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FINANCIAL STABILITY CHALLENGES FOR EU ACCEDING AND CANDIDATE COUNTRIES

MAKING FINANCIAL SYSTEMS MORE RESILIENT IN A CHALLENGING ENVIRONMENT

by an IRC Expert Group of the ESCB

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Address
Kaiserstrasse 29
60311 Frankfurt am Main, Germany

Postal address
Postfach 16 03 19
60066 Frankfurt am Main, Germany

Telephone
+49 69 1344 0

Internet
http://www.ecb.europa.eu

Fax
+49 69 1344 6000

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LIST OF ABBREVIATIONS

BRSA	Banking Regulation and Supervision Agency (Turkey)
CBI	Central Bank of Iceland
CBM	Central Bank of Montenegro
CBRT	Central Bank of the Republic of Turkey
CESEE	Central, eastern and south-eastern Europe
CFSSA	Croatian Financial Services Supervisory Agency
CMB	Capital Markets Board (Turkey)
CNB	Croatian National Bank
FME	Financial Supervisory Authority (Iceland)
FSC	Financial Stability Committee (Turkey)
IMF	International Monetary Fund
ISA	Insurance Supervision Agency (former Yugoslav Republic of Macedonia, Montenegro)
LTV	Loan-to-value
MAPAS	Agency for Supervision of Fully Funded Pension Insurance (former Yugoslav Republic of Macedonia)
MoU	Memorandum of Understanding
NBRM	National Bank of the Republic of Macedonia
NPL	Non-performing loan
ROAA	Return on average assets
ROAE	Return on average equity
SDIF	Savings Deposit Insurance Fund (Turkey)
SEC	Securities and Exchange Commission (former Yugoslav Republic of Macedonia, Montenegro)
e	estimate
f	forecast
yoy	year on year

LIST OF AUTHORS

European Central Bank	Mr Roland Beck (Chairman)
	Ms Daniela Pulst (Secretary)
	Mr Gundars Ostrovskis
ESRB Secretariat	Mr Sam Langfield
Bulgarian National Bank	Mr Stoyan Manolov
Deutsche Bundesbank	Ms Stefanie Evdjic
Banque de France	Ms Ramona Jimborean
Banca d'Italia	Mr Emidio Cocozza
Oesterreichische Nationalbank	Ms Mariya Stankeva Hake
Narodowy Bank Polski	Mr Piotr Macki
Nationale Bank van België/ Banque Nationale de Belgique	Mr Alexandre Francart
Banca Națională a României	Mr Horatiu Lovin
Národná banka Slovenska	Ms Marianna Cervena

ABSTRACT

This Occasional Paper reviews financial stability challenges in countries preparing for EU membership with a candidate country status, i.e. Croatia (planned to accede to the EU on 1 July 2013), Iceland, the former Yugoslav Republic of Macedonia, Montenegro and Turkey. It follows a macro-prudential approach, emphasising systemic risks of financial systems as a whole.

After recalling that some EU candidate countries went through a pronounced boom-and-bust credit cycle in recent years, the paper identifies current challenges for the bank-based financial sectors as mainly stemming from: (i) high or rising domestic credit risk; (ii) unhedged borrowing in foreign currencies; and (iii) strains related to the euro area debt crisis, which is impacting the EU candidate countries via a number of channels. The main channels of transmission of the euro area debt crisis to the EU candidate countries operate via: (i) trade and foreign direct investment; (ii) an increased market focus on sovereign risk; and (iii) "deleveraging", e.g. via a decline of external funding to local subsidiaries of EU parent banks.

A macro-stress-test exercise performed by the national authorities of the EU candidate countries in February 2012 suggests that large capital buffers can absorb a shock to credit quality stemming from a drop in economic activity in the EU and renewed strains from the euro area debt crisis.

With respect to supervisory practices, the paper finds that the EU candidate countries have made good progress, but some gaps with respect to international and EU standards remain.

Key words: Europe, banking sector, vulnerability indicators, macro-prudential approach, emerging markets, macro stress test, deleveraging, foreign currency lending.

JEL Classification: F32, F41, G21, G28

SUMMARY

This paper reviews financial stability developments in the EU candidate and acceding countries (Croatia, Iceland, the former Yugoslav Republic of Macedonia, Montenegro and Turkey) during 2010 and 2011, taking into account financial sector data until end-2011 as well as additional relevant information which was available by 29 March 2012.

After recalling that some EU candidate countries went through a pronounced boom-and-bust credit cycle in recent years, the paper identifies current challenges for the bank-based financial sectors as mainly stemming from: (i) high or rising domestic credit risk; (ii) unhedged borrowing in foreign currencies; and (iii) strains related to the euro area debt crisis, which is impacting the EU candidate countries via a number of channels. The main channels of transmission of the euro area debt crisis to the EU candidate countries operate via: (i) falling trade and foreign direct investment; (ii) an increased market focus on sovereign risk; and (iii) "deleveraging", e.g. via a decline of external funding to local subsidiaries of EU parent banks.

A macro-stress-test exercise for banks – performed by the national authorities of the EU candidate countries in February 2012, using a common adverse scenario provided by the ECB – suggests that capital buffers, which are larger than in the EU, can absorb a relatively big shock to credit quality. The main mitigating factors contributing to financial sector resilience in the EU candidate countries consist of: (i) large capital and profit buffers; (ii) a low exposure to market risk; and (iii) a relatively low exposure to sovereign risk, even though possible losses stemming from increased sovereign risk for domestic government bond holdings were not consistently taken into account by all EU candidate countries on a mark-to-market basis.

The available evidence suggests that bank deleveraging has so far occurred in an orderly way. This evidence tentatively indicates that some mitigating factors, such as the geographical proximity of the EU candidate countries to the EU and the relatively favourable medium-to-long-term outlook for growth and profitability, supported the continued commitment of EU parent banks to the EU candidate countries. However, strains related to bank deleveraging could re-emerge in the short term. More generally, funding liquidity risks remained relatively high in some EU candidate countries.

Lending in foreign currencies – most notably the euro – to unhedged borrowers remained significant in most EU candidate countries and contributed to positive credit growth in some cases. By and large, the use of foreign currencies is less of an issue among the EU candidate countries with floating exchange rates (Turkey and Iceland) than for the countries with tightly managed exchange rates (Croatia and the former Yugoslav Republic of Macedonia), whereas Montenegro is a special case of unilateral euroisation. To the extent that borrowers are not hedged, foreign currency loans are exposing banks in the EU candidate countries to indirect exchange rate risk. Overall, most EU candidate countries are aware of these risks and have made efforts aimed at de-euroisation and local market development. These efforts vary among the EU candidate countries, however.

With respect to supervisory practices, the EU candidate countries have made good progress, but some gaps with respect to international and EU standards remain. All of the candidate countries are well on track to adopt the Basel II capital adequacy framework. However, some relevant challenges remain with regard to the effectiveness of financial supervision. In addition, the development and implementation of macro-prudential frameworks is still at an early stage in almost all EU candidate countries. In particular, a number of EU candidate countries have still to adjust institutional arrangements in order to ensure an effective mitigation of systemic risk.

INTRODUCTION

This paper is part of a series of biannual reviews of financial stability challenges in countries preparing for EU membership with a candidate status and provides an update of ECB (2010a). The current issue covers five countries, Croatia, Iceland, the former Yugoslav Republic of Macedonia, Montenegro and Turkey,[1] reviewing mainly trends in 2010 and 2011 (the "review period") but also recalling important structural features since the start of the global financial crisis and including important developments which took place until 29 March 2012 which was the cut-off date for this paper.

The approach taken in the paper has a strong macro-prudential focus, insofar as the emphasis is on the analysis of financial systems as a whole. In Chapter 1, the main challenges for financial stability in EU candidate countries are summarised with an emphasis on common challenges. Against the backdrop of the importance of credit risk for banks in the EU candidate countries, Chapter 2 contains the results of a macro stress test performed by the authorities in the EU candidate countries on the basis of a common scenario provided by ECB staff. In Chapter 3, funding liquidity risks are assessed in the context of European bank deleveraging. Chapter 4 contains a review of recent trends in foreign currency lending, which is still widespread in most EU candidate countries. Efforts aimed at de-euroisation and the strengthening of local funding sources are reviewed in Chapter 5. Finally, Chapter 6 takes stock of supervisory practices in the EU candidate countries and assesses the extent to which the capacity to address systemic risk using macro-prudential policies has been enhanced.

In Annex A, detailed financial stability assessments for all EU candidate countries – which served as the main background for the horizontal analyses in the central part of the paper – are available. These country annexes also contain a short description of the macroeconomic environment, which was deemed important given strong macro-financial linkages in the EU candidate countries. In addition, the country annexes recall the main structural features of the financial sector in the EU candidate countries. Annex B contains the EU scenario prepared by ECB staff which was used for the macro stress test on banks performed by the authorities in the EU candidate countries.

1 Croatia is an acceding country which is scheduled to join the EU on 1 July 2013.Throughout the report, the expression "EU candidate countries" refers to EU candidate and acceding countries, in order to improve the readability of the report. Serbia was granted EU candidate status at end-February 2012 and is therefore not covered in this paper.

I MAIN CHALLENGES FOR FINANCIAL STABILITY IN EU CANDIDATE COUNTRIES

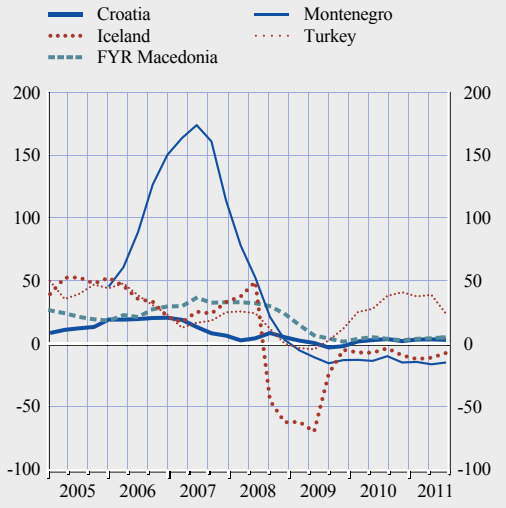
During the review period, economic and financial sector developments in the EU candidate countries mirrored to some extent the evolution of the euro area sovereign debt crisis. While economic activity remained robust in most EU candidate countries, challenges for the bank-based financial sectors stemmed from (i) high or rising credit risk (ii) unhedged borrowing in foreign currencies and (iii) strains related to the euro area debt crisis which is impacting the EU candidate countries via a number of channels.

Domestic imbalances built up prior to the crisis were the main underlying cause of high private sector credit risk in some EU candidate countries. Over the recent years some EU candidate countries went through a pronounced boom-and-bust credit cycle (see Chart 1). Excessive and unsustainable lending booms in Montenegro and Iceland led to a credit crunch which continued during the review period. While the credit cycle was less pronounced in Croatia, recent rapid credit growth rates in Turkey raised some concerns with respect to financial stability. Nevertheless, it should be borne in mind that – with the exception of Iceland – the overall level of credit to the private sector relative to GDP remained at relatively low levels by international standards, reflecting the need for further financial deepening and catching-up among the EU candidate countries.

Non-performing loan ratios mirrored the pattern of these credit cycles. Credit risk – which continued to be the main risk to which banks in the EU candidate countries are exposed as the exposure to direct market risks remained small in most countries – peaked at very high levels in Montenegro and Iceland (see Chart 2) where debt restructuring and the cleaning-up of bank balance sheets remained the focus of the authorities. In Croatia, which had not experienced a banking crisis, non-performing loans have also risen to relatively high levels due to persistently weak economic growth. In Turkey, non-performing loans continued to decline on the back of a very strong economic performance. Nevertheless, as lax

Chart 1 Real private sector credit growth

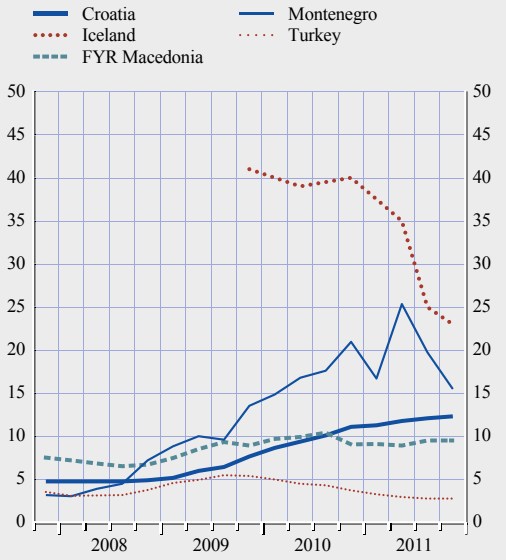
(annual percentage change, not adjusted for exchange rate changes)



Sources: IMF, Haver Analytics and national sources.
Note: In the case of Turkey, recent credit growth was lower when adjusting for changes in exchange rates.

Chart 2 Non-performing loan ratios

(percentage of total gross loans as at end-2011)



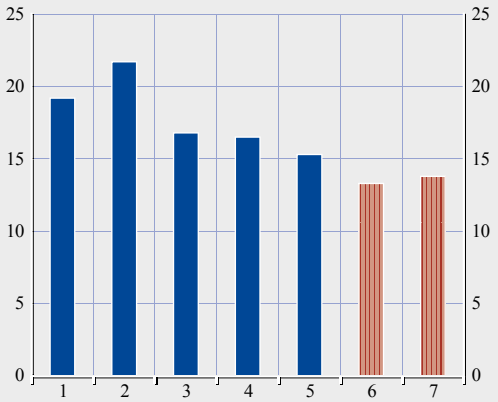
Source: National authorities.
Notes: Definitions for non-performing loans refer to average non-performing loans for private sector loans of deposit-taking institutions, but may vary across the EU candidate countries. Therefore, non-performing loan ratios may not be fully comparable across countries. In the case of Iceland, non-performing loans according to the cross-default definition are depicted. Semi-annual figures for Iceland were interpolated to quarterly frequency.

credit standards might have been applied during the recent boom period, credit quality in Turkey might deteriorate going forward. In the former Yugoslav Republic of Macedonia, the non-performing loan ratio peaked in 2010 at 10.4%, mirroring to a large extent the lagged impact of the recession of 2009. Looking ahead, non-performing loans could rise somewhat due to a more pronounced economic slowdown, possibly accompanied by a drop in house prices or a depreciation of the denar.

High capital adequacy ratios provide a solid buffer against adverse shocks to credit quality as confirmed by a macro-stress-test exercise. Average capital adequacy ratios in the EU candidate countries remained higher than in the EU during the review period (see Chart 3). A macro-stress-test exercise performed by the national authorities of the EU candidate countries using a common scenario provided by the ECB suggests that these capital buffers can absorb a relatively large shock to credit quality stemming from a drop in economic activity in the EU and renewed strains from the euro area debt crisis, even though some smaller banks might need to be recapitalised (see Chapter 2). The main mitigating factors contributing to financial sector resilience in the EU candidate countries consist of: (i) large capital and profit buffers; (ii) a low exposure to market risk; and (iii) a relatively low exposure to sovereign risk, even though possible losses stemming from increased sovereign risk for domestic government bond holdings were not consistently taken into account by all EU candidate countries on a mark-to-market basis.

Chart 3 Capital adequacy ratios

(percentage of risk-weighted assets as at end-2011)



Sources: National authorities and ECB.
Note: An unweighted average is used for the EU and the euro area.

The euro area sovereign debt crisis triggered concerns with respect to the EU candidate countries because of their high economic and financial integration with the EU. The main channels of transmission of the euro area debt crisis to the EU candidate countries operate via: (i) a fall of trade and foreign direct investment; (ii) an increased market focus on sovereign risk; and (iii) "deleveraging", i.e. a decline of external funding to local subsidiaries of EU parent banks. Such concerns escalated in late 2011 when funding pressures on European banks reached a peak. Since then, the ECB's provision

Table 1 Sovereign ratings of EU candidate countries

(as at end-March 2011)

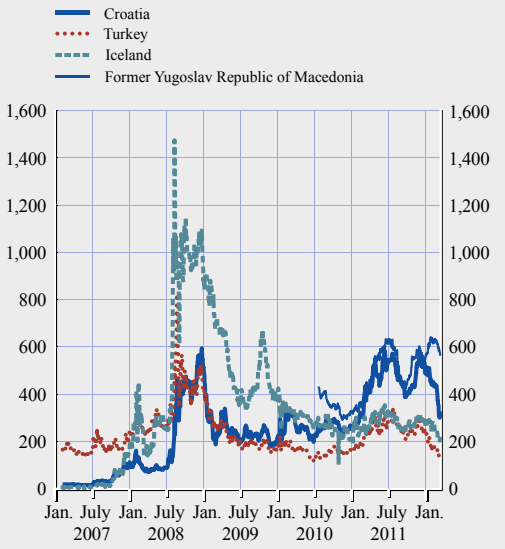
	Moody's				S&P	
	Rating	Date	Previous rating	Date	Rating	Date
Croatia	Baa3	27/01/1997	…	…	BBB-	21/12/2010
Iceland	Baa3	11/11/2009	Baa1	04/12/2008	BBB-	17/05/2011
FYR of Macedonia	…	…	…	…	BB	30/04/2009
Montenegro	Ba3	30/04/2009	Ba2	12/03/2008	BB	31/03/2010
Turkey	Ba2	08/01/2010	Ba3	14/12/2005	BB	19/02/2010
Memo:						
Bulgaria	Baa2	01/01/2007			BBB	01/01/2007
Romania	Baa3	01/01/2007			BB+	01/01/2007

Source: Bloomberg.

of long-term funding with a maturity of three years via two special longer-term refinancing operations (LTROs) in December 2011 and February 2012 alleviated funding pressures on European banks considerably. These developments were partly reflected in sovereign spreads for the EU candidate countries, which peaked in early 2012 and declined in particular after the second three-year LTRO at end-February 2012 (see Chart 4). At the same time, sovereign risk remained relatively high in the EU candidate countries given their country-specific economic and structural weaknesses. In early 2012, sovereign ratings for the EU candidate countries stood at levels broadly comparable to those of Bulgaria and Romania in 2007 (see Table 1).

The available evidence suggests that domestic bank deleveraging did not accelerate significantly at the end of 2011. While "bank deleveraging" – defined in this paper as a credit supply-driven shrinking of bank balance sheets, possibly associated with a reduced reliance on external funding and a decrease in lending to the real economy – has materialised since the start of the 2007-08 crisis in Montenegro and Iceland, there was no evidence of a retrenchment of parent bank lending to the EU candidate countries by the end of 2011 (see Chapter 3). This tentatively suggests that some mitigating factors, such as the geographical proximity of the EU candidate countries to the EU and the relatively favourable medium-to-long-term outlook for growth and profitability as well as the prospect of policy initiatives (e.g. the "Vienna II" initiative), supported the commitment of EU parent banks to the EU candidate countries. However, strains related to bank deleveraging could re-emerge in the short term since there might be a lag between parent bank funding strains and cross-border deleveraging, and in the medium term due to a broader trend of changing bank business models.

Chart 4 Credit default swap spreads for EU candidate countries



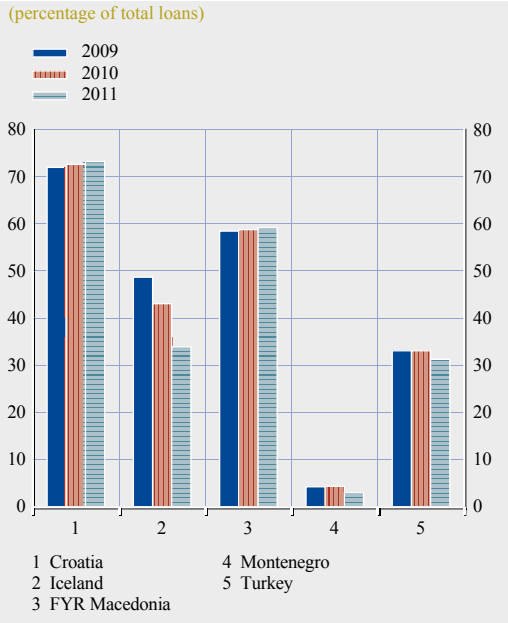
Source: Bloomberg and ECB calculations.
Note: For the former Yugoslav Republic of Macedonia no CDS spread was available. Therefore the yield spread between a government bond issued by the former Yugoslav Republic of Macedonia and a bond of similar maturity issued by Germany was used instead.

S&P		Fitch			
Previous rating	Date	Rating	Date	Previous rating	Date
BBB	22/12/2004	BBB-	28/06/2001	BB+	29/04/1999
BBB	06/10/2008	BBB-	17/02/2012	BB+	23/12/2009
BBB-	12/06/2007	BB+	02/12/2005	...	...
BB+	27/03/2007	...	...	...	...
BB-	17/08/2004	BB+	03/12/2009	BB-	27/10/2009
		BBB-	01/01/2007		
		BBB-	01/01/2007		

More generally, funding liquidity risks remained relatively high in some EU candidate countries. Funding liquidity risks continue to be a concern in Iceland due to the prominent role of sight deposits for bank funding as well as possible capital outflows once capital controls are lifted. In the case of Montenegro, while the central bank can perform lender of last resort operations for the banks to some extent, the available liquidity buffers may still be inadequate. At the same time, funding liquidity is not an immediate concern in Croatia, the former Yugoslav Republic of Macedonia and Turkey, but parent banks' funding and trends in international wholesale markets should be monitored in the case of Croatia and Turkey respectively.

Foreign currency lending remained a significant risk. As documented in detail in this paper (see Chapter 4), lending in foreign currencies – most notably the euro – to unhedged borrowers remained significant (see Chart 5) in most EU candidate countries and contributed to positive credit growth in some cases (Croatia, former Yugoslav Republic of Macedonia). By and large, the use of foreign currencies is less of an issue among the EU candidate countries with floating exchange rates (Turkey and Iceland) than for the countries with tightly managed exchange rates (Croatia and FYR Macedonia), whereas Montenegro is a special case of unilateral euroisation. To the extent that borrowers are not hedged, this is exposing banks in the EU candidate countries to indirect exchange rate risk.[2] While the national authorities of the EU candidate countries considered shocks to their local exchange rate within the macro-stress-test exercise which broadly correspond to past exchange rate volatility, more severe shocks including exchange rate regime changes were not considered.

Chart 5 Share of foreign currency-denominated and -indexed loans



Source: National authorities.

The EU candidate countries are aware of the risks associated with lending in foreign currencies and have made efforts aimed at de-euroisation and local market development. The efforts aimed at de-euroisation vary among the EU candidate countries (see Chapter 5). Even though the EU candidate countries currently do not have official de-euroisation strategies in place, they have deployed some policy measures aimed at de-euroisation and local market development. For example, reserve requirements that favour banks' local currency liabilities are used by the former Yugoslav Republic of Macedonia and were used until recently by Turkey. In the case of FYR Macedonia, the different reserve requirement ratios are complemented by different rates of remuneration. In the case of Montenegro no consideration was given to the ECOFIN Council position on euroisation.

With respect to supervisory practices, the EU candidate countries have made good progress, but some gaps with respect to international and EU standards remain. The EU candidate countries have strengthened banking supervision

2 The term "indirect exchange rate risk" is preferred in this paper since it underscores that the source of the shock is the exchange rate to which banks are often not directly exposed. Alternatively, some authorities refer to "indirect credit risk" or "currency-induced credit risk".

and the quality of securities regulation and insurance supervision in the recent past, which has helped them to withstand the effects of the global financial crisis (see Chapter 6). All of the candidate countries are well on track to adopt the Basel II capital adequacy framework. However, some relevant challenges remain with regard to the effectiveness of financial supervision. In addition, the development and implementation of macro-prudential frameworks is still at an early stage in almost all countries. On the governance front, a number of jurisdictions have still to adjust institutional arrangements in order to ensure an effective mitigation of systemic risk.

2 ASSESSING THE RESILIENCE OF BANKS IN EU CANDIDATE COUNTRIES

2.1 INTRODUCTION

In order to assess the resilience of banks in EU candidate countries to more adverse economic conditions, this chapter reports the key findings from a macro-stress-test exercise which was performed by the Croatian National Bank, the National Bank of the Republic of Macedonia, the Central Bank of Montenegro and the Central Bank of the Republic of Turkey using a common scenario provided by the ECB.[3] The exercise was performed in January 2012 drawing on bank balance sheet data as at end-2011.

With the exception of Iceland, the authorities of all EU candidate countries perform bank stress tests on a regular basis. In some cases, the results from such exercises are made public.[4] Typically such stress tests include a baseline and an adverse scenario which are based on country-specific assumptions for key macroeconomic and financial variables. In order to compare the resilience of banks across EU candidate countries, the authorities agreed to perform a joint macro stress test which is based on a common adverse scenario for the EU in which spillovers to EU candidate countries are taken into account using a common methodology (see Section 2.2 and Annex B). Since idiosyncratic shocks might differ across the EU candidate countries, the exercise also allowed for additional country-specific shocks to be considered (see Section 2.3). Due to the dominant role of commercial banking in EU candidate countries in which credit risk and indirect exchange rate risk are the main risks for bank balance sheets, the macro stress test focused on the impact of the adverse scenario on non-performing loans, but also allowed market risk to be taken into account where deemed relevant.[5]

2.2 THE COMMON ADVERSE SCENARIO FOR THE EU

In order to compare the resilience of banks across EU candidate countries to a common shock, ECB staff provided the national authorities with a baseline and an adverse scenario for the EU. In the adverse scenario, real GDP growth in the EU would turn negative in 2012 and 2013 (see Annex B). The adverse scenario is based on similar assumptions to those employed by the ECB in its December 2011 Financial Stability Review. The key drivers impacting EU GDP under the adverse scenario are: (i) an assumed aggravation of the sovereign debt crisis in the euro area, fuelling increases in certain short- and long-term interest rates (domestic demand effect), thus adversely affecting a number of asset prices; and (ii) a confidence-driven negative sentiment shock to euro area and foreign demand (global demand shock).

In the adverse scenario, the EU candidate countries would be negatively affected via the trade channel (see Annex B for further details). In addition, adverse spillovers to domestic interest rates and stock prices via their interdependence with EU financial markets are also taken into account. A non-parametric (i.e. model-free) simulation technique, which does not involve any parametric assumptions as to either the distribution of individual risk factors or their joint dependence, is employed to that end (see also Annex B for further details). Since exchange rate volatility is very low among the participating EU candidate countries (with the notable exception of Turkey) due to tightly managed exchange rate regimes in place (unilateral euroisation in the case of Montenegro), adverse spillovers to local exchange rates were not considered in this framework. However, since (indirect) exchange rate risk stemming mostly from unhedged borrowing in foreign currencies

3 The Central Bank of Iceland did not participate in this exercise due to resource constraints. However, the Financial Supervisory Authority (FME) conducts an annual Internal Capital Adequacy Assessment Process (ICAAP) exercise.

4 See Croatian National Bank (2012), National Bank of the Republic of Macedonia (2011) and Central Bank of the Republic of Turkey (2011). The results contained in these publications might differ from those presented in this report because of different assumptions and a somewhat different scope of shocks taken into consideration.

5 Direct exposure to market risk is very limited in the EU candidate countries. Nevertheless, the framework also allowed to take possible haircuts for sovereign debt into account as banks might be negatively affected – provided assets are valued using mark-to-market methodologies – if they hold sizeable amounts of government bonds.

is significant in most EU candidate countries, exchange rate depreciations could be considered by the national authorities within their country-specific scenarios.

2.3 COUNTRY-SPECIFIC ADVERSE SCENARIOS FOR EU CANDIDATE COUNTRIES

Against the backdrop of the EU scenarios and their spillover to EU candidate countries via the trade channel and asset price correlations, the authorities considered specific country scenarios for the period from 2012 to 2013. They are summarised in Table 2 and Table 3 containing the macroeconomic and the financial assumptions respectively.

Under the adverse scenario, real GDP growth in most participating EU candidate countries was considered to turn negative mainly due to the negative trade spillovers in the EU (see Annex B)[6] or to slow down considerably as in the case of Montenegro (see Table 2). These assumptions reflect to some extent the authorities' relatively positive assessment of baseline GDP growth. Due to different models for estimating the impact on bank asset quality (see below), some of the participating EU candidate countries also considered the evolution of other macroeconomic variables in the adverse scenario, namely: (i) a rise in unemployment (Montenegro and Turkey); and (ii) a decline in gross wages (Montenegro).[7]

In terms of financial variables, most national authorities considered that the impact of the adverse scenario on domestic interest rates would be limited, in line with the guidance provided by ECB staff (see Annex B). In the case of Turkey, national authorities considered a more severe rise in domestic interest rates under the adverse scenario, which is in line with past interest rate volatility during periods of financial stress.[8] The evolution of the stock market in the adverse scenario was not considered as having a significant independent impact on non-performing loans in most participating EU candidate countries, with the exception of Montenegro which considered an 18% decline of its national stock market.[9] With respect to exchange rates, the countries considered depreciations of varying orders of magnitude, broadly in line with differences in past exchange rate volatility across countries.[10] Finally, some

6 ECB staff estimates for trade spillovers to EU candidate countries contained in Annex B are expressed in terms of deviations from baseline growth. National authorities could determine the respective figures for baseline growth taking into account also country-specific information about the latest economic developments. In the case of FYR Macedonia and Montenegro, the authorities used the latest forecast by the World Bank as of January 2012 as the baseline projection for real GDP growth.

7 In the case of Montenegro, the rise in unemployment and the decline in gross wages were computed on the basis of their historical elasticities with respect to real GDP and are thus consistent with the scenario for real GDP growth.

8 Since the scenario refers only to a short-term interest rate, a parallel move in the yield curve is assumed.

9 This decline is assumed to be somewhat larger than the one proposed by ECB staff (see Annex B) because the authorities assumed – in addition to spillovers from the euro area debt crisis – an additional country-specific shock. This is in line with the methodology proposed in Annex B as it allows for a stock market decline of up to 20% in line with the EU-wide shock due to country-specific factors.

10 Due to euroisation, Montenegro did not consider a change in the exchange rate.

Table 2 Macroeconomic assumptions for EU candidate countries

(adverse scenario due to EU/global demand shock)

	Real GDP growth (annual percentage change)		Unemployment (percentage point change)		Inflation (annual percentage change)		Gross wages (annual percentage change)
	2012F	2013F	2012F	2013F	2012F	2013F	2012F
Croatia	-1.6	-2.1	-	-	-	-	-
FYR Macedonia	-0.4	0.2	-	-	2.6	2.6	-
Montenegro	0.8	0.6	0.7	0.1	2.5	2.5	-5.3
Turkey	-1.9	-1.0	3.2	5.0	3.0	1.8	-

Source: National authorities.

Table 3 Financial assumptions for EU candidate countries

(adverse scenario due to EU/global demand shock)

	Stock market		Short-term interest rate (bp change)		Exchange rate (local currency/euro or basket) (percentage change)		House prices (percentage change)	
	2012F Percentage change	2013F Bp change	2012F	2013F	2012F	2013F	2012F	2013F
Croatia	-	-	-	-	-4	-5.8	-	-
FYR Macedonia	-	-	35	35	-2.5	-2.5	-	-
Montenegro	-18.1	-	-	-	-	-	-1.9	-1.8
Turkey	-	-	1,025	800	-31.7	0.0	-23.5	-30.2

Source: National authorities.
Notes: Exchange rate assumptions refer to a weighted EUR/CHF basket in the case of Croatia and to the real effective exchange rate (REER) in the case of FYR Macedonia. Interest rate assumptions refer to banks' weighted average interest rate (in real terms).

countries considered the impact of declining house prices in the adverse scenario (Montenegro and Turkey).

