THE ECONOMIC EFFECTS OF TAX INCENTIVES ON THE MUTUAL FUNDS INDUSTRY IN BARBADOS

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The main hypothesis of the paper is that as a result of the tax incentives offered to the Barbados mutual fund industry the demand for these products is not significantly related to their return. To investigate this hypothesis, the paper estimates a model of the demand for mutual funds and test whether the coefficient of the return on mutual funds can be restricted to zero. The paper finds that the main determinants of the demand for mutual funds in Barbados are income and previous investment inflows, while the return on the fund and other mutual funds do not significantly influence demand. (JEL G11, G18)

I. INTRODUCTION

Tax incentives – employing the tax code to encourage certain behaviours, products or production processes – are in use around the globe. Auerbach and King (1983), building on the work of Brennan (1970), provide the earliest direct analysis of portfolio choice in the presence of differential taxation. The fundamental result from this study is that investors' portfolio choices are affected by the after-tax returns on each asset and that differing fiscal treatments of assets will result in investors deviating more from the market portfolio to the lightly taxed assets.

A number of studies, surveyed in Poterba (2001), have provided empirical evidence to support the main results of Auerbach and King. Some authors have argued, however, that tax incentives do not always influence consumer's portfolio decisions. Jappelli and Pistaferri (2004 and 2003) report that the tax deductibility of home mortgage interest and life insurance premiums had little

or no impact on the demand for mortgage debt or life insurance, respectively. The authors attribute their results to a reluctance to commit to long-term saving, anticipation of future liquidity constraints, minimum investment requirements and a lack of knowledge of the tax incentives. Similarly, Farinella and Kock (1999), examining the impact of the Securities and Exchange Commission amendment to rule 2a-7 that would reduce the overall risk of taxable money market mutual funds, found no significant change in the demand for retail money market mutual funds in the United States of America.

Since the introduction of the 1996 income tax amendment allowing persons to deduct up to $10,000 of their investments in mutual funds for tax purposes, the market has grown appreciably. While in 1998 the total assets of the industry were just $44 million, by 2004 this figure had jumped to almost $300 million[1] – a more than six-fold increase during the period. If the market is able to maintain this rapid pace of expansion, the total assets of the mutual fund industry should cross the $1 billion landmark within five years (2010) or earlier. While the development of the mutual fund market can add to stock market liquidity in Barbados and the Caribbean (as funds seek alternative investment opportunities), it can also be a source of financial sector risk if fund managers in their effort to obtain higher returns expand into relatively risking areas of investment.

This study attempts to add to the growing literature on the effects of tax incentives on portfolio composition, by providing an assessment of the 1996 Amendment to the Barbados Income Tax Act on the demand for mutual funds. The paper tackles two main issues: has the amendment altered the demand for mutual funds and has the shift in demand for mutual funds impacted on other categories of the consumer's asset portfolio (mainly savings deposits). To test this hypothesis a demand for mutual funds model is estimated using panel data for the period 1987 to 2004. The study assumes that if the coefficient of the return on mutual funds variable can be restricted to zero, this can provide some evidence that individuals purchase shares in mutual funds principally to reduce their tax liability. The paper then extends these findings to investigate whether the incentives offered has resulted in individuals switching some of their assets from savings accounts to mutual fund accounts.

The remainder of the study is organised as follows: In Section II, the laws regulating the mutual fund market are described along with the possible implications on the market; Section III examines the growth and performance of mutual funds in Barbados while Section IV empirically models the impact of tax incentives on mutual fund demand and consumer portfolio choices; The final section of the paper presents a summary along with some policy recommendations.

II. REGULATORY FRAMEWORK

The mutual fund market was formally regulated for the first time in 1998 with the passing of the Mutual Fund Act, 1998. The legislation outlined the regulations concerning authorisation and control of Funds and their Administrators when carrying on business in or from Barbados. The Act also covered issues related to licensing and registration, supervision and enforcement and powers of the Barbados Securities Exchange. The Act was repealed and replaced by the Mutual Fund Act, 2002. The main difference between the 'old' and 'new' Mutual Funds Acts is that the

[1] Assets of the mutual fund industry were approximately 2.8% of total financial sector assets at the end of 2003.

