This chapter reviews the experiences of Organisation for Economic Co-operation and Development (OECD) countries with public debt management during the worst financial crisis on record, the 2007–09 global financial crisis. It shows that the unprecedented global shock created local banking crises before setting the stage for a surge in government deficits and (contingent) liabilities. The rapid acceleration in sovereign borrowing needs was boosted by the fiscal response to concerns about the possibility of a severe economic slump. The resulting increase in sovereign risk created market concerns about an imminent or actual local sovereign debt and financial crisis in some OECD countries. The mutation into an actual sovereign debt crisis has revived concerns about renewed threats to the private financial intermediary system, including the interbanking market.

The origin, severity, and global nature of the financial shock and its aftermath made the 2007–09 crisis different from previous crises. Skillful debt management will need to be part of the overall macroeconomic exit strategy in order to contain the acceleration in sovereign risk, mitigate possible contagion dangers, and ensure the overall consistency of the macroeconomic policy mix. A credible exit strategy is also needed to control...
overly negative market sentiments and uncertainties surrounding sovereign credit risk that could lead again to dysfunctional markets.

OECD debt managers reported a softening of demand at some auctions, leading to postponed, failed, or canceled auctions and distortions in primary markets. Tougher issuance conditions as well as conditions of overall financial instability (which affect the functioning of primary dealers) are the principal reasons why existing issuance procedures, primary dealer arrangements, and portfolio management strategies have not always worked as efficiently as they did before the global financial crisis. Because they did not, sovereign issuers had to operate in circumstances that were at times unprecedented.

Signs of serious liquidity pressures were also present in secondary markets. A direct response to tougher issuance conditions by debt management offices (DMOs) in the OECD area included the implementation of changes in existing issuance procedures and policies. This type of policy response may have led to somewhat greater diversity of primary market arrangements and portfolio management procedures (for a detailed overview, see Blommestein 2009a).

The responses to the financial crisis—and, later, the economic crisis—resulted in a rapid increase in budget deficits and sovereign debt. These developments are likely to affect longer-term interest rates, with an adverse impact on the real sector ("crowding out"). The increase in sovereign risk, upward pressure on interest rates, and the resulting risk of crowding out put the spotlight on the importance of the overall macroeconomic exit strategy. Over time a return to a prudent medium-term fiscal strategy is an essential element of any credible exit strategy to bring debt-service costs, sovereign risk, and contagion pressures under control. A more comprehensive balance sheet definition of sovereign risk is urgently needed to help policy makers better assess the outlook for sovereign risk. There is also a need for closer (domestic and international) cooperation (including information exchange) by debt managers, fiscal authorities, and monetary policy makers.

This chapter is organized as follows. The next section examines the origin and impact of the global financial shock and its aftermath. The following section analyzes the policy challenges and responses to the crisis, including exit challenges and changes in borrowing strategies in OECD countries. The last section provides some concluding remarks.

**Impact of the Global Financial Crisis**

The origin, scope, severity, and global nature of the financial shock and its aftermath made the 2007–09 crisis different from previous crises. This unprecedented global shock created local banking crises before setting the stage for a surge in government deficits and (contingent) liabilities. The rapid acceleration in sovereign borrowing needs was boosted by public
support for the financial sector and the fiscal response to concerns about the possibility of a depression-like economic slump.

**Increase in Short-Term Government Issuance**

At the peak of the financial crisis—following the collapse of Lehman Brothers on September 15, 2008—markets in private financial paper froze. The private financial intermediary system almost completely collapsed during the panic of 2008 (Warsh 2010). Measured by the degree of collapse of short-term financial markets, the 2008 global financial crisis is the most severe crisis on record. As Alan Greenspan (2010, p. 18) notes, “Evaporation of the global supply of short-term credits within hours or days of the Lehman failure is . . . without historical precedent.”