2.4 MACRO-STRESS-TEST RESULTS

The country-specific macroeconomic and financial assumptions were mapped into non-performing loan (NPL) scenarios using national models for non-performing loans which are either based on bank-by-bank balance sheet data or on aggregate data (see Table 4). While the time series available for the estimation of such models are relatively short in some cases (Croatia, the former Yugoslav Republic of Macedonia, Montenegro) the identified variables which tend to significantly affect NPL ratios are broadly in line with recent empirical studies based on cross-country panel data.[11] The rise in NPL ratios resulting from these models in the adverse scenario as well as its impact on capital adequacy ratios is summarised in Table 5.

In Croatia, the considered rise in non-performing loans is relatively large (from 12% to around 20% by end-2011 and 30% by end-2013). As a result, the average capital adequacy ratio (CAR) would decline from 18.8% at end-2011 to around

11 See, for example, Beck et al. (2012).

Table 4 Non-performing loan models used in EU candidate countries

	Econometric model	Type of data used	Estimation method	Main variables affecting NPL ratios
Croatia	Yes	System-level, separate models for corporate loans, housing loans and consumer loans	OLS	Real GDP growth, kuna exchange rate against currency basket
Former Yugoslav Republic of Macedonia	Yes	Bank-by bank	Dynamic panel/GMM	Real growth of GDP, CPI inflation, banks' weighted average interest rate (in real terms); real effective exchange rate
Montenegro	Yes	System-level	OLS	Real GDP growth, net wage growth, unemployment rate, change in real estate prices; change in MOSTE stock exchange index, loan growth, interaction dummy variable between wages and unemployment
Turkey	Yes	System-level	OLS	Real GDP growth, lira exchange rate against currency basket; unemployment

Source: National authorities.

Table 5 Macro-stress-test results for EU candidate countries

	Non-performing loan ratio (percentage of total gross loans)			Capital adequacy ratio (percentage)			Regulatory minimum capital adequacy ratio (percentage)	Banks with a capital adequacy ratio less than the regulatory minimum (# of banks)		Recapitalisation needs (percentage of GDP)	
	Latest (2011)	2012F	2013F	Latest (2011)	2012F	2013F		2012F	2013F	2012F	2013F
Croatia	12.1	20.2	30.5	18.8	17.5	15.1	12	9	12	0.1	0.6
Former Yugoslav Republic of	9.8	11.6	13.6	16.6	15.6	13.1	8	1	5	0.0	0.2
Montenegro	15.5	21.2	22.1	16.5	14.7	14.2	10	3	2	1.5	0.2
Turkey	2.8	3.4	4.0	16.0	15.6	16.6	8	0	0	0.0	0.0

Source: National authorities.
Notes: Unless otherwise noted, NPL ratios and capital adequacy ratios (CARs) refer to mean figures for deposit-taking institutions. "Capital" refers to national definitions of regulatory capital. In the case of FYR Macedonia, average CARs refer to banking system-level data excluding one special-purpose state-owned bank. All system-wide ratios in the case of FYR Macedonia are calculated by aggregating the ratio components for each individual bank.

15% by end-2013, which is however still above the regulatory minimum of 12%.[12] According to the Croatian National Bank, this decline would mainly stem from the considered depreciation of the kuna against a currency basket consisting of the euro and the Swiss franc due to unhedged borrowing in foreign currencies. To a lesser extent the rise in traditional credit risk due to the projected decline in GDP would also negatively affect CARs, while banks' still positive operating income (assumed to drop by 30% compared with the baseline scenario) would act as a mitigating factor. At the level of individual banks, the CAR of 9 (and 12) relatively small banks would fall below the regulatory minimum, corresponding to manageable recapitalisation needs of 0.1% (and 0.6%) of GDP in 2012 (and 2013). Overall, these results broadly correspond to findings from a recent stress test performed by the Croatian National Bank where the CAR of nine banks (holding around 9% of total banking sector assets) would fall below the regulatory minimum.[13]

According to the NPL model applied by the National Bank of the Republic of Macedonia, NPL ratios in FYR Macedonia would rise in the adverse scenario from currently 9.8% to 11.6% and 13.6% in 2012 and 2013. Banks' net income was projected on the basis of the preceding three-year average, applying an 80% weight to net interest and fee income and a 100% weight to all other net income components. As a result, net income projections imply a 14.1% drop in 2012 and a 15.5% drop in 2013, measured in terms of regulatory capital as at end-2011. Given these assumptions, the average CAR[14] at the level of the banking system (excluding one special-purpose state-owned bank) would drop from currently 16.6% to 15.6% and 13.1% in 2012 and 2013.[15] At the level of individual banks, the CAR of one bank in 2012 and five banks in 2013 would fall below the regulatory minimum (8%), implying manageable recapitalisation needs of 0.01% of GDP in 2012 and 0.20% of GDP in 2013 as these banks are relatively small.

In the adverse scenario, NPL ratios in Montenegro would rise from currently 15.5% to 21% in 2012 and 22% in 2013. Using a univariate ARIMA model for net income (taking into account changes in interest rates) the Central Bank of Montenegro projected banks' net income to fall to 29.8% in 2012 and 30.0% in 2013 (in terms of regulatory capital at the end of 2011). Using these assumptions,

12 The loss-given-default (LGD) rate was assumed to remain at its average level for 2011 (41%) throughout 2012 and 2013. The results also include the impact of losses from a rise in sovereign haircuts.
13 See Croatian National Bank (2012, p. 49).
14 The median CAR would drop in the adverse scenario from currently 20.4% to 13.9% in 2012 and 10.4% in 2013.
15 The LGD rate was assumed to remain at 45% throughout 2012 and 2013. Sovereign haircuts are not taken into account. Other market risks were also not considered as trading book positions in FYR Macedonia are minimal.

the average CAR would drop in the adverse scenario from currently 16.5% to 14.7% in 2012 and 14.2% in 2013.[16] At the bank-by-bank level, three banks would fall below the regulatory minimum in 2012, followed by two banks in 2013. The respective necessary recapitalisations would amount to 1.5% of GDP in 2012 and 0.2% of GDP in 2013.

In Turkey, the considered adverse scenario would result in an increase of non-performing loans from currently 2.8% to 3.4% and 4.0% in 2012 and 2013.[17] Net income of banks was projected as the sum of non-interest income (assumed to remain constant at historical three-year averages) and net interest income (based on the sensitivity gap between assets and liabilities with respect to short-term interest rates as foreseen in the scenario), acting as an additional buffer to absorb losses stemming from an increased NPL ratio. Under these assumptions, the average CAR would drop slightly from currently 16% to 15.6% in 2012 and rise to 16.6% in 2013. In this scenario, no bank would fall below the regulatory minimum requirement.

2.5 CONCLUDING REMARKS

Overall, the macro-stress-test exercise performed with the authorities of the EU candidate countries suggests that at the aggregate level with current comfortable capitalisations well above regulatory requirements most banks could absorb on average losses stemming from an increase in credit risk in an adverse scenario in which EU growth would turn negative in 2012 and 2013. Nevertheless, a number of caveats should be borne in mind. First, as highlighted in Chapter 1, indirect exchange rate risk plays a major role in all EU candidate countries (with the exception of Montenegro). While the macro-stress-test exercise allowed for exchange rate depreciations to be considered, the assumptions made correspond relatively closely to past exchange rate volatility, which may be appropriate for the considered scenario but possibly not under all conceivable adverse conditions, including scenarios with capital outflows (see Chapter 3). Second, the employed models for non-performing loans and net income are based in some cases on relatively short time series and have not yet been tested in terms of in-sample and out-of-sample forecast properties. In addition, possible declines in the value of collateral were not systematically taken into account. Third, while at the aggregate level banking sectors seem to be well capitalised, the stress test also pointed to a need for recapitalisation of a number of smaller individual banks under the adverse scenario. Fourth, possible losses stemming from increased sovereign risk for domestic government bond holdings were not consistently taken into account by all EU candidate countries on a mark-to-market basis.

16 The LGD rate was assumed to remain at 40% throughout 2012 and 2013. Sovereign haircuts are not taken into account. Other market risks were also not considered as trading book positions in Montenegro are minimal.

17 The LGD rate was assumed to remain at 45% throughout 2012 and 2013.

3 FUNDING RISKS IN A CONTEXT OF EUROPEAN BANK DELEVERAGING

3.1 INTRODUCTION

This chapter analyses the resilience of bank funding in EU candidate countries in a context of *bank deleveraging*, defined here as asset-driven shrinking of bank balance sheets. Shrinkage might be associated with: (i) reduced reliance on certain funding sources such as debt, wholesale financing and external funding; and (ii) decreased lending to the real economy. The possibility of *disorderly* bank deleveraging received a lot of public attention at end-2011 and in early 2012 as funding strains for European banks escalated. However, it was sometimes overlooked that *orderly* deleveraging is a global medium-term trend, which can contribute to financial stability through more sustainable bank business models. To some extent, deleveraging has materialised already in some EU candidate countries. Therefore, Section 3.2 briefly recalls the main cyclical and structural drivers of bank deleveraging in the context of a prominent role of EU parent banks in most EU candidate countries. Section 3.3 reviews the available evidence of bank deleveraging in EU candidate countries since the crisis. In Section 3.4, external funding risks for banks in EU candidate countries are assessed as at end-2011, recalling that external funding is not the main source of finance and that other funding liquidity risks are also of relevance. Section 3.5 concludes.

3.2 BACKGROUND AND GENERAL CONSIDERATIONS

Concerns about disorderly bank deleveraging peaked at the end of 2011. Strains on European banks escalated at the end of 2011 due to an adverse feedback loop between perceived sovereign risk and banking systems in the euro area. As a result, many private funding channels for European banks shut down. In addition, new capital ratio requirements issued by the European Banking Authority (EBA) raised concerns that European banks might achieve higher capital ratios to some extent via asset sales and credit supply contraction, even though this risk was mitigated from the outset by various policy initiatives.[18] The ECB's provision of long-term funding via two special operations in December 2011 and February 2012 alleviated funding pressures on European banks considerably.[19] Since then, financial sector strains in the EU have re-emerged.

Geographical proximity to the EU, a relatively favourable medium-term growth outlook and regional policy initiatives should mitigate deleveraging risks to some extent in EU candidate countries. Large shares of most EU candidate countries' banking systems are funded by parent banks domiciled in the EU. This facet potentially gives rise to "home-host" considerations in the deleveraging decision, as EU banks might favour retaining their presence in home markets. In fact, empirical research based on gravity models for financial flows confirms that cross-border banking flows are driven by geographical distance and host-country fundamentals, among other factors.[20] Since EU candidate countries are located in geographical proximity to the EU, possible deleveraging risks are mitigated. In addition, despite lower output growth than before the crisis, most EU candidate countries are expected to expand at a more rapid pace than the EU average. Therefore,

18 The EBA's recommendation adopted by its Board of Supervisors on 8 December 2011 is part of a broader European package, agreed by the European Council on 26 October and confirmed during the ECOFIN Council on 30 November, to address the current situation in the EU by restoring stability and confidence in the markets. Among other measures, banks are required to establish an exceptional and temporary buffer such that the core Tier 1 capital ratio reaches a level of 9% by the end of June 2012. The EBA's recommendation required the relevant banks to achieve this new capital ratio mainly via an increase in capital and not via a reduction of risk-weighted assets. Banks were also asked to submit their capital plans to their respective national supervisors, the supervisory colleges and the EBA. According to a preliminary assessment by the EBA's Board of Supervisors as at 9 February 2012, the capital shortfalls are in the aggregate expected to be met primarily through direct capital measures. The measures were therefore not viewed as having a negative impact on lending to the real economy.

19 On 8 December 2011 the Governing Council of the ECB decided to conduct two longer-term refinancing operations (LTROs) with a maturity of 36 months. The operations were conducted on 21 December 2011 and on 29 February 2012 as fixed rate tender procedures with full allotment. According to the BIS (2012), the amount of slightly more than 1 trillion euro which banks received is equivalent to 80% of their 2012-14 redemptions.

20 See Herrmann and Mihaljek (2010).

EU parent banks might be inclined to maintain exposure to the region as local subsidiaries are likely to generate larger profits compared with home markets.[21] In fact, under a new European Bank Coordination ("Vienna II") Initiative, parent banks agreed to the principle that "orderly credit conditions in emerging Europe are in the shared interest of the private sector and home and host countries".[22] However, it is not clear whether all EU candidate countries would benefit from this commitment.

Domestic macroeconomic imbalances and a poor short-term growth performance tend to increase deleveraging risks in some EU candidate countries. Among EU candidate countries, there are cases of past or present macroeconomic imbalances and negative growth performance which tend to negatively affect cross-border credit flows.

Over the medium term, the parent bank funding model prevailing in some EU candidate countries might need to be reviewed. Prior to the crisis, the role of foreign banks in emerging Europe was almost unanimously seen as contributing to growth and financial stability. Since the onset of the crisis, however, the debate about foreign bank ownership has become more nuanced as foreign banks can transmit home-country shocks.[23] Against this background, many observers have called for a "new growth model" in emerging Europe, which would be based on more local funding. Likewise, some home countries have launched regulatory initiatives aimed at strengthening the role of local funding in central, eastern and south-eastern Europe.[24]

3.3 AVAILABLE EVIDENCE OF BANK DELEVERAGING

Taking a longer-term view, bank deleveraging has already materialised in Iceland and, to a lesser extent, in Montenegro since the start of the 2007-08 crisis. In order to examine whether bank deleveraging has taken place already in the EU candidate countries, both the size of overall bank balance sheets (measured by total liabilities) and the evolution of funding sources (capital, domestic deposits and external funding) since the start of the crisis are of interest.[25] Chart 6 (left panel) depicts the contribution of these funding sources to the percentage change of total bank liabilities in the fourth quarter of 2011 compared with the third quarter of 2008. In Iceland and to a lesser extent Montenegro, bank deleveraging in the sense of shrinking bank balance sheets has taken place since the start of the crisis as total bank liabilities declined considerably by around 80% and 20% respectively. In the case of Iceland, bank balance sheets shrank mainly due to a drop in external funding. In the case of Montenegro, bank balance sheets adjusted mainly due to a decline in domestic deposits, but external funding also contributed after parent banks initially supported subsidiaries during a crisis of confidence in early 2009. In both cases, the underlying cause of bank deleveraging was domestic in the sense that excessively rapid domestic credit growth (while mainly foreign-funded in the case of Iceland) was not contained and therefore led to a credit bubble that eventually burst.

21 According to McKinsey & Company (2010), a reasonable expectation for the long-term return on average assets in mature EU banking markets is around 0.5-0.6%, which has been historically exceeded in some EU candidate countries. Due to subdued competition, returns might also be higher in the future.

22 See press release at http://www.ebrd.com/pages/news/press/2012/120116a.shtml. Under the first European Bank Coordination ("Vienna I") Initiative, parent banks made firm commitments to keep their exposure to countries under EU/IMF programmes in the region.

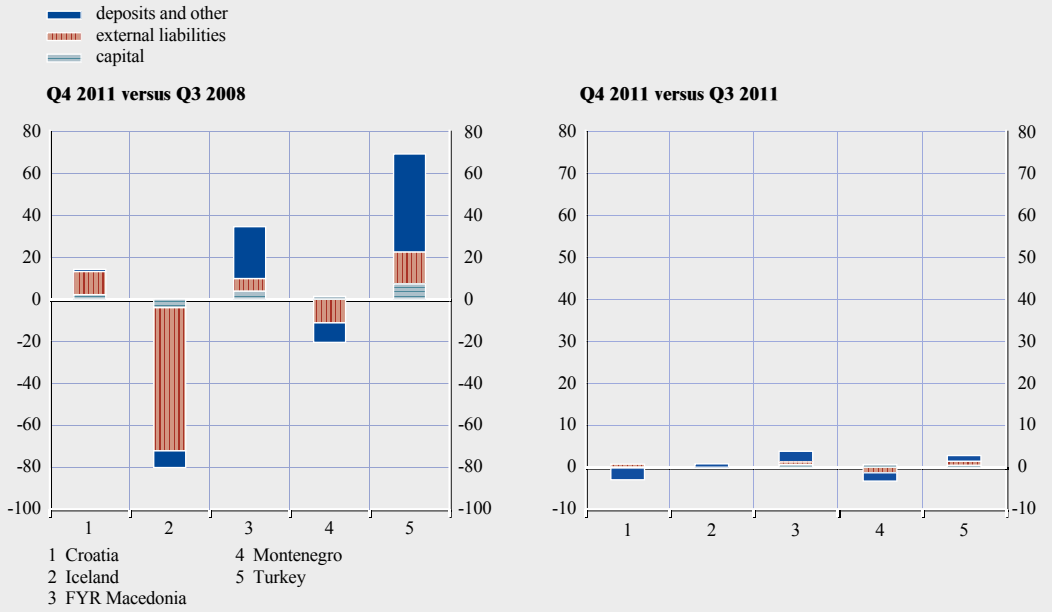
23 See Peek and Rosengren (1997), Cetorelli and Goldberg (2009), Claessens and van Horen (2011), and Popov and Udell (2010).

24 For example, the Austrian Financial Market Authority, in cooperation with the Oesterreichische Nationalbank, published a supervisory guideline in March 2012 to strengthen the sustainability of the business models of large internationally active Austrian banks. One of its pillars is aimed at strengthening the refinancing structure of banking subsidiaries and the supervisory authority will continually monitor and analyse the ratio of net new lending to local stable funding. The results of this monitoring exercise will be discussed and assessed with the competent host and home supervisors in the supervisory college framework to agree on any necessary supervisory measures, in order to proactively avoid boom-bust cycles in lending.

25 Assessing the extent of bank deleveraging in the context of host countries would be ideally based on granular data on aggregate parent bank loans, which are not readily available. Therefore, this section is based on a sectoral breakdown of bank liability data focusing on the evolution of "external liabilities", which consist largely of parent bank funding in most EU candidate countries (with the notable exception of Turkey where banks have access to international wholesale markets).

Chart 6 Change in bank liabilities

(contributions to change in total bank liabilities in percentage points)



Sources: National authorities, Haver Analytics and ECB calculations.

Since the start of the crisis, bank balance sheets have expanded in Turkey, the former Yugoslav Republic of Macedonia and to a lesser extent Croatia. Bank balance sheets have increased since the start of the crisis (Chart 6, left panel), most notably in Turkey (69%), followed by FYR Macedonia (34%) and Croatia (14%). External funding contributed to this increase in total liabilities, particularly in Croatia, which might therefore be vulnerable to parent bank deleveraging in the future. In the case of Turkey, where a credit boom occurred later than in south-eastern Europe, external funding also contributed to the increase in bank balance sheets, but this funding took mainly the form of internal wholesale finance rather than parent bank loans. In FYR Macedonia, expanding bank balance sheets have been mainly financed by deposits.

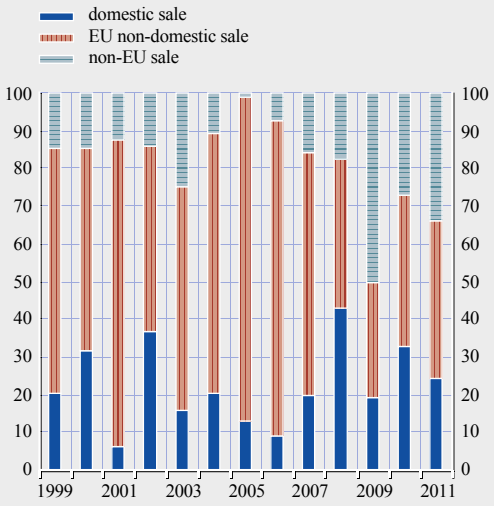
Bank deleveraging did not accelerate at the end of 2011. National data on bank liabilities available up to end-2011 do not suggest that bank deleveraging accelerated at the end of 2011 (see Chart 6, right panel). Bank liabilities slightly shrank only in Croatia, and this decline was not driven by external liabilities, which accounted for 24.5% of total liabilities at the end of 2011. In other EU candidate countries, the share of external funding remained relatively stable (see Annex A). Overall, there is no evidence of accelerated bank deleveraging among the EU candidate countries at the end of 2011, i.e. the period when funding strains among EU parent banks were elevated. However, strains related to bank deleveraging could emerge in the short term since there might be a lag between parent bank funding strains and cross-border deleveraging.

From an EU parent bank perspective, there is no firm evidence of home bias during financial crises. Chart 7 shows the asset sales by EU banks, broken down by the location of the asset relative to the location of the bank.[26]

26 The Capital IQ data include all banks located in the EU. The transactions data capture corporate divesture; recapitalisation; joint ventures; and transfers of equity stakes. Banks are broken down into the following categories: standard deposit-taking banks; diversified financial services; consumer finance; and investment banking and brokerage institutions.

Chart 7 Breakdown of EU bank asset sales by location

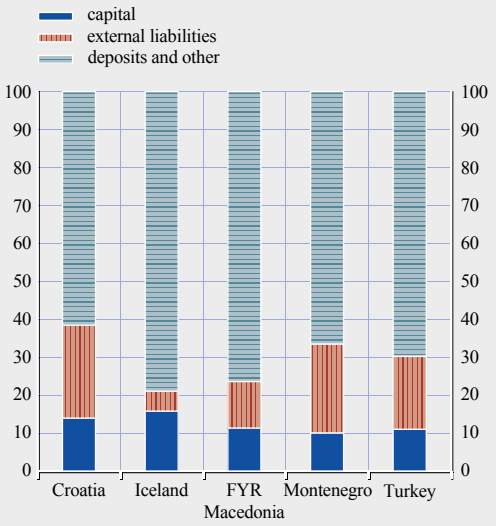
(percentages)



Source: CapitalIQ.
Note: Data refer to disinvestments of EU banks and are value-adjusted.

Chart 8 Sources of bank funding in the EU candidate countries

(percentage of total bank liabilities as at end-2011)



Sources: National authorities and ECB calculations.

In seeming contrast to the home-bias hypothesis, domestic asset sales increased relative to non-domestic sales during 2008.

3.4 FUNDING AND LIQUIDITY RISKS AS AT END-2011

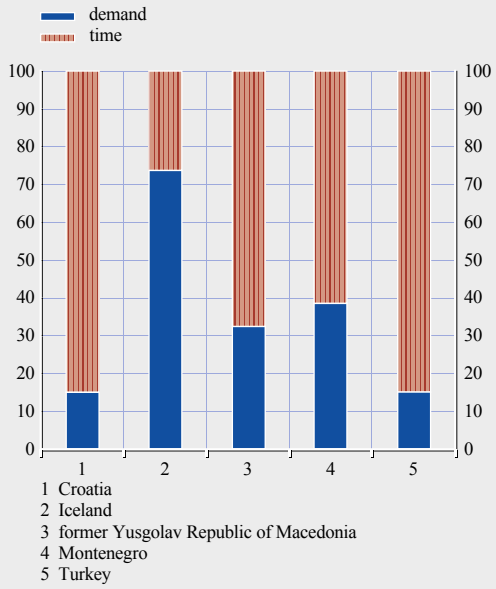
External funding liquidity risks vary considerably across the EU candidate countries. As at end-2011, banks in EU candidate countries were mainly funded through local deposits (see Chart 8).[27] Therefore, funding liquidity risks stemming from a possible reduction in external funding – triggered for example by bank deleveraging of EU parent banks – are relatively contained, particularly in Iceland (where external funding no longer plays a role for the newly established banks; see Annex A2) and the former Yugoslav Republic of Macedonia. Croatia, Montenegro and Turkey are somewhat more exposed to a drop in external funding. In the case of Croatia and Montenegro, this risk mainly relates to a drop in parent bank funding, which materialised in the case of Montenegro where the share of external funding in total bank funding has declined since mid-2009 (see Section 3.1 and Annex A4). In the case of Croatia, on the other hand, parent bank funding remained more stable until end-2011.[28] With respect to Turkey, due to the much more limited role of parent banks (see ECB, 2010)[29], external funding liquidity risks rather consist of a rising dependence of banks on external borrowing in international wholesale markets.

The risk of deposit outflow is higher in Iceland and, to a lesser extent, in Montenegro compared with other EU candidate countries. With respect to deposits, a relatively high share of time deposits compared with demand (sight) deposits mitigates the risk of a decline in deposits, with the exception of Iceland where demand deposits account for around 80% of deposits (see Chart 9). In the case of Montenegro, a

27 Wholesale funding (included in "deposits and other") is only relevant in the case of Turkey.
28 The share of external funding in total bank liabilities slightly increased during the fourth quarter of 2011.
29 In addition, risks related to foreign banks are also mitigated by higher capital requirements for banks with strategic foreign shareholders (see Annex A5).

Chart 9 Household and commercial bank deposits

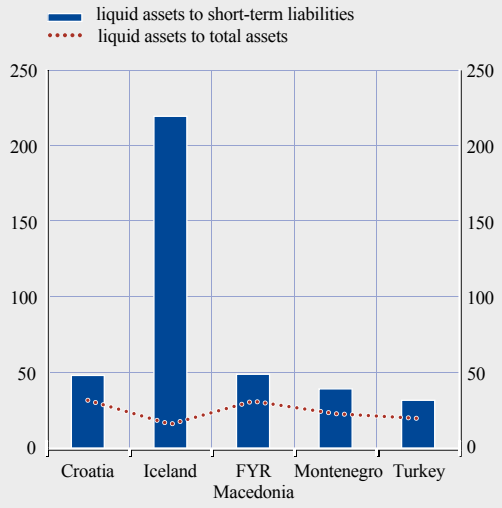
(percentage of total deposits as at end-2011)



Sources: National authorities and ECB calculations.

Chart 10 Banks' liquidity ratios in EU candidate countries

(percentage as at end-2011)



Source: National authorities.

decrease in deposits materialised to some extent in 2008 (see Annex A4).

Standard liquidity ratios do not fully reflect liquidity risk.[30] As at end-2011, the ratio of liquid assets to total assets in the EU candidate countries (see Chart 10) stood around 20% (Iceland, Montenegro and Turkey) to 30% (Croatia and the former Yugoslav Republic of Macedonia), having remained relatively stable throughout the review period. At the same time, the ratio of liquid assets to short-term liabilities stood at around 50% in Croatia and FYR Macedonia and around 30-40% in Turkey and Montenegro respectively. In Iceland, the newly created banks currently over-fulfil regulatory liquidity requirements in terms of short-term liabilities by a large margin as the new banks have few investment opportunities other than liquid government bonds on the assets side.

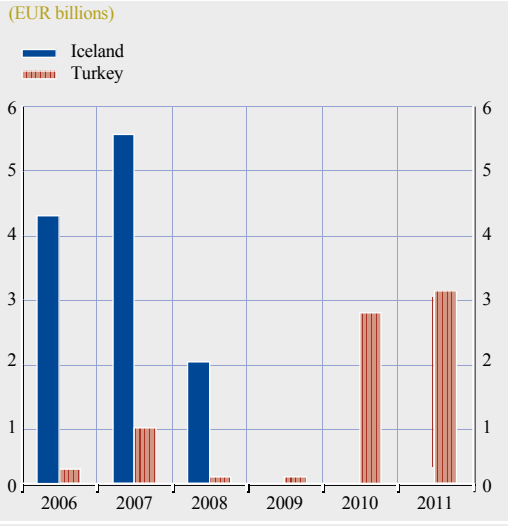
A comparison of these liquidity ratios across EU candidate countries might lead to the conclusion that Turkey – where liquidity ratios have declined somewhat over the review period (see Annex A5) – is most vulnerable to funding liquidity risk, while banks in Croatia and the former Yugoslav Republic of Macedonia appear to be more resilient. An assessment based only on such ratios does not however take into account country-specific factors in the cases of Iceland and Montenegro. In the case of Iceland, liquid assets increased to 219% relative to short-term liabilities but cover only around 40% of total deposits (see Annex A2). As the bulk of deposits are demand deposits (see above), liquid assets do not cover all demand deposits. Therefore, sudden deposit withdrawals at short notice due to a loss of confidence remain a risk, in particular with respect to non-resident deposits, which could flow out once capital controls are lifted. Nevertheless, in terms of immediate liquidity

30 The EU candidate countries were unable to provide the net stable funding ratio for this paper. To be compliant with the Basel III agreement, banks must hold at least the required amount of stable funding by 2018, and national supervisors should monitor the net stable funding ratio before that date. See Basel Committee on Banking Supervision (2010), "Basel III: International framework for liquidity risk measurement, standards and monitoring".

risk, capital controls currently shield the banking sector from possible outflows of deposits among non-residents and residents. In the case of Montenegro, liquidity buffers should be higher than international norms because of a limited capacity of the authorities to act as a lender of last resort.[31]

Market access has remained open for Turkish banks and shut for Icelandic banks. Among EU candidate countries, bank funding in the corporate bond market is only relevant in the case of Turkey. Bond issuance data confirm that the corporate bond market for Icelandic banks dried up in 2008. The market for bonds issued by Turkish banks, while thin in 2008 and 2009 in line with global markets, reopened during the review period (see Chart 11). Issuance of corporate debt by Turkish banks in international markets remains vulnerable to swings in global investor sentiment. In the case of Iceland, banks are unlikely to use international debt markets as a source of funding due to capital controls and the Icelandic authorities' objective to preserve a domestic focus of the newly established banking sector.

Chart 11 Banks' outstanding corporate bonds



Source: Dealogic.

3.5 CONCLUDING REMARKS

Overall, risks stemming from bank deleveraging have materialised in the cases of Iceland and Montenegro. Funding liquidity risks continue to be a concern in these countries. In the case of Iceland, this is due to a high share of sight deposits and possible outflows once capital controls are lifted. In the case of Montenegro, available liquidity buffers might still be inadequate given unilateral euroisation. Exposures of Croatia, the former Yugoslav Republic of Macedonia and Turkey to funding liquidity risk are more moderate. Among these countries, banks in FYR Macedonia appear to be most resilient to funding liquidity risks; banks in Croatia are predominantly exposed to a withdrawal of parent bank funding. Finally, the financial sector in Turkey, while still mainly funded through local deposits, has increased its reliance on external borrowing in international wholesale markets.

In the case of all EU candidate countries, risks to the various funding sources might be correlated in a tail risk scenario of disorderly deleveraging. While the impact of a decline in external funding is mitigated by a relatively high reliance on local deposits, banks in the EU candidate countries might be exposed to a combination of shocks including a drop in external funding and deposit outflows and, in the case of Turkey, a loss of market access. These linkages typically arise via the confidence channel in a period of financial stress and increased global uncertainty. Nevertheless, a combined funding shock scenario – which could be aggravated by capital outflow and exchange rate depreciation leading to higher default rates stemming from unhedged borrowing in foreign currency – should be considered as a tail risk.

