

KAREL LANNOO



# Capital Adequacy versus Liquidity Requirements in Banking Supervision in the EU

The focus of the debate on banking supervision over the last decade has been largely on capital requirements and solvency of financial institutions. The interaction between solvency and liquidity, defined as the ability of an institution to meet its liquidity providing obligations under normal conditions, has been much less debated. Traditionally, it was assumed that once the solvency is under control, that the liquidity should be no problem. Banks which have sufficient capital should be able to get extra liquidity from the central bank against adequate collateral in case of problem. Furthermore, the focus of the New Basel Accord on a better alignment of the regulatory capital with the risk to which banks are exposed, and the stronger focus on diversification, should reduce eventual mismatches between solvency and effective liquidity.

In day-to-day banking supervision, control is also exercised on the liquidity of banks, as an additional assurance to safeguard the stability of the financial system. This can be done in different ways. The central bank, as lender of last resort, may levy a

<sup>1</sup> CEPS is an independent European policy research institute, based in Brussels. I acknowledge comments from Rym Ayadi of CEPS.

reserve requirement. The banking supervisor can impose specific liquidity requirements. The way in which the latter is exercised in the EU today is not harmonized, it is left to the host country and is a matter of supervisory discretion. In the context of the difficult home/host discussions surrounding the implementation of the New Basel Accord in European law, it would be useful if the Committee of European Banking Supervisors (CEBS) could start some standardization process of what liquidity control encompasses. The longer-term ambition would be to have a strengthening of the home country control regime in an EU context.

This paper discusses the approach to be taken with regard to control of liquidity in the EU. To put the subject into perspective, we will first review the developments in financial market liquidity overall, and discuss the possible impact of the New Basel Accord on the liquidity of financial institutions. The assumption behind liquidity control is that banks primarily invest in illiquid assets (loans). However, market liberalization, product innovation, and technological developments, have radically increased financial market liquidity. Furthermore, the new Basel capital adequacy framework profoundly modifies the current prudential framework. The third part analyses liquidity control in the context of EU financial regulation, and discusses whether liquidity control should be harmonized in the EU, and if so, how this should be done. The paper concludes with some recommendations for policy.

### **Developments in Financial Market Liquidity**

There can be no question that financial markets are *structurally* far more liquid

today than they were in the past. By *structurally* liquid is meant that, abstracting from the occasional episodes of market stress, when liquidity freezes across several broad asset classes, asset markets generate greater trading volumes at reduced transaction costs than in the past if and when the market mechanism operates smoothly. Technological progress, coupled with global capital flows and the worldwide de-regulation of the financial sector, has enhanced the liquidity of individual assets and markets alike. In particular, recent technological breakthroughs, particularly in the realm of informatics, have contributed greatly to enhancing market liquidity. Electronic trading platforms have transformed the nature of secondary market activity by transforming largely illiquid assets into very liquid ones. Search costs before their introduction were certainly not insignificant, particularly when looking for counterparties to handle large orders or illiquid assets; in some cases, prior to the invention of the internet, finding a counterparty was so costly as to prevent trades from occurring in the first place. O'Hara (2004) gives the example of how eBay transformed the market for second-hand goods, including highly illiquid exotic collectibles.

Securitization is also an excellent example of how financial innovation, by packaging illiquid securities (e.g. mortgages or loan portfolios) into tradeable ones, has transformed secondary markets in some existing instruments and, in other cases, has effectively created a market where none existed previously. Besides the intrinsic value in rendering securities more liquid, thereby facilitating resource allocation, greater liquidity in existing products and the introduction of liquidity-creating products

also means that hedging opportunities increase, which facilitates and enhances the efficiency of risk management.

Finally, one cannot ignore the role of regulation in the design of markets. Regulation affects market quality, an important component of which is liquidity. Great strides have been made in improving market design in recent years, as a result of both more effective self-regulation and better targeted government regulation, with positive consequences for liquidity. Confidence-enhancing market rules, such as best execution and price transparency requirements, and competition among market makers, leading to reduced transaction costs from trading, are but just two examples of how market structure can influence liquidity.<sup>2</sup>

So much for the impact of innovation and market microstructure on liquidity. Yet, there also exists a broader macroeconomic interpretation of liquidity, which relates to how real economic activity, in particular monetary and fiscal policy impulses, coupled with behavioral anomalies such as herding and similar risk-management strategies, translates into and influences the creation, destruction, valuation and price volatility of financial assets. According to this view,

liquidity, defined as the creation and mobilization of previously unexploited financial capital, or re-allocation of capital to other usage, moves into and out of markets in conjunction with macroeconomic fluctuations, conditioned by expectations (broadly writ) and on the available supply of assets, which itself is determined (in part) by monetary and fiscal policy.<sup>3</sup> Certainly monetary policy, like fiscal policy, has a key role to play in the creation of financial assets. Chart 1 (see annex)



shows the rapid acceleration of liquidity in recent years as a consequence of lax monetary policy, in particular global spillovers from the generous Japanese, and, more recently, U.S., stances.

