# Credit and Deposit Interest Rate Margins in Four New EU Member States

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*Austrian banks' subsidiaries in Central and Eastern Europe deliver a higher contribution to their banking groups' overall pre-tax profit than their relative share in assets would suggest. One widespread explanation for this is that the margins between credit and deposit rates are higher in the Central and Eastern European countries than in Austria or the euro area. This paper presents an overview of the margins in four Central European new EU Member States and analyzes the major differences in the structure of deposit, lending and overall margins compared with the euro area and Austria.*

## Introduction[1]

Austrian banks' subsidiaries located in Central and Eastern Europe deliver a higher contribution to their banking groups' overall pre-tax profit than their relative share in assets would suggest. One widespread explanation for this is that margins between credit and deposit rates are higher in the Central and Eastern European countries (CEECs) than in Austria or the euro area. At the same time, it is often claimed that these margins have already declined significantly.

This paper aims to present an overview of the margins in four Central European new EU Member States (the Czech Republic, Hungary, Poland and Slovakia, the so-called NMS-4), based primarily on a first systematic evaluation of the recently launched MFI (monetary financial institutions) interest rates statistics (MIR) published by the ECB and the national central banks of the EU Member States. First, we take a close look at the current level of interest margins in these countries, comparing them to those in Austria and in the euro area. Then, we analyze recent margin developments in the NMS-4 and sum-marize the longer-term margin development in the euro area. Next, two methods are applied to decompose the overall margin (spreads) in order to get a better insight into their driving components. First, adjusted loan and deposit rate spreads in the NMS-4 against the euro area are derived by subtracting in particular the premia for sovereign and foreign exchange risk. Second, the average overall margins are decomposed into the average lending and deposit margins by using specific reference rates for alternative investments/financing, chosen on the basis of appropriate maturity. This is done both on an aggregated and disaggregated (by sector and maturity) level. The resulting lending and deposit margins are compared with the euro area average. This method provides a better understanding of the relative importance and development of business on the asset and on the liabilities side. Finally, these analyses facilitate a better assessment of potential future developments in these four countries' banking sectors, which will be highly relevant from the Austrian perspective.

## NMS-4 Interest Rate Margins above Euro Area Average

In March 2004, average overall interest rate margins,[2] expressed as the difference between interest rates on loans to and deposits from nonfinancial corporations and households, ranged between 3.8 percentage points and 6.5 percentage points in the NMS-4 (the Czech Republic, Hungary, Poland and Slovakia).[3] By comparison, the euro area average was 2.4 percentage points (Austria: 2.2 percentage points), resulting in margin spreads of between 1.4 percentage points and 4.1 percentage points.

Table 1

### Lending and Deposit Rates and Overall Margins, March 2004

|  | CZ | HU | PL | SK | AT | EU-12 |
|---|---|---|---|---|---|---|
|  | Percentage points | | | | | |
| Average lending rate | 5.9 | 14.9 | 9.5 | 7.7 | 4.5 | 5.1 |
| Average deposit rate | 1.9 | 9.9 | 3.0 | 3.9 | 2.3 | 2.6 |
| Average overall margin | 4.0 | 5.0 | 6.5 | 3.8 | 2.2 | 2.4 |
| Household lending rate | 8.2 | 15.7 | 12.0 | 8.6 | 5.3 | 5.6 |
| Household deposit rate | 2.0 | 9.7 | 3.0 | 3.4 | 2.4 | 2.7 |
| Household overall margin | 6.2 | 6.0 | 9.0 | 5.2 | 2.9 | 2.9 |
| Nonfinancial corporate lending rate | 4.3 | 14.1 | 7.1 | 7.1 | 4.2 | 4.5 |
| Nonfinancial corporate deposit rate | 1.6 | 10.8 | 2.9 | 5.1 | 2.1 | 2.5 |
| Nonfinancial corporate overall margin | 2.7 | 3.4 | 4.2 | 2.0 | 2.1 | 2.0 |

Source: ECB, OeNB, national central banks.

## Recent Margin Developments in the NMS-4

Due to the short time series of both the MFI interest rate statistics (MIR) and the Polish interest rate statistics that resemble MIR, we cannot draw far-reaching conclusions about the development of margins and margin spreads during the past few years.

On the basis of the MIR, the average overall margin (i.e. the weighted average of data for households and

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[2]  In this analysis we use the following terminology:
   The term "margin" is used for the difference between interest rates in an individual country. The overall margin is defined as the difference between interest rates on loans and interest rates on deposits. The lending margin is defined as the difference between the interest rate on loans and a (specified) reference interest rate. The deposit margin is defined as the difference between the interest rate on deposits and a (specified) reference interest rate.
   The terms "deposit rate spread," "loan rate spread" and "margin spread" are used for the difference between the respective interest rates or margins in individual countries and the respective average interest rates or margins in the euro area. Unless specified differently elsewhere, the term "average" refers to the weighted average of interest rates in business with nonfinancial corporations and households, weighted by the volumes of the stock of loans outstanding and the stock of deposits taken, respectively.

[3]  Our calculations for all countries except Poland in this analysis are based on the recently launched MFI (monetary financial institutions) interest rates statistics (MIR) published by the ECB and the national central banks of the EU Member States. For Poland we relied on the interest rate statistics published by the Polish central bank, which strongly resembles the MIR. Nevertheless, due to lacking data on some outstanding volumes, we could not calculate some (disaggregated and aggregated) lending margins and lending margin spreads for Poland. MIR statistics represent harmonized data with respect to coverage and definition. Nevertheless, some differences still exist in the range of publicly available indicators. In order to make cross-country comparisons possible, we therefore restricted our sample to deposits with agreed maturity as data for overnight deposits, deposits redeemable at notice and repurchase agreements were not available for several countries. For the same reason, we also excluded overdrafts from the interest rate statistics on loans. Since we are interested in the impact of interest rate margins on banks' profitability, we focus on interest rates on outstanding volumes rather than on new business volumes.

nonfinancial corporations) in the *Czech Republic* increased from 3.1 percentage points at the start of the time series in January 2001 to 4.0 percentage points in March 2004. This was caused by a sharper decline in deposit rates than in loan rates, especially in business with households, for which the overall margin rose by 1.4 percentage points. The overall corporate margin rose by 0.6 percentage point. Since January 2003, the average overall margin has declined by 0.1 percentage point, as the average loan rate has fallen slightly more strongly (–0.4 percentage point) than the average deposit rate (–0.3 percentage point). The magnitude of the decline was broadly equal for nonfinancial corporations and households.