31 Pockets of additional vulnerabilities might exist at the level of individual banks in all EU candidate countries because all liquidity ratios apply only to the banking sector as a whole.

4 RECENT TRENDS IN FOREIGN CURRENCY LENDING IN THE EU CANDIDATE COUNTRIES[32]

4.1 INTRODUCTION

As a legacy of the past, and as an element linked to the catching-up process and the ongoing financial integration, the EU candidate countries have built up high stocks of both assets and liabilities denominated in or indexed to foreign currency. Foreign currencies, in particular the euro, are widely used in these countries. Croatia and the former Yugoslav Republic of Macedonia even use the euro as an exchange rate anchor. In addition, Montenegro occupies a special position because it unilaterally adopted the euro as an official currency as of 2002.[33] In some of the countries under study, borrowing in foreign currency boosted the credit-driven consumption boom prior to the crisis, while also fuelling asset price rises. At the same time, foreign currency lending has induced systemic risks due to mismatches on the balance sheets of both the non-bank corporate sector and households, i.e. indirect exchange rate risk. Hence, exchange rate fluctuations may weigh on the repayment capacity in particular of households and small and medium-sized enterprises, with related debt tending to be unhedged, as the sectors' income is primarily in domestic currency. In addition, foreign currency positions involve a specific type of interest rate risk, as the foreign interest rate cycle may differ substantially from that of the domestic economy. Foreign interest rate hikes may increase the debt service on foreign currency borrowing and, hence, may lead to a further deterioration of the quality of foreign currency loans (ESRB, 2011). Since the authorities of the EU candidate countries are aware of these risks, various measures to curb lending in foreign currency have been initiated (see Chapter 5).

Concerning the factors driving the use of foreign currency loans, the rapid expansion of loans denominated in or indexed to foreign currency resulted from both demand and supply factors. On the demand side, the growth of foreign currency lending was motivated by sizeable interest rate differentials, coupled with stable exchange rates (or even currency appreciation expectations). Moreover, such growth was also buttressed by hedging linked to the widespread use of deposits in foreign currency in the household sector, to income in foreign currency from tourism (e.g. Croatia) and to remittances (Croatia, Turkey, former Yugoslav Republic of Macedonia), as well as to the presence of export-oriented companies in the non-bank corporate sector. As in EU member countries in central and eastern Europe with a high share of foreign currency lending, the major supply factors were the reliance on cross-border funding from parent institutions, given the dominant position of foreign banks' subsidiaries in the domestic banking sectors and their struggle for market share (in particular in Croatia), and the use of wholesale funding in Iceland and Turkey. In addition, rising competition, especially in the housing and mortgage markets, led banks to expand the range of products by offering mortgages in Swiss francs (most notably in Croatia).

The importance of supply and demand factors differs among the EU candidate countries. According to the results of a survey of central banks (ECB, 2010) on the importance of foreign currency demand and supply factors in three of these countries, persistently low confidence in the domestic currency owing to decades of recurring high inflation[34] (Croatia), the peg to the euro (former Yugoslav Republic of Macedonia) and the expectation of an

32 Due to data constraints, parts of this chapter do not include Montenegro and Iceland.

33 Loans in foreign currency in Montenegro are denominated in currencies other than the euro.

34 While low confidence in the domestic currency is usually coupled with currency depreciation expectations, which tend to weaken demand for foreign currency loans, low confidence may also work via at least two channels to foster the use of foreign currency loans. First, on the demand side, low confidence may be coupled with fears of a strong acceleration of inflation and parallel sharp increases of nominal and also real interest rates on local currency loans, leading to a demand preference for foreign currency loans (implicitly assuming real currency appreciation in such an event, as inflation would outpace nominal depreciation). Second, on the supply side, households may save by holding foreign currency deposits to preserve the value of their savings, given their inflationary fears. These deposits require banks to hold foreign currency assets (e.g. foreign currency loans) to avoid currency mismatches on their balance sheets and to observe regulations to limit banks' open positions in foreign currency.

appreciation of the domestic currency (Turkey) are the major reasons for the demand for foreign currency loans. On the supply side, the prudential rules for direct foreign exchange risk management by banks (FYR Macedonia), as well as the unavailability of long-term debt in local currency (Croatia), are cited as reasons for foreign currency lending. In addition, evidence from the "Euro Survey" by the Oesterreichische Nationalbank (OeNB), which is a household survey performed in 11 countries in central and south-eastern Europe[35] including households in Croatia and FYR Macedonia, underscores the importance of both supply and demand factors, but also identifies country dissimilarities. Foreign borrowing has been mainly demand-driven in FYR Macedonia, while in Croatia supply-side factors (summarised by banks' advice to their customers) have proven to be more important (Beckmann et al., 2011).[36]

4.2 RECENT TRENDS IN FOREIGN CURRENCY LENDING

Recent developments in foreign currency lending significantly differ among the EU candidate countries. Concerning the development of the share of foreign currency loans during the review period (comprising the years 2010 and 2011), in Montenegro, the share of lending in a foreign currency other than the euro in total lending to the private sector (households and non-bank companies) remained very low. Generally, the four remaining EU candidate and acceding countries can be classified in two groups, one with an increase and one with a decrease in the share of outstanding foreign currency loans in the review period from end-2009 to end-2011. The former Yugoslav Republic of Macedonia and Croatia have recorded a moderate increase in foreign currency loans to the private sector since 2009 (see Chart 12). In Croatia, the share of loans denominated in or indexed to foreign currency in total loans increased moderately to 73.7% at the end of the third quarter of 2011 from 71% at end-2009, as a result of the increase of foreign currency-indexed loans to households and of foreign currency-denominated loans to the corporate sector, while foreign currency-indexed loans to the corporate sector declined. In FYR Macedonia, the share of foreign currency-indexed loans in total loans to households as well as the corresponding share in total loans to the corporate sector declined over the review period, while the share of foreign currency-denominated loans increased in each sector, so that the share of the overall stock of foreign currency loans in total loans increased only slightly in each sector as well as among all private non-banks. Interestingly, the recent crisis appears to have barely changed the motives for foreign currency borrowing: The OeNB Euro Survey results underscore that, taking everything into account, households in Croatia and FYR Macedonia considered foreign currency loans more attractive than loans in domestic currency in 2010 (ECB, 2011).

In the two EU candidate countries which operate flexible exchange rate regimes (Turkey and Iceland), the share of foreign currency loans in loans to households was very low at the end of 2011. In Turkey, a restrictive prudential policy stance with respect to lending in foreign currency after the currency crisis in the early 2000s (when foreign currency-denominated loans to households were prohibited) had brought the share of foreign currency loans in total loans to households down to less than 4% by end-2008.[37] In addition, owing to measures effective since mid-2009 (prohibition of foreign currency-indexed loans to households), this share declined further. The respective share in the corporate sector had decreased to 43% of total lending by the end of 2010, and recorded a further decline in 2011, reaching 39% of total lending despite strong business investment and

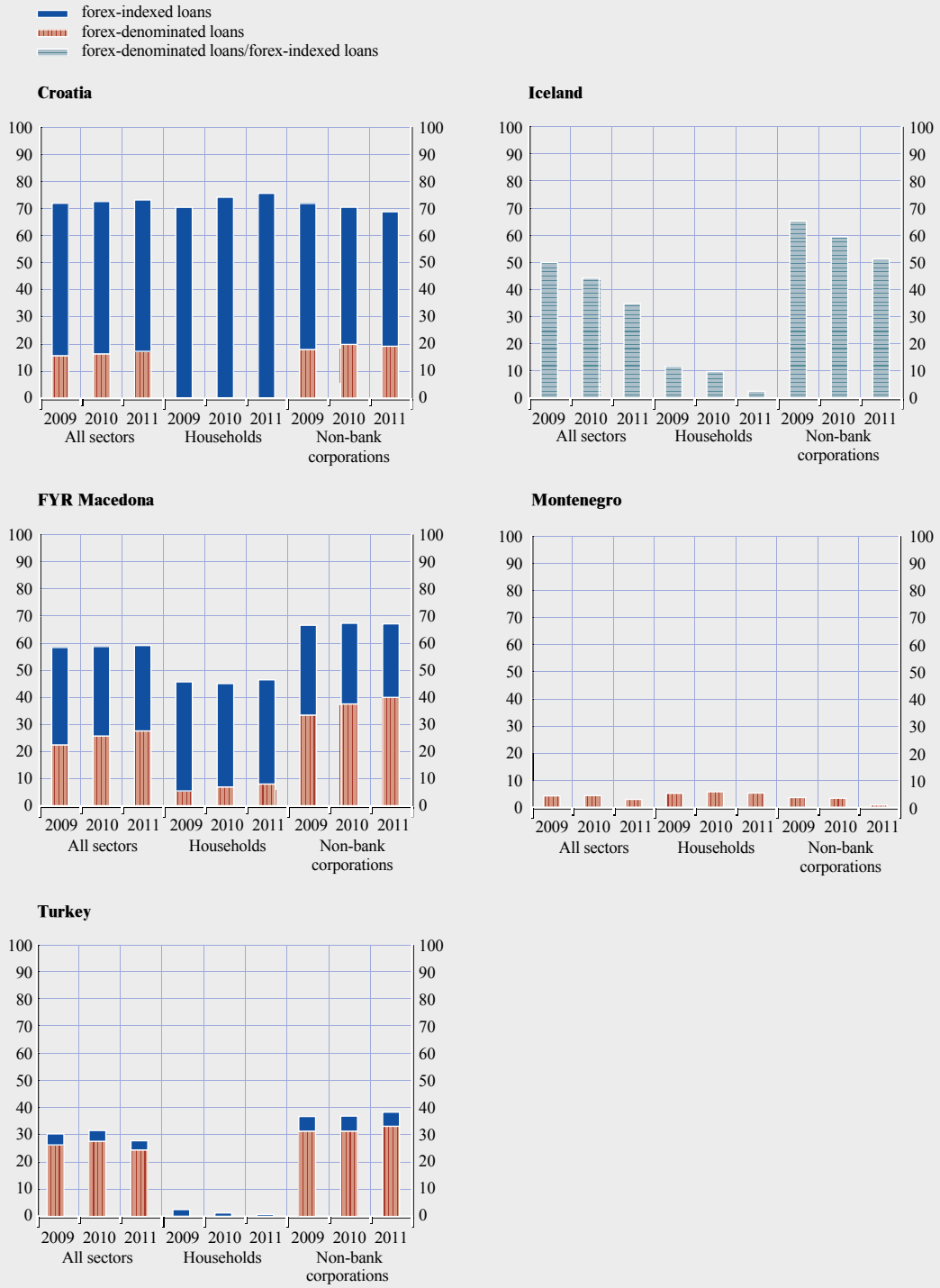
35 For further information, see OeNB (2011).

36 In addition, in a recent study applying meta-analysis to the determinants of foreign currency loans in the countries of central and eastern Europe, Crespo Cuaresma et al. (2011) find inflation volatility, foreign exchange rate volatility and the hedging function of foreign currency deposits to be the most robust determinants of foreign currency loans.

37 The shares in Turkey are adjusted for exchange rate changes. Unfortunately, no such adjustment is possible for Iceland because the currency denomination of the foreign currency loans is not available.

Chart 12 Foreign currency lending in acceding and candidate countries

(percentage of total loans)



Source: National central banks.
Note: No differentiation between foreign currency-indexed and foreign currency-denominated loans is available for Iceland. The shares in Turkey are adjusted for exchange rate changes.

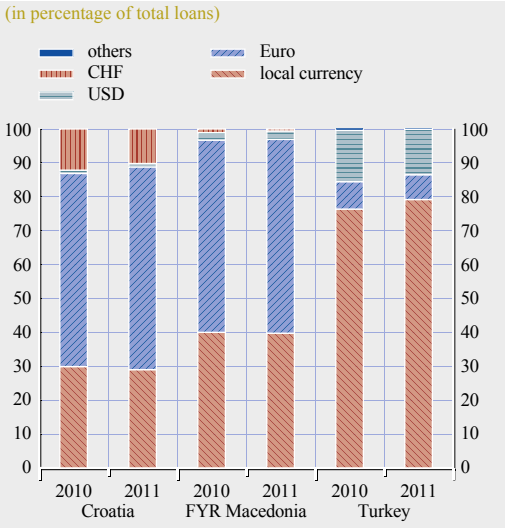
credit demand.[38] Iceland experienced a credit-driven consumption boom prior to the crisis, with total loans to households increasing by high double-digit annual rates (see Annex A2).[39] However, foreign currency loans did not play a major role in this boom, as their share in total loans to households did not exceed 15% at end-2008 (after 6.7% and 10.7% in 2006 and 2007 respectively). In 2010, two court rulings resulted in legislation regarding foreign currency-denominated loans as unlawful.[40] As a result, all household debt denominated in foreign currency was converted into local currency and the stock of foreign currency loans to households decreased sharply to 2.5% at the end of the third quarter of 2011. By contrast, the share of foreign currency loans in total loans to the corporate sector amounted to 67% at end-2008. It had declined to 50% by end-2011.

The majority of the EU candidate countries, namely Croatia, the former Yugoslav Republic of Macedonia and Turkey, recorded positive growth of total loans to the private sector in the review period. Loan growth was mainly driven by the increase of foreign currency lending in Croatia and FYR Macedonia, while local currency lending was the predominant factor behind loan growth in Turkey (see country annexes). By contrast, Iceland and Montenegro experienced negative loan growth in the period 2010-11. In Iceland, the decline of outstanding loans resulted almost entirely from the contraction of foreign currency loans, which resulted partly from the Supreme Court ruling on foreign exchange-indexed loans.[41] In Montenegro, total lending to the private sector contracted by almost 14.3% year on year in November 2011,[42] while lending in currencies other than the euro declined even more strongly in this period.

4.3 FINANCIAL STABILITY RISKS STEMMING FROM FOREIGN CURRENCY LENDING

Financial stability risks stemming from foreign currency lending are to some extent mitigated in the case of housing loans. On the one hand, the relevance for financial stability originates also from the maturity mismatch, as a large share

Chart 13 Currency composition of loans to the household sector



Source: National central banks.
Note: Data for 2011 are preliminary.

of (foreign currency) deposits consists of sight deposits, while housing loans in foreign currency have a longer maturity. On the other hand, the presence of collateral may reduce credit risk, provided that residential property prices do not decline excessively and thus impact the loan-to-value ratio. In Croatia, over 90% of mortgage loans were denominated in or indexed to foreign currency at the end of 2011, with mortgage loans in Swiss francs representing a sizeable share.

38 In June 2009 the Turkish government passed an amendment to Decree No 32 of the Law on the Protection of the Value of the Turkish Lira, which prohibited households from using loans indexed to foreign currency. In addition, corporates are only allowed to borrow in foreign currency under special conditions (e.g. a loan maturity of at least one year and a minimum value of USD 5 million).

39 Iceland imposed capital controls in 2009, which are planned to remain in force until 2013. Hence, the Icelandic króna cannot be considered a fully convertible currency.

40 See http://eng.efnahagsraduneyti.is/Publications/nr/3112 and http://eng.efnahagsraduneyti.is/Publications/nr/3190.

41 In June 2010 the Icelandic Supreme Court found that it was illegal to index loans denominated in króna to changes in exchange rates of foreign currency (it was a case of an individual's car loan (a leasing contract). Later on, in June 2011, the Supreme Court upheld a decision of the District Court of Reykjavik that ruled illegal a foreign exchange-indexed loan provided by a commercial bank to the corporate sector (IMF, 2011b). See also Annex A2.

42 When adjusting for certain extraordinary factors, the decline in overall credit to the private sector was less pronounced (around 2-3% on an annual basis), according to the Central Bank of Montenegro.

In addition, loans indexed to foreign currency remain popular for consumption purposes (e.g. car loans), though their share in total loans for consumption purposes declined to 69% at end-2011 from 75% at end-2009. In the former Yugoslav Republic of Macedonia, the growth of foreign currency housing loans decelerated in the review period, in contrast to the steep growth rates in the pre-crisis period. However, the share of housing loans denominated in or indexed to foreign currency in total residential loans increased somewhat to 92% at end-2011 from 89% at end-2009, while one-third of the consumer loans is denominated in or indexed to foreign currency.

Indirect exchange rate risk materialised to some extent during the review period. In Croatia, the share of non-performing loans (NPLs) in total loans increased by nearly 3 percentage points to over 12% from end-2009 to end-2011, while the share of NPLs in foreign currency loans, especially in Swiss francs, increased by nearly 5 percentage points.[43] Similarly, in the former Yugoslav Republic of Macedonia, the share of foreign currency NPLs has been on the rise since 2009 and increased by nearly 3 percentage points to end-2011, while the share of total NPLs in total gross loans peaked at end-2010 and has fallen since then (see the country annexes). However, on the positive side, some of the central banks of the candidate countries had undertaken prudential measures to rein in credit growth and, in particular, to restrain foreign currency lending[44] already prior to the crisis, thereby limiting the impact of the crisis on banks' asset quality.

The EU candidate countries should prepare to implement the recommendations of the European Systemic Risk Board (ESRB) at some point. Foreign currency lending is not only a phenomenon in the EU candidate countries, but is also widespread in several EU Member States. Against the backdrop of increasing financial stability concerns arising from foreign currency lending to unhedged borrowers, the ESRB published in October 2011 seven recommendations in order to limit the risks stemming from currency mismatches (see box below).[45] With a view to EU accession, the candidate countries should prepare to implement these recommendations at some point. So far, the National Bank of the Republic of Macedonia has made good efforts regarding the creditworthiness of foreign exchange borrowers and the respective capital and liquidity requirements (recommendations B, E and F).

43 In a memorandum on alleviating the position of borrowers of housing loans denominated in Swiss francs, which was signed in August 2011 by the Croatian government and local banks, the government and banks agreed to fix the exchange rate for housing loans denominated in Swiss francs at HRK/CHF 5.80 for a period of five years, to ease pressures on borrowers whose debt servicing costs rose strongly as a result of the recent strengthening of the Swiss franc vis-à-vis the kuna. However, in September 2011 the Swiss National Bank announced a limit for the value of the Swiss franc against the euro, hence alleviating the indirect exchange rate risk to a large extent. As a result, the participation in the scheme was low.

44 For instance, as of 2006, the National Bank of the Republic of Macedonia (NBRM) adopted regulations on the conditions for granting loans denominated in or indexed to foreign currency (Celeska et al., 2011). Since July 2009 the NBRM has imposed differentiated reserve requirement ratios for bank liabilities in domestic and in foreign currency (see Table A3.2).

45 See ESRB (2011).

Box

THE ESRB'S RECOMMENDATIONS ON FOREIGN EXCHANGE LENDING

Recommendation A: Risk awareness of borrowers

Financial institutions should give adequate and sufficient information to borrowers above all on instalments of a severe depreciation of "domestic currency" and of an increase of the foreign interest rate. They should also be encouraged to offer domestic currency loans for the same purposes as FX loans.

Recommendation B: Creditworthiness of borrowers

FX loans should be given only to borrowers that are able to withstand adverse shocks in the exchange rate and in the foreign interest rate throughout the lifetime of the loan. In addition more stringent underwriting standards (debt service-to-income, loan-to-value ratios) should be set up.

Recommendation C: Credit growth induced by FX lending

National supervisory authorities should monitor whether FX lending is inducing excessive credit growth as a whole and, if so, adopt new, more stringent rules.

Recommendation D: Internal risk management

Financial institutions should better incorporate FX lending risks in their internal risk management systems, namely in terms of internal risk pricing and internal capital allocation.

Recommendation E: Capital requirements

Supervisors should require institutions to hold adequate capital to cover risks associated to FX lending by taking measures under Pillar II of the Basel II revised framework.

Recommendation F: Liquidity requirements

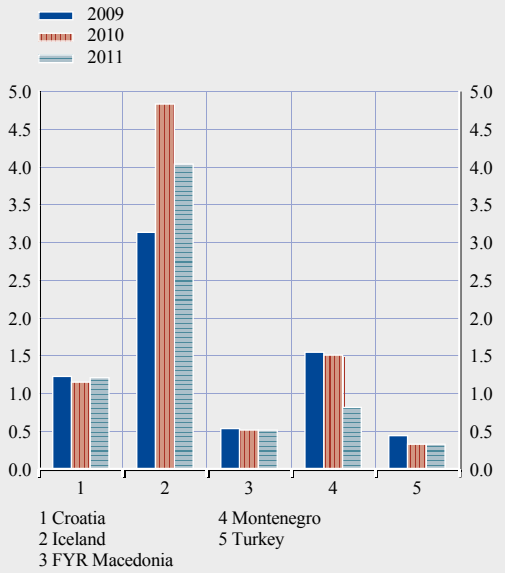
National supervisory authorities are recommended to monitor funding and liquidity risks in connection with FX lending, in particular: (i) maturity and currency mismatches between assets and liabilities; (ii) the reliance on FX swap markets; and (iii) the concentration of funding sources. They should limit the exposures, while avoiding a disorderly unwinding of current financing structures.

Recommendation G: Reciprocity

The measures on FX lending of the home authority should be at least as stringent as those of the host. Furthermore to enhance cooperation all current and new measures to address FX lending should be communicated to all relevant home supervisors, the EBA and the EBRD and be published in the home authorities' website.

Foreign exchange deposits act as a mitigating factor for indirect exchange rate risk, but maturity mismatches are relevant as well. Sizeable foreign currency loan-to-deposit gaps indicate a strong reliance on foreign financing in most of the countries (Lahnsteiner, 2011). While detailed data on the maturity structure of assets and liabilities in foreign currency in most EU candidate countries are scarce, the purpose of lending can provide some indications regarding the maturity of positions. On the liabilities side, deposits of households and enterprises continue to be dominated by short-term deposits, while on the assets side, households and companies tend to borrow long-term, which is in line with the banking sector's economic function of maturity transformation. Focusing on Croatia and the former Yugoslav Republic of Macedonia (the two EU candidate countries in which the share of credit denominated in or indexed to foreign currency increased from end-2009 to end-2011), the share of foreign currency deposits held by the private sector increased in parallel during this period, so that the

Chart 14 Foreign currency loan-to-deposit ratio



Sources: National central banks and own calculations.
Note: The ratio has been computed as the ratio of loans denominated in or indexed to foreign currency in the private sector to total deposits denominated in foreign currency in the private sector, if available. Due to data constraints, total foreign currency deposits have been used for Iceland, Montenegro and Turkey.

foreign currency loan-to-deposit ratio remained roughly unchanged (see Chart 14). In FYR Macedonia, foreign currency deposits of private non-banks exceed loans to private non-banks denominated in or indexed to foreign currency by a considerable margin. In Turkey, the foreign currency loan-to-deposit ratio was far below 1 already at end-2009, with households having long positions in foreign currency (reflecting long-standing restrictions on foreign currency lending to households) and the corporate sector having short positions. Following the ban of foreign currency loans to households in mid-2009 and the simultaneous permission (under some conditions) of foreign currency loans to the corporate sector, the foreign currency loan-to-deposit ratio decreased from end-2009 to end-2011, albeit only moderately. In Iceland, the loan-to-deposit ratio decreased somewhat during 2011, but remained above 4 at the end of the year. Finally, in Montenegro, the stock of loans in foreign currency other than the euro declined in the review period from a ratio to the stock of foreign currency deposits of over 1.5 to 0.7% at end-2011.

4.4 CONCLUDING REMARKS

Overall, indirect exchange rate risk remains a major potential risk factor for financial stability in most EU candidate countries. Moreover, high unemployment and the fall in housing prices as a consequence of the recent crisis have compounded the risks of foreign currency loans. However, the magnitude of the threats to financial stability differs considerably among the five EU candidate countries. In addition, liquidity and funding risks have not materialised over the review period, as EU parent banks have maintained their exposure, while risks from the Greek banks in some of the candidate countries is limited (Backé and Gardó, 2012). While Turkey has prohibited loans indexed to foreign currency (only in the household sector) and the Supreme Court in Iceland passed regulations on foreign currency loans, in Montenegro the indirect exchange rate risk is low due to the low share of foreign currency loans denominated in currencies other than the euro. Overall, the scope of monetary policy in Croatia and the former Yugoslav Republic of Macedonia is limited, owing to exchange rate commitments and high shares of foreign currency loans. Hence, given deteriorating external conditions, monetary policy in these countries faces the challenge of having to balance the risks to the stability of their currency (taking into account also the large foreign currency exposure in their economies) against the increased provision of liquidity to the banking system. In sum, in the near term, strengthening the local deposit base, developing local currency markets, as also proposed by the European Bank for Reconstruction and Development (EBRD, 2010), and establishing common cross-border strategies to deal with the risks of foreign currency lending should remain key priorities.

5 DE-EUROISATION IN THE EU CANDIDATE COUNTRIES

Euroisation (or dollarisation) describes a situation in which a significant share of residents' assets and liabilities are denominated in a foreign currency that does not enjoy legal tender status. Montenegro is a special case in this context as it unilaterally adopted the euro as a sole legal tender in 2002.[46] In the other EU candidate countries, economic agents use the euro as a parallel currency, in the form of cash as well as for the denomination of assets and liabilities.

5.1 INTRODUCTION

In the literature several causes have been identified for euroisation. Often the very root seems to be mistrust in a country's own currency, possibly due to past episodes of economic crisis and high inflation, but also of political crisis and war. The uncertainties surrounding the official currency can make the decision to use a foreign currency rational for individuals, as both savers and lenders try to minimise their risks. Such an attitude need not be related to present risks, but can also relate to the memory of past banking crises, phases of high inflation or other events that erased savings.

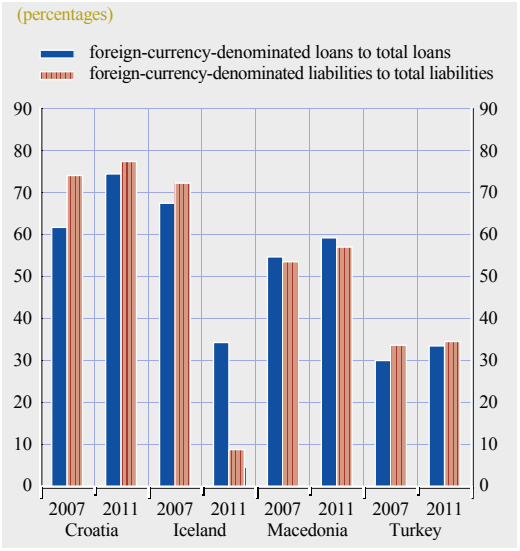
Euroisation in the EU candidate countries additionally has some specific causes (see ECB, 2008a; Zettelmeyer et al., 2010). Firstly, prospective EU and euro area membership seems to have played a role, by acting as an institutional anchor. A second reason might be the importance of the euro in the context of exchange rate policies. Croatia and the former Yugoslav Republic of Macedonia use the euro as their exchange rate anchor, while Turkey's and Iceland's exchange rate regimes are classified as floating. Thirdly, the geographical proximity of the euro area seems to be an important reason, as it goes along with close trade, financial, migration and tourism relations. In this context, country-specific supply and demand factors (e.g. close financial links to foreign (parent) banks, interest rate differentials, stable exchange rate expectations) are at work, which are discussed in detail in Chapter 4.

5.2 STATUS QUO

Banks' assets have been euroised further in all but one country. Before the global financial crisis, Croatia, Iceland and the former Yugoslav Republic of Macedonia, in particular, showed high levels of the share of loans denominated in (and indexed to) foreign currencies. Since then – not least due to a Supreme Court ruling deeming certain foreign currency loans illegal – the share has dropped tremendously in Iceland. In Croatia and FYR Macedonia, however, the share of foreign currency loans has been rising to even higher levels, reaching 74% and 59% respectively. Partly reflecting valuation effects, the ratio of foreign currency loans to total loans in Turkey has been rising since as well, but at 33% remains below the numbers seen in the other two countries (see Chart 15).

46 As Montenegro is currently not considering a de-euroisation, it will not be covered by this chapter.

Chart 15 Extent of euroisation of banks' balance sheets



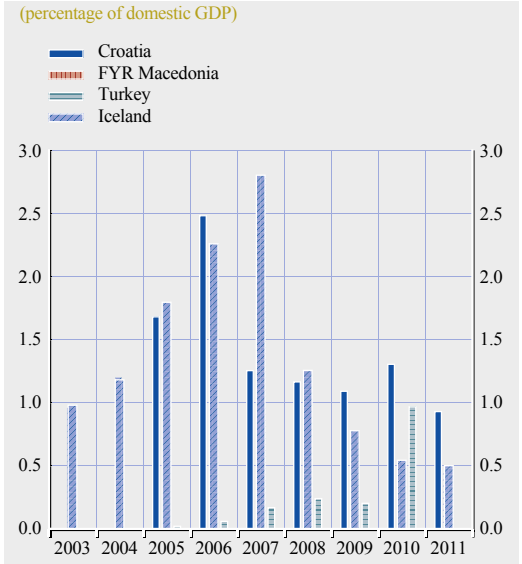
Source: National central banks.

The liabilities side of banks' balance sheets mostly shows no relaxation either, as the share of foreign currency liabilities in total liabilities has increased slightly. The degree to which banks exhibit asset euroisation is connected very closely to the degree of euroisation of the liabilities side of their balance sheets. A look at recent data on foreign currency-denominated liabilities in relation to total liabilities hence reveals that Croatia and FYR Macedonia show the highest share (see Chart 15). In Iceland, foreign currency liabilities of banks fell even more than foreign currency assets as a result of the financial crisis.

Moreover, local corporate bond markets are thin and immature: Croatia's market is approximately 1% of GDP, while the one of the former Yugoslav Republic of Macedonia is almost non-existent (Chart 16).[47] These data imply that much of local bank long-term funding is dependent on intragroup loans and credit lines from abroad.

Euroisation does not only concern book money. Around 20-25% of euro currency in circulation is estimated to circulate outside the euro area – mainly in the countries neighbouring the euro area (see ECB, 2011). A recent survey by the Oesterreichische Nationalbank (2011) has examined euro cash holdings in certain CESEE countries. The ratio of euro cash to total currency in circulation is at almost 50% very high in the former Yugoslav Republic of Macedonia, although it has fallen by about 10 percentage points since autumn 2009. In Croatia, the figure is around 20%, having fallen by almost 15 percentage points since spring 2008. No data on euro cash holdings are available for Turkey and Iceland.

Chart 16 Size of local corporate bond markets



Source: National central banks.
Note: Since the size of the local bond market in the former Yugoslav Republic of Macedonia is zero, it is not visible in the Chart.

5.3 EFFECTS OF EUROISATION

Pronounced euroisation involves the build-up of financial stability risks. After currency mismatches played a core role in the Asian financial crisis, this problem has been incorporated into third-generation currency crisis models. In case of a depreciation, currency mismatches negatively affect the repayment capacity of unhedged borrowers, as they see the local currency value of their liabilities rise. This leaves banks vulnerable, even if they have avoided a currency mismatch on their own balance sheet. By transferring the exchange rate risk to an unhedged borrower, the bank faces an indirect exchange rate risk that the borrower will fail to service its loan. Despite some dissenting views, the majority of empirical analyses find that dollarisation is associated with higher financial stability risks (see e.g. De Nicolo et al., 2003; Yeyati, 2006; Calvo et al., 2004). Analyses come to the conclusion that dollarised systems show a higher financial instability, are more likely to suffer banking crises and a sudden stop of capital flows, and show a greater volatility of deposits.

