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Notes and comments

The souvlaki connection: some reflections on the Greek public debt crisis

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After the subprime credit crisis of 2007, the world is no longer what we thought. An unprecedented crisis of confidence was combined with a credit crunch, and the G20 countries had to enact massive public spending programmes to save the economy and at least buffer the inevitable hard landing. In 2010 this excessive public spending produced the first public debt crisis in the wake of the subprime crisis: Greece reported that in 2009 it had run an unprecedented deficit of 15.4 per cent of GDP, and that its public debt had skyrocketed to 126.8 per cent. The Greek crisis is the product of years of recession, the sluggish economic environment and poor productivity – but above all it is the product of the mismanagement of the public finances and of unsatisfactory reporting practices. In this essay we analyze this crisis in the context of the era of financial derivatives and underscore a number of crucial effects that have been largely ignored in both academic discussion and public debate.

1. Public debt management in the age of derivatives

Financial innovation affects fiscal policy in two different ways: first, it assists tax avoidance by smart taxpayers; and second, it can be used by government itself to lower the cost of borrowing and improve the public sector's cash and debt management (OECD, 2002). For taxpayers, derivatives are useful for tax timing, i.e. postponing revenues and realizing losses, so as to lower taxable income, hence

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the tax liability. This has been demonstrated for both firms and households (see Zeng, 2003 and 2004; Salcedo, 2003; Oldani and Savona, 2005). The end result is a loss of total general government revenues. In helping taxpayers to lower their costs, derivatives demonstrate their essential nature – they serve to shift risks and satisfy the needs of those who resort to them more efficiently than traditional financial instruments.

The public sector may be allowed to use derivatives and securitization for debt management. Securitization is a way of pooling an institution's credit claims and other financial assets as asset-backed securities for sale on the market. The assets are generally held by a tax-neutral special purpose vehicle that issues rated debt to fund the purchase of the assets. Derivatives employed for public debt management are swaps, forward rate agreements or others, depending on rules, needs, debt structure and characteristics.

At European level there is little coordination of domestic fiscal policies, resulting in heterogeneity and asymmetry in the Union. Changes to budget rules within the EU are coordinated and instituted by the Commission, but the pace of financial innovation is incomparably faster than the regulators. The European System of Accounts (ESA 1995) was adopted in 2000, but derivatives were not then commonly used by member state governments, so no specific statistical rules for such transactions were envisaged. As a consequence, the EU statistical community had to develop specific guidelines for the recording of government securitization operations (in the form of a Eurostat decision in July 2002) and for the recording of financial derivatives (issued in March 2008). These modifications are basically the result of international regulatory reform (Oldani, 2008).

In June 2008 the Governmental Accounting Standards Board (GASB) issued Statement No. 53, "Accounting and Financial Reporting for Derivative Instruments" (SGAS 53). This requires derivatives to be carried at fair value. If a derivative qualifies for hedge accounting, fair value changes are deferred until specified termination events occur. Public institutions can use hedge accounting when the derivative effectively reduces the risk. The real effectiveness of the hedge must be

assessed by methods that are themselves prescribed in the standard. There are disclosure requirements, such as a derivative summary, information on hedge effectiveness, fair value, management objectives, significant terms, and risks. Because derivatives and hedges are now common practices, public institutions must pay attention to the transition period and the date the standard goes into effect. Although the standard goes into effect for fiscal year 2010, institutions must value their derivative instruments at the end of fiscal year 2009; the standard would be applied retroactively for hedges deemed effective. Instruments not deemed effective in fiscal year 2009 would be subject to a transition adjustment and reported as a restatement of initial net assets.

According to the IMF (2001), "Sovereign debt management is the process of establishing and executing a strategy for managing the government's debt in order to raise the required amount of funding, achieve its risk and cost objectives, and meet any other sovereign debt management goals the government may have set, such as developing and maintaining an efficient market for government securities." This definition describes how a government can manage its debt but neglects the indirect effects of innovative financial operations. Public sector use of derivatives will produce cost savings and benefit domestic and international financial markets, increasing liquidity and enhancing the efficiency of public deficit and debt management. But at the same time financial innovation could directly heighten market, credit, liquidity and counterparty risks over an indeterminate period, thus running counter to financial stability. OTC derivatives can also indirectly induce different forms of risk, due to the opacity of trading and of settlement systems and inadequate standards of accounting and registration. Moreover, the interaction between the central and local authorities practicing financial innovation can alter the financial equilibrium and the allocation of resources.

Financial innovation, with its potential cost savings, is especially attractive for countries with high public debt or tight budget constraints, like European countries (Oldani, 2008). But the use of these devices requires proper accounting, monitoring and oversight authorities to limit moral hazard.

