ISSN 1995-2864
Financial Market Trends
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Pre-publication version for Vol. 2009/1

New Challenges in the Use of Government Debt Issuance Procedures, Techniques and Policies in OECD Markets

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Government debt issuance procedures and policies differ across OECD jurisdictions, in particular in terms of technical standards for selling techniques, primary dealer systems and other primary market arrangements.

However, the increased integration of global financial markets (including the jump in the integration of European government debt markets since the introduction of the Euro) has been an important catalyst in the standardisation of the structure and types of instruments as well as the convergence of general procedures and policies for the issuance of government debt. In many OECD countries, the ongoing credit and economic crises have prompted a review of existing issuance procedures and policies.

This article provides (a) a survey of the general characteristics of government debt issuance procedures and related primary dealer (PD) arrangements in the OECD area; and (b) an evaluation of the challenges and changes generated by the impact of the turmoil in global financial markets on issuance procedures and policies.

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I. Increasingly similar issuance procedures and policies in the OECD area

Globalisation and increased competition have encouraged…

There is broad agreement among debt management offices (DMOs) that government debt issuance procedure should be designed in such a way that they take into account the interests of both issuers and financial market participants[1]. Since policy judgements, economic and financial situations as well as market practices and conventions can be expected to differ, also issuance procedures are likely to differ among OECD jurisdictions. However, an increasingly integrated global financial landscape, and the resulting increase in competitive conditions to achieve the cheapest funding, has encouraged the use of broadly similar issuance procedures and policies that facilitate or encourage liquid markets.

… the convergence of OECD public debt policies

More generally, there is wide recognition that broad and deep primary and secondary markets are instrumental in lowering the cost of borrowing for the government[2]. This in turn has been a key driver in the growing *convergence* of OECD debt management policies.

OECD countries have broadly similar issuance procedures with high degree of transparency and predictability

It is therefore not surprising that DMOs have as stated objectives to develop government securities markets that are liquid and efficient, with market participants operating in a transparent debt policy environment. As a result, we can observe in all OECD countries broadly similar issuance procedures and operations with a high degree of transparency and predictability[3]. For example, the widespread use of auction calendars and electronic auction systems is evidence of the results of this transparency objective in primary markets.

Convergence is very strong in the Euro-zone

Convergence of debt policies and procedures could clearly be observed in the Euro-area during the past decade. Financial integration in Europe increased strongly in response to the introduction of the Euro in 1999. Since Euro-area government debt policies remained at the same time decentralised (issuance remained in the hands of the different EU governments) this jump in integration increased the 'competition' between market practices and policies, leading, in turn, to more similar policies, procedures and instruments in the euro-zone.

Globalisation has also contributed to the emergence of a number of 'standard' financial products centered on a few "global benchmarks" such as the 10-year German Bund and 10-year U.S. Treasury Bonds, serving as liquid pricing vehicles for other markets.

Electronic systems are increasingly used in primary markets[4]. 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. More sophisticated systems are also needed to allow institutions to bid directly in auctions.

Auctions are the issuing procedure most commonly used among the OECD countries. However, some of the smaller countries (*e.g.* in the euro-zone) combine auctions with the syndication of benchmark bonds, in order to provide a quick build-up of outstanding volume and greater certainty of issue.

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Table 1a. Overview of issuing procedures in the OECD

	Auctions		Auction type		Tap issues		Syndication
	Long-term	Short-term	Single-price	Multiple-price	Long-term	Short-term	
Australia	x	x		x			
Austria	x	x		x			x
Belgium	x	x		x	x	x	x
Canada	x	x	x	x			
Czech Republic	x	x	x	x			x
Denmark	x		x		x		x
Finland	x		x		x	x	x
France	x	x		x			x
Germany	x	x		x	x		
Greece	x	x	x				x
Hungary	x	x		x		x	
Iceland	x	x	x	x			x
Ireland	x	x		x		x	x
Italy	x	x	x				x
Japan	x	x	x	x			
Korea	x		x				x
Mexico	x	x	x	x	x	x	
Netherlands	x	x	x	x	x		
New Zealand	x	x	x	x	x	x	
Norway	x	x	x				
Poland	x	x	x	x			x
Portugal	x	x		x			x
Slovak Republic	x	x	x	x	x	x	x
Spain	x	x		x			x
Sweden	x	x		x	x		x
Switzerland	x	x					
Turkey	x	x	x	x			
United Kingdom	x	x	x		x		
United States	x	x	x				
Total	29	26	18	20	10	7	16