By contrast, in *Poland,* the average overall margin tumbled from 7.9 percentage points at the start of the time series in March 2002 and a peak of about 8.5 percentage points in November 2002 to 6.7 percentage points in April 2004. Since January 2003 the average overall margin has declined by 0.3 percentage point, as interest rates on loans fell more strongly (–1.5 percentage points) than rates on deposits (–1.2 percentage points). This was attributable to a decline in the household overall margin (–1 percentage point), while the overall margin in the corporate sector remained stable.

For *Hungary,* the MIR statistics have been available only since the start of 2003. From January 2003 to April 2004, the average overall margin decreased by 0.9 percentage point to 5.0 percentage points, as the increase in deposit rates since the second half of 2003 outpaced the increase in lending rates. Thereby, the household overall margin declined significantly more strongly (–3.2 percentage points) to 6.1 percentage points. This was primarily caused by the decline in interest rates on loans to this sector, which contrasted with the increase in other lending rates. The corporate overall margin narrowed by 1.3 percentage points.

Comparing the development during the 15-month period from January 2003 on in those three countries of the NMS-4 for which time series are available (i.e. the Czech Republic, Hungary and Poland), the following main features emerge.[4] First, the overall margin decreased, albeit only slightly in the Czech Republic and Poland. The strongest decrease took place in Hungary, despite an increase in the general interest rate level. Second, the decrease in the overall margin resulted from a stronger downward or weaker upward movement of loan rates rather than from the respective movement of deposit rates.

## What Does the Past Development in the EU-15 Tell Us?

Due to the lack of historical MIR statistics for the EU-15, it is difficult to draw firm conclusions about a potential systemic convergence of margins within the EU-15 or the euro area. A rough estimate can be made on the basis of the retail interest rate statistics, which was replaced by the MIR statistics. Nevertheless, the fact that the retail interest rate statistics had not been harmonized hinders cross-country comparisons. Moreover, due to differences in coverage and definitions between the MIR and the retail interest rate statistics, a direct comparison of the two is not possible, either.

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[4]  *For Slovakia, the MIR statistics cover the period since the beginning of 2004 only.*

Retail interest rate data suggests that interest rate margins decreased in several EU countries in the course of the 1990s, when margins in peripheral countries like Greece or Portugal gradually approached the EU average. A study prepared by the ECB in 2000 comes to the conclusion that lending margins[5] fell significantly in the EU-15 between 1997 and 2000, which represented the continuation of a longer trend observed throughout the 1990s. However, the widening of deposit margins often compensated for this effect. The article identifies the following factors which contributed to the decline in banks' overall margins from 1997 to 2000:

— the tightening of pricing conditions owing to increased competition and deregulation;
— the impact of falling interest rate levels (deposit rates cannot fall below zero);
— the flattening of the yield curve (bank loans tend to have longer maturities than deposits);
— the shift towards charging explicit fees for services connected with bank accounts (instead of incorporating them into interest rates);
— the securitization of loans (lower capital costs);
— the reduction of operating costs;
— fiscal or regulatory changes allowing banks to engage in more competitive pricing.

The above factors may have been or may in the future become relevant for the banking sector in the NMS-4. In addition, in these countries the gradual improvement in asset quality may have already contributed to lower lending margins and will most likely continue to do so in the future.

## Decomposition in Adjusted Loan and Deposit Rate Spreads

In the following, we decompose the average overall margins and margin spreads observed in the NMS-4 into several components. In a first step, we assess to what extent loan and deposit rates in the NMS-4 differ from those in the euro area and into which components these spreads can be decomposed.

We found that the *average loan rates* in the NMS-4 were between 5.9% (Czech Republic) and 14.9% (Hungary) in March 2004. Hence, they stood above the euro area average by between 0.8 percentage point (Czech Republic) and 9.9 percentage points (Hungary) in that month. The difference between the highest and the lowest value was thus 9 percentage points. These spreads against the euro area are supposed to compensate the investor for differences in (1) sovereign risk; (2) foreign exchange risk; (3) bank-related risk; (4) client-related risk and (5) other risks, for example liquidity risk.

On the basis of the difference between five-year local currency-denominated government bond yields in the NMS-4[6] and the benchmark euro area government bond yield, we approximated the *risk premium for the combined sovereign and the foreign exchange risk* ("country-specific risks"). Obviously, bond yield spreads

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[5]  The lending margin refers to the margin between the average lending rate and a reference rate, while the deposit margin is the margin between the average deposit rate and a reference rate.

[6]  The five-year maturity was chosen to roughly match the maturity of the average lending rates. Due to data unavailability in Slovakia, we used the three-year yield spread since August 2003 and the two-year yield spread for the period before.

are also affected by liquidity risk. Nevertheless, disentangling this component would go beyond the scope of this analysis, and in the following we leave this risk factor out of consideration.

Five-year yield spreads ranged between 0.4 percentage point (Czech Republic) and 6.0 percentage points (Hungary) in March 2004. Taking into account that the premium for pure sovereign risk (estimated by the spreads on sovereign eurobonds denominated in euro, Euro-EMBI Global) ranged between 15 and 45 basis points, the five-year yield spreads seem to mostly offset foreign exchange risk. Stripping this compensation for sovereign and foreign exchange risk off the average loan rate left us with *adjusted lending* rates between 5.3% and 5.9% in the Czech Republic, Poland and Slovakia. In Hungary this adjusted rate amounted to 8.9%.

