

**FOR  
AGENDA**

SM/08/220

July 3, 2008

To: Members of the Executive Board

From: The Secretary

Subject: **Euro Area Policies—Selected Issues**

This paper provides background information to the paper on euro area policies (SM/08/212, 7/2/08), which is tentatively scheduled for discussion on **Friday, July 25, 2008**. At the time of circulation of this paper to the Board, the Secretary's Department has received a communication from the authorities of the euro area countries indicating that they consent to the Fund's publication of this paper.

Questions may be referred to Ms. Koeva Brooks (ext. 39809), Mr. Čihák (ext. 38931), Mr. Harjes (ext. 36522), and Mr. Stavrev (ext. 38732) in EUR; and Mr. Hardy, MCM (ext. 38490).

Unless the Documents Section (ext. 36760) is otherwise notified, the document will be transmitted, in accordance with the procedures approved by the Executive Board and with the appropriate deletions, to the European Central Bank forthwith; the WTO Secretariat on Monday, July 14, 2008; and to the Caribbean Development Bank, the European Bank for Reconstruction and Development, the European Commission, and the Organisation for Economic Cooperation and Development, following its consideration by the Executive Board.

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# INTERNATIONAL MONETARY FUND

## EURO AREA POLICIES

### **Selected Issues**

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and Daniel Hardy (MCM)

Approved by the European Department

July 2, 2008

#### **EXECUTIVE SUMMARY**

The four chapters cover issues that are discussed in the accompanying staff report: the effects of current financial tensions on economic growth (in ¶2, 7, 8 and Box 3 of SM/08/212); the ECB's monetary policy framework (¶16–17) and its liquidity operations (¶18–19); and the introduction of a European mandate in prudential authorities' mission statements (¶27 and 29, and Box 4).

Chapter I discusses the implications of the 2007–08 financial sector turbulence for real economic activity. It examines the linkages between the financial and real sectors in the euro area, finding that (i) bank loan supply responds negatively to declines in bank soundness; (ii) a cutback in bank loan supply has a negative impact on economic activity; and (iii) an increase in corporate bond spreads leads to a significant negative response of industrial output. These estimates imply that the currently projected banking losses and financial turmoil more generally would subtract around  $\frac{1}{4}$  percentage point from euro-area output. However, the impact could be higher, depending also on how financial conditions elsewhere in the world affect euro-area output either directly or indirectly via foreign demand.

Chapter II discusses the ECB's monetary analysis and the role of monetary aggregates in central banking, surveying the ongoing theoretical and empirical debate. The key conclusion is that an exclusive focus on non-monetary factors alone may leave the ECB with an incomplete picture of the economy. However, treating monetary factors as a separate matter is a second-best solution. Instead, a general-equilibrium inspired analytical framework that merges the economic and monetary “pillars” of the ECB's policy strategy appears the most promising way forward. The role played by monetary aggregates in such unified framework may be rather limited. However, an integrated framework would facilitate the presentation of policy decisions by providing a clearer narrative of the relative role of money.

Chapter III discusses the ECB's liquidity management. The ECB's liquidity management during the 2007–08 turmoil has garnered much praise. However, the turmoil has also brought to light several issues that deserve further discussion. These issues relate to the delicate balancing act between implementing policies geared towards price stability and supporting financial stability and the smooth functioning of financial markets. The paper finds that the euro-area liquidity framework is robust, but identifies scope for further adjustments in the monetary instruments, the collateral framework, and liquidity supervision and regulation.

Chapter IV discusses the introduction of a “European Mandate” for financial sector authorities in the EU, a proposal that is under consideration by EU member states. The idea is to foster cross-border collaboration, including in integrating Europe's financial markets. The chapter discusses the specific decisions that this would require in such areas as: (i) how should the “European mandate” be formulated?; (ii) to what areas of policy and implementation should a “European mandate” apply?; (iii) which institutions should be subject to the “European mandate”?; (iv) does a “European mandate” have to be embedded in EU Directives or national legislation to be effective?; and (vi) how and to whom should accountability for the “European mandate” be arranged?

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## I. FROM SUBPRIME LOANS TO SUBPRIME GROWTH? EVIDENCE FOR THE EURO AREA<sup>1</sup>

### A. Introduction and Main Findings

1. **The impact of the global financial turbulence on the euro-area real sector is an important unresolved issue.** Since mid-2007, the sub-prime mortgage crisis in the United States has sparked a reassessment of risk across global markets. Risk premia in money and credit markets have spiked, raising the cost of interbank and corporate financing, including in the euro area. The tighter financial conditions associated with the turbulence can affect euro-area activity through a number of channels, including:

- An increase in bank funding costs (due to higher money market premia and rates), which may be passed on to firms and consumers via higher lending rates. Indeed, some reaction of retail lending rates can already be observed (Figure 1).
- In response to their own deteriorated balance sheets and financial conditions, banks may limit the amount of credit available to borrowers for any given price. This could be in the form of stricter lending standards. The latest data indicate that quantitative bank lending conditions have tightened appreciably since mid-2007 (Figure 2).
- The costs of corporate bond and equity financing may also be higher, limiting the scope for substitution from bank financing. The corporate bond and credit default spreads of all maturities and ratings have jumped up, and the stock market has fallen since the start of the turbulence (Figure 3).
- Tighter financing conditions could create “financial accelerator effects” by depressing asset prices and reducing the value of collateral. Available data indeed confirm that asset prices are declining (Figure 3); this has an impact on collateral values, but the evidence on the accelerator effects has been only anecdotal so far.

2. **This chapter examines empirically the linkages between the financial and real sectors in several alternative but complementary ways.** It may be too early to observe in full how the deterioration in financing conditions will affect the euro-area economy, but it is still useful to examine the linkages between the financial and real sectors in the euro area, using a combination of past and recent data. The recent data show that bank credit to the private sector continues to grow at a brisk pace (due to strong loan growth to the non-financial corporate sector), while equity and bond issuance by (non-financial) firms has been holding up (Figure 4). This chapter focuses on linkages between:

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<sup>1</sup> Prepared by Martin Čihák and Petya Koeva Brooks. More details, as well as results of contingent claims analysis for the euro area are provided in Čihák and Koeva Brooks (2008).

- *Bank characteristics and lending behavior* (using data on individual euro-area banks). This analysis helps to understand how financing conditions for banks, which are a crucial part of the financial intermediation in Europe, translate into banks' lending behavior, i.e. into financial conditions of banks' clients. The key finding of this chapter is that a deterioration in the financial health of banks could translate into significantly lower bank loan supply.
- *Bank loan supply and aggregate output* (using country-level data). This analysis allows to examine the relationship between bank credit supply and economic activity. The key finding in this part is that a cutback in bank loan supply is likely to have a negative impact on economic activity in the euro area; again, this effect is statistically significant, but relatively small. These findings are not dissimilar from those in the literature on the bank lending channel in the United States, which generally finds strong evidence that banks decrease their loan supply in response to tighter financing conditions, but little evidence that the cutback in bank loan supply leads to lower real activity.
- *Corporate sector financing conditions and economic activity* (using data on corporate bond spreads and output). This part of the analysis allows to gauge how a change in corporate sector financing conditions affects industrial output. This part of the calculations suggests that higher costs of corporate bond financing (which could also reflect broader financial conditions in the economy) tend to lead to a significant negative response of industrial production growth.

## **B. Linkages Between Bank Characteristics and Lending Behavior**

3. **To assess the extent to which bank supply in the euro area is affected by deteriorating financing conditions, the “bank lending channel” was analyzed.** Two key parts of the bank lending channel are: (i) an adverse effect of higher financing costs on bank loan supply (e.g., because banks are not able to fully shield their loan portfolios from changes in financing costs); and (ii) a negative effect of the declining loan supply on economic activity (e.g., if a substantial group of borrowers is not be able to insulate their spending from the reduction in bank credit).

4. **The empirical evidence on the bank lending channel in Europe has been less than decisive.** Most of the literature on the banking lending channel deals with the U.S. economy (for a survey, see e.g., Bernanke and Blinder, 1995; Bernanke and Gertler, 1995), and generally finds strong evidence that banks decrease their loan supply in response to tighter financing conditions (in particular for small balance sheet-constrained banks), although there is little evidence that the cutback in bank loan supply leads to lower real activity (e.g., Driscoll, 2003). For Europe, the available studies (e.g., Altunbaş, Fazylov, and Molyneux, 2002; Angeloni and Ehrmann, 2003) are rather inconclusive, but suggest that the bank lending channel may be effective in countries with banking systems characterized by many small banks, weak capitalization and liquidity, and limited non-bank sources of funds.



5. **Estimating the factors behind credit developments is complicated by the interplay of cyclical and long-term factors that influence both credit demand and credit supply.** On the credit demand side, these include a combination of cyclical developments and structural shifts. On the credit supply side, the impact of the economic downturn on financial markets and the financial situation of the banks seems to have influenced their lending.

6. **A supply-demand disequilibrium model was used to analyze the bank lending channel in the euro area.** Equilibrium approaches, such as VEC/VAR models or single-equation estimates can provide only a limited answer to the causes of credit slowdown, because they do not address the question whether the demand or supply function determines the credit. Following the examples of Pazarbasioglu (1997), and Barajas and Steiner (2002), a credit demand- and a credit supply-function are estimated under the restriction that the minimum of the two determines the credit. This strategy avoids the identification problem of equilibrium models, and allows to make a statement on the existence of a credit crunch.<sup>2</sup>

7. **The disequilibrium model was estimated bank-by-bank panel data for a sample of the 50 largest euro-area banks from 1997Q1 to 2007Q4.**<sup>3</sup> The specification of the demand side follows Bundesbank (2002). The specification of the supply side is close to Pazarbasioglu (1997), but with the distance to default among the supply-side variables. The distance to default was used to approximate banking sector vulnerability as a possible source of credit supply strain.<sup>4</sup> The advantage of using individual bank data is that it allows for testing whether weaker banks are more likely to restrain their credit.

8. **The estimated model provides a plausible explanation of the factors contributing to credit developments in the major euro area banks** (Table 1). All the key coefficients have the expected signs and are significant. The model explains year-on-year real growth rates of customer loans as a function of a bank's distance to default (with an expected

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<sup>2</sup> A rough tool for distinguishing credit supply and demand factors are the bank lending surveys, organized by the Eurosystem since 2003, and summarizing responses of senior loan officers regarding loan demand and changes in their bank's lending policy in the previous quarter. Practical problems in interpreting the results of the survey include the qualitative, subjective nature of the survey data, and the short time series available. Empirically, the survey results suggest that both the loan demand and the lending standards are procyclical (Čihák and Koeva Brooks, 2008), but the time series of lending surveys are too short to allow for a more elaborate analysis or to test for breaks in the correlations.

<sup>3</sup> Data are from the BankScope database by Bureau van Dijk for 1997–2006. To explain the factors contributing to credit developments, the following variables are used: total bank assets, total loans, shareholders' equity, short-term liabilities, long-term liabilities, liquid holdings (cash, ECB and other financial institutions' securities, and government securities), equity price data ("last price," daily), and equity shares outstanding (daily).

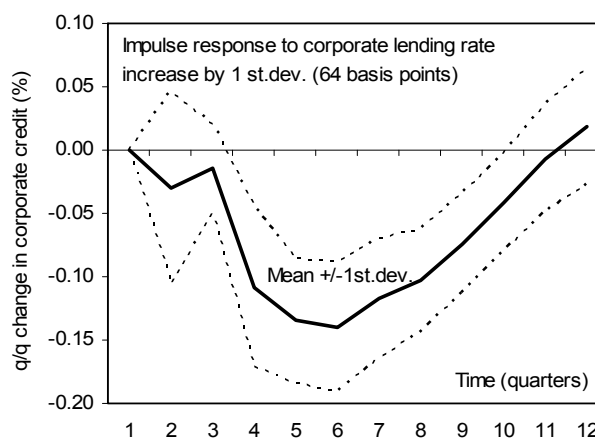
<sup>4</sup> The distance to default (DD) is an increasingly popular measure of bank soundness. It is based on the valuation model of Black and Scholes (1973) and Merton (1974), who drew attention to the concept that corporate securities are contingent claims on the asset value of the issuing firm. The DD is calculated from market prices of bank shares and balance sheet data on individual banks obtained from the BankScope database.

positive sign, as higher distance to default is associated with greater soundness, making it easier for banks to expand lending), the real GDP growth rate as a proxy for overall economic activity (positive sign), the lending rate and net interest margin (expected negative signs, reflecting more expensive lending for borrowers), and bank size approximated by total value of loans (expected negative sign). The key variable of interest is distance to default, which captures the effect of bank financial conditions on credit supply.

9. **Based on the estimated coefficients, the effect of bank soundness on loan supply is significant, but relatively small.** The estimate implies that, for instance, *a one-standard-deviation drop in the distance to default is associated with a year-on-year real growth of credit that is 1.5 percentage points lower than otherwise.* As a side result, Figure 5 illustrates the development of the excess demand for credit in the model. It is an aggregate number, calculated by aggregating the demand and supply estimates for all the individual banks. The figure suggests that in 2000 there was a period of excess supply of credit, while 2003 and 2004 were characterized by excess demand for credit. Since then, demand and supply have been relatively balanced.

#### Box 1. Interest Rates, Credit Volume, and Euro Area Output

To examine in more detail the lags between financial conditions, lending volumes, and output, a series of vector autoregression (VAR) and vector error correction (VEC) models has been estimated. Presented here is an impulse-response graph from a VAR model estimating linkages between interest rates, lending volumes, and output on aggregate quarterly data for the euro area. The VAR calculations confirm that higher interest rates transmit to loan volumes and output with lags. The maximum impact of higher rates on loans comes with a 6 quarter lag. The first 3 quarters are characterized by very little impact on corporate credit (shown here). For household credit, there is even a small “hump” initially.



10. **The bank lending channel operates with appreciable lags.** In addition to the disequilibrium model presented in Table 1, a series of pairwise Granger causality tests were run to assess the relationships between real credit growth, real output growth, and banking sector vulnerability (approximated again by distance to default). The results of the exercise suggest that banking sector vulnerability, measured by distance to default, is influenced by real GDP and real credit in the horizon of 2–4 quarters. The distance to default influences

real credit, but not GDP, with a lag of 6 quarters.<sup>5</sup> Similarly, VEC/VAR models with interest rates, credit growth, and output find that interest rates have significant effects on output, but this “interest rate channel” operates with lags of about 6 quarters (Box 1).

### C. Linkages Between Bank Loan Supply and Aggregate Output

11. **In the next step, the relationship between the supply of bank credit and economic activity was examined.** Output tends to move together with bank credit to the private sector (Figure 6), but this does not necessarily mean that the *supply* of bank loans has a significant effect on output. An alternative and equally plausible possibility is that as economic activity slows, the *demand* for bank loans declines, leading to a positive relationship between the two series. Disentangling the demand and supply effects (i.e., solving the identification problem) is hard, since these effects tend to occur jointly but only the equilibrium outcome is observed.

12. **The identification problem was addressed by using an instrumental variables technique to isolate the loan supply effect on real output.** Shocks to country-specific money demand are used as an instrument for shocks to loan supply, as proposed by Driscoll (2004) in addressing the same question for the United States. The logic behind this approach is based on the premise that country-specific shocks to money demand should lead to country-specific changes in the supply of loans, and therefore changes in output. This would allow to isolate the effect of loan supply on real activity.<sup>6</sup> The identification scheme involves the following three steps (see Appendix I for details):

- The *overall effect of bank credit on output is investigated* by regressing output growth on the growth rate of bank loans (and its lagged value), as well as its own lagged values. The resulting coefficient will reflect both the supply and demand effects of bank credit on real activity.
- The *shocks to money demand are recovered* after estimating money demand functions for each euro-area country in the sample. Then the growth rate of bank loans is regressed on its lagged values and the estimated money demand shocks, in order to establish whether the latter are a good instrument for shocks to loan supply.
- The *effect of bank credit on output is re-estimated* using the country-specific shocks to money demand as instruments. The resulting coefficient of bank loans is indicative

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<sup>5</sup> Detailed results are available upon request.

<sup>6</sup> Greenlaw and others (2008) use the Treasury-Eurodollar (TED) spread as another instrument for credit supply in the United States. As the difference between unsecured and government-backed deposit rates, the TED spread provides a useful measure of credit risk, which is likely to be correlated with credit supply. A weakness of the TED spread is that it may be influenced by “flight to quality” flows that move Treasury bill yields, as well as the funding pressures that drive LIBOR rates.

of the supply effect, as the demand effect has been stripped out. Assuming that shocks to loan demand and supply are positively correlated, one could expect the instrumented coefficient of bank loans to be smaller than the non-instrumented one.

13. **The estimations are done using country-level data from 2003Q1 to 2007Q3.** The sample includes 11 euro-area countries (Austria, Belgium, Finland, France, Germany, Greece, Ireland, Italy, Netherlands, Portugal, Spain).<sup>7</sup> The key variables used in the analysis are: real GDP, M3, deposit rates, and bank loans to non-financial corporations. For each country, the money supply (M3) and bank loan variables are deflated by the corresponding GDP deflator. Except for deposit rates, all other variables are in logarithmic form.

14. **The estimation results from the first step confirm the positive relationship between bank credit and economic activity.** Real bank credit has a significant and positive effect on output (Table 2). The size of the coefficient suggests that an increase in bank credit (in real terms) by 10 percentage points is associated with an increase in real GDP by about 1.5 percentage points.

15. **The second step estimates suggest that positive money demand shocks are associated with higher growth in bank loans.** The shocks to money demand are constructed using estimates of country-specific money demand functions (Appendix I). Their impact on bank loans is illustrated by the positive and significant coefficient of the (country-specific) residuals from the estimated money demand functions on the growth of bank loans, even after controlling for lagged values of output (see Table 3). Therefore, the money demand shocks can be used as an instrument for loan demand in the next step.

16. **Once demand effects are taken into account, the loan supply effect on output is positive and statistically significant, but relatively small.** The coefficient of the bank loan variable is still positive but smaller than in the first step (0.10 instead of 0.15) when the instrumental variables estimation is implemented (Table 4). Overall, the estimation results suggest that *an increase (decrease) in the supply of bank loans by 10 percentage points is likely to lead to an increase (decrease) in real GDP by about 1 percentage point*. Therefore, the analysis implies that a cutback in bank loan supply is likely to have a negative impact on economic activity.

#### **D. Linkages Between Corporate Financing Conditions and Economic Activity**

17. **To address the question of how corporate sector financing conditions affect activity, the relationship between the corporate bond spread and euro-area output has been analyzed.** The corporate bond spread is defined as the difference between the yield on a corporate bond (risky asset) of a given maturity and quality and the yield on a government bond (riskless asset) of the same maturity. The corporate bond risk premium has been shown

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<sup>7</sup> Cyprus, Malta, Luxembourg, and Slovenia are not included due to data limitations.

to be a good predictor of real activity in the United States (Chan-Lau and Ivaschenko, 2002; Mody and Taylor, 2004) and in the euro area (De Bondt, 2002; Ivaschenko and Koeva Brooks, 2008), which is consistent with the presence of a financial accelerator in the economy.<sup>8</sup> As corporate bond spreads tend to move together with the tightness of bank lending standards in the United States (Duca, 1999; Gertler and Lown, 2000), they also can be treated as a proxy for corporate sector financing conditions.

18. **The analysis was conducted using vector autoregressions run for 1999M1–2008M1.** The key variables were the corporate bond spread, the annual growth in output, and the annual change in the real effective exchange rate. The number of lags in the vector autoregression was set to 3.<sup>9</sup> As regards the corporate bond spread, aggregate euro-area data on corporate bond yields were utilized for securities of different maturities and quality. The spreads for AAA, AA, A, and BBB 7-year corporate bonds in the euro area (in relation to a 7-year government bond) are shown in Figure 3. The regression results presented here are based on the BBB yield minus the government bond yield, but other spreads have also been used as robustness tests, and yielded similar results. Given the high frequency nature of the data, monthly industrial production (instead of real GDP) is used as an indicator for economic activity.

19. **The estimation results show that a positive shock to the corporate bond spread leads to a significant negative response of output.** The impulse responses of the baseline regressions (Figure 8) illustrate that a one-standard-deviation shock to the corporate bond yield (about 60 basis points) has an adverse effect on the growth rate of industrial output, which peaks at about 0.25 percent in 8–20 months. This effect is statistically significant, as shown by the 95 percent confidence bands. A limitation of these estimates is that simultaneity might be an issue in the basic VAR estimation. Nonetheless, these results are fairly robust across alternative specifications.

## E. Quantitative Implications

20. **Based on the “bank lending channel” estimates, the impact of the estimated banking losses on euro-area output could be 0.2–0.3 percentage points.** This section presents two different estimates of the impact. The calculations illustrate that there are linkages between the financial sector soundness and real economic developments. They also illustrate the challenges of quantifying the exact relationship, and the uncertainties surrounding the estimates.

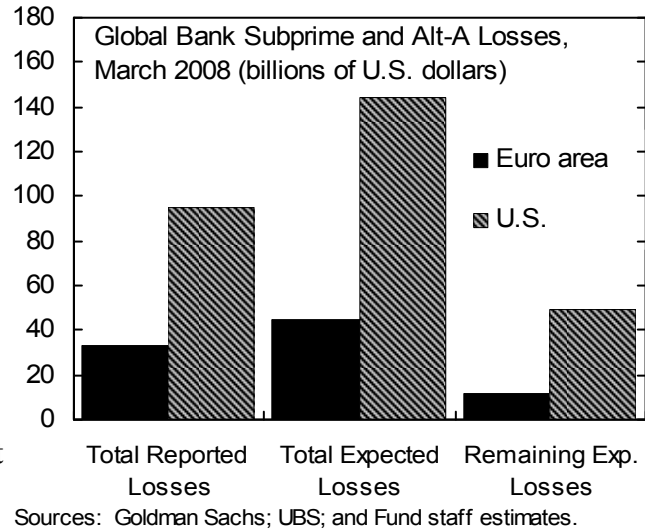
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<sup>8</sup> The basic story of the financial accelerator is that it is a mechanism linking the condition of borrower balance sheets to the terms of credit, and hence to the demand for capital. Corporate-sovereign bond spreads are a key measure of the credit terms.

