

PUBLIC DEBT, PUBLIC DEBT MARKETS AND MONETARY
POLICY IN COLOMBIA

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The views expressed here are exclusively the author's and do not necessarily represent those of the Central Bank authorities or other members of the Staff

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I. INTRODUCTION AND MACROECONOMIC OVERVIEW

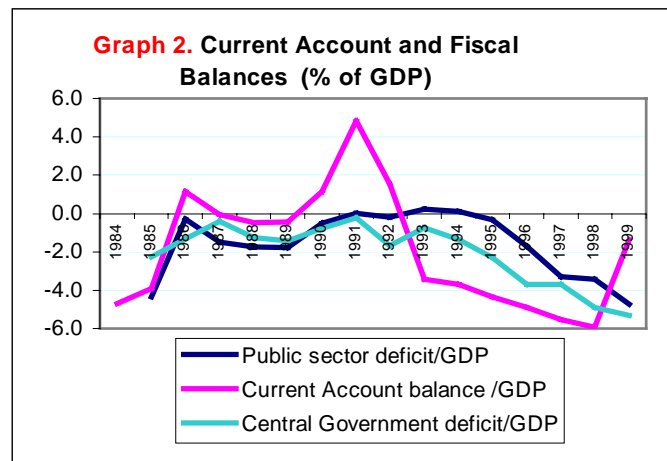
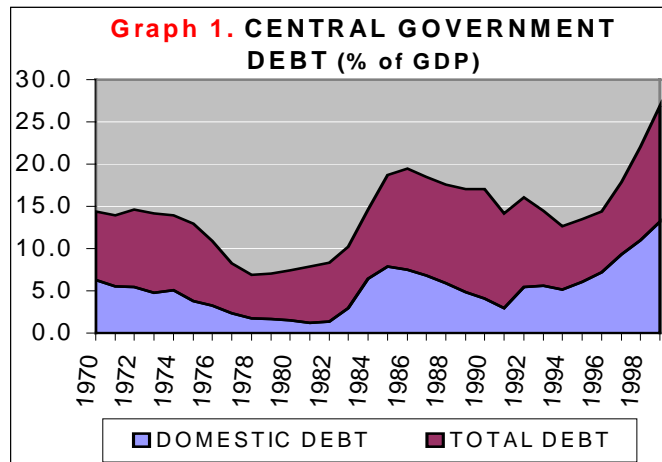
The purpose of this paper is to examine the main macro- and micro-interrelationships between public debt policy and monetary policy in Colombia during 1995-1999, from the perspective of a central banker. Emphasis will be given to the financial developments of the last two years, a period in which Colombia's capital markets have experienced significant upheaval.

Over the last decade, the public sector, as well as the private sector, have accumulated a significant stock of debt (both foreign and domestic). Between 1990 and 1999, the central government debt /GDP ratio grew 57.9%, and between 1994 and 1999, it grew 212% (Graph1). In this last period, as the result of an explicit strategy of the Ministry of Finance to develop a domestic public debt market and reduce dependency on foreign markets, the stock of domestic central government debt grew faster, showing an increase of 257% as proportion of GDP (foreign debt grew 125%). Though government debt in Colombia is still relatively low compared to that of many industrialized and developing economies (27 % of GDP in the case of central government and around 35% of GDP for the total public sector), there is a consensus that further accumulation of fiscal deficits is no longer sustainable.

This debt accumulation posed serious policy dilemmas to monetary and exchange authorities in the last decade. Given the increase in capital inflows, in domestic demand and in asset prices that took place until 1995, macroeconomic adjustment and inflation reduction were hard to achieve and almost all the burden of adjustment fell upon monetary policy. Meanwhile, the fiscal deficit, together with the external deficit, continued to grow (Graphs 2 and 3). In the midst of a severe domestic political crisis that had international implications (Colombia was "decertified" by the US for being considered as a country that did not fully cooperate in the fight against drugs), the declining trend in domestic savings continued to take place during 1996-97, in great part due to the public sector; in this period, economic growth started to slow down and asset quality started to deteriorate in the financial sector. Before the emergence of the Asian crisis, monetary policy was loosened somewhat (judging by the behaviour of

interest rates), while the markets started to perceive that the exchange rate policy was inconsistent with the fiscal policy, all of which created a highly uncertain and volatile financial environment. At the end of 1997, the nominal exchange rate hit the weak side of the crawling band which defined the exchange rate control system.

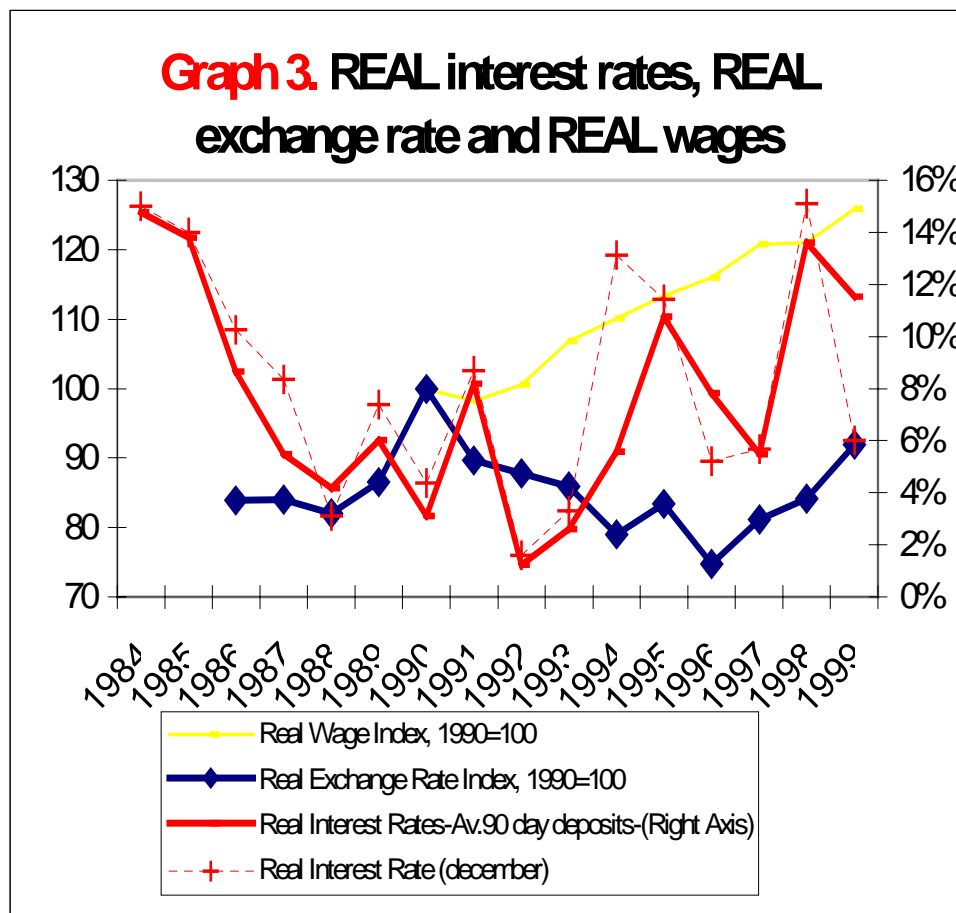
During these years, given the Constitutional mandate of the central bank to control price increases, the Colombian Central Bank (CB) did not fall into the temptation of wiping out public debt through inflation. In fact, inflation

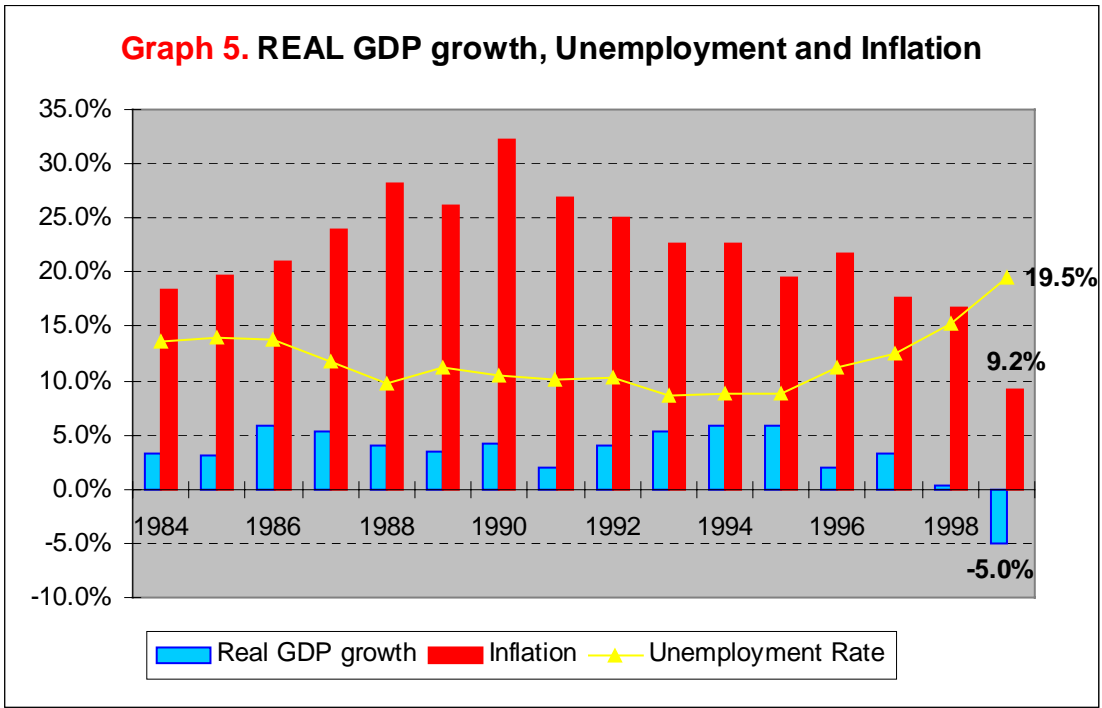
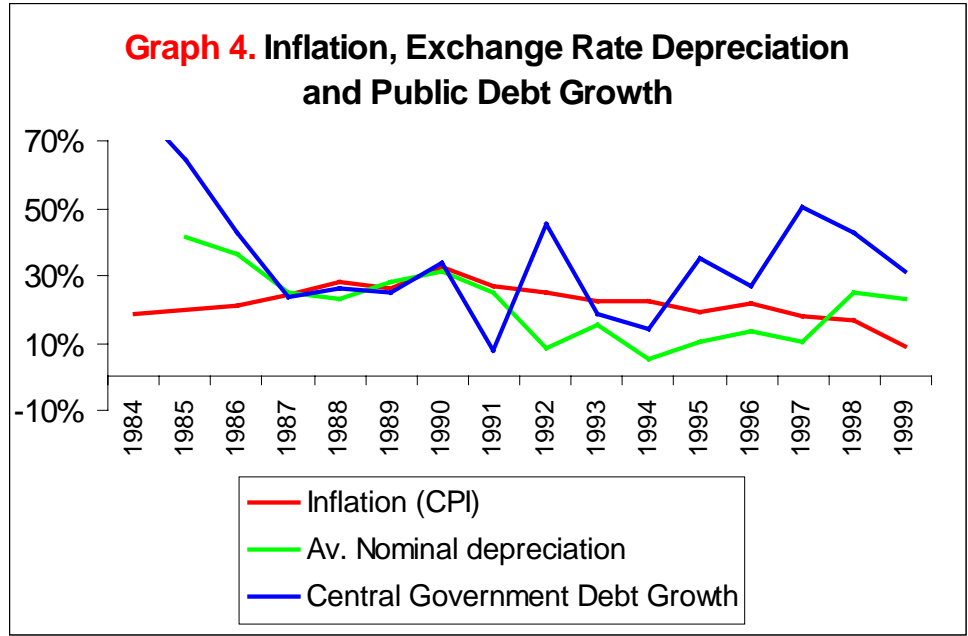