'new' legislation replaces the Barbados Securities Exchange with the Barbados Securities Commission[2] as the sole regulator, granting it greater regulator powers, and improved the corporate governance structure of the industry somewhat. The remainder of this section will therefore focus on the Mutual Fund Act of 2002.

A. Licensing and Registration

The mutual fund business in Barbados is defined as "the holding of equity interest in the form of shares and the pooling of investor funds with the aim of spreading investment risk and enabling investors in the mutual fund to receive profits or gains from the acquisition, holding, management or disposal of investments." Any investment vehicle falling in the above definition must be licensed[3] in order to conduct or attempt to conduct business in Barbados. A Fund can only be granted a licence to carry on business in Barbadosif it is based in or has a registered office in the island; its shares are listed on the stock exchange, and; that the minimum value of shares that may be purchased by a prospective investor in the fund is not less than BDS$100.

Besides the general mutual fund license, a Fund can also apply for a Limited Investors Mutual Fund Licence or an Exempt Mutual Fund Licence. The Limited Investors Mutual Fund Licence is granted to Funds whose shares are held by less than fifteen investors (the majority of whom are capable of appointing and removing the operator of the fund), or in the case of the investor being a corporation, that corporation does not have more than four beneficial owners[4]. An Exempt Mutual Fund Licence, in contrast, may be granted to an existing mutual fund that is licensed in a foreign jurisdiction provided that the Fund is not suspended from operating in that jurisdiction and they appoint an agent to represent them in Barbados.

A mutual fund licence is withdrawn if the Fund ceases to engage in "mutual fund activity", or if the license holder is insolvent or is dissolved. The Securities Commission can also annul a licence if annual licence fees are in arrears (and the licensee fails to pay the fee after written notice by the regulator) or the Fund does not comply with the requirements of the Mutual fund Act regulations or any direction from the Commission. The withdrawal of a licence, however, does not release the Administrator of the Fund, or anyone connected to the operation of the fund from any contractual obligations or fiduciary duties owed to the fund or shareholders.

B. Operation and Administration of the Fund

The management of a Fund falls under the purview of an Administrator. The Administrator is responsible for maintaining the records of the fund (income statement, balance sheet, statement of investment portfolio and portfolio transactions and a statement of changes in net assets) and making them available for inspection and to shareholders, maintaining a portion of the funds

[2] The Barbados Securities Commission is an independent government agency established under the Securities Act 2001. The Commission administers and enforces the Securities Act and regulates trading in securities and exchange contracts.

[3] The cost of a mutual fund license and other associated fees are outlined in the Mutual Funds (Fees) Regulation, 2000. To acquire a license an application fee of $10,000 is required with an annual renewal fee of $5,000.

[4] The beneficial owners are the individuals who enjoy the benefits of owning a security or property, regardless of whose name the title is in.

assets in cash or short-term high liquid investments, maintaining a surplus of assets over liabilities of about 10% and assuming the responsibility for the calculations of he fund's net asset value. The Administrator is also required to apply (at a cost of $10,000) to the Securities Commission for an Administrator license. This license must be renewed each year at a cost of $5,000 for a general Administrator license and $2,500 for a restricted Administrator license.

The Administrator of the Fund can be removed by the operator of the Fund if the Administrator goes into liquidation or becomes bankrupt, the operator is in the opinion that a change in Administrator is desirable or where the holders (whose shares carry voting rights of at least 50% in value of the shares issued) deliver a written request to dismiss the Administrator. After the decision to remove the Administrator, the Securities Commission has to be informed within seven days and the operator may appoint a new Administrator immediately after the dismissal, with the approval of the Commission. The Administrator is also liable to the investors for any losses incurred, provided it can be shown that these resulted from the failure to perform or improper performance of his/her obligations.

Although mutual funds are allowed to advertise their products to the public, the Act specifies what type of information the Administrator can include in these advertisements. The Act requires that the information presented should be accurate and contain sufficient information to ensure that they are not misleading. If the Fund is described as being authorised by the Securities Commission, it should also indicate that the Commission is not liable for the financial soundness of the fund.