This near-collapse of the financial intermediation system triggered unprecedented public support operations. Liquidity support by central banks (often in cooperation with DMOs) replaced or shored up short-term private markets, and capital injections by treasuries in the form of cash (such as the Troubled Asset Relief Program [TARP]) added billions to bank equity. Several DMOs in the OECD had to raise funds on very short notice for capital injections or recapitalization operations of nationalized insolvent banks. These injections of public funds represented a signal that OECD governments were standing behind the liabilities of the entire banking system, creating massive implicit contingent government liabilities. Governments also introduced guarantees for bonds issued by private banks, creating explicit contingent government liabilities.

In sum, financial support operations contributed strongly to the surge in issuance by OECD governments of both conventional and contingent liabilities. These operations by debt managers and other financial officials were instrumental in transforming banking crises and frozen market problems into increases in sovereign risk. In the absence of a credible medium-term fiscal exit strategy, such a policy may have set the stage for new bouts of financial market turbulence, this time triggered by a sovereign debt crisis.

The explosion in the supply of public debt happened at a time when even sovereign issuers were experiencing liquidity problems in their secondary markets. Moreover, in several markets interbank trading (almost) disappeared, affecting the market-making capabilities of primary dealers and transforming quote-driven markets into order-driven ones (an example includes the Hungarian market). In addition, several governments had to face increased competition not only from other sovereigns but also from bank bonds guaranteed by their own government.

Despite these liquidity problems and uncertainty about counterparty risk, even at the peak of the crisis, in 2008, primary markets for government paper continued to function reasonably well, even in countries facing major local banking crises. However, in countries with extreme market
turmoil, for some time operations were restricted to Treasury Bill issuance, and Treasury Bond auctions were suspended. In almost all OECD markets, the issuance of short-term debt increased significantly (figure 18.1). As an additional response to the crisis, many OECD primary markets introduced changes in issuance procedures and techniques.

**Higher Budget Deficits**

Borrowing needs have increased rapidly in response to the soaring costs of financial support schemes, other crisis-related expenditures, and recession-induced declines in tax revenues and increases in government expenditures. As a result, in 2010 many OECD governments were expecting significant increases in budget deficits.

Amidst a highly uncertain economic outlook with increasing budget deficits (figure 18.2), gross borrowing needs of OECD governments increased explosively: by 2010 they were estimated to have reached almost $16 trillion in 2009, up from an earlier estimate of about $12 trillion. Projections for 2010 show borrowing stabilizing at about $16 trillion (Blommestein and Gok 2009).

Many OECD governments faced a significant increase in expected deficits in 2010 because of the fiscal fallout of a recession that was worse than first anticipated and the financial consequences of resolving banking crises. In 2010 the OECD areawide fiscal deficit is projected to peak at a postwar high of about 8.25 percent of GDP (OECD 2009a). Delegates

![Figure 18.1 Short-Term Debt Issuance by OECD Governments, 2007–10](image_url)

**Source:** Surveys by the OECD Working Party on Debt Management, OECD staff estimates.

**Note:** Figures for 2009 are estimates. Figures for 2010 are projections.
from the OECD Working Party on Public Debt Management confirmed that many DMOs in the OECD area (as well as outside it) are confronting dramatically increased borrowing needs.¹

As a result, sovereign issuers all over the world are facing increased competition in raising funds from markets, leading to higher expected borrowing costs. A looming additional challenge is the risk that when the recovery gains traction, competition for savings will increase. If this occurs, yields will rise (figure 18.3).

**Systemic Market Absorption Problems and Increasing “Crowding Out”**

Issuance conditions have worsened in some markets. To date, however, less successful auctions can best be interpreted as “single market events” rather than unambiguous evidence of systemic market absorption problems (Blommestein 2009b). The future trend could be more challenging for the execution of borrowing programs, however, given that rising issuance is occurring hand in hand with increasing overall debt levels (figure 18.4).

Fiscal policy, government borrowing programs, and the resulting higher public debt are also likely to affect longer-term interest rates. These
financial market developments are projected to have an adverse impact on the real sector by crowding out private demand and production through higher (expected) borrowing costs. As of May 2010, this crowding-out effect remained muted: the savings rates of households and companies were relatively high in most OECD countries. Over time, however, when the recovery gains further strength, this situation is likely to change.

