

THE POTENTIAL OF SECONDARY MARKET FOR
GOVERNMENT DOMESTIC DEBT INSTRUMENTS
IN TURKEY

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I. INTRODUCTION

Insufficiency of the available information concerning the secondary market for Government Domestic Debt Instruments (GDDIs) in Turkey leads to divergent evaluations of the present state of this market.

According to one view, a great portion of the GDDIs is held in the portfolios of the banks due to some legislative requirements. Those who favour this view, therefore, place heavy emphasis on this peculiarity of the demand for such securities and consider this market as a "captive" one.

There are two accompanying points raised in relation -although non-sequitur- to this argument. The first is that the relative importance of the captive portion of the demand for such securities almost nullifies the functions of the secondary market. The second point is rather apologetic which aims to reconcile the first point with the large secondary market trade volume of such securities as reported in the Monthly Bulletin of the Capital Market Board. According to the defenders of this view, the enormous secondary market trading volume of this securities, despite the dominance of the captive portion of the demand, can be attributed to the wide use of short sale and/or similar practices. In other words, in essence, what is seen as the secondary market for GDDIs is in fact a reflection of implicit deposit collection practices widely used by banks. The problem with this argument is that it jumps to the conclusion that "the GDDI market is a captive one" from "the demand for the GDDIs has a captive portion," without any statistical evidence whatsoever.

On the other hand, those who emphasized the importance of the transactions arising from the portfolio choices of the agents as a result of the market signals against captive market argument, e.g. ERSEL(1990), were relying on the available statistical information concerning these markets. However, it should also be admitted that the statistical evidence that put forward to defend this view was also rather weak and far from being convincing.

The purpose of this paper is to supply further statistical evidence to support the latter view by estimating the GDDI stock held by banks and non-bank agents, and by defining their captive and free portions explicitly.

II. THE METHODOLOGY EMPLOYED

The Central Bank of the Republic of Turkey (CBRT) determines daily prices of the GDDIs for accounting purposes and announces them in the Official Gazette. The daily accounting price of any particular GDDI is calculated by using estimated rate of return in the present value formula. The estimated rate of return is obtained from a regression relation between the rate of return and maturity. It is inevitable that such an accounting price may deviate from the daily market value of the GDDIs, even on the average. However, since accounting rules compel all agents to value their portfolios using these prices, it establishes a consistent measure to compare GDDI stocks held by various institutions. On the other hand, total existing amount of each individual GDDI, for any particular date, is available at the Money Markets and the Treasury Department of the CBRT. These two sets of information are sufficient to calculate the value of the total GDDI stock at the accounting prices, for any specified date.

Thirdly, the total stock of GDDIs held by banks (from the data available at the Banking Department of the CBRT), and the total stock of GDDIs held by the CBRT (from the Money Markets and the Treasury Department of the CBRT), evaluated at the accounting prices referred above, can be calculated.

Using this information, it is possible to calculate:

- a) The total volume of the GDDI stock held by non-bank agents (Households+Corporations+Government Agencies [Funds]+Non-Residents) and by Banking System (Banks+the Central Bank)
- b) The free portion of the total GDDI stock held by various agents (i.e. Total GDDI Stock- GDDIs held by banks against liquidity requirements, guarantees and official deposits)

The first calculation is important in illustrating the nature of the demand for GDDIs. In the *Monthly Indicators of the Treasury*, issued by the Directorate General of Public Financing of the Undersecretariat of Treasury and Foreign Trade, two sets of information are reported. The first, TABLE III.5, is entitled as "The Distribution of Domestic Borrowings According to Buyers" and the second, TABLE III.6, is entitled as "The Distribution of the Domestic Debts Stock by Buyers." The first table gives information about the distribution of the sales of GDDIs among banks, government agencies, private institutions and individual portfolio holders. However, it should be emphasized that these figures cannot be interpreted as holding distribution of GDDIs, since the figures do not enable one to distinguish banks' demand for GDDIs for their own portfolios and for their demand as intermediaries. When one takes this point into

account, it is evident that the information in the second table is far from what its title suggests. The figures in the table are accumulated differences between GDDIs bought by each group and redemptions, and therefore can not be considered as the actual distribution of the GDDI stock among various holder categories. The methodology proposed in this paper, aims at estimating the said distribution in a consistent manner.

