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**RESTRUCTURING THE SECONDARY MARKET
FOR GOVERNMENT SECURITIES IN TURKEY:
A PROPOSAL**

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RESTRUCTURING THE SECONDARY MARKET
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GOVERNMENT SECURITIES IN TURKEY: A PROPOSAL

The growing importance of public debt has drawn the attention of academic circles and both national and international agencies which deal with macroeconomic policy issues on the effects of public borrowing and the techniques of debt management.⁽¹⁾ One of the major issues which arose with this wave of interest was the reorganization -or for some countries, the creation of- a secondary market for government securities. The issue became important not only because of the increasing significance of public borrowing, but also because of the changing structure of the securities markets due to liberalization attempts.

It should be stressed that the development of a secondary market for government securities is also a major step in the development of capital markets in general. The government securities market has the "homogeneity" property, the government being the sole issuer of these securities. The informational requirements of this market for investors, although considerable, is small when compared with the heterogenous private securities markets. Therefore, the development of government securities markets can be considered as a first step and as an instrument to increase the sophistication level of the investors.⁽²⁾

In this broad sense, Turkey faces the same general trend as observed elsewhere. However, the problem faced by policy makers was complex, due to the relatively underdeveloped state of the Turkish financial system. ⁽³⁾ In many OECD countries, the

⁽¹⁾ For a recent survey of country experiences in debt management techniques, see OECD(1988). As an example of academic interest in this problem, the recent study on Italian experience, GIAVAZZI-SPAVENTA(1988) is particularly important and inspiring.

⁽²⁾ The development of the Japanese securities markets is an important example of the role attributed to the government securities markets. For the development of the Japanese government securities market, see FELDMAN(1986, pp. 48- 59). For a detailed description and the evaluation of the present Japanese system and the role played by the government securities in conducting monetary policy, see SUZUKI(1987).

reforms that were addressed to the development of government securities markets started from a financial system where securities markets were already playing a significant role in allocating financial savings. However, in Turkey, the problem had to be considered within the broader context of developing securities markets. Therefore, the Capital Market Board (CMB) launched a broad program, which gave priority to the regulatory institutions as well as to training the personnel of the intermediaries, to lay down the necessary infrastructural basis of such markets. On the other hand, the continuous increase of government borrowing led the authorities to undertake a rather radical approach to establish the institutional foundations of a government securities market.

In the following section, the tendencies that occurred within the last half decade, in government borrowing and the institutional arrangements in the primary markets for government securities, will be surveyed. The second section examines the behavior of the existing agents concerning the development of secondary markets. In the third section, a particular secondary market model, consistent with the existing state of communication and computer technology in Turkey as well as the behavior of the agents in the financial markets, is proposed.

I. THE PRESENT STATE OF THE GOVERNMENT SECURITIES MARKET IN TURKEY

As seen in TABLE 1, the share of total securitized domestic government debt in GNP more than doubled in 1988 with respect to its 3.6% level in 1983. Although this figure is by no means high when compared to OECD countries, its impact on the financial

(3) For the description of the post-1983 developments in the Turkish financial system, see COŞAN-ERSEL(1987).

system is considerable since the financial markets in Turkey are much thinner and shallower. TABLE 2 demonstrates the increasing importance of government borrowing for financial markets. This table compares the net changes in securitized government domestic debt with financial savings, where the latter is approximated by the total volume of financial assets, corrected for double counting. These figures indicate that for the 1984-1988 period, on average, 21.76% of the financial savings were allocated to finance the increase in securitized domestic government debt. The figures also indicate that, after a decline in the 1985-1986 period, this ratio increased considerably in 1987. The attempts to curb domestic government borrowing in 1988 were effective in reducing it only two percentage points, to the second highest proportion of the considered period.

In Turkey, securitized domestic government borrowing is realized through selling two types of instruments; Government Bonds and Treasury Bills. These instruments are all in bearer form, and the main difference between them stems from their maturity. Government Bonds are relatively long term instruments with a minimum maturity of one year, whereas Treasury Bills are short term instruments with maturities of less than one year. All Treasury Bills and one-year Government Bonds are sold on a discounted basis, and the remaining Government Bonds carry biannually payable coupons. Almost all Government Bonds are fixed interest instruments. However, the Treasury has experimented with variable rate bonds since the last quarter of 1988.