<sup>9</sup> Simultaneity may be an issue because the paper does not propose a structural VAR.

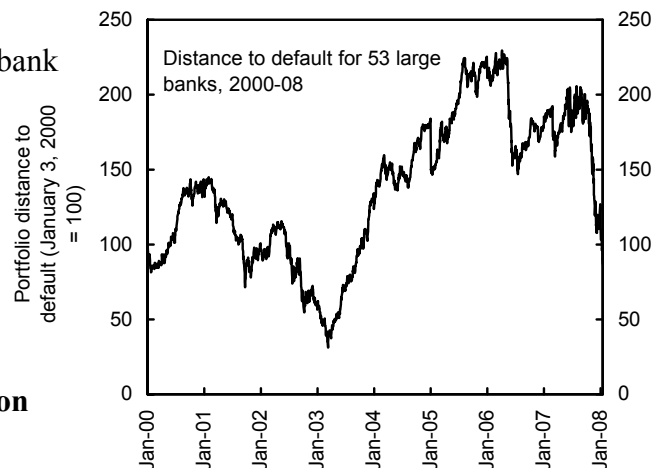
21. **One approach to estimating the impact is to start from the current estimates of losses in the banking sector; these would imply a negative 0.2 percentage point impact on euro area GDP.** The following explains the estimate:

- Estimates of the total subprime-related losses in euro-area global banks were around US\$45 billion as of March 2008 (IMF, 2008). The estimated losses for the whole of Europe were much larger (about US\$121 billion), but substantial chunks of these losses were in global banks based in the United Kingdom and Switzerland. The US\$45 billion is based on the recent IMF staff calculations, but it is also consistent with estimates by other analysts and academics, such as Greenlaw and others (2008).



- The US\$45 billion estimated losses correspond to about 2.0 percent of the euro-area banks' capital and reserves. If nothing else happened, the ratio of equity to (unweighted) assets for euro area banks would decline from 6.7 percent to 6.5 percent, and the banks' leverage would increase correspondingly.
- A plausible assumption is that the banks target a certain leverage ratio. One option is to find investors to inject more capital. Another option is to shrink assets. To keep the leverage ratio unchanged, assets would have to fall by 2.0 percent. It is assumed that banks cut down their loan supply by the same amount.
- From the estimate in the previous section, a decline in the supply of bank loans by 10 percentage points is likely to lead to a decline in real GDP by about 1 percentage point. A loan decline by 2.0 percent therefore corresponds to 0.2 percentage point drop in real GDP.

22. **An alternative approach, based on stock price developments, suggests a 0.3 percentage point fall in output.** As a market-based indicator that incorporates market participants' view on banks' situation and outlook, distance to default can provide an



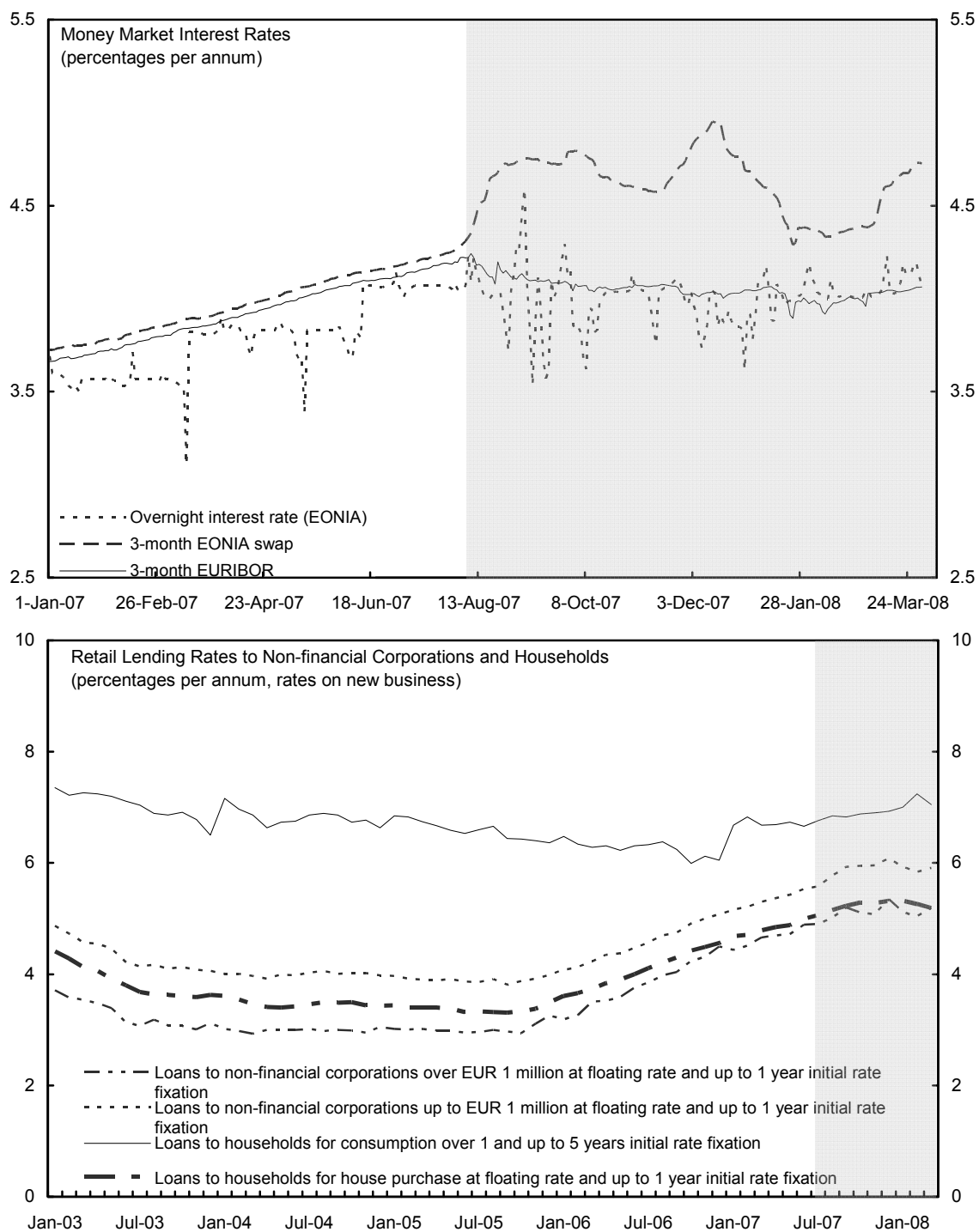
Sources: Staff calculations based on data from Datastream.  
 Note: Distance to default is the difference between the expected value of assets at maturity and the default threshold, which is a function of the value of the liabilities. A higher distance to default is associated with a lower probability of default.

alternative assessment of the likely impact of the shocks that hit the banks. The average distance to default in January 2008 was 1.9 standard deviations lower than the average distance to default in July 2007. Using the estimates in the previous section, this translates into a decline in real credit by 2.9 percentage points. That in turn (using again the estimates from the previous section) translates into a real GDP decline by some 0.3 percentage points. In other words, this method yields a broadly similar, but somewhat lower, estimate of the likely GDP impact than the method based on projected capital losses.

23. **The difference between the two approaches reflects a variety of factors.** This includes the extent to which the banks will (or will not) be recapitalized. The extent of recapitalization is not trivial to estimate, making the market's guess a useful alternative input.

24. **The above estimates should be taken with a grain of salt.** In particular, they focus only on losses to the euro-area economy stemming from losses in euro-area banks, and do not cover the impact on euro-area residents of losses in, say, Swiss banks. Also, the underlying estimates are based on commercial and investment banks, leaving out other financial institutions that could have exposures (such as thrifts, insurance companies, or hedge funds). The impact of bank losses on lending, and thereby on output, can be lower if banks increase their capital-to-asset ratios (decrease leverage) through capital injections rather than (or in addition to) asset manipulation. The impact can also be bigger if banks aim to de-leverage, i.e., decrease their leverage target, which is quite likely given the overall increase in risk aversion (see, e.g., IMF, 2008), and if they get hit by additional shocks, such as stock price declines.

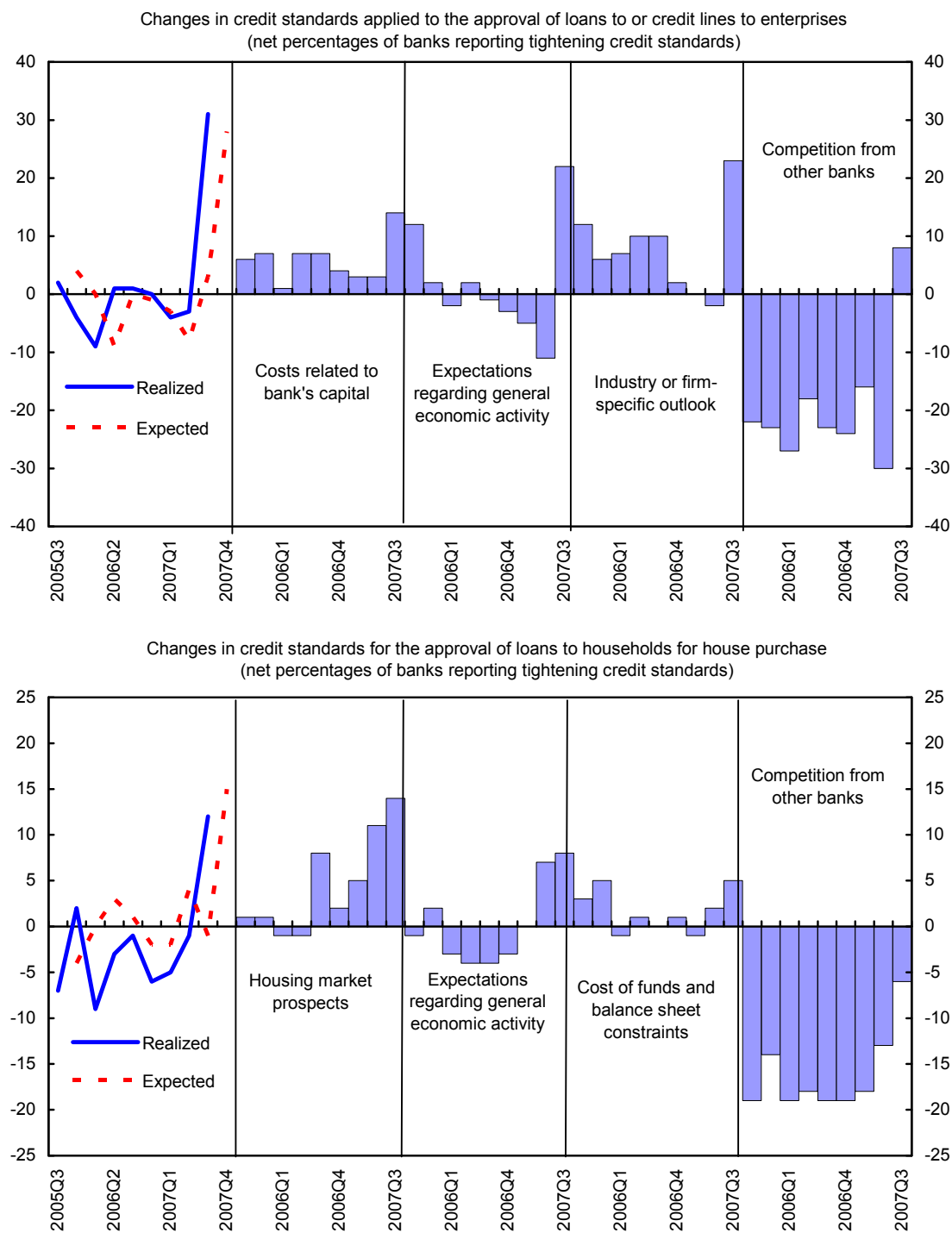
Figure 1. Euro Area: Money Market and Retail Lending Rates



Sources: Deutsche Bundesbank, Datastream.

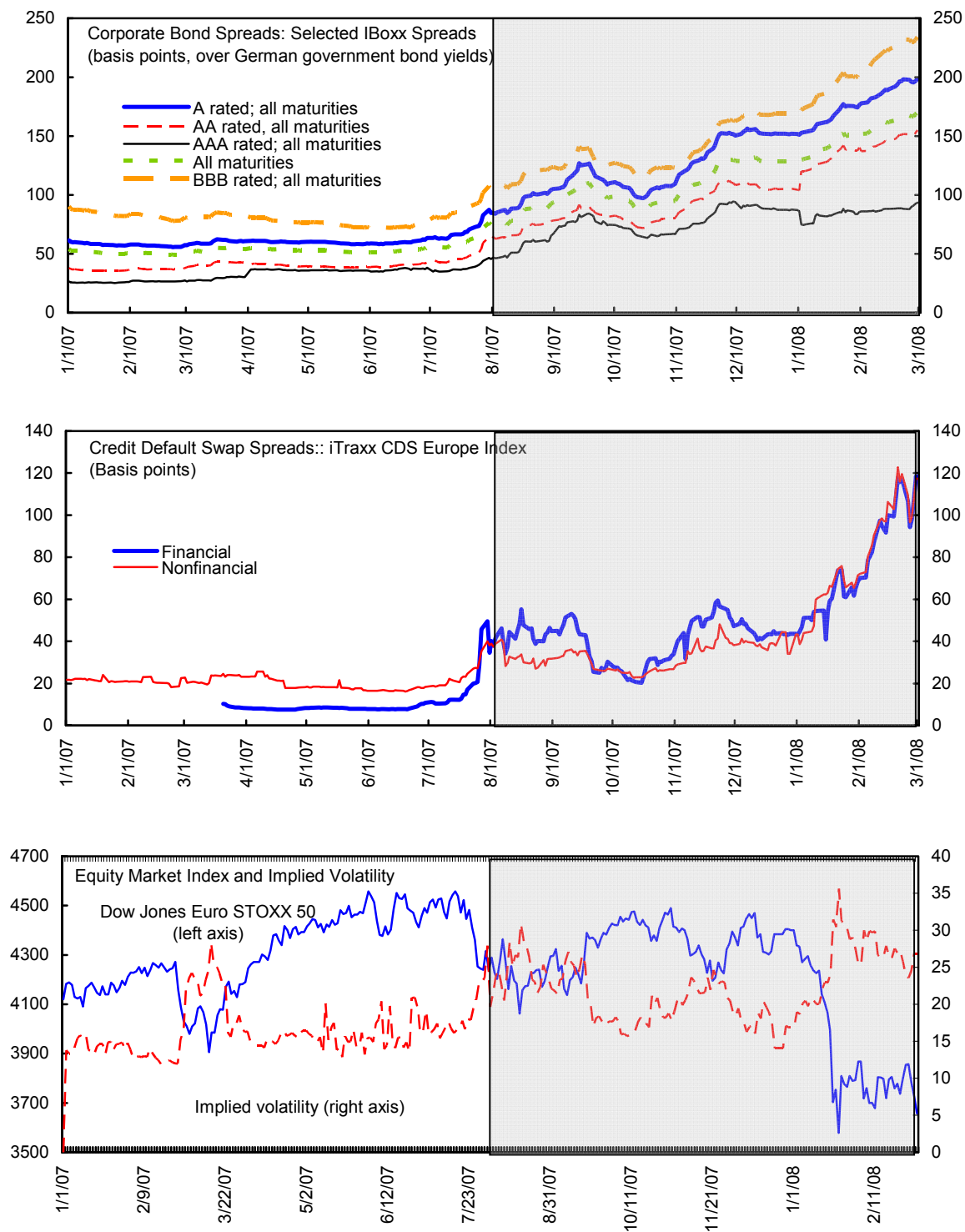


Figure 2. Euro area: Changes in Credit Standards to Enterprises and Households, 2005-07



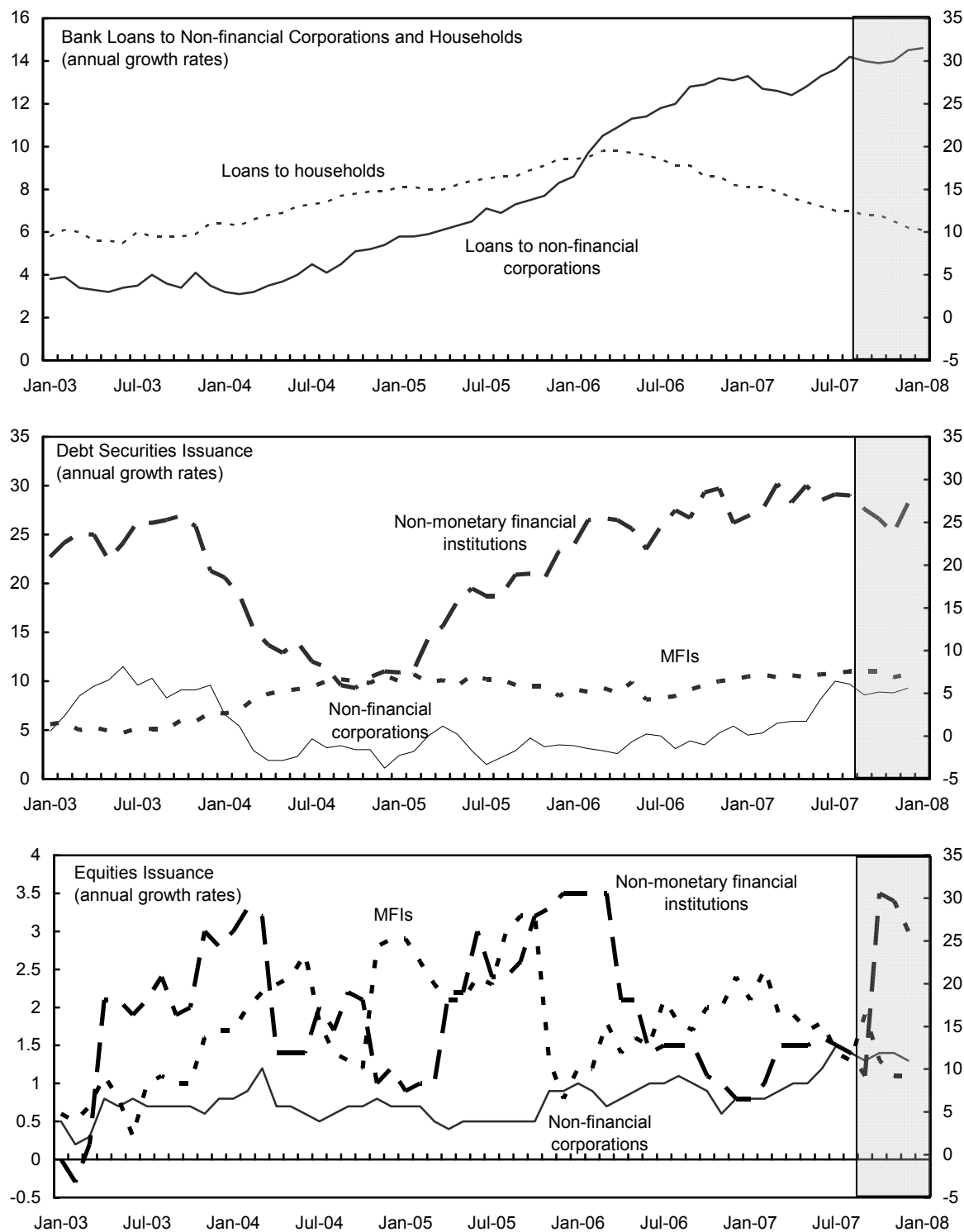
Source: European Central Bank.

Figure 3. Euro Area: Corporate Bond and Equity Market Prices



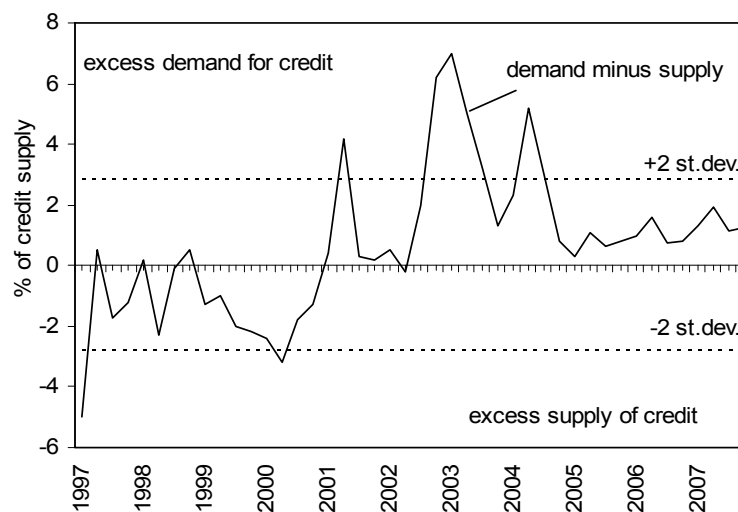
Source: Datastream

Figure 4. Euro Area: Growth in Bank Loans and Securities Issuance



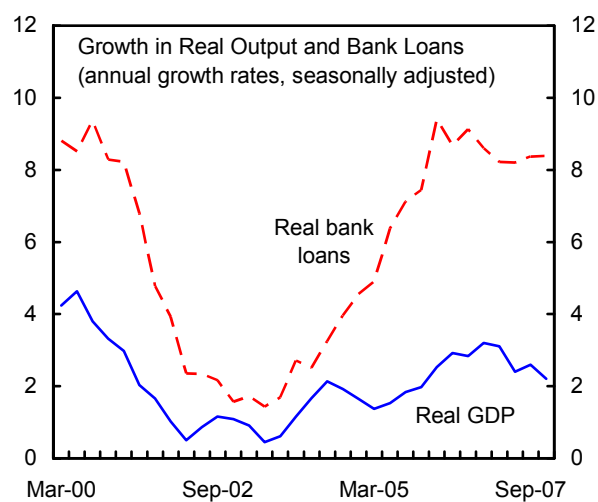
Source: European Central Bank

Figure 5. Euro Area: Excess Demand for Loans, 1997–2007



Source: IMF staff calculations.

