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THE UNEQUAL EFFECT OF NEW BANKING RULES IN EUROPE

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Highlights

- The banking rules commonly referred to as Basel III will be associated with a tightening of credit conditions. The estimated macroeconomic costs range from 0.2 percent to 1.5 percent of GDP for each percentage rise in the capital ratio.
- An optimistic view is that the monetary policy response will be accommodating, but this is unlikely. However, the pessimistic scenario of a significant impact on lending spreads because of a 'reputational cost' associated with the failure to meet the requirements, is also unrealistic, given the long implementation phase that was recently agreed for Basel III.
- The aggregate costs of the measures will be somewhere in between, but on aggregate closer to lower bound estimates. Costs will be differently distributed across countries depending on initial conditions, modalities of implementation, the relative importance of bank credit, and firms' latest financing needs and ability to access alternative funding sources.

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THE UNEQUAL EFFECT OF NEW BANKING RULES IN EUROPE

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THE BASEL COMMITTEE ON BANKING SUPERVISION (BCBS) started work in December 2009 on an initiative to make the banking sector more resilient. The milestones towards comprehensive reform were a general agreement on 26 July 2010 on the definition of admissible quality of capital and, in particular, on the predominance of common equity, and a decision on the necessary adjustments to the quantity and quality of capital on 12 September. The next step will be – hopefully consistent – implementation at national level.

The Basel III proposals mainly deal with the tightening of capital and liquidity requirements, and are part of a bigger financial reform package that aims to strengthen supervision and to provide robust crisis management mechanisms (eg bail-ins). Adjustment to the new capital requirements is expected to start in 2013 and should be finalised by 2019. Liquidity targets such as the Liquidity Coverage Ratio (LCR) and Net Stable Funding Ratio (NSFR) will be implemented after an observation period (see Box 1). Before entering into force, the proposals must be approved by national governments at the next G20 meeting in Seoul, Korea, on November 11-12, 2010.

Bank credit allows agents to invest long-term and is thus an important source of growth for any economic system[1]. The banking industry, central banks and the Bank for International Settlements (BIS) have thus attempted to estimate the impact that the new rules will have on growth. According to a recent report by the BIS each percentage point increase in the capital ratio will reduce real GDP by a 'modest' 0.20 percent in four years, or by 0.35 percent in the absence of any monetary offsetting[2]. The estimate is used to conclude that the long-term benefits of regulatory reform in the form of banks' greater resilience to future shocks will outweigh the short-term costs of lending constraints. By contrast, the Institute of International Finance (IIF), representing the banking industry, has said that the same regulatory change would lead to a more substantial loss in output of about 1.5 percent[3].

The difference in the results is striking. It is mainly due to two factors. First, the BIS model assumes that central banks will react to slower aggregate demand by reducing interest rates. At present, however, central banks have very little monetary policy space because short-term rates are at near-zero level, and concerns about the recovery and world exchange rate movements dominate the policy stance. Yet, if it ever takes place, the monetary accommodation that would accompany the implementation of the new rules in Europe will be limited. The cross-country variation in the initial positions of national banking sectors implies that the impact of Basel III will vary between euro-area countries and that, as a result, the impact on euro-area output and inflation will not be large enough to produce a strong response from the ECB. Finally, a substantial monetary accommodation may not be desirable because excessively low interest rates could create in certain market segments the same conditions that were at the root of the recent crisis[4], contradicting the original purpose of the new banking regulation.

Second, the two reports make different assumptions about the impact of the new requirements and the resulting lending spreads on the cost of capital. The BIS forecasts a rise in lending spreads of 0.15 percent, and the IFF of 0.70 percent in four years. The cost of equity estimated by the IIF is amplified by high premia associated with the possible failure to meet the new requirements in one or more years[5]. We consider the IIF estimate to be rather high for two reasons. The transition period in the IIF report is assumed to end already in

1. See, for example, Bernanke and Blinder (1988).

2. BIS (2010).

3. IIF (2010).

4. Giavazzi and Giovannini (2010).

5. The expected cost of equity in the IIF report depends on four factors: 1) a region-specific target rate, 2) a premium that captures an upward-sloping supply curve for equity, 3) a 'punishment' premium that incorporates a bank's failure to reach its target rate in a given year, and 4) an 'instability' premium that represents a bank's failure to meet the regulatory capital requirement.

2015. Longer transition periods – which have in fact now been agreed – result in flatter supply curves and thus reduce capital costs. Moreover, the 'punishment' factor is questionable because capital providers take a forward-looking perspective in determining their return expectations. This would further reduce the cost of capital and in turn the required lending spreads.