We took the difference between the five-year swap rates and the five-year government bond yields[7] as a proxy for *additional commercial bank-specific risks* compared with the sovereign risk in individual countries. Nevertheless, this comparison must be treated with some caution. For example in Hungary, the swap rate has been modestly below the bond yield since early 2003. Partly, this probably mir-

rors a difference in credit risk between Hungarian banks and the Hungarian sovereign, as a lot of Hungarian banks are subsidiaries of AAA-rated foreign banks. Partly, it may also be attributable to maturity mismatch, to different liquidity and price transparency as well as to calculation differences (day count) between the swap rate (spread) and the government bond yield (spread). In general, the differences between swap rates and government bond yields were very low in the NMS-4, ranging between –0.1 percentage point and +0.2 percentage point. Comparing these compensations for additional bank risks in the NMS-4 with that in the euro area (+0.2 percentage point) leaves us with the compensation for relative bank risk in the NMS-4 (compared with the euro area). Given that in Hungary, Poland and Slovakia the compensation for bank risk (compared with the sovereign risk) is zero or even negative, the relative compensation (compared with the euro area) is negative. Hence, stripping this factor off the adjusted (i.e. for sovereign and foreign exchange risk) lending rates leads to different results. In the Czech Republic, this adjustment leads to a roughly unchanged lending rate, while in the other three countries, this correction raises the adjusted lending rates modestly.

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[7]    *Due to data unavailability in Slovakia, we used the three-year yields and swap rates since August 2003 and the two-year yields and swap rates for the period before.*

Table 2

| Loan Rates Adjusted for Country-Specific and Bank Risk | | | | | | |
|---|---|---|---|---|---|---|
| | CZ | HU | PL | SK | AT | EU-12 |
| *Percentage points* | | | | | | |
| Average loan rate | 5.9 | 14.9 | 9.5 | 7.7 | 4.5 | 5.1 |
| Average loan rate spread against EU-12 | 0.8 | 9.9 | 4.4 | 2.7 | −0.5 | .. |
| Average loan rate less sovereign and foreign exchange risk (five-year bond yield spread) | 5.5 | 8.9 | 5.9 | 5.3 | .. | .. |
| Average loan rate less sovereign and foreign exchange risk (five-year bond yield spread) against EU-12 | 0.5 | 3.8 | 0.8 | 0.3 | .. | .. |
| Average loan rate less sovereign, foreign exchange and additional bank risk | 5.5 | 9.1 | 6.1 | 5.6 | .. | .. |
| Average loan rate less sovereign, foreign exchange and additional bank risk against EU-12 | 0.5 | 4.1 | 1.0 | 0.5 | .. | .. |

*Source: ECB, OeNB, national central banks.*

Through these adjustments we arrived at lending rates in the NMS-4 which are adjusted for sovereign risk, foreign exchange risk and (with some reservation) relative bank risk in the NMS-4. The *adjusted lending rates* ranged from about 5.5% in the Czech Republic, to the modestly higher level of 6.1% in Poland and to the significantly higher level of 9.1% in Hungary in March 2004. By comparison, the average loan rate in the euro area was 5.1%.

The resulting *adjusted lending rate spreads* should compensate for client-related risks, other country-specific factors (for example differences in financial supervision rules, tax treatment, etc.) or differences in market structure (for example the level of competition). Obviously, in Hungary, Poland and Slovakia the adjusted lending rate spreads are far less "impressive" than the unadjusted spreads. Thus, the differences between average lending rates in the NMS-4 and the euro area are to a large extent due

to the compensation for sovereign and in particular for foreign exchange risk. In the Czech Republic, the difference between unadjusted and adjusted spreads is smaller, but it still amounted to slightly less than half of the unadjusted spread.

The adjusted lending rate spreads amounted to between 0.5 percentage point and 1.0 percentage point in the NMS-4 in March 2004, with the exception of Hungary. The Hungarian spread had been relatively stable since the beginning of 2003, hovering mostly between 3.5 and 4 percentage points.[8] At the same time, the quality of the banking portfolio in Hungary is relatively good compared with the other NMS-4, the market structure is less concentrated than in the Czech Republic and Slovakia (and roughly the same as in Poland) and there are no major legislative or supervisory factors which put Hungarian banks at a disadvantage compared with the other three countries. Therefore, the high adjusted lending rate spread

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[8] *One factor that might partly explain the relatively high adjusted lending rate spread in Hungary in March 2004 is based on the fact that a (possibly sizeable) part of the outstanding volume of loans, which is taken as the basis for calculating the (weighted) average loan rate, consists of short-term loans and of long-term loans with variable interest rates. This fact combined with the marked inversity of the yield curve in Hungary (as opposed to flat or upward sloping yield curves in the other countries in March 2004) may have contributed to a relatively higher adjusted lending rate (i.e. after adjustment by the five-year bond yield spread). However, this explanation does not help to explain the relatively higher adjusted lending rate in the first half of 2003.*

may be related to the high absolute level of interest rates (which lowers the margin in relative terms) or signal excessive return potential. It may also result from the fact that government bond yields may not fully reflect domestic inflation expectations as they are influenced by the widespread participation of foreign investors in the Hungarian bond market. For these investors exchange rate expectations play a more important role than inflation expectations. By contrast, domestic inflation expectations can be assumed to dominate in banks' lending business. As a result, to the extent that the inflation risk premium exceeds the exchange rate risk premium, lending rates can be higher than government bond yields, pushing up adjusted lending rates.

Cross-country comparisons, should also take into account that our analysis focuses on *average* lending rates. This means that differences in the structure of the loan portfolio of individual countries with respect to the maturity structure along with differences in the

term structure, and to the weight of business with households and nonfinancial corporations have an impact on average loan rates and hence on cross-country differences in loan rates.[9]

Turning to the deposit side, *average deposit rates* in the NMS-4 ranged between 1.9% and 9.9% in March 2004. Hence, the average deposit rate in the Czech Republic was 0.8 percentage point below the euro area average, while in the other three countries the spread amounted to 0.3 percentage point and 7.3 percentage points, respectively.

The *adjusted deposit rates,* i.e. the rates after similar adjustments for sovereign risk, foreign exchange risk and relative bank risk premium as outlined above for the lending rates, were between –0.5% in Poland and 4.1% in Hungary in March 2004.

The resulting *adjusted deposit rate spreads* were negative in the Czech Republic, Poland and Slovakia, as the adjusted deposit rates were lower than the euro area average and positive in Hungary at 1.5 percentage points.