I.1. The Primary Market for Government Securities

Since 1985, the Treasury has been selling securities through weekly auctions, based on the "conventional price offer method," i.e. the bidders that declare a price or yield pay the price or the price associated with the yield they bid. Although the main structure of the auctioning scheme remains unchanged, there were a series of refinements in the

rules which affected the outcome of the auction. Within this set of refinements, the one introduced in June 1988, which empowers the Treasury to determine the maximum interest rate or the minimum price for the auctioned securities, deserves some attention. It seems that the idea behind this practice was to curb the interest costs of public borrowing. However, this practice was abandoned within the same year since Treasury's loss of control over the volume of borrowing was unacceptable.

The auction is open to all legal and real persons. However, the guarantees required of participants clearly favour financial institutions, particularly banks. When this practice is coupled with the overwhelming strength of banks in the Turkish financial system, banks, de facto, became the only demand side agents. This point can be easily seen from TABLE 3, which clearly shows that the share of government securities bought by banks was high and increased in time. On the other hand, banks' demand for government securities does not stem from a single objective, such as for their portfolio needs. On the contrary, partly due to the above mentioned rules, and partly because of the rational outcome of the division of labor among financial and non-financial institutions, the latter prefer to use banks as intermediaries. Therefore, banks' demand for government securities in the primary market can be explained by three components:

- i) Regulatory obligations: Because of the regulations, banks hold government securities
 - in order to satisfy a certain portion of their liquidity requirements,
 - as collateral for their activities in the money and foreign exchange markets run by the Central Bank,
 - against 65% of their public deposit holdings.

The figures available for the June-December 1989 period indicate that, on average,

72% of the total government securities held by banks were for liquidity requirements. 3% were held for their transactions in money/foreign exchange markets run by the Central Bank, and finally 1.5% are held against official deposits.

ii) Banks' own demand for government securities- This can be divided into those demanded for the portfolio decisions of the banks and those demanded for the securities departments' needs. i.e. to sell in the secondary markets. The figures for the June-December 1989 period indicate that 23.5% of the total portfolio belong placed in this category. According to available statistics, the banks' own demand for government securities consists of two components. The first, which is around 55% of their own demand, is the banks' holdings at the Central Bank beyond their collateral needs. This can be taken as an approximate measure of the government securities held by banks for their portfolio. The remaining part (11.4% of the total portfolio holdings) approximates that portion of government securities held for the needs of the securities departments of the banks.

iii) The demand which stems from the intermediary role of the banks- As is well known, banks in Turkey can act as pure intermediaries in the securities markets. This rather broad interpretation of the universal banking system enables banks to place orders for their clients (i.e. non-bank financial or non-financial investors) in the primary market.

The financial statistics in Turkey do not supply figures for government securities held by the public. Therefore, one is compelled to get estimates through indirect methods. The simplest approach is to deduct the government securities in banks' portfolios from the total and identify the remainder as the volume of government securities held by the public (i.e. households and corporations). Unfortunately, the quality of the existing

statistics creates insurmountable difficulties even for this simple approach. The statistics released by the Treasury only give figures for the principal and interest payments of securitized government debt, classified according to types of securities. Hence, these figures match the market value of any government security only at its issue and maturity dates. On the other hand, according to Turkish accounting rules, the securities portfolio of banks are evaluated by their purchase prices. Since the dates of purchase of individual securities in banks' portfolios are unknown, it is practically impossible to derive any meaningful results by comparing banks' holdings of government securities with the total figures. Therefore, the following rather crude approach is adopted:

Banks send the volume of their government securities holdings, evaluated at daily prices, to the Banking Supervision Department of the Central Bank. In order to reach an approximate figure for the total securitized debt stock of the government, one half of the interest payments is added to the principal. In TABLE 4, a rough estimate of the government securities held by the public is given by using these two figures.

A cautious interpretation of TABLE 4 indicates that, in 1988, banks were holding around 60% of the total stock of government securities, mostly for regulatory purposes. Because of the deficiency of the data, this only provides weak evidence in support of the argument that the non-bank agents' demand for government securities is not negligible.