C. Supervision

According to the Mutual Fund Act, the Securities Commission is the sole Administrator of the Act. Where the Commission is of the opinion that the mutual fund (or its Administrator) is carrying on businesses in breach of the Act, is unlikely to meet its obligations as they fall due, or winding up its business voluntarily in a manner prejudicial to its investors or creditors, the Commission can apply to the Court to preserve the assets of investors in the mutual fund or protect creditors. The actions the Commission are generally not restricted by the Act, but include the revocation of the mutual fund license, the appointment of a person to advise the fund on the proper conduct of its affairs or the appointment of a custodian.

While the Securities Commission is the sole regulator of mutual funds according to the mutual fund act, most funds are managed by commercial banks. This implies that the duties of the Central Bank of Barbados, in its role as supervisor of the banking system may overlap those of the Commission. Additionally, the Central Bank Act explicitly state that "the purposes of the Bank shall be … to promote a sound financial structure". Since the funds managed by mutual funds can act as a destabilising force on the financial industry, the Central Bank of Barbados through its Act, is also required to intervene in the market to insure that it does not destabilise the financial industry. Although this has not yet occurred, it is important that the regulatory roles of the Commission and Bank be examined further.

D. Tax Incentives

In order to stimulate the growth and development of the mutual fund industry, the income tax regulations were amended in 1996 (Income Tax Amendment No. 2, 1996-30) to allow persons to deduct up to $10,000 of investments in mutual funds from the calculation of taxable income. Amounts claimed for tax purposes, however, had to be held for at least 5 years with sums withdrawn within 5 years subject to personal income taxes in the year the withdrawal is made.

From an economic perspective, the deductibility of investments in mutual funds should have a positive effect on investments in mutual funds by increasing the effective average net asset value of the industry. This process is illustrated in Figure 1. The demand curve for mutual funds is upward sloping, as investors are willing to purchase more shares in mutual funds as the return on the fund rises. On the other hand, the supply curve is horizontal suggesting that fund managers are willing to accept any amount of investments and find investment vehicles that offer investors at least the current rate of return.

Before the 1996 income tax amendment, the industry's equilibrium is given by E_1, with investors willing to purchase I_1 shares at for a return on investment of V_1. After the amendment, with individuals allowed to deduct up to BDS$10,000 from their calculation of taxable income, the effective return on mutual funds rise to V_2. Investors are therefore now willing to purchase I_2 shares in mutual funds at the new equilibrium E_2. The deductibility of investments in mutual funds therefore expands the amount of mutual fund shares purchased.

III. GROWTH AND PERFORMANCE OF THE MUTUAL FUND INDUSTRY

The data used in this study are obtained from the annual reports of each fund between 1987 and 2004. The reports provide income statements, balance sheets, cash flow and a portfolio breakdown for the fund. The data collected shows that the 1996 amendment to the income tax regulations seems to have propelled growth in the mutual fund industry. In 1997, with only one fund in operation, the total assets of the industry was about $0.6 million or less than one percent of GDP. By 1998, with still only two funds in operation, the total assets of the industry had reached $45 million or about one percent of Gross Domestic Product (GDP). Since 1998, the total assets of the industry have doubled every two and a half years. Consequently, by the end of 2004, assets of the industry were about $276 million or just under 5% of GDP.

With such a high level of inflows into mutual funds and relatively low domestic interest rates, the industry struggled to find viable investment vehicles. Between 1999 and 2002, the average return (measured by the change in net asset value) for the mutual fund industry was zero. Seeking higher yields, the industry turned to the regional stock markets. Since 2002 more than $38 million has been invested in local and regional shares, and in turn bidding up the stock prices of regional companies. As a result of this strategy, the returns reported by the industry since 2002 have been impressive. The average fund reported a return of just over 7 percent in 2003 and 16 percent in 2004, with two funds obtaining a 30 percent increase in their net asset value in 2004.