Table 3

| Deposit Rates Adjusted for Country-Specific and Bank Risk | | | | | | |
|---|---|---|---|---|---|---|
| | CZ | HU | PL | SK | AT | EU-12 |
| | *Percentage points* | | | | | |
| Average deposit rate | 1.9 | 9.9 | 3.0 | 3.9 | 2.3 | 2.6 |
| Average deposit rate spread against EU-12 | −0.8 | 7.3 | 0.3 | 1.3 | −0.3 | .. |
| Average deposit rate less sovereign, foreign exchange and additional bank risk | 1.5 | 4.1 | −0.5 | 1.8 | .. | .. |
| Average deposit rate less sovereign, foreign exchange and additional bank risk against EU-12 | −1.1 | 1.5 | −3.1 | −0.9 | .. | .. |

*Source: ECB, OeNB, national central banks.*

[9]  *For example, the bias introduced by a maturity mismatch between five-year government bond yields across countries (as a measure for country-specific risks) can be aggravated if the yield curve is upward sloping in one country and downward sloping in the other. Similarly, the lengthening of the average maturity of the loan portfolio in one country compared with another country will have a different impact on the average loan rate and the average loan rate spread, depending on differences in the term structure. Nevertheless, we believe that even the analysis of the aggregated data gives a good impression of the true situation. The analysis of the disaggregated data (by individual loan categories and by sectors) would go beyond the scope of this stocktaking exercise. Moreover, the availability of data necessary for the calculation of disaggregated adjusted lending rates (in order to match the maturity of the loan portfolio with the maturity of the proxy for the country-specific and bank risks) would cause difficulties.*

The relatively low or – in Poland – even negative adjusted deposit rates may be an indication of less fierce competition for deposits in the NMS-4 than in the euro area. Another explanation for relatively low adjusted deposit rates could be households' preference for bank deposits, as opposed to "more sophisticated" forms of savings. Also, the structural liquidity surplus in the NMS-4 banking systems, supported by a greater weight of equity – and in some countries of net foreign liabilities – in banks' overall liabilities, may be a reason for NMS-4 banks' relatively relaxed attitude towards domestic deposits. Moreover, cross-country differences in the maturity structure of deposits together with differences in the term structures as well as differences in the weight of business with households and nonfinancial companies may cause differences in average adjusted deposit rates. Also, it should be noted that the adjustment of deposit rates for country-specific (i.e. sovereign and foreign exchange) risks introduces some bias as well. The reason for this is that the average maturity of deposits is shorter than the five years which are used for the approximation of the country-specific risk.

The *average overall margins* in the NMS-4 ranged between 3.8 percentage points (Slovakia) and 6.5 percentage points (Poland) in March 2004, resulting in a span of 2.7 percentage points between the maximum and the minimum.

These margins were above the euro area average of 2.4 percentage points, delivering average *overall margin spreads* between 1.4 percentage points (Slovakia) and 4.1 percentage points (Poland). The average overall margin spread can also be seen as the difference between the loan rate spread and the deposit rate spread. As average (adjusted) loan rate spreads were clearly higher than the mostly negative average (adjusted) deposit rate spreads across the NMS-4, we obtained positive average overall margin spreads of between 1.4 percentage points (Slovakia) and 4.1 percentage points (Poland). With the exception of Hungary, the adjusted deposit rate spreads contributed a larger part to the average overall margin spreads than the adjusted loan rate spreads, as the former were to a larger extent negative than the latter were positive.

Table 4

## Summary of Adjusted Average Loan and Deposit Rates and Spreads

|  | CZ | HU | PL | SK |
|---|---|---|---|---|
|  | *Percentage points* | | | |
| Average loan rate less sovereign, foreign exchange and additional bank risk | 5.5 | 9.1 | 6.1 | 5.6 |
| EU-12 average loan rate | 5.1 | 5.1 | 5.1 | 5.1 |
| Average deposit rate less sovereign, foreign exchange and additional bank risk | 1.5 | 4.1 | −0.5 | 1.8 |
| EU-12 average deposit rate | 2.6 | 2.6 | 2.6 | 2.6 |
| Average overall margin | 4.0 | 5.0 | 6.5 | 3.8 |
| EU-12 average overall margin | 2.4 | 2.4 | 2.4 | 2.4 |
| Average loan rate less sovereign, foreign exchange and additional bank risk against EU-12 | 0.5 | 4.1 | 1.0 | 0.5 |
| Average deposit rate less sovereign, foreign exchange and additional bank risk against EU-12 | −1.1 | 1.5 | −3.1 | −0.9 |
| Average overall margin against EU-12 | 1.6 | 2.6 | 4.1 | 1.4 |

*Source: ECB, OeNB, national central banks, Bloomberg.*

Table 5

**Overall Margins and Margin Spreads by Economic Sectors**

|  | CZ | HU | PL | SK | AT | EU-12 |
|---|---|---|---|---|---|---|
| _Percentage points_ | | | | | | |
| Average overall margin | 4.0 | 5.0 | 6.5 | 3.8 | 2.2 | 2.4 |
| Average overall margin spread | 1.6 | 2.6 | 4.1 | 1.4 | −0.2 | .. |
| Household overall margin spread | 3.3 | 3.1 | 6.2 | 2.4 | 0.0 | .. |
| Nonfinancial corporate overall margin spread | 0.7 | 1.4 | 2.2 | 0.0 | 0.1 | .. |

_Source: ECB, OeNB, national central banks._

Regarding the segmentation by sectors, the overall margin spreads were especially high in business with households, suggesting a potentially more competitive business environment with nonfinancial corporations.

## Decomposition into Lending and Deposit Margin Spreads

An alternative way of looking at the overall margin (spread) is to decompose the average overall margin into the average lending margin and the average deposit margin. Subsequently, these margins can be compared with the euro area average. The reference rates used for the calculation of lending and deposit margins represent the return on alternative investment/financing. Therefore, we have chosen the reference rates in a way that their maturity roughly matches the maturity of the average lending rate and the average deposit rate.

_Average lending margins,_ derived as the difference between the average loan rate and the country-specific reference rate, varied more widely, between 2.3 percentage points and 5.9 percentage points in March 2004. The average lending margin was highest in Hungary and lowest in the Czech Republic. By comparison, in the euro area, it was 1.8 percentage points. Due to their construction, the average lending margins "neutralize" country-specific risk factors (like sovereign and foreign exchange risk) and relative bank risk factors.