I.2. The Secondary Market for Government Securities

In order to understand the non-bank agents' demand for government securities, one has to look at the existing secondary market for government securities. TABLE 5 shows that the secondary market for government securities is by far the largest of all

securities markets in Turkey. More than 80% of the total trading in the secondary markets are on these securities. This finding also supports the view that a non-negligible portion of government securities is held by non-bank agents in Turkey. Finally, in order to make sales figures comparable, the Turnover Ratios (i.e. Sales/Stock) are computed for 1987 and 1988 in TABLE 6. These ratios indicate that the turnover rate of government securities is almost same as private sector debt instruments. This shows that the larger size of the secondary market is not merely due to the existence of a larger stock of government securities, but also due to the active trading in the secondary markets.⁽⁴⁾

In order to complete the picture of the preceding discussion, one is compelled to identify the agents on the demand side of the government securities market and their motives. Here one can distinguish three types of agents; The first is the collective savings institutions, i.e. the mutual funds and social security institutions. The second is the Central Bank, which can only buy government securities from the secondary markets for its own portfolio.⁽⁵⁾ The last, but not least, important category is the non-bank corporations which use their excess funds by making repurchase agreements (repos) with banks.

This final category is extremely important, since during interviews, banks as well as security houses estimated that almost 60% of their dealings with government securities were related to repos. Unfortunately, although the repo is widely practiced, the

⁽⁴⁾ The extremely low turnover ratio for shares is not surprising in light of the underdeveloped nature of the stock market in Turkey.

⁽⁵⁾ It should be emphasized that the CMB figures used for the volume of trading in the secondary market excludes the sales and/or repurchases of banks, due to their operations within the money markets managed by the Central Bank.

Decree-in-Law 45 (which legally prohibited the repo transactions for the wrong reasons) is still effective. As a result, presently, it is not possible to identify and distinguish repo transactions from direct sales or purchases, since banks, even if they wish to, cannot report the pledge due to their repo operations. Such a practice hides or undermines the off-balance sheet risks assumed by banks.⁽⁶⁾ As demonstrated in ERSEL(1988), under the present conditions, the repo is a relatively cheap source of finance for both corporations and banks. Therefore, it is quite reasonable to expect repos to play a considerably important role in the foreseeable future. However, due to the legal problem indicated above, it was not possible to obtain more satisfactory information concerning the volume of repos.

The present structure of the secondary market is clearly unsatisfactory in broadening the scope and volume of the transactions on government securities. Presently, the only regulated secondary market for government securities in Turkey, i.e. the İstanbul Stock Exchange, just plays the role of a registering agency for the transactions which were completed by various intermediaries out of the Stock Exchange. This peculiar practice stems from a regulation which exempts those transactions which were quoted on the Stock Exchange from certain levies. However, since the existing regulations accept the İstanbul Stock Exchange as the only regulated secondary market for all securities, the existing over-the-counter market is not regulated at all. The secondary market for government securities is reasonably competitive, since its scale is large and the number

⁽⁶⁾ These points as well as other legal problems were examined in ALTAY-BAYAZITOGLU-ERSEL(1988). On the other hand, in the report of the Special Committee on Capital Markets formed by the State Planning Organization for the preparation of the Sixth Five Year Plan, SPO(1989, p. 94) strongly advocated abolishing this restriction imposed by Decree-in-Law 45, and emphasized the urgent need for regulation to identify the legal basis of repo operations. The need for establishing a legal basis for repo operations is extremely important, since there are two different interpretations of a repo agreement; the first considers repo as a true sell-repurchase agreement, whereas the second regards it as a collateralized loan. Since the legal procedures and the results differ considerably, the regulations should be explicit on this matter. For a short discussion of these issues related to Lombard-Wall case, see STIGUM(1983, pp. 421-3).

of participants is high. However, it is still a local market since almost all activities are concentrated in İstanbul.⁽⁷⁾

I.3. The Need For Restructuring the Secondary Market For Government Securities: The Agents' Perspectives

This holding pattern of government securities effectively reduces the need to develop secondary markets for government securities. Banks which hold government securities mostly to satisfy their legal obligations use the remaining in their dealings with the Central Bank (open market operations, etc.) as well as collateral in their repurchase agreements with corporations. However, since the remaining agents, i.e. the security houses and the collective savings institutions, are negligible in terms of size and volume of trading, and the Central Bank's demand is temporary, it is appropriate to examine the banks' behavior in order to understand the systematic movements in the demand for government securities.

