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Swiss Franc Lending in Europe

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This paper documents and characterises Swiss franc lending by banks domiciled in Europe (excluding Switzerland) to their non-bank clients. The role of the Swiss financial sector in refinancing this lending is also examined. Our estimates suggest that at the end of 2007, CHF 238 billion in Swiss franc denominated loans were outstanding in the euro area, and another CHF 122 billion in other European countries. We find that the type of borrower taking out Swiss franc loans differs strongly across countries. While in Austria, Poland and Hungary most Swiss franc loans are extended as mortgages to domestic households, a substantial share of Swiss franc lending in Germany and Luxembourg is to non-resident enterprises. The Swiss financial sector is substantially involved in refinancing Swiss franc lending within the euro area but appears to play a minor role outside the euro area.

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1 Introduction

In recent years, the Swiss franc (CHF) has increasingly been used as the currency of denomination for private sector lending in several European countries beyond Switzerland itself. While the phenomenon of CHF mortgages in Austria has been widely documented in the press (for example PERRY 2007, KATTINGER 2008), little is known about CHF lending in other neighbouring and non-neighbouring countries of the euro area. Furthermore, while the use of the Swiss franc for retail lending in Poland and Hungary has been highlighted (for example CONDON and GARNHAM 2007, FUSTER 2008), little is known about CHF lending in other European countries outside the euro area.

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The objective of this paper is to give an overview of CHF lending by banks domiciled in Europe (excluding Switzerland) to the non-banking sector in developed and emerging Europe. We document the prevalence of CHF loans and compare their size to that of loans denominated in domestic currency and other foreign currencies. We characterise the borrowers who take out CHF loans and the types of these loans in comparison to loans in domestic currency. We further characterise the financial intermediaries issuing CHF loans and look at their methods of refinancing these loans and of hedging the corresponding currency exposure. We also examine the role of the Swiss financial market in refinancing CHF loans in these countries.

Our estimates suggest that, in December 2007, CHF 238 billion in Swiss franc loans were outstanding in the euro area, with loans by banks in Austria, Germany, France and Luxembourg accounting for over 80% of this volume. Another CHF 122 billion were outstanding in other European countries, with banks in Hungary, Poland, the UK and Iceland responsible for over 80% of this lending. We also find that the type of borrower taking out Swiss franc loans differs strongly across countries: while in Austria, Hungary and Poland most CHF loans are extended as mortgages to domestic households, a substantial share of CHF lending in Germany and Luxembourg is to non-resident enterprises. CHF lending, particularly in emerging Europe, is conducted by both foreign-owned and domestically-owned banks alike. Refinancing and foreign currency hedging strategies differ across countries. In Austria, Germany and Luxemburg, CHF lending is largely refinanced with CHF deposits and the issuance of CHF bonds. In Hungary and Poland, we find that a larger share of hedging is performed with off-balance-sheet instruments. While the Swiss financial market is substantially involved in refinancing CHF lending within the euro area, this is not the case outside the euro area.

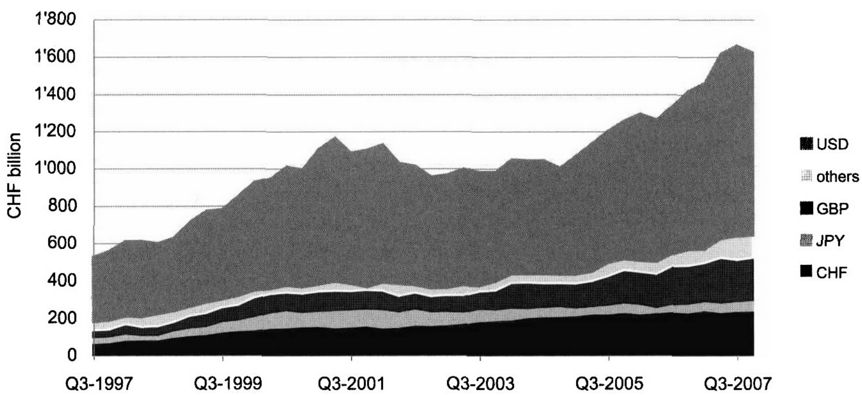
2 Swiss franc loans outstanding in Europe

