t = a_0 + a_1 Y_{pt} + a_2 Y_{Tt}, \quad a_1, a_2 > 0$$

where  $S_t$  is savings,  $Y_{pt}$  is the permanent income, and  $Y_{Tt}$  is the transitory income in year  $t$ . This model was tested using two definitions of permanent income. Following Friend and Taubman (1966) and Williamson (1968), in one case, it was defined as a three-year moving average of the current income while in the other case it was defined as a two-year moving average of current income, following Gupta (1970) and Chawdhury (1987). However, the permanent income obtained according to the former definition did not provide significant estimates. Therefore, only the results obtained using the permanent income according to the latter definition are discussed here. The results are presented in Table 15.



TABLE 15 : PERMANENT INCOME SAVINGS FUNCTIONS FOR  
TRINIDAD AND TOBAGO, 1955-1987

$$S_t = a_0 + a_1 Y_{pt} + a_2 Y_{Tt} + U_t$$

Parameter Estimates for						
Period	$a_0$	$a_1$	$a_2$	$R^2$	D-W	F-ratio
1955-87	59.0420 (0.4480)	0.1787* (11.5370)	0.6827* (6.9214)	.87	2.09	105.5*
1955-73	-8.0778 (0.3941)	0.1775* (7.4386)	0.8623* (3.9991)	.92	2.72	113.6*
1974-82	807.3000 (1.1171)	0.1820** (1.9531)	0.7383 (0.7823)	.59	1.84	6.6**
1983-87	-462.1500 (0.0761)	0.1733 (0.4850)	0.0554 (0.0929)	.37	2.08	0.1

Note: Figures in parentheses are absolute values of t-ratios.

\* Indicates significance at 1.0 percent level

\*\* Indicates significance at 5.0 percent level.

The results indicate that the permanent income savings model fits the data reasonably well for most of the periods concerned and thus appears to be relevant to Trinidad and Tobago. All the coefficients have correct signs and are significant in most cases. In accordance with theoretical expectations, the MPS out of transitory income is higher than that out of permanent income in all time periods except the period 1983-87. For the period 1955-87, the estimated values for  $MPS_s$  out of transitory and permanent incomes are 0.683 and 0.179 respectively. The corresponding values for the period 1955-1973 are 0.863 and 0.177 respectively.

#### (iv) The Life-Cycle Model of Savings

Following Leff (1969), the life-cycle model is used to test

the impact of dependency rate on domestic savings in Trinidad and Tobago. The following two models were estimated in logarithmic linear form:

$$\ln\left(\frac{S}{Y}\right) = a_0 + a_1 \ln\left(\frac{Y}{POP}\right) + a_2 \ln g + a_3 \ln DEP_1 + a_4 \ln DEP_2 + U$$

$$a_1, a_2 > 0, a_3, a_4 < 0$$

$$\ln\left(\frac{S}{Y}\right) = b_0 + b_1 \ln\left(\frac{Y}{POP}\right) + b_2 \ln g + b_3 \ln DEP + V$$

$$b_1, b_2 > 0, b_3 < 0$$

where  $\frac{S}{Y}$  is the gross savings ratio;  $\frac{Y}{POP}$  is the per capita income;  $g$  is the rate of increase in per capita income;  $DEP_1$  is the percentage of population aged 14 or less,  $DEP_2$  is the percentage of population aged 65 or older; and  $DEP$  is the total dependency ratio ( $DEP = DEP_1 + DEP_2$ ). These models were also estimated replacing the gross savings ratio ( $S/Y$ ) by per capita savings ( $S/POP$ ) and the results are reported in Table 16.

The results do not fully support the hypothesis that the dependency ratio is inversely related to a country's savings potential. The tests of significance indicate that the estimated coefficient of the dependency ratio of the population aged 65+ is statistically insignificant, though it is of correct sign in some cases. It can also be observed that the results obtained for each model form with different dependent variables are almost identical.