1.Austria	Syndication is for portion of each issue.
2.Belgium	Syndication of benchmarks bonds.
3.Canada	Syndication for foreign currency debt issuance (for foreign exchange reserve funding purposes only).
	A single price auction format is used for issuance of inflation-linked bonds.
4.Chech Republic	Syndication used for "Eurobonds", single-price for T-bills, multiple-price for bonds.
5.Denmark	Long term foreign issuance is primarily conducted via syndication.
	In the short term foreign issuance, Commercial Paper (CP) programmes are used.
6.Finland	In the issuance of T-bills, multiple-price will be used.
7.France	Syndication is usually resorted to once a year, essentially for the first issuance of a new line.
8. Germany	Syndication for first issuance and first re-opening of inflation linked bond.
9.Greece	Syndication for first issuance of med., long term and inflation- linked bonds. Public subscription for retail investors.
10.Hungary	Some Treasury bills are sold via tap sales or subscription for retail investors.
11.Iceland	Syndication or private placement is used for bonds in foreign currency; Dutch Direct auction for long term bonds.
12.Italy	Syndication for first tranche of long term bonds and for Global bonds, private placement used for external debt.
13.Korea	Syndication for first issuance of inflation-linked bonds and foreign exchange stabilization bonds.
	In buy-back auctions, multiple-price format is used.
14.Mexico	Foreign currency debt is issued via investment banks.
15.Netherlands	Dutch Direct Auction (uniform price) is used for longer dated bonds.
16.New Zealand	Tap sales are used for external debt (both long and short term). Single-price format is used.
	Auctions are primarily used in the domestic borrowing. Tap sales are used only in the long term issuance.
17.Poland	Syndication is used for external debt. Also use of retail agents for domestic securities. Single-price auction is used in supplementary auctions.
18.Portugal	Syndication for first issuance of bonds, direct negotiations for MTN and ECP programmes.
19. Slovak Republic	Syndication is for portion of each issue.
20.Spain	Syndication for new long benchmarks and foreign currency debt. The auction type is a mixture of single and multiple price.
21.Sweden	Syndication for foreign currency debt and occasionally for domestic currency bonds.
22.Turkey	Also direct sale to institutional investors and public offers to retail investors. Single-price auctions are used only for inflation-linked bonds.
23.United Kingdom	Taps for market management are reserved for exceptional circumstances only.

Source: Responses to the 2009 Survey of the OECD Working Party on Debt Management.

OECD policies and market conventions function increasingly as global standards

In sum, OECD countries have seen an increase in the convergence of the composition of debt (maturity structure and instrument type), increased similarities in issuance procedures, and increased standardisation of market conventions. Integrated markets and the spread of OECD leading policy practices and market standards, in turn, have influenced developments in government debt issuance around the world. Consequently, the standards embedded in the issuance policies and procedures found in the Survey among OECD members (section II) represent increasingly *global standards*.

II. Results from a recent survey on OECD issuance procedures and policies

The principal issuing procedures are auction and tap

The principal issuing procedures are auction and tap. The responses show that all OECD countries use auctions for issuing new long-term debt, while 26 DMOs also use auctions for issuing short-term debt (Table 1a). Syndication is used by a number of (mostly smaller) countries (usually from the euro-zone) for selling benchmark bonds. It enables achieving very rapidly a high initial outstanding volume, thereby boosting liquidity and achieving greater placing certainty with lower borrowing costs. In addition issuers (also from larger countries) are using syndication for the first-time issuance of new instruments such as linkers or ultra-long bonds. Table 1a shows that 16 OECD countries are using syndication for issuing debt.

An increase in the use of syndication in the Euro-zone

A comparison of the Survey results with a previous OECD study[5] shows that among Euro-zone countries there has been an increase in the use of syndication as an additional method for issuing debt. Tap issues are less frequently used, with 7 OECD DMOs using taps for issuing short-term debt and 10 for issuing long-term debt.

Issuance procedures often vary in terms of operational and technical details

The preferred auction type seems to be the multiple-price format.[6] However, single-price[7] auctions run a close second with the US using single-price auctions for all Treasury auctions. In sum, although issuance procedures in OECD are broadly similar, they often vary in terms of operational and technical details.