Figure 6. Euro Area: Output Growth and Growth in Bank Loans, 2000–07



Source: European Central Bank, and IMF staff calculations.

Figure 7. Euro Area: Response of Annual Growth in Industrial Production to One Standard Deviation Innovation in Corporate Bond Spread

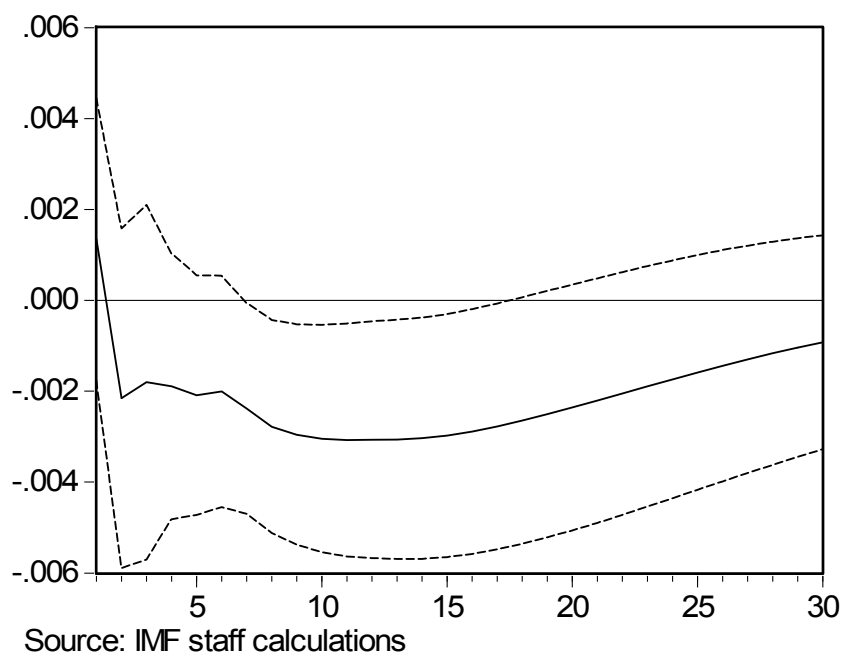


Table 1. Demand and Supply in the Disequilibrium Model, 1997–2007 1/  
(Dependent variable: year-on-year real growth rate of a bank's total credit)

Explanatory variables	Demand		Supply	
	Parameter	Std. Error	Parameter	Std. Error
Constant	- 10.24	0.48	-8.32	2.31
Real GDP growth	1.18	0.09		
Lending rate	-0.03	0.01		
Net interest margin	-0.09	0.05		
Distance to default			0.03	0.01
Log (total loans)			-0.02	0.01

Source: Authors' calculations based on data from BankScope and Datastream.

1/ Maximum likelihood estimation. Log likelihood = 125.31.

Table 2. OLS Regression of Output on Loans  
Dependent Variable:  $\Delta \tilde{y}_{it}$

Regressors	Coefficient	Standard Error
$\Delta \tilde{y}_{it-1}$	-0.2135	(0.1805)
$\Delta \tilde{y}_{it-2}$	-0.0899	(0.1756)
$\Delta \tilde{l}_{it}$	0.1486	(0.0324)***
$\Delta \tilde{l}_{it-1}$	0.0115	(0.0342)
Number of observations	232	
R-squared	0.09	

Source: IMF staff calculations.

Notes: 1. All variables are demeaned by their cross-sectional averages.

2. Critical values for 1, 5, and 10 percent are denoted by (\*\*\*), (\*\*) and (\*), respectively.

Table 3. First Stage IV Regression: Loans on Money Demand Shocks  
Dependent Variable:  $\Delta \tilde{l}_{it}$

Regressors	Coefficient	Standard Error
$\Delta \tilde{y}_{it-1}$	-0.2478	(0.3474)
$\Delta \tilde{y}_{it-2}$	-0.0119	(0.3287)
$\Delta \tilde{\varepsilon}_{it}$	0.0679	(0.0466)
$\Delta \tilde{\varepsilon}_{it-1}$	0.2205	(0.0492)***
Number of observations	232	
R-squared	0.08	

Source: IMF staff calculations.

Notes: 1. All variables are demeaned by their cross-sectional averages

2. Critical values for 1, 5, and 10 percent are denoted by (\*\*\*), (\*\*) and (\*), respectively.

3. Money demand shocks are denoted by  $\varepsilon_{it}$

Table 4. Second Stage IV Regression of Output on Loans  
Dependent Variable:  $\Delta \tilde{y}_{it}$

Regressors	Coefficient	St. Error
$\Delta \tilde{y}_{it-1}$	-0.1514	(0.0582)**
$\Delta \tilde{y}_{it-2}$	-0.0178	(0.0447)
$\Delta \tilde{l}_{it}$	0.0955	(0.0496)**
$\Delta \tilde{l}_{it-1}$	0.0178	(0.0447)
Number of observations	232	

Source: IMF staff calculations.

Notes: 1. All variables are demeaned by their cross-sectional averages.

2. Critical values for 1, 5, and 10 percent are denoted by (\*\*\*), (\*\*) and (\*), respectively.

3. Country-level money demand shocks are used as instruments.

## APPENDIX

### Identifying the Linkages Between Bank Loan Supply and Aggregate Output

The theoretical framework used to derive the empirical specification of the model is an IS/LM model, which adds a credit channel of monetary transmission to the traditional interest rate channel (Bernanke and Blinder, 1988). A possible solution to the problem of identifying loan supply effects within this framework is offered by Driscoll (2004) in investigating the analogous question for the U.S. economy. As noted by Driscoll, “the approach could also be applied to regions in other countries, or other collections of small open economies under fixed exchange rates, such as the European Union.”

The basis model consists of four equations for each country  $i$  in the euro area. There are three markets: a loan market, a money market, and a goods market.

In the loan market, banks face the following loan demand  $l_{it}^d$  from households and firms:

$$l_{it}^d = \pi_t - \chi \rho_{it} + \varpi y_{it} + v_{it} \quad (\text{B.1})$$

where  $y_{it}$  denotes output,  $\rho_{it}$  is the interest rate on loans,  $r_t$  is the interest rate on bonds (i.e., the price of financing expenditures from an alternative source), and  $v_{it}$  is a demand shock.

The loan rate is allowed to vary across euro area countries, while the bond rate is assumed to be the same for all countries. This is consistent with the evidence on a well-integrated bond market and segmented loan markets.

The loan supply function is specified by the following equation:

$$l_{it}^s = -\lambda r_t + \mu \rho_{it} + \beta(m_{it} - p_{it}) + w_{it} \quad (\text{B.2})$$

where  $(m_{it} - p_{it})$  denotes money supply, and  $w_{it}$  is the shock to loan supply. The supply of loans depends on deposits as a way to generate loans and the interest rates on loans ( $\rho_{it}$ ) and bonds ( $r_t$ ). The underlying assumption is that loans and bonds are imperfect substitutes.

The money market equilibrium for each country is given by:

$$m_{it} - p_{it} = \mathcal{W}_{it} - \delta(r_t - r_{it}^d) + \varepsilon_{it}, \quad (\text{B.3})$$

where  $r_{it}^d$  is the country-specific rate on deposits, and  $\varepsilon_{it}$  is a country-specific money demand shock. The money supply  $m_{it}$  is determined by the European Central Bank.

Finally, aggregate output is specified as function of the interest rate on bond ( $r_t$ ), the interest rate on loans ( $\rho_{it}$ ), and a country-specific shock ( $z_{it}$ ):

$$y_{it} = -\theta r_t - \alpha \rho_{it} + z_{it} \quad (\text{B.4})$$

Then the model is solved for output and loans, producing the following relationships:

$$y_{it} = \frac{\theta}{\chi + \varpi\alpha} r_t + \frac{\alpha}{\chi + \varpi\alpha} l_{it} - \frac{\alpha}{\chi + \varpi\alpha} v_{it} + \frac{\chi}{\chi + \varpi\alpha} z_{it} \quad (\text{B.5})$$

$$l_{it} = \frac{\theta}{\chi + \varpi\alpha} r_t + \frac{\chi\beta}{\chi + \mu} \varepsilon_{it} + \frac{\chi\beta\gamma + \varpi\mu}{\chi + \mu} y_{it} - \frac{\mu}{\chi + \mu} v_{it} + \frac{\chi}{\chi + \mu} w_{it} + \frac{\chi\delta\beta}{\chi + \mu} r_{it} \quad (\text{B.6})$$

These two equations illustrate the problem of identifying demand and supply effects in bank lending (i.e., separating the bank lending and interest rate channels), as bank loans and output are endogenous (jointly determined) as describe above.

Following Driscoll (2004), the identification problem is addressed by demeaning each variable with its cross-sectional mean. This effectively “shuts down” the interest rate channel. Specifically, after transforming each variable  $x_{it}$  into a deviation from its

cross-sectional mean,  $\tilde{x}_{it} = \frac{1}{N} \sum_{i=1}^N x_{it}$ , the model can be re-written as follows:

$$\tilde{l}_{it}^d = -\chi \tilde{\rho}_{it} + \varpi \tilde{y}_{it} + v_{it} \quad (\text{B.1}')$$

$$\tilde{l}_{it}^s = \mu \tilde{\rho}_{it} + \beta (\tilde{m}_{it} - \tilde{p}_{it}) + w_{it} \quad (\text{B.2}')$$

$$\tilde{m}_{it} - \tilde{p}_{it} = \tilde{\gamma}_{it} + \delta \tilde{r}_{it}^d + \varepsilon_{it} \quad (\text{B.3}')$$

$$\tilde{y}_{it} = -\alpha \tilde{\rho}_{it} + z_{it} \quad (\text{B.4}')$$

The corresponding expressions for the (demeaned) country-specific output and loans are:

$$\tilde{y}_{it} = \frac{\alpha}{\chi + \varpi\alpha} \tilde{l}_{it} - \frac{\alpha}{\chi + \varpi\alpha} v_{it} + \frac{\chi}{\chi + \varpi\alpha} z_{it} \quad (\text{B.5}')$$

$$\tilde{l}_{it} = \frac{\chi\beta}{\chi + \mu} \varepsilon_{it} + \frac{\chi\beta\gamma + \varpi\mu}{\chi + \mu} \tilde{y}_{it} - \frac{\mu}{\chi + \mu} v_{it} + \frac{\chi}{\chi + \mu} w_{it} + \frac{\chi\delta\beta}{\chi + \mu} \tilde{r}_{it} \quad (\text{B.6}')$$

The last two relationships indicate that the money demand shock  $\varepsilon_{it}$  is correlated with  $\tilde{l}_{it}$  but not with  $\tilde{y}_{it}$  but does not affect  $\tilde{y}_{it}$  independently of its effect on  $\tilde{l}_{it}$ , i.e. it is uncorrelated with the disturbance terms in equation (B.5'). This makes money demand shocks a good candidate for an instrumental variable.



The shocks  $\varepsilon_{it}$  are obtained by estimating a money demand function for each euro area country. The first stage of the instrumental-variable estimation aims to estimate if money demand shocks have a significant effect on aggregate lending in a pooled panel ordinary least squares (OLS) regression using the demeaned values of all variables. In the second stage, the money demand shocks are used as an instrument in a regression of loans on output, which helps isolate the supply effect of bank lending on real activity.

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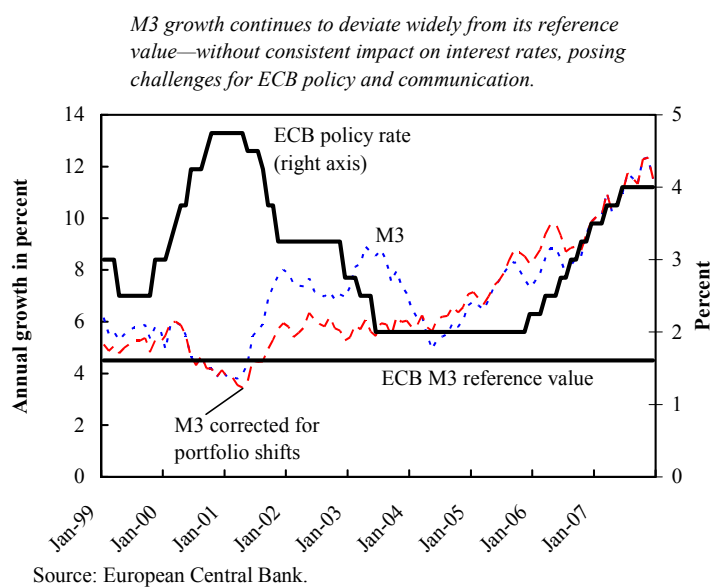
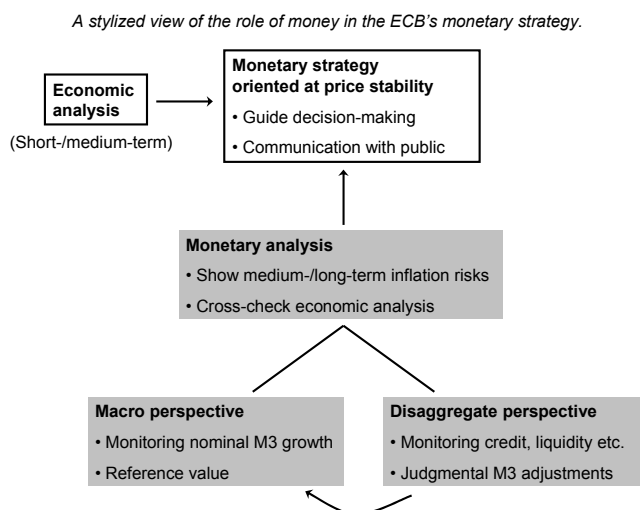
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## II. REVISITING THE ECB'S MONETARY ANALYSIS <sup>10</sup>

### A. Introduction: the Continuing Debate on the “Monetary Pillar”

25. Money plays an important role in the European Central Bank's (ECB's) monetary policy strategy. According to the ECB, monetary analysis (formerly known as the “monetary pillar”) helps to guide the policy-making process of the Governing Council by providing information on “medium to long-term trends in inflation, given the close relationship between money and prices over extended horizons” (ECB, 2003, p. 79). It also serves as a communication device by stressing the ECB's commitment to price stability. While a certain proximity to the monetary targeting framework of the German Bundesbank was intentional when the ECB announced its strategy, the central bank later made it clear that monetary analysis is neither its sole nor its most important guide to policy decisions. Today, the prime function of monetary analysis is to serve “as a means of cross-checking, from a medium to long-term perspective, the short to medium-term indications coming from economic analysis” (ECB 2003, p.87), which is a broad-based analysis of price developments in the short- to medium-run based on non-monetary indicators. Still, the continued explicit reliance on money to guide monetary policy is a distinguishing feature of the ECB's framework compared to that of other central banks.

26. In practice, the implementation of the money-based element of the ECB's policy strategy has been



<sup>10</sup> This is a summary version of Berger, Harjes, and Stavrev (2008).

challenging. In particular, the repeated surges of nominal M3 growth beyond the ECB's reference value have made it increasingly difficult for outside observers to understand the transmission, however indirect and conditional, of monetary analysis into policy action.

27. The problem is perhaps best understood in terms of the quantity theory of money. While a structural or causal relationship between money and inflation can be modeled in a number of ways (see Section B below), the quantity concept is most closely related to the ECB's approach. The well-known concept states that, if prices were fully flexible, and the nominal money supply an exogenous policy variable, and its (income) velocity constant, any change in the nominal stock of money will result in a proportional change in prices. The problem in practice is that velocity is not constant and money is not fully exogenous. The ECB has made an impressive effort to identify and explain the various special factors clouding the informational content of the monetary indicator, working from a disaggregate analysis (such as identifying portfolio shifts). But the practical difficulties of ensuring consistency in judgmental M3 adjustment are hard to overcome, and, as a result, monetary analysis seems to have played an increasingly less important role—however indirect—as an indicator of ECB policy.

28. At the same time, academic economists are debating intensively the ECB's monetary analysis. ECB watchers have criticized what they perceive as a breakdown in communication in the implementation of the “monetary pillar.” More fundamentally, recent theoretical research has cast doubt on the notion that monetary policy, almost by definition, needed to be based on a theoretical framework giving prominent role to monetary factors. Indeed, the standard New Keynesian dynamic general equilibrium (GE) model focuses almost exclusively on the interest rate channel of monetary policy, reducing the role of money to a unit of account. As a consequence, the underlying theoretical rationale of the “two pillar” approach has been questioned. Empirically, too, the case of a causal or even an informational role of money for inflation has been challenged. And while others disagree with these theoretical and empirical results, it is probably fair to say that there remains much debate about the role of money in monetary policy.

29. New IMF staff research and an extensive literature survey—summarized in Berger, Harjes, and Stavrev (2008)—concludes that monetary analysis should continue to be part of the ECB's overall monetary strategy. However, it also finds a strong case for integrating monetary and economic analysis into a unified framework.

In particular, the following conclusions emerge:

- While an exclusive focus on non-monetary factors alone may leave the ECB with an incomplete picture of the economy, treating monetary factors as a separate matter is a second-best solution. An analytical framework unifying monetary and non-monetary factors based on modern generalized GE models seems a promising way forward.

Current standard models often do not include money but generalized models do, stressing, for instance, non-separability, and financial or informational frictions. This type of models can provide a consistent setup to study the joint impact and feedback between all determinants of inflation relevant for the ECB's monetary strategy.

- However, the role played by money in such a unified framework may be limited. This also seems to be the consensus within the literature, in particular, with regard to the non-separability and financial frictions. Similarly, from a forecasting viewpoint, money does contain relevant information for inflation but its value-added is often small. In addition, non-monetary models generally provide better inflation forecasts than money-based models.
- Judgmental M3 adjustments, an important part of the ECB's current monetary analysis, do little to improve the macroeconomic information content of money in real time. This is not to deny that disaggregate monitoring of financial sector activity may be very helpful with regard to financial stability issues.
- Financial markets now widely ignore the signals from the monetary analysis and focus mostly on the economic analysis, thus missing part of the potential information set. Providing a clear, consistent, and unified narrative about the role of money in the economy seems essential to remedy this.

30. Overall, the current state of affairs could, over time, gradually detract from the credibility of the ECB's monetary strategy and undermine potential benefits from improved monetary analysis in the future. While there is potentially much to be gained from further work on monetary analysis, it seems to be more productive to refine the monetary strategy in the context of a unified framework.

## **B. The Theoretical Case for Money**

31. In the mainstream "cashless" New Keynesian GE model, money plays little or no role for inflation and is introduced, if at all, more or less as an afterthought (Clarida and others 1999, Woodford 2003). Central banks influence the economy through the interest rate and its impact on households' consumption and investment decisions. And while interest rate control presupposes control of the money supply at a technical level, the central bank will supply money elastically at the set rate. If money is explicitly introduced into the model, this is mostly through the simple assumption that households have a desire for holding money in addition to (and separate from) their preferences for consumption and leisure. As a consequence, aggregate output and inflation remain independent of the money stock, and monetary developments are essentially an endogenous reflection of contemporaneous developments elsewhere in the economy.

32. The policy recommendation stemming from cashless GE models is that central banks would be well-advised to ignore monetary developments altogether. Conditioning monetary policy on monetary developments will do little to improve the central bank's control over inflation. On the contrary, because money demand may be subject to shocks, conditioning interest rates on monetary developments could add unwanted volatility to the economy.

33. Those arguing in favor of a more prominent role of money dispute the lack of generality of the cashless benchmark, suggesting several ways to integrate monetary factors in a generalized model:

- One fairly direct approach is to introduce *non-separability* in consumption and money in the household utility function. Nelson (2002) and Ireland (2004), among others, show that this will introduce a structural or causal link (reminiscent of the Pigou/Patinkin real balance effect of old) from monetary aggregates to the output gap and inflation because real balances now influence goods demand and the stochastic discount factor of price-setting firms.
- Another idea is that *financial frictions* give money a structural role in the economy. The bank-lending channel emphasizes that monetary policy influences the real economy through bank loan supply, which depends to a large degree on the banks' ability to draw demand deposits. Money matters in this regard because the availability of demand deposits is influenced by the supply of central bank liquidity (Bernanke and Gertler 1995, Diamond and Rajan 2006).
- Another prominent argument is that of *informational frictions*. The general idea is that money may complement the information set of policy makers seeking to control inflation no matter whether it has a causal role to play in the economy or is purely endogenous. For instance, Meltzer (2001) and Nelson (2002) argue that money may be a superior index of monetary policy effects than the interest rate because money demand reflects a broad range of otherwise hard-to-observe asset prices. In addition, because money demand is also linked to output developments, money can serve as a real time indicator of real GDP developments, a variable the central bank observes only with a lag and lacking precision (Coenen and others 2005).<sup>11</sup> As Nelson (2003) and Andrés and others (2007) show, monetary aggregates could even be a forward-looking indicator of GDP if money demand was subject to adjustment costs.
- Finally, at a more technical level, a prominent role for money in monetary policy could be due to *equilibrium indeterminacy* in GE models (Christiano and others

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<sup>11</sup> Along similar lines, Beck and Wieland (2007) argue that money could help policy makers suffering from a structural bias in their assessment of potential output.