Banks are in an exceptionally privileged position to satisfy their liquidity requirements through their access to the Interbank Money Market as well as lender-of-last-resort facilities of the Central Bank (available at a rate which can hardly be labelled as a penalty rate). Thus, they do not have strong incentives to promote the development of the secondary market for government securities.

⁽⁷⁾ On the other hand, the problem is more difficult for the corporate bonds market. There, the segmentation is so high that almost all corporate bonds can be identified by referring to their sole distributor-intermediary. In that market, the entire liquidity requirement to sell bonds is satisfied by this particular intermediary through the practice of unofficial repurchase arrangements with the buyers. This practice forces these intermediaries to keep higher cash balances and increase the cost of transactions. Such a scheme has a second deficiency, namely that corporate bonds are not priced competitively. In fact, the present structure of the corporate bond market is more akin to the credit market, and selling bonds is closer to selling loans than selling securities, see SPO(1989, pp. 63-64). For a more comprehensive examination of the secondary market for corporate bonds, see AKYÜZ(1989a). His results and recommendations are also summarized in AKYÜZ(1989b).

Therefore, neither the agents on the demand side of the market nor the intermediaries, (aggregated under the same heading namely banks) have strong incentives to develop secondary markets for government securities.

I.4. Restructuring the Secondary Markets for the Government Securities: The Treasury's Perspective

The remaining important agent which may benefit from the restructuring of the secondary market is the Treasury itself. In this subsection, a case is put forward to defend the view that the Treasury will indeed benefit from the development of the secondary market for government securities.

The Treasury, being the sole supplier of government securities, is, by definition, in a monopolist position in this market. However, this is a "disadvantageous monopoly," since the Treasury is in the position of solving the following five problems under a time constraint.

- i) Channeling a sufficient volume of financial savings to finance the government deficit, i.e. collect the required amount of funds through selling government securities and other sources,
- ii) Minimize the cost of government borrowing,
- iii) Finding and realizing the optimal time schedule of government borrowing,
- iv) Coordinating the government borrowing volume and pattern with the macroeconomic objectives.
- v) Developing the government securities market, without crowding the private sector out of the financial markets.

The Treasury's approach in dealing with this complicated issue can be summarized in the following way: Macroeconomic considerations determine both the volume of government borrowing and its distribution between the Treasury's access to the Central Bank's resources and domestic borrowing. The Treasury, after determining its total volume of borrowing from the securities markets and its time pattern, devises a scheme for auctions. However, being a monopolist, it only allows itself to fix either the volume or the cost of borrowing for each auction. Since the Treasury is facing a homogeneous set of clients, i.e. banks, its playing ground is again limited by their overall constraints and portfolio decisions.

The workings of the government securities market, under the conditions summarized in the preceding paragraph, can be approximated by a very simple two person game. The players are the Composite Governmental Agency [CGA] (i.e. the Treasury + the Central Bank) and the clientele (i.e. banks). The CGA's payoff is the evaluation of the borrowing volume and cost in terms of the government's objective function, and the clientele's payoff is their evaluation of the outcome according to their profit function. The strategies of the agents revolve around the liquidity requirement ratio for the CGA and the interest rate for the clientele. The model, in this pure and simple form, assumes that the demand for government securities stems solely from the liquidity requirements of banks.

The mechanism works as follows: The CGA can sell more government securities by offering higher interest rates. However, the CGA may also force banks to buy more by increasing the liquidity requirement ratio. Such a move will increase the demand for government securities. On the other hand, since it will also reduce the loanable funds available for the corporate sector, it will have an increasing effect on market interest rates as well. Therefore, banks will react by increasing the interest rates in the auctions.