The _lending margin spreads_ take into account the spread between the reference rates both in the NMS-4 and the euro area. Thus, the fact that the lending margins in the NMS-4 were higher than in the EU-12 and lending margin spreads were hence positive in the NMS-4 may be explained by some of those factors which were identified for the decline of banks' margins in the EU-15 cited above (for example, different intensity of competition, higher interest rate level, less widespread securitization).

Table 6

**Average Lending Margins and Margin Spreads**

|  | CZ | HU | PL | SK | AT | EU-12 |
|---|---|---|---|---|---|---|
| _Percentage points_ | | | | | | |
| Average lending margin | 2.3 | 5.9 | 2.8 | 3.0 | 1.3 | 1.8 |
| Average lending margin spread | 0.5 | 4.1 | 1.0 | 1.1 | −0.5 | .. |

_Source: ECB, OeNB, national central banks._

In addition, differences in the country-specific mismatches between the maturity structure of the average loan portfolio and the reference rates as well as the already noted differences in the sectoral structure of the loan

portfolio and in the term structure, which might be reflected to various degrees in lending rates and in the reference rates, may provide some further explanation for the differences in the lending margin spreads among these four countries.

Therefore, we also looked into lending margins and lending margin spreads at a more *disaggregated* level. A comparison of the Czech, Hungarian and Slovak markets (due to lack

of data, disaggregation was not possible for Poland) showed that with a few exceptions lending margins in the NMS-3 were higher than in the euro area. Thus, the aggregated lending margin spread that was calculated on the basis of disaggregated data confirmed the above analysis based on the average lending margin spread, with Hungary showing the highest lending margin spreads.[10]

Table 7

## Disaggregated Lending Margins and Margin Spreads

| | CZ | HU | PL | SK | AT | EU-12 |
|---|---|---|---|---|---|---|
| | *Percentage points* | | | | | |
| Household loan for house purchase < 1y margin | 3.1 | 4.2 | .. | 1.6 | 3.1 | 2.8 |
| Household loan for house purchase < 1y margin spread | 0.3 | 1.3 | .. | −1.3 | 0.2 | 0.0 |
| Household loan for house purchase 1−5y margin | 4.2 | 5.3 | .. | 3.2 | 1.4 | 2.1 |
| Household loan for house purchase 1−5y margin spread | 2.2 | 3.2 | .. | 1.1 | −0.7 | 0.0 |
| Household loan for house purchase > 5y margin | 2.2 | 5.1 | .. | 2.1 | 1.0 | 1.4 |
| Household loan for house purchase > 5y margin spread | 0.8 | 3.8 | .. | 0.7 | −0.4 | 0.0 |
| Household loan for consumption and other purpose < 1y margin | 10.1 | 6.2 | .. | 5.8 | 6.1 | 6.1 |
| Household loan for consumption and other purpose < 1y margin spread | 4.0 | 0.1 | .. | -0.3 | 0.1 | 0.0 |
| Household loan for consumption and other purpose 1−5y margin | 10.8 | 14.1 | .. | 9.6 | 3.1 | 4.5 |
| Household loan for consumption and other purpose 1−5y margin spread | 6.3 | 9.6 | .. | 5.1 | −1.4 | 0.0 |
| Household loan for consumption and other purpose > 5y margin | 5.9 | 6.0 | .. | 4.7 | 1.5 | 2.2 |
| Household loan for consumption and other purpose > 5y margin spread | 3.6 | 3.8 | .. | 2.4 | −0.7 | 0.0 |
| Nonfinancial corporate loan < 1y margin | 1.6 | 2.4 | .. | 1.2 | 2.0 | 2.6 |
| Nonfinancial corporate loan < 1y margin spread | −0.9 | −0.2 | .. | −1.3 | −0.5 | 0.0 |
| Nonfinancial corporate loan 1−5y margin | 1.3 | 4.2 | .. | 2.6 | 1.8 | 1.3 |
| Nonfinancial corporate loan 1−5y margin spread | 0.1 | 3.0 | .. | 1.3 | 0.6 | 0.0 |
| Nonfinancial corporate loan > 5y margin | 1.2 | 5.3 | .. | 2.6 | 0.5 | 0.9 |
| Nonfinancial corporate loan > 5y margin spread | 0.2 | 4.4 | .. | 1.7 | −0.4 | 0.0 |

*Source: ECB, OeNB, national central banks.*

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[10]  *It should be noted that the relatively high average lending margin spread in Hungary in March 2004 might be partly explained by the marked inversity of the reference yield curve (as opposed to flat or upward sloping yield curves in the other countries) combined with the fact that a (possibly sizeable) part of the outstanding volume of longer-term loans carries variable interest rates. Similarly, the same factors may contribute to explain the increase of the margins of the loans to the non-financial corporations with maturity.*

In all three countries, the lowest lending margin spreads were observed for "loans to nonfinancial corporations with a maturity of less than one year," which have a considerable weight in the banks' loan portfolios (between 17% and 28%). Indeed, the lending margin spread on these loans was negative in all three countries.[11]

Again in all three countries, the highest lending margin spread was observed for "loans to households for consumption and other purposes with a maturity between one and five years," which also have a considerable weight in the banks' loan portfolios (between 6.5% and 9%).

With respect to segmentation by maturity, margin spreads in lending to nonfinancial corporations increased with maturity, while margin spreads in household lending were the highest in the medium (between one and five years) maturity range, with the exception of Hungarian household loans for house purchases, for which the longest maturity segment showed the highest spreads.

More generally, lending margins were higher in business with households than with nonfinancial corporations in particular in the Czech Republic and Hungary and to a lesser degree in Slovakia. As the difference between household lending margins and corporate lending margins was by far more accentuated in the NMS-3 than in the euro area average, household lending margin spreads also exceeded corporate lending margin spreads significantly. Indeed, in the Czech Republic and in Slovakia, the corporate lending margin was already more or less at the euro area level, implying a corporate lending margin spread close to zero.