The ability of investors to acquire/liquidate positions rapidly across assets (market breadth) and in an asset (market depth) has traditionally been viewed, by macroeconomists at least, as potentially destabilizing. “Excess” liquidity can have damaging

<sup>2</sup> The central issue in the debate on the EU’s recent Directive (2004/39/EC) on Markets in Financial Instruments was the need to enhance liquidity and price discovery in European equity markets. For this reason, also brokers are required to advertise the prices for shares in which they are “systemic internalizers.” See Levin (2003) for a discussion of this issue.

<sup>3</sup> For example, in 2001, the U.S. Treasury announced that it was retiring and discontinuing 30-year debt issues. This was a direct consequence of the fiscal consolidation that prevailed under Robert Rubin’s tenure as Treasury Secretary, because if such a policy had been continued, it would have led to very significant budget surpluses. The projected surpluses led the Treasury debt management office to reconsider their strategy. At the time, there was an active debate on the consequences of the great U.S. fiscal consolidation on financial markets. Market participants in particular were concerned about the liquidity effects of the deficit reduction. Such a reduction would mean obviating the need for relatively less liquid issues, such as the 30-year bond, which nevertheless played a key role in determining inflationary expectations and in establishing a benchmark risk-free rate for long-term corporate bond and project valuation. The reversal in fiscal policy in the U.S. since 2001 has meant that the projected surpluses are nonexistent. As a result, U.S. taxpayers would not be penalized as a consequence of Treasury emitting long-term bonds, because servicing 30-year bonds would no longer be disproportionately expensive. In addition, there is an enormous demand for long-term sovereign (and even corporate) debt, driven by the need of pension funds and insurance firms to generate steady streams of incomes over extended periods of time to match their long-term liabilities.

consequences for financial stability by leading to speculative feedback loops, such as momentum trading, that prevent the reversion of asset values to their true economic values. Because of the destabilizing property of liquidity, in times of financial duress at least, liquidity must be constrained or harnessed. By arguing that liquidity begets financial stability, O'Hara (2004) and microstructure theorists take a contrarian view. Liquidity for them is the grease that oils the market mechanism. In a similar manner, liquidity has been compared to the "lifeblood" of financial markets by Fernandez (1999).

According to the macroeconomic approach to liquidity, markets are (in part) more liquid today because the growth in the efficiency of financial intermediation, combined especially with rapid rates of capital growth, has outpaced growth in good investment opportunities in the (largely slow-growing) real economy. Very rapid credit creation, fueled by a lax monetary policy stance and coupled with large-scale capital inflows, means that the domestic monetary base is growing very quickly – too quickly for truly sound and profitable investments to mature, thereby saturating the existing opportunities in the real economy. As a result, in the quest for higher returns, financial institutions take on more risk and turn increasingly to speculative investments in asset markets, hoping that they will be able to liquidate their positions first when signs of a crisis begin to emerge. It is precisely the creation of excess "liquidity" in the macroeconomic sense that eventually leads to dangerous financial imbalances. Thus, it would seem that there is a certain tension between the microstructure view of liquidity (a good thing) and the macroeconomic view of liquidity (a potentially dangerous thing).

Among the biggest risk-management challenges of the future is finding a way to respond effectively, and preferably to prevent, financial instability that arises *endogenously*, as a result of market participants' behavioral patterns, rather than due to some asset-specific characteristics or to an individual institution's position. The emphasis that has been placed on capital requirements reflects the continuing bias towards the old paradigm that places institutional stability (the microprudential approach) at the heart of financial market stability, as opposed to focusing on broader correlations between institutions' returns, reactions to market stress and risk-taking positions (the macroprudential approach). According to the old paradigm, institutional stability is a precondition for market stability, that is, systemic crises find their origin in insolvent individual institutions. While this "classical" type of financial crisis can still occur, the combination of capital account liberalization and the introduction of innovative financial products such as asset-backed securities and derivatives have connected what previously had been largely segmented markets, leading to "correlations between previously independent asset classes," as noted by Andrew Large (2004). Greater correlations in prices, returns and volatility between asset classes have important ramifications for the stability of markets in times of duress. For example, liquidity shocks to one asset class can nowadays be transmitted with much greater ease and speed to other asset markets, that is, the potential for contagion has risen greatly as a by-product of the growing inter-dependence of asset markets.

Part of the challenge is to discover the determinants of market liquidity. While there is little doubt that the

liquidity of individual assets has been enhanced through financial innovation and technological progress, market liquidity can still be susceptible to mysterious vagaries, or “liquidity black holes,”<sup>4</sup> the determinants of which largely remain a puzzle to economists. The inability of economists to properly calibrate liquidity risk no doubt has given rise to one of the most pressing outstanding challenges in risk management today.