did fell 14 points between 1990 and 1997. But it did so in a very stubborn and gradual fashion (Graphs 4 and 5), due to the ineffectiveness of the macroeconomic policy mix to halt debt accumulation and growing imbalances. By 1997 Colombia's inflation record had long ceased to be

impressive, as the average level of inflation between those two years was 23.5%, substantially higher than in most countries in Latin America and the emerging world.

Then came what some have baptized the two "annus horribilus": 1998 and 1999. Colombia, as many other countries in the region, was heavily affected by spillovers from the global market turmoil in 1998 and the adverse terms of trade shock of that year. The effects of these shocks and of their policy response were more traumatic than in other countries, given the high levels of indebtedness, fragility of the domestic financial sector and macroeconomic vulnerabilities just mentioned. In 1998, the current account deficit peaked to 5.9% of GDP, the central government fiscal deficit reached 4.9% of GDP (Graph 2) and real interest rates reached unprecedented levels: more than 15% for the 90 day deposit rate (Graph 3). The policy response to the shocks was a strong monetary tightening at the beginning (May-September 1998), followed by a substantial nominal exchange rate depreciation (September, 1998), monetary loosening (October 1998 to present date) and exchange rate liberalization (September 1999); fiscal balances continued to deteriorate.





The adjustment was painful: in 1999 economic growth was negative (-5.0%), for the first time in Colombia since the years of the great depression, inflation came down in one year from 16.7% to 9.2% and the external gap shrank to 1.3% of GDP (Graph 5). Given the fact that the central government public sector deficit was 5.3%, it was private sector balances which were mostly hurt. The recession and the financial asset crisis that followed generated a credit crunch from which only the government Treasury seems to have benefited, as low risk government securities have gained a substantial share in the assets portfolio of the shrank financial sector. At present (first week of January 2000) the government is placing three year fixed rate bonds at record low annual interest rates: 10.5% nominal (1.3% real).

According to many analysts, the defense, or attempt to defend, the exchange rate regime (a crawling band system) by the central bank should be fully blamed for the substantial increase in real interest rates and the liquidity and credit crunch that took place in 1998-99. It is not the purpose here to discuss the validity of this argument. We will argue, however, that public debt and public debt market underdevelopment played an important role in making the 1998-99 external and financial crisis more costly than what would otherwise have been.

On one hand, had Colombia accumulated less public (and private) debt, the economy would have not been so vulnerable to the 1998 shocks; most probably, inflation and real exchange rate appreciation had been lower and net savings and growth would have been higher. On the other, as we will show below, the hike in money market interest rates was in some months much higher than what was desired by the authorities due to imperfections in the capital market; monetary transmission mechanisms failed to work properly, and the implementation of open market operations against public securities was severely constrained due to segmentation and lack of depth and liquidity in the public debt market. In contrast with industrialized countries that started to use indirect market monetary policy instruments when public securities markets were already developed, Colombia started to use these instruments without having the market, and in the middle of one of the most turbulent financial periods ever experienced. In other words, Colombia has suffered the weight of the old familiar truth: "public debt is bad, but public debt markets are good".

Monetary policy, in turn, has had important effects on public securities markets. Over the past decade, monetary authorities have increasingly relied on indirect instruments for monetary control purposes, and particularly on open market operations (OMOs). As from the beginning of

1998, OMOs have been carried out mainly against public paper. A 1992 law, moreover, obliged the CB to operate in the market using exclusively public debt paper as from January 1999 onwards. This has undoubtedly contributed to increase liquidity in the market, though not without problems and drawbacks for the future development of the market. As we will explain in detail below, due to an understandable fear of promoting further public debt growth through the secondary purchase of public securities, monetary authorities restricted the use of certain public securities for OMOs; unfortunately, these measures ended up contributing to segmentate and distort the securities market while they had very little, or nill, effect on the fiscal deficit.

The CB has also played an important role in modernizing the market through the provision and administration of an electronic trading system, SEN, which started to operate in November, 1998. Though the SEN project faced many problems in its initial stages and its operation was delayed several months, in its short life it has contributed enormously to increase transparency in the market and has helped to create benchmark prices. The CB is also the main custodian of public securities, and payments and settlement of these securities are managed electronically by the CB under a delivery versus payment system.

The Ministry of Finance (MoF), on the other hand, has made substantial efforts in the last four years to improve the primary market for TES-B through a program of regular auctions, pre-announcing the type of instruments to be issued and the corresponding amounts. These primary auctions are administered by the CB, under MoF guidelines. Additionally, at the end of 1997, just before the financial crisis exploded, the government appointed a group of, roughly, 20 financial institutions as official market makers (officially designated primary bond-dealers and potential candidates for primary dealers) with the stated objective of improving liquidity in the government securities market. This program is also co-administered by the CB. Unfortunately, however, due to an unfavourable economic environment and lack of a truly comprehensive program of market development, all these efforts have not been very successful in improving market liquidity.

The Colombian experience of the last years is yet another example of how important it is for monetary policy effectiveness to have enough depth and liquidity in the public debt market, and how important it is to have CB authorities aware of this fact and promoting market development. It is also an interesting case study to understand how difficult it is to achieve this

awareness and commitment when there is macroeconomic vulnerability, highly volatile markets and many institutional and legal restrictions.

The challenges that lie ahead are enormous, both in terms of macroeconomic adjustment and capital market rationalization and modernization. As is well known, at the end of last year Colombia signed an Extended Fund Facility Agreement with the IMF. The macroeconomic adjustment program contemplated under this agreement foresees a substantial and permanent reduction in the Colombian non-financial public sector deficit; debt ratios should therefore stabilize at current levels and reduce gradually after year 2003. If everything works out well, real growth should resume to 3% in year 2000 and gradually increase to 5% in 2002, while inflation is supposed to drop to 6% in two years.

One of the main economic¹ risks of the whole program is the future performance of the financial sector, which continues to be extremely vulnerable. If bank's assets continue to deteriorate at present rates (which are higher than what was foreseen initially), fiscal or monetary targets might not be easily accomplished. On one hand, Fogafin, the Colombian Deposit Insurance Fund which is a decentralized public agency responsible for financial sector rescue programs², could face budget problems or will have to issue more debt. If an inflationary adjustment is to be avoided and the financial strength and credibility in this Fund is to be maintained, new debt issues by Fogafin must be backed somehow by Central Government resources. Apart from mining the credibility in the economic adjustment program, this would inevitably continue to crowd out private credit resources for the private real sector, delaying economic growth. On the other hand, financial sector vulnerability could constraint monetary policy and induce unsustainable low interest rates, which in turn could generate further exchange rate depreciation and/or inflation. If this negative scenario does not occur and private balances recover, anyway, it is very unlikely that domestic borrowing will continue to be as cheap for the government as it has been in the last weeks.

To sum up, though there is consensus that the right steps have been taken to put the house in order, there is still uncertainty and vulnerability in financial markets and this might keep real interest rates volatile and at

¹ Of course, political and legal risks are equally, or more, important to guarantee future stability. If the latter continue to be a source of investment risk, it will be very difficult to achieve fiscal and overall macroeconomic adjustment.

² Different from last resort liquidity facilities, which are, of course, a CB responsibilities.

higher than desired levels. As Dornbusch³ would have put it: more unpleasant monetarist and fiscal arithmetic may have to be done.

The other big medium-term priority and challenge is to develop a long term development vision of capital and public debt markets. Of course, a necessary condition for this development to occur is macroeconomic stability: fiscal reform, stable inflation and (sustainable) low interest rates. But it also requires coordinated policy actions and changes in the regulatory and institutional framework; a joint effort between the CB, MoF, Securities Superintendency, Banking Superintendency and Fogafin, among other institutions. As some members of an IMF mission recently put it, capital market underdevelopment "limits the scope for a rapid recovery and constitutes an important indirect source of systemic risk".

The rest of this paper is structured as follows. Section II briefly reviews the main institutional arrangements in Colombia under which public debt and monetary policies are designed, coordinated and implemented. Section III provides an overview of the development of the domestic market for public securities in Colombia. Section IV examines the aforementioned dilemmas and contradictions of monetary and fiscal policies from a microeconomic perspective, offering some concrete examples of how public securities-market underdevelopment have hindered monetary policy effectiveness. Section V concludes with some policy recommendations.

