# ФІНАНСОВИЙ РИНОК



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### CHARACTERISTICS OF GOVERNMENT AND LOCAL SECURITIES TRADED ON FINANCIAL MARKETS – THE POLISH CASE

Розглянуто можливість та необхідність використання державних та муніципальних цінних паперів для покриття дефіциту державного та місцевого бюджету. Проаналізовано переваги та недоліки використання казначейських векселів і облігацій. The possibility and the necessity of using state and local securities to cover deficits in state and local budgets have been considered. The advantages and disadvantages of using treasury bills and bonds have been analysed.

Public authorities enter financial markets in order to make short or long term deals. They are driven by the necessity to meet the demand for money when budget revenues do not suffice to cover expenditures. Under the Polish law, both national government and local governments are allowed to approve a deficit budget; then, however, they are required to indicate how the deficit will be paid for. One of the typical methods used by authorities is borrowing by issuing securities. The main factor that distinguishes government and local securities from all other types of securities is that the issuer is a public law organisation. The above-mentioned makes an introduction to our presentation of some selected topics related to the specificity of the governments and local securities traded on the financial markets.

The main reason for the short-term government deals is the asynchrony of revenues received by the administrative or local budgets and expenditures they have to incur. In such circumstances demand for money is most frequently satisfied by a bank loan or an issue of short-term debt instruments such as Treasury bills and notes. If small-scaled, such operations cannot significantly affect the financial market. Yet, government's motivations underlying short-term transactions may deliberately drive at imbalances of the budget. Then the borrowing turns into a relatively permanent activity, as the budget deficit "ties up" part of capital market's resources (savings)[1]. Because Treasury notes include a rollover mechanism, they turn into a relatively steady instrument used to meet government's financial needs. In the long-term government's operations involving debt instruments are connected with the public debt which may become an intrinsic element of public finance. This situation affects both financial markets and real economic processes. For many years a budget deficit has been deliberately used under state interventionism as an instrument to stabilise the economic cycle and to stimulate economic growth. The theoretical basis for interventionism can be sought in Keynesism. The monetarist school is critical about the anti-cycle budget policy. M. Friedman opposes the attempts to mould the economic cycle by adjusting budget expenditures, as private sector's spending moved to a public sector (for instance, when government bonds are sold to the public) do not permanently increase the demand or stimulate economic activity [2]. Higher budget outlays are accompanied by a declining rate of corporate and personal spending, as a result of the so-called "crowding-out" effect. A government reporting its wish to borrow in order to finance the budget deficit provokes higher interest rates that curtail private investments and consumption. Consequently, a government's expansion in the debt instrument market and its increased spending puts some space between the private sector and economic activities, as a portion of the sector's resources is then allocated outside the strictly meant economic sector. In addition, monetarists claim that the efficiency of public expenditures is inferior to that in the private sector. The existence of the "crowding-out effect" and its consequences are controversial issue among economists [3].

What seems to be important in the analysis of government's activity on financial markets is a modified approach to the public debt problems. We have been able to observe that change for at least the last two decades. The period of public authorities being uncritical about the appearance of budget deficit and growing public debt is becoming history [4]. Governments in many countries are starting to realise the impacts of the budget debt and public deficit spiral. The debt service makes governments borrow more and more, in the longer term the debt undercuts the government's spending capacity and makes the deficit escape the government control [5]. Aware of that, many countries tend to control the level of public debt. Even though it is still premature to judge on the efficiency of the measures they apply, the tendency to gradually reduce the size of budget deficits is clear. Certainly, a co-ordinated action of a number of countries helps to achieve the goal; a case in point is the European Union Treaty of 1991, commonly known as the Maastricht Treaty. Two from the five macro economic principles laid down in the Treaty, known as the convergence criteria, relate to budget issues. They provide that the budget deficit in Member States may not exceed 3% of their GDPs, whereas public debt must be kept within 60% of the GDP. In the economic sense, the restrictions are intended to protect public debt from the risk of monetisation, and to make Member States solve their budget problems using instruments that do not provoke inflation [6]. Also the Polish legislature has set caps on both national and local debts and has provided for appropriate protective and turnaround procedures [7]. Polish solutions predetermine the conditions and extent of public authorities' operations in the financial market. Governments' propensity to borrow has theoretical foundations that are in practice expressed by the economic doctrine followed in a given country.