The public accounts of EU member states are subject to a series of limitations. The law of motion of debt is described in equation (1): the public debt is the result of primary budget deficits and interest payments. European countries are required to control deficits under the constraint of debt convergence to 60 per cent of GDP. The Maastricht and Amsterdam treaties specify that the deficit cannot exceed 3 per cent of GDP, except in cases of war and economic recession (i.e. GDP actually decreasing).

$$B_t = B_{t-1} - r_t B_{t-1} + (G_t - T_t) \qquad (1)$$

$$\lim_{t-n} \quad B_t / Y_t < 60 \text{ per cent} \qquad (2)$$

$$(G_t - T_t) / Y_t < 3 \text{ per cent} \qquad (3)$$

Derivatives can be considered as a means of smoothing the cost of debt ($r_t B_{t-1}$), hedging the outstanding debt (B_t, B_{t-1}) and managing the deficit, i.e. increasing revenues and decreasing expenses ($G_t - T_t$). The IMF standards do allow OTC contracts, but since 2009 their use has been severely limited by the requirement for governments to report the fair value of their operations on a yearly basis (that is, they cannot wait until the transaction matures). After 2010 we will have a broad picture of how governments use OTC markets to manage their debt. In the meantime, attention focuses on Greece.

2. Greek financial operations from 2000 to 2002

Piga (2001) examined the use of interest and exchange rate swaps by European states prior to Monetary Union, concluding that some countries used these instruments not only to hedge and reduce public debt risks but also as window-dressing – shifting interest payments forward in order to reduce deficit and debt ratios and qualify for membership in the Monetary Union. Greece is part of this group, as is Italy. The key point, however, is that the Greek window-dressing continued even after adoption of the single currency. Since 2000 the

Commission has revised the official Greek data repeatedly, most severely in 2004 and 2009.

The story is still not clear and we can only attempt to disentangle the various operations undertaken by Greece. First, currency and interest rate swaps were underwritten in 2000-02. Greece used cross-currency basis swap agreements to hedge interest and exchange rate risks. The Bank for International Settlements describes how these contracts work. This instrument "is a contract in which one party borrows one currency from another party and simultaneously lends the same value, at current spot rates, of a second currency to that party. The parties involved in basis swaps tend to be financial institutions, either acting on their own or as agents for non-financial corporations. The chart below (Figure 1) illustrates the flow of funds involved in a euro/US dollar swap. At the start of the contract, A borrows X·S USD from, and lends X·EUR to, B. During the contract term, A receives EUR 3M Libor+ from, and pays USD 3M Libor to, B every three months, where is the price of the basis swap, agreed upon by the counterparties at the start of the contract. When the contract expires, A returns X·S USD to B, and B returns X·EUR to A, where S is the same FX spot rate as of the start of the contract. Though the structure of cross-currency basis swaps differs from foreign exchange swaps, the former basically serve the same economic purpose as the latter, except for the exchange of floating rates during the contract term."[1]

Greece swapped its domestic interest rates and exchange rate to smooth the cost of debt. This procedure was legitimate from 2000 to 2002 and Greece entered into such swaps with Goldman Sachs.

A comprehensive EU report on this issue (EU, 2010) uses harsh terms to describe the conduct of the Greek authorities: "deliberate misreporting," "methodological problems," "unsatisfactory technical procedures in the Greek statistical institute," "inappropriate governance," "poor cooperation and lack of clear responsibilities". The EU notes that "the most recent revisions are an illustration of the lack

[1] http://www.bis.org/publ/qtrpdf/r_qt0803z.htm

of quality of Greek fiscal statistics … and show that the progress in the compilation of fiscal statistics in the country, and the intense scrutiny by Eurostat since 2004, have not sufficed to bring the quality of Greek fiscal data to the level reached by other EU Member States". It goes on to admit that "Eurostat is at present not in a position to validate figures which are of acceptable statistical quality." The defeat is hard to manage in Brussels.

Greece deliberately carried out a series of financial operations that were not properly reported. In 2000-02 Greece entered into currency and interest rate swaps with Goldman Sachs to hedge risks and reduce the cost of debt. At the time these transactions were compliant with European accounting rules (which were substantially non-existent). Goldman Sachs reports in February 2010 that these transactions produced a debt reduction of € 2.367 billion. However, Goldman Sachs has not signed any other derivative contract with Greece since 2004, in accordance with Eurostat rules. The cost reduction was produced by the effective currency hedge (of the drachma with the dollar and the yen), and interest rate hedging. Greece closed out its swap deals after 2002 but misreported the remaining streams of interest; in the 2005 and 2008 revisions the effects were incorporated and the data revised retroactively. According to the EU, this was a case of deliberate misreporting.