We believe for the reasons mentioned above that the BIS numbers have a more solid basis, even if we are less inclined to believe that there will be sufficient room for a substantial monetary expansion in the course of implementation. Building on these macro figures we try to assess the distribution of costs across weakly capitalised national banking systems by taking explicit account of the

BOX 1: THE MAIN BASEL III CAPITAL AND LIQUIDITY REQUIREMENTS

The proposed Basel III rules are a reaction to the experience of Basel II and to the lessons learnt from the financial and economic crisis that started in 2007. In particular, banks have struggled to maintain the appropriate amount and quality of capital and liquidity, thus allowing a crisis in a relatively small market in the United States to spread across the banking system and to threaten the functioning of the worldwide financial system. The new rules thus focus on revising and setting new standards for the capital and liquidity that banks need to hold. The main proposals are:

I. Capital

a. Raising the quality, consistency and transparency of the capital base: comprises both a quantitative and a qualitative element by proposing an increase in different capital measures as a share of risk-weighted assets as well as a focus on common equity – instead of other sources of funding such as hybrid capital – as the primary form of funding and predominant form of Tier 1 capital. There would be a minimum common equity capital level of 4.5 percent and minimum Tier 1 capital of six percent, along with a capital conservation buffer of 2.5 percent.
b. Strengthening the risk coverage of the capital framework: this focuses on more comprehensively including and better quantifying the risks arising from counterparty credit risk exposures, for example in the form of derivatives, repos, and securities financing activities.
c. Introducing a three percent leverage ratio as a supplementary measure in addition to risk-based capital requirements: while the proposals discussed in (a) deal with capital ratios that are measured with respect to risk-weighted assets, the leverage ratio is measured with respect to unweighted assets to avoid the inherent shortcomings in determining risk-weighted assets. It is meant to reduce the leverage build-up and thus the potential for the damaging consequences of deleveraging in times of crisis.
d. A series of measures to promote the build-up of capital buffers in good times: this would deal with the pro-cyclicality of the Basel II measures and the attempt to dampen their effect. The specific recommendation is to require banks to build a country-dependent countercyclical buffer within a range of 0-2.5 percent.

II. Liquidity

The liquidity proposals mainly focus on two measures that capture a bank's ability to meet its short-term and medium- to long-term liquidity needs: the so-called Liquidity Coverage Ratio (LCR) and Net Stable Funding Ratio (NSFR). The LCR measures a bank's ability to meet short-term liquidity needs and thus to offset net cash outflows in an acute short-term stress scenario. The measure is defined as the ratio of the stock of high-quality liquid assets and net cash outflows over a 30-day period, with the ratio being required to exceed 100 percent. The NSFR measures the availability of longer-term stable funding (sources) to match the requirements for longer-term stable funding (uses). This criterion is defined as the ratio of these two measures and is required to exceed 100 percent.

possibility of substitution effects between bank and non-bank credit, and firms' actual financing needs and prospects of accessing funding sources other than bank loans.

In section 1, we describe strategies available to banks for implementing the prospective Basel III requirements. In Section 2 we assess the adjustment effort for each national banking system and how it correlates with other measures of the expected loss in long-term growth. Section 3 discusses policy challenges.

1 BANK BEHAVIOUR

Capital ratios and liquidity standards for banks vary significantly for different countries, different types of banks, and different individual banks. Due to the lack of data it remains difficult to quantify exactly the capital and liquidity positions of each bank in each country. Even the July 2010 stress tests provided only a partial assessment[6]. In particular there is no information concerning the quality of capital, namely the share of common equity in the regulatory capital held in each bank and, by aggregation, in each country. This is unfortunate because it hampers the calculation of the exact size of adjustment in each bank and in each country.

The only variable for which there is reliable and comparable data is the Tier 1 capital ratio (ie Tier 1 capital divided by total risk-weighted assets), which consists of common equity and other financial instruments, which will qualify based on stricter criteria in the Basel III framework. The variations in these ratios are evident in the EU. At the end of 2008, the value of aggregate Tier 1 ranged from a minimum of 6.91 percent for Italy – a value only slightly above the six percent threshold – to a maximum of 15 percent for Malta[7]. These substantial differences in bank capital ratios across countries imply substantial differences in how far countries will need to go to comply with the new capital regulation. While in some countries, in aggregate, there may not be a need to inject additional capital into the banking system, the requirements for other countries could become quite considerable. But, again, the exact size of the adjustment can only be determined by accounting for the quality as well as the quantity of banks' capital, because of the stricter criteria imposed by Basel III on the definition of regulatory capital.

Capital-deprived banks can use different strategies to strengthen their capital positions, each strategy having a slightly differentiated economic impact. Hence, the key question that needs to be addressed is how banks will close the gap between their current capital ratios and the new target levels. One possibility is that banks take advantage of transition periods and, by paying no or only moderate amounts of dividends, progressively accumulate retained earnings. Given the long transition periods allowed, some banks might proceed this way, but this adjustment path is available only to profitable banking systems. Assuming that banks do take an active role in the adjustment process, three broad strategies can be identified[8]:

Strategy 1: Increase loan margins. Banks can increase margins on loans, which will translate into a rise in lending rates.