2008). Already Sargent and Wallace (1975) argued that an interest rate rule may leave the economy's price level indeterminate if the interest rate policy rule reacts to the history of exogenous disturbances only. McCallum (1981) pointed out that money could provide a solution. He stressed that the central bank could anchor the economy and avoid any unwanted volatility caused by multiple equilibria by conditioning the interest rate also on monetary developments.

34. The key insight from this discussion is that the case for a more prominent role for money in monetary policy can easily be made within one consistent analytical framework.<sup>12</sup> While supporters of a strong role of money used to base their case on partial equilibrium models, the advent of generalized versions of the cashless New Keynesian GE model makes this less of a necessity.<sup>13</sup> GE models, as Papademos (2006) notes, have "...the potential to incorporate in a substantive way the role and effects of money and credit in the monetary transmission mechanism." They allow a fuller view of the role that money can play in the economy than any partial equilibrium model, including by capturing equilibrium feedbacks and by having model-consistent forward-looking expectations. Due to their firmer micro-foundations, most modern GE models are also less prone to the Lucas critique, that is, their underlying structure is generally independent from the policy regime.

35. There are various indications, however, that the role of money in such a unified framework may be small. McCallum (2001) stresses that non-separability effects tend to be small under plausible calibrations of the households' utility function and much of the empirical literature supports this view both for the United States and the euro area (Ireland 2004, Andrés and others 2006). As Bernanke (2007) points out, the development of modern financial markets is likely to reduce the empirical relevance of the bank-lending channel, a point echoed by Eurosystem research (Angeloni and others, 2002). Also the extent of money's informational function for monetary policy is still disputed.<sup>14</sup> Finally, there is some

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<sup>12</sup> The ECB for its part is currently carrying out research aimed at incorporating a richer financial sector into dynamic stochastic general equilibrium models, in order to study the role of financial variables in the conduct of monetary policy (see Papademos, 2006).

<sup>13</sup> Prominent examples for partial-equilibrium arguments for a prominent role for money include the P-star model (Svensson, 2000 and Reynard, 2007) and the two-pillar Phillips curve (Gerlach, 2004). See Berger, Harjes, and Stavrev (2008) for a more extensive discussion.

<sup>14</sup> There are a number of arguments suggesting limits to the informational role of money (see Berger, Harjes, and Stavrev, 2008, for additional discussion and references): (i) monetary aggregates are noisy because of money demand shocks, which reduce their informational usefulness; (ii) the inflationary consequences of a surge in money demand will depend on whether the underlying shock was demand- or productivity-driven; (iii) asset prices and various indicators of real activity can be observed directly without the help of money; and (iv) the quantitative relevance of the informational role of money in generalized GE models is not fully explored yet.



debate whether equilibrium indeterminacy is a policy-relevant problem in GE models (Woodford 2003, McCallum 2003).

### **C. The Importance of Money for Inflation Forecasts**

36. An empirical view on the role of money is interesting from a number of perspectives. Obviously, the relative weight allocated to monetary factors within a unified analytical framework is ultimately an empirical question, and one way to answer it is to identify the contribution that money can make to forecast inflation. In addition, a forward-looking policy maker may take the pragmatic position that money deserves attention if it proves helpful in forecasting inflation, no matter the precise theoretical (structural and/or informational) channels through which this occurs.

37. The picture emerging from the empirical literature so far is fairly mixed, however. A number of studies suggest that the indicator properties of money for inflation may be limited—either because money-based models do not perform well in a cross-country framework or because money is strongly outperformed by other indicators. For example, results in Roffia and Zaghini (2007) and de Grauwe and Polan (2005) question whether the often-repeated stylized fact that high money growth is followed by high inflation still applies to low-inflation, industrial regions such as the euro area. And OECD (2007) reports results from an euro area inflation forecasting “horserace” between alternative time-series models, suggesting that money played a prominent role only up to 2000, while after 2000 non-monetary models were better predictors of inflation.

38. In contrast, other strands in the literature suggests that money continues to be helpful for euro-area inflation forecasts. For example, the Bundesbank (2005) and Assenmacher-Wesche and Gerlach (2006a, 2006b) stress the usefulness of single-equation partial-equilibrium approaches featuring money. Other studies report that money helps to forecast inflation in more encompassing empirical models (e.g., Nicoletti-Altimari 2001, Scharnagl and Schumacher 2007, Hofmann 2008), even though the size of this improvement is sometimes found to be very small once other determinants of inflation are taken into account (Berger and Österholm 2008a). Interestingly, the last result seems not to be an artifact of the particularities of the euro area but extends to U.S. data (Berger and Österholm 2008b).

39. Several factors explain these widely differing results, with important implications for any systematic approach to evaluating the information content of money in forecasting inflation. One factor is sample selection. D’Agostino and others (2006) make the point that the predictability of macroeconomic variables in general may have been lowered as macroeconomic volatility declined during the so-called great moderation. Another factor is given by differences in the empirical approach, where most of the literature focuses on either a single model or all-out horserace across a wide range of unrelated models instead of a comparison of related (or nested) model with and without money. Finally, as for instance

Galí and others (2004) warn, establishing a causal or forward-looking informational role for money requires the careful use of structural econometric approaches.<sup>15</sup>

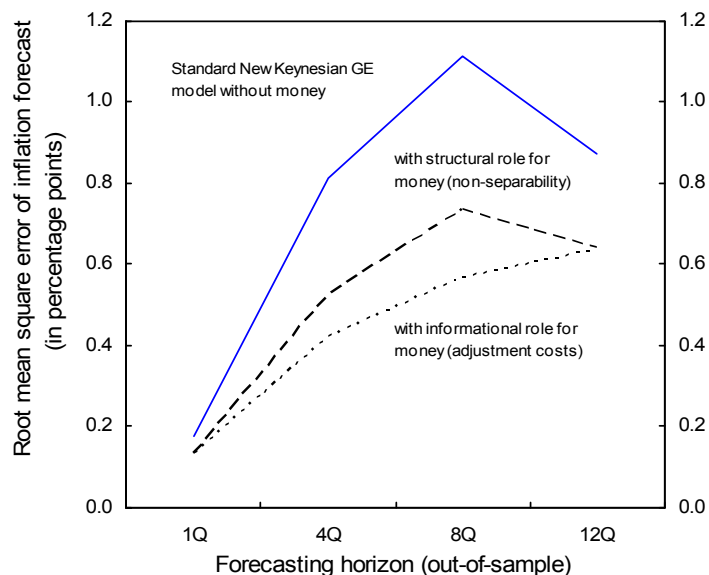
40. Following these arguments, recent IMF research provides a systematic analysis of the information content of money for inflation in the euro area. Berger and Stavrev (2008) compare the simulated out-of-sample inflation forecasting performance of models with and without money for the period 2000–2007 for a number of typical model classes. These classes include, on the empirical side, vector autoregressive (VAR) and general dynamic factor models (GDFM) and, on the structural side, both partial and general equilibrium approaches—among others. The within-class comparison is based on the out-of-sample root mean square error (RMSE) at forecasting horizons of one, four, eight, and twelve quarters ahead.<sup>16</sup> A lower RMSE implies better forecasting accuracy.

Several results emerge.<sup>17</sup>

- Money helps the inflation forecasting performance of a number of models. A

particularly interesting result is that the money-enhanced New Keynesian GE models outperform the cashless baseline model across all forecasting horizons, which supports both a structural and informational role of money for inflation. Yet, the improvement in terms of RMSE reduction from adding money averages only 0.3 percentage points of inflation. The drop in RMSEs from adding money for some of the empirical models are of a similar magnitude—in particular for the VAR models that,

*The marginal contribution of money to euro area inflation forecasting accuracy is positive but often small. This holds for many classes of empirical as well as theory-based, structural models (displayed here).*



Sources: Eurostat, IFS, Haver analytics, and IMF staff calculations.

<sup>15</sup> For instance, the cashless New Keynesian GE model can produce correlation between money growth and inflation, even though the model rejects a structural or informational role of money for inflation (Woodford 2007, 2008).

<sup>16</sup> Such an exercise is akin to a Granger causality test in a multivariate environment (Ashley and others 1980).

<sup>17</sup> See Berger and Stavrev (2008) for a detailed discussion.

not unlike the GE approaches, allow some feedback between money and inflation. However, in other empirical model classes, such as the General Dynamic Factor Models (GDFM), introducing money produces miniscule RMSE reductions, and money largely fails to improve the forecasting accuracy of partial equilibrium models.

- Comparing the performance of the money-based approaches across the various model classes, there seems to be a “u-shaped” relationship between the degree of their theoretical underpinnings and their forecasting performance: the best empirical models with money (in particular the VAR model) and the best GE model with money do better than the best partial equilibrium models. A corollary of this is that the information content of money may be best captured by a more explicit modeling of the underlying general equilibrium structure of the money-inflation relationship.
- That said, the quantitative importance of money for inflation forecasting should not be overrated. As Berger and Stavrev (2008) stress, not only is the improvement from adding money often small, there is also evidence that some of the models eschewing money perform better overall. While the quantitative advantage of the moneyless models is not always large, the finding still puts the role of money into perspective.

41. The conclusion emerging from the empirical analysis points in the same general direction as the theoretical considerations in Section B. There is evidence that a central bank interested in forecasting/assessing future inflation should take monetary factors into account, but this is best done in a framework encompassing also non-monetary factors, and the relative role played by money within such a setup is likely to be small.

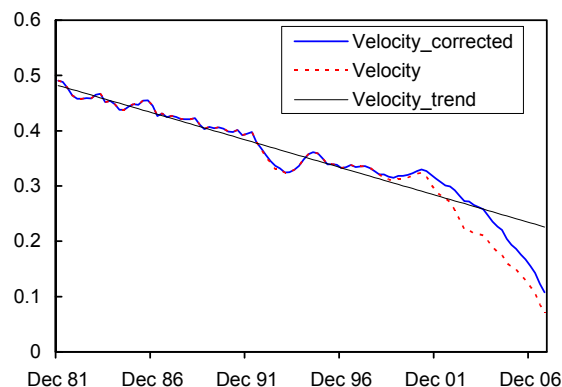
#### **D. The Disaggregate Perspective: Monetary Analysis to Look Behind M3**

42. From the beginning, the ECB’s monetary analysis encompassed both a macroeconomic and a disaggregate (or more micro-oriented) perspective. The macroeconomic part of the analysis is implemented predominantly through a comparison of annual nominal M3 growth with a reference value, which is to reflect medium- to long-term monetary developments in line with the ECB’s goal of price stability. In addition, monetary analysis takes a disaggregate perspective, focusing on other indicators of liquidity developments than M3. For instance, the ECB carefully looks at various other monetary aggregates, private credit growth, as well as their counterparts in the aggregate balance sheet of monetary and financial institutions. As the ECB (1999) pointed out, the general idea of looking beyond M3 was to provide useful background information for the assessment of aggregate developments—for example, to help separate transitory from price-relevant movements in monetary conditions. In light of the post-9/11 volatility in financial markets, the ECB (2003) clarification of its monetary strategy put even greater emphasis on the disaggregate perspective.

43. In terms of the quantity theory, the problem with the ECB's reference value stems from the fact that velocity is not constant—and this is where a disaggregate perspective could be helpful. In principle, a broadly defined money demand function may be able to account for velocity shifts while preserving the link between money and prices—but financial innovation and deregulation, technological progress, and financial integration have seriously undermined the empirical stability of models of velocity. As Friedman and Kuttner (1996) argue, the instability problem is especially severe in a modern financial system that offers an ever increasing number of financial assets, of which only an arbitrary subset will be included in a given definition of a monetary aggregate. For instance, euro-area M3 includes money market fund shares and other interest-bearing liquid assets that tend to increase in times of uncertainty as households aim to reduce the riskiness of their wealth portfolios. Such portfolio shifts can lead to higher M3 growth without necessarily being a harbinger of future goods price increases.<sup>18</sup> As a consequence, the ECB has turned to disaggregate analysis and judgmental adjustments of M3 to preserve any information M3 growth might hold with regard to future price developments.

44. However, reliable real-time judgmental adjustments of monetary aggregates are difficult to achieve. In principle, one should expect such adjustments to be targeting obvious, unique, and relatively short-lived technical or behavioral phenomena that either do not require or do not allow structural modeling. But the factors underlying recent surges in M3 growth hardly satisfy these requirements. A case in point is the judgmental ECB correction for portfolio shifts in the euro area during 2001–03. While ECB-identified portfolio shifts may indeed have been at the core of the M3 surge at the time, portfolio shifts did not explain much of the continued increase of M3 later on.

*The income velocity of euro area M3 increasingly deviates from its long-run trend, and ECB adjustments for portfolio effects have done little to change this.*



Sources: European Central Bank, and IMF staff calculations.

45. This leaves the question of what explains current M3 behavior and the associated decline in velocity. New financial innovation remains a leading candidate, and the ECB (2008) has looked at the role of securitization in this regard without coming to firm conclusions. With the disaggregate analysis providing little clues, the indicator quality of

<sup>18</sup> Other hard-to-grasp factors influencing velocity include exchange rate fluctuations and the changing international role of the euro (Faruqee 2005).

more or less permanent M3 growth above its reference value for inflation must seem doubtful even from the ECB's perspective.

46. The discussion of securitization does, however, point to another possible function of a disaggregate perspective outside the realm of monetary strategy: disaggregate monetary analysis may provide useful input into the ECB's assessment of financial stability. For example, the analysis of M3 counterparts may have provided some early warning signs of potential problems at euro-area banks when, starting in late 2006, the amount of securities issued by non-euro-area residents on German banks' balance sheets suddenly rose sharply (Reischle 2007), perhaps because of an increasing inability to hold these securities in off-balance sheet vehicles due to rising funding pressure.

47. In sum, judgmental M3 adjustments, while an important part of the ECB's current monetary analysis, seem to contribute little to the information content of money for future price developments in real time.

#### **E. How Time Path Dependent Should the ECB's Monetary Strategy Be?**

48. At its inception, for the ECB as a new institution lacking a time-honed reputation, quickly establishing inflation-fighting credentials was critical, and linking its monetary strategy to that of the German Bundesbank proved helpful in this regard.<sup>19</sup> Further urgency was added by the fact that the ECB stepped on the stage during a time of intensive structural change due to the introduction of the common currency and the ensuing uncertainties about typical shocks hitting the area, their propagation, and the monetary transmission mechanism (ECB 1999, Jaeger 2003). As Issing (2006, p.3) emphasizes, this type of uncertainty was among the arguments behind the ECB's decision to stress the continuity of its policy framework with "the best performers of national central banks participating in monetary union, and especially with the Bundesbank." This might have been helped by the fact that, in practice, the Bundesbank's monetary regime was itself fairly pragmatic, with an emphasis on communication rather than strict adherence to pre-set money growth targets.<sup>20</sup>

49. There is, however, reason to believe that loyalty to Bundesbank principles is no longer required on reputational grounds. Importantly, the ECB's own reputation as an inflation-averse central bank is now well established, and its credibility does not rest predominantly on its monetary analysis. In fact, the subtle downgrading of the importance of

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<sup>19</sup> Economic theory suggests that a central bank's reputation can anchor private sector inflation expectations. Firms set relative prices under uncertainty about the future aggregate price level. In a repeated game the credibility of a central bank's pledge to keep aggregate prices stable will depend on its own past actions or reputation, and thus a certain institutional time-path dependency can be an advantage.

<sup>20</sup> See, among many, von Hagen (1999) and Posen (2000) for a similar view.

money in the ECB's monetary strategy after the 2003 monetary policy evaluation has markedly increased the difference between the ECB's and the Bundesbank's monetary strategy both in practice and principle. In addition, according to Berger and others (2006), over the years the ECB's General Council has paid continuously less attention to monetary analysis in its words and deeds.<sup>21</sup>

50. As a consequence, the public and financial markets have ceased to attach much weight to the ECB's monetary analysis. For example, Geraats and others (2008) point out that there remains much uncertainty regarding the role of the "monetary pillar" among ECB watchers, and many seem to focus more on the economic analysis. As other studies show, financial markets, too, have ceased attaching appreciable weight to the ECB Governing Council's communications regarding monetary analysis (Lamla and Rupperecht 2006, Conrad and Lamla 2007). And according to recent ECB research, a broadly similar picture emerges from the financial market reaction to the monthly release of M3 data. ECB researchers Coffinet and Gouteron (2007) show that across interest rate horizons ranging from the very short- to the very long-run, the impact of M3 news (defined as data releases unexpected by the consensus forecast) has dramatically decreased over time, essentially becoming insignificant before or around the time of the ECB's monetary strategy clarification in 2003.

51. In summary, there is little reason to expect that further changes in the role of monetary analysis within the ECB's wider monetary strategy will have a detrimental impact on the ECB's reputation as a price-stability oriented central bank among sophisticated investors and observers. In fact, the ECB reputation as an inflation-averse central bank is now well established, with, according to some research, long-run inflation expectations in the euro area more firmly anchored than in the United States (Beechey and others, 2008). Whether such changes might have an impact among the broader public in countries that prior to EMU also ran on a two-pillar system is a question that has not been addressed in the literature. But there are few reasons to believe that they would, provided the transition is well managed and takes place during a period of price stability. Therefore, from a communication viewpoint little seems to be lost and much might be gained if the present monetary policy framework would be recast into a unified approach. This would allow for a better presentation of the relative role of money for activity and inflation.

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<sup>21</sup> The finding is based on a content-analysis of the General Council's introductory statements for its post-meeting press conferences. The analysis shows that the overall policy inclinations communicated by the General Council became increasingly less correlated with the monetary analysis contained in the statements. The same holds with regard to interest rate decisions.

## **F. Summary**

52. Money continues to play an important role in the ECB's monetary strategy. This paper revisits the case for money, surveying the ongoing theoretical and empirical debate, including recent research by IMF staff. The key conclusion is that an exclusive focus on non-monetary factors alone may leave the ECB with an incomplete picture of the economy. However, treating monetary factors as a separate matter is a second-best solution. Instead, a general-equilibrium inspired analytical framework that merges the economic and monetary "pillars" of the ECB's policy strategy appears the most promising way forward. The role played by monetary aggregates in such unified framework may be rather limited. However, an integrated framework would facilitate the presentation of policy decisions by providing a clearer narrative of the relative role of money in the interaction with other economic and financial sector variables, including asset prices, and their impact on consumer prices.

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### III. LIQUIDITY MANAGEMENT IN THE EURO AREA<sup>22</sup>

#### A. Introduction and Main Findings

53. **The financial market turbulence has highlighted the relative robustness of the euro-area monetary policy implementation framework, while exposing potential weaknesses in the risk management framework of individual institutions.** The turbulence has tested the mechanisms of liquidity creation and transmission at the global, country, and individual institution level, and it has arguably been the first major test of the euro-area liquidity management framework. The Eurosystem's relatively high reserve requirements, combined with the averaging provisions, acted as a buffer during the turmoil. The wide range of collateral and banks eligible to participate in the Eurosystem operations has limited the risk of disruptions. The collateral framework has provided an important automatic stabilizer to the financial system. Maintaining the separation between monetary policy objectives and liquidity operations has been useful, but it has put an increased premium on clear communication with the market and the public.

54. **The ECB's actions have been widely praised, but the exceptional monetary operations have also highlighted some open issues.** Those can be grouped into two broad categories: (i) linkages between liquidity management and monetary policy implementation; and (ii) linkages between liquidity management and financial stability. The existing literature tends to focus on either the supervisory side or the monetary policy implementation side while this chapter treats these two sets of issues as interlinked, addressing them in an integrated fashion.

55. **There is a scope for some minor adjustments.** For example, narrowing down the interest rate corridor for steering the money market rate could provide a clearer signal to the market. Also, should the financial turmoil worsen appreciably, consideration needs to be given to less conventional measures, such as lowering the rate on the marginal lending facility, further lengthening the maturity of auctions, lowering haircuts on collateral, and (in the extreme) outright purchases of assets; however, it should be noted that such steps have drawbacks that, outside extreme conditions, predominate the benefits.

56. **The collateral framework should feature incentives for improvement in the credit quality of collateral after the financial stress is over.** The leeway left to counterparts to accumulate good quality collateral and shift more risky collateral to the ECB allows the framework to operate counter-cyclically. However, the incentives should work both ways so that the quality of collateral reverts back to a neutral average in good times.

57. **The flexible liquidity management framework at the systemic level should be complemented by stricter liquidity management practices in individual institutions.** This chapter finds a case for reviewing liquidity regulations and supervisory practices, which

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<sup>22</sup> Prepared by Martin Čihák and Thomas Harjes. For details, see Čihák and Harjes (2008).

