

Strategic Trends and Policies Shaping Government Securities Markets in the OECD area

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I. Introduction and Executive Summary

This presentation provides an overview of the major strategic trends and policies shaping the development of government securities markets in the OECD area. Attention is focused on strategic considerations based on best practices in primary and secondary markets, structure of debt portfolios and the role of benchmarks, the growing importance of electronic trading systems, importance of the more wide-spread use of more sophisticated risk management systems, and the role of derivatives in public debt management.

II. Strategic decision to strengthen the role of market principles in government debt management in the OECD Area

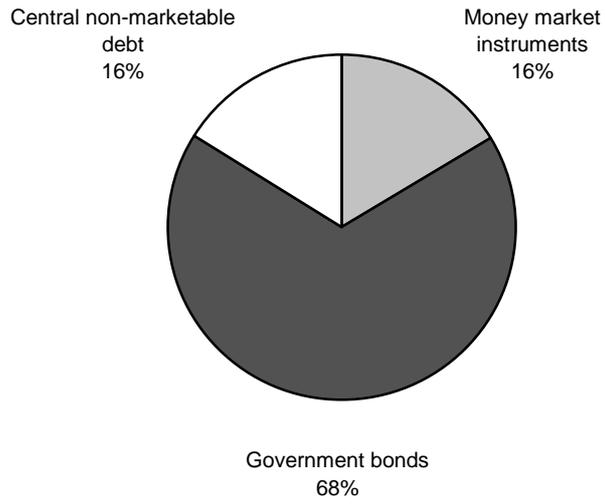
Market-based financing of budget deficits has been a major factor behind the growth of the global sovereign bond market in the 1980s and 1990s. A large number of OECD governments adopted measures to strengthen the role of market principles in government debt management by improving primary and secondary market arrangements. Along with an improved infrastructure -- including advanced clearing and settlement systems and modernisation of the regulatory framework -- as well as deregulation, the flow of government bonds helped to establish more liquid benchmark issues. Liquid government bond markets facilitated issuance also by private sector borrowers. Thus, in many countries the larger corporate borrowers stepped-up issuance of bonds and shorter dated paper such as commercial paper. Key corporate issuers as well as national and regional government borrowers in emerging markets became important issuers in the international bond markets.

Almost all OECD countries have developed their fixed-income government securities markets pressed by the necessity of financing fiscal deficits. As a result, most OECD fixed-income securities markets are dominated by public debt markets. Liquid public debt markets proved to be key for the development of corporate debt markets as the yield curve associated with government securities markets is important for the correct pricing of corporate bonds.

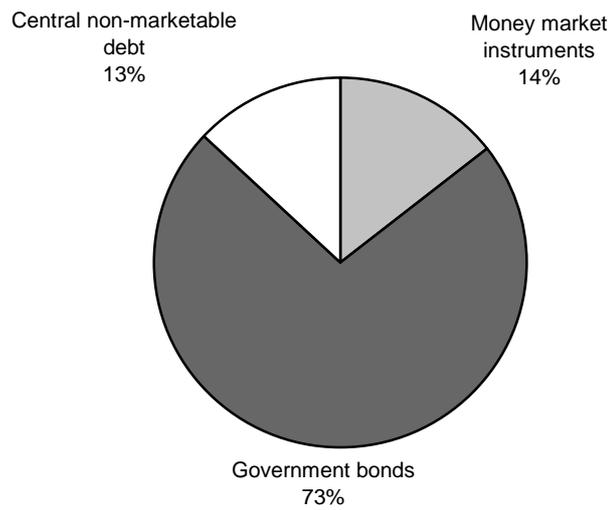
The 1980s trend in OECD countries to improve the depth and liquidity of government debt instruments has continued during the 1990s. In the early part of the 21st century, on average 87 per cent of government borrowing requirements were met through marketable instruments [*Chart 1: Marketable and non-marketable public debt instruments in OECD area 1990-2002*]. This trend is in large part due to measures taken to strengthen the role of market principles in government debt management by improving primary and secondary market arrangements.