Table 8

### Aggregated Lending Margins and Margin Spreads

| | CZ | HU | PL | SK | AT | EU-12 |
|---|---|---|---|---|---|---|
| | *Percentage points* | | | | | |
| Household lending margin (calculated from disaggregated data) | 4.6 | 6.8 | .. | 3.9 | 1.9 | 2.1 |
| Nonfinancial corporate lending margin (calculated from disaggregated data) | 1.4 | 3.9 | .. | 1.9 | 1.1 | 1.5 |
| Average lending margin (calculated from disaggregated data) | 2.7 | 5.4 | .. | 2.8 | 1.4 | 1.8 |
| | | | | | | |
| Household lending margin spread (calculated from disaggregated data) | 2.5 | 4.7 | .. | 1.8 | −0.2 | .. |
| Nonfinancial corporate lending margin spread (calculated from disaggregated data) | −0.1 | 2.4 | .. | 0.4 | −0.4 | .. |
| Average lending margin spread (calculated from disaggregated data) | 0.9 | 3.6 | .. | 1.0 | −0.5 | .. |

*Source: ECB, OeNB, national central banks.*

*Average deposit margins,* derived as the difference between the average deposit rate and the country-specific reference rate, varied between –1.0 percentage point (Slovakia) and –3.2 percentage points (Poland) in the NMS-4. These negative deposit margins (i.e. the average deposit rate is below the reference rate) contrasted with a zero margin in the euro area. This may be an indication of less fierce competition for deposits in the NMS-4 than in the euro area.

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[11] In addition, in Slovakia the margin spreads for "loans to households for house purchase with a maturity of less than one year" and "loans to households for consumption and other purposes with a maturity of less than one year" were negative. However, these two types of loans have only a very small share in the overall volume of loans to households and nonfinancial corporations.

Table 9

## Average Deposit Margin and Margin Spread

| | CZ | HU | PL | SK | AT | EU-12 |
|---|---|---|---|---|---|---|
| | *Percentage points* | | | | | |
| Average deposit margin | −1.2 | −1.7 | −3.2 | −1.0 | −0.3 | 0.0 |
| Average deposit margin spread | −1.1 | −1.6 | −3.2 | −1.0 | −0.3 | .. |

*Source: ECB, OeNB, national central banks.*

However, as noted above in connection with the average lending margin, some residual specification bias in the construction of the reference rate may have remained in place, despite the country-specific selection of the reference rates.

*Data disaggregation* showed that deposit margins in the NMS-4 tended to be larger (i.e. more negative: deposit rates below the reference rate) than in the euro area. Thus, the aggregated deposit margin spread that was calculated on the basis of disaggregated data confirmed the above analysis based on the average deposit margin spread. In particular, Poland was confirmed as the country with the largest negative deposit margin and deposit margin spread.

Looking at table 10, the most striking observation is the positive deposit margins, in particular for long-term corporate deposits (in the Czech Republic, Slovakia, Austria and the euro area) but also to a significant extent for long-term household deposits in Slovakia. On the basis of opportunity cost considerations, positive deposit margins can be regarded as a rather exceptional phenomenon. Apart from potential data issues involved, one possible explanation for the positive corporate deposit margins may relate to the fact that for most banks customer relationships are predominantly lending relationships. Thus, banks may be willing to incur losses (calculated on the basis of the opportunity cost concept) in the long-term deposit business with their corporate clients, as this may account for only a minor part of their overall customer relationships and help foster profitable relations in lending. For the euro area, one possible explanation for positive deposit margins of long-term corporate deposits may also be a possibly still underdeveloped cross-country interbank lending business.

Table 10

## Disaggregated Deposit Margins and Margin Spreads

| | CZ | HU | PL | SK | AT | EU−12 |
|---|---|---|---|---|---|---|
| | *Percentage points* | | | | | |
| Household deposit < 2y margin | −1.3 | −1.5 | −2.9 | −2.1 | −0.4 | −0.2 |
| Household deposit < 2y margin spread | −1.1 | −1.4 | −2.8 | −1.9 | −0.2 | 0.0 |
| Household deposit > 2y margin | −0.8 | −3.4 | −3.1 | 0.7 | 0.1 | 0.1 |
| Household deposit > 2y margin spread | −0.9 | −3.4 | −3.2 | 0.6 | 0.0 | 0.0 |
| | | | | | | |
| Nonfinancial corporate deposit < 2y margin | −0.7 | −0.7 | −3.0 | −0.3 | −0.2 | 0.0 |
| Nonfinancial corporate deposit < 2y margin spread | −0.7 | −0.6 | −3.0 | −0.3 | −0.2 | 0.0 |
| Nonfinancial corporate deposit > 2y margin | 0.5 | −3.6 | −2.5 | 0.5 | 0.5 | 0.9 |
| Nonfinancial corporate deposit > 2y margin spread | −0.4 | −4.5 | −3.4 | −0.5 | −0.4 | 0.0 |

*Source: ECB, OeNB, national central banks.*

Table 11

## Aggregated Deposit Margins and Margin Spreads

| | CZ | HU | PL | SK | AT | EU-12 |
|---|---|---|---|---|---|---|
| | *Percentage points* | | | | | |
| Household deposit margin (calculated from disaggregated data) | −1.0 | −1.7 | −2.9 | −1.4 | −0.2 | 0.0 |
| Nonfinancial corporate deposit margin (calculated from disaggregated data) | −0.7 | −0.8 | −3.0 | −0.3 | −0.1 | 0.2 |
| Average deposit margin (calculated from disaggregated data) | −0.9 | −1.5 | −3.0 | −1.0 | −0.2 | 0.0 |
| Household deposit margin spread (calculated from disaggregated data) | −1.0 | −1.7 | −2.9 | −1.3 | −0.2 | .. |
| Nonfinancial corporate deposit margin spread (calculated from disaggregated data) | −0.9 | −0.9 | −3.1 | −0.4 | −0.3 | .. |
| Average deposit margin spread (calculated from disaggregated data) | −1.0 | −1.5 | −3.0 | −1.0 | −0.2 | .. |

Source: ECB, OeNB, national central banks.