Exposure to common liquidity shocks has become an increasingly important source of vulnerability to market risk today. Whereas in the past, the concept of liquidity focused more on asset-specific liquidity or institutional liquidity (the ability of a bank to effectively manage its liabilities without inducing excessive funding gaps), recent research points to aggregate, or market, liquidity effects, since the characteristic liquidity of assets is seen to co-vary (Porter, 2003). Regulatory attention has turned to banks, because they are increasingly vulnerable to wider fluctuations in market liquidity. The composition of banks’ portfolio holdings, as well as the very nature of their risk-taking activities has changed dramatically in the past two decades. Tradable instruments represent an ever-greater percentage of a bank’s assets. Banks must therefore pay increasing attention to market liquidity, because their changing nature means that their traditional approach to liquidity management, which are intimately tied to asset-liability management) is no longer sufficient.<sup>5</sup>

### **The Limits of Setting aside “Liquidity Capital”**

Since liquidity is a major component of risk, it would seem logical that banks should set aside reserves of capital to mitigate this risk. In fact, there is evidence that they already do so. Hartmann (2004), citing some studies, argues that if banks endogenize the capital decision, they will keep capital reserves above those required by the minimal regulatory capital amount in order to have a buffer against shocks



to asset prices. But the fact that banks set aside “liquidity reserves” abstracts from the difficulties of implementing a common regulatory approach to managing liquidity risk. There are several limits to the benefits of setting aside “liquidity capital:”

First, market liquidity risk is more difficult to quantify than individual security liquidity. First, there is no consensus on a definition of liquidity, or on a variable that would satisfactorily proxy it. The most commonly used proxies are bid-ask spreads and trading volumes. Liquidity risk is also difficult to price because the liquidity premium varies significantly over time. In addition to variability, the interaction between liquidity and expected returns may be non-linear (Amihud and Mendelson, 1986). Thus, liquid-

<sup>4</sup> By “liquidity black holes” we mean how the liquidity of certain assets, which, under “normal” circumstances are very liquid, suddenly dries up.

<sup>5</sup> Traditionally, poor liability management resulting from a maturity mismatch would lead to a level of illiquidity that would undermine the confidence of depositors. These in turn would seek an exit for their deposits, or the typical bank run.

ity risk management is complicated by the fact that liquidity is notoriously difficult to forecast. Although liquidity no doubt has an important autoregressive component, for example when measured as trading volumes, it is likely that this component decays rather quickly and has little predictive power over longer time horizons.

Second, there are probably instances when liquidity can be “too much of a good thing.” This old debate gained a renewed vigor following the wave of financial crises that swept around the globe from 1997 to 2000. It fits into the general negative perception of liquidity of macroeconomists. A very liquid bank portfolio could lead to financial instability by possibly providing a perverse incentive to bank management to undertake greater risk (Wagner, 2004). The logic is that the more liquid a bank’s assets, the more likely that bank management will be tempted to put a fair amount of that liquidity to good work by converting liquid assets into riskier, less liquid assets that yield higher returns. In this sense, bank management is impervious to the fact that market liquidity can quickly dry up and that closing those positions will be enormously costly to the bank as they sell assets at deep discounts. Paradoxically, requirements for banks to set aside more reserves to act as buffers against liquidity shocks could encourage greater risk-taking with the residual capital of the bank.

Third, assets that are liquid today are not necessarily going to be liquid on the date that bank management expects them to be liquid. Risk man-

agement strategies based on historical data are unlikely to be very useful in the face of extreme events. The *perceived* tradability of assets, or their “structural liquidity,” based on historical data, does not guarantee that they will be marketable at a time of duress when the bank will seek to liquidate them to generate the needed cash to fund liabilities.<sup>6</sup> In fact, markets themselves are prone to a host of unpredictable malfunctions, which can be technical in nature (operational risk), or due to any other sources of distress, whether linked to the specificities of the existing market architecture or to the behavioral patterns of market participants. Due to the vagaries of market liquidity, what liquidity there is in the market today may in fact be a very poor indicator of the liquidity that remains in the market tomorrow, highlighting the risks inherent to liquidity management. These difficulties point to the ever-increasing importance of extreme value theory. In this sense, the techniques used to measure liquidity risk might be similar in methodology to those used to evaluate operational risk. The lack of contingency planning in the wake of very rare but severe occurrences can have very serious consequences, as the LTCM case demonstrated.<sup>7</sup>

But if one agrees that contingency planning against sudden “liquidity black holes,” may be necessary, particularly in light of recent financial crises, what precisely does this entail for banks? What does it mean for a bank to be “liquid?” Of course, liquidity is intrinsically linked to a time variable and

<sup>6</sup> A good example of this is the impact the 1998 LTCM crisis had on U.S. Treasuries, the most liquid securities in the world. Very quickly, the liquidity which had traditionally characterized U.S. debt securities as the safest in the world, suddenly vanished.

<sup>7</sup> Leveraged over 50:1, the LTCM’s collapse had serious consequences for the world economy in 1998 and could have been a lot worse had the Federal Reserve not coordinated a bailout.

suggests a short-term horizon, a certain immediacy. It makes little sense today to worry about the liquidity of a traded asset that has to be liquidated at a fixed date in the distant future, since its liquidity is likely to vary significantly in the meantime. That is why liquidity requirements as such will not do terribly much to ensure the smooth operation of markets. This is due not only to structural features, but also to the nature of regulations. While attention on Basel II has focused on the dangers of pro-cyclicality, less attention was given to the impact and risks of financial institutions adopting identical risk capital requirements, which could propel herd movements (Persaud, 2000).

