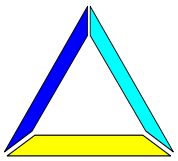
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A Primary Dealer System for Government Bonds in Ukraine. Why and How it Should be Introduced

Executive Summary

The market for local government bonds in Ukraine exhibits only limited liquidity. This lack of liquidity reduces demand and increases the cost of local borrowing for the government. Furthermore, the non-existence of a safe and liquid financial instrument creates serious problems for the economy and especially for the financial industry. Consequently, the increase in liquidity should become one of the central goals of fiscal and economic policy making.

To achieve this goal, we recommend the introduction of a primary dealer system, as is currently discussed in Ukraine. But before introducing the system, the government should resume the regular and systematic issuance of local debt instruments: without any supply of instruments no liquidity can be created. Primary dealers should be obliged to underwrite to a certain percentage of debt auctioned by the government. Besides, they should quote firm bid and ask prices for benchmark issues on the secondary market. As a compensation for these and further obligations, primary dealers should have exclusive access to government debt auctions.

The timely and well-managed introduction of a primary dealer system will contribute towards lowering the cost of local borrowing by the government, facilitate borrowing and increase its investor base. But also the private sector and the economy as a whole will benefit from the extended opportunities of a more mature capital market in Ukraine.

Contents

1 Introduction

2 Characteristics of a primary dealer system

3 Potential benefits of a primary dealer system

4 Potential risks of a primary dealer system

5 Recommendations for Ukraine

6 Conclusions

1 Introduction

The government bond market in Ukraine is not in a good shape. While the banking sector, the mortgage markets and the corporate bond markets have been rapidly developing in the last years, the market for government domestic currency bonds (so called OVDP bonds) has been lagging behind. A key problem is liquidity. Secondary market activity remains low, with only minimal trading taking place. Table 1 in the Appendix provides a detailed overview of the market for Ukraine and other Central and Eastern European Countries. In 2005, the yearly turnover of domestic government bonds in Ukraine was a mere 4.8 % of GDP, compared to 22.5% in Romania (in 2004) and 156.7% in Hungary (in 2006). Similarly, the total volume of domestic government bonds on the market is very small in international comparison.

The low liquidity in the market for government bonds has a series of unfavourable consequences. First, it raises the government's cost for domestic borrowing. Currently, bond holders have difficulties when they intend to sell their bonds at a desired date and for a fair price. Due to the liquidity risk they face, bond holders demand an interest rate premium. This, in turn, makes the placement of bonds in the primary market more expensive. Second, the lack of a liquid, risk-free state security in hryvnia also poses problems for banks and insurance companies, since they require such asset to optimize their liquidity and portfolio management. At the same time, illiquid domestic bond markets can hinder the adoption of a new, possibly more flexible exchange rate system and the implementation of an active monetary policy. Altogether, the current illiquidity at the domestic bond market should be seen as a major problem for financial sector development in Ukraine.

Many emerging economies are facing similar problems. They have underdeveloped bond markets and lack a liquid and secure domestic asset for investment purposes. In the last decade, however, there has been a trend towards local currency borrowing. Governments in Asia and Latin America but also in Central Europe and the Commonwealth of Independent States (CIS) have implemented policy programs to develop their domestic bond market.

The key step in these countries was to raise the share of local currency borrowing by the government, i.e. issuing more domestic debt and reduce foreign borrowing. A second main reform measure that has proven to be successful to foster liquidity and market development was the introduction of a primary dealer system for government securities. The primary dealer system was first introduced in the United States in 1960 and has since then spread worldwide. Also in Central and Eastern Europe and CIS countries it has become an increasingly popular mechanism and was established, amongst others, in Kazakhstan (in 1994) Hungary (in 1996), the Czech Republic (in 1997), Armenia (in 1999), Poland (in 2003), Slovenia (in 2004) and Lithuania (in 2005).

This paper discusses whether the introduction of a primary dealer system in Ukraine could help to increase liquidity and lower domestic borrowing costs for the government. It provides a detailed international comparison and concrete recommendations on how and when such a system could be implemented. In Part 2, we describe the rationale and the main characteristics of a primary dealer system in international perspective. Part 3 discusses the potential benefits and Part 4 the potential risks of such a system. In Part 5, we outline a series of detailed recommendations for Ukraine. Part 6 concludes.

