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**THE DEVELOPMENT OF THE MARKET IN  
GOVERNMENT SECURITIES IN A LIBERALISING  
ENVIRONMENT: THE CASE OF BARBADOS**

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SECURITIES IN A LIBERALISING ENVIRONMENT  
- THE CASE OF BARBADOS -**

by

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## THE DEVELOPMENT OF THE MARKET IN GOVERNMENT SECURITIES IN A LIBERALISING ENVIRONMENT - THE CASE OF BARBADOS

For several years prior to the establishment of the Securities Exchange of Barbados, Government was able to attract considerable funding through the issue of 90 day treasury bills and long term debentures. Indeed, only in the Government sector was there activity in the secondary market. This lack of liquidity tended to restrict the purchase of financial instruments to institutional investors. With the establishment of the Central Bank, and the introduction of bill discounting by the Bank, the liquidity of these instruments improved, particularly treasury bills, but only for commercial banks.

Though returns on treasury bills tended to be higher than for 3 month deposits, few individuals participated in the tender, preferring the more familiar method of saving through the banking system. The process of tender and allotment was not unduly complicated, but seemed to be a deterrent to depositors. Most issues of government tended to be fully subscribed, thus permitting government to offer lower coupons and thus lower yields. Yield curves were for the most part upward sloping.<sup>1</sup>

Subscribers to government securities are principally commercial banks, the National Insurance Board and insurance companies, particularly life companies. The Central Bank and statutory corporations hold smaller amounts, while holdings by pension funds and individuals account for less than 7% of outstanding issues.

Commercial banks hold two-thirds of the short term market in government securities

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<sup>1</sup> Long term bonds issued by Government statutory corporations such as the Barbados Development Bank, the Barbados National Bank and even the Barbados Sugar Industries Limited, were all guaranteed by Government, and shared characteristics of liquidity and maturity structures similar to those of Government bonds.

and over 40% of the market in longer term securities. The secondary reserve requirement (presently 23% of deposits) creates a captive market in Government securities. This statutory requirement that banks hold government securities in their portfolios provides a guarantee of some minimum holding of Government securities by those institutions. However, only excess holdings are likely to be traded without creating reserve deficiencies for commercial banks.

The National Insurance Board holds about one third of the longer term securities market and ought to be a major player in an efficient securities market. Insurance companies hold approximately 10% of the longer term securities. Their investments are mainly in real estate, and mortgage loans but in the last year there was a marked shift into government securities influenced partly by low interest rates offered at commercial banks, higher holding costs of real estate and diminishing prospects of capital gains.

Compulsory holding by commercial banks of government issues tends to reduce the pressure to improve the liquidity of government instruments, by making these instruments more liquid for commercial banks, who represent the very broker/dealers who should have been initiating an active market in government securities.

The tax regime in Barbados is quite favourable to the development of a capital market. The absence of a tax on capital gains in Barbados has been a decided advantage to the development of the securities exchange. Government and government guaranteed debentures and bonds qualify for preferential tax treatment. Bonds issued by most statutory boards such as the Barbados Development Bank are tax free up to a maximum of \$20,000.

The securities market is dominated by Government securities which tend to overwhelm the equities market. There are considerably more government securities outstanding than shares in public companies and new issues of government

guaranteed securities on an annual basis far outweigh the issue of new shares in public companies.

There is an absence of effective dealers. Most members of the Exchange are brokers who do not hold an inventory of securities for their own account, but mainly act in the market to satisfy orders. The Exchange prefers a multi-function system or a specialist system. Some banks trade through the main commercial bank branch and others through their trust division. Most of the commercial banks are Canadian and are products of a system where there is separation of the banking and securities markets. (In the UK since the passing of the Financial Services Act of 1986, these functions can legally be performed by the same institution). The Exchange thus can be aid to permit a hybrid or multifunction approach to securities trading, but it is not clear that this has been a deliberate decision. The small size of the market also suggests that insistence on specialisation could be costly though the advantages of separation are that it encourages wider membership and prevents oligopolistic features.

The Government securities market has grown significantly over the past four years. The domestic securities market doubled between 1991 and 1993 and again in 1994 and government securities challenge in volume the level of bank deposits. At December 1994 Government securities amounted to \$1.6 billion and represented the equivalent of 72% of deposits of the commercial banks.