This section provides an overview of CHF lending by financial institutions resident in Europe to non-banks (for example households, non-financial corporations, non-bank financial institutions, and general government). Unless otherwise stated, we report loans from resident financial institutions to non-banks inside and outside the respective country.[1]

2.1 CHF lending by euro area banks

Over the past decade, lending in foreign currency by euro area banks has almost trebled. While the nominal value of total lending by euro area banks more than doubled between 1997 and 2007, from CHF 9,443 billion to CHF 19,949 billion, the amount of foreign currency loans almost trebled during the same period, from CHF 558 billion to CHF 1,623 billion. In relative terms, the share of foreign currency loans rose from 6% in 1997 to almost 10% in 2001 and has since remained at around 8%.

Figure 1: Euro area: Foreign currency loans to the non-bank sector



Source: European Central Bank.

1 Where applicable, we adhere to the ECB definition of financial institutions: These include resident credit institutions (as defined in Community law) and all other resident financial institutions whose business is to receive deposits and/or close substitutes for deposits from entities other than monetary and financial institutions (MFI), for their own account (at least in economic terms), to grant credit and/or invest in securities. The latter group consists predominantly of money market funds (see http://www.ecb.int/home/glossary/html/glossm.en.html#518).

The value of CHF loans has more than trebled in the past ten years. Figure 1 displays the currency breakdown of foreign currency loans by euro area banks since 1997. The figure shows that the USD has consistently been the most important currency of denomination for foreign currency loans. In 2007, more than CHF 980 billion of foreign currency loans (60%) were denominated in USD, up from CHF 372 billion (67%) in 1997. The second largest share of foreign currency loans is denominated in CHF. At end-2007, CHF loans amounted to CHF 238 billion (15%), up from CHF 69 billion (12%) in 1997. Note that, similar to the evolution of Swiss franc loans, the value of loans in GBP has risen steadily over the past decade. By contrast, the amounts of USD and JPY loans outstanding have been quite volatile, growing strongly between 1998 and 2001, decreasing between 2002 and 2004, and then rising strongly again from 2005 onwards.

The majority of CHF loans extended by euro area banks are originated in two neighbouring countries, Austria and Germany. Table 1 shows that, in 2007, CHF 84 billion of the total outstanding CHF loans (35%) were claims by Austrian banks, while another CHF 60 billion (25%) were claims by German banks. Switzerland's other two neighbours, France and Italy, display lower levels of CHF lending. At end-2007, French banks had CHF 30 billion in claims denominated in CHF, while Italian banks had only CHF 8 billion.

Table 1: Euro area banks: Loans to non-bank clients (in CHF billion)

	Swiss franc loans			Foreign currency loans	Total loans
	1998	2002	2007	2007	2007
Austria	18	44	84	121	625
Germany	21	64	60	471	5,199
France	9	13	30	262	3,547
Luxembourg	14	24	25	105	317
Greece	3	2	10	32	330
Italy	8	8	8	40	2,854
Others	7	7	21	593	7,076
Total	**80**	**161**	**238**	**1,623**	**19,949**

Notes: Figures are per December, except for 1998 (March).
Source: European Central Bank.

Besides the four neighbouring countries, only two euro area countries display a significant amount of CHF loans, namely Luxembourg and Greece. In both of these countries, CHF loans make up a substantial share of total foreign currency loans (24% and 33% respectively), but a less important share of total loans (8% and 3% respectively).

2.2 CHF lending by banks domiciled outside the euro area

Outside the euro area, a considerable amount of CHF loans are found in Hungary, Poland and the UK. Data received from central banks throughout Europe suggest that, in September 2007, banks outside the euro area held CHF claims on the non-bank sector of CHF 122 billion (Table 2).