Euroisation can pose a challenge for the conduct of an independent and effective monetary policy. Firstly, monetary policy might face adverse financial stability effects, as the positive competitiveness effect of a depreciation following a reduction in the policy rate could be offset via negative balance sheet effects. Balance

47 In contrast, the corporate bond market in the EU stands at around 44% (as at end-2011) while that of the US where capital markets are more important relative to bank lending stands at around 215% of GDP.

sheet mismatches due to partial euroisation are therefore often associated with a fear of floating, further strengthening the incentives for euroisation (see Calvo and Reinhart, 2000). Due to this connection, authorities might be reluctant to use the exchange rate as an absorber in cases of real or financial shocks, de facto depriving the central bank of a tool. Secondly, a challenge arises if high euroisation increases the exchange rate pass-through to import prices. Thirdly, a high euroisation can have a negative impact on the monetary policy transmission via a weakening of the interest rate channel. Finally, even partly euroised countries lose a share of their seigniorage revenues, depending on the degree and type of euroisation.

Apart from making a country's macro-financial environment more vulnerable, euroisation also entails significant risks once a crisis occurs. The most important challenge in this context is the restriction of the monetary authority's lender of last resort function in the case of a banking crisis. In a case of high euroisation, a bank could depend on a significant amount of foreign exchange for its liquidity. However, a monetary authority's ability to provide such foreign exchange liquidity is limited to its foreign reserves, so finally it might be unable to inject sufficient amounts of foreign currency liquidity, in particular during a sudden stop in capital flows during which central bank interventions in the foreign exchange market could be required.

5.4 POLICY RESPONSE TO EUROISATION IN THEORY AND PRACTICE

As to the negative effects of euroisation, the question of how to de-euroise is getting more and more attention. Some observers argue that once a certain level of currency substitution is reached, the process of a further euroisation becomes self-sustaining (see e.g. Calvo and Reinhart, 2000). The core of this is that once an economy has reached a stage where a fear of floating is prevalent, the incentives for euroisation rise, thereby leading to a vicious circle. This view has especially been challenged by developments in Latin America, where some countries (e.g. Peru and Bolivia) have managed to achieve significant de-dollarisation during the past decade.

Macro-prudential and regulatory measures can be used in a way that makes banks (fully)internalise the risks of euroisation to their balance sheets. For example, a rise in provisions for foreign currency loans might better reflect the risks involved with a foreign currency loan. The same goal could be reached by higher capital risk weights for foreign currency loans. In addition, limits on the banks' net open foreign exchange positions could be tightened. Another known measure is the active management of reserve requirements by implementing a spread between reserve requirement ratios on domestic currency deposits and foreign currency deposits, sometimes supplemented by different rates of remuneration. Raising the resilience of the banking system vis-à-vis currency risk can in turn mitigate the fear of floating, possibly allowing countries to embark on a virtuous policy cycle, in which rising exchange rate volatility and appreciation further discourage euroisation (Ize and Yeyati, 2006).

The build-up of a local bond market can help promote the national currency. A first step to foster the local capital market is usually the issuance of long-term sovereign bonds in domestic currency. The extension of the yield curve has two-sided positive effects. Firstly, the placement of corporate bonds would be facilitated. This also applies to banks, which would be able to rely less on external sources of funding, as more local funding opportunities are available. Secondly, it enables banks to price long-term loans in domestic currency appropriately. The promotion of local capital markets has been discussed intensively over the past decade, and numerous (international) organisations have made action plans and are currently tackling these issues, with the EBRD being concerned with developments in the EU candidate countries.

Empirical evidence hints at market-based measures being a good approach. Among others, Escribano and Sosa (2011) examine the decline in financial dollarisation in Latin America during the past decade. They come to the conclusion that all of the above measures had a positive effect on de-dollarisation (see Garcia-Escribano and Sosa, 2011). However, different measures seem to have different effects when it comes to deposit or credit de-dollarisation. Regulatory measures like reserve requirement differentials helped deposit as well as credit de-dollarisation. Meanwhile, prudential policies such as higher provision requirements for foreign exchange loans and tighter limits on banks' net open positions created incentives to better reflect currency risks, thereby fostering credit de-dollarisation. The extension of the domestic yield curve was also found to have a positive effect on credit de-dollarisation.

Providing a sound macro environment should lay the groundwork for the presented measures to take effect. While the two pillars of macro-prudential/regulatory measures and the development of local capital markets are clearly geared towards de-euroisation, this alone might not help. Indeed, macroeconomic stability and sound fundamentals can be seen as a precondition for any de-euroisation effort. When it comes to the influence of the macroeconomic environment, empirical evidence is quite uncontroversial. Garcia-Escribano and Sosa (2011) conclude that the appreciation in Latin America during the last decade played the key role for deposit de-dollarisation. In addition, Kokenyne et al. (2010) find that two-way exchange rate volatility in combination with stable and low inflation is a key to de-dollarisation.

Even though the EU candidate countries currently do not have any official de-euroisation strategy in place, they have deployed some of the described measures. Reserve requirements that favour banks' local currency liabilities are used by Macedonia. In the case of the former Yugoslav Republic of Macedonia, the different reserve requirement ratios are complemented by different rates of remuneration. Concerning standards for foreign exchange liquidity, Croatia has foreign exchange liquid asset requirements in place, which oblige banks to hold a certain percentage of their foreign exchange liabilities as liquid foreign exchange assets. FYR Macedonia recently abolished its separate liquidity ratio for denar and foreign exchange deposits. With regard to higher risk weights for foreign exchange loans, only Croatia has used this approach, but abolished the regulation in 2010 due to alignment with the Capital Requirements Directive of the Basel II framework. All of the four countries have limits on banks' net open foreign exchange positions in place. In addition to a market-friendly approach, Iceland has – with regard to its severe financial crisis – seen a partial de jure de-euroisation. Iceland made significant progress in reducing the foreign exchange imbalances in its banking system as a result of Supreme Court judgements on the illegality of exchange rate linkage of loans (see also Annex A2), currency swap agreements that banks made with the Central Bank of Iceland at the end of 2010 and restructuring of foreign currency-denominated loans (e.g. conversion of foreign-denominated loans to indexed domestic currency loans).[48] Also, in Turkey households are prohibited from taking out foreign exchange-denominated or foreign exchange-indexed loans, while corporates may do so under certain circumstances.

When it comes to local capital markets, the picture differs significantly across the EU candidate countries. In Iceland and Turkey, the local bond markets are comparatively well developed. A difference lies in the fact that while in Turkey the local bond market is dominated by sovereign bonds, in Iceland corporate bonds constitute a small, but noticeable, amount. As of September 2010 Turkish banks have been allowed to issue bonds in Turkish lira, which should contribute to fostering the local bond market. In Croatia and the former Yugoslav Republic of Macedonia, the local bond markets

48 The approach of moving from foreign currency-denominated to indexed assets/liabilities is, in the literature, referred to as a "bridge", or midway station, on the way to de-dollarisation (see Ize and Yeyati, 2006).

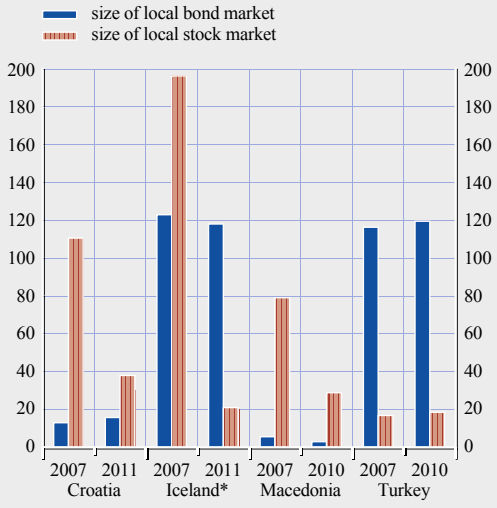
are rather underdeveloped, with FYR Macedonia exclusively having, and Croatia being dominated by, sovereign bonds. Nevertheless, in these two countries there are currently no specific initiatives aimed at promoting the local currency bond market. In FYR Macedonia, however, it is envisaged to further develop the domestic bond market, with special emphasis on the extension of the maturity of sovereign bonds towards the longer term.

5.5 CONCLUDING REMARKS

While de-euroisation is desirable for financial stability and macroeconomic reasons, the complexity of a possible de-euroisation strategy should not be underestimated. Any actions must be well thought out and be seen in a broader macroeconomic and institutional framework. In the case of countries where macroeconomic policies and the institutional framework still have notable room for improvement, precipitous de-euroising might not produce the desired effect, as basic preconditions are not yet in place. Furthermore, there is no blueprint for a de-euroisation strategy for policy-makers. As different measures have different effects on euroisation, it makes sense to first understand the country-specific roots of euroisation and then to choose an optimal mix of the available measures. If the main reason for euroisation lies in the banking sector not accurately pricing foreign exchange risk, macro-prudential measures and regulation should be useful. If, however, the widespread use of a foreign currency is due to factors such as scepticism regarding the country's own currency – possibly due to inflation still being in people's memories – strong regulation, making the use of a foreign currency impossible or very expensive, might not solve the confidence problem but even aggravate it.

Chart 17 Local capital markets

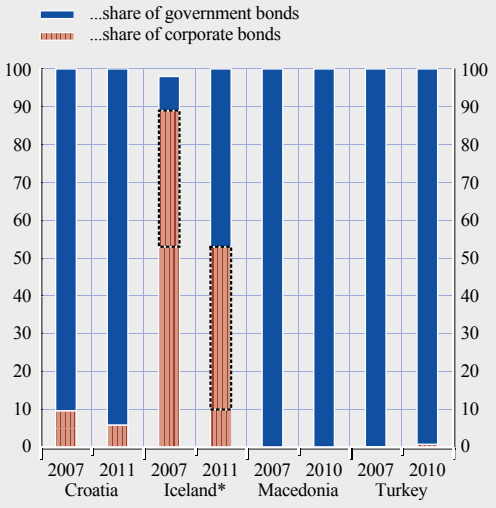
(amounts outstanding as a percentage of GDP)



Source: National central banks.

Chart 18 Composition of local bond market

(percentage of total local bond market)



Source: National central banks.
Note: * Dashed area marks the share of the Icelandic Housing Financing Fund (HFF), which is an independent government institution.

6 THE EU CANDIDATE COUNTRIES' SUPERVISORY FRAMEWORK

6.1 INTRODUCTION

The institutional arrangements for financial institutions supervision differ across the EU candidate countries and, overall, no single model for an optimal supervisory structure seems to emerge. In general, current institutional settings for financial supervision primarily reflect the idiosyncratic characteristics of each country (e.g. the financial system, economy, historical features and political and cultural structures).

The sectoral approach to the organisation of supervision, relying on separating competencies along the borderlines of various sectors of the financial system, is the most widespread institutional setting, even though this model is implemented in fairly different ways.[49] In Montenegro, the former Yugoslav Republic of Macedonia and Turkey, banks, securities firms and insurance companies are supervised by three different entities. A slight variation of this model is in force in Croatia, where responsibility for banking activities lies with the central bank, while a separate authority is responsible for supervision of all other activities. Only in Iceland does a single supervisory authority – the Financial Supervisory Authority (FME) – oversee the whole financial sector, which is the institutional setting largely prevailing in EU countries.[50] An organisation of supervision by objectives does not exist in any of the countries under review (see Table 6).

In addition, candidate countries show differences in the degree of involvement of the central bank in supervisory activities. In countries where the supervisory responsibilities are assigned along sectoral lines, it is common for the central bank to be involved in the supervision of banks. However, this is not the case for Turkey, where there is no involvement of the central bank in micro-prudential supervision. Also in Iceland, the involvement of the central bank in prudential supervision of banks is rather limited.

Independently of the prevailing structure governing the supervision of financial intermediaries, the institutional setting generally provides for effective inter-agency coordination across the sectoral lines, as well as the necessary sharing of information and cooperation with the central bank in its broadest financial stability functions (lender of last resort; payment and settlement systems oversight). Accordingly, in all of the countries under review, various methods have been devised to formalise cooperation, such as memoranda of understanding (MoU) agreements or committees.

All in all, according to various international assessments, candidate countries have significantly strengthened regulation and supervision in the different sectors of the financial system. Some relevant challenges remain with regard to the effectiveness of financial supervision, as well as relative differences among countries in the quality of the regulatory and supervisory environment.

Regarding the effectiveness of supervision in the banking sector, the EBRD indicators of banking reform provide a general assessment for some candidate countries.[51] In particular, Croatia appears to have developed a capacity for effective prudential regulation and supervision broadly in line with BIS institutional standards, while the remaining countries have made

49 Supervisory responsibilities can be organised along the borderlines of financial sectors or according to objectives. An example of the latter approach is the "twin peaks" model, where prudential supervision and conduct of business regulation are attributed to two different authorities. Alternatively, all supervision can be combined in a single (or unified) financial regulator that has responsibility for both micro-prudential supervision and conduct of business regulation for all financial institutions and activities. For details, see Herring and Carmassi (2008).

50 In the EU, 16 countries have adopted a single authority for the supervision of all financial sectors; see ECB (2010b). Central banks are in general extensively involved in supervisory activities in EU Member States: in 16 countries central banks have responsibility for supervision of deposit-taking institutions and other financial intermediaries, while in 6 countries it is planned to vest the central bank (or a body connected to it) with new supervisory responsibility, in four cases covering the whole financial system (ECB, 2010).

51 The EBRD indicators do not cover Iceland.

Table 6 Supervisory architecture in candidate countries

	Croatia	Iceland	Former Yugoslav Republic of Macedonia	Montenegro	Turkey
Supervisory authorities					
Banks	CNB	FME[2)]	NBRM	CBM	BRSA
Securities markets	CFSSA	FME	SEC	SEC	CMB
Insurance companies	CFSSA	FME	ISA	ISA[5)]	Undersecretariat of Treasury
Pension Funds	CFSSA	FME	MAPAS	SEC[6)]	Undersecretariat of Treasury
Leasing and other financial institutions	CFSSA	FME	Ministry of Finance	No distinct mandate	BRSA
Payment and settlement systems	CNB	CBI	NBRM	CBM	CBRT
Arrangements for cooperation and exchange of information among supervisory authorities					
Agreements and MoU	Agreement on cooperation (CNB, CFSSa), MoU on financial crisis management (Ministry of Finance, CNB, CFSSA)	Cooperation agreement (FME, CBI)	Bilateral MoU		MoU for Cooperation on Systemic Risk regarding the Financial System (Under-secretariat of Treasury, the CBRT, BRSA and SDIF); MoU for information sharing and cooperation (Treasury, CBRT, BRSA, CMB, SDIF)
Committees	Working Committee on Financial System Supervision (CNB, CFFSA)	Committee on financial stability (Prime Minister's Office, Ministry of Finance, Ministry of Economic Affairs, CBI, FME)[3)]		Financial Stability Council (Ministry of Finance, CBM, SEC, ISA)	SRCC (Undersecretariat of Treasury, the CBRT, BRSA and SDIF)[7)], Financial Sector Commission (Ministry of Finance, Undersecretariat of Treasury, BRSA, CBRT, CMB, SDIF, and other entities); Financial Stability Committee
Institutional arrangements for macroprudential functions					
Ownership of macroprudential policy mandate	No distinct mandate	No distinct mandate	No distinct mandate[4)]	CB, Financial Stability Council	Multiple authorities, FSC (Under-secretariat of Treasury, the CBRT, BRSA, CMB and SDIF)[8)]
Body in charge with identification of systemic risk	No distinct mandate[1)]	No distinct mandate	No distinct mandate[4)]	CB, Financial Stability Council	Multiple authorities, FSC

Source: National central banks.
Notes: 1) The CNB routinely assesses such systemic risks and publishes the assessments in regular publications (semi-annual Financial Stability and quarterly Bulletin). 2) The CBI sets prudential regulation of liquidity and foreign exchange balances of credit institutions. 3) The committee has an advisory role and is not a decision-making body. 4) A Committee for Financial Stability, based on a MoU between the Ministry of Finance and the NBRM and with a permanent status according to its mandate, was set up in 2009 to foster cooperation in maintaining financial stability and managing the financial crisis. 5) Only supervision; regulation of the insurance area is under the authority of the Ministry of Finance. 6) Voluntary pension funds. 7) The SRCC is responsible for the identification of systemic risk and crisis management. 8) The Financial Stability Committee (established in 2011 by a Decree Law) has both a systemic risk monitoring function and a crisis management function.

substantial progress in the establishment of an effective framework for prudential supervision and regulation.[52]

The latest EU progress reports have also indicated some areas where improvements in the performance of tasks by supervisory authorities should be made.[53] In Iceland, the report noted that progress had been made in strengthening bank regulatory and supervisory practices, but supervision needed to be strengthened further to bring it into line with international best practices.[54] Also, in the former Yugoslav Republic of Macedonia some regulatory and supervisory agencies (i.e. MAPAS, SEC) had not yet reached a sufficient level of independence, resource endowment and leverage. In Montenegro, despite some improvements in staff training, a further strengthening of the Central Bank and Insurance Supervision Agency's administrative capacity was required. In Croatia, the report notes that the supervisory authorities have been increasing their administrative capacity by means of training schemes and increases in staff, but recommends that strengthening of the administrative capacity of both regulators should be maintained.

In Turkey, the recent IMF Financial Sector Assessment Program (FSAP) update has called for further strengthening of supervision and regulation. Noting that the BRSA has already issued numerous regulations needed to bring the Banking Law into full effect, the FSAP underscored that further strengthening of the supervisory framework is needed. For instance, more stringent oversight of liquidity and operational risks, improvements in banks' risk management framework and models, and more comprehensive supervision of financial groups, are required to help address evolving risks. Moreover, the report highlighted the need for the BRSA to attract and retain specialists to effectively supervise an increasingly complex banking system.[55]

6.2 THE MACRO-PRUDENTIAL POLICY FRAMEWORK

The global financial crisis has underscored the need for policy-makers around the world to introduce some improvements in institutional arrangements for financial stability. These include the development of specific frameworks for macro-prudential policy, aimed at strengthening the capacity of national supervisory systems to *identify* the main sources of systemic risk and to develop a well-focused policy agenda to *mitigate* these risks. In some cases, this involves a rethinking of the appropriate institutional boundaries between central banks and financial regulatory agencies, or the setting-up of dedicated policy-making committees. In others, efforts are underway to enhance cooperation within the existing institutional structure.[56]

In January 2012 the ESRB published a set of recommendations on the macro-prudential mandate of national authorities, addressed to EU Member States. Under the recommendations, all Member States should designate an authority in national legislation for the conduct of macro-prudential policy, either as a single institution or as a board composed of the authorities whose actions have a material impact on financial stability. The macro-prudential authority should be entrusted with the tasks of identifying, monitoring

52 The EBRD indicator for banking reform is measured on a scale from 1 to 4+. The scores in 2010 were 4 for Croatia and 3 for the former Yugoslav Republic of Macedonia, Montenegro and Turkey. The (unweighted) average for the central and eastern European EU Member States was 3.6.

53 See European Commission (2011).

54 The FME has developed a two-year action plan to address the remaining prudential and supervisory gaps identified through a recent comprehensive assessment of Iceland's compliance with the Basel Core Principles for Effective Supervision. This assessment, based on an independent review carried out by a foreign expert, resulted in a set of recommendations to strengthen supervisory practices, including risk models, on-site and off-site procedures, disclosure and reporting practices, organisation and management, human resources management, training, and IT infrastructure. See IMF (2011b).

55 IMF (2012b).

56 Nier et al. (2011).

and assessing risks to financial stability and of implementing policies to achieve its objective by preventing and mitigating those risks.

Candidate countries differ on how macro-prudential policy activities are performed, in particular with regard to the existence of an explicit (formal) mandate for these functions, going beyond the generic financial stability responsibility of the single supervisory authority. In Montenegro, a Financial Stability Council was established by law in 2010, with the specific task of monitoring, identifying, preventing and mitigating systemic risks. In Turkey, a Financial Stability Committee was created by an executive degree in mid-2011, with the main tasks of monitoring and preventing systemic risks and ensuring the coordination regarding systemic risk management.[57] In the remaining countries, a distinct body with a clear mandate related to macro-prudential functions has not yet emerged.[58] In practice, the identification and mitigation of systemic risk remains predominantly a multi-agency effort. More specifically, the central bank usually leads risk identification, as in all countries central banks routinely assess systemic risks in the financial system and stress tests have become a widespread analytical tool for macro-prudential oversight. The main communication instruments are financial stability reports, regularly published, though with different frequency, in all countries (see Table 7).[59] The responsibilities for macro-prudential policy decisions and policy implementation, however, rest with the various bodies under their own purview. The potential weakness of these multi-agency set-ups may be that some risks remain undetected and unaddressed, while a collective responsibility for the mitigation of systemic risks can dilute accountability and incentives.[60]

Nevertheless, despite the lack of institutional bodies with a clear-cut mandate for macro-prudential functions, the financial systems of the candidate countries were able, thanks to a variety of macro-prudential measures (introduced both in pre-crisis years and during the crisis), to withstand the global financial crisis without any government intervention (except in the case of Iceland). These systems' capacity to absorb shocks and to remain sound during the crisis also reflects the more conservative regulations and stricter supervision requirements (in terms of capital requirements, required liquidity levels, FX lending, exposure to parent banks, licensing practices, etc.) that were put in place following the banking crisis in the 1990s and the establishment of new national financial regulatory frameworks and infrastructure. As a result, sound practices have been adopted and stricter controls have been imposed, thus contributing to the increased resilience of the financial systems to adverse shocks.

6.3 PROGRESS IN THE IMPLEMENTATION OF THE BASEL CAPITAL ADEQUACY FRAMEWORK

All the countries under review have already implemented or are in the course of implementing the Basel II capital adequacy framework.[61] In Croatia, Basel II has been in force since March 2010, following the country's alignment with the EU Capital Requirements Directive. In all other countries, the full implementation

57 The newly established FSC partly overlaps in its functions with the Systemic Risk Coordination Committee (SRCC), established in 2009 under a MoU to make the crisis management framework mandated in the law operational, which is also charged with the task of identifying systemic risks. Both bodies thus retain the same dual objectives for monitoring current stability issues as well as preparing for and addressing financial sector crises, and therefore the relationship between the SRCC and the FSC is unclear.

58 In the former Yugoslav Republic of Macedonia, a Committee for Financial Stability, based on a MoU between the Ministry of Finance and the NBRM, was set up in 2009 mainly to ensure the cooperation between the two authorities in the management of the financial crisis.

59 In Turkey, the BRSA also routinely carries out financial stability assessments on its own based on its own law.

60 See Nier et al. (2011). The institutional separation of policy decisions from control over policy instruments may also result in a sub-optimal policy mix. While the central bank has institutional incentives to ensure financial stability, it may have limited powers at its own disposal to achieve the objective. For example, central banks that have no control over prudential tools may make overly aggressive use of reserve requirements to address risks from strong credit growth, when a mix of prudential tools may be more efficient in that regard.

61 Basel II, which improved the measurement of credit risk and included the capture of operational risk, was released in 2004 and was due to be implemented from year-end 2006. The implementation of Basel II was reaffirmed by the G20 Leaders, who committed to complete, where necessary, the adoption of Basel II by 2011 (The G20 Pittsburgh summit, Leaders' statement, 24-25 September 2009).

Table 7 Financial stability reporting and stress testing

	Croatia	Iceland	former Yugoslav Republic of Macedonia	Montenegro	Turkey
Financial stability reporting					
Publication	Financial Stability (CNB)	Financial Stability (CBI)	Financial Stability (NBRM)	Financial Stability Report (CBM)	Financial Stability Report (CBRT); Financial Markets Report (BRSA)
Frequency	Biannual	Biannual	Annual	Annual	Biannual
Macroprudential assessment					
Stress testing	- Aggregate macro and sectoral (household and corporate sector) – Top-down exercises	- Micro stress tests and scenario analysis are performed, but no macro stress test is carried out - Work under way to improve macroprudential assessment	- Use of toolkits (excel spreadsheets) for application of certain shocks on banks' risk measures, balance sheets and capital positions - econometric credit risk model	- Stress tests on credit and liquidity risk - Bottom-up approach	- Regular stress tests on the resilience of banking system to shocks originating from credit and market developments - Sensitivity analyses on the impacts of exchange rate, interest rate and NPLs on CAR
Other instruments or indicators	- Early warning models for sudden stops in capitals flows, banks failure and CAMELS downgrade		- Surveys on banks' credit activities, business expectations, planned activities, perceptions of risks - Market intelligence tools (interviews with relevant industries)		- Financial Strength Index

Source: National central banks.

of Basel II is expected by 2012. In Iceland and Montenegro, Pillar 1 has already been fully implemented,[62] while in Turkey Basel II is currently being applied in parallel with Basel I and will be fully in force from July 2012 on. In the former Yugoslav Republic of Macedonia, full implementation of Pillar 1 is expected by end-2012 (see Table 8).[63]

While a few jurisdictions already allow advanced approaches for credit risk and operational risk under Pillar 1, only in Croatia banks are applying them.[64] The standardised approach is the most commonly used of the three credit risk methodologies, while the basic approach and the standardised approach are the most widely adopted for operational and market risk.

All countries are planning to implement Basel III. In Turkey, the BRSA is expected to incorporate the new principles into the legislation and start implementation in line with the timetable determined by the Basel Committee. In Iceland, preparations for the implementation are also starting. In some countries, the presence of capital requirements already above international standards and the presence of a more conservative definition of Tier 1 capital could smooth the transition to the new capital requirements framework.

62 Basel II requires the implementation of three mutually reinforcing pillars: Pillar 1 - minimum regulatory capital for credit, market and operational risks; Pillar 2 - a supervisory review process intended to ensure that banks have adequate capital to support their risks, as well as sound risk management techniques; and Pillar 3 - a set of disclosures that will promote market discipline by allowing market participants to assess key pieces of information related to Pillars 1 and 2.

63 According to a survey carried out in 2010 by the Financial Stability Institute, 70% of the respondent jurisdictions, including Basel Committee on Banking Supervision members, stated they would have implemented Basel II by year-end 2012. See FSI (2010).

64 In Iceland, although no restrictions on approaches to regulatory capital calculation for credit risk and operational risk have been set, banks have adopted basic approaches. In Turkey, most banks are planning to adopt advanced approaches two years after Basel II comes fully into force.

Table 8 Basel II and Basel III: status of implementation

	Croatia	Iceland	Former Yugoslav Republic of Macedonia	Montenegro	Turkey
Basel II					
Expected timeframe for implementation (full implementation since/expected by)	Implementation completed (2010)	Implementation in process (2012) [1]	Implementation in process (2012) [2]	Implementation in process (2012) [3]	Implementation in process (2012) [4]
Status of adoption of related regulatory rules	Final rules in force	Draft regulation published; final rules partly in force	Regulation entered into force in July 2009	Draft regulation partly not published; final rules partly in force	Final rule in force
Approaches for credit risk	Both standardized and advanced (internal model) are allowed	Basic Approach	Implementation of standardized approach starts from June 2012	Standardized approach	Standardized approach
Approaches for operation risk	Both standardized and advanced (internal model) are allowed	Basic Approach	Implementation of standardized/ indicator based approach starts from July 2012	Basic indicator approach/ standardized method	Basic indicator approach/ standardized method
Approaches for market risk		Basic Approach	Implementation of all aproaches exept from national models	All aproaches, except internal models	Own internal risk management models/standardized measurement method
Basel III					
	Implementation planned	Preparations for implementation are starting	Implementation planned	Implementation planned	Implementation planned

Source: National central banks.
Notes:
1) Pillar 1 and Pillar 2 already implemented. Implementation of Pillar 3 scheduled to start in 2012.
2) Standardised approach fully implemented on July 1st 2012; IRB approach by 2013 earliest. Pillar 2 and Pillar 3 already implemented.
3) Pillar 1 fully implemented by July 2011 without advanced approaches; Pillar 2 fully implemented by January 2012; Pillar 3 fully implemented by May 2012.
4) Parallel run ongoing. Final application from July 2012.

6.4 CONCLUDING REMARKS

Candidate countries have strengthened banking supervision and the quality of securities regulation and insurance supervision in the recent past, and this has helped them to withstand the effects of the global financial crisis. However, some relevant challenges remain with regard to the effectiveness of financial supervision. In general, they relate to further development of the supervisory capacity to complete the legal frameworks and to the adequate regulation and supervision of financial conglomerates. Moreover, countries should maintain an adequate pace in the adoption of international standards, consistent with the progress of their financial development.

The development and implementation of macro-prudential frameworks is still at an early stage in almost all countries. On the governance front, a number of jurisdictions still have to adjust institutional arrangements in order to ensure an effective mitigation of systemic risk. Looking ahead, even though in theory there is no "one size fits all" model, and in the end national institutional designs will draw extensively on pre-existing coordination arrangements, the need emerges for all countries to introduce an adequate set-up for effective macro-prudential policy-making. Among other things, this involves a clear mandate to one or to a set of specific institutions for the identification, monitoring and mitigation of

systemic risk. Moreover, in case of complex or more fragmented institutional structures, an effective mechanism should be designed to address potential accountability and incentive problems arising when there is institutional separation of policy decisions from control over policy instruments. Nevertheless, the adopted prudential measures and requirements resulting from previous experience prevented systemic vulnerabilities and thus contributed to the building of a resilient financial system.

All of the candidate countries are well on track to adopt the Basel II capital adequacy framework in the course of 2012. Training efforts to facilitate the move towards a risk-based approach in supervision should continue among the EU candidate countries.

ANNEXES

ANNEX A: COUNTRY ASSESSMENTS

A.1 CROATIA

A.1.1 THE MACROECONOMIC ENVIRONMENT

Spillover effects from the euro area debt crisis threaten the fragile economic recovery in Croatia. After a plunge in economic activity in 2009 as a consequence of the global financial and economic crisis, the rate of decline of Croatian real GDP began to decelerate in 2010 on the back of a rebound in foreign trade. However, it still remained in negative territory due to a slight contraction in private consumption and sharply declining investments. Despite subdued export activity and relatively weak domestic demand, GDP is expected to have recovered somewhat in 2011. For 2012, the Croatian National Bank (CNB) projects economic growth to turn negative again as adverse spillovers from euro area countries' debt crisis through the trade and financial channels and the short-term impact of fiscal consolidation threaten the fragile economic recovery (see Table A1).[65] In the medium term, domestic structural weaknesses (e.g. a lack of competitiveness in many sectors) and unsustainable public finances without a determined change in fiscal policy continue to constitute major challenges.

Inflationary pressures remained contained, while a weak labour market continued to act as a drag on domestic demand. After a peak of 6.1% in 2008, headline inflation (CPI) moderated to 1.1% in 2010 on the back of downward pressures from domestic factors (i.e. weak domestic demand and adverse labour market conditions) and base effects of an increase of regulated prices in 2009. Inflation moved back to 2.3% in 2011, mainly as a result of food and energy price increases. Subdued economic activity caused the unemployment rate to rise

65 In this paper, reference is made to the GDP forecast of the CNB for 2012. Forecasts by the International Monetary Fund and the European Commission (both spring 2012) report 0.8% for 2011 and 0.5% and -1.2%, respectively, for 2012.