Chart 1 - Marketable and non-marketable central government debt in OECD area
Amounts outstanding at the end of / Encours à la fin de

1993



2002



Source: OECD statistical yearbook on Central Government Debt, 2003.

III. Strategic objectives of debt management

Surveys among OECD debt managers show that the strategic policy objectives of debt managers can be summarised as follows:

1. ensuring the government's financing needs;
2. minimising borrowing costs;
3. keeping the various risks at an acceptable level; and
4. supporting domestic capital markets.

Objectives 1-3 are primary objectives, whereby borrowing costs are minimised subject to the government's tolerance for risk. Objective 4 is a secondary (or derived) objective as it is a means to achieving the primary objectives. OECD surveys on policy objectives show that:

- Debt managers pay increasingly attention to the various risks associated with government debt management. The increased use of more sophisticated risk management systems and financial derivatives support this policy trend.
- Liquidity plays an increasingly important role in government debt management. Efforts to increase market liquidity are part of secondary objective 4.

IV. Strategic debt management framework based on best practices and benchmarks

Over the years, OECD debt managers have developed best practices for raising, managing and retiring debt at the lowest possible price and acceptable risk. Some key policy conclusions from past meetings on public debt management at the

OECD² can be summarised in the form of the following best practices regarding primary and secondary public debt markets:

Primary markets

Efficient and liquid primary markets for government securities are characterised by the following best practices:

issuing strategy based on regular auctions;

the issuance of benchmarks;

abolition of privileged access by governments;

a transparent debt management framework;

a primary dealer framework with the capacity to develop markets.

Secondary markets

Efficient secondary government securities markets are characterised by the following features:

liquid markets with a large stock of outstanding benchmark issues and repo market financing;

safe and sound clearing and settlement systems;

² Since its creation in 1979, *the OECD Working Party on Debt Management* has been a unique policy forum for government debt managers and experts from OECD Member countries to exchange their views and experiences in the field of government debt management and government securities markets. The Working Party initiated in 1990 a policy dialogue with transition countries and, later on, with emerging markets in several regional and global policy forums, including the *Annual OECD/World Bank Global Bond Market Forum*, the *OECD's Annual Baltic-Nordic Forum on Public Debt Management*, and the *Annual OECD Global Forum on Public Debt Management*.

transparent and equitable regulatory and supervisory framework;

a market-making structure based on primary dealers;

liquid futures markets;

good access by foreign investors to domestic debt markets.

Naturally, best practices may have to be up-dated or re-fined over time. For example, electronic systems may reduce in the future the importance of primary dealers (for example, by allowing institutional investors direct access to auctions). Nonetheless, the above best practices can be expected to continue to play an important guiding role in achieving the principal objective of meeting the financing needs of the government at lowest cost over time and at an acceptable level of risk. These best practices also play an important role in the derived or secondary objective of promoting efficient capital markets. (This objective is ‘derived’ as it is a means to achieving the end of lowest borrowing costs.)

Strategic choices as to the financial structure of the public debt portfolio and benchmarks

Debt managers need to have a view on the optimal structure of the public debt portfolio. Ideally, they should be able to assess how a portfolio should be structured on the basis of cost-risk criteria so as to hedge the government’s fiscal position from various shocks. The optimal debt *composition* is derived by looking at the relative impact of the risk and cost of the various debt instruments on the probability of missing a well-defined stabilisation target (e.g., the stabilisation of the debt ratio at some target value, thereby reducing the probability of a fiscal crisis). This framework would allow the pricing of risk against the expected cost of

debt service. This price information makes it possible to calculate the optimal combination along the trade-off between cost and risk minimisation.

This means that the choice of debt instruments that a government should issue depends in large part on the structure of the economy, the nature of economic shocks, and the preference of investors. For example, fixed-rate nominal debt (expressed in local currency) would help hedge the budgetary impact of supply shocks, while inflation-indexed debt are better hedges than nominals in case of demand shocks.