**Larger Government Debt and Interest Payments**

The rapid and massive surge in government issuance can be expected to push the prices of sovereign debt down and yields (further) up. The issuance challenges for many DMOs are compounded by increasing debt levels—a trend already visible before the crisis.

Debt levels in the United States, the Euro Area, and Japan have risen sharply since the peak of the crisis in 2008 (see figure 18.4). Total OECD area central government debt is projected to reach almost $32 trillion at the end of 2010 (OECD staff estimates). The surge in sovereign borrowing needs may drive up real longer-term interest rates (figure 18.5).

Empirical estimates of the impact of higher debt on interest rates differ considerably. Studies report estimates of an increase of (nominal) public

---

**Figure 18.3 Spread between Long-Term and Short-Term Interest Rates versus Gross Government Debt**

Source: OECD 2009a.

Note: Figures represent average across all OECD countries for which data were available over the period 1994–2008. Short-term interest rates are typically rates on 3-month Treasury Bills; long-term interest rates are rates on 10-year government bonds.
debt of 1 percent of GDP on higher (nominal or real) long-term interest rates ranging from less than 1 to 32 basis points. There is also evidence of a nonlinear relationship between debt and interest rates. The strong increase in outstanding debt and higher long-term interest rates in OECD countries also imply higher interest expenditures (figure 18.6).

Responding to the Global Crisis

OECD debt managers reported a softening of demand at some auctions. In almost all markets, the issuance of short-term debt increased significantly. As an additional response to the crisis, and to the tougher issuance conditions that resulted from the crisis, DMOs introduced changes in issuance procedures and techniques in primary markets.

Exit Challenges

Tougher issuance conditions and the risk of crowding out put the spotlight on the importance of a proper fiscal and monetary exit strategy.
and better communication channels between DMOs and the monetary and fiscal authorities. Sovereign debt managers, with the support of sound fiscal consolidation policies, need to prepare and implement timely and credible medium-term exit strategies (Blommestein 2009b). Although skillful adjustments of the debt management strategy, discussed below, could potentially reduce government borrowing costs, sound public debt management is not a perfect substitute for sound fiscal policy. Over time a return to a prudent medium-term fiscal strategy is an essential element of any credible exit strategy to bring debt service costs under control.

The sovereign risk outlook is usually defined in terms of a traditional debt sustainability framework in which risk is a function of the country’s primary balance (influenced by fiscal adjustment strategies) as well as interactions between economic growth and the average cost of funding (Blommestein 2010). This definition fits most of the emerging market crises during the 1980s and 1990s. Since the fall of Lehman, crisis-related interactions have led to an unprecedented expansion in sovereign balance sheets and a sharp increase in off-balance sheet items such as contingent liabilities. These developments warrant a redefinition of sovereign risk, with greater emphasis on a sovereign balance sheet approach together with reliable information on off-balance sheet items such as guarantees and outstanding derivatives positions (Blommestein, Guzzo, and Holland forthcoming). An additional complication is the need to avoid or mitigate
possible market stress related to the higher real interest rates associated with the central bank’s exit strategy (Blommestein 2009b). To that end, it is important that the (future) shift to a tighter monetary policy be carefully implemented in terms of the timing and sequencing of the different exit measures taken by the monetary authorities. Because debt managers are financing historically high (and still increasing) budget deficits, it is important that DMOs and central banks keep each other informed about policy moves that may have significant market impacts (Blommestein 2009b).