Strategy 2: Raise new equity. Banks could issue new capital and keep their asset structure constant. We thus expect a strong demand for equity capital with consequent upward pressure on the price of funding, which in turn would necessitate an increase in banks' operating revenues and thus an increase in interest rates[9].

Strategy 3: Reduce assets. Banks could reduce their risk-weighted assets and keep their capital constant, ie employ a deleveraging strategy.

'How will banks close the gap between their current capital ratios and the new target levels? They could take advantage of transition periods and, by limiting dividends, progressively accumulate retained earnings. But this path is available only to profitable banking systems.'

6. See http://www.c-ebs.org/EuWideStressTesting.aspx. The stress tests were run only on 91 banks representing 65 percent of the European market in terms of total assets.

7. ECB (2009).

8. We do not account for alternative strategies such as the reorganisation of non-credit asset portfolios. This is both because situations vary significantly from one bank to the other and general conclusions are thus drawn with difficulty, and because the strategy is in any case rather long-term.

9. The costliness of equity comprises both transition effects (e.g. adverse selection, transaction costs) and permanent effects (e.g. lack of tax deductions and transaction medium); see, for example, Hanson, Kashyap, and Stein (2010).

'The longer the transition, the more likely it will be that banks accumulate retained earnings and raise new capital, rather than refuse loans to risky enterprises. The long transitional arrangements agreed in Basel buy time, possibly limiting more damaging credit rationing.'

Each of these strategies would emerge under specific conditions and would lead to a differentiated impact on credit availability. Strategies 1 and 2 need relatively long transition periods and would lead to a rise in the cost of capital. Strategy 3 will prevail when transition periods are short and banks have no other option but to cut the loan supply directly, especially to risky customers. This is the only available option in a slow-growth environment in which banks find it difficult to raise equity.

The choice confronting banks to adjust by raising the cost of capital and/or by directly reducing loan supply is an important variable because the strategies have different economic effects. Higher lending spreads may lead firms to reduce and, ultimately, abandon productivity-enhancing investment (ie R&D spending, skill training and innovation). But credit rationing has a greater economic impact. Firms might not only give up long-term investment, but might also reduce their production and employment levels.

Past experience shows us that banks tend to adopt mixed strategies. The recent crisis provides a good proxy for bank behaviour, as banks had to both comply with existing regulatory requirements and strengthen their capital positions. Two patterns were observed. First, banks charged higher interest rates even if the quality of the borrower did not change. Throughout the crisis, the ECB lending survey showed the impact of banks' cost of funds and balance sheet constraints on the tightening of credit standards for corporate borrowers[10], and these two factors became increasingly important, although the economic and firm-specific outlook continued to play the main role in assessments of borrowers' creditworthiness. This resulted in a situation in which borrowers faced tighter credit standards and higher costs at capital-scarce banks, even if their credit ratings remained unchanged. Second, as lending surveys and academic studies have shown, capital- (and liquidity)-constrained banks substantially curtailed lending to borrowers even if the credit rating and quality of these borrowers remained unchanged[11]. These findings apply to different types of customers such as retail and corporate borrowers, different regions including the United States, western Europe and central and eastern Europe, and to different macroeconomic conditions[12].

The probability of banks preferring one strategy over another in the implementation of Basel III is conditioned by two factors. The first is the length of transition periods. The longer the transition to the new regime, the more likely it will be that banks manage to accumulate retained earnings as well as raise new capital, rather than refuse loans to risky enterprises. The second is the macroeconomic environment, as banks are more likely to try and issue new capital in good times and to cut down loan supply in bad times. The long transitional arrangements recently agreed in Basel buy plenty of time for banks to start retaining earnings and raising capital, possibly limiting more damaging credit rationing.

Banks' strategies and the impact on their borrowers also crucially depend on the further consolidation and liberalisation of the financial industry. During the financial and economic crisis, there was a tendency for banks to concentrate more on their local markets, partly bowing to the pressure from national governments, which – by bailing out these banks and injecting additional capital – often gained considerable ownership and control stakes. This potentially reduces the economic impact of Basel III, and is at the same time concerning for countries in which foreign banks hold a major market share, for example in central and eastern Europe, because those foreign banks could decide to withdraw credit. Basel III and the anticipated need to inject additional capital into

10. ECB (2009a).

11. Puri, Rocholl, and Steffen (2010) show that banks that are affected by the financial crisis increase their rejection rates in loan applications by 10 percent after controlling for borrower quality.

12. See Ivashina and Scharfstein (2010), Puri, Rocholl, and Steffen (2010), Jimenéz, Ongena, Peydró, and Saurina (2010), and Popov and Udell (2010).

certain banks, along with European-level competition regulation, have prompted a number of banks, such as the German Landesbanken, to consider consolidation. Consolidation and liberalisation will have an impact on a broad cross-section of borrowers, with larger borrowers relying on well-functioning markets for syndicated loans, which require the presence of internationally operating banks, and small borrowers relying on well-functioning local markets for relationship loans, which require the presence of efficient local banks.