In a sense, this model oversimplifies the primary market for government securities, since, as demonstrated above, the demand of the non-bank agents for government securities is not negligible. However, this demand is not independent from the behavior of banks. The most important category of non-bank agents are non-financial corporations. Most of their demand for government securities is the result of the much practiced repurchase agreements. It is estimated that almost 70% of all transactions on government securities are repurchase agreements between banks and non-financial corporations. Therefore, the implied secondary market for government securities has the following characteristics: First of all, since the market is structured over the repurchase agreements, it is unnecessarily segmented. Every bank creates its own submarket with its best customers, and satisfies the liquidity requirements of this subsystem. Secondly, due to this particular segmented feature of the secondary market, all the signals coming from these transactions are transferred to the primary market through the banks, filtered according to their own needs.

The preceding discussion implies that, as long as the institutional framework of the model is kept intact, the possibility of increasing the volume of government borrowing is limited and determined by the behavior of the banks. One way of overcoming this difficulty is to change the structure of the clientele by explicitly allowing, and inducing, the non-bank agents to join the game as independent players.

In order to have non-bank independent players, the system should be restructured so as to include an efficient secondary market for government securities. Otherwise, because of the liquidity problem, the non-bank players, identified as non-financial corporations in the foreseeable future, will be reluctant to act as independent agents and prefer to be the repo partners of banks.

It should also be stressed that such a change in the structure of the clientele will modify the nature of the auction game which was introduced to describe the present state of the market.⁽⁸⁾

II. RESTRUCTURING THE GOVERNMENT SECURITIES MARKET: A MODEL PROPOSAL

The crucial role of the secondary market for government securities in broadening the scope of the clientele, and possibly the volume of domestic borrowing, without disrupting the financial markets calls for a careful analysis of the alternatives available to Turkey. The following proposal, which takes into account the recent experiences in Italy and Spain,⁽⁹⁾ addresses the establishment of an efficient market for government securities. The main idea is to organize the secondary market for government securities as a national market and enable all investors, irrespective of their location, to make transactions at the best prices.

The institutional structure of the secondary market is not independent from its attributed role. For example, as the Central Bank leans more toward open market operations, prices in the secondary markets become more important and should be taken into account. Therefore in this instance, the system needs a set of agents which benefit from using this price information in their buy or sell decisions, thereby transmitting it from one market to another. This is the rationale behind the existence

⁽⁸⁾ One of the topics investigated in the ongoing project of the Research Department of the Central Bank, on Domestic Public Debt, is how to improve the existing auction system for government securities, under "heterogeneous buyers" assumption.

⁽⁹⁾ The Italian experience in developing secondary markets is discussed in Banca d'Italia(1988), the Italian Delegation's paper in OECD(1988) and in DUNCAN(1989). The Italian public debt problem is discussed more extensively in GLAVAZZI-SPAVENTA [eds.](1988). The Spanish reform and its results are surveyed in BANCO de ESPANA(1988). In a broad sense, both Italian and Spanish reforms can be considered as attempts to develop government securities markets by adopting the US system to their different financial environments. For a brief exposition of the US government securities market, see SYRON-TSCHINKEL(1985).

of "primary dealers" in government securities markets. The experiences of other countries, including Italy, Spain and the USA, indicate that the existence of such agents is indispensable for implementing the monetary policy efficiently through the market mechanism.

Therefore, this proposal starts by advocating the establishment of such a category of intermediaries. However, in practice, there are some difficulties, mostly attributable to cultural factors in implementing this approach. It is claimed that, after allowing all banks to participate in the government securities market on an equal basis, the introduction of such a "privileged" agent status may cause discomfort among the participating banks. However, one can raise the counter argument by emphasizing, first, that the primary dealers also have extra responsibilities, and secondly, de facto, the existing system greatly resembles the one proposed, since some banks are continuously much more active in auctions. Finally, the proposed system does not advocate fixing the number of primary dealers a priori. Therefore, the primary dealer status should be open to all eligible financial institutions.

The following scheme is, therefore, based on the assumption that the Central Bank will eventually adopt a system with primary dealers. The essential features of the proposed system are as following:

a) In the primary market, the Central Bank will identify a set of primary dealers among the "financial intermediaries," i.e. banks and a subset of the financial intermediaries recognized by the Capital Market Board. However, the Central Bank should be allowed to define its own terms, by setting explicit criteria, in delineating the primary dealers. At this point, it is recommended that the Central Bank should broaden the set of primary dealers to include non-bank intermediaries, which may help to change the rather restrictive nature of the present primary market. In the long run, such access of

the non-bank intermediaries to government securities market may strengthen these institutions. This may be desirable, since it may lead to the introduction of non-bank financial agents which may effectively compete with banks. Presently, the Turkish financial system is dominated by banks; hence, in effect, the competitive structure of the financial system is determined by the competition among banks. The desired effects of competition, therefore, rest on the assumption that banks are also heterogeneous with respect to their objectives and means.⁽¹⁰⁾ However, the financial development experiences of the other countries indicate that the existence of partially overlapping competitive institutions in the financial markets is crucial for fostering competition.