Against this backdrop, the government needs to specify *a strategic benchmark*, representing the desired structure or composition of a liability (and asset) portfolio in terms of financial characteristics such as currency and interest mix, maturity structure, liquidity, and indexation. It is a management tool that requires the government to specify its risk tolerance and other portfolio preferences concerning the trade-off between *expected* cost and risk.

For a debt manager a strategic benchmark represents the structure of the debt portfolio the government wishes to have, given also the risk at the asset side. Strategic benchmarks have two key roles:

1. They provide guidance for the management of costs and risk.
2. Portfolio benchmarks also define a framework for assessing portfolio performance in relation to cost, return, and risk.

Market liquidity

As a result of implementing these strategic choices concerning the optimal debt portfolio and related best practices, liquidity in OECD public debt markets

increased significantly and a yield curve of benchmark bonds was established. Market liquidity tends therefore to be concentrated in the large bench mark issues by borrowers that use regular and predictable issue calendars, in secondary markets where trading costs are lowest, and in instruments that can satisfy the preferences of a wide range of different investors (including foreign ones). In particular the internationalisation of markets and investor bases played a major role in making these debt markets more efficient, liquid and transparent. As an asset class, government securities are assessed as virtually free from credit risk. These characteristics distinguish most OECD government debt markets from private debt markets. As a result, government bonds have been increasingly used for pricing corporate debt. Market participants started to use them also for hedging operations and positioning in both duration and volatility, as vehicles for managing liquidity, as instruments for investment, as collateral for secured borrowing, as a base for futures market contracts, and as a safe-haven during periods of market turmoil³.

Trends in the issuance of government debt instruments

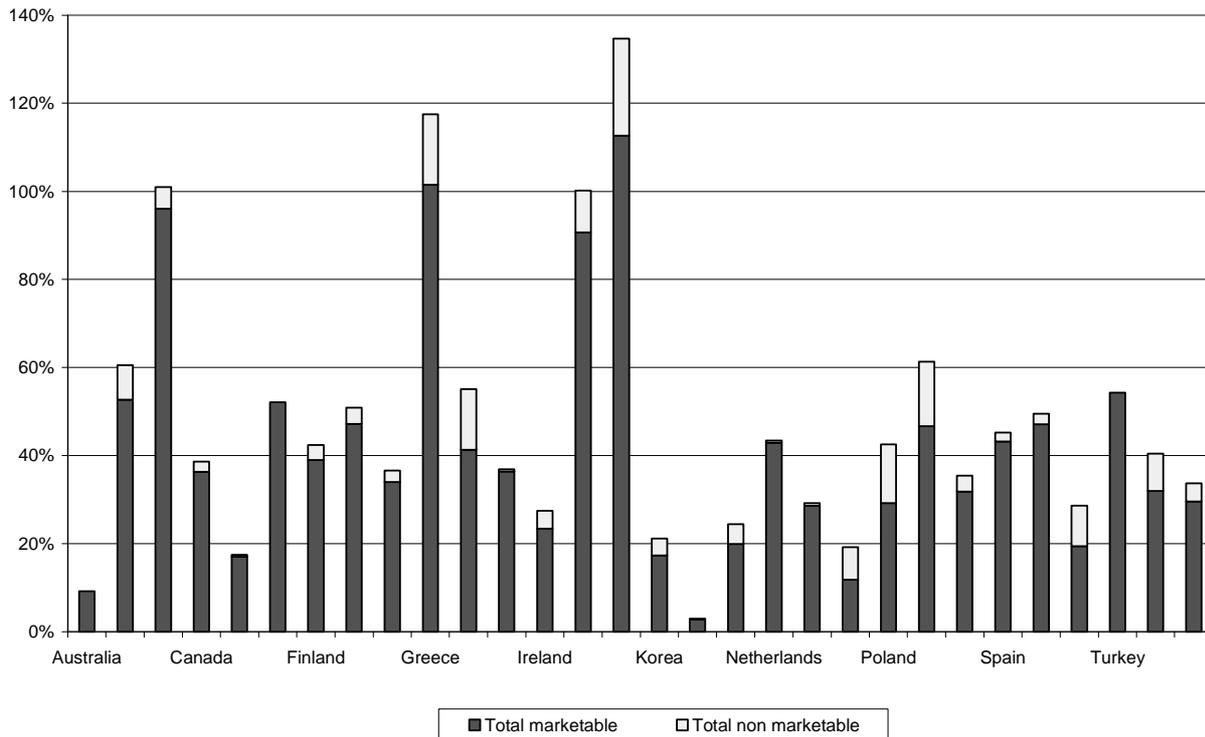
By the late 1990s, longer-term instruments accounted for the larger part of government debt [**Chart 1:** Marketable and non-marketable public debt instruments in OECD area 1990-2002; **Chart 2:** Composition of Central Government Debt in 2002] as debt managers sought to minimise re-financing risk as well as interest risk. Although most of the instruments are fixed (nominal), an interesting development during the last few years is that an increasing number of governments are issuing index-linked bonds: Australia, Canada, France, Iceland, Mexico, New Zealand,