The bottom line for policy is this: there is no point in holding reserves if, at times of crisis, they cannot be liquidated. On the other hand, the lack of proper contingency planning has proven tremendous costly in the past. Most economists agree that *something* must be done, without knowing precisely *what*. One thing is sure: regulators ought to carefully study the behavioral changes in risk management that any liquidity requirements could induce, because paradoxically, further reserve requirements for Liquidity at Risk could entail greater risk-taking by banks.

### **The New Basel Accord and Liquidity Risk**

The new Basel capital adequacy framework, which was finalized in June 2004, profoundly modifies the current prudential framework. The 1988 Basel Accord, as embodied in EU law through the own funds and solvency ratios directive, set very crude risk weightings of assets, depending on the perceived riskiness of the creditor. The New Capital Accord goes for a much

more refined risk management framework, which should also reduce the overall liquidity risk of financial institutions. In addition, Basel II introduces the concepts of supervisory review (Pillar 2) and market disclosure (Pillar 3), which should further contribute to liquidity control. Basel II does not specifically discuss liquidity requirements, but the Committee addressed the subject in a separate paper, which is discussed below.

With regards to Pillar 1, the minimum capital requirement, the New Basel Accord offers alternative approaches to credit risk measurements, ranging

from the standardized approach to a more sophisticated form in the internal ratings-based (IRB) approach. While the standardized approach is the simplest, it incorporates a finer gradation of risks based on the assessments of external rating agents of the different weighting categories of claims. Whereas before, Basel applied *grosso modo* four groups of weightings, there are now seven in the standardized approach.

The IRB approach ranging from the foundation to the advanced approach allows banks to adopt their internal rating systems to measure credit risk and this after a proper validation by the relevant national supervisory authorities. These risk sensitive approaches are supposed to reflect the real risk profile of the banks while taking into account the entire body of credit portfolio assessment criteria. As such, the IRB approach represents a considerable amount of complexity but permits a fine and efficient internal risk assessment.



The New Basel Accord also introduces a new regulatory framework to credit risk associated to securitization. To measure the associated risk, banks can either apply the standardized approach or the IRB approach with the additional distinction between the ratings-based approach (RBA, in which some risk-weighted inputs are provided by the supervisors and others by the bank) and the supervisory formula approach (SFA, in which all the risk-related inputs are provided by the bank based on its internal data and modeling systems).

Another major novelty introduced by the New Basel Accord is to set a capital requirement for operational risk.<sup>8</sup> To measure this type of risk, three approaches that vary in sophistication are provided by the Accord: a) the basic indicator approach, b) the standardized approach and; c) the advanced measurement approaches. Hence, capital requirements should be much better calibrated under the New Basel Accord, and closer correlated to the effective risk profile of a bank.

The expected use of the IRB approaches by the systemically important banks, as compared to the standardized approach by smaller banks should enhance the resilience of the financial system. Banks using the IRB approach of Basel II would have to hold higher capital charges for higher-risk segments, such as low-rated SMEs, low-rated sovereigns, asset management or custody activities, sub investment grade securitization transactions (risk weights ranging from 100% to 650% for securitized transactions rated BBB– to BB– under the RBA and the requirement in various instances,

typically for below investment grade and unrated transactions, to deduct a securitization position from regulatory capital<sup>9</sup>). These activities require less capital under the SRB approach because of their limited sensitivity to risk. However, capital charges for retail loans, consumer credit, mortgage or leasing activities, all of which can be considered illiquid, will decrease in both approaches.

The New Basel Accord has been widely debated over the last years. Two critical elements are relevant in the context of this paper: the pro-cyclicality and the impact of expected reduction in levels of regulatory capital. The expected increased pro-cyclicality of the Accord follows from its increased risk sensitivity, with the use of rating agencies assessments under the standardized approach, and, even more, the use of probability of default under the IRB approaches. Risk weights will thus become more cyclically sensitive and capital requirements more influenced by the state of the economy. In addition, the use from 2005 onwards of international accounting standards (IAS), which are based on the principle of fair value, will further exacerbate economic cycles. Both elements may further aggravate general liquidity crisis in times of stress and render the setting of liquidity requirements even more difficult. Pressure to increase the capital requirement in times at stress may increase volatility on banks more liquid asset items. It has therefore been suggested to introduce a system of dynamic provisioning, as is in place in Spain (Dierick, 2004).

Another element of concern is the impact of the expected reduction

<sup>8</sup> Regulatory capital is defined by the Basel Committee as “the risk that flaws in a bank’s own systems or human resources, as well as external events, may cause unexpected losses, such as those related to mass litigation, fraud or natural catastrophes.”

<sup>9</sup> When this happens, such capital must be taken 50% from tier 1 and 50% from tier 2.

in overall level of regulatory capital. The EU's 3<sup>rd</sup> Quantitative Impact Study forecasted a regulatory capital reduction of up to 20% under the IRB approach (Ayadi, 2004, p.18). U.S. authorities recently came out with a study predicting a reduction of 26% (Bies, 2005). Seen in combination with the increased pro-cyclicality, the financial system overall could be less sound, and a liquidity requirement less relevant, as it would function less of a buffer in times of stress. The question thus is how supervisors will approach this problem as part of the supervisory review process.