Instruments lack sufficient broad based liquidity. While 40% of deposits can be turned into cash on demand (notice is theoretically required for conversion of time deposits but in practice this does not obtain) typically only about one quarter of government securities are traded and this represents that portion of treasury bills held by commercial banks. In 1994 however, the Central bank traded on average almost \$300 million in treasury bills compared with the amount outstanding of \$581 million, a turnover of just over 50%.

Very few treasury notes or debentures are traded through the Central Bank on the secondary market (none were traded in 1994) and though government securities commenced trading on the Securities Exchange in 1991 to date trading has been extremely limited.

Individuals have been increasing their holdings of Savings bonds. At December 1994 \$50 million were outstanding. In recent years unit trusts have been active on the market but though they offer individuals both income and capital growth<sup>2</sup>, there has been no evidence of a shift out of Savings bonds into unit trusts. This is attributable largely to the tax free status of Savings bonds compared to the 12 1/2 % withholding tax which applies to income from unit trusts. In addition competition offered by Credit unions has declined with the removal of the advantage their members enjoyed in obtaining unrestricted credit and some proportion of such investors funds may be substituted for Savings bonds.

The distribution of debentures and treasury note holdings can be seen in the appendix.

There is growing, but not significant, competition with Government securities from the equities market. There are 18 companies listed on the Barbados Securities (SEB) with a total capitalization of \$1,035.0 million but much of this is closely held. Market size is equivalent to 60% of the government securities market.

### LEGISLATIVE BACKGROUND

There is no securities legislation governing securities not traded on the SEB and no Securities Exchange Commission which regulates all securities.<sup>3</sup> The Securities

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<sup>2</sup> There is the possibility that the number of unit trusts may increase in the near future.

<sup>3</sup> Securities legislation exists in Bahamas and Jamaica.

Exchange Act provides only for the quoting of prices and for the trading of securities listed on the Barbados Securities Exchange. The Financial Intermediaries Regulatory Act governs banks but does not deal with securities holdings. The Insurance Act specifies the kind of securities which may be held by insurance companies but does not stipulate a specified proportion of Government securities which insurance companies must hold, so unlike banks this is not a captive market.

The Central Bank Act concerns itself with prescribing the proportion of securities which banks may hold but does not provide guidelines for the holding and trading of securities.

Presently the Central Bank manages the issue of treasury notes, debentures and savings bonds. The volume and price of these issues are arranged subject to approval of the Minister of Finance and the frequency of issues are decided by the Central Bank within these guidelines. Limits on the issues outstanding of such securities are set by legislation.<sup>4</sup>

In the case of treasury bills the volume and frequency of issues are decided by the Ministry of Finance and issues are made by the Accountant General. Issues are by a public bidding system. The Central Bank participates in the tender and influences the average tender rate according to the volume of its tender and the level of the tender rate. The Bank may also take up shortfalls at the tender depending on the existing level of credit advanced to Government.

Trading of securities in the secondary market for treasury bills by commercial banks takes place through the Central Bank. Margins are set on the selling side are set to encourage purchase by banks and on the buying side to discourage sales to the

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<sup>4</sup> The authorised limit on outstanding treasury bill issues (and tax reserve certificates) is presently \$700 million and on treasury notes and debentures \$ 1.3 billion.

Central Bank.

Secondary trading in treasury notes and debentures with commercial banks takes place either through the Central bank or through the Securities Exchange but banks rarely trade in longer term securities at the secondary level and will apply approach the Central Bank only in rare cases. The Central Bank takes only a nominal commission on such trades. Trading of government securities on the Securities Exchange on the rare occasions when it has taken place, tends to occur at a deep discount.

Government Savings bonds are routinely issued at a discount to individuals through the commercial banks. They may be cashed at commercial banks before maturity but they are not tradeable. The Central Bank has responsibility for their issue.<sup>5</sup>

Government's fiscal deficit influences the volume of new Government securities while yields are influenced both by the volume and by liquidity in the market. The Central Bank influences yields on treasury bills and hence interest rates through its participation in the tender. However, banks with excess securities prefer to come to the discount window rather than sell longer term securities to the Central Bank. Also, banks in surplus or deficit sell to the Central bank rather than to each other.