**Changes in Borrowing Strategies**

OECD debt managers underline four important influences of the ongoing financial and economic crisis on borrowing strategies:

- The borrowing requirements in many OECD countries have increased significantly in response to bailout operations and other crisis-induced expenditures (figure 18.7). Borrowing needs also increased through additional knock-on effects of the recession on expenditures and lower tax revenues.
• Liquidity conditions tightened initially, and market participants all over the world became much more risk averse, leading to an increase in the demand for safe assets by many categories of investors.
• Policy responses by central banks (through both conventional and nonconventional measures) and governments (with DMOs playing an important supporting role) improved liquidity conditions significantly.
• In countries that experienced extreme turmoil, for some time borrowing operations were restricted to Treasury Bill issuance and Treasury Bond auctions were suspended.

These influences forced debt managers to change or modify their borrowing strategies by holding more frequent auctions, shortening maturities, increasing foreign liabilities, and issuing a different mix of instruments, made up of more short-term debt, notably bills (figure 18.8). As a result, the response to crisis-induced uncertainty resulted in somewhat more opportunistic issuance programs.

Tighter issuance conditions are compounded by increasing debt levels. OECD governments with low debt levels and modest borrowing requirements (or fiscal surpluses) are in a much more comfortable situation than countries with higher debt levels. Countries with high and quickly climbing outstanding stocks of debt will face additional issuance challenges, which in turn may induce changes in borrowing strategies.

Figure 18.7 Gross and Net Marketable Issuance in the OECD Area, 2007–10

Source: Survey by OECD Working Party on Debt Management and OECD staff estimates.

Note: Figures for 2009 are estimates. Figures for 2010 are projections.
Responses to the Surge in Borrowing Needs

The surge in borrowing needs has worsened issuance conditions, with some OECD debt managers reporting liquidity pressures in secondary markets and sometimes weak demand and distortions in primary markets. Delegates from the OECD Working Party on Public Debt Management confirm that responses to much higher borrowing requirements and concerns about possible market absorption problems included changes in issuance methods (including more flexible auctions, the introduction of auction fees, and the use of distribution methods other than auctions, such as syndication, Dutch direct auction procedures, and private placement) and changes in optimal sovereign portfolios (driven by new benchmarks that place greater emphasis on short-term paper and a reformulated cost-risk trade-off).