III. The explosion in borrowing needs has worsened issuance conditions

Borrowing needs have increased significantly in response to the soaring costs of financial support schemes and other crisis-related expenditures as well as recession-induced falls in tax income and an increase in recession-related expenditures. Many OECD governments are therefore facing a further increase in expected deficits. As a result, it is estimated that the gross borrowing requirements of OECD governments for 2009 will be close to USD 12 trillion. The 2009 funding outlook is, however, surrounded by an unusually high degree of uncertainty.

Strong supply of government paper has worsened issuance conditions…

This dramatic increase in the supply of government paper has worsened issuance conditions with reports about liquidity pressures in secondary markets and sometimes weak demand and distortions in primary markets. Delegates from the OECD Working Party on Public Debt Management (WPDM) confirmed the following trends and developments: (a) dramatically increased borrowing

… with liquidity pressures, weak demand and price distortions

requirements and (potentially) market absorption problems in many OECD countries, leading to higher expected borrowing costs;[8] (b) changes in issuance methods, including more flexible auctions, introduction of auction fees, and the use of other distribution methods than auctions such as syndication, Dutch Direct Auction (DDA) procedures and private placement; (c) changes in optimal sovereign portfolios (driven by new benchmarks with a greater emphasis on short-term paper and a reformulated different cost-risk trade-off).

IV. Tougher issuance conditions have led to changes in issuance procedures

Softening of demand has led to postponed or less successful auctions

These dramatically increased borrowing needs, in turn, have led to sharply increased competition in raising funds. Additional competition is coming from the issuance of government-guaranteed bank bonds. Issuance conditions have therefore become tougher with reports about a softening of demand at auctions, leading to postponed, failed or cancelled auctions. These developments, together with the decline in the number of primary dealers (section V), are raising important policy issues such as[9]:

- The risk to the success of auctions and greater auction tails.
- The risk to the liquidity of Treasuries in the secondary markets.

Future issuance could become more challenging

Less successful auctions have been ascribed to *uncertainties* about potential market absorption issues and volatile market conditions. Thus far, difficulties surrounding auctions can best be interpreted as "single market events" and not as unambiguous evidence of systemic market absorption problems. However, the future could become more challenging, given that this still rising issuance trend is occurring hand in hand with increasing overall debt levels.

DMOs have adopted changes in issuance procedures

In response, several DMOs have adopted changes in issuance procedures so as to address the consequences of increased competition in raising funds and (potential) market absorption problems. Issuers have also introduced new distribution facilities.

Maintaining investor relations is very important

Maintaining investor relations has become even more important than before with many DMOs reporting greater urgency for organising road shows for large (foreign) investors. Especially in the current circumstances with high borrowing needs, many DMOs observed that a broad and diverse *foreign* investor base remains essential in maintaining a diversified and liquid domestic government bond market. This means that it is important that the preferences of foreign and domestic investors are taken into account when making changes in issuance procedures and techniques.

Increasing interest in syndication

Table 1b provides an overview of some of the changes made in issuance procedures and/or the conditions for using existing systems and techniques. For example, in some jurisdictions there are reports about an increasing interest in the use of syndication. This selling method is credited with the potential to rapidly achieve a very high initial outstanding volume of issues with better placing certainty than auctions. This in turn may boost liquidity and lower borrowing costs. However, syndication has also potential downsides such as a more limited reach among potential buyers, more risk averse investors than dealers participating in auctions, and higher intermediation costs.