II. INSTITUTIONAL ARRANGEMENTS

In order to understand the interactions between public debt- and monetary policy in Colombia, it is useful to know some basic facts about the institutional framework and political economy environment under which these policies are designed. We believe the following are the most important:

- **"Independent" Central Bank (CB).** The Political Constitution of 1991 created an "autonomous" Central Bank (CB) subject to its own legal regime, with responsibility for maintaining the purchasing power of the currency. The CB Board is responsible for monetary, exchange rate and financial policies in Colombia. It should design such policies in coordination with the government, and the functions assigned to the CB should be carried out in coordination with general economic policy (mainly, the macroeconomic program approved by the National Council

³ See Dornbusch (1997)

on Economic and Social Policy, CONPES). The Central Bank Law of 1992 states explicitly that exchange policy must be determined in agreement with the Minister of Finance. In the event of failure to reach agreement, the constitutional responsibility to maintain the purchasing power of the currency shall prevail.

- **(However) The Minister of Finance is a member of and chairs the Board of Directors of the CB.** This Board comprises other six members: the General Manager of the CB and five members who serve in that capacity alone and are appointed by the President of the Republic for renewable four-year terms, with replacements of two of them every four years. The General Manager is appointed by the Board for a four year term. The presence of the Minister is required for a quorum.
- **CB direct lending to the government** requires unanimous approval from all Board members; at present (and since 1992) the CB cannot purchase public debt instruments in the primary market. Voluntary purchases of government securities in the secondary market (indirect lending) are permitted, such as outright operations, repurchase agreements and the acquisition of government paper as collateral for rediscount credit facilities to the financial sector. **CB earnings** or profits (net of reserves to cover future losses) belong to the nation and any fiscal year losses must be covered with resources from the national budget⁴. The Political Constitution of 1991 also prohibits direct lending to private individuals (other than liquidity support to financial institutions and the intermediation of external credit).
- **Open market operations with public securities.** Law 51 of 1990 gave authority to the CB to place government securities (-TESA -acquired by the CB before 1991) in the market for monetary control purposes. The resources thereby acquired could not be transferred to the government. In the Central Bank Law of 1992 (Law 31 of 1992) the authority to operate in the market with government securities was kept and an additional mandate was incorporated: as from January, 1999, all CB open market operations (both outright purchases and/or sales and repurchase agreements) should be carried out **exclusively with government securities**.
- **CB approval of public indebtedness.** By the initiative of Congress, the CB Board must formally express its opinion on the macroeconomic

⁴ Before 1992, the effect of a nominal depreciation on the value of foreign assets was monetization, as this adjustment was transferred by the CB to the government. This was for yeras, an important source of government financing.

effects of new foreign and domestic public indebtedness contemplated in each annual budget bill proposed by the government to Congress. The CB, however, has no direct power to veto such proposal; it only has potential indirect power to the extent that it is able to Congress agrees with.

- **Public debt issues require prior approval from the CB Board.** The aforementioned Law of 1992 gives the CB authority to regulate capital markets and public debt issues. More specifically, it establishes that the CB is responsible for "...determining the financial conditions under which public entities shall issue or buy securities... with the aim of insuring that these operations take place at market prices. If those conditions are not met, the corresponding securities can not be issued or placed"⁵ . In practice, CB intervention in public debt policy has gone as far as prohibiting -or not approving- the issue of short term (less than one year maturity) public debt bonds or bills.
- **MoF is responsible for main debt management functions (Department of Public Credit).** The Ministry of Finance (MoF) is responsible for functions such as planning: projection of fiscal requirements and formulation of debt program frequency, volume, issuance by instrument, etc.; short-term management of primary market including definition of issuance volumes and borrowing and auctions calendar; definitions of guidelines for the operation of primary auctions by the CB; direct placements of debt via special arrangements (captive buyers) with other public entities; active debt public management; and, in coordination with the CB, management of primary dealers (and candidates for primary dealers).
- **The CB is fiscal agent of the government** and in that capacity it makes payments, including servicing of principal and interest payments to public bond holders, and receives payments. The Treasury has two deposit accounts in the CB: one to manage payments of public debt securities and the other to manage other cash operations. There are no formal arrangements between the Treasury and the CB to manage government cash balances, but the Treasurer and CB staff meet on a weekly or bi-weekly basis (*Comité de Tesorería*) to share information and sometimes coordinate cash balances movements in order to avoid sharp fluctuations in the monetary base. At present the Treasury does not have access to remunerated deposits at the CB and cannot purchase (neither outrightly nor temporarily) securities from the CB.

⁵ Almost literal translation of Article 16, section "c" of Law 31 of 1992.

- **The CB is custodian and administers public securities' payments and settlement.** The CB is also the main custodian of public securities, and payments and settlement of these securities are managed electronically by the CB under a delivery versus payment system.

III. RECENT DEVELOPMENTS IN THE GOVERNMENT DEBT MARKET IN COLOMBIA

Colombian capital markets, as in many developing economies, continue to be highly illiquid and have a very limited investor base; this is particularly so in the case of stocks and private securities, where size is even lower than in other emerging economies. The private real sector is therefore highly dependent on traditional credit financing by financial intermediaries and there is little risk spreading through portfolio and debt diversification in the economy in general.

In this environment, short term fixed income trading, dominated by financial intermediaries (particularly banks), is the most important and sector of Colombian capital markets. Due to high and variable inflation rates for a lengthy period, the bond market is concentrated on the short end of the yield curve.

Given the impressive growth of domestic government debt over the last decade (Graph 1), government securities have gained a substantial share in the domestic bond market. The reasons for this growth are two-fold: a) On one hand, as mentioned earlier, the central government deficit started to soar since 1992 to reach record highs of more than 5% in 1999 (Graph 2), b) On the other, since 1993⁶, the MoF has developed a debt strategy consisting of reducing the former concentration on foreign obligations and promoting domestic noninflationary financing through domestic debt issues. In 1991, foreign debt accounted for almost 80% of total government debt; since 1994, that share has dropped down to a 52-50% range.

The public debt market consists mainly of bonds or notes issued by the Treasury, denominated TES-B. Up to date, primary government securities issues by the MoF have been guided by the objective of satisfying the government's financing needs, not by monetary objectives. The CB

⁶ The first auction ever of Treasury fix-rate bonds took place in February 12, 1993.

operates only in the secondary market and in the past (until early 1998) issued its own paper for monetary control purposes.

Apart from the MoF, decentralized government agencies such as the agricultural development bank, Finagro, and more recently, Fogafin, the Deposit Insurance Fund, are important issuers of public paper (Títulos de Desarrollo Agropecuario-TDAs- and Bonos Fogafin, respectively). In 1995, the outstanding stock of TES-B amounted to around \$2.3 billion, slightly more than 50% of the total central government debt. At current prices, today that stock is valued at \$19,300 billion (it has grown in real terms at an average annual rate of around 22% since 1994) and represents 94% of total central government bond market, as shown in Table 1.

Table 1. Composition of Public Debt Bond Market (end of 1999)			
	Trillions of pesos	Share in subtotal	Share in total
Central Government Debt			
TESA	0.37	1.8%	1.4%
TES B	19.28	94.0%	74.3%
Bonos Seguridad	0.41	2.0%	1.6%
Bonos Ley 160	0.09	0.4%	0.3%
Bonos Educativos	0.03	0.2%	0.1%
Bonos Agrarios	0.00	0.0%	0.0%
Valor Constante	0.07	0.4%	0.3%
Bonos Cesantía	0.04	0.2%	0.2%
Bonos Solidaridad	0.20	1.0%	0.8%
Subtotal	20.51	100.0%	79.0%
Other Decentralized public agencies debt			
Bonos Fogafín	3.51	64.4%	13.5%
TDA	1.93	35.4%	7.4%
Bonos Forestales	0.01	0.2%	0.0%
Subtotal	5.45	100.0%	21.0%
Total	25.96		
Source: DCV-Banco de la República			

All these bonds that compose the public bond capitalization are very heterogeneous. Some of them, such as the TDAs issued by Finagro, are forced investments by banks and other financial intermediaries. The Bonos Fogafín are a wide range of instruments (mostly floaters, tied to the benchmark 90day deposit rate DTF, and whose maturity ranges from less than a year to 10 years) issued last year to finance debtor relief programs and capitalization programs as part as a comprehensive financial rescue package designed by the government. As we will explain in detail below, a

great part of central government securities, including most of TES-B, are also placed through non-market mechanisms.

Despite the financial liberalization reforms of the early 1990s and government attempts to promote market development, overall, the Colombian market for public securities is extremely thin and segmented; bonds are not liquid and in many cases that liquidity is provided only by the central bank (that is particularly true in the case of the recently issued Fogafin bonds and some TES-B). Public debt instruments are placed within captive buyers such as banks (in the case of forced investments) pension funds or decentralized public entities (such as ISS, the Social Security Institute, and Ecopetrol, the public oil company) which can be enforced to invest in government bonds (today, 65% of the outstanding stock of TES-B is in the hands of the non-financial public sector). In many cases, placements continue to be at below market rates, though this practice has diminished substantially in the last years.

As mentioned in the introduction, since 1994, the MoF has made significant efforts to improve the primary market for TES-B through a program of regular auctions, pre-announcing the type of instruments to be issued and the corresponding amounts. At the end of 1996, despite this being a very dynamic year for primary auctions, only 12.1% of the stock of TES-B was issued through this mechanism. Today that share is 20%; in 1997, 1998 and 1999, auction placements increased at annual rates of 173%, 45% and 33%, respectively. There has been progress also in standardizing instruments to insure fungibility, but recent issues of Fogafin Bonds and TES-B to rescue fragile financial institutions through debt relief and capitalization programs⁷ have significantly hindered that effort. For example, most Fogafin Bond interest payments float quarterly (tied to DTF), unlike floater TES which are indexed to inflation⁸ and they are not backed by full faith and credit by the government. At present, almost only the CB accept Fogafin Bonds as collateral for repo and rediscount credits, so there is no secondary market for these bonds.

In November, 1997, the MoF launched a "Primary Dealer" system to promote liquidity in the TES-B market. Under this system, a group of

⁷ Fogafin has given loans to financial institutions to bring the risk weighted capital adequacy ratio up to 10%, through direct placement of bonds with these institutions.