3. The situation from 2004 to 2009

In 2004 and 2005, with the application of new Eurostat rules, swaps contracts were closed out; the resulting costs or gains were counted towards the fiscal outturn in these years. Terminating the contracts before scheduled maturity meant amortizing the costs over a shorter period, and the reduction in the cost of the debt was wiped out (as it was not realized). As a result the net present value turned negative, aggravating the deficit in 2004 and 2005. But Greece did not record these events properly in the accounts.[2] The

[2] EU report (2010), p. 22.

EU revised Greek data, sharply raising debt and deficit ratios.

According to the EU report and the press,[3] Greece continued to enter into swaps after 2005 but not directly. That is, it acted through other institutions, as the EU report describes in detail. The Greek government financed the deficit through the National Bank of Greece (a commercial bank), violating the Maastricht rules. In 2008 the National Bank of Greece accessed European Central Bank refinancing, posting as collateral notes issued by Titlos Plc. Titlos Plc is a Special Purpose Vehicle – created by the National Bank of Greece itself together with Goldman Sachs – that sold € 5.1 billion worth of notes maturing in February 2039 to the National Bank of Greece. But the National Bank is wholly owned by the Greek Treasury, so this would appear to be a way of financing the debt but circumventing controls and prohibitions. The end result is that the Treasury's deficit was securitized through the National Bank of Greece, which gets liquidity from the ECB thanks to the Titlos notes. The final cost of the Greek debt is thus the ECB's main refinancing rate. These operations represent a fraudulent violation of European accounting rules, in that they do not reflect the greater risk of the Greek sovereign debt (as measured by its spread with respect to German and other European Treasury bonds).

In December 2009 the European Central Bank published a legal-studies working paper entitled "Withdrawal and expulsion from the EU and EMU." Apart from the publication's timing, which is hard to see as merely coincidental, the conclusion is that the extreme solution (expulsion) cannot be precluded; it is just very complicated, now that the Lisbon Treaty has been adopted and a very large majority would be required. An easier solution would be voluntary withdrawal from the EU, which would certainly be less expensive for all concerned. A member state's withdrawal from the EMU would certainly have an adverse impact on the credibility of the monetary union itself, but it would also strengthen the constraints for those that remain. The

[3] Wall Street Journal, 23 February 2010.

balance between pros and cons is not merely economic, of course, and the final decision has already been taken. The Ecofin Council has moved to save Greece.

4. The rescue plan of 2010

The Greek crisis exploded in January 2010, and the government was forced to undertake a severe austerity plan. According to official releases, the deficit will be reduced by spending reductions (sharp cuts in civil servants' pay and benefits), pension reform (whose effects will be realized over a decade) and tax increases (VAT from 19 per cent to 21 per cent and the elimination of many tax deductions and exemptions). The austerity plan projects the public debt going down to 100 per cent of GDP by 2020. A Financial Stability Fund will be formed to stabilize liquidity.

These measures should ease the burden of public spending and produce annual budget surpluses. The most complicated aspects of the plan will be slimming Greece's bloated public sector and eliminating massive tax evasion (especially of VAT). These two problems cannot be solved by spending cuts alone. Organizational overhaul is needed.

In March 2010 Greece asked for the help of the EU and the IMF. After prolonged discussion, a 3-year rescue plan worth €110 billion was agreed on. The rating of Greek bonds fell to BB+, and most of the Greek debt is now sold off-market, in order to avoid excessive interest payments. The yield on Greek sovereign bonds has trended upward throughout the year.

The parliamentary elections of October 2010 returned the majority of Prime Minister George Papandreou (Pasok party), thereby confirming popular backing for his draconian austerity plan. The spending cuts are combined with reduced public hiring, at the expense of the younger generations. The public sector overhaul provokes social and political conflict, fuels disorder and decreases the likelihood of success.

At present an unknown proportion of the Greek debt is held by

foreign investors, which in the view of international analysts may undermine its long-run sustainability. To avert another Russian-style crisis, the IMF and the EU make regular visits to Greece to verify the country's effective ability to implement the plan.

5. Conclusion: no happy ending

Following the underestimation of the risks and repercussions of mortgage-backed securities and credit default swaps, the Greek crisis confirms that the world has changed with the spread of derivatives in global financial markets. Complex derivatives make transactions and balance sheets more opaque, opening up opportunities for subprime and predatory lending and the mismanagement of public debt. The GASB principles will ensure better measurement of countries' effective risk exposure, but they will also make total balance sheet size more dependent on financial market cycles and increase the volatility of the debt.