Table 2: Non euro area banks: Loans to non-bank clients (in CHF billion)

	Swiss franc loans[1]		Foreign currency loans	Total loans
	2002/2004[2]	2007[3]	2007[3]	2007[3]
Hungary	1.2	32.6	58	104
Poland	6.1	30.9	45	183
UK	12.0	23.8	600	4,485
Iceland[4]	n.a.	12.4	26	54
Denmark[4]	1.4	9.4	34	233
Croatia[5]	0.2	7.7	31	47
Romania[4]	0.0	2.1	43	73
Sweden[5]	1.2	1.5	151	810
Norway[5]	1.1	1.0	37	455
Bulgaria[4]	0.0	0.0	13	27
Slovakia[4]	n.a.	0.4	7	32
Czech Republic[4]	0.1	0.2	14	101
Lithuania[5]	0.0	0.2	13	26
Estonia[5]	0.0	0.0	19	24
Latvia[4]	n.a.	n.a.	31	36
Total		**122.2**	**1,122**	**6,690**

Notes: [1] Bulgaria, Romania and Lithuania: foreign currency loans without EUR and USD; Estonia: foreign currency loans without EUR, USD and SEK; Slovakia: foreign currency loans without EUR.

[2] Figures are per December 2002, except for Hungary (March 2003), Croatia and Estonia (December 2003), Bulgaria, Lithuania and Poland (March 2004).

[3] Figures for 2007 are per September, except for Iceland (estimate for May 2007).

[4] Loans to domestic households and non-financial corporations.

[5] Loans to domestic non-banks.

Source: National authorities.

Hungary displays the largest amount of CHF claims among non-euro area countries, with over CHF 32 billion outstanding. This represents more than 30% of total lending by Hungarian banks and 56% of foreign currency loans. Moreover, the share of CHF loans has risen strongly in recent years;

in March 2003, they accounted for less than 3% of total loans. Apart from CHF loans, EUR loans are the only other major foreign currency of denomination. The larger share of loans denominated in CHF is remarkable, since Hungary is not only a member of the European Union, but had also pegged its currency to the euro until the end of February 2008.

The amount of CHF claims by Polish banks was almost as high as in Hungary. But while the share of CHF claims among total foreign currency claims is higher in Poland (69%), their share of total loans is lower (17%). The share of CHF loans in total loans has also increased strongly in recent years. In 2004, only 8% of all loans (and 26% of foreign currency loans) were denominated in CHF. In March 2006, the Polish Commission for Banking Supervision issued recommendations on good practice in the area of mortgage-secured credit exposures. Thereafter, the growth rate of foreign currency loans moderated, while the growth rate of zloty loans increased further.

Other countries of emerging Europe display only small levels of CHF loans in absolute terms, although foreign currency loans are significant in most countries. In contrast to Hungary and Poland, the high levels of foreign currency lending in other new (Bulgaria, Romania, Czech Republic, Estonia, Lithuania) and aspiring EU members (Croatia) appear to be due to widespread lending in euro.

Looking at advanced European countries outside the euro area, we find substantial levels of CHF loans in the UK (CHF 24 billion), Iceland (CHF 12 billion) and Denmark (CHF 9 billion). While the ratio of CHF loans to total lending is negligible in the UK (less than 1%) and Denmark (4%), it is quite substantial in Iceland, where CHF claims make up over 20% of total loans outstanding.

3 Characteristics of CHF lending by country

This section characterises and compares the structure of CHF lending in three euro area countries – Austria, Germany and Luxembourg – and two non-euro area countries – Hungary and Poland.