2 Characteristics of a Primary Dealer System

A primary dealer system is a special **agreement** between a government and financial intermediaries in the market for government debt. The deal is voluntary from both sides and can be rather informal, e.g. by a Memorandum of Understanding, or of more formal nature, e.g. based on a legally binding document. Usually, primary dealers are given specific privileges and benefits, such as the preferred access to government auctions for resale. In return, the dealers guarantee to comply with a set of obligations that help to improve the conditions and liquidity on the primary and secondary markets for government securities. As a result, both the government and the dealers, be it banks or other financial institutions, can benefit from the arrangement.

In the last decades primary dealers have become a popular institution worldwide. By 2006, more than 40 countries already established such a system, with the number growing

constantly.[1] Primary dealers for government debt can be found in developed and developing countries alike and are not specific to small or large countries. The number of primary dealers goes from a low 5 (Mexico, Mauritius, Slovenia) to more than 20 (Czech Republic, Korea, Brazil). Generally, there are no international standards regarding primary dealer systems. As a result, the system's characteristics, particularly the dealers' obligations and privileges, vary across countries. Obligations usually get tighter the more the markets mature. The reason is that tough obligations are harder to keep up in small, volatile markets. Similarly, privileges tend to become weaker the more the market develops, i.e. the larger the volumes on the primary and secondary markets. To get a more detailed overview, Table 2 in the Appendix provides the main characteristics of primary dealer systems in some developed and emerging economies.

As to the **obligations**, most countries require primary dealers to bid in auctions of government debt. Many countries have a minimum underwriting obligation in this regard, meaning that each primary dealer has to purchase a certain minimum amount (e.g. 5%) of all bonds issued per auction, per quarter or per year. A further crucial obligation of primary dealers regards secondary market trading. Primary dealers are often required to fulfil the crucial role of market makers. They have to offer two-way (bid and ask) quotes for a predetermined amount of securities. Market making requirements can be more or less strict. The strictest form is to require dealers to offer "firm", i.e. binding two-way quotes under any market circumstances. Some countries ask dealers to provide only indicative (non-binding) quotes with no obligations to buy or sell, or to offer only one-way quotes. Particularly in less developed markets, dealers are only requested to offer quotes for small volumes and only for certain, more liquid benchmark issues.

A further issue is whether to set limits to the size of the bid-ask spread offered in the wholesale and retail market for government bonds. If spreads become too large liquidity and trading might be undermined. On the other hand, too tight obligations will increase the risk for primary dealers, as assets can be bought or sold at short notice which can be problematic in troubled times. Furthermore, some authorities also require dealers to regularly provide them with market information and analysis or to participate in money market operations. Almost all countries have rather strict reporting requirements regarding the dealer's activities.

Turning to the **privileges**, an obvious advantage of being a primary dealer is the role itself, i.e. the status and the prestige of being an entitled dealer of government securities. This can be an important marketing tool in fixed-income markets and might also involve closer relationships with the Ministry of Finance and the Central Bank. A stronger privilege, however, is the exclusive right to purchase government bonds at auctions. This provides dealers with profit possibilities when reselling bonds to interested institutional or retail investors. However, the degree of exclusivity can vary. Dealers can be granted exclusive access to all auctions or, alternatively, for a certain share of each issue and specialised auctions or bidding rounds only. Further privileges regard the relationship to the Central Bank. In countries like Canada, India or Mexico dealers have access to specific short-term credit lines at the Central Bank or, like in Ireland or Singapore, the option to borrow a predetermined amount of securities for market making purposes. In Armenia, Thailand or the United States primary dealers in securities markets also acquire an exclusive status to participate in monetary policy (open market) operations. Finally, some governments, e.g. India or Sweden, pay a commission for the underwriting commitment or even tax exemptions on securities trading income.

Besides balancing privileges and obligations, the authorities will have to set up rules for the **selection and supervision** of primary dealers. The supervision of primary dealers is usually carried out by the Ministry of Finance, the Central Bank, or both. Only very few countries delegate supervisory powers to the securities supervisory institution.