⁸ One of the reasons for choosing DTF indexed debt was to be able to match liabilities in savings and loans which are indexed to DTF and help reduce the interest gap in these institutions. regarded as cheaper than inflation indexed debt (7.7% vrs. 9% real rates, respectively), and that was the reason for having chosen it (why doesn't the gov. issue DTF indexed debt as well?).

financial agents is chosen with the stated objective of fostering growth in the primary and secondary market for these securities; these dealers have obligations to the government and enjoy some privileges which enhance their own private incentive to develop the market. Currently, there are 11 officially designated primary dealers (mostly banks) and 9 candidates for primary dealership, all of which we will call here "market makers". Minimum capital requirements⁹ and minimum risk ratings (more than BBB- or BBB for D&P and Bank Watch) have to be met in order to be a market maker. The CB evaluates each market maker's performance, following specific guidelines given by the MoF; at the end of the year each agent gets a specific mark or rating. In this evaluation, activity in the secondary market is given more weight than primary trading in this evaluation. If a minimum rating is not achieved, the agent will cease to be a market maker, or a designated primary dealer might lose its franchise and be replaced by a candidate. It is believed that this system puts more pressure on dealers to enhance liquidity in the market.

The most important privileges enjoyed by market makers are the following: exclusive right to bid or participate in primary TES auctions; exclusive access to market maker meetings with MoF and CB staff; and exclusive access to the first trading "floor" in the electronic trading system SEN. Only designated primary dealers have exclusive access to second rounds of TES auctions. Their main obligations are: be very active bidding for sale and purchase in the first SEN trading floor and produce information and documents to their clients on market developments.

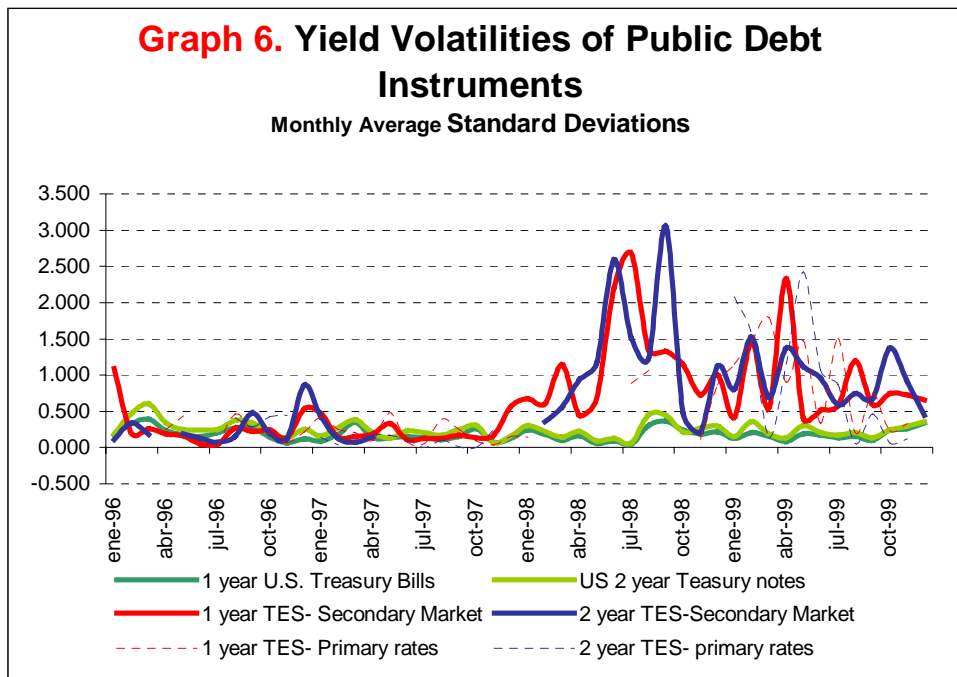
During the financial turmoil of 1998, both the perceived commitment of the government to develop the market and the efficiency of primary dealers to develop demand came into jeopardy.

Table 2. Yield Volatilities (average standard daily deviations)

January 1996- January 1999

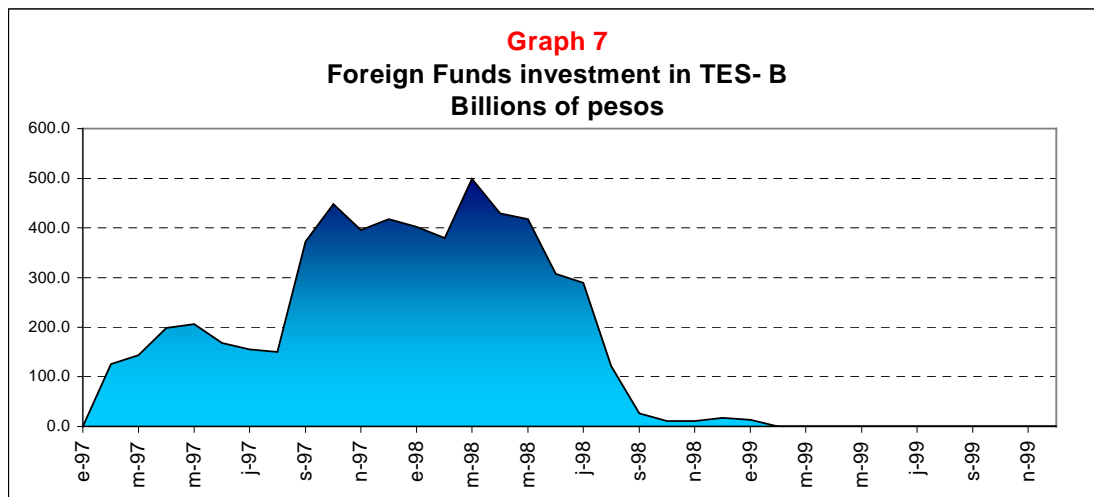
1 year Treasury Bills Secondary Market.	1.09
2 year TreasuryNotes Secondary Market	1.44
1 year TES Primary Market	5.45
2 year TES Primary Market	4.88
1 year TES Secondary Market	5.71
2 year TES Secondary Market	5.49

⁹ Stock Brokers: \$5 billion; banks: \$25 billion; Financial Corporations: \$15 billion.



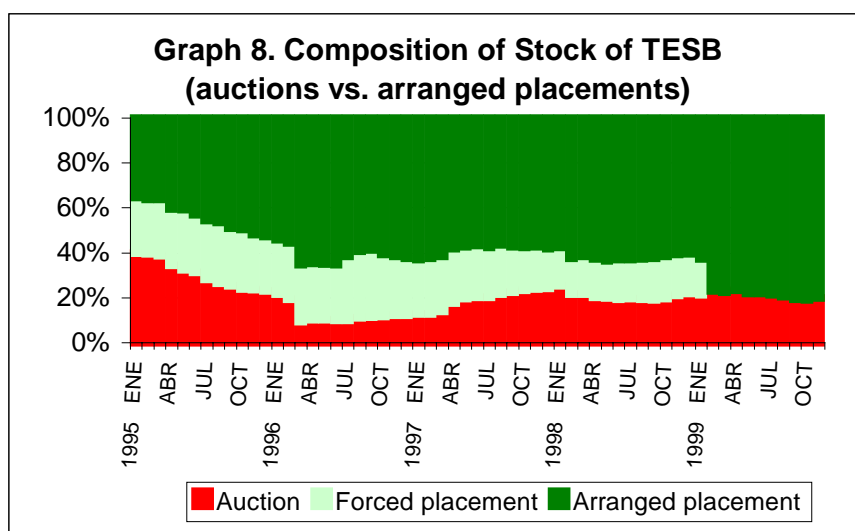
The reasons for less credibility in the government's commitment to the program are the following:

- As can be seen in Graph 6 and Table 2, volatility in the Colombian public securities market has been extremely high, compared both to previous levels and to that of developed markets such as the US Treasury Bill market. Given the sharp rise in interest rates during 1998, on several occasions the government elected to reject the bids presented by market makers in the primary auctions, declaring the options void.



This response, of course, undermined credibility in the government's commitment to be in the market both in the good and the bad times. According to many analysts, this fact helped to fuel capital outflows from international institutional investors who were already under the contagion effects of the international financial crisis and whose Colombia country risk perception was already at record highs given the magnitude of the twin external and fiscal deficits. As is shown clearly in Graph 7, the foreign investor base in the TES market that was created during 1995-97 disappeared in a couple of months. This capital outflow was undoubtedly one of the causes of the attack against the peso and CB reserves during 1998.

- Despite growth in auction amounts and promises to reduce non-transparent operations with captive buyers in late 1997, the government continues, increasingly, to operate a parallel and captive market to distribute directly significant quantities of their securities. More than 80% of the total outstanding debt in TES-B has been placed through these special arrangements, and this share is expected to increase in 2000 (Graph 8) ¹⁰. As mentioned above, some public sector companies are required to invest their excess liquidity in government securities through direct transaction with the Treasury (inversiones forzadas); these investments can not be traded in the secondary market. The Social Security Institute (ISS) is also obliged to invest its resources in such securities, but has the option of buying them in either the secondary



¹⁰ At the end of 1996, 12.2% of total outstanding TES-B was placed by auction (\$724.1 billion) and the rest was placed via special arrangements by the Treasurer with the ISS (4.3%), Garantía TAN (3.1%) and "Sustitución DSI" (0.3%).

market or directly from the Treasury (inversiones convenientes). Since 1997, these investments are supposed to be placed at “near to market” prices: more specifically, at the rate of the last primary auction.