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In recent history, during periods of severe international (or regional) financial market turmoil, investors have traditionally fled to the United States Treasury market. The emergence of a pan-European public debt market raises the possibility that an alternative, international safe-haven would become available.

Sweden, the United Kingdom, and the United States. Indexed debt is issued to assist with the overall debt management objective of raising, managing and retiring debt at the lowest possible price and acceptable risk. Specific objectives related to indexed debt include an opportunity to diversify and the provision of a real rate that is useful for policy makers and market participants. However, indexed markets tend to be less liquid, have fewer participants and have a narrower investor base than nominal markets. However, quite recently, liquidity has improved, and the investor base is widening.

Chart 2 - Composition of Central Government Debt in 2002
 Graphique 2 - Répartition de la dette de l'administration centrale en 2002
 As a percentage of GDP / En pourcentage du PIB



Source: OECD statistical yearbook on Central Government Debt, 2003

V. The growing importance of electronic systems in primary and secondary markets

Increasingly, debt management procedures and techniques are supported by new electronic systems, both in primary and the secondary markets.

Electronic primary markets

The use of electronic systems in the *primary market* consists of (1) electronic auction systems (in some cases also handling buy backs and switching operations); (2) syndication and (3) direct issuance to retail investors. An increasing number of issuers use *electronic auction systems*. Automation of auction procedures increases efficiency vis-à-vis the use of manual procedures, as it enhances speed, reliability and cost-effectiveness. Moreover, together with the publication of auction calendars, the introduction of electronic auction systems has increased transparency. All these improvements in the structure of primary markets are important for issuers because they are facing a stronger competitive environment. Three types of *primary market* systems are usually distinguished: competitive bidding systems (issuer to dealers), online selling systems (dealer to clients), and direct primary issuance systems (issuer to clients).

Auctions are the most commonly used issue method. However, after the introduction of the Euro a number of EU countries (in particular the smaller ones) have introduced *syndication* as a supplement to auctions. This issue method is effective in rapidly building-up an outstanding volume of considerable size. Electronic book-building typically supports syndication. However, experiences thus far indicate that the contacts between the sales team and the investors remain very important, although there is the technical possibility to enter bids directly into the system.

Electronic secondary markets

Another important recent development is the impact of electronic systems on *secondary markets*. The advance of electronic trading systems (ETS) is reshaping the fixed income markets. They are improving national markets by extending access to, and awareness of, the markets.

Various types of ETS can be distinguished, including dealer-based ones, matching systems, competitive bidding and auction systems. When choosing a system, issues to consider include participation, market-making obligations, vendors, international alliances and consultation of primary dealers. Two types of *secondary* trading systems are usually distinguished: single and multiple (co-mingled) dealer systems (to clients), and cross-matching systems (between dealers and client to client).