2. THE ECONOMIC COSTS

The next question to address is what impact tougher capital requirements will have on economic activity. Credit plays an important role in economic growth. There are numerous micro-level studies that assess the relationship between credit constraints and economic growth, both short- and long-term. A positive correlation is found, for example, between the growth rate of industries and the availability of external finance, after controlling for the fact that certain industries are more dependent on external sources of funding than others[13]. Similarly, firm-level analyses show that financial constraints of various types negatively affect hiring[14], firm sales[15], and firm entry, in particular in the case of small firms trying to access sectors with higher growth potential[16]. All these studies underline that the economic impact of credit constraints varies depending on initial levels of financial development and the availability of alternative sources of funding, either at sectoral or firm level.

Similarly, we argue that the new rules will have a variable impact. In particular, adverse effects are stronger in countries in which i) bank loans are the primary source of credit, and stock markets are not equally developed; ii) there is a larger proportion of firms that think their financing needs have increased in 2009, and that the availability of bank loans, internal funds and/or equity investment would deteriorate in 2010.

2.1 How large are the capital requirements?

The output effects of Basel III in each country will of course depend on the country's starting position relative to the new target levels. The adjustment, where necessary, should be frontloaded, as the new rules require the core Tier 1 capital ratio to increase by 1.5 percentage points in 2013 – the first year of implementation – and by 0.5 percentage points in each of the following two years. Fully undercapitalised banking systems will thus have to start adjusting already in 2012.

Moreover, the recent Basel agreement introduces a mandatory capital conservation buffer that should top 2.5 percent in 2019. It should be introduced progressively starting in 2016[17]. Table 1 summarises the expected output effects using the results from the BIS study. The figures in Table 1 indicate negative output effects for those countries that start from previous minimum regulatory capital levels and need to adjust in full to the new regime (ie 'fully undercapitalised systems'). Each percentage point rise in the capital ratio leads to a loss in real GDP of 0.35 percent in the absence of monetary accommodation, and of 0.20 percent when accounting for the possibility that the ECB and other central banks in Europe react to poor growth and subdued inflation with a monetary accommodation. Although we believe that a mon-

13. Rajan and Zingales (1998); Acemoglu *et al* (2002).

14. Nickell and Nicolitsas (1995).

15. Beck *et al* (2005).

16. Aghion *et al* (2007).

17. The recent Basel agreement also foresees a countercyclical buffer, but it is not yet clear if and to what extent this should consist of common equity. There are two main reasons why banks may even have an interest in holding some countercyclical buffer. First, buffers are normally used as insurance against unexpected depletions of capital (Milne and Whalley, 2001). Second, buffers help banks maintain their external credit ratings (Nier and Bauman, 2006). We can expect total buffer (ie the mandatory conservation plus the countercyclical buffer to approach a level of four percent, which was the average in Europe during normal times. See, for example, IIF (2010) and Benford and Nier (2007).

Table 1: Changes in regulatory capital over time and the ensuing output effects in fully undercapitalised systems (% deviation from baseline GDP with and without monetary accommodation)

	2013	2014	2015	Total	2016	2017	2018	Total
Δ Core Tier 1	1.5	0.5	0.5	2.5				
Output effects without monetary accommodation				**-0.875**				
Output effects with monetary accommodation				-0.500				
Δ Capital conservation buffer				0.625	0.625	0.625	0.625	2.5
Output effects without monetary accommodation								-0.875
Output effects with monetary accommodation								**-0.500**

Source: Bruegel based on BIS results.

etary accommodation is unlikely before 2016, it is not to be excluded that the ECB gains room for manoeuvre after that date and manages to accompany progressively stricter capital requirements with an accommodation.

Calculating the costs of the new regulation on a country-by-country basis is complicated by the lack of information on the quality of capital. Results obtained from an analysis of adjustment to quantitative targets may change radically when accounting also for the required changes in the composition of capital. Countries that seem far away from the quantitative target may have a large share of common equity and thus need to adjust less than countries that are closer to the target but suffer from low shares of common equity in total capital.

The overall target for core Tier 1 capital is seven percent (made up of 4.5 percent of core Tier 1 capital plus a 2.5 percent mandatory conservation buffer – see Box 1). We assume, for illustrative purposes only, that common equities represent half of Tier 1 capital in 2008 and use this for the basis of the calculation of the distance of each national banking system from the Basel III target. Column 1 in Table 2 shows the adjustment effort each country is expected to go through. All countries need to adjust to some extent, with the exception of Malta. More precisely, the countries that need to strengthen their capital position the most are, in order of required adjustment effort, Italy, Portugal, Austria, Greece, Sweden, Spain, UK, Estonia, Cyprus, Lithuania, France, Slovenia and, to a much smaller extent, Ireland, Germany, Latvia and the Netherlands. Nevertheless, it is important to stress that the ranking of countries would certainly change if we accounted for the heterogeneity in the quality of capital across countries.