Market making can be a risky business; hence primary dealers should be financially sound and dispose of state-of-the art technological and managerial capacities. In Korea, primary dealers

[1] Countries with a primary dealer system (in 2006) include Argentina, Armenia, Austria, Belgium, Brazil, Canada, Czech Republic, Denmark, Egypt, Finland, France, Ghana, Greece, Hong Kong, Hungary, Iceland, India, Indonesia, Ireland, Israel, Italy, Japan, Jamaica, Kazakhstan, Korea, Lithuania, Malaysia, Mexico, Morocco, Netherlands, Norway, Poland, Portugal, Singapore, Slovenia, Spain, Sri Lanka, Sweden, Thailand, Uganda, United Kingdom and the United States.

are required to dispose of a minimum number of qualified and experience personnel in various divisions such as trading, back-office and research. It is standard to have minimum capital requirements for primary dealers. Authorities may also require them to free capital that is used exclusively for primary dealer activities or even the obligation to open a specific, fully capitalized subsidiary, e.g. in India or, earlier, in Sri Lanka. Some governments, such as the one of Lithuania, also require a minimum rating of financial institutions (Moody's: A3, S&P: A-) for them to become primary dealers. Many countries select primary dealers (or review their status) based on figures of market activity, i.e. by setting certain bidding and trading thresholds in the primary and secondary market. Others, such as Korea established a qualifying period of one year. In a first step, financial institutions become "preliminary primary dealers". If they fulfil all requirements over the course of a year they can then apply for the status of a regular primary dealer.

In most systems the primary dealers' status is reviewed regularly (see Table 2 in the Appendix). After setting up a transparent ranking, very active non-dealers may then enter the selected group - and dealers that have not met the obligations in a satisfactory way can be discharged. In the selection process, authorities will also have to decide whether to allow foreign financial entities to participate. This can be a problem, particularly if the foreign country's supervisory standards are not satisfactory. Yet, most countries allow capitalized subsidiaries of foreign financial institutions, which are supervised by domestic authorities, to become primary dealer.

3 Potential Benefits of a Primary Dealer System

Introducing a system of primary dealers has potential advantages and disadvantages. The following paragraphs give a more detailed overview and discuss the main issues both from the point of view of the government and the financial sector.

(i) Increased Liquidity and Lower Cost of Debt

Primary dealers that act as market makers can play a crucial role in increasing liquidity on the market for domestic government bonds. The quoting requirement and the obligation to buy and sell a range of government bonds at a fixed price will help to increase liquidity and turnover volumes on the secondary market.

Increased liquidity can be highly beneficial for the government. The first reason is that the liquidity premium will tend to decrease and therewith the interest cost of new debt issued. The more liquid a security is, the easier and less costly it is for an investor to sell, and therefore the lower the liquidity premium attached to the security when issued. As an example, the government of Israel, which introduced the system of primary dealers in 2006, is planning to save about USD 250 m a year (or 3% of yearly interest expenses) thanks to the introduction of the primary dealer system and other reforms in the market for domestic government debt.[2]

A second reason is that more liquid state bonds can better be used for liquidity management, e.g. by banks or institutional investors. Also insurance companies will be more prone to hold secure assets that can be sold in an active market. In other words, government bonds will increasingly be used as a tool for risk management and as a secure investment and will not only attract investors in search for a higher short-term return. Then, the demand for state securities is likely to increase. A third benefit from the point of view of the government is that a more liquid bond market will be beneficial for financial sector development as a whole. Proper domestic bond markets have the character of a public good.

The benefit from the point of view of the primary dealers and other traders is that more active trading will allow them to earn higher benefits, even at a lower bid/ask spread. The more active the market becomes the higher the volumes and the potential income from reselling and trading. In general, banks, institutional investors and other corporations alike may benefit from increased liquidity in the bond market. The yield curve will improve, allowing for better risk pricing and facilitating corporate bond issues. Additionally, private companies will dispose of a secure asset to invest in that can be easily traded. As an example, in Ukraine, the current lack of a liquid, risk free security can be seen one of the major impediments for the

[2] Source: Annual Report (2005), Israel's Ministry of Finance Debt Management Unit. Downloadable at: http://www.mof.gov.il/debt/gen/docs/rep05_full.pdf

development of the insurance industry and the private pension system. This bottleneck for development could be alleviated by a more active government issuance strategy in general and the introduction of a primary dealer system in particular.