- Many market makers and analysts believe the government has been ambiguous with respect to its intention to extend the yield curve and, in particular its commitment to use fixed income bonds for this purpose. As can be seen in Graphs 9-11 the range of instruments issued by the MoF has broadened significantly over the last three years, and the structure of the market by type of instrument has been quite unstable. In 1996 there were basically three types of instruments in the secondary market: fix rate bonds for shorter maturities (1, 2 and 3 year maturities); a 6 year maturity floater tied to monthly inflation¹¹ and a 15 year maturity yearly floater bought by the ISS (through arranged placements)¹². In the second half of 1998, just after the exchange rate band was depreciated 9%, the government introduced US dollar denominated bonds¹³; in 1999, it stopped issuing the 7 year floaters and opened a new issue of indexed bonds denominated in units of constant real value called UVRs¹⁴. At present it issues 1,2 and 3 year fixed bonds, 5 and 7 year inflation indexed bonds and dollar indexed bonds. The rationale for these changes in structure and the use of this diverse range has proven very confusing. Market participants view the introduction of these instruments as opportunistic behaviour by the MoF, with the sole purpose of mobilizing more (and cheaper) funding to the growing fiscal deficit.

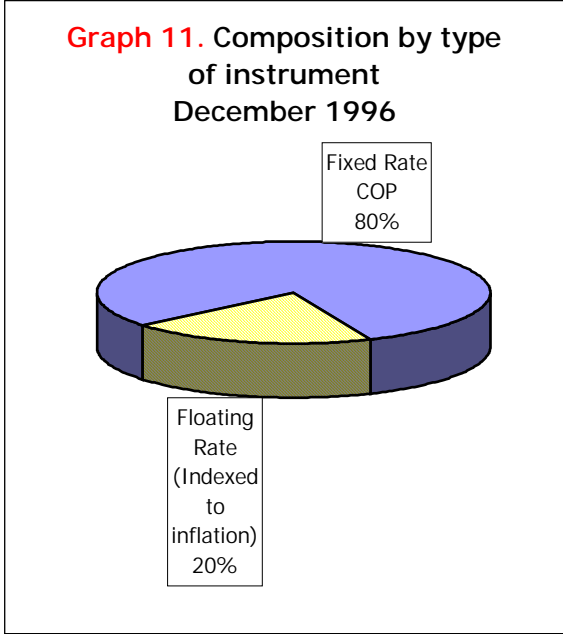
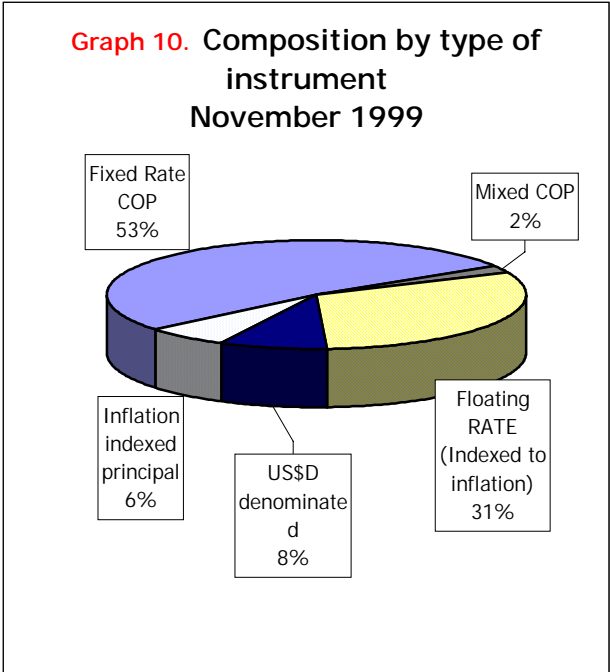
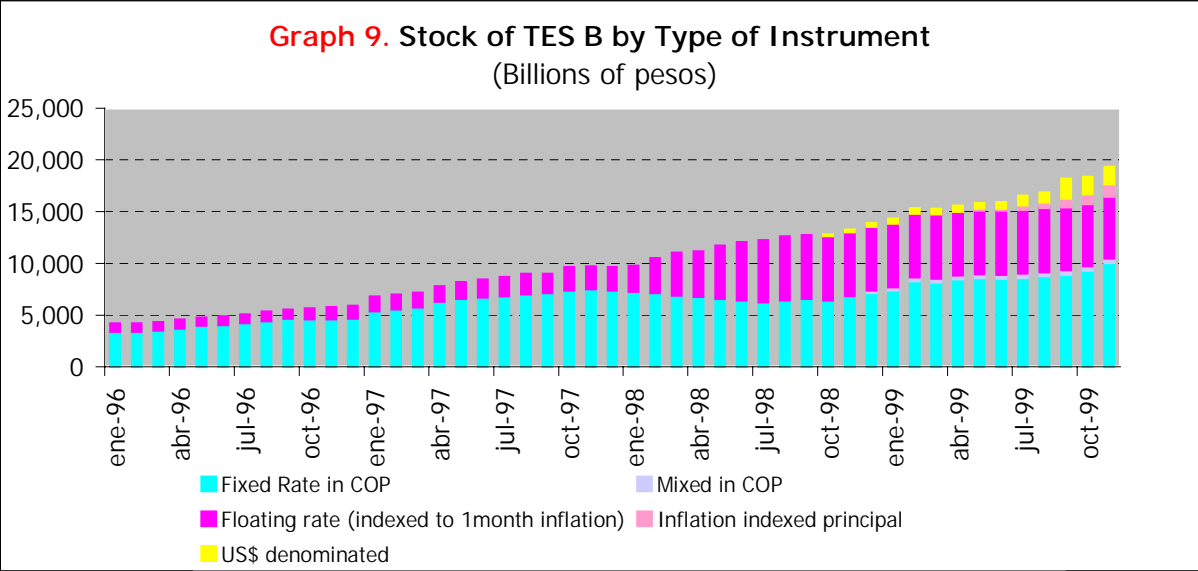
It was this same view what determined that the CB Board did not accept a proposal by the MoF to issue treasury bills of less than one year- maturities in early 1998, when real interest rates started to rise. The Director of the Ministry’s Public Debt Department had argued that it was important to issue these bills to complete the short end of the yield curve and to facilitate cash management by the Treasurer. The CB authorities, however, perceived that approving these new issues would only help increase the deficit and the vulnerability of public finances, and no market development considerations were taken into account in that opportunity.

¹¹ The first auction of 6 year floater bonds took place in June 14, 1995.

¹² These bonds were issued in 1994 and in 1998. Each august the MoF reports the rate of this annual floater. Currently the yield of these bonds is annual consumer price inflation plus 1.28 points.

¹³ The first US dollar TES auction took place in October 29th, 1998.

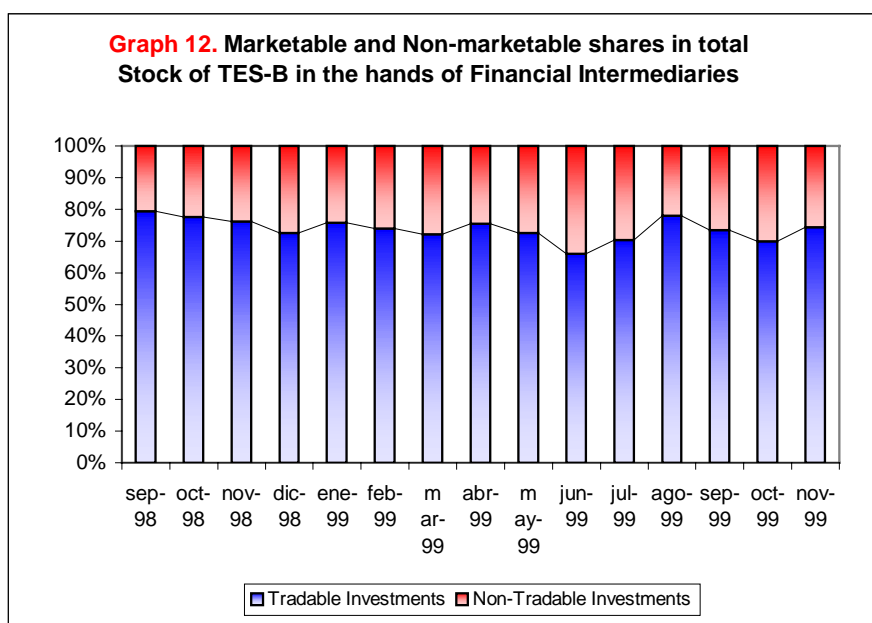
¹⁴ The first auction of UVR denominated bonds took place in May 25th, 1999.



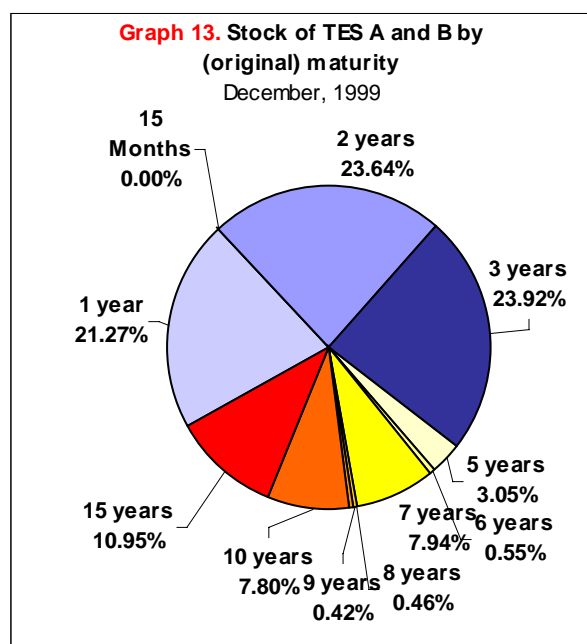
Market makers complain the government has been very inconsistent in its issuance of short term (1 year) TES in the past, of which there is not enough stock at present. Many of the past 1 year notes have been replaced by 2 or 3 year maturities, extending average maturity and causing a vacuum of short term issues. Inconsistent issue size and maturities affect the market via uneven future liquidity of those same series of bonds.