According to Leff (1969) the coefficient on the dependency ratio of the population aged 0-14 is much larger than that on the dependency ratio of the population aged 65+. However, Ram (1982) found that the coefficient on  $DEP_1$  is not always greater than that of  $DEP_2$ . Our results also suggest that in the periods 1964-82 and 1964-73, the magnitude of the coefficient on  $DEP_1$  is much greater than that on  $DEP_2$ . However, it appears fair to say that, in the case of Trinidad and Tobago, there is little indication of a significant adverse effect of dependency on savings.

TABLE 16  
PARAMETER ESTIMATES FOR SAVINGS FUNCTIONS FOR TRINIDAD AND TOBAGO, 1964-1982

Period	Dependent Variable	Independent Variable						R <sup>2</sup>	D-W	F
		Const.	ln(Y/POP)	ln(g)	lnDEP <sub>1</sub>	lnDEP <sub>2</sub>	lnDEP			
1964-82	S/Y	-16.411** (2.604)	0.656** (2.214)	0.020 (0.166)	4.011** (2.382)	-0.371 (0.270)	--	.51	1.57	5.6**
	S/Y	-17.511** (2.402)	0.483* (3.699)	0.015 (0.144)	--	--	-4.108** (2.173)	.50	1.51	7.0*
	S/POP	-16.411** (2.604)	1.656* (5.337)	0.020 (0.166)	4.011** (2.382)	-0.371 (0.270)	--	.96	1.57	117.1*
	S/POP	-17.511** (2.402)	1.483* (11.356)	0.015 (0.144)	--	--	-4.108** (2.173)	.96	1.51	149.0*
1964-73	S/Y	26.545*** (2.182)	-1.064 (1.048)	-0.294 (1.356)	-8.861*** (2.075)	4.292 (1.122)	--	.98	2.90	87.4*
	S/Y	20.496*** (2.315)	0.156* (3.699)	-0.547* (0.144)	--	--	-5.645** (2.173)	.98	2.54	164.2*
	S/POP	26.545*** (2.182)	-0.064 (0.063)	-0.294 (1.356)	-8.861** (2.075)	4.292 (1.122)	--	.97	2.90	86.4*
	S/POP	20.496*** (2.315)	1.546* (10.312)	-0.547* (3.371)	--	--	-5.645** (2.484)	.98	2.54	151.8*
1974-82	S/Y	-0.303 (0.024)	-0.036 (0.053)	0.159 (0.614)	0.282 (0.091)	-1.209 (0.549)	--	.59	1.85	3.7
	S/Y	0.416 (0.030)	-0.300 (0.700)	0.043 (0.341)	--	--	-0.255 (0.739)	.45	1.89	3.1
	S/POP	-0.303 (0.024)	0.967 (1.526)	0.159 (0.614)	0.282 (0.090)	-1.209 (0.549)	--	.88	1.85	15.2*
	S/POP	-0.416 (0.030)	0.700 (1.635)	0.043 (0.341)	--	--	-0.255 (0.739)	.86	1.89	16.8*

\* Indicates significance at 1.0 percent level.

\*\* Indicates significance at 5.0 percent level.

\*\*\* Indicates significance at 10.0 percent level.

Note: Figures in parentheses are absolute values for t-ratios.

## (v) The McKinnon-Shaw Model of Savings

Granger tests of causality undertaken by the authors showed evidence of unidirectional causality running from the rate of interest to savings. Therefore, attempts are made to deal with the issue of interest responsiveness of savings in context of the McKinnon-Shaw thesis.