(ii) The Placement of Domestic Bonds Becomes Easier

Primary dealers are expected to purchase a certain amount of securities offered in government auctions. In most cases, issues will be fully subscribed at current market rates. Consequently, the Ministry of Finance or Treasury department will be able to rely on a more stable and predictable source of funding. Fiscal planning will be facilitated. The exclusive status of being a primary dealer might also motivate banks to market government securities. Generally, banks have products that are in competition with government securities so that they might not be as committed to promote this type of investment. However, primary dealers that gain exclusive access to government auctions will have a special opportunity to make profits by trading and reselling the purchased securities to retail and institutional investors. Hence, such dealers might be more prone to promote the underdeveloped debt market and to attract new investors to it. Together with their secondary market activities, this may then lead to an overall increase in the demand for state debt. On the whole, a proper primary dealer system will make it easier for the state to place debt domestically. If the government, as a consequence, increases the share of domestic currency debt and borrows less in foreign currency abroad, the primary dealers and other financial institutions will benefit accordingly. Higher placement volumes do usually imply higher earning possibilities for those firms active in the bond markets.

(iii) Facilitates Open Market Operations

A further rationale for introducing a primary dealer system is to prepare for and facilitate the conduct of active monetary policy, i.e. the central bank's open market operations. In Thailand, monetary policy management was a main motivation for introducing primary dealers. In 2000, the Bank of Thailand chose 9 banks to participate in bond auctions and as market makers. Two years later, in 2002, it appointed 9 dealers as exclusive counterparties for bilateral repo transactions.[3] In this way, the Thai government aimed to improve the country's inflation targeting framework and increase the efficiency of monetary policy. Canada, Finland, Mexico, Singapore and the United States are further countries where primary dealers are designated to sustain the conduct of monetary policy. Again, both the government and the dealers can benefit from such an arrangement.

(iv) Improved Dialogue between the Government and the Financial Sector

Lastly, a primary dealer system can help to improve the relationship between the authorities and the financial sector. Most countries have strict reporting requirements for primary dealers, many oblige them to provide market analysis and share information. Most arrangements imply regular meetings between the two sides. As a result, the government receives regular feedback on market conditions and the views of leading financial firms. It can thus better plan its debt management and adapt its policies for financial sector development as a whole. The firms, in turn, may also benefit from a closer relationship with the Ministry of Finance and the Central Bank. They will be better informed about the authorities' plans and policies.

4 Potential Risks of a Primary Dealer System

(i) Anti-Competitive Distortions between Dealers and Non-Dealers

In a primary dealer system, designated dealers acquire a privileged status as compared to non-dealers. For example, dealers have informational advantages and an exclusive position in the market for government debt. As a result, there is a certain risk that the arrangement turns out to be anti-competitive. Non-dealers might be discouraged to engage in the secondary bond market. Dealers, in turn might try to monopolize their position and exclude other market participants to become primary dealers. To foster competition and transparency, most countries publish rankings of secondary market turnover and auction participation of the

[3] Repurchase agreements (usually called 'repos') involve the sale or purchase of securities with the guarantee to reverse the transaction at an agreed date and at an agreed price in the future. Repos provide flexibility in that they allow the central bank to inject liquidity for a limited period with a single transaction.

primary dealers and, in some cases also of non-dealers. Likewise, it is standard to revise the current dealer's status regularly and allow proper candidates to gain primary dealer status. An open system with entries and exits has proven to be an important element for the success of a system of primary dealers.

(ii) Collusion and Price Manipulation by Primary Dealers

In the worst case, particularly in small markets, primary dealers might misuse their preferential position so far as to manipulate prices. This risk of collusion is maybe the biggest potential risk of a primary dealer system. By creating a cartel, the dealers may prearrange their bidding behaviour with the aim of driving down the price for government bonds (driving up yields) to later resell at higher prices. Similarly, they might agree upon very high spreads and trading fees in the secondary markets. Such behaviour will undermine the system as a whole and jeopardize market development. However, the government can aim to prevent collusion by proper supervision and a system setup that fosters competition. In extreme cases, where collusion is evident, the government may even reject bids or cancel auctions.

(iii) Misuse by the Government to Place Debt at Artificially Low Yields

The key pillar of a primary dealer system is the market mechanism. Auctions are fully market based, meaning that prices and yields of the bonds and T-bills are determined within the bidding process and as a result of free competition among the dealers. The government usually takes the auction result as given. However, in some developing and emerging economies, governments have reportedly misused the underwriting obligation of dealers to place its debt at predetermined, artificially low interest rates. Such practice will undermine the key rationale of the entire system, i.e. a voluntary deal between equals with both sides benefiting if everyone follows the rules of the game. Forced placement practice will seriously undermine the credibility of the government as a fair player and lead to the withdrawal of private financial institutions. In case the government misuses the system to save short-term costs, the primary dealer system is likely to break down and will be discredited for a long time.