Government securities traded in the Polish financial market can be divided into Treasury notes and bonds. These instruments certify that the buyers have lent their money to the issuer, in this case the Treasury. Government securities are issued by the Minister of Finance who must be authorised by the budget law to do so. For several years the budget law did not specify the value of securities that can be sold in a given year, but the government permitted to borrow only additional amounts in the domestic and foreign markets, respectively. An issue of securities is forerun by a public announcement of the tombstone detailing the issue.

In Poland Treasury notes are sold at a discount and their maturity ranges from one week to one year. This instrument allows the government to borrow short term in the money market (primary); it is also the instrument that the central banks use most frequently in the open market transactions. Since 1993 the National Bank of Poland (NBP) has used Treasury notes to intervene in the money market by initiating repo and reverse repo deals. As a monetary policy tool open market transactions have a number of advantages. Buy and sell transactions involving Treasury notes are started by the central bank that decides about the transactions' value. They are used not so much as a long-term monetary policy instrument, but rather as an ad hoc solution used to compensate for unfavourable trends in the money market and in the central bank's money supply [8]. This instrument has a direct and readily predictable impact on the banking sector's liquidity. Every mistake made in the implementation of a monetary policy may be easily corrected by a compensatory sale or purchase of government securities. The monetary policy has two goals that the central bank may strive to achieve. Firstly, it may work towards keeping the money supply at a given level. Secondly, it may aspire to stabilise the market interest rate. Trying to achieve both goals simultaneously via open market operations is almost impossible. Which of the monetary policy goals should be selected is a subject of vivid discussions among both theoreticians and practitioners of finance.

For commercial banks and other financial institutions the importance of deals involving Treasury notes results from their high negotiability in mature money markets and the common opinion that they are a non-risk or low-risk asset. On the secondary market Treasury notes can be purchased not only as an

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investment, but also for typically speculative purposes. Speculative deals involving Treasury notes can be divided into arbitrage, speculative financial futures and forward transactions [9].

Deals with Treasury notes affect interest rates in the money market. The level of interest rates in the money market is determined by the central bank that fixes rates on the refinance credit and enters open market deals, as well as the Ministry of Finance that establishes the discount rates for Treasury notes at auctions, according to the budget needs, estimation of the possible demand for the notes and the costs of raising funds. The issuer tends to set the yield at a level that promises to encourage investors' involvement, while trying to minimise the costs of raising funds necessary to cover budget spending. Besides, the yield of government securities is shaped by the interest rate on the refinance credit, treated as a referential rate for yields of the Treasury bills [10].

Treasury bills are a very attractive short-term investment instrument and the interest rate they bear is fundamental for the money market, as it affects the yield of other types of financial instruments [11]. However, opinions on how interest rates on a given market contribute to the public authorities' inclination to borrow are discrepant. According to the borrowing funds theory the pressure to finance certain needs when the budget is tight leads to borrowing regardless of the funds' price. Government securities are issued for two reasons. Firstly, to finance budget outlays that cannot be covered by national revenues, and secondly to refinance previous, maturing debt. In both cases the government is not free to choose whether to borrow or not. On the other hand, a frequently pronounced opinion is that the price of money substantially affects the range of options that might be exercised to finance a budget deficit. In addition, a sale of securities may encounter the demand barrier. As a result, the issuer has to offer investors a satisfactory yield. In order for the government to realise its profits from an issue of securities potential buyers must have adequate capital, the capital must be available and the buyers themselves must be willing to make such investments [12].