More generally, deposit margins were more negative in business with households than with nonfinancial corporations in particular in Hungary and Slovakia and to a lesser degree in the Czech Republic. This was true in particular for deposits with a maturity of less than two years, which account for the bulk of total deposits of both sectors in the NMS-4. As there was hardly any difference between household and corporate deposit margins in the euro area, the difference between the sectoral deposit margins in these three countries is reflected also in the deposit margin spreads. By contrast, in Poland, the two business lines offered roughly the same deposit margins and deposit margin spreads.

Turning again to the *overall margin,* the average overall margin can be calculated as the difference between the lending margin and the deposit margin. As the average lending mar-

gins were clearly positive throughout the NMS-4 and the euro area, while the deposit margins were negative in the NMS-4 and about zero in the euro area, we obtained positive average overall margins between 3.5 percentage points (Czech Republic) and 7.6 percentage points (Hungary).[12] With the exception of Poland, average lending margins delivered a larger contribution to the average overall margins than average deposit margins, as in the NMS-4 (except Poland) the former were to a larger extent positive than the latter were negative, and in the euro area average deposit margins were about zero. In Poland, the contribution of both components to the average overall margin was about equal.

However, the situation is different for *overall margin spreads* (calculated as the difference between average lending margin spreads and average deposit margin spreads) due to the

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[12]  It should be noted that the thus calculated average overall margins differ from the average overall margins described earlier as the difference between (adjusted) loan and deposit rates shown in tables 1 and 4. This is due to the difference in the reference rates which are used for the calculation of the lending and the deposit margins. More precisely, the difference between the average overall margin as the difference between average loan and deposit rates and the average overall margin as the difference between average lending and deposit margins is equal to the difference between the longer-term reference rate for the average loan rate and the shorter-term reference rate for the average deposit rate. Thus, in case of an upward sloped term structure this difference is positive (Czech Republic, Poland), while in case of an inverse interest rate curve it is negative (Hungary).

fact that in the euro area lending margins were clearly positive, while deposit margins were zero.[13] In the Czech Republic and Poland, the average deposit margin spreads accounted for a larger portion of the average overall margin spreads than the average lending margin spreads, as the for-mer were to a larger extent negative than the latter were positive. In Slova-kia, the contribution of the two com-ponents was roughly equal, while in Hungary, the highly positive average overall margin spread stemmed pri-marily from the positive average lend-ing margin spread.

Table 12

## Summary of Lending and Deposit Margins and Margin Spreads

|  | CZ | HU | PL | SK | AT | EU-12 |
|---|---|---|---|---|---|---|
|  | *Percentage points* | | | | | |
| Average loan rate | 5.9 | 14.9 | 9.5 | 7.7 | 4.5 | 5.1 |
| Reference rate for average loan rate | 3.6 | 9.0 | 6.7 | 4.8 | 3.2 | 3.2 |
| Average lending margin | 2.3 | 5.9 | 2.8 | 3.0 | 1.3 | 1.8 |
| Average deposit rate | 1.9 | 9.9 | 3.0 | 3.9 | 2.3 | 2.6 |
| Reference rate for average deposit rate | 3.1 | 11.6 | 6.2 | 4.9 | 2.7 | 2.7 |
| Average deposit margin | −1.2 | −1.7 | −3.2 | −1.0 | −0.3 | 0.0 |
| Average overall margin (difference of lending margin and deposit margin) | 3.5 | 7.6 | 6.1 | 4.0 | 1.6 | 1.9 |
| Average lending margin spread | 0.5 | 4.1 | 1.0 | 1.1 | −0.5 | .. |
| Average deposit margin spread | −1.1 | −1.6 | −3.2 | −1.0 | −0.3 | .. |
| Average overall margin spread (difference of lending margin and deposit margin spread) | 1.6 | 5.7 | 4.2 | 2.1 | −0.2 | .. |

*Source: ECB, OeNB, national central banks.*

## Main Findings of the Decompositions

The following picture emerges for margins and margin spreads in the NMS-4 in March 2004:

(1) Country-specific risk factors (sovereign risk, foreign exchange risk) account for a large portion of the overall average lending rate spread between the NMS-4 and the euro area. If the compensation for these risk components is left aside, the spread is far less impressive, except for in Hungary.

(2) The average deposit rate in the Czech Republic was below the euro area average, and in Poland, it was close to the euro area average level. The extraction of the country-specific risk premium from the average de-posit rate further enhanced the nega-tive spread against the euro area in the Czech Republic and led to a neg-ative spread in Poland and Slovakia as well. The relatively low or, in Poland, even negative adjusted deposit rates may be an indication of less fierce competition for deposits in the NMS-4 than in the euro area.

(3) In the NMS-4, the average overall margins were higher than in the euro area. With the exception of

[13] *Similar to what was stated in the previous footnote for the average overall margins, it should be noted that also the thus calculated average overall margin spread differs from the average overall margin spread described earlier and shown in table 4. The difference between the previous average overall margin spread and the average overall margin spread as the difference between lending and deposit margin spreads is equal to the difference between the country-specific difference between the loan reference rate and the deposit reference rate in the NMS-4 and the euro area-specific difference between the loan reference rate and the deposit reference rate in the euro area.*

Hungary, the adjusted deposit rate spreads contributed a larger part to these average overall margin spreads than the adjusted loan rate spreads.

(4) This overall margin spread was particularly large in the business with households, suggesting a potentially more competitive business environment with nonfinancial corporations.

(5) Similarly, business with households in particular in the Czech Republic and Hungary and to a lesser degree in Slovakia (no data for Poland) offered higher lending margins and lending margin spreads (compared with the euro area) than the corporate business. Indeed, in the Czech Republic and in Slovakia, the corporate lending margin was already more or less at euro area level, implying a corporate lending margin spread close to zero. The spread in lending margins was the highest for "loans to households for consumption and other purposes with a maturity between one and five years." On the other hand, the spread in lending margins for "loans to nonfinancial corporations with a maturity of less than one year," which have a considerable weight in the loan portfolio (between 17% and 28%), was even negative.

(6) While the average deposit margins in the NMS-4 were negative (i.e. the deposit rates were lower than the reference rates), the average deposit margin in the euro area was about zero. This may be an indication of less fierce competition for deposits in the NMS-4 than in the euro area.