In response to liquidity pressures, rising borrowing requirements, and tougher issuance conditions, many DMOs made major changes to issuance procedures and the conditions for using existing systems and techniques (table 18.1). The risk-averse behavior of investors forced debt managers to modify their fundraising strategies. There are reports of increasing interest in the use of syndication, which has the potential to rapidly achieve a very high initial outstanding volume of issues with better placing certainty than auctions. The use of syndication may increase liquidity and reduce borrowing costs. Syndication also has potential downsides,
<table>
<thead>
<tr>
<th>Country</th>
<th>Change</th>
</tr>
</thead>
</table>
| Australia  | More flexible auction calendars  
Issuance of inflation-indexed bonds recommenced in second half of 2009 to broaden investor base; first issuance was through syndicated offering. Subsequent issuance of inflation-indexed bonds planned through single-price auctions. Auctions for all nominal debt are through the multiple-price format. |
| Austria    | More emphasis on investor relations                                                                                                                                                                     |
| Belgium    | Tap sales for long-term debt  
Increased placement of medium-term euro notes                                                                                                                                                           |
| Canada     | Reintroduction of three-year maturity  
Reduction in regular buy-back program but maintenance of switch operations on long end to support market liquidity  
Introduction of additional benchmarks for two- and five-year sectors                                                                                                                                 |
| Denmark    | Use of private placement in foreign markets in 2008  
Termination of Treasury-bill program in 2008  
Greater use of auctions in lieu of tap sales                                                                                                                                                         |
| Finland    | Diversification of funding sources  
Greater emphasis on investor relations  
More coordination with primary dealers  
Higher syndication fees  
Active use of demand-supply windows                                                                                                                                                                   |
| France     | Increased flexibility for better matching demand  
Issuance of off-the-run bonds since second half of 2007                                                                                                                                                 |
| Germany    | Use of tap sales for long-term debt  
More frequent auctions                                                                                                                                                                                     |
| Greece     | Beginning in 2009, auctions of Treasury bills adopted single-price format  
Syndication for all types of bonds and reopenings                                                                                                                                                     |
| Hungary    | More flexible auction calendar (biweekly bond auctions with dates but without tenors in calendars)  
More flexibility in amounts offered  
Introduction of top-up auctions (noncompetitive subscription) and auction fees  
More frequent use of reopenings of off-the-run bonds and buy-back auctions  
Planned introduction of exchange auctions  
Introduction of direct, regular meetings with institutional investors                                                                                                                     |
<table>
<thead>
<tr>
<th>Country</th>
<th>Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Iceland</td>
<td>Single-price auctions (for long-term bonds) used together with multiple-price auctions</td>
</tr>
</tbody>
</table>
| Ireland                 | Syndication added as funding tool  
Auctions for short-term debt                                                                                                                                                                                                                                                                 |
| Italy                   | More flexible procedures  
Increase in range of offered amounts for on-the-run bonds  
Possibility of offering additional off-the-run bonds as response to highly volatile market conditions  
Adjustment of auction pricing mechanism for nominal bonds, linkers, and floaters (issuer discretionally sets total allocated volume within previously announced range)  
Participants in T-bill (Buoni Ordinari del Tesoro [BOT]) auctions required to submit bids in terms of yield  
Modification of method for calculating share in auctions  
Range of maturity of bonds sold to primary dealers at noncompetitive prices extended  
Introduction of reopenings of old bonds                                                                                                                                 |
| Korea, Rep. of          | Single-price format of auctions changed to multiple-price format in September 2009  
Introduction of conversion offers                                                                                                                                                                                                                                                                 |
| Mexico                  | Use of tap issues for short- and long-term bonds                                                                                                                                                                                                                                                                                                           |
| Netherlands             | Increased frequency of bond auctions (of off-the-run bonds)  
Extended repo and commercial paper facilities (longer maturity, extra foreign currency issuance)  
Extended Treasury-bill programs                                                                                                                                                                                                                                                                 |
| New Zealand             | Introduction of new long-term bond  
Use of tap issues for short-term debt  
Monitoring of foreign markets for attractive foreign borrowing opportunities  
Introduction of new “reverse tap tender” facility                                                                                                                                                                                                                                                  |
| Norway                  | Only single-price auctions now used                                                                                                                                                                                                                                                                                                                       |
| Slovak Republic         | Contemplation of direct selling and buybacks in secondary market, underwriting auctions (single price based on price discovery through syndication), buybacks, and exchange auctions                                                                                                                                                                                                 |
| Turkey                  | Revenue-indexed bonds introduced to broaden investor base                                                                                                                                                                                                                                                                                               |
| United Kingdom          | Mini-tenders introduced in October 2008 as more flexible supplementary distribution method alongside core auctions program  
DMO using syndicated offerings to supplement its auction program  
Introduction of postauction option facility                                                                                                                                                                                                                                                   |

however, such as more limited reach among potential buyers, the presence of more risk-averse investors than dealers participating in auctions, and higher intermediation costs.

Many DMOs are operating more frequent auctions, whose schedules have become more flexible and opportunistic. The maturity of debt has become shorter, and there is growing use of foreign currency liabilities.

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

**Concluding Remarks**

DMOs responded to dramatically increased borrowing requirements and concerns about possible market absorption problems in several ways. Responses included changes in issuance methods (including more flexible auctions, the introduction of auction fees, and the use of distribution methods other than auctions such as syndication); adoption of Dutch direct auction procedures and private placement; and changes in optimal sovereign portfolios (driven by new benchmarks with a greater emphasis on short-term paper and a reformulated cost-risk trade-off).

Although fundraising strategies have become more flexible and somewhat more opportunistic, OECD debt managers remain committed to maintaining a transparent debt management framework in order to minimize medium-term borrowing costs. This policy perspective is a necessary condition to maintain uninterrupted access by sovereign borrowers to markets.