### **Trading in securities prior to liberalisation**

The underdeveloped nature of capital markets permits the banking system to offer negative real returns on savings without impacting on investment in stocks and bonds. Control of private consumption expenditure to protect the balance of payments often led to upward adjustments to the minimum savings rate. Given the underdeveloped nature of the market, coupons on Government securities tend to be important since longer dated securities were often held to maturity. Where Government's financing needs are low coupons on Government securities and yields on treasury bills tend to

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<sup>5</sup> The authorised limit on the issue of Government Savings bonds is presently \$100 million.



be below the average lending rate. However, in a freer interest rate environment, lending rates will have a closer relationship to yields on Government paper. Also, possible crowding out of the private sector will be more influenced by yields on Government securities and by Government's financing needs given the reduced scope for increasing the compulsory element of the statutory reserve requirement.

In especially illiquid situations yields on government bonds have exceeded the ceiling on the lending rate as Government attempted to compete with commercial banks for surplus loanable funds. However since commercial banks are the major investors in government securities, even in excess of stipulated secondary reserve requirements, investment of these surpluses constitute an income advantage to commercial banks during such periods. However for the greater part of the period since the establishment of the Central Bank yields on government securities were below average lending rates making the holding of secondary reserves a cost to commercial banks with adverse implications for profitability.

While treasury bill yields tended to be higher than government bond yields they were generally lower than banks' average lending rates and this had adverse implications for profitability to the extent that these securities were held in satisfaction of required secondary reserve requirements and were therefore an inflexible part of banks portfolio and so represented an opportunity cost for banks.

Yields on Government securities were usually higher than the minimum savings rate. A small differential was sufficient to satisfy the depositor that the additional liquidity, convenience and accessibility exceeded the differential in favour of government securities. Large depositors for whom liquidity was not as important tended to be offered higher rates by commercial banks.

Yields on Government securities did not exceed long term deposit rates by a

sufficiently wide margin as to exceed the perceived transactions cost, inconvenience and the cost of illiquidity of investing in Government securities. Yields on treasury bills exceeded average deposit rates by about 1%. To that extent therefore interest rates offered on government securities did not tempt depositors to withdraw funds from commercial banks thus creating liquidity problems. In underdeveloped securities markets of the Caribbean, Government securities still tended to be more illiquid than similar investments in developed markets. Generally therefore, regulated interest rates did not create liquidity problems for commercial banks. In addition in a regime where the exchange rate was fixed and exchange controls still existed, the concerns of capital outflows were not as severe.

Ceilings on lending rates tended to encourage resort to overseas borrowing in times of high interest rates, but frictional costs and lack of familiarity with overseas markets and the relative certainty about exchange rates did not lead to frequent use of overseas markets in the Barbados case.

### **Securities trading in a liberalised environment**

Several developments point to the need to develop a more active market in Government securities. Firstly, Government's decision to reduce its external debt service ratio placed greater emphasis on domestic resource mobilization. Consequently between 1991 and 1994 domestic securitised debt doubled from \$885.5 million in 1991 to \$1708.2 million in 1994.<sup>6</sup> With this size of the country's assets held in government securities it becomes more important for the holders that the liquidity of these instruments be improved.

Secondly, the Central Bank has become less involved in the direct control of interest

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<sup>6</sup>Issues of \$ 281 million in respect of securitised debt relating to the sugar industry contributed to the increase in 1994.

rates, so that it is becoming increasingly important to be able to influence the level of interest rates indirectly, through the Government securities market.

Thirdly, the scope for increasing reserve requirements has declined, partly because the level of secondary reserve requirements is at relatively high levels and also because the tolerance of international financial institutions (whose opinions matter) for high levels of reserve requirements has diminished.

Also, liberalisation of credit controls has freed commercial banks from direct intervention by the Central bank over credit volumes, so that the Bank needs to position itself to use indirect means of influencing credit where it can.

Increased liberalisation of exchange controls has also introduced another consideration. The system is likely to become less tolerant of a low interest rate regime on the domestic market where exchange controls are liberalised, so that the facility must exist where domestic returns can be raised in order to discourage capital movements.

