Anikó Szombati: Systemic level impacts of Basel III on Hungary and Europe*

Based on data available in the autumn of 2010, this paper describes the impacts which the most significant elements of the Basel III standards – that is, the new capital and liquidity requirements – are expected to have on the domestic and European banking system. Overall, we do not expect the new regulations to exert any significant direct effects on the Hungarian banking system. Nevertheless, some decline in GDP growth at the national level cannot be ruled out, to a lesser extent due to movements in the European money and capital markets, and to a greater extent due to impacts directly through parent banks. It is important to stress that calculations used as the basis for the industry and regulatory conclusions presented in this paper are relevant to a specific date and rely on different regulatory packages. Therefore, a repeated review of the regulatory package will have to be carried out prior to its implementation.

INTRODUCTION

On 12 September 2010, the Basel Committee on Banking Supervision (BCBS) announced a broad agreement on the most important parameters of a new regulatory system commonly referred to as Basel III and a transition period to allow banks sufficient time to implement the regulatory changes. The importance of this set of proposals lies in the fact that the G20 countries accept its principles as binding, thus turning them into global standards. Fundamentally, the proposals are based on macro-prudential considerations and strive to reinforce the stability of the financial system on two levels. On the level of individual institutions, they aim to strengthen the system's resilience to possible future shocks by improving their capacity to weather crises, whereas on the systemic level these proposals are meant to manage and contain the risk of a systemic spill-over and procyclicality. A transition period of several years available for raising additional capital and meeting higher liquidity and other risk management standards is intended to minimise restraints of activity in the banking sector.

A number of unresolved issues remain in relation to the implementation of new regulations, which will require decisions at the national or European level. From a national perspective, one particularly delicate aspect will be decisions on issues delegated to supervisory authorities, as these have a direct impact on the system as a whole. Such issues include the requirement on the FX denomination of liquidity buffers, activating and calibrating capital buffers in relation to excessive credit growth, or approving their drawdown in post-crisis periods. A further possible macro-prudential challenge could arise if – in response to tighter regulations – risks assumed by the banking system are shifted outside the sector.

Given the structural characteristics of the Hungarian banking system, another relevant concept may be to strengthen systemically important financial institutions (SIFI's) and to seek loss-absorbing capacities other than the central budget should a crisis situation occur. As the Basel Committee has only communicated its intentions in this field, a toolkit for crisis management has yet to be designed and those authorised to identify such systemically important entities have yet to be named. We expect this issue to be a source of further conflicts between home and host countries.[1]

Besides briefly presenting the Basel III framework, this paper investigates the changes with the most profound impacts, i.e. the new liquidity and capital requirement standards. In addition to identifying the direct impacts on the domestic and the European banking system, I will present the forecasts that have been or can be made in relation to indirect macro-economic impacts using information available prior to the publication of this paper. Finally, I will briefly summarize those issues that domestic decision-makers will have to address, i.e. matters in the new framework to be treated from Hungary's standpoint with great care.

* The views expressed in this article are those of the author(s) and do not necessarily reflect the offical view ot the Magyar Nemzeti Bank.

[1] A home country is the country where the parent bank of a banking group is registered. A host country is where subsidiaries or branches are based.

SUMMARY OF THE ELEMENTS OF THE REGULATION

At the level of both individual banks and the banking system as a whole, the proposals of the Basel III framework are intended to remedy the market, supervisory and regulatory failures that played a key role in the evolvement and severity of the crisis. Following national implementation, the package will enter into force in 2013, but as far as areas requiring fundamental adjustments are concerned and wherever completely new rules apply, the Basel Committee has adopted a plan for a gradual phase-in. Thus, the rules will, in a final and complete form, become binding requirements starting from early 2019 (see Annex).

Capital regulations

The fundamental purpose of the changes is to improve banks' ability to withstand shocks. Banks' primary line of defence against unexpected situations is regulatory capital. However at the outbreak of the crisis it turned out that those parts of capital which were meant to be available for immediate loss absorption proved insufficient. The tightening of capital regulations is based on two main pillars.

As a first pillar, the Basel regulators narrowed the range of components which can be recognised as regulatory capital and prescribed stricter limits in order to ensure compliance with group-level capital adequacy requirements. However, since tightening the range of eligible regulatory capital components can – given their current capital level – easily prompt banks to make asset-side adjustments in response to the new requirements, the Basel Committee adopted a transition period of 10 years during which entities will be able to improve the quality of their regulatory capital through retained earnings, new issuances and downscaling of their non-debt instruments.