Public deficit, being almost a permanent trait of public finance, needs funds that can be sought in the financial markets; their most important type is bank loans [13]. In some circumstances this recourse may lead to the deformation of commercial banks' lending policies. In Poland such a situation occurred in the first half of the 1990s, when the banks' demand for Treasury notes increased. This was caused by the bad loans crisis and a high level of interest rates. Suffering from excessive liquidity and being reluctant to risk loans for businesses, banks increased their involvement in securities, mainly Treasury notes and bonds. At the same time, the government changed its approach to the budget deficit financing, which became one of the key factors stimulating the growth of the securities' market [14]. Amounts due to banks from the public sector dropped considerably in favour of receivables represented by government securities. Changes in the structure of commercial banks' assets are illustrated in table 1.

Table 1.

Type of debt	1991	1992	1993	1994	1995	1996
Foreign receivables	12.9	16.1	13.8	15.6	11.0	8.46
Receivables from the financial sector	14.0	13.0	12.8	11.9	13.6	12.33
Receivables from the budget sector	3.2	4.1	2.1	0.7	1.0	1.03
Receivables from the non-financial sector	42.8	37.4	36.2	34.3	35.1	38.53
Securities	15.2	15.6	19.9	23.9	27.1	28.21
Treasury notes	2.9	7.8	9.3	10.6	12.2	8.41
NBP bills	0.4	0.0	0.0	1.1	2.8	5.25
Treasury bonds	10.4	6.6	9.6	11.4	11.3	13.77
Other assets	11.9	13.8	15.3	13.5	12.2	11.42
Total assets	100.0	100.0	100.0	100.0	100.0	100.0

Structure of commercial banks' assets in Poland, years 1991-1996 (%)

Source: Biuletyny informacyjne NBP

In 1994 changes in the balance of payments inflated reserves available in the banking system beyond investment opportunities in the financial market. This stimulated banks' demand for Treasury notes even more strongly. In the next year the Treasury notes' market attracted foreign investors which spurred a sudden growth in demand that then entailed the notes' higher prices. After 1995, when the yield of Treasury notes clearly dropped and lending activities revived, Treasury notes gradually lost their role as the type of assets desired by the banks. Transactions involving Treasury notes started to mushroom on the secondary market. The growing supply of Treasury notes on the secondary market was accompanied by escalating demand, mainly among enterprises that more and more often started to use them as an instrument applied to control their liquidity [15]. In 1996 government securities accounted for 22.18 % of all commercial banks' assets, in 1998 this rate went down to only 15.9%.

Treasury bonds are an instrument with maturity over 1 year. Today, the domestic market transactions involve bonds with maturity ranging from 2 to 20 years. Some types of bonds, for instance two and five-year bonds issued in a number of series after 1994, as well as 10-year bonds, are fixed interest rate securities. Other bear variable interest rates linked with the yields of Treasury notes or inflation rate. Interests are typically paid out annually or in quarterly periods. Investors in Poland can choose from a wide range of Treasury bonds to suit their preferences of the investment time frame, type of interest and its construction. Features of some selected bonds traded in the period 2000-2002 can be found in table 2.

Table 2.

Name of bond	Face value of 1 bond	Maturity period	Interest rate	Debt (as of the end of 2000; bn zl)
Zero coupon bond	1 000 zl	2 years	No	11.7
5-year bond with fixed interest	1 000 zl	5 years	Fixed 8.5 %	_
10-year bond with variable interest	1 000 zl	10 years	Variable, weighted average yield of 52-week Treasury notes + 1 percentage point.	31.5
10-year bond with fixed interest	1 000 zl	10 years	Fixed, 6 %	5.1
2-year saving bond, fixed interest	100 zl	2 years	Fixed, 11%, 13%, 14%, 15 %, 16%	1.5
3-year bond, variable interest	100 zl	3 years	Variable, 105, 104, 100 or 95 % of average yield of 13-week Treasury notes	1.8
4-year saving bond, indexed	100 zl	4 years	Variable, annual rate of inflation + margin of 4.5 %, 5.5 % or 7 %	0.5
20-year bond, fixed interest	1 000zl	10 years, with a repurchas e option at an auction	Fixed, 5.75 %	

Selected government bonds traded in the years 2000-2002.