Table 2: Output effects over a four-year period

Ranking	(1) Adjustment effort	(2) Real GDP loss	(3) Real GDP loss with MON ACC	(4) Profitability
IT	3.54	1.239	0.708	0.93
PT	3.25	1.1375	0.65	1.39 (-)
AT	3.13	1.0955	0.626	0.67
SE	3.04	1.064	0.608	0.68
GR	3.03	1.0605	0.606	1.53 (-)
ES	2.93	1.0255	0.586	1.36 (-)
UK	2.92	1.022	0.584	0.78
EE	2.89	1.0115	0.578	2.17 (-)
CY	2.83	0.9905	0.566	1.27 (-)
LT	2.81	0.9835	0.562	1.61 (-)
FR	2.79	0.9765	0.558	0.41
SI	2.58	0.903	0.516	1.24 (-)
IE	2.38	0.833	0.476	0.55
DE	2.35	0.8225	0.47	0.14 (+)
LV	2.21	0.7735	0.442	1.89 (-)
NL	2.16	0.756	0.432	-0.52 (+)
SK	1.95	0.6825	0.39	1.59 (-)
DK	1.88	0.658	0.376	0.33
PL	1.88	0.658	0.376	2.12 (+)
RO	1.73	0.6055	0.346	4.06 (+)
CZ	1.72	0.602	0.344	1.56 (+)
HU	1.57	0.5495	0.314	1.81 (+)
BG	1.40	0.49	0.28	2.66 (+)
BE	1.26	0.441	0.252	0.20 (-)
FI	0.72	0.252	0.144	0.72
LU	0.63	0.2205	0.126	0.65
MT	-0.50	**	**	0.47

Source: Bruegel based on BIS results.

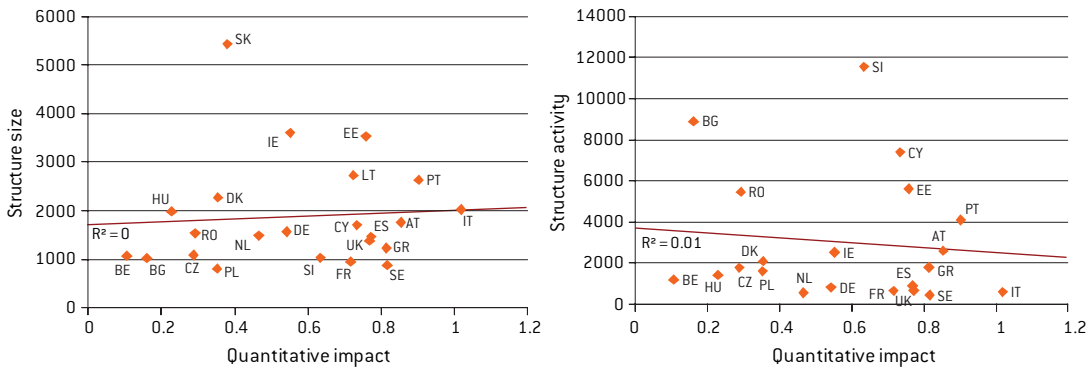
1. Distance of estimated Core Tier 1 Capital ratio (2008) from Basel target of 7 percent.
2. Real GDP losses calculated multiplying the required adjustment effort by the BIS estimate of the deviation of output from baseline for each one percent increase in the target capital ratio in four years.
3. Same as above including impact from monetary accommodation.
4. Profitability measured by operating profits as a percentage of total assets.

2.2 Output effects

The output effects of new capital requirements are a function of the size of the adjustment and of the change in real GDP associated with each percentage point increase in the capital ratio. We calculate the quantitative impact of Basel III based on a purely illustrative assumption about the composition of capital in 2008. Table 2 summarises the main results. Columns 2 and 3 illustrate output effects without and with monetary accommodation respectively. Column 4 provides information on the profitability of national banking systems in 2008. Countries that start from high operating profits are more able than others to adopt a 'wait and see strategy' and simply accumulate retained earnings over time thanks to the long transition periods allowed. This adjustment path should soften output effects. The contrary is true for countries that start from exceptionally low profitability (eg Belgium, Germany and the Netherlands).

However these estimates assume that the effects of higher credit costs or of a tightening of credit conditions are homogenous across countries. This is not the case. To account for differentiation, our first hypothesis is that financial systems in which bank credit is the main source of funding will suffer disproportionally under Basel III. Figure 1a plots, on the horizontal line, the quantitative impact indicator of Basel III[18] and, on the vertical line, the ratio of private credit to stock market capitalisation in 2008. The latter is normally used in the literature to define the structure of national financial systems and is taken to capture the systemic role of banks in each financial system[19]. Figure 1b uses instead the ratio of private credit to stock market total value traded in 2008, which better accounts for financial market activity. High values on the vertical axis indicate countries whose financial system is predominantly based on bank credit and where at the same time equity markets are not sufficiently developed or not sufficiently active to represent a perfect substitute for bank credit. It is thus a parsimonious way of measuring the substitution effects between bank and non-bank credit. The countries above the trend line in Graph 1a are those for which the relative size of loans will probably have a greater impact on growth than anticipated by multi-country macro-econometric models (in order of magnitude of substitution effects, Slovakia, Ireland, Estonia, Lithuania, and Portugal). Similarly, the countries above the line in Graph 1b will also suffer disproportionally (in order of magnitude, Slovenia, Bulgaria, Cyprus, Estonia, Romania and Portugal) because their banking sectors are still more active than their capital markets, independent of their respective relative sizes. We only represent countries whose Tier 1 capital is below the new Basel III target of 10.5 percent.