The theoretical background of the proposition of a positive interest responsiveness of savings is found in the McKinnon-Shaw model based on theories developed by McKinnon (1973) and Shaw (1973). Following Fry (1978) attempts are made to test the validity of the McKinnon-Shaw model of Trinidad and Tobago using the following model:

$$\frac{S_d}{Y} = f \left( g, y, r, \frac{S_f}{Y}, \left( \frac{S_d}{Y} \right)_{-1} \right)$$

where  $S_d/Y$  is the domestic savings rate,  $g$  is the real rate of growth in income,  $y$  is the real per capita income,  $r$  is the real interest rate,  $S_f/Y$  is foreign savings rate, and  $(S_d/Y)_{-1}$  is lagged domestic savings ratio. Variables  $y$ ,  $r$  and  $S_f/Y$  are assumed to be exogeneous within the framework of this function.

The savings functions estimated by the two-stage least squares (TSLS) estimation method are presented in Table 17. For this exercise the following variables are taken as exogeneous: growth rate of population; real exports; real investment; the foreign savings ratio; the ratio of export to GNP; the real rate of interest; logarithm lagged per capita real money stock; lagged domestic savings ratio; and logarithm per capita real income.

The results presented in Table 17 indicate that the model does not fit the Trinidad and Tobago data. The real rate of interest,  $r$ , does not exert a positive influence on the savings rate. However, signs of all the other coefficients estimated agree with a priori expectation. The negative coefficient on the foreign savings rate suggests that it constitutes a substitute for domestic

savings. One possible reason for not observing the desired sign for the coefficient on the real rate of interest might be the use of the observed inflation rate in place of expected inflation rate when measuring the real rate of interest. However, a more comprehensive treatment of this issue should consider the overall context in which financial liberalization policies are usually implemented and the corresponding linkages with concurrent policies.

TABLE 17  
SAVINGS FUNCTIONS FOR TRINIDAD AND TOBAGO, 1966 - 1987

Dependent Variable	Constant	Independent Variables					R <sup>2</sup>	F
		g	y	r	S <sub>t</sub> /Y	(S <sub>d</sub> /Y) <sub>-1</sub>		
S <sub>d</sub> /Y	0.1788** (2.6588)	0.0137** (2.2333)	0.0001 (0.2533)	-0.0077** (2.1748)	-0.3038 (1.2607)	0.0744 (0.1963)	.71	9.5*
S <sub>d</sub> /Y	0.1777** (2.8654)	0.0126* (4.8124)	0.0001 (0.1734)	-0.0077** (2.3638)	-0.2784 (1.4798)	--	.74	14.3*

\* Indicates significance at 1.0 percent level.

\*\* Indicates significance at 5.0 percent level.

Note : Figures in parentheses are absolute values of t-ratios.

TABLE 18 : FOREIGN CAPITAL INFLOWS AND DOMESTIC SAVINGS  
IN TRINIDAD AND TOBAGO, 1955 - 1987

$$S/Y = a_0 + a_1 F/Y$$

Period	$a_0$	$a_1$	$R^2$	F-ratio
1955-87	0.1962* (17.7090)	-0.7161* (5.9510)	.52	35.4*
1955-73	0.1969* (25.6810)	-0.0468 (0.3598)	-.05	0.1
1974-82	0.2732* (13.3030)	-0.5503* (3.9516)	.65	15.6*
1983-87	0.1555* (9.7781)	-0.2696 (1.0219)	.26	1.1

$$S = b_0 + b_1 Y + b_2 F$$

Period	$b_0$	$b_1$	$b_2$	$R^2$	D-W	F-ratio
1955-87	-23.2880 (0.2033)	0.2109* (16.5171)	-0.9310* (7.9508)	.91	1.71	155.2*
1955-73	-41.4300 (1.6653)	0.2339* (11.7570)	-0.1517 (1.1065)	.88	1.67	69.8*
1974-82	-342.6100 (1.5772)	0.2773* (16.7980)	-0.9436* (9.6566)	.97	2.45	148.8*
1983-87	-998.9000 (0.4651)	0.2981 (0.9740)	-0.3288 (1.0130)	.40	1.67	0.7

\* Indicates significance at 1.0 percent level.