In the proposed system, the role of the primary dealers are as follows:

- i) They are expected to bid at realistic prices and for appropriate volumes in the auctions. However, this does not rule out the participation of other banks and intermediaries as competitive bidders in the auctions. On the other hand, the introduction of the non-competitive bidders is considered helpful. In this context, the Central Bank, with its twenty six branches, can offer the necessary services for the non-competitive bidders.
- ii) The primary dealers should be in the privileged position of being the only counterparty agents in the open market operations of the Central Bank.
- iii) The primary dealers will also be able to participate in the secondary markets. Their participation is crucial in establishing a link between the primary and secondary markets, thereby increasing the efficiency of the monetary policy. However, it should

⁽¹⁰⁾ This is the main working hypothesis of the ongoing project of the Research Department of the Central Bank, entitled "The Structure of the Turkish Banking System and Competition."

be stressed that, for such a purpose, the broker capacity of the primary dealers is sufficient. Therefore, they are not required to act as market makers, i.e. they will not be in the position of being responsible for price developments in the secondary markets.

b) In order to operate such a national market efficiently, a book-entry system for government securities is required. Presently, the transactions in the securities markets are terminated with the physical delivery of the securities against cash payments. On the other hand, for restricted government securities transactions between banks and the Central Bank, the latter acts as a depository institution. This function should be broadened and a book entry system for government securities should be introduced.
(11)

The regulated secondary market for the government securities should be organized as a national market. The present computer and telecommunication facilities available in Turkey are sufficient to develop a computer based regulated over-the-counter market for such securities.⁽¹²⁾

The target of the national market can be reached gradually. Starting from relatively large cities, local dealers can be incorporated into such a network. Since many banks have similar computerized systems, it is possible to use their channels to broaden their activities with their branches. For the non-bank intermediaries, however, there are some problems. Since most of them have no branches out of İstanbul, they may find it

(11) Both Italy and Spain developed such a mechanism before reforming the operational system of the secondary markets for government securities. For a critical evaluation of the Italian Monte Titoli Depository system see DUNCAN(1989), and for explanation of the working of the Spanish Government Securities Book Entry System, see BANCO de ESPANA(1989).

(12) This argument is based on the observation that, in the past few years, many banks were able to connect their branches with each other quite successfully using the facilities offered by the telecommunications authority, i.e. the PTT.

difficult to compete with banks elsewhere. If their competition is considered a positive factor in attaining the efficiency in the securities markets, easy credit terms for computerization can be offered to these institutions in order to induce them to extend their activities to other locations.

In the present unregulated over-the-counter market for government securities, the information gathering process for the customer is extremely costly. In order to collect all available bids and offers, the customer has to contact each intermediary. However, a computer based pricing system, such as CATS of the Toronto Stock Exchange, will dramatically reduce the information gathering as well as execution costs.

The working principles of the secondary market are as follows:

i) All participating agents send their bid and ask orders through their computer terminals. For each security, all agents observe the quantity offered and asked at various prices. Any matching order will be executed through computer systems and the central authority will order the depository institution to make the necessary changes in the book entries. The system should be organized to process both limit and market orders. Market orders can be executed whenever they reach the market according to the price priority principle, i.e. starting from the most advantageous price of the existing counter orders. The limit orders, by definition, will be executed when the matching orders are available.

ii) At the end of the day (or the session), the center will ask each agent to confirm their trading. During this settlement session, any discrepancies among the accounts should be corrected.

iii) The center should be responsible for supplying the securities bought by any customer, in kind, if the other party fails. However, such a failure should not be

tolerated within the system, and severe penalties may be introduced to discipline the participating agents.