Figure 1: Output effects compared with the structure of financial systems in the EU



Source: Bruegel based on data in Table 2 and World Bank (2010).

18. In Figure 1, we use data from column 2 in table 2 divided in half because we do not assume here that the assessment of the quality-of-capital dimension leads to double the effort necessary when only the quantitative dimension is accounted for.

19. Demirgüç-Kunt and Levine (2001).

2.2 Firm-level analysis

Heterogeneity does not stop here. In addition to demand effects, there are costs to long-term growth associated with the possible abandoning of productivity-enhancing investment by firms in need of financing if the availability of bank loans deteriorates and firms cannot access other sources of funding, such as internal funds (ie retained earnings and sales of assets) and/or equity investment. These effects are unlikely to be uniform as the share of cash-poor firms and their dependence on bank credits varies across countries.

We use data from the ECB's SME Access to Finance survey. The sample includes about 6000 firms of different size and age in the largest euro-area countries (France, Germany, Italy and Spain) and in the rest of the euro area (Austria, Belgium, Cyprus, Finland, Greece, Ireland, Luxembourg, Malta, Netherlands, Portugal, Slovenia and Slovakia). The survey was conducted in 2009 and questions refer to the first and the second halves of 2009 or to prospects for 2010. For all firms, it was mainly fixed investment that impacted most on the needs for external financing, reinforcing the idea that firm-level analysis provides useful information about possible long-term growth effects, which would be less easily quantifiable using a macroeconomic model.

Figure 2 on the next page shows the percentage of firms that recognised the need for additional bank loans in 2009. On average, SMEs with fewer than 250 employees were in greater need than firms with more than 250 employees. The need was greater for new entrants and for micro-firm in all countries (Figure 2c)[20]. The variation across firm age classes is more pronounced in the case of large firms, with youngish large firms (from 2 to 4 years on the market) being the hardest hit (Figure 2a). In 2009, Italian and Spanish SMEs had the greatest need for loans (Figure 2b).

There are differences between small and large firms also in the perceived availability of various types of financing. SMEs of all ages were generally more pessimistic about the availability of bank loans in 2009 and 2010, especially those that have been on the market for quite some time. SMEs were generally more pessimistic about credit supply conditions in 2009 and 2010, especially those in Germany and Spain (Figure 3ab). Figure 3c shows that small firms in Spain and micro firms in Germany were the hardest hit.

Whether the adaptation to Basel III will exercise a tangible economic impact will depend not only on firms' revealed financing needs and the expected availability of bank credit, but also on the availability of sources of funding other than bank loans, such as internal funds and equity investment. In this case, there is no clear-cut divide between large firms and SMEs; only old SMEs are generally more pessimistic about the evolution of internal funds than all other firms. The most cash-poor firms are in Spain, followed by Italy and, to some extent, Germany (Figure 4ab).

There is also no dramatic divide between large firms and SMEs regarding the prospect of raising equity financing. Youngish large firms and old SMEs are more pessimistic. SMEs in Spain will be the most constrained in their capacity to raise equity investment, especially firms with between 10 and 50 employees (Figure 5).

The sector in which firms operate is also an important determinant. Hence, the most affected will be firms concentrated in the most bank-dependent sectors, such as manufacturing, and especially machine and machine part manufacturers[21]. The long-term aggregate impact will thus be stronger in countries in which the manufacturing sector is the main contributor to the country's added value (eg Austria, Germany, Ireland, Italy and Sweden).

3 SUMMARY OF MAIN FINDINGS

The Basel III framework will have an impact on economic growth. It is however difficult to exactly quantify the size of the impact given the lack of information and uncertainties about banks' initial positions, especially their holdings of common equity over total capital, and their preferred adjust-

20. This is in line with the existing literature, according to which small and young firms are generally more bank-dependent because they do not have access to capital markets. See, for example, Gertler and Gilchrist (1994).