3.1 Austria

The main CHF borrowers in Austria are households. Of the total of CHF 69 billion in CHF loans outstanding in Austria[2] at end-2007, 74% (CHF 51 billion) was owed by households, 19% (CHF 13 billion) by non-financial corporations, and the remaining 7% (CHF 5 billion) by non-bank financial institutions and general government. The CHF 51 billion of CHF loans to households in turn represented over 95% of total foreign currency loans to the household sector and more than one-quarter of total lending (that is in domestic and foreign currency) to this sector. BEER, ONGENA and PETER (2008) find that the prevalence of foreign currency housing loans is highest among risk-loving, high-income and married households. The CHF 13 billion of CHF loans to non-financial enterprises, meanwhile, accounted also for over 80% of foreign currency loans to non-financial enterprises, but only about 7% of total lending to this sector.

The bulk of CHF loans to households consist of loans for housing purposes (mortgages). At the end of 2007, 70% (CHF 36 billion) of CHF household loans were loans for housing purposes, 9% (CHF 5 billion) were consumer loans, and the rest (CHF 10 billion) were other loans. While there are no marked differences in maturity between household loans in EUR and in CHF – both types are mostly long term – other contract features vary significantly. Whereas EUR household loans typically carry a fixed interest rate and are regularly amortised, CHF household loans are mainly variable interest rate balloon loans (that is involving monthly payments of interest only, with full principal paid at maturity) that are coupled with a repayment vehicle (for example mutual fund, life insurance). They also provide the borrower with the option of switching currencies (for example back into euro or into yen) and allow the bank to convert the loan into a EUR loan without the borrower's consent (BOSS 2003). In June 2007, for instance, 72% of household loans denominated in CHF were balloon loans coupled with a repayment vehicle, while 82% of household loans denominated in EUR were regular amortising loans (LAMATSCH 2007).

Domestic banks are the main CHF lenders to non-banks in Austria. The joint stock and private banks *(Aktienbanken und Bankiers)* have the largest market share in CHF lending (38%), followed by the savings banks *(Sparkassen)* (23%), the Raiffeisen credit cooperatives *(Raiffeisenbanken)*

2 The difference between these CHF 69 billion and the CHF 84 billion reported in Table 1 represents loans by Austrian banks to non-banks domiciled outside Austria.

(16%), the state mortgage banks *(Landeshypothekenbanken)* (13%), and the *Volksbanken* credit cooperatives *(Volksbanken)* (10%). Branches of foreign banks have negligible CHF loans outstanding.

Refinancing of CHF lending occurs primarily through interbank deposits, the issuance of CHF bonds, and foreign exchange swaps; CHF customer deposits play only a very minor role. Available data suggest that, at end-2007, customer deposits covered only about 2% of total CHF lending, while interbank deposits made up 34%, with the remaining 64% being refinanced with the issuance of CHF bonds and through currency swaps.

3.2 Germany

CHF loans by banks domiciled in Germany are extended evenly to firms and households, located both within and beyond the German borders. In February 2008, these banks lent CHF 33 billion to domestic (non-bank) clients and CHF 25 billion to foreign clients, which corresponds to 0.9% of total loans to domestic non-bank clients and 2.4% of total loans to foreign non-bank clients respectively. CHF loans to domestic clients are shared evenly between households (CHF 15 billion) and enterprises (CHF 18 billion). According to the Bundesbank, CHF loans within Germany are most likely to be either for residential housing or small business loans (which, as in Switzerland, are to a large extent also mortgage-backed). The available evidence suggests that cross-border CHF loans by German banks display a different picture. Bundesbank figures reveal that roughly two-thirds of cross-border loans went to non-bank enterprises in Switzerland, in particular to subsidiaries of German enterprises.

CHF lending in Germany is predominantly conducted by domestic banks. However, the prevalence of CHF loans does vary among domestic banks. The publicly-owned *Landesbanken* have the highest share of CHF loans. The proportion of CHF loans to total loans accounts for 1.8% of this category (*Landesbanken* also have the highest amount of CHF loans in absolute terms, amounting to CHF 12 billion). By contrast, credit unions *(Kreditgenossenschaften)* have only 0.3% (or CHF 2 billion) of their loans denominated in CHF.

