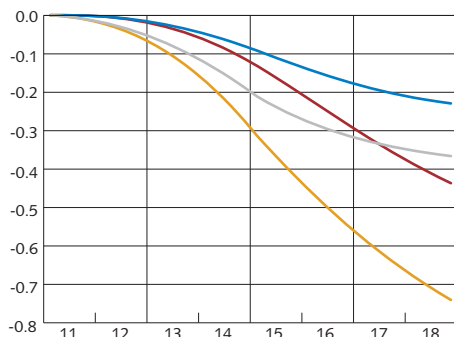


The effects of Basel III on macroeconomic development

Figure A26. Effects of the changed interest rate margins on GDP

Deviation from main scenario, per cent



— Capital level, passive monetary policy
 — Capital level, active monetary policy
 — Liquidity, passive monetary policy
 — Liquidity, active monetary policy

Source: The Riksbank

The financial crisis has highlighted the need for an effective banking sector. The current banking regulations in the Basel II framework have not managed to adequately address the risks in the banking system. A new regulatory framework, Basel III, has therefore been drawn up. This new framework will require the banks to hold more capital of better quality and entails new requirements concerning the banks' liquidity.³³ This article presents the result of calculations of how the new regulations will effect real economic development in Sweden in terms of GDP. The results indicate that the costs associated with stricter capital and liquidity requirements will be small and in line with the results of previous international studies.

Higher capital and liquidity requirements may increase the banks' capital costs and thus the lending rates offered to companies and households. According to economic theory, however, higher capital requirements do not necessarily lead to higher capital costs. The so-called Miller-Modigliani theorem states that the banks' average capital costs are only affected by the risks in the total assets; that is, it is irrelevant whether the banks fund their operations using equity or loans. This only applies, however, in a world without taxes, subsidies, bankruptcy costs or other forms of friction. In reality, it is often more costly to fund operations using equity rather than loans since the central government subsidises loan funding. It does this, for example, by providing a deposit guarantee scheme and by making interest rate payments on loans, but not share dividends, deductible in the companies' accounts.³⁴

Stricter capital requirements may lead to higher interest rates and lower GDP

There is thus reason to believe that higher capital requirements may lead to increased capital costs for the banks. However, the impact of Basel III on the banks' capital will vary from country to country. The Swedish banks already meet the capital requirements proposed in Basel III.³⁵ The increased capital requirements should not therefore need to affect the banks' costs unless market demands lead the banks themselves to choose to maintain buffers over and above the level required by the regulations.

The Swedish banks do not, on the other hand, fully comply with the new liquidity requirements.³⁶ In the short term, we can thus expect that requirements for more and higher-quality capital in combination with new liquidity requirements will lead to increased costs for the banks. If these costs are passed on to companies and households this will entail higher loan costs for them in the form of higher lending rates. It is not self-evident that the costs will be passed on in this way, but it is likely given the banks' historical price setting behaviour.

³³ See Monetary Policy Report, October 2010, and Financial Stability Report 2010:2 for descriptions of Basel III.

³⁴ See also A. Vredin, R. Brännlund, L. Ljungqvist, P. Strömberg och A. Wallgren, "Miljö, arbete och kapital: konjunkturrådets rapport 2011", SNS Förlag, 2011.

³⁵ See the article "Basel III – Effects on the Swedish banks and Sweden" in Financial Stability Report 2010:2.

³⁶ See the article "Basel III – effects on the Swedish banks and Sweden" in Financial Stability Report 2010:2, which also describes how increased liquidity requirements may lead to higher costs for the banks.

The effects of the new regulations on macroeconomic development in a number of countries (although not Sweden) have been studied by a working group under the Basel Committee and the Financial Stability Board (FSB) called the Macroeconomic Assessment Group (MAG).³⁷ This working group finds that the banks' interest rate margins will increase marginally and that GDP will decline somewhat. The negative effects may, however, be mitigated by monetary policy reacting to the higher interest rate margins and by the fact that the regulations will be phased in over a long period of time.