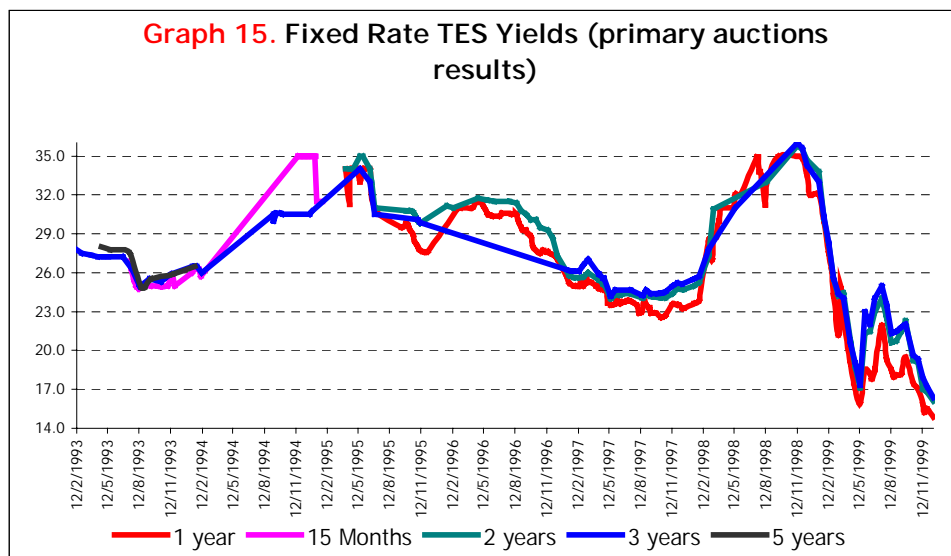
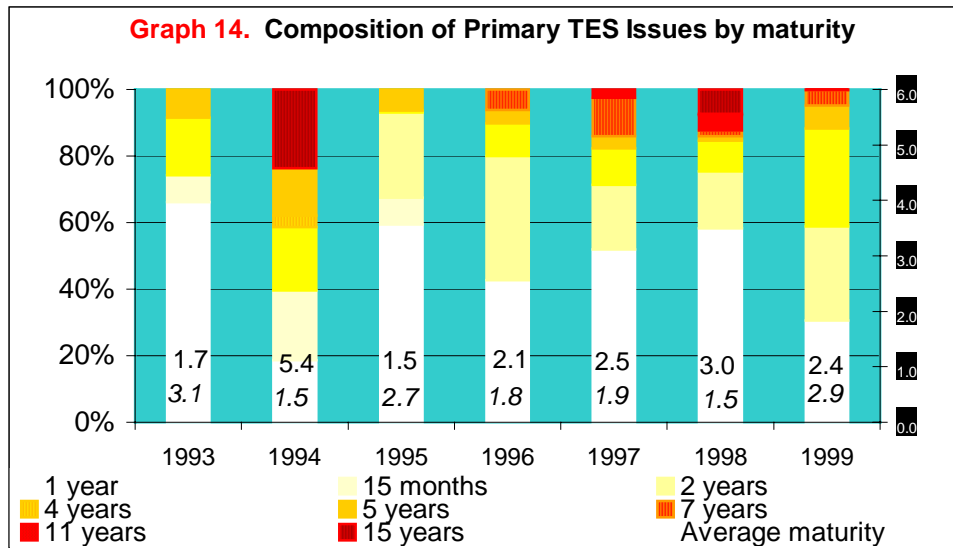
Authorities, on the other hand, have the perception that market makers, even controlling for the effect of a very unstable macroeconomic environment, have not made enough efforts to promote liquidity. Currently, around 75% of the portfolio in the hands of financial intermediaries is held for trading (Graph 12) and it has to be marked to market. Most trading has taken place in the repo market, a substantial part of which takes place with the central bank. Once the economy stabilizes and authorities strengthen their commitment to a comprehensive plan to develop the market, it would be advisable to review the whole market maker program. More strict and accurate parameters to evaluate market-making performance should be introduced, as well as more effective positive incentives to be a market maker.

Though demand for longer term indexed bonds has increased in the last years (Graphs 13-14), the term structure of TES-B placed by auctions shows that demand continues to be concentrated in short term maturities (1, 2 and 3 years). Once markets calmed slightly in 1999, the MoF was able to increase the average maturity of new bond issues from 1.5 years in 1998 to 2.9 years. Over the last decades, high and unstable inflation rates have been the main obstacle to develop long-term financial savings in Colombia. As mentioned earlier, at present inflation is at its lowest levels in decades. If price changes continue to be at one-digit levels, it is the right moment to start developing a long-term capital market.



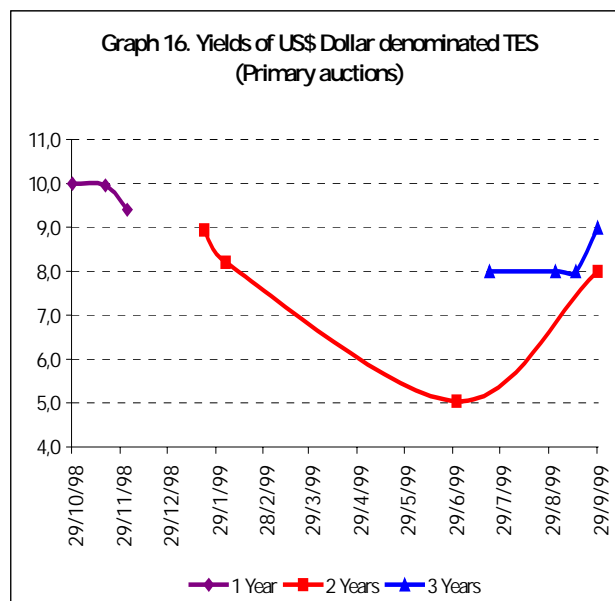
Most probably, the government will continue to issue indexed bonds to capture long term savings, particularly if inflation expectations continue to be higher than actual inflation, as has happened in the last months. This has the potential advantage of introducing the right stimulus for government to diminish pressure on the CB to inflate the economy and reduce the debt burden. However, many would argue, I believe correctly, that strengthening a constituency of inflation-averse investors in fixed rate long term bonds in some cases is more effective to reduce the temptation to inflate the economy. Additionally, competition with the financial private sector issuing long term indexed financial products will be tough. In order to solve the interest and maturity gap problem currently affecting the Colombian savings and loans system, the same government is promoting a new housing financing system, similar to the Chilean, based on the issue of long term indexed bonds.





From a different perspective, it would be very useful to issue longer term fix rate bonds to extend the yield curve; at present there are no nominal long term reference or benchmark rates in Colombia. Market makers argue that indexed instruments are not attractive to the market due to the fact that uncertain cashflows for long maturities require traders and investors to assign the most conservative estimates of coupon and principal cashflow when calculating their VaR values. Additionally, due to seasonal changes in monthly inflation, there are sharp cycles in prices and traded volume, with investors "piling in" during perceived months of high inflation and "piling out" in the months of lean inflation after the first quarter of the year. All this makes the market for these securities very illiquid.

To sum up, there is evidently a trade-off between indexed and fixed rate bonds, and perhaps it would be desirable to have both in sufficient amounts



as to make their markets relatively liquid. If there is a good combination of floaters and fixed rates for equal maturities in the market, this has the advantage of being able to better monitor inflation expectations in the economy. It is interesting to note that the spread between the 1 year- note and the 2 and three year- notes has been relatively large throughout 1999 (Graph 15), indicating that despite the drop in inflation, agents continued to expect higher interest rates in the future. If the MoF decides to issue a fix-rate 5 year bond in 2000, it would be a nice way to test credibility in the inflation targets programmed for 2000-2005.

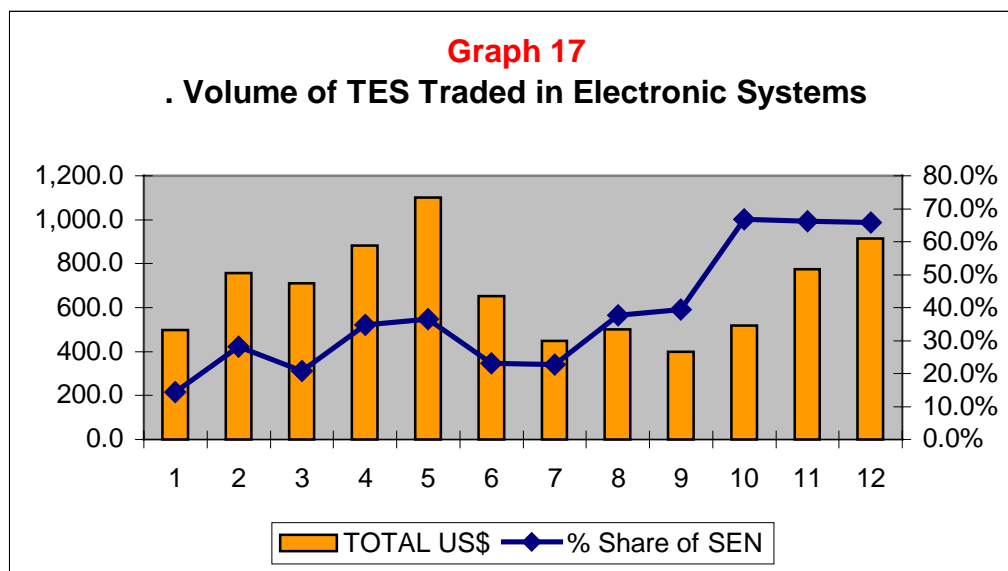
At this stage, it is not clear whether the government will continue to issue dollar indexed bonds, and/or in what amounts. Judging by the behaviour of the two-year- dollar indexed primary yields in 1999 (Graph 16), peso devaluation expectations have decreased since the peso started to float in late September. It is important to point out that there are regulations that distort demand for this type of instrument. On one hand, since 1998, but particularly since August 1999 when the peso was under a second speculative attack which ended in the elimination of the crawling band exchange rate system and the introduction of a floating regime, the CB restricted the dollar credit cash position that banks can have. Due to this restriction, in order to be able to hedge uncovered debit positions, banks have demanded dollar indexed TES. Another piece of regulation which creates (in a way, artificial) incentives to demand these TES is preferential treatment in terms of capital requirements for derivatives that are covered with dollar indexed TES (if they are covered with other dollar denominated asset they do not have this treatment).