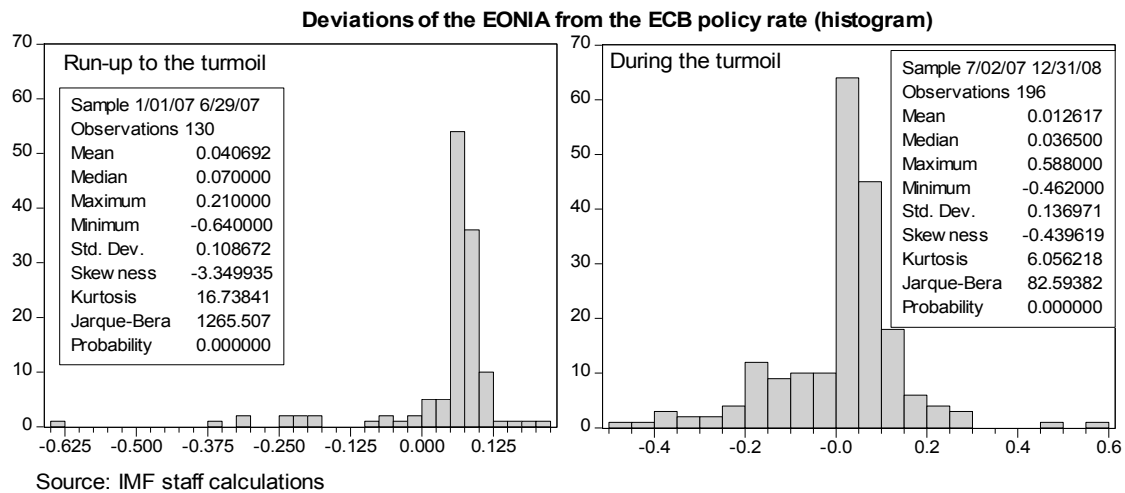
still differ significantly across the euro-area countries, more than is the case for capital regulations and supervision. Regulators need to ensure that financial institutions rely less on recent correlations, and incorporate more severe liquidity gapping and correlation jumps in their market risk models and stress tests. There is also scope for reducing uncertainty through increased transparency about risk management practices, and about the products being used to manage liquidity. Furthermore, this chapter argues for clarifying the links between emergency liquidity assistance and supervisory intervention, based on an EU-wide approach.

## **B. Distinguishing Monetary Policy Stance and Liquidity Operations**

58. **The ECB has responded promptly and forcefully to the financial turmoil.** Since the onset of the turmoil, the volatility of euro money market rates has increased sharply, and spreads between overnight and longer-term interest rates have risen. The ECB has responded by special liquidity operations (Appendix I), aiming to avoid large deviations of the overnight rate from the policy rate, and also to calm tensions and boost confidence in money markets. The following should be noted (Figure 1):

- During all months but December 2007, the average overnight rate stayed within  $\pm 15$  basis points of the policy rate set by the Governing Council at 4 percent since June 2007 (there was more volatility in day-to-day values of the overnight rate).
- There have not yet been obvious signs of aggregate, economy-wide liquidity or money demand shocks (M1 growth decelerated further and M3 growth remained at an elevated level).
- The total volume of the ECB's refinancing operations did not exceed trend growth (except for a brief period at the end of 2007), but the maturity profile lengthened.

59. **The ECB's liquidity operations had some success in limiting the “noise” in the money market.** A key stated reason for the special operations was to provide confidence to the markets in a situation of a sudden increase in liquidity demands from European banks, which pushed the EONIA rate substantially above the policy target on several occasions. An econometric analysis using a GARCH model (Figure 2) suggests that the operations have been successful to the extent that after an initial increase in the deviations of the EONIA rate from the policy rate, both these deviations and their volatility has declined towards pre-crisis levels. The deviations of the EONIA from the policy rates (plotted here in the text chart) remained somewhat above the pre-crisis levels; the difference, while statistically significant, was quantitatively small. The same is correct for the conditional volatility estimated by the GARCH model (Figure 2). The stabilization of the EONIA has been achieved by an increased activity in the open market operations: one indicator is the ratio of the open market operations to the reserve requirements (Figure 3), which has been characterized by significantly increased volatility since August 2007.



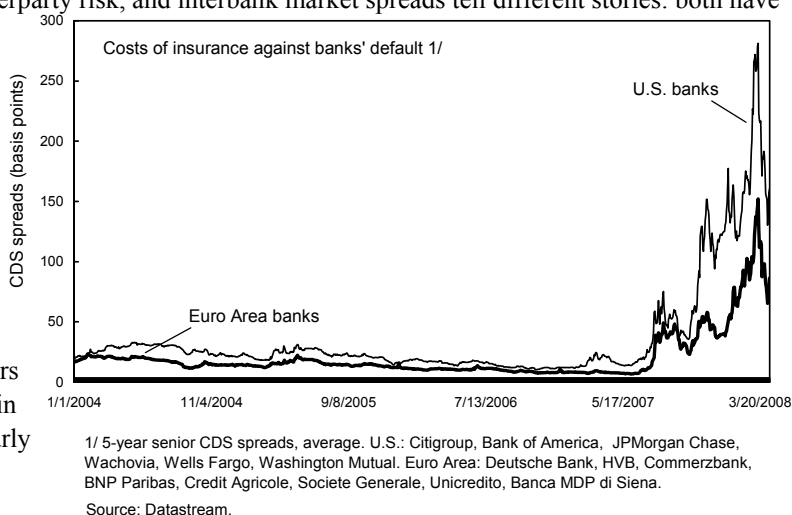
60. **At the same time, in the unsecured 3-month interbank money market, spreads with overnight interest rates have remained at unusually high levels.** The spreads between a 3-month deposit rates and overnight rate swaps of the same maturity have become lower in the euro area compared to the United States and the United Kingdom (Figure 4). However, a more detailed econometric examination of the effects of these measures finds that the ECB action (as well as the Fed and Bank of England actions), while helping to reduce the money market volatility, may have had only a small impact on these spreads (IMF, 2008 and Box 1).

61. **Communicating the distinction between liquidity operations and monetary policy implementation has been a challenge.** In this regard, the emphasis in communication on the role of monetary aggregates in guiding policy decisions may have complicated the ECB's task relative to that of other central banks. It has been challenging for the ECB at times to communicate that in conditions of pronounced uncertainty, the supply of abundant liquid instruments was aimed not at altering the stance of monetary policy, but at ensuring the regular functioning of the markets (in particular, preventing large deviations of the EONIA rate from the policy target and providing confidence for somewhat longer term maturities). Indeed, no additional liquidity was provided on net terms, when considering average liquidity provided over the reserve maintenance period (also, the ECB did not soften eligibility criteria for the collateral it accepts). More importantly, even if additional liquidity had been provided on net terms, this should not have been interpreted as a change in the monetary policy stance as the policy stance is enforced by controlling the overnight interest rate in money markets while money supply, more or less, adjusts endogenously. The desirability of policies to offset temporary shocks to money demand that are unrelated to total output has been pointed out e.g., by Diamond and Rajan (2006).

### Box 1. High Spreads in Interbank Markets: Counterparty Risk or Liquidity Premium?

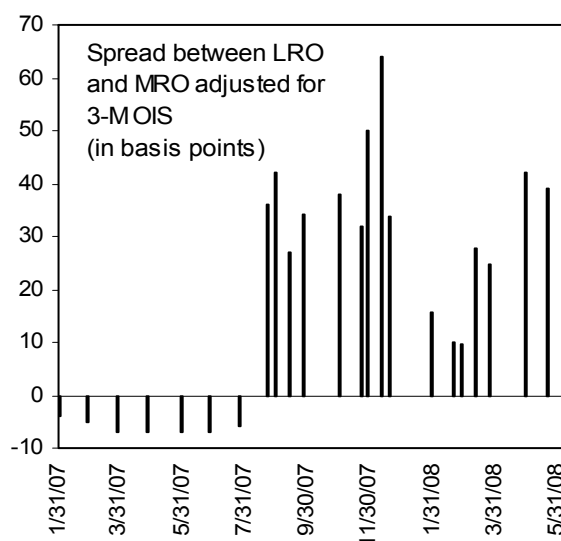
Increasingly large term spreads in interbank money markets, adjusted for interest rate expectation effects, are a defining feature of the financial turmoil that began in the summer of 2007. Do they reflect changes in counterparty risk, or are they signs of increased uncertainty, funding pressure for banks, and liquidity hoarding?

CDS spreads, as a measure of counterparty risk, and interbank market spreads tell different stories: both have gone up in the early part of the turbulence, but while the interbank market spreads have remained high, CDS spreads have narrowed markedly since March 2008. The decline in CDS spreads coincides with the Federal Reserve organized rescue of Bear Stearns and the Fed's introduction of a new lending facility to improve the ability of primary dealers to provide financing to participants in securitization markets. This has clearly alleviated markets' concerns about possible bank failures.



The recently diverging trends between CDS and interbank money market spreads could indicate further market segmentation, or liquidity factors (e.g., increased funding pressure on those banks that were already too reliant on wholesale funding). Michaud and Upper (2008) use the CDS as a proxy for counterparty risk and decompose the spread between 3-month Libor and the overnight (OIS) rate into credit risk and liquidity risk. They approximate the latter as the residual in their calculations.

A more direct way of measuring liquidity risk is using the spread between the rates of the ECB's MROs and LTROs. Reflecting the design of these refinancing operations, the spread should include very little or no credit risk. This spread was particularly elevated at the end of 2007; it fell through early March but picked up since then (see text chart). These developments reflect the following sequence of events: at the end of 2007, an already severe liquidity pressure combined with some purely technical (end-year) issues related to liquidity management in financial institutions. The ECB's shift to longer-term refinancing operations has contributed to the fall observed in January and February 2008, even though this effect has likely been relatively small, given that the repurchase agreements account for only 2 percent of total liabilities (consolidated) of euro area monetary financial institutions. In the wake of the Bear-Sterns failure and also pushed by regulators, banks have become increasingly unwilling to accept maturity mismatches at the short end for fears of running into liquidity problems, which accounts for the increase in the liquidity premium since early March 2008.



Source: IMF staff calculations, based on ECB data.

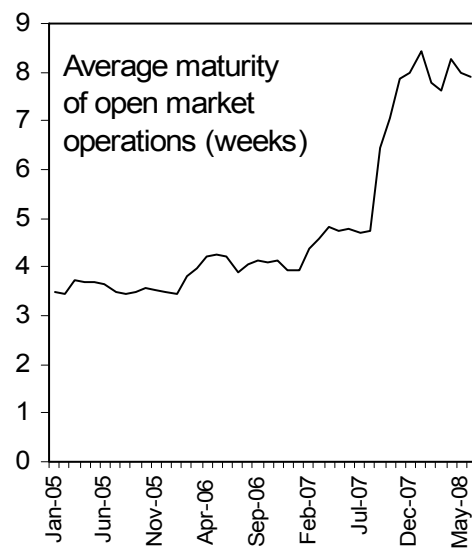
### C. Scope for Modifications in the Liquidity Management Framework

62. **There is some, but limited, scope for further modifications in the current Eurosystem liquidity management framework.** As indicated above, the monetary operations/liquidity management framework has so far proven rather robust during the turbulence. Volatility in the EONIA has been contained successfully. Interbank-OIS spreads have remained at elevated levels, but most likely for reasons such as counterparty credit risk, which are largely outside of the control of the central bank. The following is a discussion of the measures that are within the central bank's control.

#### Lengthening further the maturity profile of refinancing operations

63. **The ECB's actions can do relatively little about the high spreads between longer-term and overnight rates.** The empirical analysis of the recent episode suggests that one important factor of the high term spreads in money markets is the perceived counterparty (credit) risk. There is very little a monetary authority can do about this, short of bail outs of institutions at risk, including outright purchases of bank assets that could otherwise be sold on to markets only at a steep discount.

64. **The lengthening of the maturity profile of ECB's refinancing operations likely had some tempering effect on longer-term rates, but it has complicated short-term rate management.** The amount provided through LTROs almost doubled from euro 150 billion to euro 290 billion while the amount provided through MROs fell from around euro 300 billion to euro 170 billion (Figure 1), resulting in a lengthening of the maturity profile (text figure). This had a tempering effect on term interest rates (Box 1), but at the same time may have complicated to some extent the management of the EONIA. This was evidenced for example in December 2007, when the average difference between the EONIA and the policy rate was -12 basis points, compared to +6 to +7 basis points in "normal times" (ECB, 2008). Under current conditions, the costs (e.g., in terms of lower control over the EONIA) of dropping further the amount available for MROs may well outweigh the benefits of lengthening of the maturity profile of refinancing operations.



Source: IMF staff calculations on ECB data.

### D. Narrowing the Interest Rate Corridor

65. **One possible adjustment is to narrow the range that the standing facilities set around the policy rate** (currently  $\pm 100$  basis points). This would lower the penalties charged for use of the standing facilities, effectively narrowing down the corridor for the EONIA rate,



and likely making the money market rate less volatile in periods of increased uncertainty. The ECB's interest rate corridor is relatively wide in international comparison, with some advanced economy central banks using corridors as narrow as  $\pm 25$  basis points.<sup>23</sup>

66. **An analysis of the EONIA rates suggests that the interest rate corridor would have to be very narrow to become binding.** For example, narrowing down the corridor to  $\pm 75$  basis points (the same as used, for example, in Sweden) would not have made much difference in the recent turbulence, as the actual observations since August 2007 have ranged from -46 to +58 basis points. Even a  $\pm 50$  basis point corridor would cover all but one observation from the recent turbulence (i.e., more than 99 percent of the observations). Narrowing it down to  $\pm 25$  basis points (as used, for example, in Canada or Australia) would still cover 92 percent of observations, i.e. EONIA would be inside the corridor about 92 percent of the time (and the ratio might be even higher if the ECB used more active money market operations to steer the EONIA within the corridor).<sup>24</sup>

67. **Narrowing the interest rate corridor involves some trade-offs.** It would likely limit EONIA volatility in stressful periods, and reduce the need for special liquidity operations. This would come at the cost of lower flexibility and increase the money market's reliance on central bank funding (which has, however, been very low). Another risk is that if the interest rate corridor becomes too narrow, a large investor may benefit from building up a futures position first and trading subsequently in the spot market while using the central bank facilities. However, the incentives for such speculation are low unless the corridor is very narrow, and it can be shown (Ewerhart and others, 2004) that the probability of manipulation decreases when the central bank uses an active liquidity management.

68. **On balance, narrowing the corridor could perhaps be useful, but it is not a panacea.** If there were fundamental reasons for banks to be concerned about solvency of their counterparties, this measure alone would not be able to prevent banks from distrusting each other and the interbank market, especially at longer-term maturities, from breaking down. However, a moderate narrowing of the corridor is unlikely to do much harm, especially not in normal times, while helping to provide a clearer signal about the ECB's desired interest rate in times of uncertainty. The balance of the arguments, and the international experience, point toward some scope for narrowing the interest rate corridor.

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<sup>23</sup> For instance, central banks in Australia, Canada, and New Zealand have operated standing facilities with rates  $\pm 25$  basis points relative to the policy rate, and Sveriges Riksbank has used a  $\pm 75$  basis point corridor. The U.S. Fed's lending facility had a +100 basis point spread before the recent turbulence; but since then the Fed has lowered the spread to +50 basis points (the Fed has no deposit facility).

<sup>24</sup> In principle, it would be possible to move to an asymmetric corridor. However, symmetric corridors are not prevalent in advanced economy central banks, and the benefits of an asymmetric corridor are unclear.

### E. Targeting the 3-Month Interbank Money Market Rate

69. **Targeting directly the 3-month money market rate is an option, but with unclear benefits.** Some observers (e.g., Morgan Stanley 2008) have recently argued that the ECB should follow the example of the Swiss National Bank and target the 3-month interbank money market rate instead of the overnight rate. They point to the fact that the 3-month rate is more closely correlated with bank lending rates which are crucial in the transmission of monetary policy. One could take the argument even further and argue, for example, that one-year lending rates have a much stronger impact on consumption and investment demand than 3-month rates, and could be more relevant for the monetary transmission than 3-month rates. However, given the structure of the markets at the longer maturities, it would be very difficult for any central bank to control, with market means, rates at such maturity. There are also technical reasons why targeting a 3-month or longer rate may be difficult: Libor or Euribor type of references are declarative and not actually traded, which raises question as to the extent to which they are reflective of market conditions, particularly in stressful times. In the end, it is mostly a technical issue which maturity a central bank decides to target: longer maturities may be more economically relevant, but the longer the maturity, the more difficult it is to effectively steer a rate. The case for targeting rates at longer maturities is not clear at present. Moreover, the ECB can take into account changes in the spread between the overnight and three-month rate when setting its policy rate.<sup>25</sup>

### F. Adjusting the Collateral Management Framework

70. **The collateral framework has proven to be one of the few automatic stabilizers in the financial system.** The Eurosystem's range of collateral acceptable for routine repurchase agreement operations is broader than that of the U.S. Federal Reserve or the Bank of England.<sup>26</sup> The wide range of acceptable collateral diminishes the Eurosystem's control over the structure of the collateral pool, but it has important advantages. Namely, it makes the collateral framework responsive to market innovations, and it acts as a countercyclical stabilizer in stressful times. This latter role has been at display in the recent period: even though the general framework has not been changed during the financial turmoil, the quality and liquidity of collateral posted (slowly deteriorating already before the turmoil) has substantially decreased. The share of government bonds has come down (currently about 15 percent, compared to their 50 percent share of the stock of eligible collateral, and compared to the 60 percent share in pledged collateral in 1999) in favor of primarily bank bonds and, to

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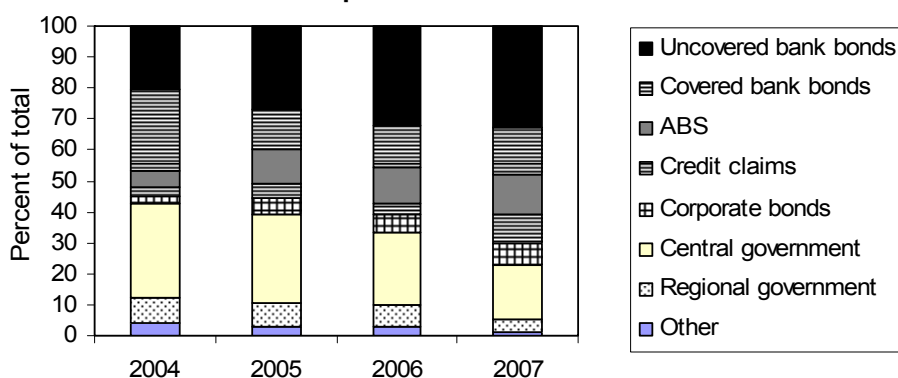
<sup>25</sup> For instance, before the onset of the turmoil, markets widely expected the ECB to raise its policy rate by 50 basis points to 4.5 percent during 2007, but the ECB decided to keep the policy rate unchanged.

<sup>26</sup> The current collateral framework relies on a single list of eligible assets (currently numbering around 24,000), published daily on [www.ecb.int](http://www.ecb.int). The list includes asset-backed securities and debt instruments issued by corporations and others. The collateral has to meet "high credit standards," normally defined as an "A" rating.

a lesser extent, asset-backed securities. Banks that post lower-quality collateral reportedly tend to bid higher rates at auctions, reflecting the lower opportunity cost of the collateral.

71. **The decreased quality and liquidity of the posted collateral is not a problem per se.** Combined with a deteriorating credit quality of the counterparties,<sup>27</sup> these developments shift risks to the

**Structure of the collateral pool**



Source: IMF staff calculations, based on ECB data.

ECB, and increase the potential for moral hazard. However, the increasing risks are acceptable if they are aligned with the Eurosystem's risk tolerance. Indeed, in a well-designed collateral framework, collateral quality can be expected to deteriorate in a stressful financial environment (and this can be dealt with via the risk mitigation measures present in the ECB framework).

72. **However, current collateral developments are appropriately subject to close monitoring.** There is a need for the Eurosystem to refine its collateral policy, not only to ensure that the quality of new collateral does not fall below the Eurosystem's risk tolerance level, but also to control the market impact of the collateral framework and to limit the risk of market distortions (this includes, for instance, limiting the "manufactured collateral," i.e. the risk that banks could use the cross-placement of bank bonds to artificially create eligible collateral). Keeping track of market developments in European fixed-income markets is challenging, since markets are undergoing rapid structural changes and products are tending to become ever more complex. A recent example has been the rapid developments in markets for structured finance and asset-backed securities (some of which are currently illiquid).

73. **It is particularly important to ensure that the quality of the collateral pool starts to improve again when the financial stress subsides.** However, the current collateral framework does not seem to feature sufficient incentives for any substantial recovery in collateral quality (Chailloux and others, 2008), although only time will tell.

74. **A key medium-term challenge may very well therefore be to make the framework truly countercyclical.** Possible steps involve adjusting haircuts, or, if that is not

<sup>27</sup> The counterparty risk has deteriorated substantially, as indicated by the indicators of bank soundness, including credit default spreads, and by developments in banks' ratings and rating outlook (e.g., Fitch, 2008).

sufficient, introducing higher interest rates when lending against lower quality collateral. In a situation of abundant collateral, the latter measure is likely to be more biting.<sup>28</sup>

75. **If current financial market conditions were to deteriorate appreciably further—which is not the central scenario—additional, normally very costly measures may have to be considered.** These measures include softening the collateral framework by broadening even further the allowable collateral (this would mean extending it beyond the “A” rating), lowering the haircuts, or (in the extreme) even outright purchases. All these measures have substantial negative side-effects and associated costs that in most circumstances outweigh their benefits. For example, lower haircuts or a broader collateral list would increase the volume of collateralized operations, but they would mean bigger exposures for the Eurosystem, and lower incentives for banks to find financing from other banks.<sup>29</sup>

### G. Liquidity Management and Financial Stability

76. **The turbulence highlights the case for strengthening liquidity regulations for financial institutions.** Central bank liquidity operations are only one of the key elements of systemic liquidity management; the first line of defense against excessive risk taking and financial distress should be sound risk management practices in financial institutions and market participants. Most of the existing liquidity regulations date back to more than a decade ago, a fact that, by itself, would warrant a review, given the dramatic changes that took place in the financial system in the last decade. The recent turmoil provides another reason for assessing whether the existing liquidity rules can be amended in a way that, if not eliminating such episodes, can at least limit their likelihood and impact.

77. **Increasing the resilience to liquidity stress should involve making liquidity management in financial institutions more forward-looking and less reliant on recent correlations.** An important part of the approach should be for regulators to ensure that financial institutions incorporate correlation jumps in their market risk models and stress tests. Also, to eliminate information asymmetries, it is important to reduce uncertainty through standardization of securitized products and improvements in the rating system (e.g., IMF, 2008).