The aim of the second calculation is to determine the volume of total free GDDI stock that can be used in transactions (sale, purchase or repo) in the secondary market. This calculation will give the upper bound of GDDIs which would support the repo market. This information, when combined with the assumptions made pertaining to the maturities of the repos, will make it possible to estimate the potential size of the repo market.

III. BASIC FINDINGS

By using the methodology explained briefly above, the GDDI stock calculated for the last Friday of each month of 1991, evaluated at that day's accounting prices. These figures with the monthly volume of secondary market transactions with GDDIs, excluding those with the CBRT, are reported in Annex Table 1. The figures in this table reveal that:

- a) During 1991 the total GDDI stock, which was TL. 31.6 trillion on January 25, 1991, increased by 77.12 %, reaching TL 56 trillion on December 27, 1991.
- b) During the same period, the amount of GDDI held by banks increased by 103.7 %. However, again in the said period, the amount of GDDIs in the free portion of the portfolios of the banks increased by 155%. In other words, the growth in the GDDI stock, mostly, stemmed from the increase in the GDDI demand of banks for their own portfolio holdings.
- c) Although the GDDI stock held by households and by the corporate sector was up only 60% during the period in question, due to the sharp increase in the free portfolios of banks the total tradeable stock of GDDIs increased by 81% in 1991.

IV. THE GDDI STOCK IN VIEW OF THE SECONDARY MARKET FOR GDDIs

As can be observed from *Capital Market Board (1991, Table III.2)*, the 85% of the transactions in secondary markets for securities are with GDDIs. Also, it is well known

that the bulk of these transactions are repos, which, unfortunately, do not have a legal basis due to "temporary" rules imposed by Decree in Laws No's. 35 and 45.

In order to make a rough guess of the potential of repo market, it is necessary to calculate the total free stock of GDDIs. This stock has two major components. The first is the free portfolios of banks, which is reported in the Annex Table 1. Column III. This amount is the difference between the total GDDI stock held by banks and those GDDIs held against liquidity, guarantees and government deposits by banks.

The second component of the GDDI stock is that portion held by households, the corporate sector, as reported in Annex Table III, Column VII. This figure is calculated by subtracting the amount of GDDIs in the portfolios of banks, the CBRT, and the funds from the total. This calculation is justified by making two implicit assumptions. The first is that households and the corporate sector do not purchase GDDIs, and the stocks in their portfolios are the outcomes of the repo transactions. The second implicit assumption is that the funds do not engage in repo transactions.

Since the likely direction of the errors with respect to these two components is reverse of each other, the margin of error in the aggregate is smaller, in comparison to the error margins of its components and, with a high probability, negligible.

In TABLE III.1, below, the calculated volume of GDDI stock is given, and assumptions indicate for each component.

TABLE III.1
FREE GDBBs VOLUME

DATE	(Trillion TL)		
	NON-BANKS	BANK(*)	TOTAL
25.01.1991	10.7	3.1	13.8
22.02.1991	11.2	3.5	14.7
29.03.1991	15.8	1.7	17.5
26.04.1991	14.0	2.4	16.4
31.05.1991	14.1	3.7	17.8
28.06.1991	12.3	4.2	16.5
26.07.1991	13.8	6.2	20.0
30.08.1991	15.5	6.4	21.9
27.09.1991	17.7	6.0	23.7
25.10.1991	18.5	6.8	25.3
29.11.1991	16.7	7.2	23.9
27.12.1991	17.2	7.9	25.1

(*) Weekly average values are used in order to established free portfolio in the data of Banking Department of the CBRT. While making this table, it was assumed that the ratio of "the Free Portfolio/Total GDDIs Stock" derived from the said data was valid on the day of calculation.