Finally, the international trend toward market determined processes and market deregulation which has been occurring over the past few years, must logically include the Government securities market. Development of the primary market will encourage greater investment in government securities and achieve a more efficient system of trading among institutional investors and in due course, the public. While, the development of the secondary market in government securities will enhance the opportunity for open market operations and reduce reliance on the Central Bank in for providing or reducing liquidity in the banking system.

The advantages of a market-based system of trading in securities are:

- 1) improved efficiency;
- 2) elimination of bottlenecks in trading and irregularity in pricing;

- 3) a more integrated system in which prices of Government securities bear a clear relationship to other interest rates;
- 4) fuller information to all players in the market.

Presently, the barriers to the development of an efficient government securities market include:

- a lack of market information on the part of financial managers and corporate decision makers and a lack of familiarity with investment trading in a market environment;
- traditional rigidity in investment patterns influenced by the ready accessibility to the Central Bank both for buying and selling securities and for providing liquidity at the discount window;

Development of this market will require changes in the legal and regulatory framework in which securities trade and that regulatory impediments to the improvement of the secondary market in government securities are removed. The existing primary and secondary market in treasury bills, bonds and debentures and will need to be restructured, and arrangements for trading among institutions, brokers, banks modified.

Presently such institutions and individuals may theoretically conduct such trading through their brokers on the Securities Exchange. Assuming the existence of market makers what is then needed are instruments which have the following attributes.

- marketability
- security
- ease of transferability
- attractive coupon

Instruments with the above characteristics would satisfy the requirements of:

Instruments would be designed to cater to the range of investors and features should include a broad range of maturities at competitive rates.

### **Monetary Policy and the market in Government Securities**

The short term market in government securities can be a prime instrument of monetary policy and is likely to become increasingly so in a liberalised environment. Some Central Banks take part directly in treasury bill auctions, e.g Bank of Canada and Bank of Jamaica on rare occasions, others do not. Invariably however, the ability to influence short term interest rates through open market operations forms a critical part of monetary policy.

This has in many cases become the only tool of monetary policy in the increasingly liberalised environments. In the secondary market there may be a second tier of brokers who buy from and sell to primary dealers, (In Canada, jobbers perform this role), or the primary dealers may themselves be brokers (in the U.K the GEMMS (Gilt Edged Market Makers) may perform both roles). The specifics depend on custom and on the size and sophistication of the market. In the Caribbean Jamaica has moved aggressively to put in place a market based system of secondary trading and Trinidad and Tobago is also examining ways of moving to more active open market operations.

<sup>7</sup> Maturities which match seasonalities in government revenue flows and the ability to meet cash shortage through the issue of " cash management bills" (a Canadian custom) are other considerations. These could be issued for one week to three months and could for simplicity have maturity dates which coincide with the nearest treasury bill maturity. This facility is likely to take some of the pressure off the Ways and Means account of Government with the Central bank.

In order to provide a market related current yield as well as a capital gain at maturity consideration should be given to the issue of some longer term instruments at a discount. This may also help to provide a tax shelter to some individuals and

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<sup>7</sup> The Treasury Bills and Tax Certificates Act ,1987-25 provides for the issue of treasury bills with maturities up to a maximum maturity of 1 year.

companies. However, since trading in discounted bonds requires some familiarity with the bidding process, this kind of security is likely to be phased in.

Tradeable bonds with fixed interest coupons could be introduced specifically for individuals, particularly for retirees and high net worth individuals. Issues of longer term Treasury Bills as well as tradeable bonds for individuals could be phased in gradually.

### **Satisfying liquidity needs**

The need for liquidity is likely to lead to the banks exacting high returns, particularly if the Central Bank provides temporary accommodation at the discount window only where there are no interested buyers of securities. If the Central Bank is prepared to make temporary advances available even in a scenario where potential buyers are prepared to provide liquidity to the market, then recourse to the discount window will not be reduced unless the Bank sets the discount rate at prohibitively high levels. In the first scenario the pressure on interest rates will come from the treasury bill market and could force the discount rate up and in the other the discount rate will be kept high to deter use of the window. In such cases the bank may need to intervene and buy securities itself to put liquidity in the system rather than allow the rate to rise. The advantage of doing the latter is that there is less money creation .