The portfolio composition of mutual funds impacts on the profitability and risk of the industry. Mutual funds that invest primarily in fixed income securities are likely to have a lower risk

profile than those that have most of their shareholder's funds in equities, but will also have a relatively lower rate of return. Figure 2 provides the portfolio distribution of the mutual fund industry between 2000 and 2003. The chart shows that the industry has reduced the proportion of their portfolio in equities during the period. While in 2000 the industry had 53 percent of their portfolio in equities, by 2003 this figure had fallen to 38 percent; a significant portion of these equity holdings was in Caribbean stocks.

Fixed income securities however increased from 12 percent in 2000 to about 20 percent in 2003, primarily due to the launch of Fortress Caribbean High Interest Fund on May 17, 2002, which maintains almost all of its assets in fixed income securities. Holdings of investment properties remained constant over the two years at around 19 percent, with the Fortress Caribbean Property Fund owning most of these investment properties. Investments in collective investments funds went up from 11% in 2000 to 15% in 2003. Mutual funds tend not to invest all the money at their disposal, but instead maintain cash reserve balances. These balances are held for two primary reasons, the first being to keep money on hand for when shareholders decide to sell their shares and to provide the flexibility in the event of an opportunity arising in the market. On average local funds usually maintain health levels of cash ranging from about 5 to 8% between 1997-2004.

While the return on shareholder's investments has not always been stellar, most Funds have managed to maintain relatively healthy rates of profitability with both the return on equity (ROE) and return on assets (ROA) ratios rising over the period 1999-2004. The ROE ratio more than doubled during the review period, from 6.01 percent to 15.02 percent, while the ROA ratio grew by about 7.28 percentage points to 13.24 percent. However, in 2000 and 2001, both the ROE and ROA fell to around 3 percent because of low interest rates on fixed income securities and sluggish regional and international stock market performances.

One of the reasons the mutual fund industry in Barbados have managed to remain highly profitably has been through cost efficiencies. Mutual fund expenses and similar related fees can seriously erode wealth accumulation over time, as these fees are stealthy and go largely unnoticed by investors, while steadily diminishing the value of their investments. Offices are usually quite modest and some of the investment management functions have been delegated to specialised fund managers. To measure the cost efficiency of the industry, the authors calculated an expense ratio: the percentage of costs attributable to the running of the fund; the principal expenses are management fees, administrative cost and marketing or distribution costs. Over the period, management fees (% of total assets) and the expense ratio have been relatively constant at around 1.11 percent and 2.34 percent, respectively.

IV. THE ECONOMIC EFFECTS OF TAX INCENTIVES

A. Tax Incentives and Investment in Mutual Funds

Given the relatively low rates of returns in the industry, the amount of money that flowed into mutual funds between 1997 and 2002, does not seem to be consistent. Indeed, one can argue that persons seem to have been investing in mutual funds during this period primarily for the

associated tax benefits and not the rate of return on these assets. To test this hypothesis the authors estimate a demand for mutual funds function similar to that used by and Farinella and Koch (1999). The model assumes a semilog process with substitute instruments and is specified as follows:

$$\ln(1+inv_{it}) = b_1 \ln(1+inv_{it-1}) + b_2 \ln y_t + b_3 r_{it} + b_4 r_{jt} + b_5 rtry_t,$$

where inv_{it} is the investment inflows into the mutual fund, y_t is the personal income, r_{it} is the rate of return on a given mutual fund, r_{jt} is the average rate of return on the mutual funds in the industry and $rtry_t$ is the rate of interest on three month treasury bills.

The variable r_{it} under normal circumstances is expected to be positive because individuals are likely to invest more when the rate of return is higher. However, if investment inflows into mutual funds are due primarily to the tax incentives and not the rate of return, the coefficient is expected to be insignificant and not significantly different from zero. For the other control variables y_t should be positively related to investment inflows, while r_{jt} and $rtry_t$ (the rate of return on other mutual funds and the treasury bill rate) should be inversely related to investment inflows.