As a second pillar, the Committee also defined a new three-tier capital requirement-structure. Under the decision, the current capital requirement will change as follows:

- Common Equity (Core) Tier 1[2]/RWA[3]: 2% (currently) → 3.5% (from 2013) → 7% (from 2019)
- Tier 1[4]/RWA: 4% (currently) → 4.5% (from 2013) → 8.5% (from 2019)
- Regulatory capital/RWA: 8% (currently) → 8% (from 2013) → 10.5% (from 2019)

The increase in required capital levels is attributable chiefly to the introduction of the capital conservation buffer (+2.5%). Nevertheless, these required capital ratios are by no means considered the maximum values. In the event of excessive credit growth, national supervisory authorities may decide to prescribe an additional capital buffer (up to +2.5%) to mitigate banks' pro-cyclicality (Table 1). Its extent would be based on the debt-to-GDP ratio and on an indicator reflecting deviation from the ratio's equilibrium level. If the debt-to-GDP ratio grows to excessive levels, a buffer add-on will be required at the level of the banking system, and vice versa.

Table 1
How capital buffers – aimed at containing procyclicality either at individual or at systemic level – work

	Capital conservation buffer	Counter-cyclical buffer
Purpose	Strengthening of the shock absorption ability of individual banks	Maintaining the banking system's lending capacity during recessions
Mechanism of generating the buffer	On-going, supervisory authority derogation in the event of a shock	Periodically, on the basis of supervisory authority discretion, prescribed at a systemic level
Basis of capital buffer generation	A fixed target value over the minimum capital requirement	In proportion to excessive credit growth: dominantly in proportion to the widening of the debt-to-GDP gap, gradually
Extent	Core Tier 1 + 2.5%	0–2.5%
Date of introduction	2016–2019	From 2016
Use of buffer	In justified cases, on a case-by-case basis for loss absorption	In the case of a systemic level shock for loss absorption
Sanctions	Restrictions on distributions from capital instruments	Restrictions on distributions from capital instruments

[2] The Hungarian equivalent of 'Common Equity (Core) Tier 1' is 'elsődleges alapvető tőke', and refers to the sum of an entity's subscribed capital, capital reserves and retained earnings.

[3] Risk-weighted assets and the capital requirement for market and operational risks multiplied by a credit conversion factor

[4] Tier 1 (T1) capital comprises Core Tier 1 capital and certain non-maturing, eligible hybrid capital instruments granting entitlement to special payments. Tier 2 (T2) capital ranks next in terms of loss absorption capacity. Regulatory capital can be interpreted as the sum of the two (T1+T2).

The problem we are presented with here is two-fold: one is how we define 'excessive' credit growth, and the other is whether the definition of capital requirements is consistent across individual countries.

Liquidity regulations

It is the first time that liquidity standards have been introduced in the Basel Committee's proposals. The new liquidity requirements are based on two ratios. One is the liquidity coverage ratio (LCR)[5] that enables banks to survive stress periods up to 30 days. Although compliance with the ratio will have to be disclosed from 2011 onwards, it will only take effect as a binding rule in 2015. The other indicator is the net stable funding ratio (NSFR), which will also be phased in over a relatively long period, with regular calculations to start in 2012. It will become a binding requirement in 2018. The purpose of introducing the ratio is to reduce maturity mismatch on banks' balance sheet, i.e. regulators intend to enforce that long-term assets to be financed by liabilities with maturity of over one year.

Other regulatory requirements

Another new indicator is the leverage ratio, which is intended to efficiently curb excessive risk taking by imposing limitations on the proportion of on- and off-balance sheet assets and Tier 1 capital. Although, in principle, a leverage ratio – tentatively set at 3% – will have to be observed by large international banks from 2011 onwards, the Basel Committee will only set a definitive limit prior to the introduction of the ratio as a binding requirement starting 2018. The impact of leverage ratio-based requirements across the banking system will, to a large extent, depend on the accounting method selected for the recognition of off-balance sheet items, the extent of close-out netting that is permitted for accounting purposes and whether the selected limit (currently 3%) will narrow the room for manoeuvre for certain business models under standard circumstances as well, or will only function as a backstop measure preventing excessive risk-taking.

A further component of the package of regulatory proposals is aimed at reducing the risk of contagion at the systemic level. Higher capital adequacy requirements and tighter liquidity management criteria have been set for systemically important financial institutions. Furthermore, supervisory discretion may be exercised in converting certain senior creditor positions into loss-absorbing capital components, thereby enabling these institutions to better resist shocks.