5 Recommendations for Ukraine

Recommendation 1 (main recommendation): The Ukrainian government should introduce a primary dealer system

In general, we clearly recommend introducing a primary dealer system in Ukraine. Such voluntary arrangement between the Ministry of Finance and financial firms would increase liquidity and foster bond market development. If it is properly implemented, the government can reduce the cost of servicing local debt and will gain a more stable source of financing. Experience in several emerging economies has shown that the system is well recommended at an early stage of market development. Therefore, we believe that the Ukrainian authorities are right in currently preparing the introduction of a primary dealer system.

Recommendation 2: The primary dealer system should not be introduced prematurely. As a precondition, the government will have to issue more domestic debt under a regular auction calendar.

In our view, timing is crucial for the success of the system. At the present day situation, it is not advisable to introduce a primary dealer system in Ukraine. The government has issued only very low volumes of bonds in domestic currency in the last 2 years. Moreover, it did not follow a predictable and regular auction calendar and did offer artificially low yields that were not in accordance with market conditions. If the system were to be introduced too early and under the current unfavourable conditions, there is a serious risk that it will not work because banks will not be interested in the deal and market making will be highly problematic. As a result, the system as a whole might then be discredited for the future.

To avoid a system failure at an early stage, we strongly suggest the Ministry of Finance to gain the confidence of banks and brokerage firms in the next 6 months. The government should demonstrate its determination to market development by issuing considerable volumes of domestic debt each month and with a market-oriented issuance strategy.[4] Once a higher

[4] For detailed recommendations see our Advisory Paper V19: "The currency structure of government debt in Ukraine: Why the share of hryvnia bonds should be increased", downloadable at www.ierpc.org/ierpc/papers/v19_en.pdf

volume of debt will be on the market, e.g. in 6 months, the primary dealer system could be introduced with a much higher probability of success. Nevertheless, we clearly support the preparation of the system as of today. Consultations and a close and regular dialogue among the parties about possible system features should start early on.

Recommendation 3: On the obligations of the government

For the system to work, the government, as an equal partner, will have to comply with some obligations. Most importantly, it has to issue enough debt and commit to a market-oriented issuance strategy. It should regularly issue reasonable volumes of domestic bonds according to a predictable auction calendar and focus on benchmark issues. If only small volumes of domestic debt are issued, liquidity will drop and primary dealers will loose their opportunity to make a profit both in the primary and the secondary markets. Accordingly, they will not be able or willing to sustain the functioning of the market. Of course, the government should in no case force primary dealers to buy debt at artificially low yields. Auctions and bond prices have to be determined according to market conditions.

Recommendation 4: On the obligations of primary dealers

We suggest obliging primary dealers to underwrite to a certain percentage of government debt auctioned over a 6 months period. In accordance to current practice in Hungary, the Czech Republic and Israel, the share should be in the range of 3 to 5% of securities offered. The second main obligation of dealers should be to quote firm bid and ask prices in the secondary market. Due to the small and volatile market in Ukraine, this quoting requirement should initially be limited to a predefined number of benchmark issues. Also, dealers should only be obliged to sell or buy at quoted prices for a limited daily amount (e.g. an equivalent of USD 0.25 m). Once the system is well established and once liquidity will have increased considerably, we also suggest to limit the offered bid/ask spread on benchmark issues to a predetermined maximum, depending on the time and size of the bond and the remaining maturity. The quoting requirement should be alleviated in very turbulent times and during financial crises to avoid damaging financial repercussions for the dealers.

Lastly, dealers should provide regular reports and analysis on their trading activity and on market conditions. One possibility, which we deem as suitable, is to install a primary dealer forum with obligatory participation, which meets bi-monthly or quarterly to discuss current developments in the primary and secondary market among dealers and the authorities.

Recommendation 5: On the privileges of primary dealers

The key privilege for primary dealers in Ukraine should be an exclusive access to government debt auctions, as is the case in a series of emerging and transition economies. The privileged status and the special option to earn profits by reselling and trading bonds should be enough to support dealers in fulfilling their secondary and primary market obligations. We do not suggest to pay underwriting fees or to grant tax concessions to primary dealers.