### **Basel Committee Guidelines on Liquidity Requirements**

In February 2000, the Basel Committee issued its Principles for the Assessment of Liquidity Management in Banking Organisations. This paper is an update of its September 1992 paper on the subject. According to the Committee, liquidity management is one of the most important activities conducted by banks. Since liquidity shortfalls at the level of one individual bank can have serious systemic repercussions, also supervisors are concerned.

The principles largely focus on the management of a bank's liquidity, although they also speak briefly about the role of supervisors and public disclosure. The paper does not set any quantitative thresholds for liquidity regulation, neither on the side of the banks nor on the regulators.

On the management side, the principles require the bank to have:

- a strategy to manage liquidity on a day-to-day basis, agreed by the board, effectively implemented and backed-up by a internal control system;

- a process to measure and monitor net funding requirements;
- a contingency plan to handle liquidity crisis, including public relations management;
- a specific analysis of foreign currency exposure and eventual mismatches which may occur;
- an adequate level of disclosure in order to manage public perception of the organization and its soundness. Banks should provide an adequate amount of information to the public on an ongoing basis.

Supervisory authorities should conduct an independent evaluation of the implementation of these principles by a bank, and of the internal control system. As part of that, supervisors should also consider a bank's liquidity risk in conjunction with its capital adequacy. In this sense, the role of supervisors falls under Pillar 2 of the new Basel capital adequacy regime, since:

*“appropriate supervisory responses to a bank with higher liquidity risk may include requiring the maintenance of higher levels of capital and repositioning the asset portfolios or funding arrangements to reduce liquidity risk. As part of this supervisory process, supervisors may also want to consider implementing regulatory requirements for certain liquidity limits or ratios”*  
(Basel Committee, 2000, p. 20).

Seen in combination with the implementation of the New Basel Accord, higher (macro) liquidity risk, which results from the pro-cyclicality and the lower capital levels of the New Basel Accord, may result in higher liquidity requirements for banks, or increased use of the powers of discretion by supervisors under Pillar 2.

### **The EU Framework**

The introduction of the euro has indirectly done more for the alignment of liquidity requirements in the EU, or at least in the euro area, than EU financial market regulation. The start of Economic and Monetary Union (EMU) led to the introduction of minimum reserve requirements for all credit institutions in the euro area. The ECB also harmonized the list of acceptable collateral for liquidity providing operations by the central bank and payments through the TARGET system. But liquidity requirements have not been harmonized under EU financial law.

### **The Euro Area Framework**

A reserve requirement is the minimum amount of deposit a credit institution is required to hold on accounts with the central bank. The amount is calculated by multiplying the reserve ratio with the reserve base, which are most short-term liability items of banks. Although the reserve requirement is essentially used for monetary policy purposes, i.e. to stabilize money market interest rate, it is also used to monitor the liquidity needs of the banking sector, and thus to steer financial stability. The reserve ratio was set at 2% since the start of EMU, and the holdings are remunerated at close to money market interest rates.

Before EMU, reserve requirements differed largely in the euro area countries. They differed in the base, the ratio and remuneration. In several EU Member States, they were not remunerated, and thus functioned as a form of levy on the banking system.

A second element through which the ECB contributed to easing the liquidity needs of the banking sector was the harmonization of acceptable collateral for liquidity providing

operations. Eligible assets comprise tier 1 and tier 2 collateral. Criteria for tier 1 are harmonized, tier 2 assets are defined by the national central banks (NCBs), based upon minimum standards set by the ECB. Tier 2 comprises less or non-marketable assets (commercial loans) that are of particular importance for national financial markets and banking systems. Collateral is held in 18 securities settlement systems. All assets (tier 1 and tier 2) can be used on a cross-border basis. In this sense, the euro area has contributed to easing liquidity constraints in the euro area banking system, certainly for smaller Member States.

The same list of eligible collateral is used for participation in the high-value payment system of the ECB, TARGET. Minimum reserve holdings are requested from participating banks for settlement purposes during the day and the Eurosystem provides unlimited (collateralized) intraday credit free of interest to its counterparties. The Eurosystem furthermore has standing facilities to provide liquidity and absorb in exceptional circumstances. The marginal lending facility provides overnight loans from the central bank against collateral at a rate which has been about 1% above the main refinancing rate.

The Eurosystem's definition of acceptable collateral is also used in the private repo market, which plays an important role in providing temporary liquidity to financial institutions. The private repo market has been growing at a high rate over the last years. Data from the private sector showed a growth of over 20% in the year 2004, standing at EUR 5 trillion (ISMA, 2005).

## The Single Market Framework

EU financial markets regulation says little about liquidity requirements. The core pieces of legislation are the first banking directive, the second banking directive and the related solvency ratios directive, and the draft capital requirements directive.

The first banking directive (77/780/EEC) introduced the freedom of establishment and national treatment for banks in the EU. The directive required national authorities to cooperate closely to supervise the activities of credit institutions operating in several Member States, amongst others the monitoring of the liquidity and solvency (Art. 7.1). It therefore created the Banking Advisory Committee, the precursor of the CEBS.