21. Rajan and Zingales (1998).

Figure 2: Firms in need of bank loans, first and second half of 2009

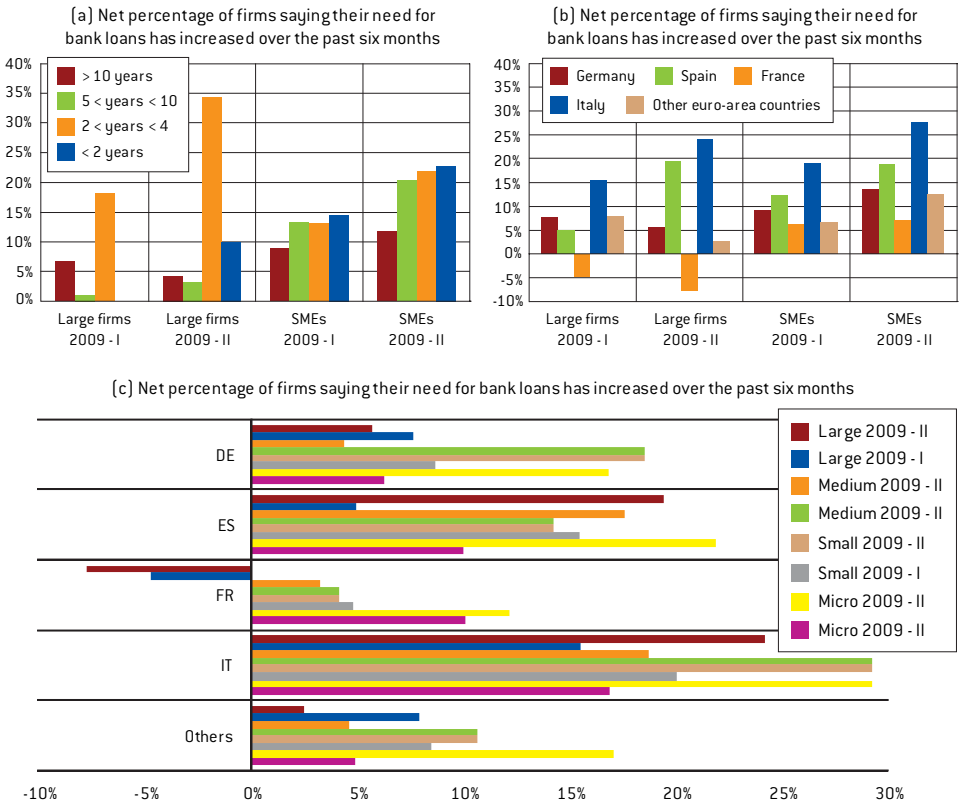
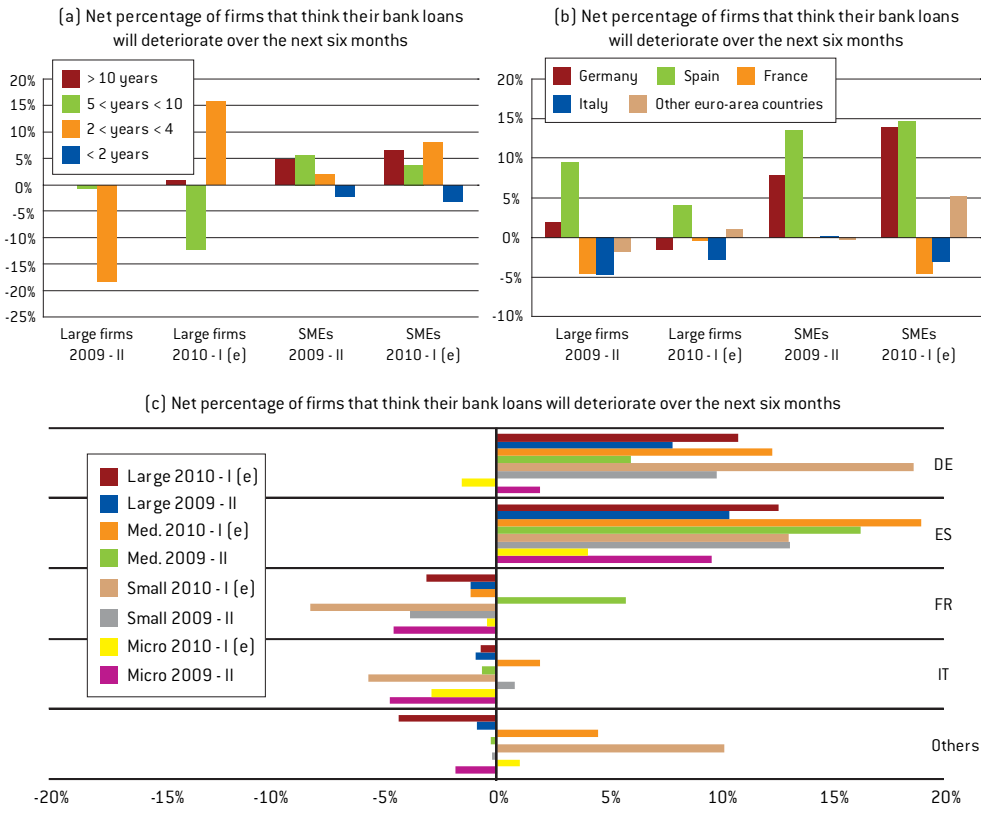


Figure 3: Firms for which availability of bank loans will deteriorate, first half 2010, second half 2009



Source: Bruegel based on SME Access to Finance Survey (ECB).