In response to further requirements affecting interbank transactions, capital requirements for the trading book will rise by three- to four-fold on average[6], as well as those for counterparty risk. The regulation recognizes that counterparty risk emerges not only when a partner organisation goes bankrupt, but also when its creditworthiness deteriorates materially; furthermore, higher correlation ratios will be allocated to positions towards financial institutions.

A move to clear derivatives contracts through central counterparties (CCPs) wherever possible as another form of counterparty risk management is expected to further reduce systemic level risks. However, a standardised structure of transactions and an expected rise in charges may also narrow market depth.

QUANTIFYING THE ANTICIPATED IMPACTS OF THE FRAMEWORK

Each of the recommendations serving as the cornerstones of the regulation is intended to address a typical phenomenon that contributed to the evolvement of the current crisis. A quantitative impact study (C-QIS) by the Committee of European Banking Supervisors (CEBS) aimed at quantifying the impacts of the recommendations on the banking system seeks to assess, on the basis of data available for individual banks as of 31 December 2009, the aggregate impact of the recommendations and provide assistance with the final calibration of individual ratios.[7]

Since the announcement of the regulatory proposals in 2009, a number of analyses investigating the macroeconomic impacts of the tighter rules during the transition period and over a longer horizon have been published. One of the most referenced industry studies, an analysis by the Institute of International Finance (IIF), assesses the aggregate impact of international regulatory initiatives[8] published up to June 2010 on the long-term macro-economic performance of the G3 countries[9].

[5] LCR = liquid assets/30-day cumulative net cash outflow>=100%, NFSR (net stable funding ratio) = stable funds/stable assets to be financed>=100%.

[6] Overall, based on Quantitative Impact Study 6 (C-QIS), this will mean a 6.4% rise in capital requirements for large European banks. Changes are not expected to affect medium-size banks, as they are less active in securitisation and trading.

[7] The study involved 48 large international (Group 1 or G1) and 186 medium-size (Group 2 or G2) banks, covering 70% of the European Union's banking sector at a consolidated level.

[8] Thus, in addition to the 2009 proposals of the Basel Committee, it also dealt with the aggregate impacts of an international bank levy and additional requirements for large, systemically important entities, revised accounting standards, enhanced capital requirements for the trading book and of some of the latest restrictions (also named Volcker rules) that are applicable in the USA.

[9] USA, Japan and euro area countries.

In order to adopt an official regulatory stance, two separate workgroups of the BCBS carried out separate analyses on the anticipated temporary and permanent macro-economic impacts related to the Basel III switchover.[10] Rather than specifically examining the effects of different calibrations under the new regulations, these analyses provide an assessment of the effects of 1 percent tightening of capital and liquidity requirements on the GDP path.

Relying on these three sources, as well as on a Hungary-specific analysis (Somogyi and Trinh, 2010) by the staff of International Training Center for Bankers (Bankárképző) and on MNB's own methodology, I will in the following section present the effects of a rise in expected capital levels and of the introduction of liquidity standards on the domestic and European banking system, along with the estimated macro-economic costs of the necessary adjustments.

Impacts of the capital regulations

Banking system-related and macro-economic impacts in the EU

Under the first pillar of the Basel III capital requirements (primarily tightening the eligible capital base by deductions from common equity), the quantity of Core Tier 1 capital suitable for loss absorption will decrease significantly in the European banking system. Furthermore, under the second pillar (a higher Core Tier 1 ratio), there will be a marked rise in expected capital levels (Table 2). One look at the Core Tier 1 ratio forming the basis of three-tier capital requirement-structure reveals that, at the end of 2009, the capital ratio for all large European banks was well below the 7% level that is scheduled to take effect starting 2019, due, fundamentally, to a narrower range of eligible capital components. Between 2013 and 2019 these banks will have to raise, either in the market or by retaining earnings, EUR 270 bn in Core Tier 1 capital, which is equal to 58% of their current, similarly high-quality capital. The capital ratio of medium-size banks is somewhat higher, and thus, in their case the required Core Tier 1 capital only amount to 17% of their current holdings.

The heightened capital requirements pose two problems. One is the uncertainty around the success of raising capital and the costs involved. The current money market environment remains less than favourable; other factors which make raising capital even more difficult are the withdrawal of capital support provided by governments during the crisis, along with their substitution with funds originated from the markets on the one hand, and the materialization of prospective (private and sovereign) loan losses identified in stress tests exercises on the other. The question is whether capital markets in Europe can, in the face of deteriorating profitability, supply a sufficient quantity of funds for CET1 to be adequately increased.