Table A1 Croatia: Main macroeconomic and monetary policy indicators

	Unit	2004	2005	2006	2007	2008	2009	2010	2011	2012f
Real GDP growth	percentage, period average	4.1	4.3	4.9	5.1	2.2	-6.0	-1.2	0.4	-0.2
Inflation	percentage, period average	2.1	3.3	3.2	2.9	6.1	2.4	1.1	2.3	2.3
Unemployment rate	percentage, period average	13.8	12.3	10.5	9.7	8.7	9.2	12.1	12.8	13.6
Current account balance	percentage of GDP	-4.1	-5.3	-6.6	-7.2	-8.8	-5.2	-1.2	0.4	0.5
FDI	percentage of GDP	2.9	4.1	7.0	8.4	8.8	5.2	0.6	2.0	2.3
Gross external debt	percentage of GDP	69.5	72.1	74.8	77.7	85.0	99.1	101.3	98.9	99.1
General government balance	percentage of GDP	-4.2	-3.5	-3.4	-3.0	-2.1	-4.5	-5.3	-5.5	-5.1
General government gross debt[1)]	percentage of GDP	37.6	38.2	35.4	32.9	29.2	35.1	41.3	45.1	50.0
Central government balance	percentage of GDP	-3.4	-2.4	-1.5	-1.1	-0.8	-3.0	-4.3	n.a.	n.a.
Repo rate[2)]	percentage, end of period	n.a.	3.5	3.5	4.2	6.0	6.0	n.a.	n.a.	n.a.
Money market overnight rate	percentage, period average	4.9	3.1	3.1	6.2	5.8	1.2	1.3	0.5	n.a.
Nominal effective exchange rate	index (2001 = 100)	104.4	105.4	106.8	107.6	109.6	108.4	107.3	105.2	n.a.

Sources: CNB, Vienna Institute for International Economic Studies, IMF and Eurostat.
Notes: 1) Excluding public guarantees and HBOR debt. 2) The last repo auction was held in October 2009.

from already elevated levels of 9.2% in 2009 to 12.1% and 12.8% in 2010 and 2011.

Despite a strong reduction of external imbalances, high external debt keeps gross external financing requirements high. The current account deficit narrowed from 5.2% of GDP in 2009 to 1.2% of GDP in 2010, driven by improving exports of goods and services and a continuous fall in imports. This adjustment continued also in 2011 and net FDI inflows rose to 3% of GDP in the first three quarters of 2011. As a result, Croatia's gross external debt stabilised, albeit at the high level of €45.7 billion or 99.3% of GDP at the end of 2011. Still, this elevated gross external debt ratio constitutes a key vulnerability, all the more so as two-thirds of public sector debt are denominated in or indexed to foreign currency and the private sector is highly exposed to indirect exchange rate risk.

Lasting budget consolidation and a reduction of public debt remain key challenges. On the back of sluggish GDP growth and despite the increase of the basic VAT rate and the introduction of a special crisis tax in 2009, Croatia's fiscal position deteriorated in 2010. The general government deficit nearly tripled in 2010 compared with 2008. Notwithstanding expenditure reduction measures undertaken in 2011, the general deficit widened somewhat to 5.5% of GDP due to revenue deterioration (e.g. the expiration of the crisis tax). In June 2010, the Croatian parliament adopted the Fiscal Responsibility Law (FRL) as part of the Croatian Economic Recovery Program (ERP) to tackle structural vulnerabilities. In accordance with the FRL, the government plans to decrease fiscal expenditures by 1% of projected GDP in the near term until a balanced primary budget is achieved.[66]

The conduct of monetary policy remained challenging in 2010 and 2011. Against the backdrop of the tightly managed float since the mid-1990s (initially with the Deutsche Mark and then the euro), the CNB is committed to maintain exchange rate stability against the euro. The mild depreciation in the nominal effective exchange rate of the kuna since late 2009 has potentially lent some support to the export sector. Moreover, in view of the high level of euroisation in Croatia, this depreciation, especially the accelerated drop against the euro visible since October 2011, triggered a shift in the CNB's stance towards a tightening bias in the latter half of 2011. Indeed, until the summer of 2011 the CNB maintained a policy of ample surplus liquidity in order to stimulate bank lending in general and, in particular, to assist programmes initiated by the government in 2010 to motivate the extension of credit to the corporate sector. With regard to the latter, the CNB had cut reserve requirements from 14% to 13% in February 2010, partly to release funds that in combination with banks' own resources were earmarked for these schemes, and lowered the amount of minimum foreign currency claims banks have to hold against corresponding liabilities from 20% to 17%, to provide further impetus. Starting in July 2011, however, the CNB has sold euro against kuna with the pace of these interventions having accelerated since the beginning of 2012 when the kuna's exchange rate approached 7.6 to the euro. Supplementing these direct actions to mop up kuna liquidity and shore up the exchange rate, reserve requirements were hiked back to 14% in September 2011 and rose to 15% in January 2012. As an outcome of these measures, money market rates displayed their first noteworthy upward movement for almost two years, but nevertheless stayed at relatively muted levels, pointing towards a still considerable degree of excess liquidity present in the financial system.

A.1.2 STRUCTURE OF THE BANKING SYSTEM

No major structural changes took place in the Croatian banking sector in 2010 or 2011. The total number of banks fell by one in 2010 (to 33) and remained stable until November 2011;

66 The government's Economic and Fiscal Policy Guidelines 2012-2014 envisage a general government budget deficit of 4.1% of GDP in 2012 and 2.7% of GDP in 2013. In its Pre-Accession Economic Programme, the envisaged general government budget deficit is 3.8% of GDP in 2012 and 3.3% of GDP in 2013.

Table A2 Croatia: Structure of the banking sector*

	Unit	2004	2005	2006	2007	2008	2009	2010	2011
Number of banks		37	34	33	33	34	34	33	32
… of which foreign-owned		15	14	15	16	16	15	15	17
Number of banks per 100,000 inhabitants		0.8	0.8	0.7	0.7	0.8	0.8	0.7	0.7
Assets of private banks	% of total assets	96.9	96.6	95.8	95.3	95.6	95.8	95.7	95.5
Assets of foreign banks	% of total assets	91.3	91.3	90.8	90.4	90.6	90.9	90.3	90.6
Assets of the four largest banks	% of total assets	64.9	64.9	64.0	64.0	64.8	65.2	65.3	66.4

Source: CNB.
Notes: All figures refer to commercial and savings banks. Figures on the number of banks per 100,000 inhabitants are based on the population of Croatia, which was 4,492,049 inhabitants according to the 2001 census and 4,456,096 inhabitants based on the 2011 census.

nevertheless, two private-owned banks became foreign-owned. By the end of 2011, the total number of banks fell by one to 32 (see Table A2).

Foreign ownership continues to dominate the Croatian banking system. The asset share of foreign banks remained quite stable in 2010 and 2011, with an increase in the number of foreign banks from 15 to 17 (see Table A2). Parent banks headquartered in the euro area account for the bulk of banking sector assets: Austria accounted for 60.1% of total banking sector assets, followed by Italy (19.7%), France (6.9%) and Hungary (3.3%), as at end-2010.

Despite the relatively large number of banks, the banking sector is fairly concentrated. The market share of the four largest banks remained stable in 2010 (at 65.3%) and increased slightly further in September 2011 (to 66.1% of total assets).

Banking sector assets are increasingly dominated by loans. According to CNB figures, the share of loans in total banking sector assets increased somewhat in 2010 and 2011 relative to other domestic assets and foreign assets (from 66% to 68% of total assets as at end-September 2011) as banks assumed more credit risk and liquidity risk to generate additional income (CNB, 2012).

Banks continue to be funded mainly by resident deposits, which are mostly denominated in foreign currency. According to the CNB, the structure of banking sector liabilities remained broadly unchanged in 2010 and 2011, with resident deposits accounting for 64% of total banking sector liabilities as at the end of 2011. The bulk of resident deposits continued to be denominated in foreign currencies (44% of total liabilities; 68% of total resident deposits), in particular in euro.[67]

Parent bank deposits and loans remained another important source of funding. In 2010 and 2011, the share of liabilities to non-residents remained broadly unchanged at around 23-24% of total bank liabilities. Within total foreign funding sources (including capital), deposits made by parent banks into their Croatian subsidiaries accounted for 28%, followed by share capital (24%) and parent bank loans (17%).

Credit growth remained subdued during 2010 and 2011 in an environment of a sluggish economic recovery and orderly deleveraging. Following a period of rapid credit expansion until 2008, credit growth turned negative in 2009 and remained relatively subdued in 2010 and 2011 (see Table A3), primarily due to low demand for loans. During the same period, credit to the corporate sector grew somewhat more rapidly than credit to households due to government-sponsored corporate lending programmes, and to a shift from foreign funding to domestic funding within the corporate sector, and possibly because household loan demand remained subdued due to a weak labour market and banks becoming more aware of rising

67 See Chapter 3 for an analysis of the drivers of deposit euroisation.

Table A3 Croatia: Loan and deposit growth

	Unit	2006	2007	2008	2009	2010	2011
Credit to the private sector [1)]	nal, percentages growth p.a.	23.7	14.5	12.2	-0.8	6.3	6.8
… to households [1)]	nal, percentages growth p.a.	21.8	18.0	12.1	-2.9	3.8	3.6
… to companies [1)]	nal, percentages growth p.a.	26.1	10.2	12.3	2.0	9.5	9.5
Deposits	nal, percentages growth p.a.						4.4
… of which demand deposits	nal, percentages growth p.a.	27.2	23.5	-8.8	-16.4	6.2	6.5
… of which time deposits [2)]	nal, percentages growth p.a.	19.9	21.7	9.5	5.6	3.8	4.0

Source: CNB.
Notes: The latest available data are for November 2011.
1) Total credit to the private sector (kuna and foreign currency).
2) Kuna and foreign currency time deposits.

credit risk among households.[68] At the same time, loans to the government expanded rapidly during the review period.

Deposits have remained stable since the onset of the euro area debt crisis. Demand deposits recovered in 2010 and 2011, but did not reach their pre-crisis level. During the same period, time deposits, which were less affected by the crisis, grew at a more moderate pace (see Table A1.3).

A.1.3 FINANCIAL STABILITY CHALLENGES FOR CROATIA

CAPITALISATION AND CREDIT RISK

The exposure of Croatian banks to credit risk has increased. Due to the increase in the share of loans in bank assets, the banking sector's exposure to traditional credit risk increased somewhat in 2010 and 2011. In addition, the quality of banks' loan portfolios continued to deteriorate during the same period. The ratio of non-performing loans (NPLs) to total (gross) loans went up from 8.7% at the beginning of 2010 to 12.3% at end-2011, the highest level since the end of 2002 (see Table A1.4). The deterioration in the quality of corporate loans accounts for a major part of the rise in overall NPLs: As at end-September 2011, the NPL ratio for corporate loans stood at 19.9%, while the corresponding ratio for household loans stood at 8.5%.[69] The NPL ratio for loans denominated in or indexed to foreign currency increased from 7.2% in 2010 to 10.9% in the third quarter of 2011 mainly as a result of the appreciation of the Swiss franc against the euro (see also the section on market risks below). While the gradual economic recovery in 2010 led to a relative stabilisation in NPL ratios in 2011, the worsened macroeconomic outlook for 2012 makes a further deterioration in asset quality likely. In addition, banks have become increasingly exposed to sovereign risk due to the rise in claims on the government.

Banks in Croatia are well capitalised and profitable and appear to be able to absorb reasonably large adverse shocks to credit quality. During the period under review, the average capital adequacy ratio further increased to around 19.2% as at end-2011, mainly due to: (i) a fall in the average risk weight applied to bank assets resulting from the transition to Basel II;[70] and (ii) the rise in the share of loans to the government (which carry a risk weight of 0%). At the same time, unweighted capital-to-asset ratios have remained large by international standards (around 14%), implying a very low leverage of the financial sector. In addition, the quality of capital is high as evident from only small differences between Tier 1 and regulatory

68 Nominal lending figures at current exchange rates presented above are to some extent driven by exchange rate movements. This is particularly the case for household lending due to the strong appreciation of the Swiss franc. When looking at figures at constant exchange rates, in 2011 the increase in loans to the corporate sector (+9.1% yoy) still accounts for the largest part of the increase in loans to the private sector (+3.7% yoy), while household loans were negative in 2010 and 2011.

69 As pointed out in ECB (2010), the relatively high delinquency rate for corporate loans might reflect adverse selection problems as the companies with sound financial standing might tend to borrow cross-border.

70 The required minimum capital adequacy ratio was raised from 10% to 12% at the beginning of 2010 and additional capital requirements for operational risk were introduced.

capital ratios. Finally, bank profits also continue to provide a buffer against adverse shocks. Banks' profitability indicators remained solid, with a return on average assets (ROAA) of 1.9% by end-2010 and 1.2% by end-2011, and a return on average equity (ROAE) of 8.3% and 8.8% respectively.

Relatively high gross household debt is mitigated by sizeable deposits, but households are exposed to exchange rate and interest rate risk. Household debt and household debt service (relative to GDP and disposable income) levelled off at relatively high levels in 2010 and 2011. At the same time, due to large household deposits the household sector retained, on aggregate, a net positive financial position (IMF, 2011). Nevertheless, households are exposed to interest rate risk and exchange rate risk stemming from borrowing in foreign currencies as these liabilities are not necessarily matched by foreign currency deposits at the household level (see also the section on market risks below).

The decline in house prices might negatively impact bank balance sheets. Residential real estate prices started to decrease in mid-2009 and have continued to decline ever since. At the end of 2010, residential real estate prices had declined by 9.5% compared with end-2009 and by another 1.0% by end-2011. Given relatively high loan-to-value (LTV) ratios for housing loans, relatively small declines in house prices might lead to losses in bank balance sheets due to higher loss-given-default rates. However, house prices are currently not considered as a parameter for stress tests carried out by the CNB due to a lack of historical data and a systematic relationship between house prices and NPL ratios.

MARKET AND FUNDING LIQUIDITY RISKS

While the direct exposure of banks to market risks is small, banks are exposed to indirect exchange rate risk stemming from unhedged borrowing in foreign currencies by the household and corporate sectors. At the end of the third quarter of 2011, net open FX positions in relation to capital stood at a very low level of 2.1% which, when combined with the open position in equities in relation to total assets of 7.0%, indicates relatively low exposures to market risks. However, 73.7% of loans to the private sector were linked to foreign currencies, exposing the Croatian banking sector to credit risk via indirect exchange rate risk because borrowers – in particular households – are often unhedged against exchange rate fluctuations. In particular, the recent exchange rate swings between the kuna and the Swiss franc led to a materialisation of indirect exchange rate risk in the form of rising NPLs within the segment of Swiss franc-denominated loans. This risk was mitigated in September 2011 by the decision of the Swiss National Bank to maintain a EUR/CHF exchange rate above a minimum rate of CHF 1.20 per euro.[71] The banking sector's direct exposure to interest rate risk is also limited as most of the interest rate risk on the assets side is shifted to bank clients via variable rate loan contracts and safeguard clauses.[72] Nevertheless, banks are exposed indirectly to interest rate risk via credit risk as some borrowers might be unable to service their debt at higher interest rates. On the liabilities side, deposits are predominantly short-term so that interest rates paid on deposits can be adjusted in a flexible manner.

Overall, funding liquidity risk remained moderate due to ample liquidity buffers and low leverage, but banks are vulnerable to a withdrawal of parent bank funding. Funding liquidity risk[73] as measured by the ratio of liquid assets relative to total assets and relative to short-term liabilities remained relatively stable during the period under review (see Table A4).[74] At the same time, loan-to-deposit ratios somewhat declined since mid-2010, to 126% by

71 An "exchange rate fixing scheme" for foreign currency-denominated loans agreed earlier by the Croatian government was not used by many borrowers because the entailed preferential exchange rates were no longer attractive in view of the decision by the Swiss National Bank.

72 Loan contracts in Croatia including fixed interest rate loans often allow for pertinent interest rate adjustments by carrying safeguard clauses (ECB, 2010).

73 Funding liquidity risk is defined here as "the ability to settle obligations with immediacy", as proposed e.g. in Drehmann and Nikolaou (2010).

74 According to the CNB (2012), the ratio of liquid foreign assets to short-term foreign liabilities decreased during the first three quarters of 2011. This effect was, however, offset by an increase in kuna liquidity reserves so that overall liquidity indicators were almost not affected.

end-2011, which is relatively low by international standards. Nevertheless, foreign funding mainly in the form of parent bank deposits and loans remained an important source of funding, exposing Croatian banks to potential deleveraging among EU banking groups.[75] So far, however, such risks have not materialised and are mitigated by the notion that EU banking groups are less likely to withdraw external funding from their subsidiaries compared with unrelated parties. Looking ahead, the bank funding model in Croatia might need to be based even more on local sources of finance because foreign funding might be less easily available than in the past.

75 In addition to foreign borrowing, domestic lending has been partially financed by liquidation of previously acquired foreign assets, which has been made possible by the relaxation of the CNB's regulatory requirements.

Table A4 Croatia: Financial stability indicators

(percentages)

	2009 Q4	2010 Q1	2010 Q2	2010 Q3	2010 Q4	2011 Q1	2011 Q2	2011 Q3	2011 Q4
Regulatory capital to risk-weighted assets	16.4	18.9	19.0	18.6	18.8	19.1	18.9	19.3	19.2
Regulatory Tier-1 capital to risk-weighted assets	15.8	17.7	17.7	17.4	17.5	17.8	17.5	17.8	17.5
Non-performing loans[1)]									
…net of provisions to capital	22.0	24.9	28.3	30.3	34.5	34.9	36.3	37.2	37.8
…to total gross loans	7.7	8.7	9.4	10.1	11.1	11.3	11.8	12.1	12.3
…of which in FX[2)]		7.2	7.7	8.3	9.6	10.2	10.4	10.9	11
……of which in Euro		7.6	8.1	8.6	9.8	10.4	10.6	11.0	11.1
……of which in USD		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0
……of which in CHF		5.8	5.9	7.2	8.8	9.6	10.1	10.6	11.2
Return on assets	1.2	1.2	1.1	1.2	1.2	1.3	1.3	1.9	1.2
Return on equity	8.8	8.9	8.2	8.7	8.3	9.2	9.2	9.2	8.8
Liquid assets to total assets	35.8	33.3	33.2	34.6	33.7	29.6	30.5	32.7	31.7
Liquid assets to short-term liabilities	53.5	49.9	50.2	52.0	50.6	44.7	46.0	49.3	48.2
Loan-to-deposits[3)]	125.3	126.1	128.8	121.8	123.9	128.1	129.3	123.9	126.4
Net open position in foreign exchange to capital	5.4	4.2	2.9	4.9	5.2	2.6	3.9	2.1	…
Capital to assets	13.8	14.2	14.0	14.1	13.8	14.1	13.9	13.8	13.6
Large exposures to capital	44.8	39.5	40.8	40.7	39.0	38.9	40.5	45.2	50.5
Total gross loans	3.6	-1.2	1.4	2.3	4.7	8.1	7.1	7.5	
Gross asset position in financial derivatives to capital	0.4	0.3	0.5	0.5	0.3	0.6	0.4	1.6	1.2
Gross liability position in financial derivatives to capital	0.8	1.1	2.5	2.1	2.7	1.4	2.8	2.4	2.5
Trading income to total income	15.5	7.7	5.9	7.2	8.0	6.2	5.9	6.2	6.8
Foreign-currency-denominated loans to total loans	72.3	74.0	73.6	73.9	74.3	74.5	75.0	74.4	75.1
Foreign-currency-denominated liabilities to total liabilities	79.0	77.6	76.0	76.5	77.0	78.2	77.9	77.4	77.2
Ratio of external liabilities to total liabilities of banks[4)]	23.3	23.6	24.0	21.8	23.0	24.3	25.2	23.4	24.5
Net open position in equities to capital	4.8	4.1	4.2	4.6	4.9	4.4	7.0	7.0	6.9

Source: CNB.
Notes: 1) Non-performing loans are defined using the 90 days overdue rule. Valuation is based on national GAAP and the time of recognition is based on IAS 39. All loans not considered to be performing (A) are considered to be non-performing (B1, B2, B3 or C) with their coverage with value adjustments increasing from 10% to 100%. However, if the loan is insured and well covered with collateral and the foreclosure measures have been activated, the non-performing loan can be classified in the special A90 category. Although A90 loans are not covered with value adjustments, general provision (amounting roughly to 1% of banking system assets) is in place to implicitly cover for possible misjudgements in the A and A90 loan assessments. 2) Ratios show (the sum of) loans extended in or indexed to foreign currencies. Loans in Croatia are rarely extended in foreign currency; most of the loans are indexed to foreign currency. The share of loans extended in or indexed to the US dollar is insignificant. 3) Includes domestic non-financial sectors (government, corporates and households). 4) Capital is not included in liabilities.

A.1.4 CONCLUDING ASSESSMENT

Spillover effects from the euro area debt crisis threaten the fragile economic recovery in Croatia. In this context, Croatia's major macro-financial challenges relate to external vulnerabilities, particularly on the financing side. In particular, Croatia could become exposed to capital outflows which could be triggered by deleveraging among euro area parent banks. So far this risk has not materialised, given the commitment of parent banks to the country, in particular in view of its accession to the EU in 2013. In the medium term, the local funding base of the banking sector should be strengthened further.

Credit risk remains one of the most important financial stability challenges for the banking sector. The high indebtedness of both households and corporations and the related challenges of servicing this debt burden are a key issue. Credit risk stemming from unhedged borrowing in foreign currencies (indirect exchange rate risk) is another key risk for Croatian banks and has materialised to some extent with respect to Swiss franc-denominated lending.

In this demanding environment, the main challenge for the CNB is to safeguard both price and financial stability. While external factors impacting financial stability such as funding liquidity risks stemming from possible parent bank deleveraging are beyond the CNB's control, it can continue to contribute to domestic financial resilience. In particular, regulatory capital requirements should be kept high in order to be prepared to absorb adverse shocks where traditional credit risk and indirect exchange rate risk might be interacting. The restructuring of relatively high non-performing loans is another challenge for banks and the CNB which needs to be carefully managed in an environment of economic stagnation. In the medium term, the CNB should return to its pre-crisis de-euroisation efforts (which had been successful until the crisis triggered a renewed trend in deposit euroisation) and contribute to a more sustainable funding model for banks by fostering additional local sources of financing.

A.2 ICELAND

A.2.1 THE MACROECONOMIC ENVIRONMENT

Large macroeconomic imbalances were built up prior to the global financial crisis, as Iceland experienced a substantial foreign-funded boom. The banking sector funded a credit-driven consumption boom, with total banking sector assets expanding to more than 1,000% of GDP. Private sector debt rose to one of the highest levels among advanced economies. Most loans to

Table A5 Iceland: Main macroeconomic and monetary policy indicators

	Description	2004	2005	2006	2007	2008	2009	2010	2011	2012f
Real GDP growth	percentage, period average	7.7	7.5	4.6	6.0	1.4	-6.8	-3.5	3.1	2.5
Inflation	percentage, period average, harmonised definition	3.2	4.0	6.8	5.0	12.4	12.0	5.4	4.2	4.5
Unemployment rate	percentage, period average	3.1	2.1	1.3	1.0	1.6	8.0	8.1	7.1	6.0
Current account balance	percentage of GDP	-9.8	-16.2	-23.8	-15.7	-24.5	-11.7	-8.0	-7.1	3.2
FDI (net)	percentage of GDP	-14.0	-25.0	-10.0	-16.0	-30.0	-18.0	-21.0	-8.0	n.a.
Gross external debt [1]	percentage of GDP	179.0	286.0	444.0	568.0	259.0	242.0	215.0	198.0	n.a.
General government balance	percentage of GDP	0.0	4.9	6.3	5.4	-13.5	-10.0	-10.1	-4.4	-2.3
General government gross debt	percentage of GDP	34.5	25.4	30.0	28.0	70.3	88.2	93.0	99.0	96.8
Central government balance	percentage of GDP	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Repo rate	percentage, end of period	7.9	10.0	13.3	13.8	18.0	10.0	4.5	4.8	n.a.
Money market overnight rate	percentage, period average	7.5	9.2	15.7	13.8	18.0	8.5	4.4	4.1	n.a.
Nominal effective exchange rate	index (2001 = 100), period average	100.3	110.6	98.6	101.3	73.8	53.1	53.8	54.0	n.a.

Sources: Central Bank of Iceland, IMF and Statistics Iceland.
Note: 1) In 2008, excluding deposit money banks that are in winding-up proceedings.

companies were linked to foreign currency, as banks relied on foreign financing for their refinancing needs. Such high capital inflows were accompanied by an overvaluation of the króna and were mirrored in significant current account deficits (see Table A5). As a consequence, the stock of gross external debt exceeded 570% of GDP by the end of 2007. These vulnerabilities exposed the country to the full force of the global crisis in an exceptional manner, leading to a pronounced boom-bust cycle, which the IMF called in 2008 "the perfect storm".[76]

After having contracted significantly during 2009-10, Iceland's economy returned to growth in 2011, expanding by 3.1%. According to IMF forecasts, economic growth will remain at 2.5% in 2012, rising to about 3% in 2013. The challenging global economic outlook and the euro area debt crisis have so far not had a negative impact on domestic economic activity, but nevertheless constitute a downside risk to GDP growth. Unemployment, although still high by Icelandic standards, recently declined to 7.1% and is projected to decrease further to 6% this year.

Following a steep devaluation during the crisis, the króna has settled at a competitive level, supported by capital controls, which has helped to bring the current account onto a sustainable path. After the króna depreciated by more than 50% (in nominal trade-weighted terms) between September and December 2008, Iceland decided to implement capital controls to avoid a further deterioration in private and public sector balance sheets, which would have had further negative effects on financial stability. The improvement in the terms of trade helped boost exports, contributing to a further narrowing of the current account deficit in 2011. Although the current account is expected to record a slight surplus in 2012, this positive development could be undermined by negative spillover effects from global and euro area developments. Furthermore, as domestic demand strengthens, imports are also on the rise, placing a question mark over the future of the current account position. The capital account remains strongly regulated through capital controls implemented during the crisis. However, 2011 saw a first success, with Iceland regaining access to international capital markets when the government issued a USD 1 billion bond in June 2011.

Nevertheless, with short-term external debt exceeding foreign exchange reserves, lifting capital controls clearly entails risks for the balance of payments and the exchange rate.[77] The authorities are well aware of the associated challenges and are pursuing an approach of gradual return to capital account convertibility. The Central Bank of Iceland has developed a strategy to gradually lift capital controls to contain risks related to exchange rate instability and banks' liquidity position.

The Icelandic Monetary Policy Committee (MPC) used the leeway made available by the imposition of capital controls to pursue an accommodative monetary policy. The exchange rate stabilised and inflation came down as capital controls were implemented at the height of Iceland's financial crisis. Easing inflationary pressures enabled the MPC to reduce the policy interest rate from its peak of 18.0% in February 2009 to 4.25% during the first half of 2011. Since autumn 2011, however, inflation has surpassed 5%, exceeding the central bank's upper band (4%) for its central inflation target (2.5%). In response to these rising inflationary pressures, the policy interest rate was subsequently raised to 5.75%.

Iceland has made significant progress in putting public debt back onto a sustainable path. Having had a public debt ratio of only 28.0% of GDP in 2007, the banking sector bailout burdened the state with a rise in its debt level to 99.0% of GDP in 2011. Following a swift and determined consolidation programme, the budget deficit is projected to be 2.8% in 2012 and to shrink further over the next few years. With GDP growth expected to remain robust, this means that the debt level should fall from

76 See IMF (2008, p. 9).
77 According to the IMF (2011, p. 9), foreign exchange reserves cover about 90% of short-term external debt.

Table A6 Iceland: Structure of the banking sector

	Description	2004	2005	2006	2007	2008	2009	2010	2011
Number of banks		n.a.	28	25	23	22	17	16	15
… of which foreign-owned		n.a.	0	0	0	0	0	0	0
Number of banks per 100,000 inhabitants		n.a.	10	8	7	7	5	5	5
Assets of private banks [1]	percentage of total assets	n.a.	100	100	100	73	64	62	61
Assets of foreign banks	percentage of total assets	n.a.	0	0	0	0	0	0	0
Assets of the four largest banks [1]	percentage of total assets	n.a.	94	95	93	77	88	96	98

Source: Central Bank of Iceland.
Note: 1) Data are reported on a consolidated basis and refer to deposit money banks for 2005-10 and to the three largest banks for 2011.

its current peak level to around 80% by end-2016, according to the IMF (2012a).

A.2.2 STRUCTURE OF THE BANKING SYSTEM

The reconstruction of the financial sector is proceeding well. After the collapse of almost the entire banking system and the subsequent banking support measures, the authorities made good progress on restructuring the financial institutions. The recapitalisation of the core financial system seems complete, and total assets of the new banking system have shrunk significantly to about 200% of GDP. The number of institutions has decreased from 23 to 15, and banks are operating solely domestically. At the same time, the role of state-owned banks has increased (see Table A6) as the Icelandic Treasury took additional stakes in private banks.[78] The financial system is dominated by the three largest commercial banks and the Housing Financing Fund, together representing a market share of 98%.

Private sector deleveraging and the repairing of bank balance sheets continued in 2010 and 2011. In the third quarter of 2008, private sector credit growth peaked at around 55% yoy. The fall of Lehman Brothers brought the credit boom to an abrupt halt, with the extension of new loans to households virtually stopping and loans to corporates shrinking significantly. As the private sector and banks are deleveraging further, the contraction of credit to the private sector continued through 2010 and 2011 (see Table A7).[79] As the size of the financial sector prior to the crisis was excessive, this contraction in credit should be seen as a necessary and welcome correction of past imbalances.

78 As recalled in Iceland's Pre-Accession Economic Programme for 2012 (see Ministry of Economic Affairs, 2012), the Treasury took over all Icelandic commercial banks upon the collapse of the banks in October 2008, under the so-called Emergency Act, no. 125/2008. Following the completion of the banks' refinancing, the biggest share of the banking system came under the control of the claimants of the old banks, i.e. the private sector. At the same time, the Treasury became the largest shareholder in Landsbanki and a minority owner of both Íslandsbanki and Arion Bank. At the end of 2010, the Treasury also acquired a major share in six relatively small savings banks.

79 Disaggregated figures on deposit money bank lending suggest that loans denominated in local currency started to pick up towards the end of 2011, while foreign currency-denominated loans continued to contract.

Table A7 Iceland: Loan and deposit growth

	Description	2006	2007	2008	2009	2010	2011
Credit to the private sector	nominal, percentage growth p.a.	39.5	31.4	34.2	-4.7	-9.0	-14.3
… to households	nominal, percentage growth p.a.	22.0	16.8	20.7	4.9	-3.2	-2.6
… to companies	nominal, percentage growth p.a.	50.0	38.4	42.5	-9.8	-12.3	-18.7
Deposits [1]	nominal, percentage growth p.a.	62.9	120.7	-32.0	-2.7	-12.3	6.6
… of which demand deposits	nominal, percentage growth p.a.	28.6	33.3	-10.7	1.3	-3.9	5.1
… of which time deposits	nominal, percentage growth p.a.	-27.5	-56.8	56.3	-4.0	12.5	10.5

Source: Central Bank of Iceland.
Note: 1) Deposit figures refer to parent entities of deposit money banks.