The preceding principles are compatible with the automatic execution systems available, such as CATS of the Toronto Stock Exchange. One of the merits of adopting such a system is that it can easily be extended beyond the government securities market to corporate bonds and stocks when desired. ⁽¹³⁾

The last point is important in establishing the proper institutional set up to operate such a regulated over-the-counter market. The question is whether the Central Bank, with its technical facilities and experience in managing money markets, should be the agent responsible for the operation of this market. Such an approach can be defended both by referring to the experiences in Spain and Italy and also from a practical point of view. However, from a long term perspective, establishing a separate agency is certainly preferable. First of all, as mentioned above, under a separate authority it is much easier to extend the computerized over-the-counter market to private securities. Secondly, the independence of the organization of the secondary market for government securities from the Central Bank will enhance the credibility of the open market operations.

⁽¹³⁾ For CATS system, see SCMERKEN(1987) and SMALL(1988).

REFERENCES

- AKYÜZ, A.(1989a): "İkinci El Piyasalar ve İkinci El Tahvil Piyasasının Yeniden Düzenlenmesi," (Secondary Markets and Restructuring of the Secondary Market for Bonds), CMB, unpublished.
- AKYÜZ, A. (1989b): "The Organization, Operation and Efficiency of Secondary Markets in Turkey," paper presented in the CMB/OECD Conference entitled "Current Issues in Turkish Capital Markets," September 3-8, 1989, Antalya.
- ALTAY, Ö.- Y. BAYAZITOĞLU- H. ERSEL(1988): "Bankalar ve Şirketler Arasında Repo İşlemleri" (Repos Between Banks and Corporations), Research Department, Central Bank of the Republic of Turkey, Internal Document, January.
- BANCA D'ITALIA(1988): The Italian Government Securities Market. mimeographed, February.
- Banco de ESPANA(1988): "Recent Reforms of the Spanish Government Securities Market", in OECD(1988), pp. 69-86).
- COŞAN, F.- H. ERSEL(1987): "The Turkish Financial System: Its Evolution and Performance, 1980-1986," in Inflation and Capital Markets, CMB Publications, No.7, Ankara 1987, pp. 27-65.
- DUNCAN, , M.G.(1989): "Italian Settlement and Efforts to Develop a Transparent and Liquid Market in Italian Government Securities," paper presented in the CMB/OECD Conference entitled "Current Issues of Turkish Capital Markets," September 3-8, 1989, Antalya.
- ERSEL, H.(1988): "Türkiye'de Mali Piyasalarda Bazı Yenilikler ve Para Politikası," (Financial Innovations in Turkey and the Monetary Policy), APE Discussion Paper 8802, Research Department, Central Bank of the Republic of Turkey, March.
- FELDMAN, R. A. (1986): Japanese Financial Markets, The Mit Press, Cambridge, Massachussetts.
- GIAVAZZI, F.- L. SPAVENTA [Eds.](1988): High Public Debt: The Italian Experience, Cambridge University Press, Cambridge.

OECD(1982): Government Debt Management. Vol. 1: Objectives and Techniques. Paris.

OECD(1983): Government Debt Management. Vol. 2: Debt Instruments and Selling Techniques. Paris.

OECD(1988): Collection of papers submitted in Special Session of Government Debt Management Experts, October 20-22, 1988, Paris.

SAK, G.(1989): "1988 Ekonomik Ortamında Anonim Ortaklıkların Yatırımları ve Finansman Politikaları," (The Investments and the Financial Policies of the Corporations in 1988 Economic Environment), CMB, unpublished.

SCHMERKEN, I.(1987): "How Computer Assisted Trading is Making the Toronto Stock Exchange Purr," Wall Street Computer Review, December, pp. 71-97.

SUZUKI, Yoshio [Ed.] (1987): The Japanese Financial System, Clarendon Press, Oxford.

SMALL, G.(1988): "CATS: The Computer Assisted Trading System by the Toronto Stock Exchange," November, Toronto Stock Exchange, Mimeographed.

SPO(1989): Sermaye Piyasası Özel İhtisas Komisyonu Raporu, (Report of the Special Committee on Capital Markets), State Planning Organization, Publication No. DPT: 2191-Ö.İ.K:346, November.

STIGUM, M.(1983): The Money Market, Revised Edition, Dow Jones-Irwin, Homewood, Illinois.