Another risk related to the increased capital requirements is the acceleration of the banking system's balance sheet adjustment and the macro-economic implications of such acceleration. The IIF analysis, which – due to the fact that it was published in June 2010 – could not rely on the finalised standards,[11] projects a rather dramatic fall over the transition period (Table 3). Our forecast reveals that, from among the three regions studied, the euro area will have to make the largest growth sacrifice: its GDP is expected to drop by 4.4% over a span of 8 years. The underlying reason for this is that bank intermediation is dominant in the euro area, and the weight of the banking system is high in the economy.

Table 2
Capital impacts of the Basel III requirements expressed as a percentage of Common Equity Tier 1 at the European level

	Current CET 1 ratio under Basel I	Current CET 1 ratio under Basel III	New CET1 ratio from 2019	Capital shortfall (EUR billion)	As a proportion of the currently available capital
G1, Europe	11.3%	4.9%	7%	263.2	55%
G2, Europe	11.4%	7.1%	7%	28.3	18%

Source: C-QIS.

[10] Temporary impacts were assessed by the Macroeconomic Assessment Group (MAG) established by FSB and BCBS, the permanent ones by BCBS's Long-term Economic Impact (LEI) Group. As the above analyses were carried out on the basis of the 2009 consultation recommendations, BIS will make an updated analysis relying on the finalised regulations approved in September 2010.

[11] IIF results are the outcome of the analysis of a complex scenario where the combined effects of liquidity, capital, leverage, trading book and other regulations (e.g. those pertaining to a bank levy) are taken into consideration. In addition, the assumed date of introduction for the complete rule book is 2012; therefore, one-off adjustment impacts reflect a sharper fall. (For further differences, see later.)

Table 3
IIF estimates for the impact of new regulatory standards on GDP

A change in real GDP in response to a 1% increase in the capital requirement by 2019	Total actual increase in the capital requirement from 2011 to 2019	A change in real GDP in response to an actual increase in the capital requirement by 2019
–2.2%	2%	–4.4%

Source: IIF.

Table 4
BIS projection for the impacts of the new capital requirements on GDP

A change in real GDP in response to a 1% increase in the capital requirement by 2019	Total actual increase in the capital requirement from 2011 to 2019	A change in real GDP in response to an actual increase in the capital requirement by 2019
–0.1%	2.4%[12]	–0.24%

Source: BIS.

A Basel Committee workgroup assessing the costs of the transition summed up the findings of 89 models, run on various countries, by the participating Member States using different methods. Analysts adopted a two-step approach to analysing the macro-economic effects of higher capital requirements. The first step is the assumption that banks will meet higher capital and profitability requirements via higher lending spreads. The second is that impacts on macro-economic variables, including consumption, investment and growth, are assessed on the basis of the lending spreads and volumes thereby calculated (Table 4).

Estimates of the BIS workgroup show a substantially milder impact on GDP growth than those by the IIF. According to the former, GDP will be 0.24% lower by 2019, in relation to the 'unregulated' baseline scenario. There is a roughly twenty-fold difference between the two calculations, which can be attributed to a number of factors. One of the fundamental differences is that the Basel Committee workgroup assessed the growth impact of the capital requirements partially, while IIF prepared its calculations for the regulatory package as a whole, of which tighter capital requirements are only one component. Furthermore, the assumptions of the two groups of analysts also differ in terms of baseline scenarios, because IIF experts used pre-crisis levels as a benchmark in assessing the impact of the framework on both banking activity and credit growth.

Banking system-related and macro-economic impacts in Hungary

According to MNB's assessment, the new rules are not expected to have major impacts on large domestic banks, due to their conservative capital structure (first pillar) and to the actually high level of conservative capital components (second pillar).

Based on August 2010 data, we have quantified the additional capital that major actors in the domestic banking system would have to hold in order to meet the new requirements. Of the major banks, only one fails to comply with the Tier 1 capital requirements. One more bank would fail to comply with the 10.5% capital requirement which takes into consideration, in addition to CET1, both Tier 2 and hybrid capital instruments, were this requirement already binding. Based on current figures, the total additional capital need of the domestic banking system is HUF 22 billion, which is equal to 0.87% of the capital stock.