Source: Ministry of Finance data

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Bonds, just like Treasury notes, are sold at auctions or through a retail network set up by a bank selected to be the issue broker. Consequently, the real yield of bonds depends not only on the interest rate guaranteed by the issuer (that is the government), but also on their price paid at an auction. A purchase of bonds does not freeze the invested capital until the maturity date. Today, most government bonds intended to finance the budget deficit are traded at the stock exchange and over the counter. A holder of government bonds may therefore easily dispose them at any time, with the profitability of bond buy or sell transaction concluded on the secondary market depending, as in the case of any other security, on its timing. Individual investors may also purchase in the retail network savings bonds that are not traded at the stock exchange.

Government securities are mainly traded on the unregulated inter-bank market, where official transaction prices are not quoted and information on the volume of turnover is not given. On account of that, in April 2002 the Ministry of Finance started to implement a system of dealers in securities. Securities will be traded on an electronic platform operated by the Central Schedule of Offerings [16]. This solution is expected to improve the market's efficiency and transparency, and primarily to provide information necessary for asset valuation.

Both Treasury notes and bonds are readily purchased by banks, investment funds, insurance companies, pension funds and companies with a surplus of available funds that primarily seek safe investments. Yet, the supply of Treasury securities is subject to the level of public debt and the instruments and strategy used to finance it. Rational management of the debt ensures not only financial liquidity, but also minimises public debt service costs, in which public authorities are greatly interested. An analysis of the types of government securities used to finance domestic debt in selected years shows growing importance of long-term securities at the cost of the short-term ones. The proportion of the long-term securities was steadily growing and in 1999 related liabilities exceeded debt due to the short-term instruments. Another phenomenon is a very high increase in amounts owed to the domestic non-banking and foreign investors.

Table 3.

Specification	1995	1999	2000
Total	66 160.1	134 676.2	145 981.6
By original maturity			
Government securities	61 442.8	109 141.2	132 984.4
Short-term (1 year and less)	31 772.7	28 913.4	23 442.3
Medium-term (from 1 to 5 years)	8 970.9	53 838.2	79 824.4
Long-term (over 5 years)	20 699.2	26 389.9	29 717.7
Other debt due to mature liabilities	4 717.3	25 535.0	12 997.2
By creditor			
Central bank	11 154.3	19 330.3	16 524.7
Other domestic bank	40 921.6	57 457.3	50 158.7
Domestic investors other than banks	11 907.2	50 687.9	61 546.2
Foreign investors	3 077.0	7 200.7	17 752.0

#### Domestic debt of the government (as of 31 Dec., million zl).

Source: Statistical Yearbook of the Republic of Poland 2001.

In early 1990s, bank loans played an important role in financing the budget deficit, whereas in 2000 almost 94 % of public debt was financed by government securities. These tendencies should be viewed as positive. They contribute to development of the financial market, moderate the inflationary pressure and reduce the possible risk of reducing corporate loans. However, when a government offer is too large and attractive the level of savings in the banking system drops and a non-market allocation of funds takes place.

In the year 2000, the Ministry of Finance decided to extend the average maturity of debt even more, which today does not exceed 3 years. It was decided to cease the sale of 10-year bonds bearing variable interest and to issue 20-year fixed interest bonds (5.75 %). The new bonds are hoped to enlarge the domestic market of government securities and to meet the demand reported by investors [17]. Because of the extended maturity period financial institutions operating with a long investment horizon are expected to be the major buyers, for instance open-end pension funds or insurance companies. This new instrument may arouse some interest also among foreign investors. An issue of 20-year bonds will allow to create a benchmark for the long-term interest rates in Poland and thus facilitate their comparability.