(7) In Hungary and Slovakia in particular and to a lesser degree in the Czech Republic, household deposit margins and margin spreads against the euro area were more negative than the corporate deposit Margins and margin spreads. The two business lines offered roughly the same deposit margins and margin spreads in Poland.

(8) With the exception of Poland, the average lending margins delivered a larger contribution to the average overall margins than the average deposit margins. In Poland, the contribution of both components to the average overall margin was about equal.

(9) By contrast, in the Czech Republic and Poland, the average deposit margin spreads accounted for a larger portion of the average overall margin spreads than the average lending margin spreads, as the former were to a larger extent negative than the latter were positive. In Slovakia, the contribution of the two components was roughly equal, while in Hungary, the highly positive average overall margin spread stemmed primarily from the positive average lending margin spread.

(10) On the basis of disaggregated data, the dominance of the lending margin spread in Hungary as well as a slight dominance of the deposit margin spread in the Czech Republic could be confirmed. (Due to the lack of disaggregated data, this comparison could not be made for Poland.)

Overall, the analysis of the available data suggests that the margins were wider in the NMS-4 than in the euro area in particular in business with households on both the lending and the deposit side. This may be attributable to higher costs related to business with households in the NMS-4 than in the euro area, for example due to a more widespread use of labor-intensive banking services. On the other hand, lower competition in business with households in the NMS-4 compared with the euro area may offer an alternative explanation.

## Other Factors Affecting Banks' Net Interest Income

Apart from the interest rate margins in business with nonfinancial corporations and households, the net interest margin (defined as net interest income as a percentage of average total assets or average total equity in a certain period) in the NMS-4 may also be affected by other factors. Thereby, specific factors in the NMS-4 on the asset side of commercial banks tend to reduce net interest income compared with the euro area average, while specific factors on the liability side tend to have a positive impact.

On the *asset side,* one specific feature of the NMS-4 banking sectors is that *claims on the general government* account for a higher percentage of total assets than on average in the euro area. While this share was around 10% in the euro area at the end of 2003, it ranged between 15% (Hungary) and 26% (Slovakia) in the NMS-4. In Poland and the Czech Republic, the share stood at around 20%. As lending to the general government tends to be less risky than lending to other sectors, and hence usually carries lower interest rates, this factor can be expected to lower net interest income in the NMS-4 compared with the euro area.

Another characteristic of the NMS-4 is the structural liquidity surplus in the money market. Therefore, central banks are generally liquidity absorbers. Since the interest rate on the liquidity-absorbing facilities mostly represents the benchmark or the floor for interbank interest rates, *investment in these central bank instruments* usually carries lower interest rates (albeit at practically no counter-party risk) than business with other clients.

On the *liability side,* the difference in the *share of deposits of domestic residents other than the central government and monetary financial institutions* between the NMS-4 and the euro area is striking. While this share amounted to around 32% at the end of 2003 in the euro area, it ranged between 51% (Hungary) and 66% (Slovakia) in the NMS-4. As we pointed out above, the adjusted deposit rate spreads and deposit margin spreads in the NMS-4 can be identified as a major source of the overall margin spreads. The high share of domestic deposits in total liabilities multiplies this effect.

Similarly, the *share of capital and reserves* in total liabilities is significantly higher in the NMS-4 than in the euro area. While in the euro area this share amounted to 5.8% at the end of 2003, it stood at 8.9% in Hungary, 11% in the Czech Republic, 13.5% in Slovakia and around 16% in Poland. This enables commercial banks in the NMS-4 to finance interest-bearing assets by equity financing – a relatively cheap form of financing – which adds to their overall profitability.

Another question is whether and to what extent banks in the NMS-4 utilize the positive *interest rate differential* between local and foreign currency – in particular euro – interest rates. Borrowing in foreign currency and lending in local currency at higher interest rates would enhance profits, but also increase banks' exposure to foreign currency risk. Unfortunately, data on banks' *overall net FX position*[14] are not readily available in all countries. Czech banks had a small overall

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[14]   *The overall net FX position comprises both the on-balance and the off-balance net FX position.*

net short foreign exchange position[15] (0.6% of total balance sheet liabilities) at the end of 2003. By contrast, data of the Hungarian central bank showed that Hungarian banks in the past tended to close their long balance sheet position by off-balance sheet items. Indeed, Hungarian banks maintained a small long (around 0.5% of total balance sheet liabilities) overall net foreign exchange position over the last year. Similarly, Polish banks tended to close their long balance sheet FX positions by short off-balance sheet items. Therefore, they had a minimum overall net long foreign exchange position of less than 0.1% of total balance sheet liabilities at the end of 2003. Hence, the general conclusion that banks in these countries take advantage of the interest rate differential by incurring higher exposure to foreign exchange risk cannot be drawn.

## Concluding Remarks

In this analysis we found that country-specific risk factors, in particular related to foreign exchange risk, account for a significant part of the lending and deposit rate spreads between four new EU Member States (NMS-4) and the euro area. Moreover, we found that interest rate margins in the NMS-4 were indeed higher than in the euro area, contributing significantly to the favorable relative net income development of banks. Margin spreads compared to the euro area were particularly high in business with households on both the lending and the deposit side.

We also found that in the NMS-4 (with the exception of Hungary), deposit margin spreads compared with the euro area delivered a larger contribution to the overall margin spreads than lending margin spreads. This may be taken as an indication that competition for (household) deposits is less fierce in the NMS-4 than in the euro area and also less fierce than in the lending business (to nonfinancial corporations). Nevertheless, owing to a potential specification bias, conclusions from deposit margins should be drawn with some caution.

However, as the deepening of financial intermediation will fuel banks' appetite for financial resources, while alternative forms of savings are likely to gain significance, a more competitive environment can be expected in the deposit business. Similarly, it can be anticipated that EU accession, which has pushed the door wide open for cross-border banking services, will increase competition during the next few years. Thus, it can be expected that interest rate margins in the NMS-4 will converge towards euro area levels over the medium to long term, in line with the developments that were observed for the EU-15.

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[15]    *A short position is defined as excess liabilities over assets, a long position is defined as the opposite.*