The second banking directive (1989) introduced the free branching and provision of services in the EU, subject to authorization and final control by the home country. The directive however leaves a few powers in the hands of the host country, such as the supervision of the liquidity of branches. Art 14. (Art. 41 in the consolidated banking directive, 2000/12/EC) says:

*“Host Member States shall retain responsibility in cooperation with the competent authorities of the home Member State for the supervision of the liquidity of the branches of credit institutions pending further coordination. Without prejudice to the measures necessary for the reinforcement of the European Monetary System, host Member States shall retain complete responsibility for the measures resulting from the implementation of their monetary policies. Such measures may not provide for discriminatory or restrictive treatment based*

*on the fact that a credit institution is authorized in another Member State.”*

The monetary policy argument was used by France against the introduction of interest bearing current accounts by Barclays Bank on its territory in 1997. Today, however, this does no longer make any sense.

A related area where some harmonization has been undertaken by the EU is in the deposit guarantee directive. Although strictly speaking no liquidity regulation, since it is external



to the bank, and comes into force ex-post, it should be at least mentioned, as it is part of the preventive measures the debate on whether to fully harmonize deposit protection schemes in the EU will be similar for liquidity regulation. Today, the responsible authority for deposit protection for branches is the home country, but a “non-export” provision applies for branches of countries with higher levels of depositor protection, and a “topping up” option for branches of countries with lower levels. Subsidiaries fall under the responsibility of the host country.

## Liquidity Requirements in the EU Member States

Different countries have seen it necessary to regulate liquidity in the banking sector and have adopted a variety of approaches to liquidity regulation, from quantitative to qualitative, or a mixture of both. This typically involves setting some form of liquidity ratio as a minimum requirement,

Table 1

Quantitative only	Mix	Qualitative only
Germany Austria	Belgium Denmark Finland France Greece Italy Netherlands U.K.	Spain Sweden U.S.A.

Source: CEBS, Bank of England, own investigations.

complemented by broader systems and controls related to management of liquidity risk.

Within the quantitative requirement, national approaches differ between a stock and a maturity mismatch approach, or a combination of both. A stock approach prescribes a minimum level of cash or high quality liquid or marketable assets in relation to the stock of deposits and other liabilities. The definitions of what constitutes a stock, or liquidity, thereby differ from country to country. Maturity mismatch analysis involves the classification of expected inflows and outflows of funds into time-bands according to their residual maturity, subject to minimum criteria. Some regimes also include a degree of internal estimation of likely liquidity stress impact and analysis, generally limited to a floor.

Furthermore there is considerable variation in the scope of national regimes, whether it is applied on a consolidated (group) or unconsolidated (solo) basis. The U.K. and the Netherlands apply liquidity regulation on a consolidated basis, in Germany and France the focus is on the unconsolidated deposit-taking entity. A fundamental question is, given the

increasing number of internationally active banks, and bank's global liquidity management policies, whether the solo approach still makes sense, whether local entities can be ring-fenced from overall liquidity problems in a bank (Bank of England, 2004). On the other hand, it could be argued that, even if banks *monitor* liquidity globally, they should diversify it globally as well, taking into account differing liquidity needs arising in different locations. This would also make sense from systemic stability point of view. As one major global bank puts it:

*“Diversification of our funding profile in terms of investor types, regions, products and instruments is an important element of our liquidity risk management framework. Our core funding resources, such as retail, small / mid-cap and fiduciary deposits as well as long-term capital markets funding, form the cornerstone of our liability profile. Customer deposits, funds from institutional investors and interbank funding are additional sources of funding. We use interbank deposits primarily to fund liquid assets.”<sup>10</sup>*

Such an approach would fit with the New Basel Accord, which emphasizes the need to diversify the risk exposure of a bank, to classify assets according

<sup>10</sup> Extract of the chapter on liquidity risk in the Annual Report 2004 of Deutsche Bank, available from: <http://annualreport.deutsche-bank.com/2004/ar/riskreport/liquidityrisk.php>

Table 2

Liquidity Levels in the EU-15 and the New Member States					
	All banks	Large	Medium	Small	Foreign
<b>EU-15</b>					
Liquidity asset ratio 1 (cash and T-bills)	2.2	2.0	2.6	4.6	1.3
Liquidity asset ratio 2 (ratio 1 + loans to credit institutions)	18.0	18.1	17.8	17.5	27.8
Liquidity asset ratio 3 (ratio 2 + debt securities by public sector bodies)	25.8	27.5	22.2	19.5	35.4
Depositor liabilities	41.9	38.8	46.8	64.9	29.1
Ratio 3 to deposits	61.6	71.0	47.5	30.1	121.8
<b>New Member States</b>					
Liquidity asset ratio 1 (cash and T-bills)	14.9	16.7	17.5	14.3	14.1
Liquidity asset ratio 2 (ratio 1 + loans to credit institutions)	31.5	30.9	29.3	36.1	31.8
Liquidity asset ratio 3 (ratio 2 + debt securities by public sector bodies)	36.8	39.4	38.0	43.9	35.6
Depositor liabilities	65.7	70.0	69.5	71.3	63.7
Ratio 3 to deposits	56.0	56.3	54.6	61.6	55.9

Source: ECB (2004)

to their riskiness and liquidity and stimulates banks to move towards internal methods to measure its capital needs, while giving supervisors the discretion to intervene depending of the risk profile of the bank.