A different type of debt instrument is securities issued by local authorities. These are mainly municipal bonds, although issues of municipal notes have also taken place (debt instruments with maturity period to one year).

Municipal bonds offer an alternative to financing municipal investment projects by bank loans. Even though they are not favoured by the European local government system, they have been commonly used in the USA for over 100 years as general bonds secured on all municipal assets or on incomes from a source indicated by the issuer [18].

Polish law allows to issue a whole range of bonds, having various construction and offering different benefits. Municipalities that raise their funds in this way have to allocate them to a specific purpose indicated in the terms of issue. The money is typically used to fund the construction and improvement of roads, sewerage and water supply systems, to construct sewage works and to purchase new means of transport. Projects involving recreation centres, schools, community centres or renovation of a town's central area are rare [19]. The procedure foregoing the preparation of an issue of municipal bonds is rather long and complicated, which discourages many municipality boards to use this instrument, which is particularly true in small communities. A serious problem is the selection of the issue broker, in most cases a bank or a banking consortium. The public procurement law requires that a bidding process to award the contract. Values of issues can be very different - from 0.9 million zl (Pieniezno) to 99.3 million zl (Gdańsk). The average value of an issue ranges from 5 to 8 million zl. In order to comply with the law-imposed limits on local debt, municipalities issue bonds in tranches and with various maturity dates. Estimates from years 1998-1999 show that the cost of placing a small issue ranged from 2 to 6 % of the issue's worth [20]. Some municipalities use issues not only for purely financial purposes, but also to promote the community. Beside the statement of creditability, another trustworthy and reliable source of information on a municipality and the involved investment risk is rating calculated by a rating agency. The Ministry of Finance requires municipal bonds to be placed on international markets to have an adequate rating from one of the three agencies: Moody's Investors Service, Standard and Poor's or Fitch IBCA [21].

The amended bond law that introduced new type of bonds, such as income-backed bonds, offers local authorities and municipality-managed enterprises new borrowing opportunities. In the case of income-backed bonds the issuer may limit its liability to the level of incomes drawn from the planned undertaking or to the value of project's assets, to which a bondholder has the priority right under the law [22]. Such bonds provide buyers with a high degree of protection, being one of the reasons why their dynamic growth is expected. What is important for local authorities is that the value of issuer's liabilities to the holders of such bonds is excluded from the limits on local debt mentioned in article 113 of the public finance law, that local governments have to comply with. The basic limitation is that the total amount of payments due to amounts borrowed and guarantees given must not exceed 15 % of the local government's incomes planned for a given budget year.

Municipal bonds are much less common and important on the financial market than government bonds. This can be proved for instance by the level of borrowing; in 2001 the government sector's share in the total debt of the public finance sector slightly exceeded 97%, whereas borrowings of local governments accounted for less than 3 %. Today, the value of the municipal bond market in Poland is estimated at around 1.6 bn zl.

Among a number of reasons for which municipal bonds are used more rarely than it might by suggested by the potential of local governments and their investment needs two seem to be most important [23]:

- 1) High costs and complicated processes underlying preparation of issues.
- 2) Unavoidable competition with the government securities, the supply of which is relatively high as a result of the national budget deficit. Additionally, the government is viewed as the most trustworthy issuer.

The bond market in Poland is dominated by the national government, even though the new bond law enacted in 1995 aimed to stimulate potential issuer's interest in this method of raising funds. The major advantage of investments in bonds is that future yields can be calculated with a relatively high degree of accuracy. Such yields can be either fixed (predefined – the case of fixed interest bonds) or variable (linked to variations in other parameters or to financial instruments' prices). However, the variability of interest rates in the financial market undermines some of the bond market's doctrinal stability, hence investors have to be cautious and skilfully estimate the possible earnings. The basic bond-related risk is posed by the future market interest rates, as securities bearing fixed interest rates are in an inverse proportion to changes in market interest rates. This means that growing interest rates make the value of bonds sink, because potential investors seek higher yields. Analogously, in periods of declining interest rates prices of fixed interest bonds are going up [24].