Using the MNB's own methodology, we assessed the macro-economic impact of such an additional amount of capital over an 8-year adjustment period. Under our assumption, if the required capital of the banking system increases, adjustment may take place fundamentally via two channels. One is by making up for the shortfall in regulatory capital, i.e. through capital increases. The other is by reducing risk-weighted assets to an extent where the capital requirement reaches the required level. We conducted our calculations assuming that adjustment occurred via capital increases and reduction in assets in an equal measure. Reduction in assets occurs by banks not rolling over expiring loans. We assume that banks will first adjust through corporate lending for as long as reasonably possible, then through household lending. Some (in our calculations: one-half) of the credit portfolio that is not rolled over may be assigned to other banks, as a result of which the decrease in

[12] We calculated the required increase in capital requirements on the basis of C-QIS data in a manner that it was established as a proportion of the capital shortfall to the current level of capital for large and medium size banks.

Table 5
MNB forecast of the impact of changes in the capital requirements on GDP

A change in real GDP in response to a 1% increase in the capital requirement by 2019	Total actual increase in the capital requirement from 2011 to 2019	A change in real GDP in response to an actual increase in the capital requirement by 2019
−0.63 – −1.05%	0.11%	−0.07 – −0.12%

Source: MNB.

aggregate credit supply is more moderate than the adjustment by the individual banks.

A credit supply shock caused by banks' adjustment will restrain production as it constrains lending to corporations. Tightening household lending reduces consumption directly, thereby deepening economic downturn on the supply-side. In calculating macro-economic impacts, we relied on the MNB's forecast model.[13] Our findings (Table 5) reveal that, where the above HUF 22 billion capital increase materializes, achieving compliance with the capital requirements during the 8-year transition period may lead to a 0.07–0.12% decline in GDP relative to the baseline scenario.

According to a study published by two staff members at Bankárképző (Somogyi and Trinh, 2010), the impacts of a stricter definition of capital and heightened capital requirements will be more dramatic. The study, while assuming that national authorities will initiate a counter-cyclical capital buffer in the maximum possible amount,[14] forecasts HUF 140-150 billion in additional capital need by the end of 2012. This amounts to approximately 6% of the banking system's current level of regulatory capital. As it is roughly seven times as high as the MNB's forecast, it is worth comparing the two systems of assumptions and the two methods. A detailed comparison is shown in Table 6.

Liquidity rules

Banking system-related and macro-economic impacts in the EU

As for the European banking system, the introduction of the LCR and the NSFR will require adjustment on the part of large, international and medium-size banks alike, as both their LCR and NSFR fail to meet prescribed levels (Table 7).

Table 6
Major causes of differences in national forecasts

Different results:		
	Bankárképző	**MNB**
New capital requirement ratio (%)	13	10.5
Additional capital need (HUF billion)	150	22
Reduced credit supply due to balance sheet adjustment (%)	7	1
Deviation of GDP from the baseline scenario	−1.92	−0.12
Impact of 1% decrease in credit supply on GDP	0.2	0.2
Different assumptions:		
	Bankárképző	**MNB**
MKB's capital increase (HUF 50 billion) taken into account	No	Yes
Bank levy taken into account	Yes	No
Restoration of capitalization	Exclusively through adjustments in lending	Partly with parent bank capital, partly through adjustments in lending
Interbank substitutability of adjustments in lending	No	50% substitutability

Source: MNB, Somogyi and Trinh (2010).

[13] The direct model results forecast the impacts of an increase in capital requirements subsequent to a shock, where the increase materialises over 1-1.5 year(s). By contrast, impacts of regulatory changes will take as long as 8 years to emerge. In quantifying the impact on GDP for this longer period, we relied on the adjustment paths of the BIS and the IIF over different time horizons.

[14] According to the communication of the Basel Committee (BCBS 2010), the earliest possible date for its introduction is 2016, but even then it will have to be phased in gradually.

Table 7
Anticipated impact of the new liquidity standards on Europe's capital markets – C-QIS

	Liquidity coverage ratio (LCR) (%)	Net stable funding ratio (NSFR) (%)
G1, Europe	66.5	91.1
G2, Europe	87.1	93.9

Source: C-QIS.

These new requirements are expected to put immense pressure on the markets. However, it should be added that results presented here are based on current balance sheet structures. Asset-side adjustment may help comply with the prescribed ratios, especially in light of the fact that these two ratios will only be in full force from 2019 onwards. The question is, however, how (partial or full) asset-side adjustment is likely to affect Europe's economic growth.