78. **There is a case for aligning more closely liquidity regulations in individual euro-area countries.** In contrast to the internationally harmonized capital-adequacy

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<sup>28</sup> The ECB’s current framework provides liquidity via OMO operations at the same price to all counterparts, irrespective of the credit quality and liquidity of the underlying collateral. Haircuts and margin calls are used, but these measures are not biting in a situation of abundant collateral.

<sup>29</sup> Additionally, extending the available collateral much further could run into inconsistency with the requirement that the Eurosystem provides liquidity to the banking system only “based on adequate collateral” (ECB Statute, Article 18.1), and it would also be incompatible with the principles of transparency, equal treatment, and accountability, since it would entail much more discretion in the management of counterparty risk.

requirements and accounting standards, the regimes for supervision of banks' liquidity still vary considerably across countries, even in the euro area. This results, among other things, in a variety of year-end and quarter-end effects. The various liquidity regulation regimes in the euro area differ in the relative mix of approaches (quantitative and qualitative) that they use. Quantitatively-oriented liquidity regimes focus on compliance with required liquidity indicators, while qualitatively-oriented liquidity regimes are based on a dialogue between supervisors and banks' managers about the banks' liquidity management procedures and systems. In recent years, there has been a marked shift towards more qualitative approaches (Basel Committee, 2008), driven by the increased complexity and sophistication of liquidity management in individual banks. Also, within the quantitatively-oriented systems, there has been a move from stock-based liquidity indicators (e.g., ratio of liquid assets to short-term liabilities) to mismatch-based indicators (e.g., liquidity-at-risk). These developments puts much more premium on consistent supervisory implementation across countries.

79. **In principle, there is a clear distinction between the collateralized provision of liquidity, emergency liquidity assistance (ELA), and solvency support.** ELA is the support given by central banks in exceptional circumstances, on a case-by-case basis, to temporarily illiquid institutions and markets. The main guiding principle is that the competent NCB takes the decision about providing ELA to an institution operating in its jurisdiction. This takes place under the responsibility and at the cost of the NCB in question.<sup>30</sup> Mechanisms are in place to ensure an adequate flow of information so that potential spillovers can be managed in a manner consistent with the maintenance of the appropriate single monetary policy stance (ECB, 2000). In particular, individual NCBs are required to report to the Eurosystem about ELA usage.

80. **In practice, in a crisis situation, the distinctions between collateralized support, ELA, and solvency support become very blurred.** In practice, there is often uncertainty about the solvency of the institutions involved, and it takes time to make a solvency assessment. Recent trends in the financial system, such as consolidation, emergence of global financial conglomerates, and growth of complex financial products make these tasks even harder. While requests for liquidity support may arise very rapidly, it is unlikely that central banks or supervisory authorities will be able to make a valid assessment of the solvency of troubled institutions quickly enough. As a result, it is practically very difficult to draw the dividing line between the central bank's responsibilities and those of other authorities by distinguishing between institutions with solvency problems and those with pure liquidity problems, at least during a sudden crisis. For similar reasons, it may also be difficult to ascertain the quality of collateral in a crisis situation, which makes the distinction between collateralized liquidity support and ELA blurred. Moreover, there may be incentives for individual NCBs to use collateralized liquidity support rather than ELA, since the potential

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<sup>30</sup> See, e.g., ECB (2000). In the euro area, the ECB does not have direct ELA functions; those are in the hands of the national central banks (NCBs).

costs of the collateralized liquidity support are shared in the Eurosystem, while the costs of ELA are borne by the individual NCBs.

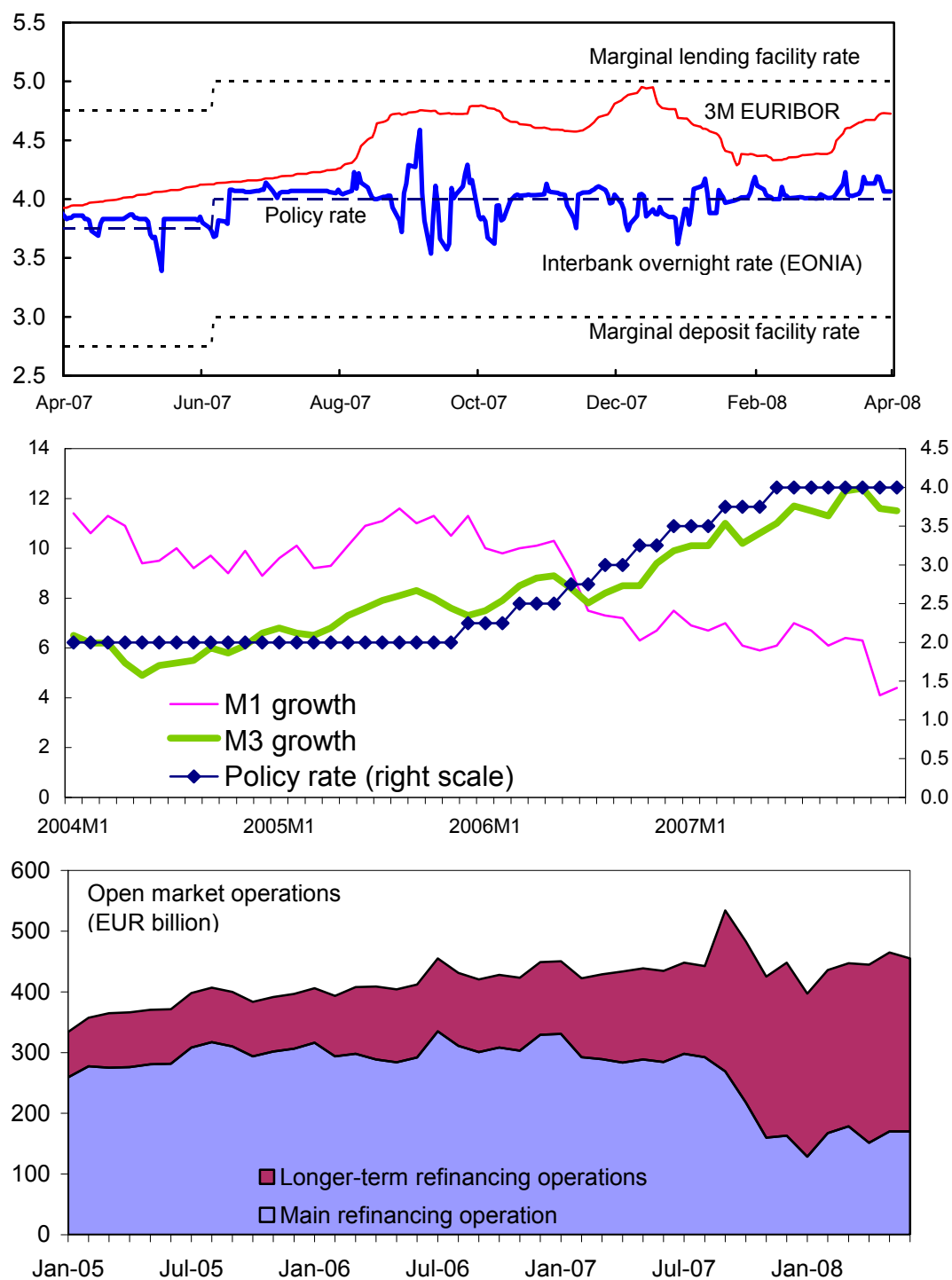
81. **An important step towards improving the EU’s capacity to prevent, manage, and resolve financial crises would therefore be to put in place a functioning EU-wide framework for pre-crisis sanctions and tools.** A key part of this framework would be a scheme prescribing mandatory supervisory actions at certain “trigger points,” which should be the same for all euro-area financial institutions, and cover both liquidity and solvency concerns.<sup>31</sup> Designing such a system is nontrivial, particularly with respect to the trigger points, and needs to strike a delicate balance between rules and discretion, considering that each financial crisis is likely to be different. However, in a cross-country setting the case for a more rules-based approach to dealing with financial stress is even stronger than in a single-country setting, where it significantly rests on limiting politically-motivated regulatory forbearance and limiting costs of failures to the public purse: it is key to lessening banks’ scope for prudential arbitrage, establishing trust among supervisors, and distinguishing more clearly solvency support and the various forms of liquidity support.

82. **Making the framework work would require a consensus on the ultimate policy objectives, including the degree to which governments are willing to be exposed to contingent claims for solvency support.** This would involve a basic political agreement. It would also require at least some degree of harmonization of countries’ legal frameworks for bank resolution. These are thorny issues on which some work is on-going but much more remains to be done.

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<sup>31</sup> Such schemes are sometimes referred to as “structured early intervention and resolution” (SEIR). Based on Mayes, Halme and Liuksila (2001) and Eisenbeis and Kaufman (2005), one can identify the following characteristics of an efficient SEIR: (i) the prudential authorities need to act as soon as a solvency shortfall or other warning signals are detected; (ii) if there is no improvement after the grace period, a capital injection should be imposed; (iii) if no private sector solution has been found and solvency drops below a certain level or another trigger point is met, there should be a mandatory and prompt suspension of shareholder rights, the bank resolution agency should take custody or receivership of the bank, and new management should be put in place; (iv) in custody or receivership, the bank resolution agency needs to make a quick early assessment so as to allow continuity in the bank’s core operations and minimal or no disruption in the availability of most deposits; (v) systemic and core operations of the bank, including basic retail services, should continue uninterrupted or after a minimal interruption not exceeding one or two days; (vi) the reopened bank should be recapitalized, restructured and prepared for sale to private acquirers within a relatively short time period.

Figure 1. Euro Area: Money Market Rates and Monetary Aggregates



Source: European Central Bank.

Figure 2. Euro Area: Volatility in EONIA and Open Market Operations

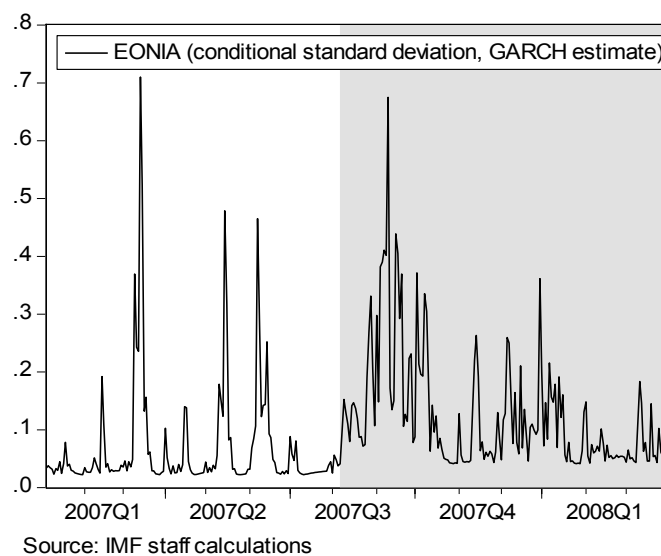


Figure 3. Open Market Operations and Reserve Requirements

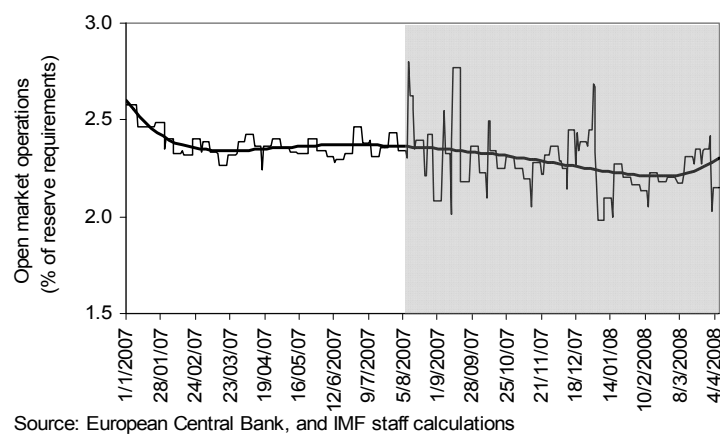
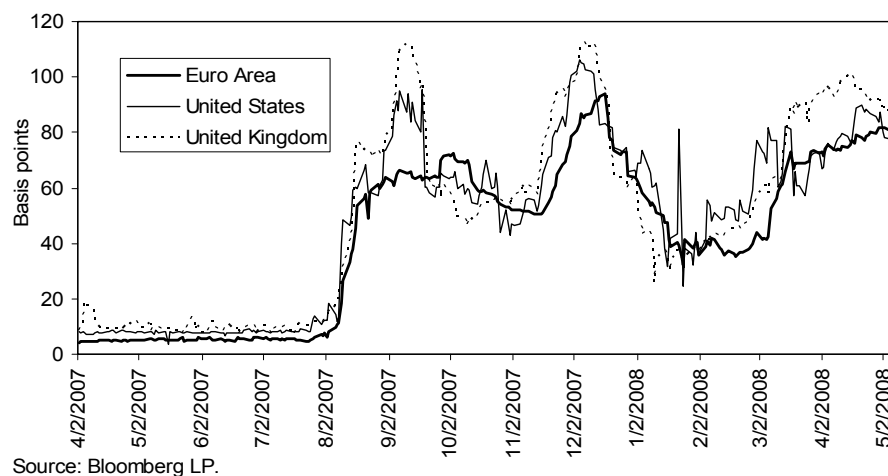


Figure 4. Spreads Between 3-Month Libor Rates and Overnight Interest Rate Swaps



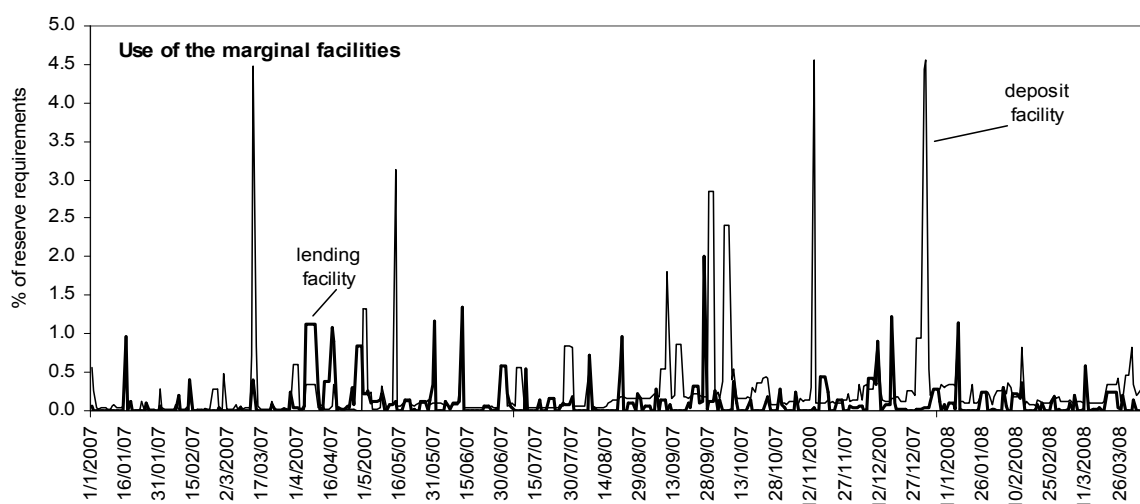


## APPENDIX

**ECB' Monetary Policy Implementation**

In the ECB's monetary policy framework, the main operating target is the euro overnight index average (EONIA), a measure of the effective interest rate in the euro area overnight market, calculated by the ECB on a daily basis as a weighted average of the interest rates on unsecured overnight lending transactions denominated in euro (e.g., ECB, 2008). The ECB's monetary operations are geared towards limiting the deviations of the EONIA rate from the policy rate set by the ECB's Governing Council. The volume of central bank liquidity is in turn determined endogenously by the market demand for money at given EONIA levels.

The key instrument of the ECB's monetary operations framework are main refinancing operations (MROs), conducted on a weekly basis with weekly maturity. The ECB also conducts fine-tuning operations (FTOs), and longer-term reserve operations (LTROs). To stabilize money market interest rates and create (or enlarge) a structural liquidity shortage, the Eurosystem maintains a minimum reserve system, characterized by relatively high reserve rates and long reserve maintenance periods (one month). A large number of banks are eligible counterparties for Eurosystem monetary policy operations (potentially 1,700 banks compared to only 20 primary dealers in the U.S.; see, e.g., ECB 2006a and IMF, 2008). For small banks, participation in the weekly MROs could be relatively costly as they may not need to adjust their reserve holdings that frequently. For this reason, the ECB has also been conducting the LTROs, with a 3 month maturity. At this maturity, the ECB has offered relatively small fixed amounts until mid-2007 (euro 50 billion during February–August 2007, or about 15 percent of total reserve operations) and acted as a price (rate) taker.



Source: IMF staff calculations, based on data from the European Central Bank.

The marginal deposit and lending facilities provide overnight liquidity by offering access on any regular weekday at the discretion of banks, and effectively set a floor and a ceiling for the EONIA. Rates are set at the policy rate minus or plus a margin of 100 basis points,

respectively. Reflecting the wide margins, the average daily use of these facilities has been less than 1 percent of banks' reserve requirements (see the text chart).

This framework has enabled the ECB to react flexibly to the recent turmoil in financial markets. The large number of banks eligible to participate in the Eurosystem operations has limited market segmentation across banks, which could become a serious problem during times of financial stress. The wide range of collateral, while not without potential problems, has also helped in avoiding possible forced asset sales in markets that experienced a sudden and sharp drop in turnover that may have triggered significant bank losses.

When faced with the financial turbulence, the ECB, together with the other major central banks, intervened repeatedly from the first half of August 2007 to satisfy the demand for liquidity and curb the divergence of very-short-term interest rates from the official rate, resorting most frequently to fine-tuning and 3-month operations.

In mid-December 2007, the ECB extended the duration of the main refinancing operation, supplying an exceptionally large volume of liquidity. This was a part of a coordinated set of measures undertaken together with the U.S. Federal Reserve, the Bank of Canada, the Bank of England, and the Swiss National Bank, all aimed at addressing the elevated pressures in short-term funding markets. Actions taken by the Federal Reserve included the establishment of a temporary Term Auction Facility (TAF) and the establishment of foreign exchange swap lines with the ECB (and the Swiss National Bank). Also in agreement with the Federal Reserve, the ECB offered loans in dollars to euro-area counterparties. In March 2008, the ECB went even further in extending the maturity of its refinancing operations by introducing a new "supplementary" LTROs with six month maturity.<sup>32</sup>

An important feature of the ECB response to the turbulence has been the increased use of LTROs, which has resulted in a substantial lengthening of the average duration of its lending. The duration profile has been increasing already before the financial turbulence, but it was late 2007 and early 2008 when the structure switched substantially (Figure 1; bottom panel).

Another important part of ECB's response to the financial turbulence has been to alter the time pattern of liquidity provision during the reserve maintenance period. The ECB has provided relatively more liquidity in the early parts of the reserve maintenance periods, and correspondingly less in the latter part of the period (to keep unchanged the total volume of liquidity provided over the maintenance period). It has been implemented mainly to accommodate banks' desire to frontload reserve fulfillment. This was a helpful step that illustrated the benefits of the Eurosystem's flexible reserve requirement system that combines relatively high remunerated reserve cushions with long reserve maintenance periods (Bindseil, Gonzalez, and Tabakis (2008)).

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<sup>32</sup> See <http://www.ecb.eu/press/pr/date/2008/html/pr080328.en.html>.

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#### IV. A “EUROPEAN MANDATE” FOR FINANCIAL SECTOR AUTHORITIES IN THE EU<sup>33</sup>

##### A. Introduction

83. An elaborate regulatory and supervisory structure—known as the Lamfalussy process—supports the integration of the financial sector across the EU and the maintenance of soundness in a system of ever more elaborate cross-border linkages. That structure has prudential elements, aimed at ensuring that the system remains sound even as it evolves and becomes more integrated. The structure also has elements to promote competition and transparency, so that integration can yield its full benefits in terms of allocative and cost efficiency, and incentives for innovation.

84. The current structure is based largely on the coordination of national policies and institutions. Most areas of prudential regulation and supervision remain primarily national responsibilities. An EU-wide regulatory framework exists, but it largely reflects a compromise among national authorities. Accordingly, it grants national authorities considerable freedom in setting specific regulations and in implementing EU Directives. Furthermore, national supervisors implement the framework and conduct on-going supervision in order to achieve a variety of objectives set out in national legislation that serve national interests. To this end they are answerable to national parliaments.

85. Such fragmentation may lead to poor and slow policy-making. The scope for “beggar-thy-neighbor” policies may be greatest when dealing with failing institutions because authorities in each country effectively have a fiduciary duty (and a political imperative) to minimize costs to their own country, and this may come at the expense of others. But even in less acute situations there may be a failure to internalize externalities, or a tendency to accept compromises and delays that are not in the long-term collective interest. This is unnecessarily costly and risky both for European citizens and their financial institutions.

86. The very success of efforts to create a common market in financial services makes the need for a matching system of oversight increasingly acute. A nationally-based system risks becoming both ineffectual and very unwieldy. Strengthening cross-border supervisory mechanisms will require more joint decision making and/or more delegation. A European mandate for supervisors could help both elements, and indeed is necessary (but far from sufficient) for a fully integrated system.

87. There is therefore growing and widespread recognition of the value of assigning a “European mandate” to financial sector regulators and supervisors, and to associated European structures (Appendix). There has been progress over the past year on a number of related elements: the acceptance of the concept of a European mandate; formal recognition that financial stability is a common concern; a commitment to share the fiscal costs of a financial crisis; greater readiness to delegate powers to supervisory colleges, etc.; and the development of mechanisms to ensure that Level 3 Lamfalussy committees operate with

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<sup>33</sup> Prepared by Daniel Hardy.

more of a joint European orientation. More specifically, the May 2008 EU Economic and Financial Council (ECOFIN) meeting endorsed a recommendation for the possible introduction of EU mandates in national supervisors' mission statements.