Recommendation 6: On selection criteria, foreign institutions and the number of dealers

In the first years after the system's establishment we suggest to constrain the circle of primary dealers to banks only, because banks are strongly supervised in Ukraine. However, only banks with a sound financial standing and sufficient experience should be allowed to participate in the system. As to foreign banks, they should be allowed and encouraged to become primary dealers in Ukraine, as this will help to increase liquidity and competition. Yet, foreign banks will have to open a branch in the country and should have a sufficient credit rating in order to apply (e.g. a minimum S&P rating of A- or the equivalent rating from another internationally recognized rating agency such as Moody's or Fitch). Generally, we do not suggest setting a fix number of dealers. The number of dealers should be determined mainly by the market, i.e. by the number of qualified banks, which apply to participate in the primary dealer system. However, there should be a minimum of at least 6 dealers to assure a competitive environment and prevent collusion.

Recommendations 7: On Status Revision, Supervision and Trading Markets

It is important to keep the system open for competition. The primary dealers' status should be reviewed bi-annually or at least annually. New firms should be allowed to become dealers once

they fulfil all requirements. Evaluation should be based on financial soundness, compliance with dealer obligations and primary and secondary market activity.

As stated, we suggest allowing only banks to become primary dealers in the next few years. Consequently, primary dealers should be supervised by the NBU. While they should obviously dispose of a license by the State Commission for Stock Exchange Supervision ("Securities Commission"), we do not suggest delegating specific supervisory power for the primary dealer system to the Securities Commission. Likewise, we do not suggest restraining bond trading and secondary market quoting to the stock market. Instead, the issued government securities should be tradable both on the stock exchange and in the over-the-counter market, as is the case in many countries, e.g. Hungary. This will guarantee a competitive environment for trading in government bonds.

6 Conclusions

Ukraine's market for domestic government bonds is very illiquid. This fact poses a number of fiscal problems and risks. Besides, this situation heavily obstructs the further development of the financial sector in the country. Consequently, the development of a liquid domestic government bond market should become one of the key priorities of Ukraine's fiscal and economic policy.

The most immediate reason for the lack of liquidity is the lack of products: the government has in the last two years neglected the issuance of local bonds and borrowed instead heavily abroad and in foreign currency. Thus, the most immediate step to be taken is to resume with a systematic, pre-announced scheme for issuing local debt. Once this process has started, the government should target a further problem: the lack of market institutions to ensure liquidity. After having passed the necessary legislation, the government should start negotiations with banks, which are suited and interested in becoming primary dealers. Once the banking community is convinced about the seriousness and reliability of the new domestic issuance policy, the government should establish a primary dealer system. The obligations and the privileges of the primary dealers should be clearly set out in contracts between the government and dealers. So should the obligations by the government.

If the system is implemented at the right time (i.e. after a significant increase in the supply of local government bonds) and in a proper manner, it will considerably contribute to lowering the cost of local borrowing and broaden the investor base for state securities. Furthermore, the existence of a liquid and safe financial instrument will facilitate the liquidity management and investment possibilities for financial companies in Ukraine and thus make a decisive contribution to the development of the financial sector as a whole. Last, a liquid government bonds market could attract substantial amounts of foreign capital into the country and thus support investment and economic growth.

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Kyiv/Berlin, May 2007

Appendix

Table 1
Secondary Market Turnover of Domestic Government Bonds in Selected Countries

	Year	Total Volume of Domestic Gov. Bonds (USD bn, end of period)	Secondary Market Turnover of Domestic Gov. Bonds per Year (USD bn)	Ratio of Secondary Market Turnover of Domestic Gov. Bonds to GDP (%)	Ratio of Secondary Market Turnover per Year to Total Volume of Domestic Gov. bonds (%)
Bulgaria**	2004	1.90	7.30	30.02	385.32
Croatia***	2005	4.47	5.01	13.03	112.11
Hungary***	2006	48.46	175.49	156.70	362.11
Romania**	2004	7.32	16.96	22.46	231.55
Slovak Republic*	2006	n.a.	33.15	60.17	n.a.
Ukraine****	2005	3.8	4.10	4.77	107.97

Sources: State Securities and Stock Market Commission of Ukraine (Annual Report 2005), Prague Stock exchange, Bratislava Stock exchange, PFTS, ECB, IFS, Erste Bank, IMF World Economic Outlook, Ministries of Finance, State Statistical Agencies, Central Banks and own calculations.

* Data on organized trading on the country's main stock exchange. Over the Counter Trading (OTC) trading was less than 10% of total.

** Data on OTC trading. Organized trading (on the stock exchange) is absent or negligible. Yearly figure based on 260 working days per year estimate.