V. CONCLUSIONS

The results indicate that the potential of the secondary market for GDDIs is quite important. If, the figures in Annex Table 1, Column IX [Taken from *the Capital Market Board(1991)*] is assumed to indicate the repo transactions volume, then it is possible to deduct that the average ratio transactions/stock ratio for GDDIs is 1.15 and the corresponding average maturity is 27.3 days. These results as well as the differences among the monthly figures broadly correspond to the observations made in this market.

The main conclusion of this paper is that, in Turkey, there is a large GDDI secondary market, and enough free GDDI stock to support it.

REFERENCES

ERSEL, H. (1990): *Restructuring the Secondary Market for Government Securities in Turkey: A Proposal*, CBRT Research Department No. 9002, Ankara.

CAPITAL MARKET BOARD (1991): *Monthly Bulletin*, December 1991, Ankara.

ANNEX

TABLE 1

DATE	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	XIII
	Total	Bank	Bank Free	CBRT	Funds	Share of	HH+Corp.	Share of	GDDI	Total Free	Sales/	Free GDDI/	Average
	GDDI	GDDI	GDDI	GDDI	GDDI	Bank GDDI	GDDI	HH+Corp.	Sales	GDDI	Free GDDI	Sales	Maturity
January 25, 1991	31613.1	17403.3	3089.1	1793.8	1676.2	0.5505	10739.8	0.3397	14892.7	13828.9	1.0769	0.9286	27.8571
February 22, 1991	33122.1	19010.9	3520.1	1269.9	1592.7	0.5740	11248.6	0.3396	14131.3	14768.7	0.9568	1.0451	31.3532
March 29, 1991	37988.3	18612.0	1716.4	1950.6	1625.8	0.4899	15799.9	0.4159	16374.8	17516.3	0.9348	1.0697	32.0913
April 26, 1991	38960.2	21082.0	2407.5	2188.0	1674.8	0.5411	14015.4	0.3597	15354.1	16422.9	0.9349	1.0696	32.0883
May 31, 1991	40544.9	23201.2	3666.0	1492.3	1746.9	0.5722	14104.5	0.3479	27691.8	17770.5	1.5583	0.6417	19.2517
June 28, 1991	40706.4	24987.7	4207.7	1595.4	1810.2	0.6139	12313.1	0.3025	26939.1	16520.8	1.6306	0.6133	18.3979
July 26, 1991	43106.7	27018.3	6244.1	438.9	1885.2	0.6268	13764.3	0.3193	32888.6	20008.4	1.6427	0.6087	18.2622
August 30, 1991	48259.4	28209.0	6353.1	765.8	1821.3	0.6098	15463.3	0.3343	23836.4	21816.4	1.0926	0.9153	27.4577
September 27, 1991	49747.8	29161.1	5994.5	949.3	1920.0	0.5862	17717.4	0.3561	21405.6	23711.9	0.9027	1.1077	33.2323
October 25, 1991	52669.6	30946.2	6805.9	1203.1	1986.5	0.5876	18533.8	0.3519	24103.6	23339.7	0.9512	1.0513	31.5385
November 29, 1991	52611.7	33110.5	7184.0	769.4	2068.3	0.6293	16663.5	0.3167	25451.2	23847.5	1.0672	0.9370	28.1097
December 27, 1991	55992.6	35340.1	7886.4	581.0	2903.0	0.6312	17168.5	0.3066	26468.6	25054.9	1.0564	0.9466	28.3977
Mean	43610.2	25673.5	4922.9	1249.8	1892.6	0.5844	14794.3	0.3409	22459.8	19717.2	1.1504	0.9112	27.3365
Standard Deviation	7562.8	5680.9	1966.6	540.7	335.4	0.0405	2422.6	0.0291	5778.2	3942.0	0.2731	0.1783	5.3
Coefficient of Variation	0.1734	0.2213	0.3995	0.4326	0.1772	0.0694	0.1638	0.0852	0.2573	0.1999	0.2374	0.1957	0.1957
Annual Rate of Growth	77.12	103.07	155.30	-67.61	73.19	59.86	77.73	81.18					