The model is estimated using pooled generalised least squares (EGLS) estimator and data for the period 1987 to 2004 and the results obtained are shown below (standard errors shown in parentheses below coefficients, while the p-values are given in parentheses beside the test statistics):

$$\ln(1+inv_{it}) = \underset{(0.138)}{0.522} \ln(1+inv_{it-1}) + \underset{(0.239)}{0.650} \ln y_t + \underset{(5.329)}{8.229} r_{it} + \underset{(9.654)}{3.425} r_{jt} - \underset{(0.118)}{0.018} rtry_t$$

$$\textit{Adjusted } R-\textit{squared} = 0.919$$

$$\textit{Serial Correlation LM} = 1.56 \quad (0.458)$$

$$\textit{White Heteroskedasticity Test} = 5.616 \quad (0.846)$$

The principal determinant of investment flows in the regression was income and the previous period's level of investment. The coefficient on personal income y_t and the previous period's investment in mutual funds are both positive and statistically significant. The coefficient on the variable of interest r_{it} is positive in accordance with prior expectations. However, a Wald test indicated that the coefficient is not significantly different from zero. Similarly, the coefficients on r_{jt} and $rtry_t$ are both insignificant, which implies that these variables have no effect on individuals decisions to invest in mutual funds. These results seem to support the authors' hypothesis that the rate of return on a mutual fund is not an important determinant of investment into mutual funds during the period.

B. Investments in Mutual Funds and the Demand for Savings Accounts

Investments in mutual funds in Barbados are fairly liquid assets: investors can usually withdraw funds with a minimum of advanced notice. This characteristic, combined with the inherent tax benefits of holding mutual fund accounts – can encourage some individuals to shift some of their savings – normally held in low interest-bearing accounts at commercial banks into mutual fund accounts.

To test this hypothesis, the authors estimate a standard savings demand function and augment it with the flows into mutual fund accounts. The savings demand (s_t) function used in this study is specified as:

$$\ln s_t = b_0 + b_1 \ln r_t + b_2 \ln y_t \qquad (3)$$

The independent variables in the equation are the rate of interest on savings deposits (r_t) and personal income (y_t). It is anticipated that r_t should be positively related to the demand for savings (i.e. $b_1 > 0$), since consumers save more as return from doing so rises, while the coefficient on y_t should also be positive (i.e. $b_2 > 0$) since savings tend to rise as income levels increase.

To test whether investments into mutual funds help to explain personal savings dynamics in Barbados, Equation (3) is augmented with the natural logarithm of the purchases of shares in mutual funds ($\ln MF$). It is anticipated that the coefficient on this variable will be negative suggesting that persons are switching some of their savings into mutual fund accounts. However, it is possible that the coefficient could be positive which would indicate that mutual funds have encouraged individuals to save more.

Equation (3) is estimated using the method of ordinary least squares and data for the period 1987 to 2004 and the results are presented below (standard errors shown in parentheses below coefficients, while the p-values are given in parentheses beside the test statistics):

$$\ln s_t = 3.314 + 0.021 \ln r_t + 0.413 \ln y_t - 0.005 \ln MF$$
$$\quad (0.671)\ (0.015) \qquad (0.087) \qquad (0.003)$$

$$\begin{aligned} &\textit{Adjusted } R-\textit{squared} && = 0.998 \\ &\textit{Jarque}-\textit{Bera} && = 1.413\ (0.493) \\ &\textit{Serial Correlation LM} && = 1.146\ (0.353) \\ &\textit{White Heteroskedasticity Test} && = 2.454(0.102) \end{aligned} \qquad (3)$$

The coefficients on the control variables r_t and y_t are in accordance with *a priori* expectations. The coefficient on the variable of interest, $\ln MF$, is significant (at the 10 percent level of testing) and negatively signed suggesting that investors in mutual funds tend to shift some of their savings away from commercial banks and into mutual fund accounts. The size of the coefficient, however, is relatively small. This is reflective of the size of personal savings deposits in Barbados relative to shares held in mutual fund accounts: domestic savings deposits per capita was estimated at US$ 4,405 in 2004 compared to US$508 for per capita mutual fund accounts.