This is an extremely fast-moving area. The number and types of fixed-income ETSs grew rapidly in the recent past, although there are now some signs of consolidation. Markets and governments will have to adapt to this new reality.

VI. Increased emphasis on risk management

Lately, the trend to more autonomous debt management agencies is accompanied by an increased emphasis on *risk assessment and risk management*. The risk management function is now a central feature of debt offices in many OECD countries. This risk control function is in many debt offices organised in the form of separate *risk management unit* and as part of the middle office.

OECD surveys show that the extent of risk management varies widely across countries, with some debt managers conducting very limited risk management and others engaged in extensive activities in this regard. The majority of OECD countries are actively engaged in risk management, with risk typically not managed on a consolidated basis across all government entities. Sources of risk exposure are tied to the domestic debt management activities of the central governments, which include management of the domestic treasury bill and bond programs, and associated asset cash management operations. Sources of risk exposure can also arise from management of the national foreign currency reserves in those countries where the reserves are not managed separately by the central bank. Derivative operations related to either the domestic or foreign reserve activities of the central government provide sources of risk exposure, as well.

In general, risk management tolerances and policies are approved (and often set) by the Ministry of Finance (or appropriate Ministry). The actual risk management operation is often run at a separate agency responsible for management of the sovereign debt or at the central bank if it manages the debt, and is typically segregated from other treasury operations.

Market risk, credit risk, liquidity risk and refunding risk are the risks most likely to be managed. Operational risk and legal risk are less likely to be formally managed. Historically, most OECD debt managers have played only a small role in managing the risks associated with contingent liabilities. More recently, government debt managers in a greater number of OECD countries are becoming involved in the monitoring of explicit contingent liabilities, designing contingent-based instruments and for making recommendations to the government on appropriate provisioning.

Several different measures are typically used in combination to monitor market risk and credit risk. In general, OECD countries with active risk operations

update market risk and credit risk positions on a daily basis. Risk management systems employed tend to be a combination of internally developed models, specialised purchased applications and general software.

VII. The use of derivatives by debt managers and market participants

Derivatives have become important instruments for many sovereigns to manage the risks related to debt management operations as well as for improving the profile of the debt. Market participants and debt managers are increasingly using derivative instruments to gauge market sentiments, while they also use them to construct yield curves⁴. Their use by market participants adds to the liquidity in secondary government securities markets. In general, derivatives and risk management instruments can be used by both debt managers and market participants to protect the value of an investment or transform the characteristics of assets or liabilities into alternative, more desirable forms.

Reasons for use of derivatives by governments

Derivatives are often used by sovereigns to reduce expected borrowing costs. Derivative transactions are also employed to modify the level and type of risks incurred by governments. The following more specific reasons have recently stimulated the use of derivatives by debt managers.⁵ First, derivative use got a push from the period in the recent past with budgetary surpluses and the related

⁴ BIS (2001), The Changing Shape of Fixed Income Markets, Working Papers No. 104.

⁵ Gustavo Piga (2001), Derivatives and Public Debt Management, ISMA and Council on Foreign Relations.

reduction of debt, as it made the objectives of optimal risk management and liquidity-building more distinct. Also the increasingly important role of the euro facilitated the use of derivatives by debt managers. Finally, the trend to more autonomous DMOs and use of benchmark portfolios are also encouraging a more active use of derivative contracts.

Strips

However, not all OECD debt managers participate actively or directly in the derivative market activity. For example, the United States introduced in 1985 its Separate Trading of Registered Interest and Principal of Securities (*STRIPS*) programme. Strips are a zero-coupon Treasury derivative securities instrument. But the United States Treasury neither issues nor sells STRIPS directly to investors. Although United States Treasury derivative contracts are actively traded over the counter and on organised exchanges, it is the exchanges, bond dealers and investors that are directly involved in issuing, buying or selling them.

STRIPS can be used to improve the functioning of primary and secondary debt markets. Currently, many debt managers in the OECD are using them. By separating future coupon payments and principal payment at maturity from a treasury bond, investors can purchase *separate* series of coupon payments or principal separately. This feature of strips is creating more demand for government securities because by buying them some institutional investors (e.g. pension funds) can generate a stream of future cash flows that matches better their liabilities.