The above suggests the opportunity for the Bank to become active in providing overnight funds and opens the possibility for an active market in repurchase agreements. Maturities in the repo market could be for maturities of from 1 day to 10 days.

### **Limits to the effectiveness of government securities trading as a monetary policy instrument**

The extent to which yields on government securities can be used as an instrument of monetary policy will be influenced by several factors either together or individually.

These are principally, the size of the fiscal deficit, the rate of growth of savings (principally deposits), excess liquidity, private sector demand for credit, domestic and international interest rates, and other factors such as the extent of exchange control regulation. The major factor will be the extent of government's financing needs. Yields on Government securities will tend to rise ("ceteris paribus") if government's borrowing requirements rise. Attempts to restrict private consumer spending are also likely to lead to higher yields. Low international interest rates are likely to be supportive of a regime of low yield on government securities, but only to the extent that domestic demand for financing is controlled. Historical trends would suggest that in situations where governments financing requirements are low, where there is excess liquidity, or where authorities wish to stimulate spending are yields on government securities likely to decline. This will still be influenced by international interest rates and by the extent of exchange controls which may still be in operation.

Given that past monetary policies were concerned with controlling expenditures to protect the balance of payments, the likely trend will probably in the direction of higher yields on Government securities in the primary and secondary market unless government controls the size of the fiscal deficit.

#### **Empirical versus a prospective approach**

The use of econometric techniques did not seem appropriate for testing a future scenario, since monetary and investment responses in a scenario where credit controls were in place, where interest rates were tightly controlled and where exchange controls were not liberalised could not provide the meaningful signal about a future in an environment that was significantly more liberalised.

It is possible however to formulate the response of yields on government securities as follows:

$$r_g = f(g, Dp, L, Crp, EX, Def, r_d, r_i, u)$$

Where

rg = yield on government securities

g = real rate of economic growth

Dp = deposit growth

L = excess liquidity (cash)

Crp = private sector credit

EX = exchange controls

Def = government deficit

rd = domestic interest rates

ri = international interest rates

u = other factors, administrative bottlenecks etc

The above assumes a fixed and unchanged exchange rate.



Comparison of average lending rate (actual) and T.Bill rate

Barbados

Period	Av lending rate (actual)	Treasury Bill Rate
1973	12.0	8.1
1974	12.0	8.08
1975	11.3	4.0
1976	10.3	4.5
1977	10.0	5.0
1978	10.0	4.79
1979	10.1	4.95
1980	11.0	6.19
1981	13.9	13.82
1982	13.7	11.34
1983	11.9	6.81
1984	11.9	7.19
1985	10.9	4.58
1986	10.3	4.34
1987	10.3	4.99
1988	11.1	4.71
1989	12.7	5.82
1990	12.1	8.06
1991	15.0	11.30
1992	12.6	6.6

Domestic debt of Barbados by Instrument

\$Million

Period	Treasury Bills	Savings bonds	Debentures and treasury notes	Total
1973	18.1	..	53.1	71.2
1974	47.0	..	83.9	110.9
1975	56.9	..	82.4	139.3
1976	94.6	..	93.2	187.8
1977	114.4	..	121.9	236.3
1978	132.1	..	127	259.1
1979	149.4	..	125.4	274.8
1980	164.2	..	130.6	294.8
1981	228.1	2.5	143.0	373.6
1982	265.6	2.4	137.8	405.8
1983	302.3	2.4	134.7	439.4
1984	350.6	4.5	139.5	494.6
1985	404.9	6.9	154.7	566.5
1986	422.5	13.7	189.9	626.1
1987	423.9	21.5	234.	680.3
1988	434.0	26.0	294.4	754.4
1989	426.9	26.9	319.4	773.2
1990	506.2	34.6	341.7	882.5
1991	497.7	37.1	350.7	885.5
1992	635.2	30.2	411.1	1076.5
1993	648.5	37.6	762.1	1448.2
1994	515.3	45.3	1079.7	1640.3

