

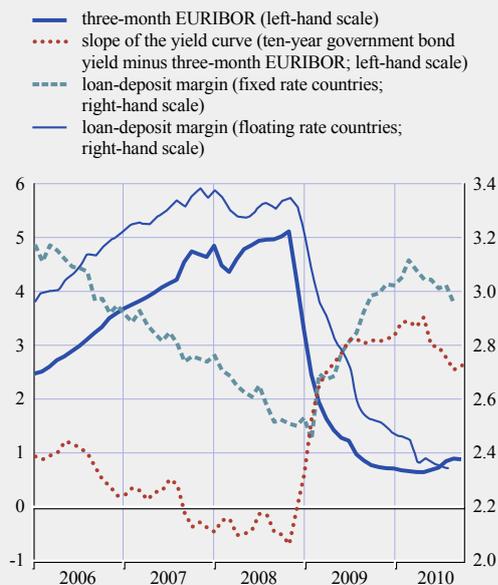
Box 7

SENSITIVITY OF EURO AREA BANKS' INTEREST INCOME TO CHANGES IN SHORT-TERM MARKET RATES

Net interest income generated by retail customer activities, such as, in particular, the collection of deposits and the granting of loans, is one of the main sources of income for euro area banks. At the current juncture, with short-term interest rates hovering at historical lows and many banks experiencing protracted difficulties in accessing both retail and wholesale funding, banks' deposit margins have been squeezed significantly. Similarly, in euro area countries where the majority of loans carry a rate of interest that is either floating or has a short period of fixation, lending margins have also come under pressure in light of the sharp decline of short-term market rates over the

Loan-deposit margins, the three-month EURIBOR and the slope of the yield curve

(Jan. 2006 – Sep. 2010; percentages)



Sources: ECB and ECB calculations.
Notes: "Floating rate countries" include Ireland, Greece, Spain, Italy, Austria, Portugal and Finland. In this group of countries, the majority of new business loans are provided with floating rates and an initial rate fixation period of up to one year. "Fixed rate countries" include Belgium, Germany, France and the Netherlands. In this group of countries, a major proportion of new business loans (in particular, to households for house purchase) is granted with an initial rate fixation period of more than five years.

(see the chart above). Against this background, this box examines the possible implications of an increase in short-term market rates, as currently expected by market participants, on euro area banks' retail customer-related net interest income.

Market expectations, captured by the rates implied by three-month EURIBOR futures on 19 November 2010, suggest that the three-month EURIBOR was expected to increase by around 117 basis points between end-August 2010¹ and end-December 2012.² The impact of the expected change in short-term market rates on banks' net interest income can be estimated using a two-step approach.³ First, country-specific error-correction regressions of the change in the average interest rate paid on outstanding loans and deposits respectively on the changes in the three-month EURIBOR are conducted.⁴ Second, using the multipliers on changes in the short-term market rate from these regressions and applying the outstanding amounts of loans and deposits as of August 2010, the impact of the expected change in the short-term market rate up to end-2012 on euro area banks' retail customer-related net interest income is calculated (see the table above).

1 The latest date for which MFI interest rate statistics are available.
2 The impact of potential changes in long-term market rates is not considered in this box.
3 For details of the estimation approach, see Box 13, entitled "Elasticity of banks' interest income vis-à-vis recent changes in short-term market rates", in ECB, *Financial Stability Review*, June 2009.
4 The MFI lending and deposit rates on outstanding amounts, as reported in the ECB's MFI interest rate statistics, have been applied.

Estimated changes in euro area MFIs' interest income on outstanding loans and deposits

(31 Aug. 2010 – 31 Dec. 2012; EUR billions)

	Net interest income (Aug. 2010)	Change between Aug. 2010 and Dec. 2012		
		Loans	Deposits	Net effect
Sum	293.9	25.6	17.9	7.7
Mean	26.7	2.3	1.6	0.7
Median	10.1	1.9	0.9	0.6
Maximum	84.1	6.2	5.0	2.9
Minimum	3.0	0.3	0.4	-1.4
Standard deviation	26.6	2.0	1.6	1.3
Floating rate countries ¹⁾				
- sum	122.3	16.6	10.3	6.3
- mean	17.5	2.4	1.5	0.9
Fixed rate countries ²⁾				
- sum	171.6	9.0	7.6	1.4
- mean	42.9	2.2	1.9	0.4

Sources: ECB, Bloomberg and ECB calculations.
Notes: The effect is estimated using the updated country-specific multipliers reported in Table A of Box 13 in the June 2009 issue of the FSR. In a second step, the multiplier is combined with the aggregate amounts outstanding of loans and deposits in the country to derive the overall effect on the interest income received on loans and the interest payments on deposits of the change up to end-December 2010 in the three-month EURIBOR derived from the rates implied by three-month EURIBOR futures.
1), 2) See notes to the adjacent chart.

past two years. By contrast, banks in euro area countries where a significant part of loans are granted at rates that are fixed for a long term have tended to benefit from the relatively steep yield curve observed in 2009 and 2010

For the euro area as a whole, the banking sector's net interest income from retail activities is likely to benefit from the increase in short-term market rates expected for 2011-12. Assuming for the sake of simplicity that outstanding amounts of loans and deposits remain constant over the period, the expected increase in short-term market rates would boost the net interest income of the sample of euro area banks by slightly more than 2% (i.e. an increase of €7.7 billion in comparison with the level of €293.9 billion recorded in August 2010). Notably, the impact differs across countries and is found to depend crucially on whether bank loans in the country are tied predominantly to short-term floating interest rates or to long-term fixed interest rates. In the group of "floating rate" countries, net interest income would increase by more than 5% from its August 2010 level as a result of the rise in short-term market rates, whereas in the "fixed rate" countries the increase in net interest income would be less than 1%. Notably, in two of the fixed rate countries, the elasticity of banks' net interest income to an increase in short-term interest rates is found to be negative and hence net interest income is projected to decline somewhat.⁵

All in all, the currently prevailing market-based expectations for short-term market rates over the next two years suggest that euro area banks' net interest income might improve somewhat going forward and therefore should help the banking sector improve its retained earnings and capital position. In particular, the positive effects on net interest income from (expected) higher short-term market rates are likely to be larger in those countries where bank margins have suffered most from the current low level of short-term interest rates.⁶ At the same time, an increase in short-term interest rates and a concomitant flattening of the yield curve might be expected to put downward pressure on the net interest income of banks in those countries where lending rates are predominantly fixed to the long end of the yield curve. Moreover, some banks, especially the larger ones, are likely to be largely hedged against such risks.

⁵ See also Deutsche Bundesbank, *Financial Stability Review*, Overview, November 2010. At the same time, net interest income is expected to even increase slightly in the other fixed rate countries (owing mainly to very sluggish deposit rates in those countries). However, it should be noted that this calculation does not take into account the impact of changes at the longer end of the yield curve on net interest income during this period, which arguably would affect the fixed rate countries more markedly than the floating rate countries.

⁶ It needs to be kept in mind that the overall effect on banks' net interest income depends not only on income generated through retail customer relationships, as considered in this box, but also on interest income generated by banks' securities holdings, as well as on interest payments on wholesale funding.