The immediate crisis response by OECD DMOs was fairly successful. But the situation can deteriorate rapidly beyond a market comfort level, as evidenced by the sharp increase in Greek borrowing costs in April–May 2010 and contagion risk. In view of looming serious fiscal problems and sovereign risk, not only in Greece but in several OECD governments, the importance of a credible medium-term fiscal outlook has increased. The Greek experience demonstrates the importance of sound crisis management (including sending clear policy messages and maintaining good communication channels with the market) and a credible fiscal outlook. Especially during crisis periods, markets need the comfort or deterrence of policy actions that reduce noise, increase the signal, or both.

By themselves, debt and deficit levels as a percentage of GDP cannot be used to predict the onset and subsequent dynamics of debt crises, because they conceal important structural differences across countries
that have important (sometimes nonlinear) impacts on the sustainability of government debt (examples include growth potential, the degree of domestic institutional savings, home bias of investors, and fiscal capacity). A more thorough assessment also requires taking into account the (expected) real costs of the 2007–09 banking crises. Several studies demonstrate that the real costs of systemic banking problems have been growing since the 1970s and exceed those of currency crises (Bordo and others 2001). These higher costs increase the chance that a banking crisis will mutate into a sovereign debt crisis (Candelon and Palm 2010). Reinhart and Rogoff (2008) estimate that on average, the stock of sovereign debt almost doubled three years after the banking crisis. The increase in sovereign risk, the risk of crowding out, and the tightening of issuance conditions put the spotlight on the importance of a proper fiscal and monetary exit strategy. Sovereign debt managers, with the essential support of sound fiscal consolidation policies, need to prepare and implement a timely and credible medium-term exit strategy. A credible exit strategy is also needed to control overly negative market sentiments and uncertainties about sovereign credit risk that could lead to dysfunctionalities at the short end of markets. Better communication channels among DMOs, the monetary and fiscal authorities, and markets are essential, especially during periods of financial fragility and perceptions of higher sovereign risk.

Crisis-induced policy responses since the collapse of Lehman have led to an unprecedented expansion in sovereign balance sheets and a sharp increase in off–balance sheet items such as contingent liabilities. These developments necessitate a redefinition of sovereign risk when assessing the sovereign risk outlook. Measures of sovereign risk should fully reflect key vulnerabilities on sovereign balance sheets associated with financial liabilities and assets (for a detailed analysis, see Blommestein 2006 and Blommestein and Koc 2008). These broader risk measures require an integrated approach to sovereign risk management, with greater emphasis on a sovereign balance sheet approach while taking into account reliable information on off–balance sheet items, such as guarantees, and outstanding derivative positions, such as swaps.

Notes

The author is indebted to Ms. Eylem Vayvada Derya (on secondment from the Turkish Treasury) for excellent statistical assistance.

1. The policy information in this chapter is based on OECD surveys of delegates of the Working Party on Public Debt Management, public information from official sources, and OECD (2009a, 2009b).

2. This reasoning implies rejection of the Ricardian equivalence hypothesis. An earlier period of widespread deficits (the 1980s) prompted a vigorous (sometimes almost ideological) debate about the effect of fiscal policy on interest rates. Chinn and Frankel (2003, p. 2) thought this debate would have been settled by now.
in the direction of “rejecting Ricardian equivalence as a practical description of the real world,” a conclusion also drawn by Gale and Orszag (2003). Other analysts strongly disagree with this conclusion.

3. Many DMOs are using currency swaps to eliminate the risks associated with the resulting foreign currency exposure.

4. In times of extreme risk aversion and high uncertainty, governments use short-term issuance to raise extra funds at short notice while providing liquid and secure instruments to the market.

5. To an important degree, this comfort level is arbitrary (or subjective) and therefore hard or impossible to predict. This perspective on crisis situations reflects the insight that a debt sustainability framework cannot be used to predict the “real time” onset and evolution of a sovereign debt crisis. Moreover, markets are prone to under- and overshooting as well as bubbles.

6. A key finding of Bordo and others is that the average banking crisis is followed by a 4.1 percent fall in real output growth and a recession lasting two years.

References