The workgroup of the Basel Committee assessed the economic impacts of the introduction of new liquidity standards separately from the anticipated effects of new capital requirements. Their model was based on a 25% rise in liquid assets and the prolongation of the remaining maturity of wholesale liabilities. Their calculations suggest that, over a four-and-a-half-year period following the introduction of the standards, lending will fall by 3.2%, which leads to 0.08% lower GDP relative to the baseline scenario.

Banking system-related and macro-economic impacts in Hungary

When assessing the impact of new liquidity standards in Hungary, it is important that direct and indirect impacts be treated separately. Parent banks' measures to improve liquidity may, indirectly, also affect the liquidity of the domestic banking system. As the reliance of domestic subsidiaries on foreign – mainly parent bank – financing is high, any possible deleveraging may lead to difficulties in financing the stock of foreign currency-denominated loans. A further indirect impact is that, if European banks decide to cut back on lending in response to the high liquidity standards, this will affect growth in the domestic corporate sector as well, due to the economic integration.

The direct impact of the liquidity standards on the domestic banking system is moderate. Nevertheless, in interpreting the national calculations, it is important to bear it in mind that they reflect one-off data for late 2009 and early 2010. In this period banking activity was relatively subdued. It is safe to say, therefore, that figures for a more active period would show a less balanced picture.

Our survey based fundamentally on the calculations of the individual banks shows that the mandatory use of the LCR is unlikely to have a significant impact on the banking system. Discussions with banks underpinned our assumption that they will not have to adjust in order to comply with a ratio exceeding 100%. As regards the NSFR, several large domestic banks currently fail to meet the new standards and therefore, over the long term, some change in the structure of financing will be unavoidable in Hungary as well. In order for the NSFR of all the banks surveyed to exceed 100%, overall, HUF 850 billion will have to be raised in long-term funds, but of this, only HUF 11 billion will be needed for the new liquidity ratio to be complied with if short-term financing from parent banks can be turned into funds with maturity of over 1 year. It should also be noted that these calculations are based on the current structure of banks' balance sheet, and thus, in principle, credit side adjustment until 2018 cannot be ruled out either. There may be less need for such adjustment if additional resources can be raised as a result of households' improved savings position. As the regulations treat short-term retail resources[15] quite favourably, we do not expect lending to be cut back on or loan origination to be reduced as a direct impact of the new liquidity ratios.

Bankárképző's calculations lead to similar conclusions, although there are significant differences in terms of quantitative results in this case as well. The most important difference is that the MNB only assessed the liquidity requirements of large domestic banks and relied predominantly on the banks' own calculations. Another difference is that MNB data pertain to the end of 2009, Bankárképző's to 2010 Q2. This accounts for the difference between the two calculations, especially in the case of the more volatile LCR. Table 8 compares the two sets of calculations.

As regards the introduction of the new liquidity ratios, in Hungary due consideration will have to be given to the question of the extent to which international standards prescribing higher short- and medium-term liquidity can handle the domestic banking system's complex problem

[15] Banks can expect even short-term retail and SME deposits to be rolled over to a 80% and 90% degree respectively.

Table 8
Anticipated impacts of the new liquidity standards in Hungary according to the calculations of Bankárképző and the MNB

	Bankárképző	MNB
LCR (%)	119	160
NSFR (%)	88	90
Liquidity shortfall (HUF billion)	2,688	850

Source: MNB, Somogyi and Trinh (2010).

arising from the simultaneous existence of on-balance sheet open FX positions and maturity mismatches. Regarding FX positions, banks' ability to absorb shocks can, in principle, be improved through the Hungarian supervisory authority's decision to the effect that banks will be expected to hold a 30-day liquidity buffer in the prescribed breakdown by currencies. Nevertheless, prior to such a step being taken, further calculations will have to be made, because, in view of the limited availability of market liquidity and impacts on profitability, there is no guarantee that banks will opt for this kind of adjustment.

LONG-TERM IMPLICATIONS OF OPERATION IN ACCORDANCE WITH THE NEW RULES

Besides the above impacts, the introduction of the new regulations may also have permanent, long-term implications. Temporary impacts originate from the one-off adjustment of banks to the new requirements (i.e. compliance with the higher capital and liquidity requirements), while the permanent, long-term effects derive from banks' more stable operation under the stricter regulations.