88. This paper presents some suggestions on how to give national supervisory authorities and other connected agencies and European structures an effective "European mandate." Many of the suggestions are based on a "first best" approach, in the sense that they assume that political and legal hindrances are overcome. It is recognized that, in current circumstances, it will be difficult to institute a European mandate in a way that deeply affects the financial sector policy in practice. Nonetheless, the suggestions may show the direction in movement that is needed.

89. The next section reviews the current structure of supervisory cooperation and the allocation of responsibilities, identifies inconsistencies and possible sources of inefficiencies associated with the current lack of a European mandate, and assesses what a European mandate might achieve. The following section discusses how the European mandate might be formulated; and how it might be balanced against other mandates; measures to implement or embody a European mandate; and what supporting arrangements might be needed, notably with regard to accountability.

## **B. A System of National Supervisors**

### **Current Arrangements**

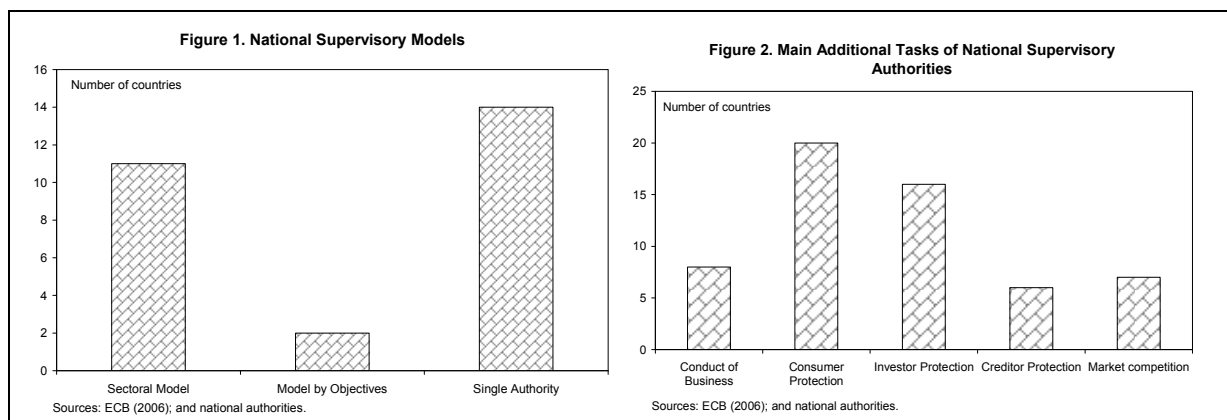
90. Most financial sector regulatory and supervisory activities in Europe are currently organized on a national basis. In each country, one or more authorities have the responsibility for issuing regulations, granting and taking away licenses, conducting on-going supervision, and taking enforcement action. These supervisory authorities are empowered by national parliaments, are subject to national accountability mechanisms, and obtain financing from national sources. Each country's authority (or set of authorities) is responsible for the consolidated supervision of financial sector institutions and groups domiciled in that country, for which it is the home supervisor. It is also responsible, as host supervisor, for oversight on a stand-alone basis of subsidiaries of institutions from other member states operating in its jurisdiction. Several authorities have commitments to cooperate with counterparts abroad expressed in national laws or their mission statements.

91. How supervisory and related powers are organized is quite diverse (text figures and Table 1). EU member countries differ in the roles assigned to a separate supervisory authority, the central bank, the Ministry of Finance, a separate deposit insurance scheme, and private organizations.<sup>34</sup> The objectives and mandates of the supervisory authorities vary likewise. The diverse objectives include (i) financial sector stability; (ii) the protection of

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<sup>34</sup> European deposit guarantee schemes do not generally have supervisory role. In some countries, associations of banks de facto supervise themselves to some extent. Self-regulation elements are more common in the nonbank financial sector.

depositors; (iii) the protection of investors and creditors; and (iv) fostering the financial sector. Responsibility over prudential, market-conduct, competition, and consumer protection policies are unified to a greater or lesser degree.



92. On top of these national institutions lies a complex structure designed to facilitate cooperation. Important elements include:

- A large number of bilateral and some multilateral MOUs. MOUs typically commit the signatories to regular exchange of information and timely consultation on enforcement action. Several countries (e.g., in Scandinavia and the Benelux) have entered into special MOUs to deal with individual banks of regional systemic importance. There are also some EU-wide or EMU-wide MOUs on such matters as the provision of emergency liquidity and financial crisis management, the most recent of which dates from April 2008 (Appendix).
- “Colleges” of supervisors follow the activities of cross-border insurance groups and some banks. Currently, colleges are in operation for the major cross-border banks in the Benelux and Nordic regions, and a number of “pilot case” colleges for other major banks have been established. The April MOU on crisis management envisages the establishment of Cross-Border Stability Groups, which can be considered to be colleges expanded to include other concerned institutions such as Ministries of Finance and bank resolution agencies.
- Lamfalussy committees. Under the so-called Lamfalussy process, three committees of supervisors (so-called Level 3 committees) have been established for the banking, insurance, and securities sectors, respectively, to promote financial sector integration in Europe. These committees meet regularly and, on the basis of consensus, make proposals for the coordination of financial sector regulation and supervision. Level 3 committees provide technical advice to the Commission and Level 2 committees on draft implementing measures and proposals for framework legislation, and work to ensure more consistent and day-to-day implementation of EU legislation by issuing guidelines and reviewing/converging national regulatory and supervisory practices. Qualified majority voting may be used in deciding the technical advice to be provided to the Commission. The Level 3 committees are taking on new tasks, such as the development

of guidelines for the functioning of supervisory colleges and the assessment of key financial sector vulnerabilities, which are reported to the so-called Financial Stability Table of the Economic and Financial Committee (ECOFIN).

- EU institutions. The EU institutions are not directly involved in financial sector supervision, but they have important powers in three relevant areas.
  - First, agreed EU regulations are directly applicable in all Member States; EU directives are binding as to results to be achieved, leaving to the Member States the choice of form and methods. Directives that have recently come into force or that are scheduled to come into force in the near future include the Capital Requirements Directive (CRD) for banks (fully implemented from January 2008 onward), MiFID for the securities sector (November 2007), and the Solvency II directive for the insurance sector (targeted for 2012).
  - Second, the Council of the European Union discusses financial sector policy and can adopt conclusions setting the agenda for the coming period, of which the recent conclusions on developing “burden sharing” and a “European mandate” are examples.
  - Third, the EU Commission has autonomous powers in areas relating to the completion of the common market, competition and trade negotiations, including trade in services. The Commission also has enforcement powers in its areas of competency. Thus, actions such as mergers between financial institutions, injections of state capital, and the cross-border provision of financial services (also to and from countries outside the EU) can be reviewed by the Commission and possibly affected by its decisions.
- The ESCB and ECB. In the euro zone, the ECB does not have direct prudential supervisory responsibilities, and many central banks that are members of the ESCB have little or few on-going prudential supervisory responsibilities. However, as provider of lender of last resort (LOLR) liquidity and with payment system oversight responsibilities, the central banks cannot be divorced from prudential matters. The current arrangement is that each national central bank is responsible for emergency liquidity provision to financial institutions domiciled in its jurisdiction (and for taking on any associated risk), but the ESCB and ECB need to be kept informed on a timely basis so that offsetting monetary action can be taken if needed. Furthermore, as has occurred recently, the ECB may decide to inject liquidity on an ad hoc basis to ease strains in the system-wide money market. The ESCB statutes anticipate some role in prudential supervision of credit institutions, and a Banking Supervision Committee is established.<sup>35</sup>
- Multinational institutions and standard setters. The European financial sector authorities are major actors in a number of multilateral organizations and forums, and they are

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<sup>35</sup> Art. 3.33 of the ESCB Statute states that “In accordance with Article 105(5) of this Treaty, the ESCB should contribute to the smooth conduct of policies pursued by the competent authorities relating to the prudential supervision of credit institutions and the stability of the financial system.”

affected by the latter's decisions. For example, EU legislation on financial sector prudential matters are designed to be consistent with (and in many instances exceed) the principles promulgated by the various standards setting bodies, such as the Basel Committee on Banking Supervision, the IAIS, and IOSCO. The BIS, the FSF, and the IMF in its financial sector surveillance each have an influence.

### **C. Rationale for Current Arrangements, and the Costs**

93. This structure represents the outcome of a long process of evolution, yet can be interpreted as broadly in accord with certain EU principles. Subsidiarity is meant to be respected, in that responsibilities are to be assigned to the lowest level that can effectively meet them. In particular, centralization is limited and member states are (de facto and de jure) allowed considerable freedom in areas not explicitly addressed in EU legislation. Thus, a country can adapt regulations and supervision to the needs of its financial system and economy more widely, and countries can experiment with a variety of approaches. At the same time, many of the provisions—such as the mutual recognition of standards and licenses—are designed to ensure that there can be trade in financial services across borders. Furthermore, EU directives and regulations are designed to ensure that there is no “race to the bottom,” that is, that there are minimum standards such that regulators cannot compete without restriction to favor their national industries.

94. Nonetheless, there are concerns that current structures are being overtaken by the pace of financial industry innovation and integration. First, reliance on consensus and the operation of large committees may slow decision-making, while financial innovation keeps accelerating. Second, decisions may be sub-optimal.<sup>36</sup> For example, consensus might sometimes be achieved by recognizing all current national practices, thus hindering integration and adding to the regulatory burden.<sup>37</sup> Third, the committees may be biased towards outcomes that favor established interests (including those of national supervisory institutions themselves) that are effective in lobbying, rather than maximize welfare for the EU as a whole. This favoritism may be motivated by a desire to promote national financial institutions (for example, by claiming a prudential justification for a measure that limits entry, i.e., as a nontariff barrier) or to shift the burden of regulation and enforcement to others. Thus, there may be a “race to the bottom” in some areas, but “Gold Plating” in others.<sup>38</sup> Fourth, due to the complexity of the regulations and other arrangements, it is easy for national authorities to implement them in a way that favors national interests, for

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<sup>36</sup> Academic literature suggests that the outcome of decision making by committee may be far from maximizing aggregate welfare, and may depend on such factors as the sequence of items on the agenda.

<sup>37</sup> For example, some commentators have suggested discussions on reporting definitions, formats and requirements have been characterized by agreements to disagree rather than streamlining or harmonization.

<sup>38</sup> A “race to the bottom” occurs when regulators compete to minimize the regulatory burden in order to attract firms. “Gold Plating” involves adding extra provisions to those contained in harmonizing Directives, which could be motivated by a desire to shift any problems to other jurisdictions, or by favoritism toward domestic firms that are more adapted to the Gold Plating provisions.



example, by being slow to convey all information to other supervisors. There have been incidents where prudential instruments have been used to protect private domestic institutions. Fifth, the costs of decentralization are mounting as financial institutions and markets become more integrated; national authorities individually are no longer able to exercise effective supervision of cross-border groups.

95. Financial institutions will react to this situation in ways that may compound the costs involved. On the one hand, they may hold back from entering other EU markets in order to avoid the extra regulatory burden. On the other, they may seek out means of regulatory arbitrage. In any case, they have a strong incentive to engage in lobbying and other efforts to “capture” regulators.

96. Nonetheless, there are mitigating circumstances. European governments and financial sector regulators are committed to European institutions and are aware that they will have to operate in cooperation with each other in a wide range of fields for the indefinite future. This is a repeated game with effectively no reasonable possibility of exit, so cooperative solutions and the building of good reputations are rational approaches. Each country knows that, over any one instance, it cannot seek its own advantage without constraints, because its European partners have a wide range of opportunities to retaliate (including in the nonfinancial area).<sup>39</sup> Immediate national interest may override these considerations in extreme situations—such as a financial crisis—but the considerations are powerful in normal times.

97. Furthermore, conflicts of interest are centered around fiscal concerns—e.g., the cost of bank rescues and the benefit of attracting financial sector firms—and the potential for wider asymmetric costs of instability rather than around stability. Each country should be concerned about the soundness of the institutions in the other countries, as recent market turbulence has demonstrated once again. Moreover, as the markets and institutions integrate, the definition of national interest may become more complex, particularly with respect to financial sector stability. For example, if many of the shares of a bank licensed in country A are held by residents of country B, or if a subsidiary of a country B bank is a major player and employer in country A, then it is not clear which regulator will give most weight to the interests of that bank. Finally, it should be recognized that the European economy is large, diverse and complex, and effective supervisory arrangements will to some extent have to reflect that complexity.

#### **D. How Might a European Mandate Help?**

98. On the one hand, a European dimension in the mandates of national supervisors would complement the political accountability of the Level 3 committees at the EU level and supervisory colleges at the level of individual institutions. A European mandate for national financial sector authorities could help produce decisions that are more timely and more conducive to promoting the common EU good. Consensus would be easier to reach if participants in the various committees and other forums were aiming to achieve what is best

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<sup>39</sup> Although the larger countries might be less concerned by this than the smaller ones.

for the EU as a whole, rather than negotiating among potentially incompatible national interests. The decisions that are made would better reflect aggregate welfare, rather than that of those countries or interest groups who are most immediately affected and are most effective in lobbying. These considerations will become increasingly important if, as recently confirmed, decisions coming out of the Lamfalussy process are to become more binding, with Member States subject to a “comply or explain” mechanism.

99. On the other hand, the European mandate gives EU convergence and cooperation operational priority at the national level. There would be more readiness to give up current national practices in favor of common practices, and less willingness to erect surreptitious nontariff barriers or to shift burdens onto others.

100. An European mandate will become increasingly important in the future as supervisors come to rely more on each other. On-going integration of European financial markets and commercial institutions (and EU expansion) will make supervision based on national supervisors ever more cumbersome, costly, and risky. Hence, more elements of delegation and tiering of responsibilities may have to be introduced (for example, an institution’s supervisory colleges might include a core of supervisors from countries where it is very active, and a periphery of supervisors from countries where it is less important). National authorities can and will agree to such delegation only if they are sure that their interests are being given full weight, that is, if the authority or authorities to whom responsibilities are delegated are acting in the collective interest. Thus, a European mandate could contribute to streamlining supervision and reducing regulatory burdens. Ultimately, any truly integrated European supervisory system would necessarily include a strong European mandate for all participants.

101. These benefits might be obtained in the operation of Level 3 committees, in national supervisory authorities’ operations in normal times—in the process of formulating regulations, licensing institutions, and conducting supervision—and in their operations in more extreme situations, such as a financial crisis. Some measures could help implement a European mandate in Level 3 committees and in normal times when national authorities interact in a “repeated game” for relatively low stakes; they might lose force under severe stress, but they will nonetheless be of value.

102. However, there is a clear danger that the notion of a “European mandate” will become vacuous. It would be easy for country authorities to declare their commitment to a noble goal, but carry on as before, and be ready to defend interests at every turn, while providing a spurious explanation of how selflessly they are acting. Everyone is in principle in favor of cooperating and sharing information, but implementation is costly even under benign circumstances, and doubly so when important financial interests are at stake. Hence, this may end up an obligation more honored in the breach than in the observation. Current arrangements are already highly complex, which may provoke skepticism as to their effectiveness. Adding another layer of provisions and obligations in the name of “European mandates” may reduce transparency and widen the scope for machinations, while having little positive effect.

## **E. Formulation and Implementation of a European Mandate**

103. A number of questions need to be answered if financial sector regulators and supervisors are to be charged with fulfilling a European mandate.

### **How might a European Mandate be Formulated?**

104. The European mandate should center on financial sector stability. The European mandate might be extended to cover many areas besides stability, such as consumer and investor protection; the promotion of competition and innovation; or combating financial sector crime and money laundering. However, the inclusion of more objectives complicates any definition and increases the scope for conflicts among objectives. Furthermore, explicit mention of obligations towards specific groups raises the issue of institutional liability in case something goes wrong due to negligence, fraud or bad luck; the legal regimes governing institutional liability for supervisors differ significantly across Europe, and convergence in this area may be a distraction. In any case, the aim should not be to protect particular institutions or other parties who take on commercial risk. Moreover, countries and regional institutions may have other commitments in these areas (for example, under EU competition policy and UN resolutions). Hence, a more focused approach seems appropriate at the initial stages.

105. Stability, though, is a fairly broad concept. For example, stability involves no crises, but, in addition, a financial system cannot be stable in the long term unless it is adequately profitable. Furthermore, a certain balance must be maintained between the desire for financial system stability, and the direct and indirect costs of regulation. Determining the optimal degree of regulation and supervision must involve recognition of the trade-offs. Hence, the need for efficiency must be recognized.<sup>40</sup>

106. Even within prudential policies, there are a number of elements: licensing, regulation, on- and off-site supervision policies and practice, enforcement, and intervention and resolution/closure. The last area is most prone to generating sharp conflicts between countries, but conflicts in such areas as entry (de novo or through takeovers) have also been seen.<sup>41</sup> Furthermore, intervention may require quick decision-making and the maintenance of strict confidentiality, which will limit time and incentives for consultation and careful evaluation of all ramifications. At least to start with, it would be prudent to concentrate on the areas where conflict is likely to be less acute.

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<sup>40</sup> The term “efficiency” will be used here as a shorthand for concerns such as reducing costs of doing business for financial sector firms and their clients, promoting the development of the sector and allowing innovation, and the operation of fair markets that aggregate information effectively. Several European supervisors have both a stability objective and explicit objectives to promote efficient markets, improve business capability and effectiveness, or ensure the financial system’s profitability.

<sup>41</sup> Following some celebrated cases of national favoritism, a directive has been adopted to deal with these “entry” issues, and clarify the powers recognized to supervisory authorities in the context of, for example, a proposed take-over.

107. Arrangements between Australia and New Zealand may serve as a model for some aspects of the formulation. In light of the very close integration of their financial systems, these countries recognized an interest in an explicit and mutual commitment to take into account cross-border spillovers (Box 1). The arrangement seems to work despite the asymmetries between the countries. The European context, with many more countries, is much more complex. However, cooperation should be easier because of the greater symmetry across countries (and especially the biggest half-dozen financial systems) and the presence of countries that are both home and host supervisors.

**Box 1. Mutual Responsibilities of Supervisors in Australia and New Zealand**

Australia and New Zealand amended financial sector legislation in 2006 with the express aim of giving national supervisors a mandate to take into account financial stability concerns in the other country. In particular, each supervisor is meant to support the other and, whenever reasonably possible, to avoid actions that would adversely affect the financial system stability in the other country, and to consult if possible before taking actions that could have a major cross-border impact. Specific mention is made of actions that interfere with the provision of outsourced services. Furthermore, a bank administrator or statutory manager is to inform the supervisor if they believe that their action may have a detrimental effect on financial stability in the other country.

The countries agree to this intensified form of cross-border cooperation in recognition of the fact that the new Zealand banking system is almost entirely owned by large Australian banks (as is the rest of the financial system). Furthermore, institutions in New Zealand have outsourced many functions to their parent banks in Australia.

It is worth noting that:

- Supervisors are required to make an effort to consult each other and take each other's interest into account, but it is recognized that this may not always be possible when time is of the essence.
- As part of this reform, the Australian Prudential Regulatory Authority had to be given an explicit mandate to promote "financial system stability," which previously had been the sole preserve of the Reserve Bank of Australia. The Reserve Bank of New Zealand has all supervisory functions.
- Australia grants depositors preferential status in bank resolution. New Zealand does not offer deposit insurance or any special protection for depositors.
- There does not appear to be a mechanism dedicated to achieving accountability for these mutual responsibilities.

108. One approach would be to define a broad European mandate, and then add several specific "dos and don'ts." This approach would help ensure that the European mandate is flexible but sufficiently well-defined to be effective, and would facilitate accountability. The more specific responsibilities would be preceded by a clause allowing unilateral actions when authorities are faced with force majeure.

109. The broad European mandate could be formulated along the following lines:

*The [authority] will, in cooperation with our European partners, seek to maintain and promote the financial soundness, efficiency, and integration of*

*the European financial system as well as those of all EU countries involved, in the planning and execution of its financial sector policies.*

There could be an additional explication that financial sector stability is a common good shared among European partners, and of value not only to the financial sector but to the economy as a whole. In this formulation, efficiency is given explicit recognition alongside stability. Thus, for example, a European mandate would imply a commitment to strive for uniformity of treatment and interpretation of regulation across the EU, which is important for financial sector cost efficiency and competition.

The specific “dos and don’ts” might include some or all of the following:

*Insofar as reasonably practical and without endangering the financial soundness and efficiency of the European financial system, the [authority] will*

*(i) consult and coordinate with European partner authorities before taking action that would significantly affect financial systems in other Member States;*

*(ii) assist, including by providing relevant information, European partner authorities in their efforts to maintain and promote financial sector soundness and efficiency;*

*(iii) avoid taking actions that hinder the integration of European financial markets;*

*(iv) avoid taking actions that are likely to have the effect of unilaterally shifting to other Member States the costs associated with financial sector regulation and supervision, or those associated with other financial sector policies; and*

*(v) minimize the potential harmful economic impacts at the lowest EU-wide cost when managing and resolving financial crises.*

### **Which Authorities Should be Covered?**

110. Even on a country level, several institutions are involved in setting and implementing financial sector policies. All of them might in principle be given a European mandate, although there may be constitutional difficulties in some cases. A European mandate for Ministries of Finance might conflict with their explicit fiduciary duties and answerability to national parliaments.<sup>42</sup> Central banks in their lenders of last resort and monetary policy functions are covered by other provisions, such as the ESCB MOUs on emergency liquidity provision for relevant member states.

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<sup>42</sup> Member states are individually responsible for maintaining financial stability under the European Treaties.