Figure 4: Firms for which availability of internal funds will deteriorate, first half 2010, second half 2009

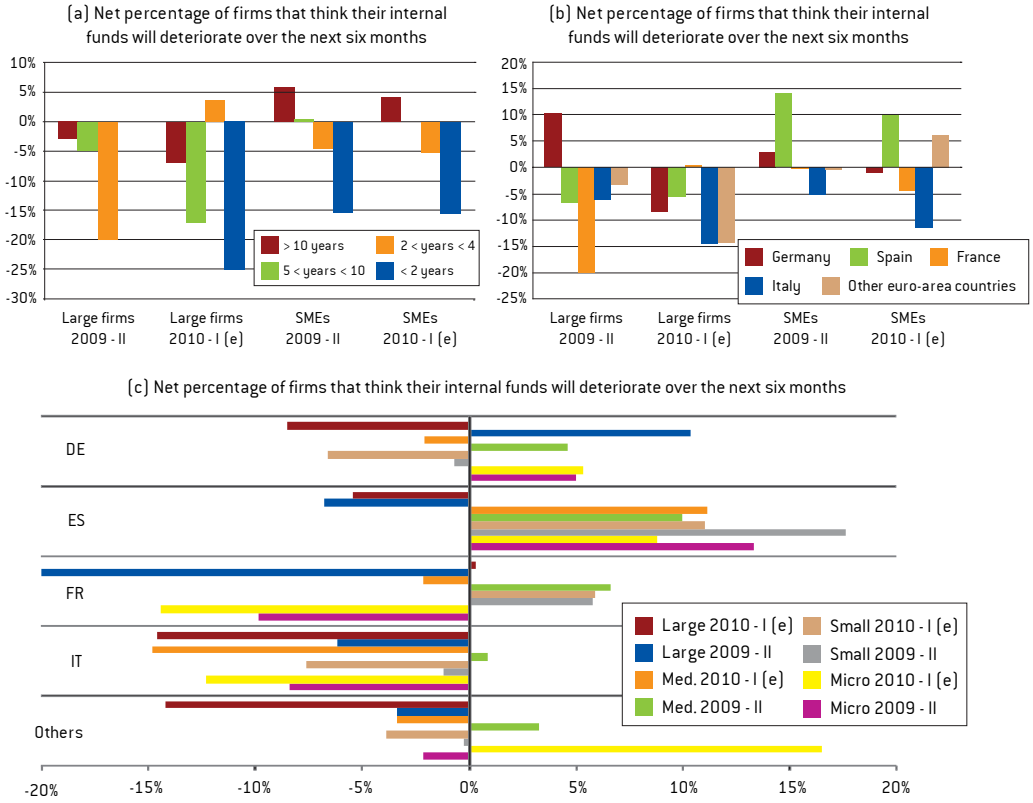


Figure 5: Firms for which availability of equity investment will deteriorate, first half 2010, second half 2009

Source: Bruegel based on SME Access to Finance Survey (ECB).

ment strategies. Overall, and irrespective of initial capital positions and adjustment paths, each one percentage rise in the capital ratio should bring a loss in output of about 0.35 percent over four years. At the same time, monetary policy is unable to offer any support to offset the costs of Basel III in a close-to-zero interest rate environment such as at present.

All European countries need to adjust in one way or another. Some national banking systems seem further away from the Basel III targets (eg Austria, Italy and Portugal) than others, but only direct information on the quality of their capital would provide a realistic picture of their distance from the new targets. Unfortunately this information is at present not available. Furthermore, the level of profitability in each national banking system needs to be taken into account. More profitable systems, such as in Portugal, may be better able to adjust their capital positions through retained earnings, thereby limiting their need for expensive new equity and/or ration loans. Less profitable systems, such as Belgium, Germany and the Netherlands, might however have to opt for new credit constraints, as they do not have the option of retaining high earnings over the transition period. The existing macroeconomic models have also ignored the possible substitution effects between bank and non-bank credit. Financial systems in which capital markets are both relatively large and active may be able to cushion the adverse effects from the new rules of Basel III (eg Sweden and the UK).

In this context, firm-level data provides useful information. The micro-perspective allows us to say something about possible long-term effects. Survey-based evidence suggests that firms' main need for external finance has been to finance fixed investment. Reduced access to finance in the next few years will have a major impact on investment and thus on long-term growth. In 2009, SMEs were more in need of bank loans than larger firms, in line with expectations. The most in need were micro-firms with fewer than 10 employees in Italy and Spain. On the credit supply side, Spanish and German SMEs are the most pessimistic about the availability of bank loans. In Germany the problem is more acute for micro and medium firms, while small firms with 10 to 50 employees are arguably well served by local banks. In parallel, the internal funds and equity investment prospects of SMEs were expected to deteriorate the most, especially in Spain.

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