In order to have more liquid, transparent and efficient public bond markets in the future, both the MoF and the CB must design a comprehensive market development plan with a clear long-term vision. This vision has to be communicated and transmitted to other regulatory public agencies which directly or indirectly effect the market such as the Banking Superintendency and the Securities Superintendency, among others. Among regulatory issues that need urgent reform, we could mention the following:

- Securities lending, which was prohibited in Colombia until March, 1999, is still subject to many restrictions (particularly regarding accounting principles).
- Though in 1998 the CB led a reform to eliminate quantitative restrictions on gross amounts of short repo operations, there are still some restrictions on the repo market. For example, securities used as collateral backing any repo contract can not be used by the temporary holder to do other operations and they are held frozen in the respective account administered by the custodian (the CB).
- Institutional investors, in particular pension funds, are subject to portfolio investment regulations that currently distort prices and hinder the development of this demand sector¹⁵. As stressed by a recent IMF mission, the regulatory structure governing mutual funds should be rationalized, guaranteeing more competition among financial institutions offering mutual funds, among other aspects.

Before entering to examine the way the CB has operated in the market, this section will end with a positive note regarding recent developments in trading infrastructure. As mentioned in the introduction, in November 1998, the CB put in operation an electronic trading system, SEN. By October 1999, more than 60% of electronic trading was done through SEN (Graph 17). This system, which is centralized and administered by the CB, has substantially improved transparency and efficiency in the secondary market for TES-B. Before, most trading took place through the stockmarket system where prices are severely distorted (among other reasons, because in most cases it is impossible to separate yields from fee rates paid to the broker).

¹⁵ The majority are fixed income funds, invested in securities that mature in one year or less.



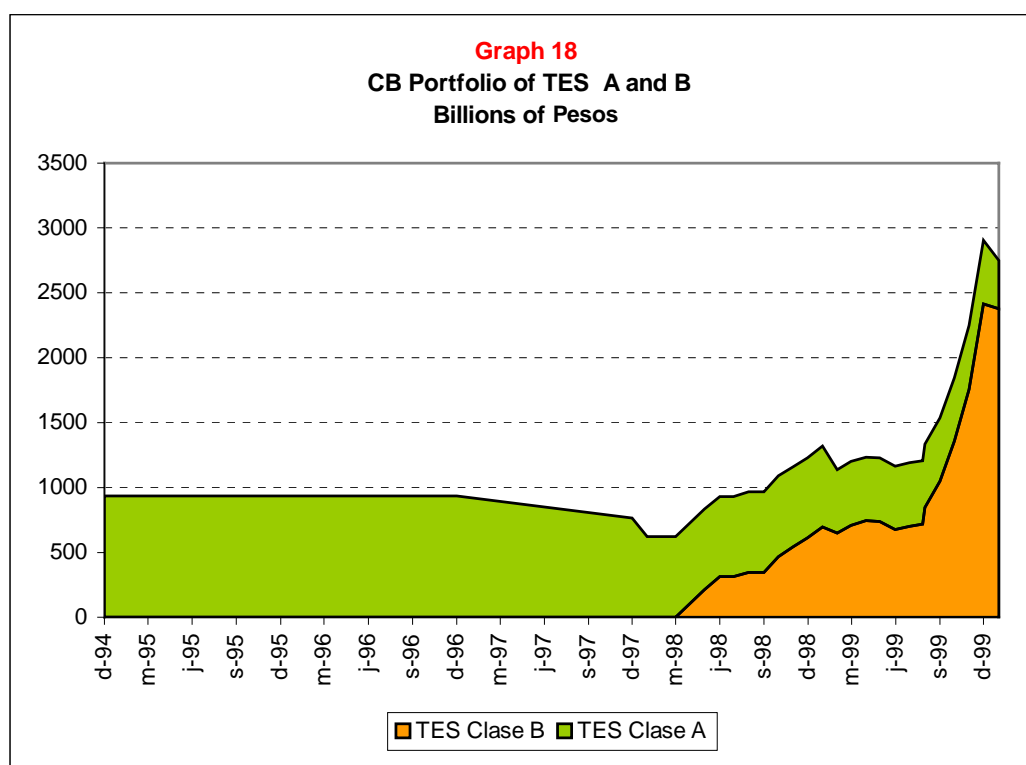
IV. MONETARY POLICY AND PUBLIC DEBT MARKETS DEVELOPMENT

Like in many other countries, OMOs have become the CB's main instrument for altering the stock of money. Though traditionally monetary reserve requirements have been a key tool of monetary control in Colombia, in recent years, however, the level of reserve requirements has been reduced from an average of 27% in 1992-94 to 4.5% at the end of 1999. Reserve requirements were kept relatively high compared to other countries in the region during most of the 1990s. During the 1998 crisis these reserves were substantially diminished as a means to provide liquidity to the banks and help prevent a systemic payments crisis¹⁶. Nowadays, CB authorities rely almost exclusively on OMOs to control liquidity in the markets and on a rediscount credit window to provide lender of last resort facilities.

Since the 1980s, the CB started to develop several techniques and instruments of indirect monetary policy. As is often the case, when the CB initiated the transition to use mainly indirect monetary policy instruments in the early 1990s, there was excess liquidity in the financial system and open market operations were used almost exclusively for contractionary purposes. This excess liquidity was inherited by policies during direct

¹⁶ A substantial portion of liquidity demand during the second half of 1998 was provided through the reduction in these requirements.

control policies and fueled by the significant accumulation of foreign assets during the period of foreign capital inflows (1990-1995). Up to 1997, the CB chose to issue its own securities for monetary control purposes (called Títulos de Participación, TP) rather than use government securities. The reason for this was two-fold: on one hand, the 1991 Constitution gave autonomy to the CB and the idea of implementing monetary policy through primary government issues was simply not viable. On the other, secondary markets of public securities were extremely thin and segmented to be able to implement OMOs with government paper. Additionally, since the CB was traditionally a net debtor of the financial system, it needed to build enough stock of public securities to insure that it could issue all the amounts needed to achieve monetary objectives. The CB held in its portfolio only less than one trillion pesos in the form of TES-A acquired in the early 1990s through a special arrangement with the government (Graph 18), which was certainly not enough to meet contractionary needs (Graph 19). Though the CB could have mixed the use of TPs and TES-A for OMOs, it never sold its TES-A (definitely or on a temporary basis) and the secondary market for these securities was unexistent by the end of 1997.



At the end of 1995, the stock of TPs (CB paper) reduced significantly as well as the need for contractionary OMOs (see Graph 19). According to some analysts (CB staff and external consultants, see Mas (1996)), there seemed to be an opportunity to buy public securities in the secondary

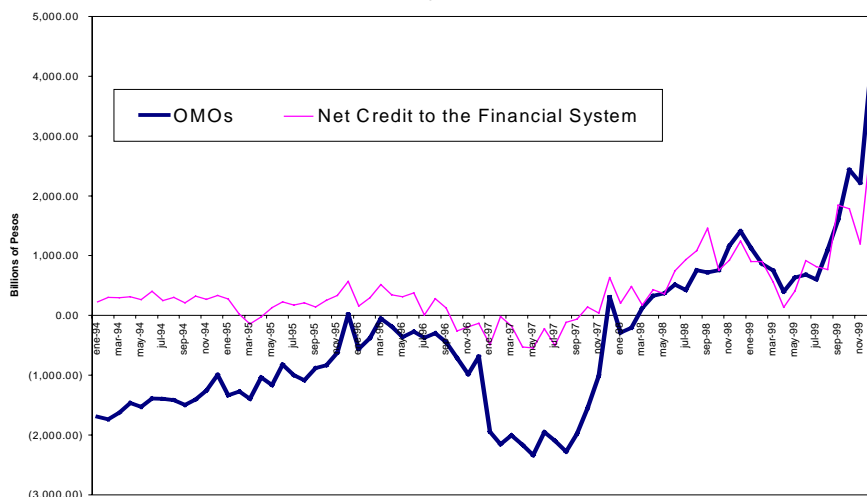
market for future OMOs. CB authorities and staff were increasingly aware of the need to prepare for 1999, a year in which the CB would have to operate exclusively trading government securities, as mandated by a 1993 law. However, the CB did not dare to take this step at this stage and preferred to keep using TPs, while it continued to prepare its staff only “mentally” or “intellectually” to this future challenge¹⁷. Simultaneously, the banking operations area of the CB started to seriously consider the possibility of providing directly an electronic securities trading system and centralizing its administration.

In late 1997 the stock of TPs depleted completely and at the onset of the 1998 events, the CB became, for the first time in recent history, a net creditor to the interbank money market, as is clearly shown in Graph 19. Back then, the CB had a standing facility for overnight liquidity needs. It was ready to provide all the resources needed or demanded at a constant rate of 28% nominal, called the CB Repo rate (Graph 20), against a set of eligible paper (basically Central Bank TPs, TES-B and Finagros`s TDAs). Soon the CB authorities were shocked and surprised to observe that overnight interbank interest rates were well above the CB Repo rate and that volatility in that market had started to increase after two years of great stability. The demand for liquidity was growing and the CB was not able to satisfy it against its will. Why?, because there was not enough stock of eligible paper in the market.

In February 1998 the peso experienced the first of four speculative attacks until the peso was left to float in September 1999. In that month, in contrast with what was done in Chile, the CB authorities chose not to produce a liquidity shock. They decided instead to increase the Repo rate to 30%, willing to provide all the liquidity that was needed at that rate, while leaving the exchange rate regime unmodified. For the better or the worse, the interbank rate soared, followed by longer maturity rates. The CB was losing control over monetary policy, not only due to exchange rate fixing, but because money markets and transmission mechanisms were failing to work. To solve the securities’ stock constraints, the CB had to partially implement monetary policy through collateralized credit auctions using private sector claims as collateral as had done Mexico.

¹⁷ The CB sought for technical assistance from the Central Bank of Spain during this period, as the Spanish experience of Monetary Policy based on government security transactions was viewed as a very successful one. So did the MoF to develop its domestic debt management strategy.