A.2.3 FINANCIAL STABILITY CHALLENGES FOR ICELAND

CAPITALISATION AND CREDIT RISK

The newly established banks are well capitalised. After the failure of most major banks in 2008, three new banks were established, and a portion of the failed banks' domestic assets and deposits was transferred to these new banks. Since the 2008 collapse, banks have also reduced their leverage ratios, which stood at around 6 on average in the first half of 2011, well below the peak of around 17 just prior to the crash. Likewise, the total capital adequacy ratio of the newly established banks increased in 2011 to 21.7%, from 19.3% at the end of 2010, well above the regulatory minimum capital adequacy ratio of 16%.[80]

During 2010 and 2011, Iceland's restructured banking sector was profitable. Returns on equity were high, reaching 16.0% at the end of 2011, slightly down from 17.8% in 2010, whereas return on assets decreased from 2.4% to 1.0%. Net interest income constituted the main source of revenue in the banking sector. Throughout the period under review, a significant part of income came from the revaluation of the transferred loan portfolios. As the bulk of these loans was transferred at a deep discount and banks' methods of estimating actual values differ, it is still uncertain how these loan portfolios will impact bank income in the future.

The share of non-performing loans has been declining on the back of ongoing debt restructuring, but some uncertainty over bank asset valuations persists. According to the IMF (2012a), the bulk of household and corporate applications for debt restructuring have been processed.[81] As a result, non-performing loan ratios – when measured using the cross-default method – have decreased from more than 40% of total loans at the end of 2009 to around 25% at end-September 2011.[82] A 2011 Supreme Court ruling on foreign currency-indexed loans[83] had been partly anticipated by banks so that the initial impact on bank capital was limited. However, in another more precise decision of February 2012, the Supreme Court ruled that banks could not increase interest rates on foreign currency-indexed loans. As a result, further losses on foreign currency-indexed loans are likely to materialise. According to Iceland's Financial Supervisory Authority, the impact on bank capital will be manageable due to high capital buffers, but the FSA conceded that the precise impact on bank balance sheets would still have to be assessed[84] as loans originally indexed to foreign currencies are supposed to be converted into króna loans.[85] In addition, a slowdown in economic growth could lead to an increase in traditional credit risk and thus new non-performing loans. While the Central Bank of Iceland did not participate in the Expert Group's stress-test exercise for EU candidate countries (see Chapter 2) due to resource constraints, it appears that current capital and profit buffers could be large enough to withstand shocks to credit quality.

Household indebtedness continued to decrease. Over the course of the last three years, the ratio of household debt to GDP has been marked by a steady decline from its peak of around 129% to just 110% of GDP. The household debt service ratio (relative to disposable income) has moderately decreased, indicating an improvement of households' overall credit standing.

The housing market has begun to bottom out after the slump. Residential real estate prices increased by 9.9% during 2011, after stabilising

80 To some extent, the increase in capital adequacy ratios was due to lower risk weights applied to loans which were originally denominated in foreign currency but converted into local currency due to a Supreme Court decision (see below).

81 The most common way of restructuring debt is an extension of loan maturities including payment smoothing.

82 When measured without assuming cross-default, non-performing loan ratios rose in 2010 to 18.3% (from 14.2% at end-2009), but dropped to 11.8% at end-2011.

83 On 9 June 2011 the Supreme Court of Iceland upheld a decision of the District Court of Reykjavik that ruled foreign currency-indexed loans illegal.

84 See statement by the Financial Supervisory Authority of 16 February 2012.

85 According to the IMF (2012a), legal uncertainties could arise also with respect to the enforceability of inflation-indexed loans.

in 2010. A decline in house prices, triggered for example by a slowdown of economic growth, could negatively impact bank balance sheets via a decline in the value of collateral.

MARKET AND FUNDING LIQUIDITY RISKS

The direct exposure of the newly established banks to market risk has decreased. In terms of exchange rate risk, which is currently limited as a result of the imposed capital controls, currency mismatches of banks have decreased considerably during the review period. The open foreign exchange position of the banks decreased from around 248% of bank capital at end-2009 to 21.0% at end-2011 as claims indexed to foreign currencies were transformed into local currency (see above). However, the foreign exchange exposure of Icelandic banks is still subject to legal uncertainties as market risk was passed on to customers and transformed into credit risk, but has by now been passed back to banks via court rulings declaring the linking of loan instalments to exchange rate developments as illegal (see above).[86] Following the collapse of the Icelandic stock market in 2008, the direct exposure of Icelandic banks to equity price risk became relatively small, increasing somewhat during the review period (see Table A8).

The predominant source of funding of the newly established banks consists of local sight deposits. As the newly established banks no longer rely on external funding sources since they lost

86 When excluding exchange rate-linked assets (effective/corrected imbalance excluding so-called FX/ISK assets), the net open foreign exchange position of the three largest commercial banks – which are permitted by the FME to apply this correction – decreased to about 3% of bank capital as at end-June 2011.

Table A8 Iceland: Financial stability indicators [1)]

(percentages)

	2005	2006	2007	2008	2009	2010	2011
Regulatory capital to risk-weighted assets	12.7	15.1	12.7	4.5	12.6	19.3	21.7
Regulatory Tier-1 capital to risk-weighted assets	10.6	11.9	10.9	4.0	11.8	17.4	19.4
Non-performing loans [2)]	n.a.	n.a.	n.a.	n.a.	14.2	18.3	11.8
… net of provisions to capital	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
.... to total gross loans	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
…. of which in FX	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
……. of which in Euro	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
……. of which in USD	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
……. of which in CHF	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Return on assets	1.8	4.2	1.6	-6.0	-0.3	2.4	1.0
Return on equity	24.0	53.9	19.9	-84.0	-4.4	18.7	6.7
Liquid assets to total assets	6.4	4.2	6.1	6.2	17.6	17.8	16.0
Liquid assets to short-term liabilities	31.1	16.7	31.4	94.0	180.6	219.7	219.0
Loan-to-deposits	302.9	331.0	204.7	145.4	112.7	125.5	124.2
Net open position in foreign exchange	12.5	22.8	46.5	276.0	247.8	111.1	21.0
Capital to assets	7.2	7.3	6.2	n.a.	13.4	16.1	16.0
Large exposures to capital	76.0	59.0	95.0	n.a.	86.5	39.8	48.0
Total gross loans	66.4	75.8	62.0	58.4	60.1	60.2	61.9
Gross asset position in financial derivatives	0.3	0.5	0.7	0.0	0.3	0.0	0.0
Gross liability position in financial derivatives	0.4	0.6	0.7	0.0	0.3	0.0	0.0
Trading income to total income	29.6	26.4	8.3	n.a.	16.3	10.2	22.0
Foreign-currency-denominated loans	52.4	58.7	67.4	63.4	53.6	47.9	28.0
Foreign-currency-denominated liabilities	63.7	69.8	72.2	18.6	10.8	6.0	9.0
Ratio of external liabilities to total liabilities of banks	67.8	73.5	70.9	19.2	11.8	8.3	n.a.
Net open position in equities	n.a.	35.5	33.4	n.a.	8.4	9.9	14.0
Household debt to gross domestic product	101.3	107.9	116.3	117.2	128.2	123.5	110.0
Household debt service and principal payment to income	n.a.	n.a.	n.a.	n.a.	11.4	11.0	10.0
Loan-to-value ratio for housing loans	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Residential real estate prices (Percentage change/last 12 months)	31.0	5.0	15.0	-2.5	-12.0	0.2	9.9

Sources: Central Bank of Iceland, Financial Supervisory Authority and Statistics Iceland.
Notes: 1) Based on the three largest banks; however, in a few cases, data cover all deposit-taking institutions. 2) Deposit money banks' loan portfolios held by the three largest commercial banks. Regarding past due items, the COREP definition is used.

market access, local deposits have become the main source of funding. Around 80% of local deposits are sight deposits and about 9% of deposits are owned by non-residents. Other forms of bank funding remain fairly limited in the absence of access to external and wholesale financing. Nevertheless, the issuance of covered bonds as a way to finance housing loans was introduced recently.

Liquidity buffers among the newly established banks are high, but banks are exposed to a sudden withdrawal of deposits. The Central Bank of Iceland requires banks to hold liquid assets[87] in excess of the liabilities maturing in the next three months. In addition, Iceland's Financial Supervisory Authority requires the largest commercial banks to hold: (i) liquid assets equal to at least 20% of all deposits; and (ii) cash and cash equivalents equal to at least 5% of sight deposits. Both requirements have been over-fulfilled by a large margin during the review period as liquid assets increased to 219% (see Table A2.4) relative to short-term liabilities and to 41% relative to total deposits. Hence, as the bulk of deposits are sight deposits (see above), liquid assets do not cover all sight deposits. Therefore, sudden deposit withdrawals at short notice due to a loss of confidence remain a risk, in particular with respect to non-resident deposits which could flow out once the capital controls are lifted (Central Bank of Iceland, 2011). In addition, resident depositors might also be inclined to acquire foreign assets once capital controls get lifted. Such risks are mitigated to some extent by a government guarantee scheme of all deposits, which appears credible since sovereign risk decreased somewhat under the IMF programme. In addition, the Depositors' and Investors' Guarantee Fund is pre-funded to the value of 1% of banking system deposits and insures eligible deposits up to at least €20,887.

A.2.4 CONCLUDING ASSESSMENT

Following a sharp adjustment of external and internal imbalances built up prior to the crisis, an economic recovery began in mid-2010. The current outlook for the moderate economic expansion to continue is subject to downside risks stemming from the euro area debt crisis, which could negatively affect GDP growth in Iceland via trade, foreign direct investment and confidence effects. At the same time, capital controls currently shield the exchange rate from renewed depreciation pressures; however, their gradual phasing-out is likely to entail risks of its own, of which the authorities are fully aware.

In terms of rebuilding the Icelandic banking sector after its collapse in 2008, much has been achieved: the newly created banks focus on domestic operations and fund themselves mainly with local deposits rather than external borrowing. In addition, the new banks have large capital and liquidity buffers so that they are likely to be able to withstand reasonably large shocks. In this new environment, the main risks for a now much smaller banking sector consist mainly of "legacy risks", i.e. legal uncertainties with respect to banks' asset values and the resolution of the remaining debt restructurings. At the same time, the authorities should closely monitor risks stemming from a high dependence on sight deposits, of which some are held by non-residents which currently cannot repatriate these funds due to the capital controls.

A.3 THE FORMER YUGOSLAV REPUBLIC OF MACEDONIA

A.3.1 THE MACROECONOMIC ENVIRONMENT

Economic growth seems to be gaining momentum. Real GDP growth turned negative in 2009 due to the contraction of economic activity in the EU in the aftermath of the financial crisis, a steep fall in metal prices and a decline in remittances and capital inflows (see Table A3.1). Reviving exports and a gradual recovery of domestic demand due to improved labour market conditions and additional impulses from public investment helped the economy to return to positive growth

87 Eligible instruments include cash, deposits with other financial institutions and securities eligible as collateral for refinancing facilities at the Central Bank of Iceland.

Table A9 Former Yugoslav Republic of Macedonia: Main macroeconomic and monetary policy indicators

	Description	2004	2005	2006	2007	2008	2009	2010	2011	2012f
Real GDP growth	Percentage, period average	4.1	4.4	5.0	6.1	5.0	-0.9	1.8	3.3	2.5
Inflation	Percentage, period average, harmonised definition	-0.4	0.5	3.2	2.3	8.4	-0.8	1.5	3.9	2.0
Unemployment rate	Percentage, period average	37.1	37.3	36.0	34.9	33.8	32.2	32.1	31.2	n.a.
Current account balance	Percentage of GDP	-8.4	-2.5	-0.4	-7.1	-12.8	-6.8	-2.2	-2.8	-4.5
FDI	Percentage of GDP	6.0	1.6	6.6	8.5	6.1	2.0	2.3	3.9	3.8
Gross external debt	Percentage of GDP	51.9	52.5	47.9	47.6	49.2	56.4	59.5	63.3	n.a.
General government balance	Percentage of GDP	0.4	0.2	-0.5	0.6	-0.9	-2.7	-2.5	-2.5	-2.2
General government gross debt	Percentage of GDP	36.6	38.4	32.0	24.0	20.6	23.9	24.6	26.2	26.1
Central government balance	Percentage of GDP	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Repo rate	Percentage, end of period	n.a.	8.4	5.8	4.8	7.0	8.5	4.0	4.0	n.a.
Money market overnight rate	Percentage, period average	n.a.	8.0	4.8	3.3	4.8	6.2	2.0	2.1	n.a.
Nominal effective exchange rate	index (2001 = 100), period average	109.6	110.9	111.1	112.6	114.4	116.7	117.2	117.2	n.a.

Sources: NBRM, Statistical Office of the Republic of Macedonia (SSO), Ministry of Finance.

in 2010. In 2011, GDP growth further accelerated due to stronger export and domestic demand, supported by low interest rates and a gradual resumption of credit growth. The recovery is expected to continue in 2012, albeit at a slightly slower pace. The National Bank of the Republic of Macedonia (NBRM) recently lowered its GDP growth forecast to 2.4% (from 3.0% previously) broadly in line with recent projections by international organisations[88] due to a weaker growth outlook for the EU, which is the country's dominant trading partner, and financial stress stemming from the euro area debt crisis. Among the most relevant channels of transmission are a decline in EU import demand for exports of the former Yugoslav Republic of Macedonia and a possible drop in foreign direct investment and remittances which could lead to balance of payments pressures.

Inflation picked up, but is expected to moderate. Starting in the second half of 2010, inflation in the former Yugoslav Republic of Macedonia picked up, reaching 5.2% yoy in May 2011. The main reason for the rise in consumer prices was higher global food and energy prices. In the second half of 2011, as a result of lower commodity prices, the inflation rate declined. The average annual inflation rate in 2011 was 3.9%. For 2012 a somewhat lower inflation rate is expected due to lower global food and energy prices as well as slowing domestic demand.

Structural unemployment remains high. During the review period the official unemployment rate remained above 30% due to persistent administrative factors as well as hidden employment in the unofficial sector (see ECB, 2010).

The current account deficit has widened somewhat, but external debt is moderate. With shrinking imports, the current account deficit nearly halved in 2009 and continued to narrow in 2010 mainly due to the improvement in the trade balance and the strong growth in private transfers. As the economic recovery gained momentum, the current account deficit also increased in 2011, with FDI being one of the most important finance sources. The latest data show higher FDI inflows in 2011 than in the preceding year, although their level is still somewhat below the average in the pre-crisis period. In the same period, net inflows of foreign loans increased considerably as well. In March 2011, the rise in foreign borrowing was mainly due to the withdrawal of €220 million under the IMF's Precautionary Credit Line (see below). The government borrowed an additional €130 million at the end of the year,

88 For example, the World Bank forecast of January 2012 is of a similar magnitude. However, the December 2011 projection by IMF staff amounted to only 2.0% real GDP growth in 2012. The market mean Consensus Forecast stood at 2.3% real GDP growth in 2012 as at end-March 2012.

through a policy-based guarantee of the World Bank. These financial account developments contributed to a net accumulation of foreign exchange reserves of €354.4 million in 2011. In 2012, the current account deficit is expected to widen somewhat. The external debt ratio of the former Yugoslav Republic of Macedonia is moderate compared with other candidate countries. A large part of this external debt consists of short-term debt, comprising mainly trade credits and inter-company loans.

A relatively sound fiscal position enabled the former Yugoslav Republic of Macedonia to draw on a Precautionary Credit Line with the IMF. Despite several anti-crisis measures implemented in 2008-09, the budget deficit remained relatively low at 2.7% in 2009 and 2.5% in 2010. In 2011, the fiscal deficit of the central government met the 2011 budget target (2.5% of GDP). In March 2011, the government borrowed €220 million under the Precautionary Credit Line from the IMF, citing a balance of payments need which had emerged after the uncertain outcome of the early elections. For 2012, the fiscal position is expected to improve slightly. During the review period, public debt remained at a low level relative to GDP, somewhat increasing to around 28.2% in 2011.

Monetary policy continued to be exchange rate-based. While price stability is the primary objective of the NBRM, the NBRM has anchored its exchange rate since the mid-1990s in the form of a "soft peg" against the euro (formerly against the Deutsche Mark). The fixed exchange rate policy is motivated by a high degree of openness of the economy, close trade integration with the euro area and the EU, the NBRM's need to establish credibility and a significant unofficial euroisation. In 2011, the NBRM was a net buyer of foreign currency in the foreign exchange market. There were no significant pressures in the balance of payments and the level of international reserves, which amounted to €2.1 billion in December 2011, was sufficient to cover more than four months of imports and around 100% of short-term debt. Since December 2010, the NBRM has kept its policy rate – the weighted average rate at the central bank bill auctions – unchanged at 4%. At its weekly central bank bill auctions, the NBRM continues to satisfy all bids (i.e. to absorb an unlimited amount of liquidity) at a fixed rate, a measure introduced in February 2008 in response to the global financial crisis. The additional liquidity absorption through central bank bills in 2011 was lower than in 2010.

Policies aimed at de-euroisation continued. Since July 2009, the NBRM has imposed differentiated reserve requirement ratios for bank liabilities in domestic and foreign currency (10% for liabilities in domestic currency, 13% for liabilities in foreign currency and 20% for liabilities indexed to foreign currency) to discourage currency substitution. In September 2011, the NBRM reduced the reserve requirement ratio for household deposits with a maturity longer than two years to 0% with effect from January 2012. The measure aims to stimulate the long-term domestic saving rate. It is also expected to improve the liquidity management of the banking system.

A.3.2 STRUCTURE OF THE BANKING SYSTEM

The banking sector of the former Yugoslav Republic of Macedonia continues to be dominated by foreign-owned private banks and focuses on traditional bank business models. During the review period, the total number of banks operating in FYR Macedonia fell by one to 17 in 2011, with 13 banks being foreign-owned (see Table A3.2).[89] The dominance of foreign banks is also mirrored in their large and relatively stable asset share of 92.4% as at end-2011. The four largest banks accounted in 2011 for 71.4% of the total assets, underscoring the concentration of the sector. While this feature is typically seen as natural and common in many small open economies (ECB, 2010), the fact that two banks – accounting for around a quarter of total banking sector assets – are owned by Greek parent banks has raised some concerns. Since the subsidiaries

89 The fall in the total number of banks and foreign-owned banks by one is due to an acquisition of one bank by another foreign-owned bank.

Table A10 Former Yugoslav Republic of Macedonia: Structure of the banking sector

	Description	2004	2005	2006	2007	2008	2009	2010	Q4 2011
Number of banks			20	19	18	18	18	18	17
… of which foreign-owned			8	8	11	14	14	14	13
Number of banks per 100,000 inhabitants			1.0	0.9	0.9	0.9	0.9	0.9	0.8
Assets of private banks	Percentage of total assets		98.4	98.4	98.6	98.8	98.6	97.7	96.9
Assets of foreign banks	Percentage of total assets		51.3	53.2	85.9	93.1	93.3	92.9	92.4
Assets of the four largest banks	Percentage of total assets		71.1	70.8	72.3	71.4	72.9	72.3	71.4

Source: NBRM.

of Greek banks are mainly financed by local deposits with minimal funding from their parents, and do not hold Greek assets (IMF, 2011), no material spillovers from the restructuring of Greek sovereign debt had occurred by the time this paper was finalised. At the same time, banks continued to concentrate on traditional banking activities, with private sector credit playing a dominant role on the assets side of banks.[90]

Since the pre-crisis credit boom came to an end in 2009, credit has been expanding at a more sustainable pace, while deposits remain a stable source of bank funding. During the review period, private sector credit expanded at an annual rate of around 7-8% (see Table A11) in nominal terms, i.e. a pace which is considerably more sustainable than pre-crisis credit expansion rates of 30-40% p.a. in nominal terms. At the sectoral level, the moderation in credit growth was somewhat more pronounced with respect to lending to households compared with corporate lending. Deposit growth resumed in 2010 after demand deposits in particular had contracted somewhat during the crisis.

A.3.3 FINANCIAL STABILITY CHALLENGES FOR FYR MACEDONIA

CAPITALISATION AND CREDIT RISK

The banking sector in the former Yugoslav Republic of Macedonia continued to be well capitalised and profitable. During the review period, average capital adequacy ratios increased slightly (from 16.4% at end-2009 to 16.8% at end-2011) as banks increased their own funds by issuing new shares and through subordinated instruments issued by parent entities. Thus, capitalisation continued to be comfortably above the regulatory minimum level (8%) and high by international standards. The degree of leverage of the banking sector is low. Tier 1 capital accounts for the bulk of regulatory capital (see Table A3.4), indicating a good capacity to absorb unexpected losses. In addition, banks have remained profitable during the review period with somewhat lower returns on assets (0.3% on average during 2010-11) and more moderate returns on equity (2.7% on average during 2010-11) compared

90 As at end-2011, loans to non-financial entities accounted for 54.7% of total banking sector assets.

Table A11 Former Yugoslav Republic of Macedonia: Loan and deposit growth

	Description	2006	2007	2008	2009	2010	2011
Credit to the private sector	Nominal, percentage growth p.a.	30.6	39.3	34.6	3.7	7.4	8.5
… to households	Nominal, percentage growth p.a.	42.9	56.2	37.4	2.6	5.7	8.2
… to companies	Nominal, percentage growth p.a.	24.9	30.3	32.8	4.4	8.5	8.7
Deposits	Nominal, percentage growth p.a.	27.9	31.9	9.5	3.8	13.5	9.8
… of which demand deposits	Nominal, percentage growth p.a.	18.4	22.2	4.6	-7.3	9.1	3.0
… of which time deposits	Nominal, percentage growth p.a.	37.2	40.0	13.1	11.4	16.0	13.4

Source: NBRM.

with 2009, when returns on assets and returns on equity averaged 0.5% and 4.5% respectively. To some extent, this decline in profitability can be attributed to provisioning against non-performing loans, lower interest rate margins and rising operating costs.

Non-performing loans peaked in the third quarter of 2010, but could rise again if downside risks materialise. Traditional credit risk is the key risk that banks in the former Yugoslav Republic of Macedonia face as loans to the private sector continued to account for a large part of banking sector assets (see above). The ratio of non-performing loans to total gross loans increased until the third quarter of 2010, peaking at 10.4%, mirroring to a large extent the lagged impact of the recession of 2009.[91] Since then, NPL ratios have declined somewhat. Looking ahead, non-performing loans could rise somewhat due to a more pronounced economic slowdown, possibly accompanied by a drop in house prices[92] or a depreciation of the denar against the major reserve currencies due to unhedged borrowing in foreign currencies (see below).[93] At the same time, relatively low household and corporate debt levels mitigate the risk of a severe deterioration in loan quality. Overall, given their large capital buffers, banks are likely to be able to absorb losses stemming from a deterioration of credit quality also under more adverse economic conditions.

MARKET AND FUNDING LIQUIDITY RISKS

The direct exposure of banks to market risks has remained small, but banks are exposed to indirect interest rate and exchange rate risks. Given that most bank loans are extended with de facto adjustable interest rates, interest rate risk in the banks' balance sheets is limited. As exposure to interest rate fluctuations is largely passed on to the borrowers, however, banks are exposed indirectly to credit risk via interest rate risk. Similar considerations apply to foreign exchange rate risk. While the net open foreign exchange position of banks has remained below 30% of own funds (the regulatory limit) (see Table A3.4), banks are exposed to indirect exchange rate risk via exchange rate risk stemming from unhedged borrowing in foreign currencies: Foreign currency-denominated loans and loans indexed to foreign currencies accounted for 59.2% of total loans as at end-2011. While the share of such loans tends to be somewhat bigger for corporate loans (66.7% of total corporate loans as at end-2011) than for household loans (47.2% of total household loans as at end-2011), corporate borrowers are only to some extent hedged against exchange rate swings through export revenues in the respective foreign currencies. Similarly, households are only partially hedged via foreign currency deposits or foreign currency income via remittances. At the aggregate level, foreign currency deposits accounted for 52.7% of total deposits as at end-2011. Nevertheless, individual households and companies continue to be exposed to exchange rate risk (see above).

Funding liquidity risks remain contained. Loan-to-deposit ratios have remained on average below 100% during the review period, implying a very low degree of leverage and funding liquidity risk traditionally stemming from other sources of bank funding such as external funding (standing at around 11.7% of total liabilities in December 2011) and wholesale funding.[94] Nevertheless, banks are exposed to a loss of confidence and a sudden withdrawal of deposits. This risk is mitigated by the relatively high

91 In their NPL model used for the stress test in Chapter 2, the NBRM considers real GDP growth, the inflation rate (due to adjustable interest rates in response to price developments), banks' weighted average interest rate (in real terms), and the real effective exchange rate (due to balance sheet effects) as significant determinants of non-performing loans.

92 Due to a lack of long time series for house price data, a systematic relationship between house prices and non-performing loans cannot be identified at this stage. Nevertheless, since banks use real estate assets as collateral for housing loans, a decline in house prices (which stagnated in 2010 after a correction in 2009) could negatively impact bank asset quality. This is mitigated by relatively low loan-to-value ratios for housing loans (see Table A3.5).

93 The NBRM is committed to keep the denar stable against the euro. Indirect exchange rate risks can also materialise to some extent via depreciations against the US dollar or the Swiss franc, even though their share in total loans is relatively small (2.7% and 0.5% of total foreign currency loans respectively).

94 As pointed out in ECB (2010), there is considerable dispersion among banks, although some banks operate with substantially larger loan-to-deposit ratios. Therefore, pockets of vulnerability in terms of funding liquidity risk exist at the level of individual banks.

Table A12 Former Yugoslav Republic of Macedonia: Financial stability indicators

(percentages)

	Q4 2009	Q1 2010	Q2 2010	Q3 2010	Q4 2010	Q1 2011	Q2 2011	Q3 2011	Q4 2011
Regulatory capital to risk-weighted assets	16.4	16.8	16.5	16.4	16.1	16.8	16.5	16.7	16.8
Regulatory Tier-1 capital to risk-weighted assets	13.8	14.3	13.9	13.7	13.4	14.1	14.0	14.0	14.1
Non-performing loans									
...net of provisions to capital	-0.6	1.1	1.2	3.7	-0.3	-1.5	-2.1	-1.7	-1.9
...to total gross loans	8.9	9.7	9.9	10.4	9.0	9.1	8.9	9.5	9.5
...of which in FX	7.1	7.9	8.1	8.1	7.2	7.5	7.6	8.5	9.2
.....of which in Euro	7.2	8.0	8.2	8.1	7.2	7.5	8.2	8.5	9.2
.....of which in USD	7.8	7.7	10.2	13.0	13.2	10.8	10.9	9.3	6.4
.....of which in CHF	2.2	2.5	2.3	3.7	2.7	3.6	3.9	4.6	4.6
Return on assets	0.6	0.1	0.4	0.5	0.8	-0.1	0.2	0.1	0.4
Return on equity	5.6	1.1	3.2	4.0	7.3	-1.0	2.1	1.0	3.4
Liquid assets to total assets	25.7	25.6	27.6	27.9	31.0	30.2	29.7	29.9	31.3
Liquid assets to short-term liabilities	37.5	38.2	41.4	41.8	47.0	46.7	46.2	46.7	48.9
Loan-to-deposits	92.5	91.6	89.9	91.0	87.5	88.2	89.3	88.2	86.4
Net open position in foreign exchange to capital	13.0	13.4	12.8	14.3	18.9	11.9	10.0	17.9	21.3
Capital to assets	11.4	11.6	11.3	11.1	10.6	11.0	11.0	11.1	11.0
Large exposures to capital	213.3	175.4	180.3	190.3	200.4	182.1	199.6	186.1	189.6
Gross asset position in financial derivatives to capital	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Gross liability position in financial derivatives to capital	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Trading income to total income	18.5	29.7	5.6	3.8	3.8	-25.6	11.5	22.4	6.9
Foreign-currency-denominated loans to total loans	58.5	58.9	58.6	58.0	58.8	58.3	58.2	59.2	59.2
Foreign-currency-denominated liabilities to total liabilities	61.8	60.1	59.8	58.0	57.6	57.7	56.9	57.0	54.5
Ratio of external liabilities to total liabilities of banks	12.0	10.6	11.3	11.9	13.0	12.8	13.4	12.3	n.a.
Household debt to gross domestic product	18.4	n.a.	n.a.	n.a.	18.7	n.a.	n.a.	n.a.	n.a.
Household debt service and principal payments to income	8.3	n.a.	n.a.	n.a.	10.8	n.a.	n.a.	n.a.	n.a.
Loan-to-value ratios for housing loans	n.a.	n.a.	n.a.	n.a.	53.1	64.2	52.8	56.7	56.9
Residential real estate prices (Percentage change/last 12 months)	-7.0	n.a.	n.a.	n.a.	0.9	n.a.	n.a.	n.a.	n.a.

Source: NBRM.

share of time deposits (67.5% of total deposits as at end-2011) compared with demand deposits (32.5% as at end-2011). In terms of liquid assets, the NBRM regulation on liquidity risk management, which entered into force during the first quarter of 2009, was effective in raising the share of liquid assets relative to total assets to 31.3% and relative to short-term liabilities to 48.9% (see Table A12).

A.3.4 CONCLUDING ASSESSMENT

While economic growth in the former Yugoslav Republic of Macedonia is likely to be dampened by lower growth in the EU via the trade channel and a possible drop in foreign direct investment, immediate concerns related to possible spillovers from the euro area debt crisis did not materialise by the time this paper was finalised. In particular, a prudent funding structure of banks, as well as no exposure to foreign sovereign risk on the assets side, has shielded the banking sector from the sovereign debt restructuring in Greece. More generally, funding liquidity risks have remained low. Given the relatively low share of external funding in total bank liabilities, FYR Macedonia's banks are also shielded from broader deleveraging trends among European banks. The main challenges for banks consist of traditional credit risk and indirect exchange rate risk stemming from unhedged borrowing

in foreign currencies. Capital buffers are high so that banks appear to be able to absorb a further increase in non-performing loans, which could materialise under more adverse economic conditions. In order to preserve the resilience of the banking sector, the NBRM should therefore continue to pursue its efforts aimed at: (i) maintaining bank incentives for prudent credit policies; and (ii) promoting the use of the denar, in particular among unhedged borrowers.