Studying the long-term macro-economic impacts, the Basel workgroup used literature on banking crises as its starting point, gauging the extent by which more stringent capital and liquidity requirements will be able to reduce the likelihood of a banking crisis. This was compared with the costs of previous banking crises (in terms of the departure of GDP from its pre-crisis baseline scenario); the long-term benefits of the introduction of Basel III were estimated from reduction in costs and in the probability of the occurrence of a crisis. This was contrasted with those costs of compliance with the new regulations incurred by more expensive credit that lead to lower GDP relative to its baseline scenario. Results suggest that, overall, the introduction of Basel III will have favourable implications: stricter capital and liquidity standards may – according to best-case scenario figures – increase output by as much as 2% annually compared with the baseline scenario. The forecast of more conservative models is, however, for a close to 0% impact. The workgroup itself pointed out – without citing concrete methodological problems – that its forecasts were rather uncertain.

ISSUES RELEVANT TO HUNGARY

In the course of the future drafting of the new regulations as an EU directive and during their implementation in Hungary, regulators will have to make decisions on the following currently open issues on the basis of the characteristics and existing risks of the domestic banking system. As at end of 2010, based on its duties and macro-prudential tasks, the MNB believes that an official stance will have to be adopted on the following issues:

1. **Liquid assets eligible for the calculation of the LCR:** many of the assets that the ECB (and the majority of central banks) considers (consider) to be eligible collateral are not included in the liquid asset buffer. A possible consequence could be that the majority of the banks will have to turn to the central bank for assets eligible as liquidity buffer components against central bank-eligible assets as collateral. As a result, the quality of central bank collateral will deteriorate, and, contrary to the purpose of the regulations, reliance on the central bank will increase rather than decrease.

2. **LCR: a liquidity buffer in a breakdown by currencies:** regulators require banks' liquidity buffers to be available in a manner that corresponds to the currency composition of outflows on the liabilities side, i.e. they assume that in a stress situation swap markets freeze. However, the supervisory authority may allow banks to generate the buffer in HUF rather than by currencies. On the basis of experience related to earlier crises, a decision should be made whether such practice can, from the perspective of the stability of the system, be supported.

3. **NSFR and the treatment of parent bank funding:** the most critical requirement for domestic banks is that they will have to treat short-term parent bank funds as interbank loans with zero weight. As only parent bank funds with maturity of over one year count in the ratio,

if the financing structure of the subsidiaries remains unchanged, the maturity of parent bank loans will have to be prolonged considerably. The question is whether parent banks will be willing to do so.

4. **NSFR of banks financed from the capital market:** the problem facing banks financed primarily from the capital market is a sudden 'drying up' as funds become short term when the remaining maturity falls below one year. This is partly remediable through diversification of their maturity structure, but its efficacy is limited due to the limited availability of funds with different maturity.

5. **Definition of systemic level stress and excessive credit growth:** this is the first time that new regulations have allocated tools of fundamentally micro-prudential regulation (i.e. capital buffers) to an expressly macro-prudential objective. Both buffers will require supervisory authorities to think in a new way and take into account more aspects than before. Especially, the calibration and the timing of the use of the counter-cyclical capital buffer intended to track the cyclical movements of the financial system and ensure the generation of reserves that are sufficient at a systemic level is a task that will likely to require closer co-ordination between the competent national and international authorities.

6. **Costs of the services of central clearing houses:** under the BCBS's proposals published in July 2010, exposures to central clearing houses will no longer receive a zero risk weight; they will be subject to a low risk weight, proposed at 1% to 3%. A decrease, due to additional costs, in the number of those intending to take positions in HUF diminished would hit the domestic banking system's access to FX swaps adversely.

7. **Evading regulation:** as tighter regulations will apply exclusively to the banking system, risks are likely to be shifted outside the sector as a way of minimising adverse impacts on profitability. Therefore, from the perspective of systemic stability, one of the challenges is to identify and limit the risks posed by unregulated sectors.

CONCLUSIONS

Overall, based on the foregoing, we conclude that the new regulations are not expected to have material direct effects on the Hungarian banking system. At the level of the nine largest domestic banks, additional capital in an amount of HUF 22 billion, equal to 0.87% of the current capital stock, will be required. As regards liquidity, if short-term parent bank funding can be turned into funds with maturity of over one year, long-term resources in an amount of HUF 11 billion will have to be raised. Nevertheless, to a lesser extent due to movements in the European money and capital markets, and, to a greater extent due to some impacts directly through parent banks, some reduction in growth at the national level cannot be ruled out.