A survey on liquidity regulation by the Euribor ACI Money Market and Liquidity Working Group of the international association of foreign exchange dealers ACI (Association des Cambistes International) calls for internal liquidity management models. It learns that most major banks in the euro area have such models in place for the management of their liquidity, even in countries which benefit of a very light liquidity regulation. The internal liquidity models are based on Best Market Practice and the “Sound Practices for Managing Liquidity in Banking Organisations” published by the Basel Committee. However, the association sees an inconsistency between the domestic regulation of liquidity and the integrated money market at the level of the euro area. National regulations lead to distortions in liquidity and securities pricing,

and hamper the level playing field of banks (De Vidts, 2005).

Data of the ECB show that large EU-15 banks have 27.5% of their assets in liquid financial market instruments, compared to 22.2% for medium-sized banks, 19.5% for small banks and 35.4% for foreign-owned banks. This compares to depositor liabilities of on average 41.9% for all banks (see table 2). The liquidity ratio in the new Member States is on average higher, but with a lower ratio to deposits.

### Any Need for EU Intervention?

The current liquidity control framework, whereby the responsibilities are left with the host country supervisory authorities, is consistent with the broader framework for financial supervision, as put forward by the Basel Committee and contained EU law. The home country is in charge of exercising consolidated supervision of a banking group which is active in the EU, and will decide on the validation and final shape of the IRB model, under the Basel II framework. The

host country authorities are in charge of controlling financial stability and managing the deposit protection system, and are accountable to local tax payers.

Liquidity requirements are a first line of defense in case of a bank run, and can in the current circumstances better be monitored locally, by those which have a knowledge of the local requirements and the local banking market, rather than at home country level. This does however not mean that certain actions cannot be undertaken at EU level, to stimulate the exchange of information and trust among supervisors, and come to some level of standardization of what can be considered as liquid assets and what the ratio should be. The CEBS forms the ideal forum to pursue initiatives on this subject, following up on steps undertaken before by the Groupe de Contact.

We would certainly not argue for a full harmonization of liquidity requirements at EU level. The capital requirements directive, implementing the New Basel Accord in EU law, already requires banks to implement a much more calibrated risk management framework, based on external credit agencies assessments for smaller banks, and on internal ratings for larger institutions. In addition, it allows supervisors to intervene promptly in case a financial institution falls below the capital requirements, by requiring an institution to hold more own funds, to apply a specific provisioning policy and to restrict its activities. Furthermore, it requires financial institutions to have internal controls in place to assess and maintain on an ongoing basis the amounts, types and distribution of internal capital to be adequate to cover the nature and level of risks to which they are exposed

(Art. 123). Internal control requirements are also set in most, if not all Member States, for all listed companies in company law or corporate governance codes. This should also be the approach for liquidity requirements: banks should have the internal mechanisms to monitor their liquidity requirements, subject to some general guidelines.

What could be done is, pending further market integration, to come to mutual recognition of national liquidity requirement systems. This could already be done today for the countries of the euro area, given the existence of a single currency and the harmonization of collateral. Hence the home country's liquidity requirement system would be applicable all-over the EU, although funding requirements monitoring could be done in a cooperation with the host country authorities. Given the existence of the Basel Guidelines on liquidity requirements, and market integration, a convergence of liquidity requirements could be expected in the EU.

To come to that objective, the CEBS could continue the work undertaken by the Groupe de Contact and set standards of best practice for liquidity requirements in the EU. In addition, to strengthen trust amongst supervisory authorities, the creation of an EU clearing house for supervisory information could be considered. Today, the home-hosts relationships are run on a bilateral basis, which does not necessarily improve trust among supervisory authorities.

### **Conclusion**

Liquidity requirements on financial institutions could reduce endogenous liquidity shocks. At the same time, however, regulators should bear in mind that more liquid bank assets

could contribute to risk-taking by banks. Moreover banks are increasingly vulnerable to wider fluctuations in market liquidity, against which liquidity requirements are of limited use.

Any initiative to harmonize liquidity requirements at EU level should therefore be carefully balanced. As long as financial stability, depositor protection and supervisor's accountability are host country responsibilities, there is no immediate reason to change the present framework. What could be advocated is to set minimum guidelines for liquidity requirements in the EU, based upon the Basel Committee's principles, and to strengthen the home country rule in the implementation of liquidity requirements, certainly within the euro area.

In normal circumstances, maintaining a minimum of liquidity on a decentralized basis should be a standard practice within well-run banks. The implementation of the New Basel Accord will largely strengthen the internal appreciation of risk and risk diversification, away from the very crude asset weightings which are in place at present. Moreover, financial market liberalization, innovations and technological developments have rendered markets significantly more liquid over the last 15 years.