Overview of key derivative instruments

Futures and forward contracts provide the ability to hedge risks. Also *options* have become indispensable risk management tools. The generally strong correlation between yields on sovereigns and on private debt securities means that

government securities can be used to hedge general interest rate risks. A special type of forward transaction is the *when-issued market*, where government securities are sold before and immediately following the auctions, but before settlement. As dealers can distribute primary issues before their participation in the auction, this contributes to deepen the primary market. Also the functioning of the secondary market can be improved by opening new avenues for pre-auction distribution and encouragement of price discovery leading into auctions.

Swaps are simple but important tools of risk management, which have long been used by debt managers. For example, in Denmark the central government has been using swaps to reduce the costs of borrowing, and to manage the currency composition and interest rate risk on the stock of debt. Canada is regularly using cross-currency swaps of domestic obligations as part of its management of international reserves.

VIII. Summary conclusion on OECD strategic policy trends

Standardisation and convergence of debt policies and instruments

Standardisation of government debt policy, driven by the international integration of financial markets and the resulting increase in competitive conditions to achieve the cheapest funding, has led to a growing degree of *convergence* of OECD debt management policies. This means that an increasing number of OECD debt managers are implementing *best practices in primary and secondary markets*.

Also debt instruments have converged to an important degree, as a result of greater competition, the desire to secure stable funding sources and the objective of maintaining liquidity at key benchmarks.

Structure of the debt portfolio and strategic benchmarks

OECD debt managers have increased their capacity to assess how a portfolio should be structured on the basis of cost-risk criteria. This means that an increasing number of debt offices are now in the position to calculate the optimal combination along the trade-off between cost and risk minimisation.

This means that governments are better able to specify informative and well-articulated *strategic benchmarks*. Accordingly, the value of benchmarks as management tools (both as guidance for the management of costs and risk as well as for assessing portfolio performance) has increased.

Electronic primary markets

Electronic systems are increasingly used in *primary markets*. Automation of auction procedures increases their efficiency vis-à-vis the use of manual procedures, as it enhances speed, reliability and cost-effectiveness. Improved electronic auction systems are therefore important for streamlining the process of submitting bids so that auction results can be faster processed and disseminated. These more sophisticated systems are also key for making it easier for institutions to bid directly in auctions. Broad and deep primary markets would help lower the cost of borrowing for the government. Moreover, together with the publication of auction calendars, the introduction of electronic auction systems has also increased the transparency of primary market.

Electronic secondary markets

There is also a strong expansion in the use of *electronic trading systems (ETS)*. This reduces the costs of trading government bonds, and at the same time it increases liquidity. The move to multi-dealer and cross-matching systems is having

a centralising effect. This is leading to a bigger pool of liquidity. Competition for liquidity, in turn, is stimulating fewer trading systems and strengthening the centralisation trend.

Composition of investor base

There is a growing focus on the *composition of the investor base*. A broader domestic and international investor base of primarily major institutional investors will contribute to lower borrowing costs and facilitate the sale of future issues.

Risk management

The extent of *risk management* by financial asset and liability managers varies widely across OECD countries, with some conducting limited or no risk management and others engaged in extensive activities in this regard. The majority of countries are actively engaged in risk management, with risk typically not managed on a consolidated basis across all government entities. However, to what extent and how debt managers should manage overall government's balance sheet risk, is moving to the forefront of current risk management work or thinking in OECD countries. Also the development of a framework for monitoring contingent liabilities, designing contingent-based instruments, and calculating provisions for expected losses in the government budget, is getting a higher policy priority.

Derivatives

Derivatives have become important instruments for many sovereigns to manage the risks related to debt management operations as well as for improving the profile of the debt. Derivatives are often used by sovereigns to reduce expected

borrowing costs. Derivative transactions are also employed to modify the level and type of risks incurred by governments.

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