Note : Figures in parentheses are absolute values of t-ratios.

(vi) Foreign Capital Inflows and Savings

The hypothesis that foreign capital inflows reduce domestic savings is tested in this paper to check its relevance to Trinidad and Tobago. Using data covering the period 1955-1987, we have tested the relationship between foreign capital inflows and savings in Trinidad and Tobago using two alternative models. The results are presented in Table 18. Variable S stands for domestic savings, Y for gross national product, and F for foreign capital inflows.

The results indicate that generally model form 2 fits the data better than model form 1 does. It is interesting to note that the coefficients on foreign capital inflows in both of the models are negative for all periods considered. However they are statistically significant for only the periods 1955-87 and 1974-82. Thus, there is evidence to suggest that foreign capital inflows reduce domestic savings.



(vii) Exports and Savings

Several studies of savings in developing countries have found that exports and domestic savings are positively related to each other (see Maizels 1968; Chenery and Eckstein 1970; Lee 1971; and Ramsaran 1988). In actual specifications of empirical equations, these studies have incorporated exports in several alternative ways. In the current paper two models are estimated to test the effect of exports on savings in Trinidad and Tobago.

Following Chenery and Eckstein (1970) a model was estimated and the results are reported in Table 19.

TABLE 19 : EXPORTS AND SAVINGS IN TRINIDAD AND TOBAGO, 1955-1987

$$S = a + bY + C (X/Y) + u$$

Period	Parameter Estimates for			R <sup>2</sup>	D-W	F-ratio
	a	b	c			
1955-87	-1435.7000 (1.4060)	0.2148* (4.3395)	2461.0000 (1.8113)	.36	1.68	8.3*
1955-73	- 116.1100 (1.1624)	0.2528* (8.2353)	94.4490 (0.8177)	.88	2.02	67.2*
1974-82	-4411.3300 (1.2582)	0.3293* (3.7398)	8339.0000 (1.5477)	.69	1.66	9.8**
1983-87	-68993.0000* (6.1476)	2.2915* (6.4675)	9998.8716* (6.1870)	.90	1.41	21.1***

Note : Figures in parentheses are absolute values of t-ratios

S = gross domestic savings;

Y = gross national product;

X = merchandise exports.

\* Indicates significance at 1.0 percent,

\*\* at 5.0 percent, and

\*\*\* at 10.0 percent level.

The results suggest that the model fits the data reasonably well. However, the coefficient on the exports to gross national product ratio is found to be significant only for the period 1983-87. It should be noted that the sign of this coefficient is positive for all periods considered and is consistent with a priori expectations.

The second model tested is mainly intended to test the Maizels hypothesis. It is hypothesized that the coefficient on exports in an aggregate savings model would be statistically significant as well as be larger than that on non-export income (i.e. GDP - exports). Testing of this hypothesis concerning Trinidad and Tobago required estimation of two simple models, the estimated results of which are presented in Table 20.

It can be noticed in table 20 that the inclusion of exports as an explicit variable results in a marked improvement of  $R^2$  as suggested by Maizels (1968) and Lee (1971). The export variable is significantly positive for all the periods considered. Non-export GDP variable is also significant in all the cases. The coefficients of the second equation show that the values of the coefficients on exports (X) are much larger than that on non-export income (GDP - X).

On the whole, our regression results are consistent with the Maizels hypothesis. Exports seem to be more significant than non-export GDP. The signs are consistently correct in the case of exports. As expected by Maizels, the variations are much better explained by the second equation than by the first equation. However, these results do not allow us to make any precise statement with respect to the relationship between exports and savings, though savings appear to be positively related to exports.