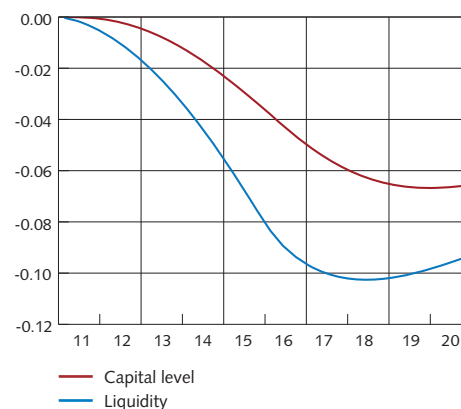
In the longer term, it is expected that the new requirements will reduce the likelihood of new financial crises occurring and – if they nevertheless do occur – reduce their impact on the real economy. Another working group under the Basel Committee, the Long-term Economic Impact group, LEI, has studied this.³⁸ This group finds that the long-term net benefit of the stricter regulations will be positive and in the range of a 0 to 2 per cent increase in GDP. However, this article focuses solely on calculating the costs that will arise when the new requirements are phased in.

Limited effects on GDP

The scenarios follow the same structure as in the MAG report but are based on Swedish data. The starting points for the scenarios are a hypothetical increase of the capital level by 1 percentage point or, alternatively, a hypothetical increase in the banks' holdings of liquid assets by 25 per cent.³⁹ This will affect the banks' interest rate margins, which may increase by between 10 and 15 basis points, see the article "Basel III – effects on the Swedish banks and Sweden" in Financial Stability Report 2010:2. The impact this will then have on GDP has been calculated using a general equilibrium model (Ramses) and a time-series model.⁴⁰

In the first scenario, the capital level increases by one percentage point over a four-year period, which is in line with the MAG study. It is assumed that the banks, in line with their historical price setting behaviour, will pass on the increased costs stemming from the capital requirements to the borrowers, which means that the banks' interest rate margins will gradually increase by around 10 basis points according to the Riksbank's calculations. The effects of the higher interest rate margins on GDP are presented in Table A1 and Figure A26.⁴¹ In Ramses, it is primarily the companies' loan costs that are affected by the higher interest rate margins. When the interest margins increase corporate investment will fall, which will lead to weaker GDP growth. How much GDP will fall depends, among other things, on how monetary policy is designed.

Figure A27. Adjustment of repo rate
Deviation from main scenario, percentage points



Source: The Riksbank

37 The MAG report is called "Assessing the macroeconomic impact of the transition to stronger capital and liquidity requirements". It was published in August 2010 and is available at www.bis.org.

38 The LEI report is called "Assessing the long-term economic impact of stronger capital and liquidity requirements". It is available on www.bis.org.

39 The capital level is defined as Core Tier 1 capital in relation to the risk-weighted assets for the major Swedish banks.

40 Ramses is the Riksbank's forecasting and policy simulation model. For a description of the model see L. Christiano, M. Trabandt and K. Walentin, "Introducing financial frictions and unemployment into a small open economy model", Working Paper no. 214, Sveriges Riksbank 2007.

41 As well as the increase in interest rate margins, the calculations of the effects of Basel III on the banks indicate that lending volumes will decrease. However, this effect is not included in the Ramses scenarios.

In Ramses, the repo rate is adjusted to achieve the inflation target of 2 per cent and partly to stabilise resource utilisation. If the negative effects of the increased interest rate margins are counteracted with a more expansionary monetary policy, the impact on GDP will be lessened. Figure A27 shows how the repo rate will be adjusted if monetary policy follows its normal pattern. After 18 quarters, the repo rate is approximately 5 basis points lower. GDP then falls by 0.1 per cent, see the first column in Table A1. If the repo rate is instead left unchanged, GDP falls by roughly twice as much.

In the second scenario, the banks' holdings of liquid assets increase by 25 per cent, a change that is also phased in over a period of four years. This leads to a gradual increase in the banks' interest rate margins by 15 basis points. As the interest rate margins increase more in this scenario, the effects on GDP are greater to a corresponding degree. In the case of an active monetary policy, GDP falls by 0.2 per cent after 18 quarters, see the third column in Table A1⁴².