The EU documents make it clear that Greece did not actually violate proper accounting rules, which were not introduced until after the derivative contracts were made; but it did violate the principles and limits imposed by the European treaties. Greece concealed relevant information from the market, which accordingly punished it by lowering the country's credit rating to a level that forced international institutions to intervene as lender of last resort. The expulsion or withdrawal of Greece from the Union would be politically unsustainable, which will presumably help the other peripheral EU member states with troubled finances (Portugal, Ireland and Spain) in 2011.

The numerous revisions of the Greek public accounting data and the subsequent crisis confirm that the incentives to cheat far exceeded the potential cost. The condition for the rescue plan to succeed in the medium term is that its costs have to exceed revenues. The austerity plan to smooth debt and deficit has to be cheaper than debt bail-out. At present part of the Greek debt is held by non-residents, and in the event of default the loss could range from 30 to 50 per cent. Most economic analyses see the solution in productivity improvements,

which can speed Greek economic growth and thus ease the burden of debt. Such a structural overhaul can only come from national policy, with reforms that so far are only minimally under way.

The Greek crisis is the result of mismanagement, misreporting and the circumvention of European rules. The entire cost will be borne by Greece; the EU and the IMF intervened with credit at very low interest, but not nil. Financial and accounting surveillance are still in progress, but the Greek system is not yet in a position to assure the proper use of resources. This confirms that the origin of the problems is the weak governance of the European Union, which lacks a definite political framework.

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Appendix

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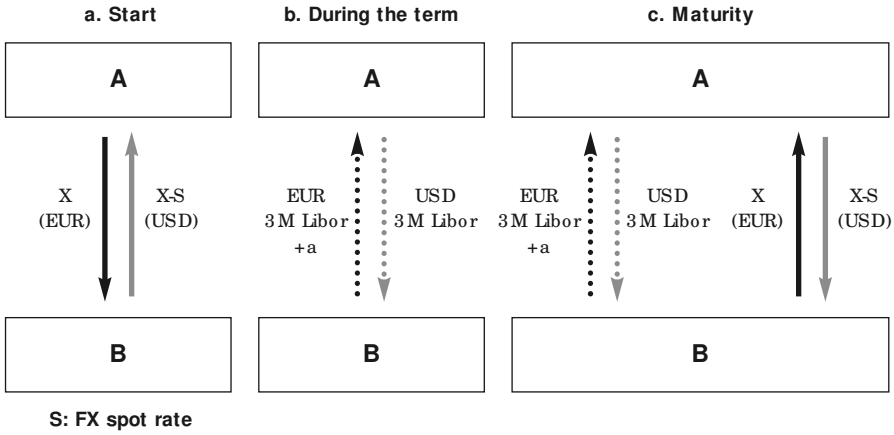
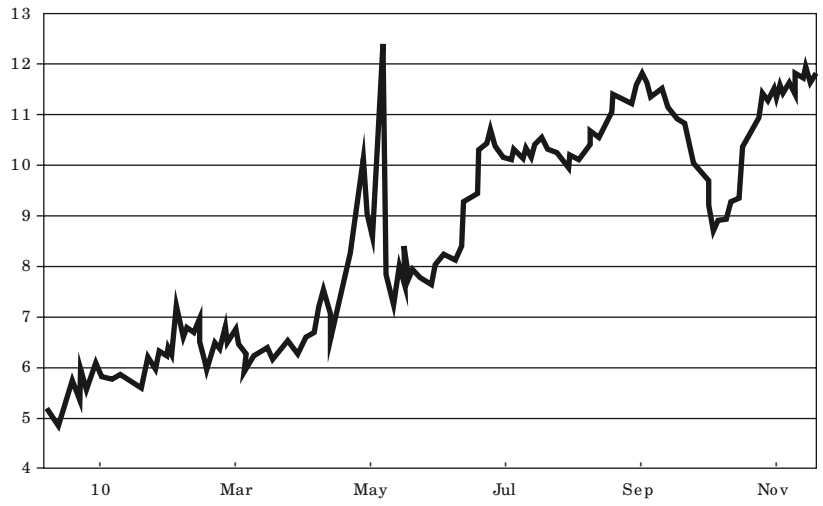
FIGURE 1. Euro/ US dollar swap structure



Source: BIS

FIGURE 2: Yield of Greek Public Bonds *(percent)*



Source: Bloomberg L.P.

TABLE 1. Greek Government Deficit/ Surplus and Debt levels

	2006	2007	2008	2009
Net borrowing (-)/ net lending (+) as % of GDP	-5.7%	-6.4%	-9.4%	-15.4%
General government consolidated gross debt as % of GDP	106.1%	105.0%	110.3%	126.8%

Source: Hellenic Statistical Authority/ Eurostat, UniCredit Research, November 2010.