SYRON, R.- S.L. TSCHINKEL(1985): "The Government Securities Market: Playing Field for Repos," Federal Reserve Bank of Atlanta Economic Review, September pp. 10-19.

TABLE 1

OUTSTANDING SECURITIZED DOMESTIC GOVERNMENT DEBT (billion TL)

	<u>1983</u>	<u>1984</u>	<u>1985</u>	<u>1986</u>	<u>1987</u>	<u>1988</u>	<u>1989*</u>
(1) TREASURY BILLS	56	340	490	822	1923	2542	2520
(2) GOVERNMENT BONDS	360	531	1032	1511	2407	4880	9694
(3) TOTAL SECURITIZED DOMESTIC GOVERNMENT DEBT 416		871	1522	2333	4330	7422	12514
(4) GNP	11551.9	18374.8	27789.4	39309.6	58390	100154.3	163818.1
(5) (3)/(4)	0.036	0.047	0.055	0.059	0.074	0.074	0.076

*Estimates: Debt Stock by Treasury, GNP by SIS (September).
SOURCE: Treasury Monthly Indicators, September 1989, Table III.3, p.15.

TABLE 2

THE IMPACT OF GOVERNMENT BORROWING ON THE FINANCIAL SYSTEM

	<u>1984</u>	<u>1985</u>	<u>1986</u>	<u>1987</u>	<u>1988</u>
(I) CHANGE IN SECURITIZED DOMESTIC GOVERNMENT DEBT STOCK(1)	455	651	811	1997	3092
(II) FINANCIAL SAVINGS(2)	2101.8	3483.9	4571.1	7612.1	12679.2
(III) I/II	.2164	.1880	.1774	.2623	0.2439

SOURCE: (1) Calculated From TABLE I
(2) SAK(1989).

TABLE 3

THE GOVERNMENT SECURITIES BUYERS (% SHARES IN THE TOTAL)

	BANKS		PUBLIC INSTITUTIONS		PRIVATE INSTITUTIONS		HOUSEHOLDS	
	TB	GB	TB	GB	TB	GB	TB	GB
1986	52.2	94.7	43.3	2.5	3.5	1.5	17.3	1.2
1987	76.3	80.4	19.3	15.9	4.4	3.4	0.1	0.3
1988	91.6	89.0	5.6	8.1	2.7	2.9	0.1	0.0
1989 (September)	86.9	90.1	8.7	7.9	4.5	2.0	0.0	0.0

TB: Treasury Bills

GB: Government Bonds

SOURCE: Treasury Monthly Indicators, September 1989, Table III 6, p.19

TABLE 5

	VOLUME OF SECURITY SOLD (TL Billion)			GOVERNMENT BORROWING			THE SHARE OF GOVERNMENT SECURITIES IN TOTAL
	SHARES	PRIVATE DEBT INSTRUMENTS ^(*)	SEE ISSUES	TREASURY BILLS	GOVERNMENT BONDS	TOTAL	
1987	59.8	541.5	445.9	3199.4	1526.0	5772.6	0.3186
1988	105.7	1249.1	410.0	7528.8	2630.9	11924.5	0.3520
1989(SEPT)	395.2	1527.4	1891.4	10019.5	5666.1	19499.6	0.3065

(*) Private Debt Instruments are defined as the sum of Corporate Bonds, Finance Bills and Bank Bills.
SOURCE: Capital Market Board Monthly Bulletin, Various Issues.

TABLE 6

TURNOVER RATIOS^(*) FOR AGGREGATED CATEGORIES OF SECURITIES

	<u>1987</u>	<u>1988</u>
SHARES	0.0613	0.0619
PRIVATE SECTOR DEBT INSTRUMENTS (**)	1.0601	1.4742
GOVERNMENT SECURITIES (***)	1.0913	1.3689

(*) Turnover Ratio is defined as Sales/Stock.

(**) Corporate Bonds + Finance Bills + Bank Bills

(***) Treasury Bills + Government Bonds.

SOURCE: Sales figures are from TABLE 5; the stock figures for shares and private sector debt instruments are obtained from Appendix 3 of SAK (1989) The stock figures for government securities are obtained from TABLE 1.