Table A1 also shows the results of an increase in the capital level of 1 percentage point for the euro area calculated using the CMR model, which is a general equilibrium model used by the ECB.⁴³ According to these calculations, GDP will fall by 0.2-0.3 per cent after 18 quarters as a result of the increased capital requirements, depending on whether monetary policy is adjusted or not. The MAG report also presents calculations based on other types of general equilibrium model, with or without the banking sector. The median value of these calculations is that GDP will fall by 0.1 per cent after 18 quarters as result of an increased level for the banks' capital. A requirement for a greater proportion of liquid assets will lead to a similar fall in GDP.

The effects of the new regulations on the real economy have also been calculated using a time-series model, i.e. a Vector Autoregressive (VAR) model. This model captures historical correlations between variables but says nothing about potential causal links in the way that a general equilibrium model can. However, one advantage of this simpler time-series model is that there is no need to first calculate the effect of the regulations on the interest rate margin. We can instead directly investigate how the changes in the capital level may affect macro variables such as GDP and inflation. This model therefore acts as an important complement to the analysis in the general equilibrium model. The MAG study finds that in general the calculated effects of the regulations are slightly larger in the time-series models than in the general equilibrium models.⁴⁴

42 Active monetary policy means that the central bank follows its normal course of action, for example in accordance with a monetary policy rule. Passive monetary policy means that the policy rate remains constant.

43 See L. Christiano, R. Motto and M. Rostagno, "Financial factors in economic fluctuations", ECB Working Paper Series, nr 1192, 2010.

44 The effects of the new liquidity requirements have not been calculated in the VAR model.

The MAG has issued guidelines for the design of the time-series models. The model that has been estimated for Sweden follows these guidelines. The variables included are the capital level, real GDP, inflation measured in terms of the CPIF, the interest rate on a three-month treasury bill and bank lending to the Swedish public.⁴⁵ In the scenario, the capital level is 1 percentage point higher than in the base scenario after four years.

Results for Sweden in line with the calculations for other countries

The Swedish results are in line with the results of the MAG study for other countries. The effects of the proposed regulations on GDP (see Table A1) are somewhat stronger than the effects calculated using Ramses. GDP falls by approximately 0.3 per cent, but recovers after a few years. In the MAG report it is also generally the case that the effects are somewhat greater in the time-series models. When uncertainties in the estimates are taken into account, however, the differences appear to be insignificant.

All in all, the results of the calculations in Ramses and the time-series model indicate that an increase in the capital adequacy requirement for Swedish banks would have limited effects on the development of GDP. According to the calculations in Ramses a requirement to increase holdings of liquid assets would have a somewhat greater effect on GDP, as in this scenario it is assumed that the banks would increase their interest rate margins to a greater extent than in the case of stricter capital requirements.

Table A1. Reduction in GDP (per cent) from increased interest rate margins as a result of new regulations

	Level of capital increases by one percentage point		Increase in holdings of liquid assets by 25 per cent	
	18 quarters	32 quarters	18 quarters	32 quarters
Sweden				
Passive monetary policy (Ramses)	0.2	0.5	0.4	0.8
Active monetary policy (Ramses)	0.1	0.2	0.2	0.4
Time-series model	0.3	0	-	-
Euro area, CMR model*				
Passive monetary policy	0.3	0.4	-	-
Active monetary policy	0.2	0.3	-	-
MAG median				
General equilibrium models**	0.1	0.1	0.1	0.1
Time-series models	0.4	0.4	1.3	1.7

* The CMR model is used by the ECB and is a general equilibrium model of a type similar to Ramses. In the CMR scenario it is assumed that the interest rate margins will gradually increase so that after 18 quarters they will have risen by 25 basis points.

** The MAG report compiles results from various types of general equilibrium models, with or without the banking sector.

Source: The Riksbank

⁴⁵ The estimation period is 1997-2010. The VAR model contains four lags and is estimated using Bayesian methods.