**Treasury bill issues redemptions and average rate**  
 \$Million

Period	Issued	Redeemed	Outstanding at calendar year-end	Average tender rate at calendar year-end
1974/75	131.4	111.6	47.0	8.04
1975/76	227.7	208.3	56.9	4.00
1976/77	345.3	305.2	94.6	4.5
1977/78	411.6	397.4	114.4	5
1978/79	429.0	427.3	132.1	4.79
1979/80	478.9	461.3	149.4	4.95
1980/81	555.5	535.6	164.2	6.19
1981/82	817.2	746.4	228.1	13.82
1982/83	944.7	913.0	265.6	11.34
1983/84	955.3	918.1	302.3	6.81
1984/85	1058.5	998.9	350.6	7.19
1985/86	1232.2	1170.3	405.0	4.58
1986/87	1353.4	1344.9	422.5	4.34
1987/88	1482.3	1491.7	423.9	4.99
1988/89	1373.6	1369.6	44.0	4.71
1989/90	1393.0	1396.4	427.0	5.82
1990/91	1509.9	1412.2	506.2	8.06
1991/92	1619.3	1642.9	497.8	11.30
1992/93	1987.8	1857.9	635.2	6.60
1993/94	2662.4	2695.3	648.5	7.23

### Government of Barbados Treasury bills by Institutional holder

Bds\$ Million

Period ended	ECCA/central bank	Commercial banks and Trust companies	National Insurance Board	Statutory Boards	Other	Total outstanding
1978	31.4	67.4	26.7	3.9	2.8	132.1
1979	53.8	63.3	27.6	3.4	1.3	149.4
1980	46.0	85.1	28.6	3.4	1.1	164.2
1981	66.5	102.4	55.8	1.3	2.1	228.1
1982	53.3	127.3	77.1	3.5	4.5	265.6
1983	67.0	105.6	115.9	12.0	1.7	302.3
1984	36.7	147.7	150.9	14.7	.7	350.6
1985	47.9	164.2	170.4	20.0	2.5	405.0
1986	31.1	182.5	174.8	25.6	8.5	422.5
1987	0.9	221.7	81.8	14.1	5.4	423.9
1988	21.2	212.2	176.8	19.2	4.6	434.0
1989	59.7	164.4	183.7	18.2	1.0	427.0
1990	73.6	223.2	192.2	16.0	1.2	506.2
1991	46.0	231.2	200.2	16.0	4.3	497.8
1992	88.3	324.9	199.7	19.0	3.2	635.2
1993	64.8	299.0	228.7	19.5	36.4	648.5
1994	90.2	291.2	228.7	18.7	96.3	515.3

Government of Barbados Debentures by Institutional Holder & Savings Bonds  
(BDS \$000)

Period Ended	ECCA/ Central Bank	Deposit Money Banks & Trust Companies	National Insurance Board	Statutory Boards	Insurance Companies	Other	Total Outstanding	Barbados Savings Bonds
1978	16.4	52.0	29.6	3.8	14.2	11.0	127.0	-
1979	2.9	63.5	29.6	3.8	13.9	11.7	125.4	-
1980	11.9	58.2	27.6	4.2	16.1	12.6	130.6	-
1981	14.1	63.1	29.6	4.2	18.7	13.4	143.0	2.5
1982	10.6	64.7	29.6	3.6	15.9	13.2	137.8	2.5
1983	6.2	68.0	28.6	3.5	15.8	12.7	134.7	2.3
1984	-	77.8	27.6	3.8	16.6	13.8	139.5	4.5
1985	12.9	68.4	32.6	3.5	22.6	15.5	154.7	6.9
1986	8.8	96.7	43.6	5.8	23.5	12.3	189.9	13.7
1987	17.6	118.3	44.0	7.3	33.6	14.7	234.9	21.5
1988	15.2	161.3	63.3	7.3	33.3	14.0	294.4	26.0
1989	12.0	168.2	79.3	7.1	35.1	17.7	319.4	26.9
1990	12.0	183.0	82.2	6.9	34.8	22.4	341.2	34.6
1991	9.7	177.1	98.0	6.9	36.0	23.0	350.7	37.1
1992	7.9	200.6	118.1	10.6	39.5	34.5	411.1	30.2
1993	7.5	269.0	149.0	12.3	48.5	275.9	762.1	37.6
1993	7.5	275.6	404.6	12.3	81.8	298.0	1079.7	45.3