Table 1b. Recent changes in issuing procedures

Australia	More flexible auction calendars.
Austria	More emphasis on investor relations.
Belgium	Tap for long term debt. Increased issuance volumes.
Canada	Re-introduction of 3-year maturity. Introduction of switches. Additional benchmarks for 2-year and 5-year sectors.
Denmark	Use of private placement in foreign markets in 2008. T-bill programme terminated in 2008. Greater use of auctions instead of tap sales.
Finland	Diversification of funding sources. More emphasis on investor relations. More coordination with PD's. Higher syndication fees. Active use of demand-supply windows.
France	Increased flexibility for better matching demand. On several occassions off-the-run bonds were issued since the 2nd half of 2007.
Germany	Tap for long term debt. More frequent auctions.
Greece	Beginning 2009, auctions changed to single price format.
Iceland	Single price auctions (for long term bonds) are used together with multiple price auctions.
Ireland	Syndication has been added as funding tool. Auctions also in use for short term debt.
Italy	More flexible procedures. The range of offered amounts for on-the-run bonds increased. The range of the maturity of bonds sold to PDs at non-competitive prices are also extended. Introduction of re-openings of old bonds.
Mexico	Tap issues on both short and long term bonds.
New Zealand	Introduction of new long term bond. Tap issues for short term debt. Monitoring foreign markets for finding attractive foreign borrowing opportunities. Introduction of a new facility of "reverse tap tender".
Norway	Instead of both auction types, only single price auctions are now being used.
Slovak Republic	Contemplation of following (future) operations: (a) Direct selling and buy backs in secondary market; (b) Underwriting auctions (single price based on price discovery via syndication); (c) buy backs and exchange auctions.
Turkey	'Revenue indexed bonds" are introduced in order to broaden the investor base.
United Kingdom	Mini tenders are introduced as a more flexible supplementary distribution method alongside with the core auctions programme.

Source: Responses to the 2009 Survey of the OECD Working Party on Debt Management.

DMOs are operating more frequent auctions with more flexible and opportunistic procedures

There are already signs that liquidity pressures, rising borrowing requirements and risk-averse behaviour of investors are forcing debt managers to modify their fund raising strategies. Regarding the operation of auction schemes, many DMOs are operating more frequent auctions with auction schedules having become more flexible and opportunistic. The maturity of debt is becoming shorter. There is growing use of foreign liabilities, and debt managers are using a wider range of instruments, including bills and notes.

Transparency and predictability remain key in the minimisation of borrowing costs

These changes, while understandable, create some risks. As debt managers become more opportunistic, issuance programmes are becoming less predictable. That may not be desirable in the long term. DMOs emphasise therefore that they will continue to operate a transparent debt management framework supported by a strong communication policy. Transparency and predictability are instrumental in reducing the type of market noise that can unnecessarily increase borrowing costs.

Some DMOs have introduced auction fees and the UK mini-tenders

Some DMOs were considering introducing (or have introduced) auction fees. Others argue that fees are not effective and/or not consistent with the principle of open auctions. Mini-tenders were introduced by the UK DMO *alongside* the scheduled auction calendar in order to mitigate liquidity problems[10].

Suggestions for studying joint issuance in Euro-zone

On several occasions, suggestions have been made that Euro-zone issuers[11] should explore practical ways to issue government paper jointly. This debate seemed to have gained some traction from recent issuance problems, with several European countries being forced to cancel bond issues due to lack of interest by investors. These problems have revived discussions about closer co-operation in the form of joint issuance policies, including the issuance of *a joint European short-term debt instrument* that would be able to attract additional investors due to its increased issuance size (and resulting liquidity)[12].

Increased retail issuance ….

… complicated by financial stability considerations

Another possible change in issuance strategies may be a stronger emphasis on *retail issuance* so as to broaden and stabilise the investor base. Increased use of electronic systems has made it easier to reach retail investors directly. However, a possible downside concerns a lack of cost- effectiveness, although the greater use of electronic means has improved the scope to reduce distribution costs. A new complication in some countries is the financial stability perspective. Although the introduction of additional retail funding instruments may lead to lower borrowing costs, this policy move may not be desirable in the current crisis situation in which banks try to strengthen their balance sheets by increasing retail deposits. Hence, additional competition from retail instruments issued by DMOs may at the moment not be desirable on *financial stability* grounds.

V. How urgent is the need to review primary dealer arrangements?

Primary dealer (PD) systems in OECD area differ

Primary dealer (PD) systems in the various OECD countries are quite different in terms of obligations/requirements, either in broad terms or technical detail. For example, market making (MM) rules in secondary markets are often part of the set of PD requirements, but not in all jurisdictions[13]. In addition, some OECD countries either do not possess PD systems or dealers are formally (or *de jure)* not recognised as such by the issuer. See Table 2a, 2b and 2c for an overview of requirements imposed on (candidate) primary dealers in the OECD area.