111. It is suggested, therefore, that at a minimum the mandate be given to those institutions most directly involved in on-going financial sector regulation and supervision, namely, the financial supervisory authorities (where they exist) and relevant central banks that have this responsibility. One practical criterion would be to require a European mandate for all members of the Level 3 Lamfalussy committees, which includes central banks. Indeed, a European mandate for central banks is important even when they do not have prudential supervisory responsibilities because they have a central role in maintaining the smooth functioning of money markets and payment systems, where cross-border spillovers are large.

112. Furthermore, the Level 3 Lamfalussy committees themselves and their participants qua members could be given a European mandate. The aim would be to foster decision-making that promotes overall EU welfare, not that of a winning coalition of member states.

113. It may also be useful and feasible to give a European mandate to deposit insurance schemes. A European mandate for deposit insurance schemes could be valuable if it helped ensure uniform treatment of depositors in case of resolution. However, deposit insurance schemes are highly diverse across the EU, and in some cases are private.

114. Following the Australian-New Zealand model, financial institution conservators, administrators or receivers could be given a European mandate. Since cross-border spillovers may be especially important in dealing with problem institutions, such a European mandate may be especially valuable. Such a provision could be introduced as part of a wider reform and convergence of financial institution insolvency procedures in Europe.<sup>43</sup> However, assigning to them a European mandate may not be fully realizable until the prickly issue of burden sharing, which has been resolved in broad principle, is resolved in practice.

## **How can a European Mandate be Embodied and Implemented?**

### ***Legislation***

115. A very strong legal basis for a European mandate is especially important in relation to dealing with problem institutions and, *a fortiori*, crisis situations. These are the circumstances when national authorities are most likely to focus on the letter of the law and disregard longer-term consequences of non-cooperation: first, crises are inherently unpredictable and dangerous for the reputation of decision-makers. Faced with these risks, decision-makers may be more apt to revert to following the strict letter of the law. Second, major crises are rare and the stakes are high, so the temptation to act in narrow national self-interest is great and the scope for retaliation for non-cooperation is relatively limited. Hence, a European mandate may be especially valuable in these circumstances.

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<sup>43</sup> Under directive 2001/24/EC, where a credit institution with branches in other Member States fails, the winding up process is subject to a single bankruptcy proceeding initiated in the Member State where the credit institution has its registered office and governed by the bankruptcy law of that state. The Commission has launched in 2007 a public consultation on this directive to examine whether the Directive fulfils its objectives, whether it could be extended to cross-border banking groups, and how obstacles related to asset transferability within such groups can be addressed.

116. The strongest way to assign a European mandate to national financial sector authorities would be through legislation passed by national parliaments. Those authorities would then have unambiguous powers and responsibility to take action to achieve the European mandate. The national parliaments and their agents (such as the Ministry of Finance in many countries) could also verify that they have been fulfilling these responsibilities (see below).

117. However, it must be anticipated that changing a large number of national laws would be a lengthy and legally complex process. During that process, national parliaments may insist on modifying the European mandate in idiosyncratic ways, thus partly undermining its unifying intent. Furthermore, legal and constitutional systems differ across Europe, for example, with respect to the amount of discretion that can be left to government authorities and how precisely responsibilities and powers must be defined.

118. These possible inconsistencies could largely be avoided if the national laws were formulated so as to translate an EU Directive. Another possibility would be an EU Regulation, under which there would be less scope for national discretion; since the case for national discretion is weak in an area that seeks to address the potential for cross-border spillovers of national actions, a regulation would be *prime facie* preferred to a directive. However, an issue to be resolved is whether current treaties provide a basis for a directive or regulation in this area.

### **Supervisory Practice and Institutions**

119. For supervision during normal times, a European mandate for supervisors may be effected using means that are more adaptable and more under control of the supervisors themselves. These measures may also be adopted to implement a mandate enshrined in national Level 1 legislation. The following (non-exclusive) possibilities suggest themselves:

- Inclusion of the European mandate in authorities' mission statements, as suggested by the IIMG. However, the effectiveness of such a non-binding and non-operational commitment may be questionable;
- An EU-wide MOU. However, the effectiveness of such a non-binding and non-operational commitment in periods of stress may be questionable;
- Appointment of a high-level officer in each authority with responsibility for promoting European financial sector integration and cooperation;
- Inclusion on the Board of each authority of a member with special responsibility for promoting European financial sector integration and cooperation. The Board member could come from an EU institution or another EU member country;
- A commitment that all major decisions (on regulation, licensing, perhaps enforcement action, etc.) will be preceded by a "European Impact Study" designed to assess its consistency with the European mandate. There could be a presumption that the impact studies will be published, perhaps with a lag, and possibly reviewed by other supervisors

or the EU. However, there might be a need for an override provision, such that rapid enforcement action and intervention can be undertaken if circumstances warrant;

- Requiring that authorities pool some resources for common projects (such as the supervision of transnational banks), and/or that financial institutions from across the EU contribute directly to a common pool. Although the absolute amounts may not be large relative to government budgets or the potential cost of financial bail-outs, fiduciary responsibility may strengthen incentives to pursue cooperative strategies; and
- Establish systems for sharing information and agreeing on procedures, such that each deposit insurance scheme can honor claims uniformly across jurisdictions. The uniform treatment would be not only in terms of coverage, but also in terms of the speed and modalities of payouts. Fulfillment of the European mandate might require schemes to meet certain minimum standards for payout procedures and conditions, and not merely of coverage.

### **Functioning of Level 3 Committees**

120. Various measures are available to introduce an effective European mandate in Level 3 Lamfalussy committees, many of which are already envisaged (see Appendix):

- Introducing language on the European mandate into the rules and statutes establishing the committees;
- More widespread use of majority voting in the Lamfalussy committees; and
- Assigning the EU Commission or another European institution to chair the Level 3 Lamfalussy committees, or to have a decisive voice in setting the agenda.<sup>44</sup>

### **How to Balance Mandates**

121. A European mandate may come into conflict with other mandates to which supervisory authorities and central banks are subject. Conflict cannot be excluded even if a European mandate is embedded in national legislation. Indeed, conflicts may arise among existing national mandates (for example, for a central bank, between the commitment to monetary stability and responsibility for the smooth functioning of the financial sector), and in extreme situations notionally autonomous authorities are likely to come under strong pressure to modify their behavior; a supervisor cannot ignore macroeconomic and fiscal considerations when dealing with major financial shocks.<sup>45</sup>

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<sup>44</sup> The ECOFIN already sets the agenda in broad terms, and the European Parliament will from now on monitor their work programs.

<sup>45</sup> It would be interesting to gather information on how institutions have coped when their existing mandates when these have come into mutual conflict.



122. Conflicts are likely to be most acute when financial sector policies intersect with fiscal policy, and in particular when dealing with deposit insurance and the resolution of problem institutions. Potential conflicts here may be unavoidable, but failures of major financial institutions are rare events. The other main area of conflict is likely to arise from economic nationalism, as expressed for example through the promotion of “national champions.” Yet, even in extreme situation, policy-makers face a continuum of possible actions, and some counterweight to short-term self-interest would be worthwhile. The establishment of a European mandate may push the game towards a more cooperative solution, and thus still be worthwhile.

123. A practical approach may be to accept a hierarchy of mandates. Preferably, national authorities would be responsible first for fulfilling a European mandate, and then be responsible for the soundness and efficiency of national financial systems, subject to which they possibly could pursue other mandates (such as investor or consumer protection). The analogy would be with the responsibility of many central banks to pursue price stability, subject to which they may act to promote full employment, etc. Such a hierarchy would not prevent all conflicts, but it would limit them to cases where stability objectives are at odds. Furthermore, a clear hierarchy would be keeping with the principles of the international standards for effective financial sector supervision and regulation.<sup>46</sup>

124. Even if countries choose to place the mandate to promote the soundness of respective national financial systems above the European mandate, it is essential that the latter have precedence over non-prudential objectives, such as minimizing quasi-fiscal costs or promoting the national financial industry. As argued above, conflicts between Member States in financial sector policy may be much more acute in these areas than in prudential policy per se. The European mandate needs to have priority over these objectives if it is to facilitate policies that are good for Europe as a whole.

125. Introducing a European mandate, especially when it is embedded in national legislation (or EU Regulations or Directives), may be an occasion to harmonize other aspects of supervisory authorities’ overall mandates. Currently, the scope and clarity of national authorities’ responsibilities is diverse, especially with respect to concerns other than

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<sup>46</sup> The International Association of Insurance Supervisors Core Principles includes, as essential criteria under Core Principle 2, that “the key objectives of supervision [is to] promote the maintenance of efficient, fair, safe and stable insurance markets for the benefit and protection of policyholders” and “in the event that the law mandates or specifies multiple objectives for insurance supervision, the supervisory authority discloses and explains how each objective will be applied.” For the International Organization of Securities Commission’s methodology states that “The three core objectives of securities regulation are: The protection of investors; ensuring that markets are fair, efficient and transparent; the reduction of systemic risk. Principle 1 requires that “the arrangements in place demonstrate the ability of the regulatory framework to create and implement a system intended to protect investors, provide fair, efficient and transparent markets, and reduce systemic risk.” Thus, these stability concerns take clear precedence over other possible objectives. The Basel Core Principles for Effective Banking Supervision are less explicit on this point.

financial stability, such as the “fair” functioning of financial markets and consumer and investor protection. A greater degree of harmonization of non-stability mandates may be useful in achieving further integration of financial markets.

### **How to Achieve Accountability?**

126. The autonomy enjoyed by central banks and financial sector supervisors in Europe must be balanced through accountability. Strong incentives to fulfill a European mandate require a strong accountability mechanism. An accountability mechanism, which effectively “punishes” self-interested behavior, would contribute importantly to making a European mandate more than hollow words.

127. The accountability of the Level 3 committees themselves deserves re-examination in the context of introducing a European mandate. The most straightforward approach would be to enhance the accountability of Level 3 committees towards EU institutions. One element thereof would be regular reporting, as is now envisaged, but there may also be greater scope for transparency (perhaps through the publication of voting records and the issuance of more non-technical summaries of proceedings).

128. Since the relevant supervisory authorities take their powers and responsibilities from national parliaments, an essential step will be for those authorities to explain to those parliaments the nature of the European mandate, and actions taken to fulfill it. It should be possible to persuade those parliaments that the European mandate—even if not embedded in national legislation—is an extension of existing mandates. As mentioned above, conflicts of interest regarding financial system stability are likely to diminish over the long term, while the conflicts of interest that arise from economic nationalism and fiscal concerns are inconsistent with the authorities’ existing mandates and countries’ European commitments.

129. Supervisory authorities could also be accountable to the European Parliament. However, the European Parliament may be overwhelmed were scores of national authorities to report to it. Possibly, the European Parliament would have the right to request information and explanations from supervisors on how they have fulfilled their European mandates, rather than establish routine reporting.

130. The EU Commission could issue a periodic report on countries’ efforts to fulfill the European mandate. Its reports on compliance with Maastricht budget conditions have had leverage. In the less politicized and more collegiate world of financial sector supervision, such leverage may be more effective. Eventually, use might be made of the Commission’s enforcement powers. The Commission also has the staff resources to track and evaluate member states’ actions. An alternative, more collegial approach would be to have the respective Level 3 committee prepare a regular report on its members through a system of peer review (as envisaged in the May 2008 ECOFIN conclusions). The Level 3 committee members have the technical expertise to conduct such reviews, and they are developing reporting procedures. This approach might be more politically acceptable to some member states, but could be open to mutual toleration of failings.

131. An important element of accountability is that towards the general public. Financial sector authorities could commit themselves to issuing periodic reports on their efforts to fulfill their European mandate, and invite public debate on the accuracy of their “European Impact Studies.” Private sector bodies (financial institutions, consumer or industry groups) and indeed supervisors and governments from other countries could have a more active role to play in bringing forward cases of “non-cooperative” behavior by domestic supervisors. Given the analytic resources available to financial sector institutions and various research organizations, authorities would be forced to make a convincing case for their actions.

## **F. Conclusions**

132. A European mandate for national financial sector authorities could help produce decisions that are more timely and more conducive to promoting the common EU good. It would also help give EU convergence and cooperation operational priority at the national level. Thus, a European mandate could help build trust and cooperation, and enable supervisors to rely increasingly on each other, which is necessary in an integrating financial market with decentralized prudential arrangements. Importantly, a European mandate could provide a form of accountability for supervisors' increasing cross-border responsibilities. However, there is a danger that a European mandate would become vacuous, making little difference in day-to-day practice and being disregarded during crisis situations. Avoiding this danger requires concrete action on a number of issues:

- *How should a European mandate be formulated?* The mandate should center on financial sector stability but also recognize the need for efficiency, mainly in the sense of limiting regulatory burdens and not hindering innovation. One approach would be to define a broad European mandate, complemented by specific "dos and don'ts." This approach would help ensure that the mandate is flexible but also well-defined.
- *Which authorities should be covered?* At a minimum, the mandate should cover financial supervisory authorities and central banks, which are inevitably involved in supporting financial sector stability. Explicit European mandates could also be given to the Lamfalussy Level 3 committees, deposit insurance schemes, and administrators or receivers of financial institutions.
- *How can a European mandate be established?* A very strong legal basis is necessary. National legislation could provide this, but risks adding complexities and undermining the unifying intent. Guidance from an EU Directive would therefore be desirable, while an EU Regulation could be another option, depending on how exactly treaty powers are interpreted.
- *How can a European mandate be put into practice?* Various practical measures taken by supervisors could help ensure that their European mandate permeates their day-to-

day work and decision-making. Some current reforms, for example, to the functioning of Lamfalussy Level 3 committees, move in this direction.

- *How to balance different mandates?* The European mandate may come into conflict with other mandates to which national agencies are subject, notably during the resolution phase of a crises. A hierarchy of mandates that puts the European mandate first—in line with the general principle that European law precedes national law—would be preferable, or the European mandate should at least have precedence over any non-prudential national objectives of supervisors. More generally, some harmonization of mandates might be necessary.
- *How to achieve accountability?* Strong accountability mechanisms are necessary to make a European mandate more than hollow words. Some combination of mechanisms toward the national and European levels would be preferable, so as to involve national parliaments while also ensuring oversight by institutions with an EU-wide perspective such as the European Commission and the European Parliament. Financial sector authorities should also report on their efforts to fulfill their European mandate to the public, thus allowing an active role by private sector bodies.

Table 1 EU Area: Supervisory Structures

Country	Supervisory structure			Central bank as supervisory authority	Central bank involvement	Main tasks/areas of supervision of banking supervisory authority							
	Sectoral model	Model by objectives				Banking supervision	Pension fund supervision	Insurance supervision	Securities supervision	Stability	Conduct of business	Consumer protection <sup>1</sup>	Market competition
			Single authority										
Austria			X	X <sup>3</sup>	X	X	X	X	X	X	X		
Belgium			X	X <sup>4</sup>	X	X	X	X	X	X	X	X	
Bulgaria	X			X <sup>5</sup>	X	X	X	X	X	X	X		
Czech Republic			X	X <sup>2</sup>	X	X	X	X	X	X		X	
Cyprus	X			X	X	X	X	X	X	X	X		
Denmark			X		X	X	X	X	X	X	X	X	
Estonia			X		X	X	X	X	X	X	X		
Finland	X			X	X	X	X	X	X	X	X		
France	X			X	X	X	X	X	X	X	X		
Germany			X	X	X	X	X	X	X	X	X		
Greece	X			X <sup>6</sup>	X	X	X	X	X	X	X		
Hungary			X		X	X	X	X	X	X	X	X	
Ireland			X		X	X	X	X	X	X	X	X	
Italy	X			X	X	X	X	X	X	X	X	X	
Latvia <sup>7</sup>			X		X	X	X	X	X	X	X		
Lithuania	X			X	X	X	X	X	X	X	X	X	
Luxembourg	X			* <sup>7</sup>	X	X	X	X	X	X	X		
Malta			X		X	X	X	X	X	X	X	X	
Netherlands		X		X	X	X	X	X	X	X	X	X	
Poland			X		X	X	X	X	X	X	X		
Portugal	X	X		X	X	X	X	X	X	X	X		
Romania	X			X	X	X	X	X	X	X			
Slovakia			X	X	X	X	X	X	X	X	X	X	
Slovenia	X			X	X	X	X	X	X	X	X		
Spain	X			X	X	X	X	X	X	X	X		
Sweden			X		X	X	X	X	X	X	X		
United Kingdom			X	X	X	X	X	X	X	X	X		

Source: National authorities.

<sup>1</sup> Including investor and depositor protection.<sup>2</sup> Single supervisory authority.<sup>3</sup> Fully involved in prudential regulation; mandatory on-site inspections in credit and market risks; processing supervisory reporting data.<sup>4</sup> Macro-prudential supervision.<sup>5</sup> Only banking supervision.<sup>6</sup> Involved in supervision of credit and financial institutions (banks, factoring and leasing companies).<sup>7</sup> While the Central Bank is not involved in supervision, it has a role to play in financial stability through its membership of the ESCB.

## APPENDIX

### Recent EU Initiatives on a European Mandate for Supervisors

The October 9, 2007 ECOFIN meeting issued an ambitious set of conclusions on enhancing arrangements for financial stability in the EU, focusing on crisis management. Some elements include:

- A recognition that financial stability is a common concern for all member states that must be safeguarded on the basis of close cooperation.
- A set of common principles on cross-border financial management, which is recognized as a matter of common interest for all member states affected.
- An invitation to the ECOFIN to prepare an extended MOU by June 2008, which will detail common principles (notably on the management of a cross-border crisis), a common analytical framework and the timely sharing of assessments, and practical guidelines. (This MOU was agreed in April 2008—see below.)
- An invitation to the Commission to cooperate with the member states to consider including in the mandates of national supervisors a task to cooperate within the EU and the take into account the financial stability concerns of all member states.
- An invitation to the Commission to improve the interoperability of deposit insurance schemes and clarify the implications of sharing financial burdens.

The December 4, 2007 conclusions included various measures on supervisory cooperation, largely relating to the Lamfalussy process, and in particular provisions on:

- The risk of excessive national discretion in implementing EU Directives and for “Gold Plating.” Therefore, member states are invited to report to the Commission on their use of discretion.
- The Commission is to review differences in supervisory powers and objectives between national supervisors and with regard to sanctioning powers.
- Level 3 committees are to introduce qualified majority voting where necessary.
- A suggestion that those who do not comply with Level 3 committee decisions provide a public explanation of their actions.
- The conclusions “underline the importance of considering” including in the mandates of national supervisors the task “to cooperate within the EU and to work towards European supervisory convergence and to take into account the financial stability of all member states.”

The Inter-Institutional Monitoring Group, established to assess progress in the Lamfalussy process, included in its final report the following recommendations:

- The Level 3 committees should be provided (a) with a clear EU mandate, complemented by an annual work program, which should be endorsed by the European Parliament, the Council and the European Commission, and (b) with a sufficient legal basis covering their activities.

- At national level, a clear requirement to cooperate at EU level and to support the EU convergence process should be included in mission statements of national regulatory and supervisory authorities.
- The Level 3 committees should serve as a platform for the coordination of supervision and regulation, facilitating the development of supervisory tools and methods, and strengthening the trust between national supervisors. One of their aims should be to enhance supervisory convergence and cooperation.
- When providing technical advice to the Commission, the Level 3 committees are (already) able to use a qualified majority voting procedure. The Group agrees that the committees should be permitted to use qualified majority voting for a limited number of tasks which are of a highly technical nature and where a delegation is given to the committees in Level 1 or (with the exception of one Member) Level 2 legislation. Other decisions on supervisory convergence should be taken by consensus and their implementation ensured by a strong "comply or explain" mechanism.
- Parliament, supervisors and the private sector should put forward complaints, information and concrete cases of incorrect implementation of EU rules.
- Transparency of national transposition of EU directives and implementation through disclosure mechanisms could curb regulatory additions and enhance convergence of practices through peer pressure.
- Improving enforcement of agreed legislation should become a common objective of all stakeholders. The Commission should play the principal role by using all available tools. Member States, the European Parliament, supervisors and the private sector should put forward complaints, information and concrete cases of incorrect implementation of EU rules.

The April, 2008 MOU on cross-border financial crisis situations contains:

- A recognition that financial stability and managing a cross-border financial crisis are common concerns.
- An acceptance of the need for a common analytic framework for assessing systemic vulnerabilities and timely sharing of information.
- The introduction of a framework for cooperation agreements on arrangements for crisis management in the case of cross-border financial institutions. It is envisaged that "Cross-Border Stability Groups" be established; the groups would effectively expand colleges of supervisors by including Ministries of Finance and other agencies that would be involved in resolving a financial crisis.
- Agreement that collective crisis costs should be minimized and the distribution of costs of bank resolution should be equitable and balanced.
- A commitment to share information with counterparties in other member states as soon as an authority becomes aware of a potentially serious threat to financial stability. National

authorities should share their information and assessments with one another.

Some of the main conclusions of the May 14, 2008 ECOFIN meeting include:

- The introduction of a “European dimension” into the mandates of national supervisory authorities. Member States are invited to ensure, by mid-2009, that the mandates of national supervisors allow them to take the EU dimension into account in exercising their duties. The task of financial supervisors should include cooperation at the EU level and among states.
- The introduction by the Commission of these objectives into EU legislation. For example, the Commission’s current proposed amendments to the Capital Adequacy Directive includes clauses to the effect that supervisors in one state should have regard to the impact of their decisions on the stability of the financial system in all Member States; home supervisors should alert host supervisors as soon as they become aware of an emergency situation in a financial institution; and that consolidating supervisors should establish colleges of supervisors.
- An assessment by the Financial Services Committee of the application of the European dimension in national mandates, based on reports from the Level 3 committees.
- Strengthening the role of colleges of supervisors and their extension to all cross-border financial groups. The Level 3 committees are to provide guidelines to provide consistency and effectiveness in the work of the colleges.