The switch from low-interest commercial bank savings deposit accounts to mutual fund accounts has obvious benefits for the investor once the return on the fund remains above savings deposit rates and the tax breaks are maintained. However, a severe downturn in the fortunes of industry could lead to significant losses for the investor who has a large proportion of his/her savings in these accounts. Barbadian consumers should see mutual fund accounts as a component of a well-diversified asset portfolio rather than a vehicle for storing their savings.

V. CONCLUSIONS

The mutual fund market in Barbados has expanded and developed significantly within recent years. Between 1997 and 2004 total assets of the industry rose from below one percent of GDP to 5 percent of GDP in 2004 – rising by approximately $129 million between 2001 and 2002. With the exception of 2003 and 2004, however, the average return on mutual funds was just 2.7 percent. Nevertheless, the return on equity and the return on assets for the industry have remained quite healthy, at about 4.7 percent on average and reaching as high as 15 percent in 2004. These rates of profitability have been maintained primarily through cost containment with the total expense ratio being just over two percent for the sample period.

This paper estimated a demand for mutual funds function for the industry between 1987 and 2004. The results obtained seem to support the claim that investments in mutual funds are not linked to the economic fundamentals, as the rate of return on the fund itself or competing investment products are not significantly different from zero. The principal determinant of investments into mutual funds are national income and the previous levels of investments in mutual funds.

This characteristic, combined with the inherent tax benefits of holding mutual fund accounts, can encourage some individuals to shift some of their savings, normally held in low interest-bearing accounts at commercial banks, into mutual funds. To test this hypothesis, the authors also estimate a standard savings demand function and augment it with the flows into mutual fund accounts. The study finds that there exist a negative relationship between savings accounts and mutual fund accounts, which suggests that investors in mutual funds maybe shifting some of their savings away from commercial banks and into mutual fund accounts.

Finally, a number of policy recommendations can be made for the enhancement of the availability, usefulness and the reliability of the information provided by the mutual fund industry. These could include the quarterly submission of un-audited financial statements to the Securities Commission, the implementation of more detailed disclosure requirements and the stipulation of a consistent format for the presentation of the financial statements. These would enable current and prospective investors, as well as, other interested persons to make fully informed decisions about their investments. Placing emphasis on the independence of the board of directors of the funds can be another policy recommendation, as this would improve the board's ability to protect the interest of the shareholders.

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TABLE 1

Indicators of Mutual Fund Activity in Barbados

	1998	1999	2000	2001	2002	2003	2004
Total Assets ($ Million)	44.7	64.1	97.7	102.0	231.0	270.8	276.1
Net Asset Value ($)	4.96	4.52	3.40	3.10	2.18	2.24	3.26
Change in Net Asset Value (%)	-8.9	-24.7	-8.9	-29.7	2.6	45.7	-8.9
Return on Equity (%)	8.5	6.0	3.9	3.3	6.8	9.4	15.0
Return on Assets (%)	8.4	6.0	3.9	3.2	5.4	7.4	13.2
Total Expenses (% of Total Assets)	1.9	2.0	2.0	2.0	2.2	2.2	2.1
Management Fees (% of Total Assets)	1.4	1.5	1.2	1.2	1.1	1.2	1.2

FIGURE 1

The Effect of Tax Incentives on Investments in Mutual Funds

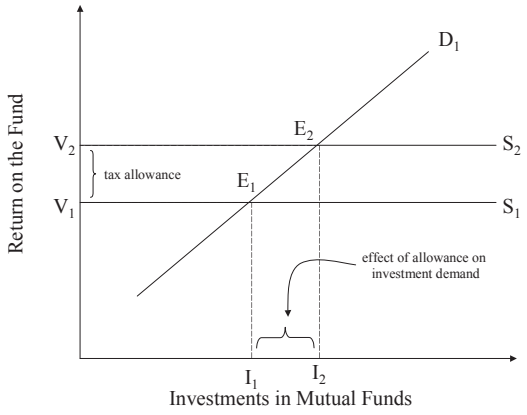

FIGURE 2

Portfolio Breakdown of Mutual Funds