Graph 19. Stock of Central bank OMOs and Credit to the Financial System



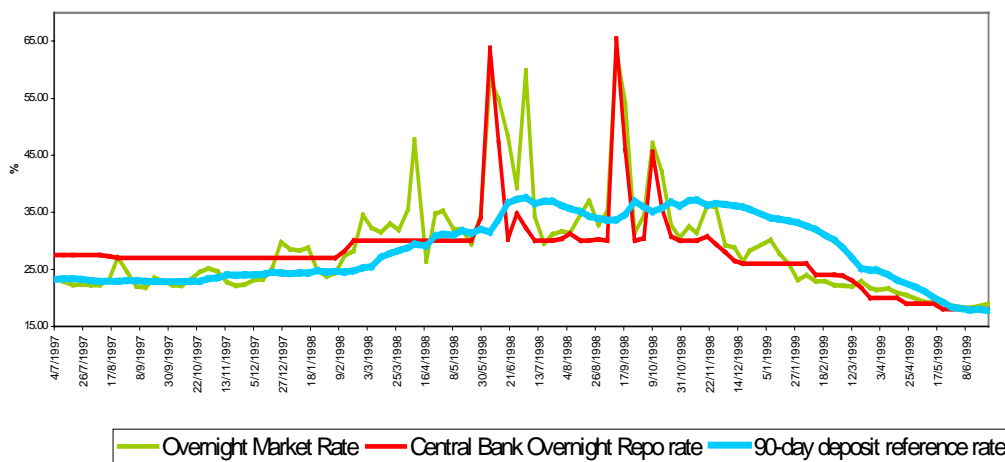
In addition to the lack of sufficient stock of government paper, the available securities to obtain liquidity from the CB were being discounted at very high rates by the CB (Graph 21). The reason was, once again, related to public debt market underdevelopment: there were no reference secondary market rates to be used to discount this paper. In the past, the CB had created the following ad-hoc formula to calculate the discount rate for TES and other securities: when there were no reference prices in the secondary market, the CB would use the higher rate between the effective Repo rate and DTF plus 7 points (DTF is the average 90 day deposit rate) to rediscount public bonds. As is shown in Graph 21, this formula proved to be too restrictive¹⁸. When the second speculative attack took place just before the presidential elections in May 1998, the CB decided to ration liquidity and auctioned overnight facilities. As a result, the Repo rate reached record highs (of more than 80% in one day of June). That meant not only that central bank resources were extremely expensive, but that almost twice the face value of collateral had to be put to obtain the rationed amount of liquidity, given the discount rate for repo operations¹⁹. In other words, there was monetary over-adjustment due to factors that were, at that moment, not foreseen nor entirely under the control of the CB authorities and staff. In August 1999, discount rates were adjusted to more reasonable levels.

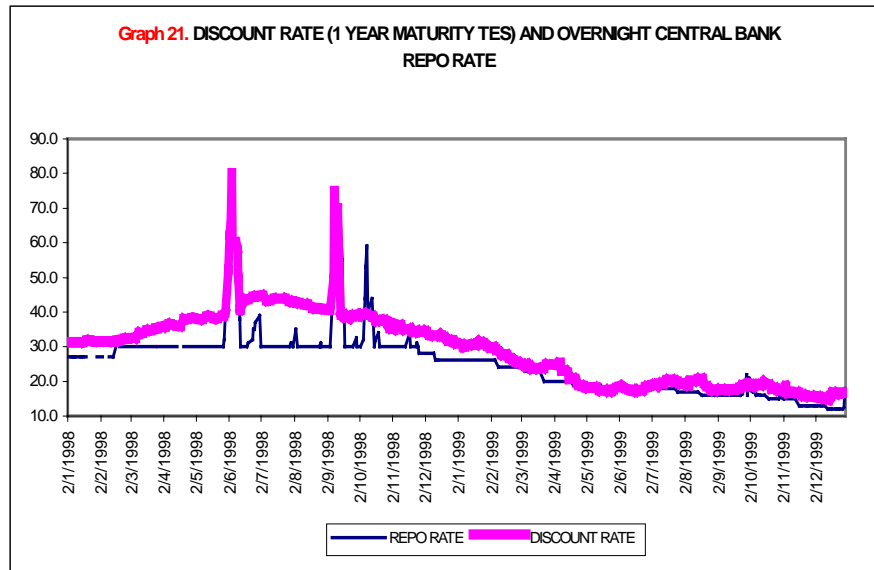
¹⁸ Tying the discount rate to DTF had also the following disadvantage: when there is flight for quality and risk aversion, the spread between the rates charged by different institutions increases substantially, increasing the average 90 day deposit rate.

¹⁹ Matters became worse as the CB started to manage payments under Real Time Gross Settlement system in July, which of course increased the demand for liquidity even further.

In September 1998, after a very short period of dropping interesting rates, the Russian crisis hit again the already distressed market and the exchange rate band was depreciated 9%. This marked the beginning of a significantly calmer period in monetary markets, but certainly less calmed on the financial and last resort facility side, given the problems that started to arise on the asset side of financial intermediaries. Monetary policy was substantially loosened both through reserve requirement reductions and substantial expansion and cheapening of Repo operations and rates. The CB Repo rate has fallen systematically until present date, with the sole exception of a couple of days when the fourth speculative attack took place in the middle of 1999 and the peso was floated.

Graph 20.
Overnight market interest rate, Central Bank Overnight REPO rate and
90-day deposit reference rate
Weekly series





The repo market has been extremely dynamic over the last year, particularly due to CB OMOs²⁰. Today, the CB absorbs or provides overnight and short term liquidity exclusively through repo or reverse repo auctions and standing facilities. It conducts daily, weekly and bi-weekly repo auctions using a uniform-price method against public securities (mainly TES-B, but securities issued by Fogafin and Finagro, among other public entities, are accepted). To meet end-of-day needs of the banks, there are standing facilities against accepted collateral at a "Lombard" rate; access to these facilities is limited only by the amount of collateral available. Reverse repos are also carried out on a daily basis (at present, only through an end-of-day standing facility).

Apart from Repos, the CB has been involved since 1998 in outright purchases of government securities (only TES-B) in the secondary market. This is done on a weekly basis (every Friday) via a uniform price auction, and sporadically (basically, when there are attractive opportunities) via transactions through the electronic transaction system SEN. All financial intermediaries that trade with the CB in ordinary Repo operations have access to the auctions ("agentes colocadores de Omas"); they are not

²⁰ The interbank repo market was, however, hurt by a financial transactions tax of 0.2% that was levied for some months in 1999 due to a Constitutional Court ruling.

restricted to market makers. As shown in Graphs 19 and 22, in six months the CB has more than doubled its stock of TES-B. This, of course, has also helped to provide liquidity in the government securities market.

The implementation of outright purchases, however, has proved to be difficult and with many contradictions. Firstly, given the mandate to operate exclusively with government securities as from January 1999, and the fact that the CB was ill prepared for that event, it had to start building its stock of TES-B at a time when it was supposed to be following a contractionary policy to defend the exchange rate band. The first auctions therefore generated confusion and uncertainty about the true objectives of monetary policy during the first half of 1998.

Secondly, as mentioned earlier, until very recently the CB did not want to purchase paper that had been originally placed by non-market methods (*convenidas y forzosas*). This helped to segmentate some fix rate issues which were otherwise absolutely fungible. The electronic system administered by the CB labels each issue and coupon with a specific code indicating whether their primary placement took place at an auction or not.

In this way, the CB could identify “eligible” securities to purchase. Though the CB recently eliminated the restriction to buy “*convenidas*”, the label continues to exist in the system and those securities are still being “punished” by the market with greater discount rates.

Thirdly, despite the fact that CB staff has tried to identify *ex ante* the most liquid issues and has tried not to dry up the market for some of them through its purchases, it has not been possible to avoid this effect. On one hand, the lack of periodic reliable information and a well designed data base makes the task of identifying suitable issues to buy makes life difficult for the operations desk. On the other, in order to meet the monetary objectives set by the CB Board, the CB operations desk had the mandate to auction substantial amounts of liquidity during the second half of 1999. As a result, the CB is today the main single holder of some security issues. Hence, CB operations have had the mixed and contradictory effect of providing liquidity to the securities market, while at the same time is shrinking the already small stock of available public debt in the secondary market. Otherwise, prices at CB auctions have yet not been too far from secondary market quotes.

V. CONCLUSIONS

This paper ends with not very original conclusions. The following list of policy recommendations could have been drawn from any paper on the same subject on any emerging economy in the process of adjusting its macroeconomy after a financial crisis:

1. Continuous public debt accumulation is bad. In the case of Colombia, it has been a true obstacle to achieve macroeconomic stability since the beginning of the 1990s. To achieve sustainable high growth rates public sector deficits must be phased out. Colombian authorities are committed to a comprehensive macroeconomic adjustment program under an EFF IMF agreement which foresees a substantial reduction in public debt accumulation. However, to achieve the desired targets, present asset losses in the financial system must halt and more stable political and legal conditions must prevail. Otherwise, more debt accumulation and/or more inflation will be inevitable, and more unpleasant monetarist and fiscal arithmetic will have to be done.
2. Capital market underdevelopment played an important role in making the 1998-99 crisis more costly than it otherwise would have been. It reduced monetary policy effectiveness and helped make interest rates more volatile.
3. Apart from macroeconomic stability, capital market development requires coordinated actions by economic authorities to guarantee a suitable regulatory and institutional framework. In the case of the market for public securities in particular, it also requires a clear and transparent debt management strategy and coordinated actions with monetary policy. At present, Colombian authorities lack a comprehensive vision or strategy in this area. The aftermath of a financial crisis could be a good opportunity to think these issues over and design a strategy with the commitment of all public agencies that affect the market directly or indirectly, including the Central Bank. Among the specific issues that must be tackled we could mention the following:
 - there are regulatory restrictions that help to segmentate the market and reduce liquidity
 - there are too many types of public debt instruments in the market, they are not fungible and most of their issues and/or series are very small and illiquid

- there is no complete yield curve and benchmark rates and no perceived serious commitment to develop them among market participants
- the primary dealer system may need adjustments and a more credible commitment by both issuers and market makers
- the government should phase out arranged placements and increase market-based issuing systems
- to the extent that SEN (the electronic system) continues to grow, yields negotiated in that market should become benchmarks for valuation and trading; the CB should be the first one to take this step.

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