A.4 MONTENEGRO

A.4.1 THE MACROECONOMIC ENVIRONMENT

The economic recovery from the recession continues, but remains fragile. Montenegro, which uses the euro as legal tender,[95] experienced a credit-driven boom after its independence in 2006 until the global financial crisis in 2008, with aluminium exports (accounting for 40% of total exports), construction, financial services and tourism being the main driving forces. Real GDP growth peaked at 10.7% in 2007, fuelled by foreign direct investment and domestic demand (see Table A13). The Montenegrin economy started cooling down in 2008 and contracted in 2009 (-5.7%) as the domestic credit boom turned into a bust. GDP recovered in 2010 due to a good tourist season and resumed metal production and gained momentum in the first half of 2011. Strains from the euro area debt crisis and declining aluminium prices triggered a slowdown in economic growth in the second half of 2011. As a result, real GDP expanded at a more moderate pace in 2011 (2.0%). The Central Bank of Montenegro (CBM) recently lowered its original GDP forecast for 2012 (3.5%) to 1.8% due to the economic slowdown in the EU, Montenegro's main trading partner.[96]

Inflation has picked up somewhat, while unemployment is still relatively high. Inflation has remained at single-digit levels over the last

95 The government of Montenegro unilaterally declared in November 1999 the Deutsche Mark as a parallel legal tender to the Yugoslav dinar. The Deutsche Mark, and subsequently the euro, became sole legal tender in January 2001. Montenegro has been using the euro unilaterally since March 2002. The ECOFIN Council adopted a policy position on euroisation in November 2000, as part of a policy line on exchange rate aspects related to EU enlargement, making clear that any unilateral adoption of the single currency by means of "euroisation" would run counter to the underlying economic reasoning of EMU in the Treaty, which foresees the eventual adoption of the euro as the endpoint of a structured convergence process within a multilateral framework. Specifically on Montenegro, the ECOFIN Council adopted on 15 October 2007 a declaration recalling that "unilateral euroisation is not compatible with the Treaty, which foresees the eventual adoption of the euro as the endpoint of a structured convergence process within a multilateral framework".

96 This forecast is in line with recent forecasts by international organisations such as the World Bank (2012) and projections for Montenegro's Pre-Accession Economic Programme for 2012-2014 where the authorities anticipate in their baseline scenario 2% real GDP growth for 2012.

Table A13 Montenegro: Main macroeconomic and monetary policy indicators

	Description	2005	2006	2007	2008	2009	2010	2011	2012f
Real GDP growth	Percentage, period average	4.2	8.6	10.7	6.9	-5.7	2.5	2.0	3.5
Inflation [1)]	Percentage, period average, harmonised definition	3.4	3.0	4.2	8.5	3.4	0.5	3.1	2.0
Unemployment rate, national defintion	Percentage, period average	18.5	14.7	11.9	10.7	11.4	12.2	11.6	n.a.
Current account balance	Percentage of GDP	-16.6	-31.3	-39.5	-50.6	-29.6	-24.6	-19.4	-21.7
FDI	Percentage of GDP	22.0	21.9	21.2	18.9	35.8	17.8	11.9	12.1
Gross external debt	Percentage of GDP	n.a.	n.a.	n.a.	n.a.	93.3	98.9	99.3	97.8
General government balance	Percentage of GDP	-1.4	3.0	6.7	0.1	-5.3	-3.9	-3.4	-2.4
General government gross debt	Percentage of GDP	38.6	32.6	27.5	31.9	40.7	44.1	43.1	42.2
Repo rate	Percentage, end of period	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Money market overnight rate	Percentage, period average	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Nominal effective exchange rate	index (2001 = 100), period average	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.

Sources: IMF World Economic Outlook, Statistical Office of Montenegro, Employment Agency of Montenegro, Central Bank of Montenegro.
Note: 1) Inflation figures for 2005 refer to retail prices, for 2006-08 to a cost of living index and for 2009-11 to the consumer price index (yearly averages).

years, but was prone to episodes of pronounced upside pressures, especially during the post-independence boom years because of surging aggregate demand and imported inflation. Montenegro registered a disinflationary trend in the post-crisis period, mainly due to declining domestic demand and falling international food and energy prices. Consumer price pressures started to pick up in the first months of 2011, reflecting mainly rising food prices. For 2012, the authorities expect inflation to moderate somewhat. The strong economic growth until 2009 had a noticeable impact on the labour market, with notoriously high unemployment decreasing until 2008. Since then, the unemployment rate has increased due to the slowdown in economic growth.

Montenegro's sizeable external imbalances remain a source of concern, while during the 2008-09 crisis no IMF assistance was needed. In the run-up to the crisis, the fast demand-driven growth was mirrored in widening external imbalances. The current account deficit stood at 50% of GDP in 2008, a record high even by regional standards. These imbalances have been only partially corrected during the crisis. Montenegro still posted a current account deficit of 19.4% of GDP in 2011. Against the backdrop of the euro area debt crisis, however, the prospect of lower FDI inflows and potential bank deleveraging have raised renewed concerns over the financing of the current account deficit. From a stock perspective, total external debt has risen to 100% of GDP, which could prove to be unsustainable at some point.

Fiscal consolidation is needed. From a surplus of over 6% in 2007, the fiscal balance started to post deficits since 2008 and severely deteriorated in 2009, when it reached a deficit of almost 6% of GDP. The government has taken a series of measures since 2009 to consolidate the public finances. As a result, the budget deficit slightly narrowed to 4.9% of GDP in 2010. According to government projections, the general government deficit stood at 3.4% of GDP in 2011 and is expected to further narrow to around 2.4% in 2012. While public debt has remained relatively moderate by regional standards (43% of GDP as at end-2011), the fact that the public deficit is mainly financed through external borrowing is making the country vulnerable to a deterioration in external borrowing conditions and a sudden stop in capital inflows.

The policy framework of the central bank remains restricted, but has improved somewhat. The adoption of the euro as legal tender means that the CBM cannot influence money supply, which is determined by balance of payments flows, and its capacity to act as a lender of last resort is limited.[97] Until 2009 the central bank focused primarily on bank supervision, trying to limit rapid credit growth via reserve requirements and other prudential measures, which was not very effective (see below) because a too loose imported monetary stance resulted in too rapid money supply growth. Since credit growth turned negative during the bust in 2009, the CBM repeatedly eased mandatory reserve requirements. In July 2010, the regulatory framework was improved with new laws in several relevant areas. As a result of these legislative changes, the CBM's capacity to act as lender of last resort was enhanced.[98] In addition, a new law on deposit protection helped in restoring confidence in banks to some extent.[99]

97 According to the Central Bank Law, the main objective of the CBM is to "foster and maintain financial system stability, including fostering and maintaining a sound banking system and safe and efficient payment systems". The law also foresees that the central bank shall "contribute to achieving and maintaining the stability of prices". The central bank also engages in liquidity management operations and issues Treasury bills on behalf of the government, as its fiscal agent.

98 Under the new law, the CBM can provide emergency liquidity loans to solvent banks for 90 days against collateral, extendable to 180 days maximum.

99 On 23 November 2011, a twinning project ("Strengthening the regulatory and supervisory capacity of the financial regulators") involving the Bulgarian National Bank, De Nederlandsche Bank and the Bulgarian Financial Supervision Commission was completed. It aimed at harmonising the Montenegrin legislation with the EU acquis in the financial sector.

A.4.2 STRUCTURE OF THE BANKING SYSTEM

Montenegro's small banking sector is dominated by a few subsidiaries of EU parent banks. Montenegro's banking sector is mainly foreign-owned with subsidiaries of EU parent banks (mainly from Hungary, Slovenia, Austria and France) accounting for almost 90% of total banking sector assets (see Table A14). The total number of banks has been stable since 2007 at 11, of which 9 are foreign-owned.

The degree of concentration of the banking sector has declined considerably in the aftermath of the crisis. The share of the assets of the four largest banks in total banking sector assets grew to almost 80% in 2008. Mainly as a result of the credit controls and asset restructuring in the aftermath of the crisis, this share started to decline in 2009 and reached 64.1% by end-2011.

On the assets side, traditional loans to the private sector account for the majority of bank claims. Claims on the private sector are split relatively evenly across sectors: As at end-2011, loans to the corporate sector accounted for 51.3% and loans to households for 47.7% of total loans to the private sector. The bulk of these loans are denominated in euro.[100]

Bank deleveraging in the aftermath of the crisis has contributed to a more sustainable funding structure, but the role of external funding is still non-negligible. After peaking in the first quarter of 2009 at more than 150%, the loan-to-deposit ratio declined considerably during the review period, reaching 107.6% at end-2011, as credit contracted in the aftermath of the crisis. The share of external liabilities (consisting mainly of parent bank loans) in total bank liabilities peaked in the second quarter of 2009 at 33% and then declined to 22.9% by end-2011.

Credit growth underwent a pronounced boom-and-bust cycle and is still contracting. During the boom period, a cycle of positive wealth effects and rising real estate prices fuelled an unsustainable credit boom, in particular in the construction sector. Credit growth peaked at more than 100% yoy in 2007. These unsustainable developments were supported by a too accommodative policy stance stemming from euroisation. In 2008, the CBM applied credit controls, which dampened credit growth to around 22%. The unwinding of previously accumulated imbalances during the global financial crisis resulted in late 2008 in a liquidity crisis and a run on deposits in some cases (see below).[101] While a systemic collapse was avoided, largely through parent bank support and government interventions,[102] credit has been contracting at a rapid pace since 2009 mainly due to less available parent bank funding

100 Loans denominated in other currencies accounted for only 2.5% of total loans to the private sector as at end-2011.

101 Prva Banka (the second largest bank in the country) lost sizeable amounts of deposits when it announced its troubled financial position in October 2008.

102 As summarised in IMF (2010, p. 11), the authorities announced a blanket deposit guarantee and provided emergency liquidity support (€44 million, repaid by October 2009) and subsequently steered privatisation-related deposits to Prva, the largest domestic bank. The government also prepaid loans in an effort to boost bank liquidity. Foreign parents have also stepped in with substantial liquidity infusions and capital injections into their subsidiaries.

Table A14 Montenegro: Structure of the banking sector

	Unit	2004	2005	2006	2007	2008	2009	2010	2011
Number of banks	Number	10	10	10	11	11	11	11	11
… of which foreign-owned	Number	4	7	8	8	9	9	9	9
Number of banks per 100,000 inhabitants	Number	1.6	1.6	1.6	1,77	1.8	1.8	1.8	1.8
Assets of private banks	Percentage of total assets	21.8	7.2	8.1	21.3	15.4	12.9	11.6	10.3
Assets of foreign banks	Percentage of total assets	61.8	87.7	91.9	78.7	84.6	87.1	88.4	89.7
Assets of the four largest banks	Percentage of total assets	69.3	74.0	73.1	77.7	77.8	73.7	68.0	64.1

Source: Central Bank of Montenegro.

Table A15 Montenegro: Loan and deposit growth

	Description	2006	2007	2008	2009	2010	2011
Credit to the private sector	Nominal, percentage growth p.a.	141.3	181.6	24.9	-15.8	-9.4	-14.5
… to households	Nominal, percentage growth p.a.	198.3	155.2	30.7	-11.4	-6.1	-3.5
… to companies	Nominal, percentage growth p.a.	113.2	199.4	21.3	-18.8	-11.7	-23.1
Deposits	Nominal, percentage growth p.a.	120.5	94.4	-4.8	-8.3	-1.9	1.5
… of which demand deposits	Nominal, percentage growth p.a.	134.2	57.5	-24.4	-8.1	9.7	-3.3
… of which time deposits	Nominal, percentage growth p.a.	104.8	142.7	11.9	-8.4	-8.6	4.9

Source: Central Bank of Montenegro.

(see Table A15).[103] While these developments reflected in the beginning to some extent also a decline in the demand for credit due to the recession in 2009, a credit crunch materialised during 2010-11. Government measures aimed at stabilising credit such as the lifting of credit ceilings imposed during the crisis [104] have so far not been very effective.

Bank deposits have stabilised after a loss of confidence during the crisis. Since the peak of the crisis, banks have suffered a significant decline in deposits due to a loss of confidence in the soundness of banks (around 15% of total deposits were withdrawn between 2008 and 2010). In 2011, deposits – in particular household deposits – started to recover, mirroring improvements in the overall economy and a return of confidence in the banking system (see Table A15). However, deposits have not yet reached their pre-crisis levels. In terms of composition, demand and time deposits accounted for 39% and 61% of total deposits respectively as at end-2011. Finally, as at end-2011, only a minor share of deposits was denominated in other currencies than the euro (3.5% of total deposits).

A.4.3 FINANCIAL STABILITY CHALLENGES FOR MONTENEGRO

During the review period, the financial sector in Montenegro found itself in a post-crisis environment with balance sheet repairs, asset restructuring, recapitalisations and deleveraging being the focus of attention. Therefore, some of the backward-looking indicators for financial stability discussed below mainly reflect the unwinding of previous excesses in the banking sector, whilst other indicators suggest that further risks may also lie ahead.

Capitalisation and credit risk

Capital adequacy ratios have remained relatively high. Most parent banks provided their Montenegrin subsidiaries with capital injections during the crisis. As a result, average capital adequacy ratios have remained high since 2006 (see Table A4.4). In December 2011, the ratio of regulatory capital to risk-weighted assets stood at 16.5%. The small differences between Tier 1 capital and regulatory capital indicate that bank capital is typically of high quality.

Non-performing loan ratios appear to have peaked, but could rise again under more adverse economic conditions. Due to lax credit standards applied during the boom period, NPL ratios increased from around 3% at the end of 2007 to more than 25% of total gross loans by end-June 2011.[105] According to empirical studies, an NPL ratio in this order of magnitude has often been associated with systemic banking crises.[106] At the end of 2011, asset quality slightly improved as banks were increasingly writing non-performing loans off their balance sheets and

103 When adjusting for certain extraordinary factors, the decline in overall credit to the private sector was less pronounced (around 2-3% on an annual basis), according to the Central Bank of Montenegro.

104 In March 2011, all restrictions on the lending activity of Prva Banka, which received government support in late 2008, were removed.

105 Non-performing loans include loans classified as "C" (= substandard), "D" (= doubtful) and "E" (= loss).

106 See Laeven and Valencia (2008).

Table A16 Montenegro: Financial stability indicators

(percentages)

	Q4 2007	Q1 2008	Q2 2008	Q3 2008	Q4 2008	Q1 2009
Regulatory capital to risk-weighted assets	17.1	17.2	16.6	15.6	15.0	12.4
Regulatory Tier-1 capital to risk-weighted assets	14.9	16.0	15.1	14.4	15.1	12.1
Non-performing loans						
…net of provisions to capital	22.0	24.5	25.8	28.7	40.1	47.6
... to total gross loans	3.2	3.0	3.9	4.5	7.2	8.8
… of which in FX	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
……of which in Euro	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
……of which in USD	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
……of which in CHF	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Return on assets	0.7	0.2	0.6	0.3	-0.6	-1.5
Return on equity	6.2	2.6	6.4	3.5	-6.9	-17.8
Liquid assets to total assets	22.4	14.6	14.3	12.9	11.2	10.5
Liquid assets to short-term liabilities	39.5	27.6	27.3	24.0	20.9	19.6
Net open position in foreign exchange to capital	0.1	-0.1	-1.6	-2.8	-3.4	-2.4
Capital to assets	8.0	8.3	8.2	8.1	8.4	8.4
Large exposures to capital	181.4	134.8	131.4	138.0	150.7	221.0
Total gross loans	75.5	79.0	79.8	81.3	84.5	84.9
Gross asset position in financial derivatives to capital	n.a.	n.a.	n.a.	n.a.	n.a.	0.000
Gross liability position in financial derivatives to capital	n.a.	n.a.	n.a.	n.a.	n.a.	0.4
Trading income to total income	2.5	-0.1	0.3	0.3	0.3	-0.2
Foreign-currency-denominated loans to total loans	3.4	4.9	5.5	3.9	3.9	4.0
Foreign-currency-denominated liabilities to total liabilities	4.6	6.0	5.4	5.6	5.4	5.7
Ratio of external liabilities to total liabilities	19.7	22.0	24.0	24.5	28.8	32.7
Net open position in equities to capital	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Household debt to gross domestic product	29.6	29.0	32.3	34.0	33.6	33.9
Household debt service and principal payments to income	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Residential real estate prices (Percentage change/last 12 months)	n.a.	2.4	n.a.	-10.1	n.a.	-17.4

Source: Central Bank of Montenegro.

parent banks took over some of the bad loans.[107] Looking ahead, a more pronounced slowdown in economic activity might lead to a renewed rise in NPL ratios.

Bank profitability continues to constitute a challenge for financial stability as financial institutions continue to make losses. Prior to the crisis, Montenegrin banks were relatively profitable with returns of up to 6% in terms of equity and close to 1% in terms of assets (see Table A4.4). Since end-2008, banks' profit and loss accounts have moved into severe negative territory (see Table A4.4). Losses became somewhat more moderate in 2011 as losses stemming from the peak in non-performing loans appear to have been written off.

Household indebtedness remains moderate, and households are not exposed to exchange rate risk. Throughout the boom-bust cycle, household debt has remained relatively moderate by regional standards (around 25-30% of GDP; see Table A4.4), suggesting that overindebtedness of households was not at the root of the crisis. This observation is confirmed by the fact that asset quality mainly deteriorated

107 In 2010, the period before a loan is classified as a "loss" was increased from 270 to 365 days (see Table A4.2 for further details with respect to the definition of non-performing loans).

Q2 2009	Q3 2009	Q4 2009	Q1 2010	Q2 2010	Q3 2010	Q4 2010	Q1 2011	Q2 2011	Q3 2011	Q4 2011
11.9	12.9	15.8	14.3	16.5	14.6	15.9	15.4	15.3	15.1	16.5
11.7	12.5	15.5	14.1	16.5	14.5	15.5	15.6	15.8	15.9	15.1
54.5	52.7	45.3	52.6	51.7	60.3	45.6	38.1	40.8	40.3	32.6
10.0	9.6	13.5	14.9	16.8	17.6	21.0	16.7	25.3	19.7	15.5
n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
-1.6	-0.9	-0.7	-3.5	-3.2	-4.2	-2.8	-2.4	-0.6	-1.0	-0.1
-18.9	-10.2	-7.8	-34.4	-31.6	-41.1	-27.3	-23.3	-6.3	-10.1	-1.1
11.7	16.0	15.3	13.5	16.6	17.1	19.1	19.4	19.9	23.0	19.9
21.9	26.8	25.8	22.8	28.3	28.9	32.9	33.5	33.9	39.2	32.8
-1.2	-0.5	0.7	0.1	1.0	1.9	0.8	-2.0	0.6	0.8	1.0
8.6	9.3	11.0	10.4	11.4	10.2	9.6	10.4	10.6	10.1	10.9
164.2	176.8	84.2	118.9	87.9	145.5	112.1	106.5	107.0	99.9	100.8
83.9	79.8	79.3	80.8	78.3	77.8	74.7	72.1	70.8	67.7	69.6
0.078	0.046	0.015	0.005	0.002	0.003	0.002	0.001	0.002	0.002	0.002
0.5	0.4	0.3	0.3	0.2	0.2	0.2	0.1	0.1	0.2	0.1
0.7	0.7	0.9	2.7	1.5	1.2	1.1	0.5	3.6	1.9	2.6
3.9	4.0	4.2	4.2	3.9	3.9	4.1	3.7	2.8	2.8	2.3
5.6	5.3	6.4	6.9	6.7	6.5	6.4	5.2	5.1	4.9	4.3
33.4	29.8	28.2	27.7	26.9	27.3	27.4	26.5	24.4	23.4	22.9
n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
32.7	31.9	30.8	29.0	28.5	27.9	27.8	25.6	26.1	25.8	25.5
n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
n.a.	-27.9	n.a.	-33.5	-29.8	-30.7	-30.2	-31.8	-32.1	-32.4	-31.5

in the segment of corporate loans (see above).[108] Household borrowing in foreign currencies other than the euro remained limited so that households are hardly exposed to exchange rate risk.

Property price developments, on the other hand, were unsustainable. After soaring due to the construction boom and the development of the tourism sector, residential real estate prices have been declining by around 30% during the past three years (see Table A4.4). A further deterioration of house prices could negatively affect bank asset quality because property is typically used as collateral for housing loans.[109]

MARKET AND FUNDING LIQUIDITY RISK

Funding liquidity risks remain a concern. The significant withdrawal of deposits between 2008 and 2010 severely undermined the liquidity of the system. As a result, the ratio of liquid assets to short-term liabilities dropped below 20% at the peak of the crisis (see Table A4.4). Through a combination of government and parent bank support (see above), it was possible to stabilise the liquidity situation somewhat, not least because the CBM can act to some extent as lender of last resort. Nevertheless,

108 Figures on household debt service relative to disposable income are currently not available.

109 Figures on loan-to-value ratios for housing loans are not available

Montenegro's use of the euro puts tight limits on the CBM's liquidity support operations. In order to address these concerns, the IMF has recommended to: (i) bolster foreign exchange reserves; (ii) build up fiscal buffers; and (iii) require capital and liquidity buffers which would exceed international norms. With respect to parent bank funding, the pattern changed considerably during the review period. While the ratio of external liabilities to total liabilities increased during the peak of the crisis to around 34% in the second quarter of 2009, the ratio has declined since then to 22.9% as at end-December 2011, suggesting that parent bank funding was less readily available. At the same time, this decline in reliance on external funding has reduced the banks' vulnerability to further deleveraging as the risk of a domestic credit crunch triggered inter alia by cross-border deleveraging has already materialised.

The exposure of banks to market risk has remained small. The banks' net open foreign exchange position relative to total bank capital remained at a very low level throughout the review period (0.83% as at end-September 2011). Indirect exchange rate risk stemming from unhedged borrowing in foreign currencies has also remained negligible (see above).

A.4.4 CONCLUDING ASSESSMENT

At end-2011, Montenegro found itself still in a post-crisis environment, with balance sheet repairs, asset restructurings, contracting credit and possible liquidity shortages as the main concerns. Looking ahead, strains from the euro area debt crisis might negatively impact parent bank funding, in particular as local banks are on average still in loss-making territory and the medium-term growth outlook is hampered by large external imbalances and a lack of economic diversification. However, the decline in banks' reliance on external funding has reduced their vulnerability to further deleveraging, as the risk of a domestic credit crunch triggered by cross-border deleveraging has already materialised to some extent since the start of the crisis.

In addition to funding liquidity risk, credit risk might also increase again if economic activity slows down further. In such a scenario, which could be triggered by a weak economic performance of Montenegro's main trading partners in the EU and a drop of foreign direct investment, unemployment would rise further, while house prices would tend to fall. As a result, asset quality could deteriorate with respect to household loans, which so far have performed somewhat better than corporate loans.

The policy framework has proven to be inadequate to prevent a severe boom-bust cycle in credit. While a too loose imported monetary policy stance led to a surge in money and credit growth during the boom years, the authorities currently have only a few instruments at their disposal to offset the credit crunch. Therefore, in addition to measures aimed at improving liquidity buffers and safety nets in the short term, the ECOFIN Council position on euroisation should be fully taken into consideration by the Montenegrin authorities.

A.5 TURKEY

A.5.1 THE MACROECONOMIC ENVIRONMENT

The Turkish economy experienced a very rapid recovery from the 2008-09 global crisis. After reaching 9.2% in 2010, real GDP growth slightly eased to 8.5% in 2011. GDP growth was driven by strong business investment and household consumption. Growth is expected to moderate in 2012, against a backdrop of deteriorating external conditions and a less accommodating policy stance in 2011. Downside risks to the outlook are significant and a more severe slowdown could materialise, should returning tensions in global financial markets and the euro area dampen consumer and business confidence and lead to a capital flow reversal.

Inflation has been volatile, picking up most recently due to the Turkish lira's sharp depreciation. After falling to a historical low level in March 2011 (4.0%), headline inflation trended up, reaching 10.4% in December 2011,

Table A17 Turkey: Main macroeconomic and monetary policy indicators

	Description	2005	2006	2007	2008	2009	2010	2011e	2012f
Real GDP growth[1)]	Percentage, period average	8.4	6.9	4.7	0.7	-4.8	9.2	8.5	4.5
Inflation[2)]	Percentage, end of period, harmonised definition	7.7	9.7	8.4	10.1	6.5	6.4	10.5	6.5
Unemployment rate	Percentage, period average	10.6	10.2	10.2	10.9	14.0	11.9	10.5	10.4
Current account balance	Percentage of GDP	-4.6	-6.1	-5.9	-5.7	-2.3	-6.5	-9.4	-8.0
FDI[3)]	Percentage of GDP	1.9	3.6	3.0	2.3	1.1	1.0	1.5	1.5
Gross external debt	Percentage of GDP	35.3	39.5	38.5	37.8	43.6	39.5	n.a.	n.a.
General government balance	Percentage of GDP	-0.1	1.4	-0.2	-1.6	-5.5	-2.9	-1.0	-0.8
General government gross debt[4)]	Percentage of GDP	52.7	46.5	39.9	40.0	46.1	42.2	39.8	37.0
Central government balance[5)]	Percentage of GDP	-1.7	-0.6	-1.6	-1.8	-5.5	-3.6	-1.7	-1.5
Repo rate[6)]	Percentage, end of period	n.a.	n.a.	n.a.	n.a.	n.a.	6.5	5.8	n.a.
Money market overnight rate[7)]	Percentage, end of period	15.2	17.5	16.1	15.0	6.5	7.1	10.5	n.a.
Nominal effective exchange rate	Index (2001 = 100), period average	67.5	62.9	64.4	61.7	54.9	57.2	49.3	n.a.

Sources: Consensus Forecasts, IMF, OECD and national sources.
Notes: (1) 2011 and 2012 figures are national estimates. (2) Source: CBRT. 2011 figure is the realised end-of-period figure. 2012 figure is the CBRT estimate. (3) 2011 and 2012 figures are national estimates. (4) EU-defined general government gross debt stock. (5) 2011 figure is an estimate, whereas the 2012 figure is according to the government's program. (6) Central bank policy rate. (7) Istanbul Stock Exchange overnight repo rate.

far exceeding the 5.5% annual target, primarily owing to the exchange rate pass-through and increases in unprocessed food and administered prices. Tighter domestic supply conditions also contributed to the surge in inflation.

As a result of strong economic activity, conditions in the labour market have improved significantly. The unemployment rate fell to 10.5% (9.8% according to TURKSTAT) in 2011 (from peak levels of around 14% in 2009), a low level by historical standards, notwithstanding the increase in labour force participation.

External imbalances have reached unprecedented levels, representing one of the main macro-financial risks. Strong domestic demand and subdued export growth, reflecting sluggish demand in the EU which is Turkey's main export market and, until recently, a considerably overvalued real exchange rate, contributed to the sharp widening of the current account deficit from 6.5% of GDP in 2010 to 9.4% in 2011. Although the dependency on energy imports accounts for a significant part of the deficit, the non-energy balance also deteriorated considerably. Alongside increasing external financing needs, funding sources have become potentially more volatile, with a major role played by portfolio flows and short-term external borrowing by banks, even though most recent data point to a gradual increase in the share of long-term borrowings in financing the current account.

The overall fiscal conditions have improved on the back of strong cyclical revenues. The fiscal stimulus provided in 2009 in response to the crisis was withdrawn in 2010, and the headline general government deficit improved further in 2011 to an estimated -1.0% of GDP, while public debt is expected to decrease to 39.8% of GDP.

The monetary policy stance has varied during the last two years, responding to changes in the balance of risks between price stability and financial stability. Since 2010, the Central Bank of the Republic of Turkey (CBRT) has adopted an unorthodox monetary policy approach, entailing: (i) a combination of progressively higher reserve requirements –differentiated according to maturity – to lengthen the maturity of bank funding and to contain domestic credit growth; and (ii) a relatively low policy rate, cut further on several occasions, from 7% to 5.75% in August 2011, together with a wide interest

rate corridor, to stem short-term capital flows. The CBRT stance has, however, favoured a sharp devaluation of the Turkish lira, which depreciated by around 16% on a nominal effective basis in 2011, while credit growth eased only with considerable lags. The CBRT has shifted to a tighter monetary policy since October 2011, in response to persisting foreign exchange depreciation pressures and a sharp deterioration in the inflation outlook. In order to tighten the monetary policy stance, the CBRT announced that it would set banks' funding costs, even on a daily basis, within a corridor between the main policy rate (left unchanged at 5.75%) and the overnight lending rate (raised to 12.5%). The lending rate was reduced to 11.5% in February 2012. The CBRT also intervened occasionally with unsterilised foreign exchange sales in addition to regular foreign exchange sale auctions until late January 2012. As a result of these measures, the monetary policy stance has been tightened since October 2011, generating a greater upside variability in funding conditions, thus pushing the interbank overnight rate to around 10.5% on average at the beginning of 2012.

A.5.2 STRUCTURE OF THE BANKING SYSTEM

The Turkish banking system was relatively unscathed by the 2008-09 global financial crisis and no major structural changes materialised during the last two years. In 2010 and 2011 the total number of banks decreased by one, after the merger between TEB and Fortis Bank in February 2011 due to the reorganisation of BNP Paribas activities in Turkey. Three major banks, including the largest bank, are state-owned, and overall public banks account for close to one-third of total banking sector assets. The asset share of public banks increased during the recent credit boom as they were able to expand their market share thanks to a competitive advantage in terms of funding costs and lending rates. The privatisation of state-owned banks has remained on hold on account of unfavourable global conditions.

Foreign participation has remained broadly stable. As at end-2011, foreign-owned banks accounted for about 17% of total banking assets, a relatively low level compared with other banking systems in the region, though foreign presence would actually be higher if joint ventures with domestic investors were taken into account. Indeed, interest in the fast-growing and profitable Turkish banking system remains high among major international banking groups, and as recently as in 2010 the Spanish bank BBVA acquired a controlling stake, jointly with a domestic investor, in Turkey's third-largest bank.

The structure of banks' assets and liabilities changed during the review period, as did the risk profile of bank balance sheets. While the share of loans in total assets has increased significantly, banks have reduced their sizeable share of holdings of government securities (to 23% of total bank assets by end-2011), partly to finance the rapid expansion of lending activity. At the same time, though the funding of the Turkish banking system remains mainly

Table A18 Turkey: Structure of the banking sector [1)]

	Unit	2004	2005	2006	2007	2008	2009	2010	2011
Number of banks	Number	35	38	37	37	37	36	36	35
… of which foreign-owned [2)]	Number	13	15	17	20	21	20	20	19
Number of banks per 100,000 inhabitants [3)]	Number	0.05	0.06	0.05	0.05	0.05	0.05	0.05	0.05
Assets of private banks [4)]	Percentage of total assets	63.1	67.9	70.0	70.7	70.6	68.8	69.3	70.9
Assets of foreign banks	Percentage of total assets	3.5	6.3	13.4	16.4	17.3	16.1	16.9	16.8
Assets of the four largest banks	Percentage of total assets	53.1	55.2	52.8	52.8	53.1	54.4	53.4	51.2

Sources: CBRT, BRSA.
1) All banking sector statistics shown in this report only refer to deposit-taking institutions, which exclude development and investment banks.
2) Banks with foreign controlling shareholders (i.e. with a 51% share or more); participation banks are included since 2005.
3) Population estimate for 2011 is used to calculate the figure.
4) Includes foreign banks.