*** Data on total trading (OTC + Organized). The figure for Croatia includes corporate bond turnover, but this constitutes less than 10% of the total bond market, which is dominated by government bonds.

**** The figure for Ukraine includes both OTC and organized trading as reported by registered security dealers (excluding primary market activity). The true market turnover figure is lower as inter-dealer operations are reported by both seller and buyer. Correcting for double-counting the actual volume is estimated at USD 2.5-3 bn (operation with non-residents are not double-counted).

Table 2
Primary Dealer Systems in Selected Countries

Country	Establi-shment	Number of dealers	Key obligations of Dealers	Key privileges of Dealers	Status Review
Austria	1989	6 domestic and 20 internation. banking institutions	Obligation to submit bids at each auction with a minimum amount of 1/26th of the issue amount (1 divided by the number of auction participants). No contractual market making obligation but primary dealers are expected to quote.	Exclusive right to participate in auctions. Primary dealers receive a fee of 10 basis points (in price) for their competitive allotments in the auctions.	Annually
Czech Republic	1997	11	Obligation to purchase at least 3% of volume at auctions (maximum 50%). The share of the total annual turnover on the secondary market must be at least 1%. They have to quote firm two-way prices on benchmark issues. Prices should be in line with the market level and own trading prices.	Exclusive access to primary auctions and to buy-back and exchange operations of government bonds. Preferred counterparty in derivative operations of the Ministry of Finance.	Quarterly
Denmark	2003	13	Quote bid / ask prices within predefined spreads of all state security with a remaining maturity of more than 13 months and for a volume of USD 0.55 m.	Be official counterparty of debt issuance and buy-back transactions. Option to use lending facilities of the central government and the Social Pension Fund.	n.a.
France	1987	4 French institutions and 16 non-resident institutions	Requirement to participate in all auctions and to account for, at least 2% of the annual volumes auctioned. In the secondary market they have to permanently display bid and offer prices on the main issues and make at least 2 % of total securities transactions.	No exclusive right to bid. Only limited right to receive additional amounts of new issues at the average auction price in a non-competitive auction	Every 2 years
Hungary	1996	13	Obligation to buy 3% of the total volume at auctions. Quote prices for bonds in a minimum amount of USD 0.55 m for regular bonds and USD 1.1 m million for benchmark bonds	Exclusive right to bid at auctions. Some dealers also acquired the exclusive right to sell government securities in the retail market.	Semi-annually

Country	Establi-shment	Number of dealers	Key obligations of Dealers	Key privileges of Dealers	Status Review
Israel	2006	19 local and foreign banks	Purchase at least 5% (or USD 0.5 m) of bonds issued per year. Offer two-way quotes (with a maximum spread) for USD 1.25 m per day for benchmark securities (minimum).	Exclusive right to bid for 80% of fixed coupon bond issued in competitive auctions.	n.a.
Lithuania	2004	6 banks and 1 brokerage firm	Purchase at least 1 % of all government securities offered in auctions each quarter. Continuously bid and ask prices of government securities for preannounced amounts (some exceptions for illiquid securities or low volume deals)	Exclusive right to bid at auctions	Annually
Mauritius	2002	5 banks	Quote continuous 2-way prices with a maximum spread of 30 basis points on a range of securities with remaining maturity of up to two years	Exclusive right to submit bids on behalf of third parties at auctions. Access to special refinancing instruments such as repos.	Regular review
Slovenia	2005	5 banks and 1 brokerage house	n.a.	Exclusive right to participate in auctions directly	n.a.
Thailand	2000	9 banks and 10 securities firms	Purchase a minimum of 2% of T-Bills and government bonds in primary market auctions over a 6 months period. Continuous quoting firm two-way prices under normal market conditions.	Exclusive right to submit non-competitive bids. Exclusive right to conduct open market operations. Opportunity to consult with the Ministry of Finance on its security issuance plan.	Annually
United States	1960	21	No fix minimum bids or trading shares, but dealers are expected to be “meaningfully good” market makers and auction participants.	No exclusive right to participate in auctions. But: Special trading relationship with the Federal Reserve Bank which allows for beneficial refinancing facilities	Semi-annually

Main Source: Websites of the Countries’ Ministries of Finance and Central Banks. Some information is also taken from Arnone, M. and Ugolini, P. (2006): Primary Dealers in Government Securities. Washington D.C.: International Monetary Fund.

Note: Local currency values where converted to USD using current exchange rates.