Risk becomes a primary factor when an investment decision is being made. In the eyes of buyers the attractiveness of Treasury bonds is the government's guarantee that the liabilities will be met. Buyers are not afraid of the issuer's insolvency, naturally, as long as there is political and economic stability in the issuer's country. In addition, the deals may involve tax relieves or the possibility of using the instrument to repay certain liabilities. Therefore, the government may offer particular types of incentives that no other potential debtor is able to present. But the basic lure is the reliability and creditability of the debtor. Also the bonds' interest rates, typically exceeding bank rates on long term deposits (but lower than those on bank loans), make bonds more attractive in the eyes of the market [25]. This is obviously a simplification of the case as every and each financial investment is burdened by some risk. In addition to the interest rate risk and inflation risk, other important types of risk involved in the government securities is country risk (i.e. political risk) and the exchange rate risk.

US government securities are considered free of investment risk. Their interest rates are linked to those operated both in the US economy and in other countries. Colloquially, a given type of security is said to be traded above or below a given type of US government securities. Two factors seem to determine their importance: the value of a given issue and the securities' liquidity. The large debt and high values of particular issues cause that the market of US government securities is the most active and consequently the most liquid market in the world [26].

Government and municipal securities allow to reduce the portfolio risk through diversification. A mature financial market supports flexible selection of investments in terms of the involved risk, according to private and institutional investors' preferences. In investment portfolios Treasury bonds bearing fixed interest rates and Treasury notes are considered risk-free financial instruments. Their purchase reduces the portfolio risk, yet risk-free instruments typically allow to expect a rate of return below that offered by stock [27]. In some cases, however, government securities are not only the safest, but also the most profitable investment instrument. Obviously, the bear market spurs the demand for Treasury notes and bonds. Additionally, an international comparison of interest rates

may contribute to an influx of speculative capital to some countries and revaluation of the domestic currency. Apparently, a government's entrance into the financial market may be very consequential for the whole economy.

Municipal bonds, specially those issued by larger or wealthier municipalities, are considered a safe investment, but involving a higher degree of risk than the government bonds. Hence the interest rates they offer are somewhat higher. For instance, the municipality of Gdynia issued four-year bonds with the interest rate being 1.25 percentage point above the yield offered by 52-week Treasury notes, bonds issued by the city of Łódź bear interest rate 1.15 percentage point above the same Treasury notes and only 1 percentage point lower than the interest rate on the 10-year government bonds [28]. The municipal bonds can attract capital by offering additional benefits, such as discounts for investors wishing to purchase flats from the municipality's housing stock, reduced rents for flats or commercial space. Such bonds, however, are not traded on the financial market.

Summary

- 1) Government securities are a very important segment of the financial market. They allow to diversify investment portfolios and for the risk-avoiding investors or those that by definition need to invest in securities bearing minimal risk they are the basic investment instrument.
- 2) It would be an oversimplification to view government securities as completely risk-free, particularly when deals are concluded on international markets.
- 3) Economists disagree as to the impact of the government securities' yields on interest rates, and to what degree local authorities' borrowing capacity depends on the level of interest rates operated on the financial market.
- 4) The modified approach to financing the budget deficit has become one of the most important factors underlying the growth of the Polish stock market. The bond market in Poland is dominated by government bonds.
- 5) Treasury notes are important not only for financing the government deficit they are also traded on the open market; such transactions are used by the central bank to intervene on the money market.
- 6) An important supplement to the government securities is municipal bonds that play a marginal role in Poland as regards the value of issues as well as their impact on the situation on the financial market.

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