Table 2a. Primary market requirements for becoming a Primary Dealer

	To participate regularly in auctions	Minimum participation in every auction	Minimum average annual/quarterly participation in auctions	To bid in each auction	To ensure placement of debt	To avoid distortion to auction prices	To allocate sufficient resources to support issuer
Austria	x	x				x	x
Belgium	x				x		
Canada	x	x		x		x	
Czech Republic			x			x	
Denmark							
Finland	x				x		x
France	x		x	x			x
Greece	x		x		x	x	
Hungary	x		x		x	x	x
Iceland	x	x		x	x	x	
Ireland	x					x	x
Italy			x			x	
Japan	x	x		x		x	
Netherlands	x					x	x
Norway	x			x			
Poland							
Portugal	x		x		x		
Slovak Republic						x	
Spain	x	x		x	x	x	
Turkey	x		x		x		
United Kingdom	x		x	x	x	x	x
United States	x			x			
Total	17	5	8	8	9	13	7

Source: Survey prepared by the Italian Treasury, "Relations between OECD Sovereign Issuers and Financial Intermediaries", circulated as Room Document no.7 for the OECD Working Party on Debt Management meeting held on 2 and 3 October 2007.

PD arrangements have not been working as efficiently as before the crisis

Existing PD arrangements have not been working as efficiently as before the crisis. This raises the question whether requirements as summarised in Table 2 need to be revised, temporarily or on a more permanent basis.

Current arrangements and requirements may have to be revised

Another primary market issue is whether the broader business model of co-operation with PDs needs to be changed. The business models in the U.S and Japan are based on the philosophy that DMOs have a hands-off relationship with PDs, or, in the case of Germany, a selected group of banks[14]. For example, the U.S. Treasury, through its issuing agent (the Fed of New York) has a hands-off approach with all its primary dealers where it sees its task ending with the conditions of primary issuance and is therefore only concerned with on-the-run securities.

Debate about market-making obligations

That said, the current credit-cum-liquidity crisis has shown that the Fed may have to play a more proactive role vis-à-vis PDs in times of great market stress. In contrast to a general hands-off approach, several DMOs (*e.g.*, in the EU) play a more activist role by giving PDs direct incentives or privileges in return for market-making (MM) obligations. This approach may reflect the challenges faced in fragmented and/or small markets. In some jurisdictions, however, the effectiveness of MM-obligations is under discussion. This debate is in part fuelled by the ongoing financial crisis and may lead (or has led) to changes in the current market infrastructure, including via the introduction or presence of multiple electronic trading platforms.

Table 2b. Primary market requirements for becoming a Primary Dealer

	To be a market maker	To ensure adequate trading volumes and turnover	To quote a certain number of securities	To trade at tight bid/ask spreads
Austria	X	X		
Belgium	X	X		X
Canada	X		X	X
Czech Republic	X		X	
Denmark	X			
Finland	X			
France	X		X	
Greece	X	X	X	X
Hungary	X	X	X	
Iceland	X	X	X	
Ireland	X		X	X
Italy	X	X	X	
Japan				X
Netherlands	X	X	X	
Norway	X			
Poland	X		X	
Portugal	X			
Slovak Republic				
Spain	X		X	
Turkey			X	X
United Kingdom	X	X	X	X
United States		X		X
Total	18	9	13	8

Source: Survey prepared by the Italian Treasury, "Relations between OECD Sovereign Issuers and Financial Intermediaries", circulated as Room Document no.7 for the OECD Working Party on Debt Management meeting held on 2 and 3 October 2007.

Insolvent and fragile balance sheets of PDs may negatively affect their future operations

Primary and secondary market activities have been negatively affected by both insolvent and fragile balance sheets of primary dealers. Many DMOs expressed concerns about this development and its implications for future operations. In several countries, recent events are accelerating a longer-term trend of a reduction in the number of (active) primary dealers. For example, the number of primary dealers transacting in US Treasuries declined from its peak of 46 in 1988 to 21 in 2007 and to 17 active primary dealers as of September 2008. This in turn raises the following policy issues[15]:

Additional reasons to review PD obligations and privileges

- The risk of lower competition in the primary market, possibly weakening the price discovery process.
- The risk of dominance in the government securities market by a few large banks.
- The risk of overall higher funding costs to finance government operations.

These problems and issues may be additional reasons to review existing PD requirements (obligations) and privileges.