It is worth tapping the hidden potential of the new global regulations, i.e. it is worth finding out whether they can help reduce any macro-prudential risks specific to Hungary. In the MNB's opinion it is worth assessing the extent to which the new liquidity regulations can be used to address issues specific to Hungary (e.g. the simultaneous existence of on-balance sheet FX open positions and maturity mismatches).

As a closing note, it is important to stress that calculations used as the basis for the industry and regulatory conclusions presented herein relate to one specific point of time, and rely on different regulatory packages. Therefore, repeated reviews of the regulatory package will have to be carried out prior to its implementation.

REFERENCES

Basel Committee of Banking Supervision: Long-term Economic Impact (LEI) workgroup: *An assessment of the long-term economic impact of stronger capital and liquidity requirements*. August 2010. URL: http://www.bis.org/publ/bcbs173.htm.

Basel Committee of Banking Supervision: Macroeconomic Assessment Group (MAG): *Assessing the macroeconomic impact of the transition to stronger capital and liquidity requirements – Interim Report*. August 2010 URL: http://www.bis.org/publ/othp10.htm.

Basel Committee of Banking Supervision: *Strengthening the resilience of the banking sector – Consultative document*. 17 December 2009 URL: http://www.bis.org/publ/bcbs164.htm.

Basel Committee of Banking Supervision: *The Group of Governors and Heads of Supervision reach broad agreement on Basel Committee capital and liquidity reform package*. 26 July 2010. URL: http://www.bis.org/press/p100726.htm.

Committee of European Banking Supervisors: *Results of the comprehensive quantitative impact study*. URL: http://www.c-ebs.org/cebs/media/Publications/Other%20Publications/QIS/EU-QIS-report.pdf, 16 December 2010.

Institute of International Finance (IIF): *Interim report on the Cumulative impact on the Global Economy of proposed Changes in the Banking Regulatory Framework*. June 2010 URL: http://www.iif.com.

Somogyi Virág and Trinh Tuan Linh: 'A Bázel III szabályozás várható hatásainak elemzése Magyarországon'. [An analysis of the anticipated impacts of Basel III on Hungary] Hitelintézeti Szemle, Vol. 9, No. 5 2010.

ANNEX

Table 9
Proposals of the Basel Committee on Banking Supervision
(December 2009)

Market failure	Regulatory proposals
The amount of actually available capital decreased consistently, and the amount of capital at the time of the outbreak of the crisis was only partially able to absorb losses. Significant government intervention in the form of capital injection was required.	Revised definition of capital: Tier 1 – going concern capital: common equity + flexible interest-bearing non-maturity hybrid capital Tier 2 – gone concern capital: subordinated loan capital
Banks relied on the interbank market to ensure their short-term and long-term liquidity to an increasingly large extent. Once market liquidity became scarce, large-scale central bank and government interventions had to be made.	International liquidity standards based on stress scenarios: • Short-term (30 days) – LCR: liquid assets/outflows on the liabilities side ≥1 • Long-term – NSFR: liabilities with maturity of over 1 year/short-term assets to be financed ≥ 1
One of the major contributors to the crisis was the increasingly lax lending standards of banks. After the onset of the crisis, impacts were exacerbated by the fact that, in a bleak market environment, banks cut back on lending excessively. As a result, the financial crisis turned into a real economy crisis.	Measures to reduce pro-cyclicity: • Mitigation of the pro-cyclical nature of the Basel II regulations • Forward-looking accounting provisioning (on an expected rather than incurred loss basis) • Prescription of capital reserves on the level of the individual banks • Prescription of systemic level capital reserves
There was not enough capital to cover the risks posed by interbank trading; losses were mainly due to the deterioration in counterparties' credit rating, a situation that regulations had failed to address.	Enhanced capital requirements for trading and counterparty risks: • Stress VAR with a holding period of 1 year • Application of a 1.25 multiplier to counterparties in the financial sector • Counterparty risk on the basis of the probability of default and deterioration in their credit rating • A move to clear OTC derivatives contracts through CCP's
Build-up of huge on- and off-balance sheet leveraged positions, with regulatory capital requirements being met.	Definition of leverage ratio: Tier 1 capital/unweighted on- and off-balance sheet assets
When the risks posed by systemically important financial institutions (SIFIs) materialised, governments had to recapitalise them in order to reduce the risk of spill-over and real economic impacts. As a result, the moral hazard of similar institutions grew.	Supplementary regulations applicable to systemically important financial institutions. (At the time of the drafting of the proposal, requirements for additional capital and liquidity and the involvement unsecured debtors in loss absorption were laid down.)