Table A19 Turkey: Loan and deposit growth

	Description	2006	2007	2008	2009	2010	2011
Credit to the private sector [1)]	Nominal, percentage growth p.a.	36.9	35.4	21.0	7.5	32.4	23.1
…to households	Nominal, percentage growth p.a.	47.7	35.2	21.9	11.4	32.7	29.1
…to companies	Nominal, percentage growth p.a.	32.3	35.4	20.5	5.6	32.3	20.0
Deposits	Nominal, percentage growth p.a.	21.3	21.4	16.4	14.1	21.1	5.9
…of which demand deposits	Nominal, percentage growth p.a.	15.8	10.3	-2.5	39.0	29.4	13.9
…of which time deposits	Nominal, percentage growth p.a.	22.6	23.8	20.1	10.5	19.7	4.4

Sources: CBRT, BRSA.
Notes: 1) Includes public sector loans, which account for 3% of total loans. Data are adjusted for exchange rate effects (the adjustment assumes a foreign exchange buying rate of 70% USD and 30% EUR for loans, and 60% USD and 40% EUR for deposits). FX-indexed loans are included in FX loans.

deposit-based, the share of deposits in total liabilities (excluding own funds) decreased from 72.1% at end-2010 to around 66.4% at end-2011. As a result of these changes on the assets and liabilities sides of bank balance sheets, the loan-to-deposit ratio increased from 73.6% at end-2009 to 94.8% at end-2011. At the same time, banks relied increasingly on external funding, which increased considerably during the review period, reaching 19.2% of total banking liabilities as at end-2011. This is making them vulnerable to funding strains in international markets. However, even though the maturity of foreign liabilities decreased somewhat during the review period, foreign liabilities continue to contribute to an extension of the maturity profile of total liabilities with an average maturity of over three years. During the review period, funding through repo transactions with the CBRT also increased considerably. The issuance of long-term bonds, recently approved by the Banking Regulation and Supervision Agency (BRSA) to favour a lengthening in the maturity of banking liabilities, led to an increase in corporate bonds issued, although such issuance was still at low levels at end-2011.

Credit growth rebounded strongly from the crisis and eased only recently. Loans to the private sector, adjusted for changes in exchange rates, grew at an annual rate of over 30% throughout 2010 and most of 2011, spurred by sound private sector balance sheets, historically low borrowing costs, intense competition for market share and ample external financing. Lending was especially rapid to households and to small and medium-sized firms due to strong demand and high profit margins for these loans. In order to dampen rapid loan growth, the CBRT implemented successive increases of reserve requirements. In addition, the BRSA adopted a wide range of measures, including loan-to-value limits on real estate loans and, in the summer of 2011, increased risk weights for new general-purpose consumer loans, higher general provisioning requirements for banks with high levels of consumer loans or non-performing general-purpose consumer loans, and limits on the length of time to repay credit card balances. Reflecting the effects of monetary tightening and macro-prudential measures introduced by the BRSA, as well as strains in global funding markets, loan growth eased substantially more recently, slowing to about 23.1% in December 2011 (see Table A19).

A.5.3 FINANCIAL STABILITY CHALLENGES FOR TURKEY

CAPITALISATION AND CREDIT RISK

High capitalisation and profit levels of Turkish banks are decreasing and might come under pressure looking forward. Mainly due to the recent high levels of credit growth and an increase of loans (with positive risks weights) relative to government bonds (with a zero risk weight) on the assets side, the capital adequacy ratio decreased during the review period from its peaks reached at end-2009. At the end of December 2011, the average capital adequacy ratio, which is still calculated according to Basel I rules, stood at 15.3%, down from 19.1% as at end-2009, but still comfortably above the

target ratio of 12% (see also Table A5.4).[110] A very large part of the regulatory capital continues to be comprised of high-quality Tier 1 capital so that it can act as a solid buffer against adverse shocks. In the past, large capital buffers had also been supported by high profit generation. However, it will be challenging to maintain past profitability levels in the future, as is already shown by decreasing ROE and ROA levels, even though these levels remain above the EU average. Indeed, the environment is getting more challenging for Turkish banks, mainly due to a decreasing net interest margin (NIM) as a result of: (i) higher reserve requirements on deposits; (ii) the low interest rate environment as previous interest rate cuts were transmitted mostly to deposit rates; and (iii) increased competition.[111]

Non-performing loans, currently at very low levels, are expected to rise due to the economic slowdown. NPL ratios reached historical lows in 2011 supported by a cleaning-up of bank balance sheets in the past and, more recently, credit growth with nominal NPLs remaining relatively stable due to the buoyant economic environment. Nevertheless, at the end of 2011, overall NPL ratios exhibited their first increase since the third quarter of 2009. As confirmed by the macro-stress-test exercise presented in Chapter 2, asset quality would deteriorate further in the case of a "hard landing" scenario for the Turkish economy. In particular, NPL ratios could rise in the segment of foreign currency-denominated corporate loans because the Turkish lira would depreciate considerably in such a scenario (see also the section on market risks below).

Corporate and household indebtedness remain moderate. Corporate debt levels increased somewhat during the review period and reached 44.9% of GDP at the end of September 2011. Household debt also increased markedly during the review period, both relative to GDP and to disposable income (see Table A20), but remained low in terms of levels by regional and international standards. On balance, households remained, in aggregate terms, net savers during the review period (IMF, 2012b).

Recent house price increases have not been excessive but possibly contributed, among other factors, to the boom in housing loans. Residential real estate prices have registered moderate positive growth since the beginning of 2010, after a considerable correction in 2009. In absolute terms, residential house prices have not yet reached again their level of 2007, suggesting that recent increases have not been excessive. Nevertheless, according to the CBRT, the recent rise in residential real estate prices was associated with a strong increase in the volume of housing loans and might have led to an increase in credit risk among households (CBRT, 2011).[112]

MARKET AND FUNDING LIQUIDITY RISKS

While the direct exposure of banks to market risks is small, banks are exposed to indirect exchange rate risk stemming from unhedged corporate borrowing in foreign currencies. As at end-2011, banks' net open FX positions as well as equity positions relative to total bank assets stood at very low levels (1.0% and 0.4% of capital respectively). However, during the review period, the share of foreign currency-denominated loans in total loans, while relatively moderate by regional standards, increased mainly due to valuation effects stemming from the depreciation of the lira against the major reserve currencies. Turkish households retain long foreign exchange positions due to a complete ban on foreign currency lending to retail customers, including foreign exchange-

110 According to the IMF (2012b), the planned introduction of Basel II principles is expected to lead to a further decline in capital adequacy ratios.

111 At the end of September 2011, the NIM had reached its lowest level since November 2003, remaining around that level since then. The growth in the volume of credit and lower provisions have not been sufficient to offset the negative impact of a decreasing margin on profitability indicators, as Turkish banks are highly dependent on interest income (as shown by the marginal share of trading income in total income). Looking forward, strains on margins could be mitigated by loan repricing. However, the expected reduction in lending volumes would negatively impact the net interest income of banks. The cost of risk and thus the pricing of loans might also rise depending on the further evolution of the economy.

112 A more detailed assessment of risks entailed in housing loans would require figures for loan-to-value (LTV) ratios, which are currently not available.

indexed loans since June 2009.[113] For Turkish non-financial corporates, on the other hand, foreign currency-denominated loans are significant and accounted for around 49.6% of corporate loans and around 32.8% of total loans as at December 2011.[114] Since the respective corporate borrowers often do not have revenues in the respective currency, they are exposed to changes in exchange rates.[115] Since a significant part of foreign currency lending is provided cross-border, Turkish non-financial corporations have in total an even larger net open foreign currency position.[116] This short foreign exchange position of the corporate sector increased by 16.4% in 2010 and another 35.7% during the first three quarters of 2011 to USD 122 billion as at end-2011.[117] Therefore, the risk of a renewed depreciation of the Turkish lira against the dollar and the euro should be closely monitored as higher corporate delinquencies would negatively affect bank balance sheets in this case.

Interest rate risk has been contained by recent macro-prudential measures. As banks continued to be exposed to direct interest rate risk, the BRSA imposed in August 2011 capital surcharges on large maturity mismatches, discouraging duration gaps. At the same time, indirect interest rate risk has remained relatively low as, in the case of housing loans, only a small fraction consists of variable interest rate loans.

Turkish banks' risk profile is highly correlated with the one of the government. During the review period, Turkish banks remained vulnerable to a deterioration in Turkish sovereign risk. This is due to the banks' significant holdings of Turkish government bonds. Besides a direct impact on the value of their government bonds (via mark-to-market losses in the trading book), an increase in sovereign risk would also impact the market assessment of the banks' creditworthiness and the value of their collateral. In an environment of increased reliance on non-deposit funding, an increase in sovereign risk could thus lead to a negative feedback loop between the perceived creditworthiness of the government and the banking sector.

Turkish banks are mainly funded by retail deposits, but the share of wholesale funding is increasing. The share of wholesale funding in total bank funding has almost constantly risen since the end of 2010. While retail deposits still account for the bulk of Turkish banks' funding, the higher share of wholesale funding makes Turkish banks more vulnerable to strains in international wholesale markets or among foreign parent banks, as shown by the increasing share of external liabilities in total liabilities which are increasingly short-term (IMF, 2012b).[118] Partly in response to recent concerns over parent banks, the BRSA increased the required capital for banks with strategic foreign shareholders in January 2012.[119]

A.5.4 CONCLUDING ASSESSMENT

The Turkish economy has experienced a vigorous recovery from the global crisis, underpinned by buoyant private investment and consumption. The rapid economic expansion

113 As pointed out in ECB (2010), it was also previously not allowed to lend directly in foreign currency to unhedged borrowers, so that companies borrowed from offshore branches or foreign banks or used foreign exchange-indexed loans. As regards individuals, only foreign exchange-indexed loans were allowed. The regulation was amended in June 2009 (amendment to Decision No 32 in June 2009) and allowed since then lending in foreign currency by local branches of Turkish banks to corporates of up to TRY 5 million. Hence, foreign currency loans to non-bank corporations tend to be granted by local branches instead of foreign branches of Turkish banks since then. The same amendment banned foreign currency lending (including foreign exchange-indexed loans) to individuals.

114 The figure for the ratio of foreign currency-denominated loans to total loans includes loans indexed to foreign currencies and excludes non-performing loans.

115 Both company accounts data from the central bank and balance sheets of corporations traded at the Istanbul Stock Exchange suggest that there might be a positive relationship between the ratio of FX-denominated/-indexed loans to total loans and the ratio of exports to total sales for non-financial corporations, but especially manufacturing firms. Nevertheless, pockets of unhedged borrowing in foreign currency are likely to exist.

116 Anecdotal evidence suggests that big corporations using this type of borrowing used high-quality cash collateral for these loans, mitigating the indirect exchange rate risk for the banks.

117 Likewise, the ratio of foreign exchange assets to foreign exchange liabilities of the corporate sector stood at 41.4% as at end-2011.

118 Overall, external loans still have a longer maturity than domestic liabilities.

119 According to the IMF (2012b), the new minimum capital requirement for banks with foreign strategic shareholders depends on various factors, such as the CDS spread between the parent bank and its sovereign, EBA stress-test results, and the public debt ratio in the country of origin.

was spurred by strong credit growth reflecting low interest rates and a surge in short-term capital inflows. Against this background, external imbalances have widened sharply to record levels, while inflation has spiked recently. Though a gradual moderation in economic activity and a rebalancing between internal and external demand are already underway, also thanks to policy actions implemented since the end of 2010, still challenging conditions in international funding markets have the potential to spill over to Turkey given its large external financing requirements and dependence on short-term capital inflows.

Table A20 Turkey: Financial stability indicators

(percentages)

	Q4 2009	Q1 2010	Q2 2010	Q3 2010	Q4 2010	Q1 2011	Q2 2011	Q3 2011	Q4 2011
Regulatory capital to risk-weighted assets	19.1	18.4	17.7	17.9	17.6	16.6	15.9	15.3	15.3
Regulatory Tier-1 capital to risk-weighted assets	17.0	16.5	16.0	16.1	15.6	15.0	14.3	13.7	13.8
Nonperforming loans									
…net of provisions to capital	3.6	3.5	3.1	3.0	2.6	2.4	2.3	2.6	3.0
... to total gross loans	5.4	5.0	4.5	4.3	3.7	3.3	3.0	2.7	2.7
… of which in FX	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
……of which in Euro	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
……of which in USD	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
……of which in CHF	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Return on assets[1),2)]	2.6	2.7	2.6	2.5	2.4	2.2	2.0	1.8	1.7
Return on equity[1),3)]	21.9	21.8	20.7	19.8	19.5	18.0	16.5	15.6	15.3
Liquid assets to total assets	31.7	31.9	30.1	29.1	28.7	26.6	22.6	21.3	19.8
Liquid assets to short-term liabilities	46.9	46.7	43.9	44.4	42.7	41.3	36.6	34.3	31.7
Loan-to-deposits	73.6	75.5	78.1	80.4	82.6	86.9	91.3	93.7	94.9
Net open position in foreign exchange to capital	0.6	-0.2	1.0	2.6	0.0	1.3	1.4	-0.6	1.0
Capital to assets	12.2	12.4	12.0	12.6	12.3	11.9	11.2	10.8	11.0
Large exposures to capital	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total gross loans (TL billions)	400.4	424.4	461.5	481.6	529.5	565.7	620.2	658.8	678.5
Gross asset position in financial derivatives to capital	120.7	137.1	164.3	160.5	155.7	179.6	195.7	215.2	200.2
Gross liability position in financial derivatives to capital	118.7	136.1	165.1	161.3	155.7	180.9	196.5	215.2	199.0
Trading income to total income[4)]	3.1	2.0	1.2	1.3	0.5	4.4	1.1	-0.7	-0.4
Foreign-currency-denominated loans to total loans[5)]	31.3	31.5	31.1	29.9	31.3	31.9	31.8	33.5	33.1
Foreign-currency-denominated liabilities to total liabilities	31.6	31.0	30.8	30.7	30.4	31.2	31.7	34.5	35.9
Ratio of external liabilities to total liabilities of banks[8)]	14.7	15.1	15.1	14.4	15.1	16.6	17.3	18.6	19.2
Net open position in equities to capital	0.3	0.3	0.4	0.4	0.3	0.3	0.3	0.3	0.4
Household debt to gross domestic product[6)]	15.4	15.6	16.2	16.7	17.3	17.7	18.7	18.9	n.a.
Household debt to disposable income[6),7)]	36.0	n.a.	n.a.	n.a.	41.2	n.a.	n.a.	44.7	50.3
Loan-to-value ratios for housing loans	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Residential real estate prices (Percentage change/last 12 months)	2.4	6.7	3.4	1.8	2.4	3.2	4.3	5.8	7.3

Sources: BRSA, CBRT, TURKSTAT, SPO, Reidin.com, Association of Real Estate Investment Companies.
1) Data are annualised.
2) Average assets are used to calculate the ratio.
3) Average equity is used to calculate the ratio.
4) Total income = net interest income + net fees and commissions + net trading income + other non-interest income.
5) Excludes NPLs. Includes FX-indexed loans.
6) Household debt consists of gross consumer credits and credit card balances extended by banks and consumer finance companies (since December 2003) and liabilities to the Housing Development Administration of Turkey (TOKI).
7) Household disposable income for 2010 and 2011 has been calculated using private sector disposable income estimates for 2010 and 2011.
8) External liabilities consist of foreign liabilities. Total liabilities do not include own funds.

Against this background, the current relatively benign state of the Turkish banking sector could deteriorate looking forward. In particular, NPL ratios are expected to rise from currently very low levels due to the economic slowdown. In a hard landing scenario, possibly accompanied by capital flow reversals and downward pressure on the Turkish lira, corporate credit quality might deteriorate even further. While currently still high capital buffers will be available to absorb the respective losses, funding liquidity risks should be monitored closely in such a scenario as Turkish banks have increasingly relied on wholesale funding, including short-term external borrowing.

In terms of the policies, recent macro-prudential measures taken by the CBRT and the BRSA have started to dampen credit growth somewhat. At the same time, it appears that the monetary policy stance has been too accommodative to prevent a build-up of internal and external imbalances, even though the task of the CBRT is complicated by capital inflows, which tend to positively respond to a rise in interest rates. Looking ahead, additional measures to extend banks' funding duration and to discourage short-term external borrowing might be needed to make the Turkish banking sector more resilient.

ANNEX B: EU SCENARIO FOR THE MACRO STRESS TEST

B1.1 MAIN ASSUMPTIONS FOR THE EU AND EU CANDIDATE COUNTRIES

BASELINE SCENARIO

The baseline scenario covers the period from 2012 to 2013 and is in line with the IMF World Economic Outlook of September 2011, envisaging annual real GDP growth in the EU of 1.4% in 2012 and 1.9% in 2013. For EU candidate countries, baseline growth is projected to equal 2.2% and 3.4% respectively for 2012 and 2013. Table B1 summarises the baseline real GDP growth paths across EU candidate countries. Under the baseline, interest rates of EU candidate countries should be held constant at end-2011 levels.

The ongoing financial turbulence will be a drag on activity through lower confidence and financing, even as the negative effects of temporary factors such as high commodity prices and supply disruptions from the Japanese earthquake diminish. However, the baseline projections assume that European policy-makers will contain the crisis in the euro area periphery. In the central and eastern European (CEE) economies, growth will slow to about 2.7% in 2012 (from 4.2% in 2011), as both domestic and external demand moderate. Yet, economic performance will vary widely across Europe. Among the EU candidate countries, Turkey is operating close to average pre-crisis rates, with little or no excess capacity, and is experiencing a boom, driven to a large extent by overly accommodative policies. Iceland is recuperating from a recent crisis while addressing a number of challenges, including a weak banking system. For Croatia, FYR Macedonia and Montenegro, baseline growth prospects continue to be rather moderate.

Table B1 Baseline GDP growth

(percentages)

	2012	2013
Croatia	1.8	2.5
Iceland	2.5	3.1
Macedonia	3.7	4.2
Montenegro	3.5	3.7
Turkey	2.2	3.4
Candidate countries	2.2	3.4
EU	1.4	1.9

Source: September 2011 IMF World Economic Outlook.
Notes: The candidate countries' composite growth is a weighted average of the respective countries' GDP growth, with weights being derived from the nominal GDP forecasts for 2012 and 2013, respectively. For the stress test presented in Chapter 2, World Bank forecasts as of January 2012 were used as baseline projections in the case of FYR Macedonia and Montenegro.

ADVERSE SCENARIO

The adverse scenario is based on similar assumptions to those employed by the ECB in its December 2011 Financial Stability Review.[120] The key drivers impacting EU GDP under the adverse scenario are: (i) an assumed aggravation of the ongoing EU sovereign debt crisis, fuelling increases in short- and long-term interest rates (*domestic demand effect*), thus adversely affecting a number of asset prices; and (ii) a confidence-driven negative sentiment shock to euro area foreign and domestic demand (*global demand shock*). The second component is assumed to affect euro area countries more than those in the rest of the EU and outside the EU, given that the sovereign debt crisis is assumed to be more acute for the euro area.

DOMESTIC DEMAND EFFECT

The *domestic demand effect* is triggered by an assumed rise in euro area sovereign bond yields to abnormally high levels. The shock emanates from a spreading of concerns about sovereign creditworthiness of the three euro area countries under EU/IMF financial assistance programmes (i.e. Greece, Ireland and Portugal). A non-parametric, copula-based simulation approach is employed to simulate the response of a large number of risk factors to an assumed adverse shock to long-term interest rates in Belgium, Spain and Italy, which are currently perceived as being most vulnerable to a domestic demand shock from the above-mentioned peripheral euro area countries.

120 See ECB (2011b).

The sizes of shocks to *long-term interest rates* in the three shock-originating markets are calibrated to a 5% probability, implying impulses to ten-year bond yields of 184 basis points (up to 6.2%) for Belgium, 207 basis points (up to 7.3%) for Spain and 382 basis points (up to 10.7%) for Italy (all from the perspective of levels as at 19 December 2011). Apart from the three euro area countries under EU/IMF programmes, the corresponding impact on government bond yields in all other EU countries is smaller, going up to a 108 basis points increase.

In response to the increased tensions in bond markets, *stock prices* fall by approximately 20% on average in the EU. Shocks to interest rates at all maturities and stock prices are assumed to apply in the first quarter of 2012 and to then imply a permanent level shift for bond yields and stock price indices over the stress-test horizon. In consequence, this leads to a negative expenditure shock affecting investment and consumption in EU countries.

The set of risk factors that is simulated under the scenario has been augmented by stock market prices, short- and long-term rates as well as exchange rates for the EU candidate countries in order to gauge how responsive they are to the shock-originating countries. The simulation technique employed to that end does not involve any parametric assumptions as to either the distribution of individual risk factors or their joint dependence, that is, it is a fully non-parametric modelling approach. In order to conform to a quarterly frequency of the macroeconomic model framework, the forward horizon for simulating conditional shock responses is set to 60 business days. Table B2 summarises the results, which suggest that the candidate countries, indeed, appear rather remote to stress originating in core European countries.[121] For exchange rates, a response was simulated for the Turkish lira (+3.4% local currency depreciation; not reported in Table B2). For the remaining countries, local currencies have been excluded because of prevailing exchange rate regimes (i.e. tightly managed floats in the case of Croatia and FYR Macedonia, capital controls in the case of Iceland and euroisation in the case of Montenegro).

Table B2 EU candidate countries' market risk factors in response to the adverse scenario

(deviations from baseline level)

	Stock markets	Short-term interest rate	Long-term interest rate
Croatia	-5.7%	+41bps	+9bps
Iceland	0.0%	+12bps	+21bps
Macedonia	-3.9%	+45bps	+27bps
Montenegro	-14.1%	+30bps	+32bps
Turkey	-10.1%	+75bps	+51bps

Source: ECB calculations.
Notes: Only for Turkey, a generic ten-year bond is available. For Croatia, Iceland, FYR Macedonia and Montenegro, the following bonds have been chosen (ISINs with maturity in brackets) for long-term rates: HRRHMF017BA6 (Nov. 2017), IS0000017077 (Feb. 2019), XS0238022445 (Dec. 2015) and ME0B170A1PG9 (Jan. 2017). As regards short-term interest rates, three-month LIBOR rates have been used for Croatia and Turkey, a generic two-year bond yield for Iceland, a sovereign bond for Macedonia (XS0438534579, Jan. 2013) and the EURIBOR as a reference for Montenegro.

GLOBAL DEMAND SHOCK

Global macroeconomic risks have recently increased with a number of negative data releases, in particular emanating from the United States. This has raised the risk that the global economy could be entering a soft patch, and in the worst case a double-dip recessionary phase, with adverse consequences for banking sector credit risk and profitability. Under this adverse scenario, the trigger is assumed to be a confidence-driven slowdown in demand in the United States as well as an accompanying appreciation of the US dollar, which in turn negatively affect global demand, including EU domestic demand. The shock commences in the US in the first quarter of 2012 – with a US-specific deterioration of confidence that triggers some expenditure restraint. The shock, then, transmits to the non-EU rest of the world.

OVERALL EFFECTS OF BOTH SHOCKS

Combining these two sources of shocks, i.e. a domestic demand effect and a global demand shock, would result in a -1.5 and -1.8 percentage

121 Note that for short-term interest rates, for some countries interbank money market rates, and for others short-term government bond rates, have been used in the simulation. Details can be found in the footnote to Table 2.

Table B3 Adverse scenario

(deviations from baseline level)

	GDP		Private Consumption		Investment		Unemployment	
	2012	2013	2012	2013	2012	2013	2012	2013
Euro Area	-1.5	-3.3	-1.9	-3.2	-3.6	-9.6	0.2	1.0
Non Euro Area	-1.6	-3.4	-1.0	-2.4	-1.1	-4.2	0.5	1.6
European Union	-1.5	-3.3	-1.7	-3.0	-3.0	-8.3	0.3	1.1

Source: ECB calculations.
Note: For GDP, consumption and investment, deviations are expressed in percentages and for unemployment in percentage points.

points deviation from baseline EU real GDP growth in 2012 and 2013, respectively. Both oil and non-oil commodities are assumed to be unaffected. Monetary policy is also assumed not to react to the shocks. Tables B3 and B4 summarise the adverse responses for selected macroeconomic variables at EU, euro area and non-euro area EU aggregate levels.

B1.2 SPILLOVERS TO EU CANDIDATE COUNTRIES AND ADDITIONAL SHOCK CHANNELS

Spillover effects of the adverse scenario on EU candidate countries can take place mainly via the trade channel. Since the ECB models employed for estimating the impact of the adverse scenario only cover EU countries, a satellite two-step regression approach has been used in order to measure the responsiveness of domestic activity and inflation in the candidate countries to global and EU domestic demand shocks: (i) for each candidate country, an elasticity of its domestic GDP/inflation vis-à-vis the sum of its respective local exports to the world is computed; (ii) the resulting elasticities are then used to translate a trade-weighted average of the shocks to imports of the world to domestic GDP/inflation in the candidate countries.[122] Table B5 shows the results.

Table B4 Adverse scenario

(deviations from baseline growth)

	GDP	
	2012	2013
Euro Area	-1.5	-1.8
Non Euro Area	-1.6	-1.7
European Union	-1.5	-1.8

Source: ECB calculations.
Note: Deviations are expressed in percentage points.

Since the trade-based (only) reaction of EU candidate countries to the EU scenario might not be considered severe enough for the purpose of stress testing the financial sector,[123] consideration should be given to adding some additional domestic country-specific shocks assumed to mostly affect domestic demand: (i) a *foreign exchange shock*, i.e. a depreciation of the domestic currency, operating via the wealth channel (i.e. with a limited impact on exports), combined with (ii) an *increase in interest rates* (short- and long-term)[124] reflecting e.g. a need to preserve the exchange rate and/or prevent inflationary pressures along with increased risk premia and/or expected interest rate hikes; (iii) a *stock market shock* that could be similar to the EU-wide one (i.e. a deviation from baseline levels by around 20%); (iv) a *house price shock* that could be of about 10% if in line with assumptions retained in EU-wide stress tests; and (v) an additional *confidence-driven domestic demand shock* that would lead to a further reduction in GDP growth.

122 Trade weights are specific to each candidate country. They are computed based on exports to EU countries, China and the US in 2010.

123 In particular for Montenegro, the induced macroeconomic stress levels are comparatively low. For the stress testing of the banking sector in this country to be reasonably strong and thus effective, additional country-specific shocks would need to be considered.

124 On top of the increase in long-term interest rates presented in Table B2.

Table B5 Estimated trade-based responses of EU candidate countries under the adverse scenario

	Global demand shock (percentage)		GDP		Price inflation	
	2012	2013	2012	2013	2012	2013
Croatia	-3.0	-7.0	-3.4	-4.6	-0.7	-0.9
Iceland	-2.9	-6.1	-2.3	-2.5	-1.7	-1.9
Macedonia	-3.4	-7.3	-2.9	-3.3	-0.7	-0.7
Montenegro	-3.6	-10.6	-1.0	-1.9	-0.2	-0.3
Turkey	-3.1	-6.3	-4.1	-4.5	-4.9	-5.1

Source: ECB calculations.
Note: Global demand shocks are expressed as the percentage deviation from baseline growth. They reflect shocks to global import growth weighted by export shares of EU candidate countries. Deviations of GDP and inflation are expressed in percentage points from baseline growth rates.

B1.3 GUIDANCE ON SCENARIO APPLICATION STRESS TESTING OF BANKS' BALANCE SHEETS

For simplicity and consistency reasons, bank balance sheets should be assumed to be static over the simulated horizon under both scenarios. Assets and liabilities that mature within the time horizon of the exercise are replaced with similar financial instruments in terms of type, credit quality at date of maturity and residual maturity as there were at the start of the exercise. Defaulted assets are, however, not replaced, effectively implying a balance sheet reduction due to impairments. Finally, it is assumed that institutions maintain the same business mix and model throughout the tested scenario horizon.

The projection of banks' credit risk – in terms of *changes to probabilities of default* (PDs) and *loss given default* (LGD) or loss rates based *non-performing loans* (NPLs) under the baseline and adverse scenarios – is ideally estimated at the level of exposure types, differentiated by countries. The projected changes at the country level should then be applied to bank-specific levels of loss rates. *Expected losses* should be calculated as the product of each bank's outstanding exposures at default (EADs) to each sector at end-2011 and the PDs and LGDs or a loss rate, implied by NPLs, over the horizon. Table B6 provides guidance on LGDs across different credit portfolios.

Table B6 Loss-given-default assumptions across credit portfolios under the baseline and adverse scenarios

	LGD
Financial institutions	45
Corporates	45
Real estate	25
Consumer credit	45

Source: ECB assumptions.
Note: Expressed in percentages.

Similar to the approach taken in the EBA 2011 stress-test exercise,[125] for domestic exposures to *sovereigns and financial institutions classified as available for sale (AFS)*, provisioning under the adverse scenario could be made by using: (i) *rating-implied PDs* assuming a four-notch downgrade for sovereign holdings and financial institutions; or (ii) for the case of sovereign exposures, *haircuts based on net present value calculations* using the long-term interest rate assumptions provided for EU candidate countries over the scenario horizon (see Table B7 for an overview of the haircuts for sovereign exposures under the adverse scenario).

The only exception to this rule is for Greek sovereign holdings, for which a 50% loss rate should be used, in accordance with the postulated accounting treatment of the private sector involvement (PSI) part of the Greek programme agreed by euro area Heads of State or Government on 26 October 2011.

125 See European Banking Authority (2011b).

Table B7 Haircuts for holdings of sovereign exposures under the adverse scenario

	Sovereign haircut
Croatia	0.41
Iceland	1.17
Macedonia	1.31
Montenegro	1.08
Turkey	2.70

Source: ECB calculations.
Note: Expressed in percentages.

The postulated rise in sovereign bond yields, or declines in the prices of these bonds, has a number of effects on banks' balance sheets. First, it implies mark-to-market valuation losses on *banks' sovereign exposures in the trading book*. Second, the increase in sovereign credit spreads would be expected to *raise the cost of banks' funding*, impacting on banks' profits via net interest income, which is assumed to be driven by rising liquidity premia owing to counterparty credit risk concerns. In addition, increases in national sovereign CDS spreads, accompanied by the postulated rise in sovereign bond yields, should be passed through to the rates of maturing long-term loans and to the costs of wholesale funding, if applicable.

The *computation of banks' net interest income* under the adverse scenario could be based on a loan-deposit margin multiplier approach to assess the impact of interest rate changes. The respective changes in short-term loan and deposit rates are then multiplied by the outstanding amounts of loans and deposits for each bank at end-2011. Alternatively, an average of net interest income over the last three years could be applied under the baseline scenario and the same figure reduced by 20% under the adverse scenario. Besides, similar assumptions about income related to fees and commissions should be applied. Finally, given the interest rate increase under the adverse scenario, liquidity constraints might arise and even further dampen profits. Tax and dividend assumptions should be bank-specific. For taxes, in case of positive profits the average ratio of positive tax payments over pre-tax profits from 2009 to 2011 should be used. For dividends, the median dividend-to-net income ratio over the horizon from 2009 to 2011 should be applied under the baseline scenario, whereas no dividends should be paid under the adverse scenario.

For internal rating-based (IRB) exposures, if existing, *risk-weighted assets* (RWA) should be calculated at the bank level for credit risk using the Basel formulae assuming fixed LGDs, as well as a static balance sheet.

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