The latter developments may however also strengthen global financial instability. Liquidity requirements will in such circumstances be of little help, they can only be considered as a first line of defense against a bank run, to prevent a single banking problem from becoming systemic. Regional or global systemic instability will require immediate and large scale action by the authorities, but is beyond doubt that the strengthening of the international financial architecture, which has been

undertaken over the last decade at the initiative of the G-7, has largely come to meet such potential problems. ❧

## References

- Amihud, Y. and H. Mendelson. 1986.** Asset Pricing and the Bid-Ask Spread. In: *Journal of Financial Economics* 17. 223–249.
- Ayadi, R. and A. Resti (eds.). 2004.** The New Basel Capital Accord and the Future of the European Financial System. CEPS Task Force Report 51.



- Bank of England. 2004.** Strengthening Financial Infrastructure. *Financial Stability Review*. December.
- Basel Committee on Banking Supervision. 2000.** Sound Practices for Managing Liquidity in Banking Organisation. February.
- Bies, S. S. 2005.** Financial Stability Benefits and Implementation Challenges of Basel II. Central Bank of the Republic of Turkey's International Conference on Financial Stability and Implications of Basel II, Istanbul. May 17.
- De Vidts, G. 2005.** Banks' Liquidity Policies in Europe. A Survey and a Recommendation on Liquidity Regulation by the Euribor ACI Money Market and Liquidity Working Group. Presentation to the Joint Forum of International Regulatory Committees, Amsterdam. May.
- Dierick, F. 2004.** Pro-Cyclicality and Dynamic Provisioning. In: Ayadi, R. and A. Resti (eds.). *The New Basel Capital Accord and the Future of the European Financial System*. CEPS Task Force Report 51.

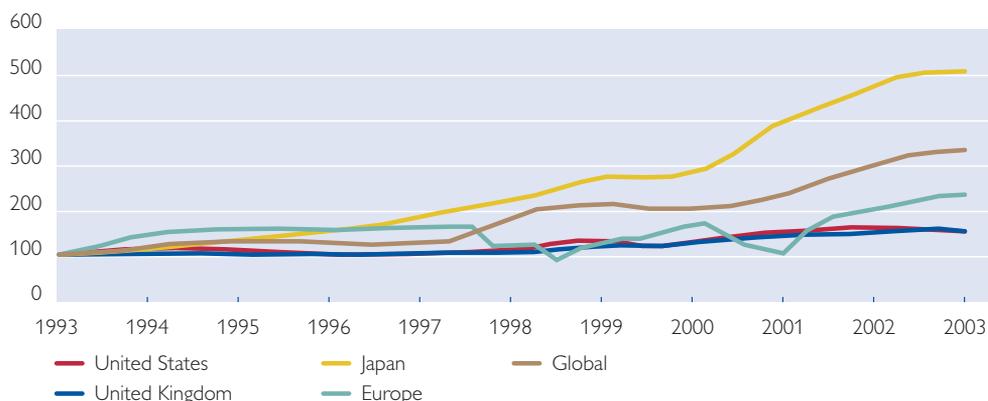
- ECB – European Central Bank. 2001.** The Monetary Policy of the ECB.
- ECB – European Central Bank. 2004.** EU Banking Sector Stability. November.
- Fernandez, F. 1999.** Liquidity Risk: New Approaches to Measurement and Monitoring. Securities Industry Association. December.
- Garcia, G. G. and M. J. Nieto. 2005.** Banking Crisis Management in the EU: Multiple Regulators and Resolution Authorities. In: Journal of Banking Regulation 6(3).
- Hartmann, P. 2004.** Discussion of “Liquidity Risk and Contagion”, by R. Cifuentes, G. Ferrucci and H. S. Shin. Paper presented at the “Accounting, transparency and bank stability” workshop organized by the Basel Committee on Banking Supervision, the CEPR and the Journal of Financial Intermediation, Basel. May 17–18.
- ISMA. 2005.** European Repo Market Survey. March.
- Lannoo, K. and J.-P. Casey. 2005.** Financial Regulation and Supervision beyond 2005. CEPS Task Force Report. February.
- Levin, M. 2003.** Competition, Fragmentation and Transparency: Providing the Regulatory Framework for Fair, Efficient and Dynamic European Securities Markets. CEPS Task Force Report.
- Large, A. 2004.** Why We Should Worry about Liquidity. In: Financial Times. November 11.
- Marrison, C. 2002.** The Fundamentals of Risk Measurement. Boston: McGraw Hill.
- O’Hara, M. 2004.** Liquidity and Financial Market Stability. National Bank of Belgium Research Paper 55. May.
- Persaud, A. 2000.** The Puzzling Decline in Financial Market Liquidity. Risk Magazine. June.
- Porter, R. B. 2003.** Measuring Market Liquidity. University of Florida Working Paper.
- Wagner, W. 2004.** The Liquidity of Bank Assets and Banking Stability. Cambridge University Working Paper.

## Annex

Chart 1

### Evolution in Global Liquidity, 1993–2003

Global Central Bank Liquidity Index: 1993 = 100



Source: IMF, International Financial Statistics;  
EconData Pty.Ltd.; Bloomberg L.P.; IMF staff estimates

GELDPOLITIK  
UND  
FINANZMARKTSTABILITÄT