Table 2c. Organisational requirements for becoming a Primary Dealer

	Minimum net regulated capital	To be shareholder in secondary market trading company	Capacity to place securities to wide range of investors	Sufficient human resources and expertise	Capacity to add value regarding specific products	Geographical location	Guarantees for the settlement of bonds	Capacity to attract new investors	Ability to sell to a wide variety of retail clients
Austria	X		X	X	X			X	
Belgium	X	X	X	X	X			X	
Canada	X			X		X	X		
Czech Republic						X			
Denmark	X		X	X					
Finland			X	X		X		X	
France				X		X			
Greece	X		X	X		X		X	X
Hungary	X		X	X					
Iceland	X			X			X		
Ireland			X	X	X	X		X	X
Italy	X		X	X	X				
Japan									
Netherlands	X	X	X	X	X			X	X
Norway			X	X					X
Poland	X		X	X			X	X	
Portugal		X	X				X		
Slovak Republic	X						X		
Spain	X		X	X			X	X	
Turkey	X								
United Kingdom	X		X	X			X	X	X
United States	X								
Total	15	3	14	16	5	6	7	9	5

Source: Survey prepared by the Italian Treasury, "Relations between OECD Sovereign Issuers and Financial Intermediaries", circulated as Room Document no.7 for the OECD Working Party on Debt Management meeting held on 2 and 3 October 2007.

VI. Conclusions

Worsening issuance conditions and changes in issuing procedures

The worsening of issuance conditions manifests itself via greater risks (a) in primary markets in the form of less successful auctions and greater auction tails;

and (b) in secondary markets in the form of liquidity pressures and price distortions. These (potential) problems are encouraging changes in issuance methods, including the use of other distribution methods than auctions such as syndication, Dutch Direct Auction (DDA) procedures and private placement. DMOs have increased their efforts in maintaining investor relations with a greater urgency for organising road shows for large foreign investors.

Many DMOs are using more flexible auctions with issuance programmes becoming less predictable and more opportunistic. That may not be desirable in the long term. DMOs emphasise therefore that they will continue to operate a transparent debt management framework supported by a strong communication policy. Some debt managers are considering introducing (or have introduced) auction fees. Others argue that fees are not effective and/or not consistent with the principle of open auctions. Mini-tenders were introduced by the UK DMO alongside the scheduled auction calendar in order to mitigate liquidity problems.

How urgent is the need to review primary dealer arrangements?

Existing PD arrangements have not been working as efficiently as before the crisis. This raises the question of whether current requirements need to be revised, temporarily or on a more permanent basis.

Another issue is whether the broader business model of co-operation between DMOs and PDs needs to be changed.

An assessment may be made of the viability of market-making (MM) obligations in relation to possible changes in the current market infrastructure.

NOTES

[1] This includes the notion that financial market participants (in particular primary dealers or selected groups of banks) can also function as (*informal)* partners of governments when it comes to government debt issuance.

[2] Supporting domestic capital markets is therefore an *indirect* debt management objective. It is an indirect one as it is a means to achieving the *direct* objective of minimising borrowing costs subject the preferred level of risk.

[3] It is widely recognised that issuers, investors, dealers and tax payers have benefited from transparent, efficient, robust and reliable issuance procedures for government debt. [Hans J. Blommestein (2002), editor, *Debt Management and Government Securities Markets in the 21st Century*, OECD].

[4] See chapters 1 and 4 in Blommestein (2002).

[5] Blommestein and Schich (2003).

[6] At a multiple-price auction, bonds are sold at the actual bid price of successful bidders.

[7] At a single-price (uniform-price or Dutch) auction, all bonds are sold at the same lowest accepted price.

[8] This rapid and massive increase in government issuance can be expected to push prices of government debt down and yields up. However, the following financial crisis/recession-related factors are likely to mitigate or delay this supply impact on prices and yields: (a) the (projected) fall in output that is likely to keep expectations of future inflation in check; (b) high risk aversion (credit and liquidity) that is encouraging a flight to safe and liquid assets; (c) low official interest rates; (d) the impact on (longer-dated) government debt of quantitative easing policies pursued by some OECD central banks; (e) the high demand for government paper for use as high-quality collateral.

[9] US Treasury (2008).

[10] The UK DMO circulated last year a consultation document about supplementary distribution channels (including mini-tenders) (UK Debt Management Office, 2008).

[11] Euro-zone countries include: Austria, Belgium, Finland, France, Germany, Greece, Ireland, Italy, Netherlands, Portugal and Spain.

[12] SIFMA/EPDA (2009).

[13] Note that also MM rules may vary in terms of technical detail.

[14] The members of this group of banks are not formally designated as primary dealers.

[15] US Treasury (2008).

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