TABLE 20 : EXPORTS AND SAVINGS IN TRINIDAD AND TOBAGO, 1955-1987  
(Testing Maizels' Hypothesis)

$$S_t = a + b \text{ GDP}_t + U_t$$

Period	a	b	R <sup>2</sup>	F-ratio
1955-87	152.3900 (0.8120)	0.1910* (9.6981)	.73	94.1*
1955-73	-30.4270 (1.5473)	0.2104* (13.5040)	.90	182.4*
1974-82	817.1500 (1.2661)	0.2432* (3.9149)	.69	16.0*
1983-87	-525.7000 (1.4191)	0.4326* (2.0642)	.48	4.7

$$S_t = c + d (\text{GDP}_t - X_t) + eX_t + V_t$$

Period	c	d	e	R <sup>2</sup>	D-W	F-ratio
1955-87	-23.2880 (0.2033)	-0.2319* (7.4700)	0.9754* (17.2300)	.96	1.15	389.5*
1955-73	-41.4300 (1.6653)	0.2204* (5.8076)	0.2266* (3.0761)	.88	1.90	64.3*
1974-82	-342.6100 (1.5772)	-0.1677* (4.3444)	0.9334* (15.9660)	.99	2.99	836.3*
1983-87	-998.9000 (0.4651)	0.3598* (7.8771)	3.7145* (6.0789)	.99	2.55	967.2*

\* Indicates significance at 1.0 percent level.

Note : Figures in parentheses are absolute values of t-ratios

#### IV MAJOR FINDINGS, CONCLUSIONS AND POLICY IMPLICATIONS

In this research study we have tested some conventional hypotheses of savings with a view of ascertaining their relevance to the Trinidad and Tobago situation.

The results of the study demonstrate that the quadratic model was the most appropriate functional form for an analysis of household savings in Trinidad and Tobago. Since both the marginal and average propensity to save are found to be higher in high income groups, it would appear that any programme to mobilize household savings should pay greater attention to this group of the society. From Table 5 there is seen to be an unambiguous positive correlation between the savings rate and income level, both across households and through time. This is reinforced by results presented in Table 7. It would seem, therefore, that given the need to raise savings as implied by the persistent negative saving-investment gap, incentives would be given at the upper income levels with greater success.

The parameter estimates of the simultaneous-equation model suggest a relatively slow adjustment rate of actual to desired savings. They also indicate relatively high desired asset-income ratios. Its high value indicates that people desire to hold a relatively large proportion of their income in assets. Though the steady-state savings ratios implied by this model indicate that there are prospects for increasing savings ratios, they are not really as encouraging as might appear to be.

The results of the estimated Keynesian savings function indicate that the function fits reasonably well at both aggregate and per capita levels. This functional form is also found suitable for an analysis of private and government savings. Moreover, they suggest that the propensity to save by the private sector has been declining over time while that of the public sector has been increasing. This implies that the private sector saves

progressively less of its income over time. However, savings by the private sector is vital for the development of any developing country. Therefore, suitable measures should be taken to enhance private sector (corporate and household) savings in Trinidad and Tobago.

The relative income savings function appears to be inappropriate for an analysis of savings in Trinidad and Tobago. However, when the model was used to check whether there is indication of an international demonstration effect, it appears that there had been such an effect during the periods 1955-87 and the shorter boom period 1974-82. The model also suggests that the MPS is increasing over time.

The permanent income savings function appears relevant to analyse savings behaviour in Trinidad and Tobago. The MPS out of transitory income is higher than that out of permanent income. This is consistent with theoretical expectations. However, the MPS out of transitory income is not equal to unity as assumed by Friedman. A thorough empirical verification of this theory has been very difficult since the partition of observed income into its permanent and transitory components has always been done somewhat arbitrarily.

The hypothesis that the dependency ratio is inversely related to a country's savings potential is not fully supported by the estimated results of the life-cycle hypothesis. The elasticity coefficient on the dependency ratio of the population aged 0-14 years is much larger than that of the population aged 65 years and over. This result is acceptable since, in the case of Trinidad and Tobago, the proportion of population under 14 years is substantially higher than that over 65 years. However, there is some little indication of a significant, adverse effect of dependency on savings.

The proposition of a positive interest responsiveness of savings is not supported by the evidence pertaining to Trinidad and Tobago. The McKinnon-Shaw model does not appear suitable for an analysis of interest responsiveness of savings. One possible reason for not getting the expected sign for the coefficient on the real rate of interest might be the use of the observed inflation rate instead of expected inflation rate when measuring the real rate of interest. A more comprehensive treatment of this issue should consider the overall context in which financial liberalization policies are usually implemented and the corresponding linkages with concurrent policies.

Foreign capital inflows appear to lead to a reduction in domestic savings in the case of Trinidad and Tobago. This finding has been supported by a number of researchers in the field. Some of the channels through which an increase in foreign capital inflows may lead to reduced domestic savings are: a decline in public sector savings either as a result of reduced tax receipts or as a result of changes in the composition of government expenditures; a decline in private sector savings due to particular disincentives to save; and a decline in domestic savings caused by the stimulation to consume importables and exportables.

Exports appear to exert a positive influence on domestic savings in Trinidad and Tobago. It also seems to support the view that exports have a much larger impact on domestic savings than non-export GDP, supporting the Maizels hypothesis.

All in all, our empirical results reveal that savings are mainly determined by income. Among other factors which appear to impact on savings are the dependency rate, foreign savings, foreign capital inflows, and exports.

TABLE : A1  
MONTHLY SAVINGS AND INCOME IN TRINIDAD AND TOBAGO  
HOUSEHOLD BUDGETARY SURVEY DATA

Income Group (TT \$)	1981/82		1988	
	Savings (TT \$)	Weight <sup>1</sup>	Savings (TT \$)	Weight <sup>1</sup>
0 - 099	- 935.87	77	-1004.16	108
100 - 199	- 519.35	82	- 737.50	38
200 - 299	- 434.80	58	- 593.74	103
300 - 399	- 748.44	31	- 673.63	56
400 - 499	- 599.75	40	- 585.21	68
500 - 599	- 1189.41	35	- 628.48	55
600 - 699	- 750.11	70	- 732.38	58
700 - 799	- 635.96	49	-1085.75	40
800 - 899	- 595.93	75	- 736.87	49
900 - 999	- 629.98	66	- 948.58	48
1000 - 1099	- 668.85	71	- 849.57	59
1100 - 1199	- 684.93	35	- 975.54	53
1200 - 1299	- 632.10	68	- 921.17	70
1300 - 1399	- 743.59	43	- 837.11	49
1400 - 1599	- 628.91	88	- 775.42	114
1600 - 1799	- 702.84	101	- 921.52	84
1800 - 1999	- 529.90	72	- 978.19	67
2000 - 2199	- 697.77	95	- 845.46	71
2200 - 2399	- 542.46	50	- 801.34	57
2400 - 2599	- 39.17	53	- 942.77	45
2600 - 2799	183.06	32	- 579.54	50
2800 - 2999	242.23	29	- 461.57	42
3000 - 3499	- 205.54	87	- 836.02	84
3500 - 3999	74.29	57	- 129.61	38
4000 - 4499	476.29	48	- 200.98	46
4500 - 4999	961.22	33	84.38	33
5000 - 5499	989.25	28	14.46	30
5500 - 5999	1054.75	16	- 994.43	9
6000 - 6499	1901.23	15	- 691.14	11
6500 - 6999	1747.50	10	-1186.25	8
7000 - 7499	2622.79	7	1388.83	6
7500 - 7999	4439.17	3	- 566.75	4
8000 - 8499	5810.00	2	1852.59	11
8500 - 8999	1109.50	1	3169.50	2
9000 - 9499	3545.45	4	1309.90	5
Over 9500	5810.00	4	396.17	3

1. Number of households for the income group.  
Source: Household Budget Surveys - Unpublished Data: Central Statistical Office, Trinidad and Tobago.



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