Assets of German banks in CHF are covered largely by on-balance-sheet CHF liabilities. In February 2008, total CHF assets of German banks (that is including claims on other banks and holdings of securities) totalled CHF

125 billion. Total CHF liabilities, by contrast, amounted to CHF 122 billion, implying that 97.6% of German banks' CHF assets are financed by on-balance-sheet items. Of the CHF 122 billion of CHF liabilities, 49% consisted of bank deposits (interbank loans), 10% of non-bank deposits, and 41% of bonds issued.

3.3 Luxembourg

Almost all CHF loans by financial institutions domiciled in Luxembourg are extended to non-residents. Data from the ECB show that, of the total of CHF 25 billion in loans to non-bank clients in December 2007, only CHF 2 billion were to residents. The remaining CHF 23 billion were lent to foreign households and firms, CHF 13 billion of which went to non-bank borrowers residing outside the euro area. The dominance of CHF loans to non-residents is a reflection of Luxembourg's status as an international financial centre.

Lending in CHF to the non-bank sector is allocated evenly to firms and households. Data from the Banque centrale du Luxembourg (BcL) show that 40% of CHF loans to non-banks are to households, 32% to non-financial corporations, 20% to non-bank financial corporations and 8% to the public sector. There seems to be no striking difference in the maturity of the loans between CHF loans and loans given in EUR. Loans in Luxembourg, including CHF loans, are predominantly granted by foreign-owned banks.

Data from the BcL show that CHF assets by banks domiciled in Luxembourg are completely refinanced with on-balance-sheet CHF liabilities. CHF assets include the above-mentioned loans to the non-bank sector (42%), interbank loans (51%) and securities/equity (7%). On the liability side of the balance sheet, interbank deposits cover 55% of CHF assets, while deposits of the non-bank private sector cover a further 21%. In addition, Luxembourg banks have issued CHF debt securities which amount to 33% of total CHF assets.

3.4 Hungary

Data from the Hungarian Financial Supervisory Authority (HFSA) suggest that most CHF borrowers are retail customers. In February 2008, 59% of total bank lending to households was in CHF. The corresponding ratio for non-financial enterprises was 16%. Foreign currency loans to households are divided more or less equally between consumer loans and residential mortgages. The HFSA assumes that, among enterprises, small businesses are more involved in borrowing in CHF than large firms.

CHF loans in Hungary rarely involve cash flows in Swiss francs. All loans are disbursed and all instalments are paid in forint (HUF). It is merely the value of the instalments due and the value of the outstanding loan which are indexed to the CHF. The HFSA suggests that there are few differences in the characteristics of CHF and HUF loans. Maturities and available loan-to-value ratios appear to be similar. However, households eligible for government subsidies on housing loans may only borrow in HUF from designated lenders. HUF borrowing is therefore predominantly done by customers eligible for a government subsidy or for short-term lending, where conversion costs and currency volatility are too high.

The Hungarian banking sector is dominated by foreign-owned institutions which hold over 80% of total assets. However, there seems to be little difference between domestic and foreign banks when it comes to CHF lending. For both, foreign currency lending accounts for about 80–90% of the flow of new customer loans and credits. About ten large banks have been leading the market, but smaller service providers, including consumer lenders and cooperative credit institutions, have followed the trend.

Data from the HFSA suggest that banks refinance the majority of their CHF assets with off-balance-sheet items. At the end of 2007, 40% of banks' total assets in CHF were covered by on-balance-sheet CHF liabilities. These liabilities were dominated by interbank loans and securities issued, with foreign currency customer deposits playing only a minor role. The remaining long position on banks' balance sheets is hedged with currency swaps, in most cases vis-à-vis their foreign parent company.

3.5 Poland

CHF lending in Poland is dominated by residential mortgages. Data from the National Bank of Poland (NBP) suggest that roughly 90% of CHF lending goes to households and is secured by mortgages. Foreign currency loans, in particular CHF loans, are much less widespread in consumer lending and corporate finance. In 2007, less than 6% of CHF lending was ascribed to consumer credit and corporate credit, while residential housing loans accounted for up to 60%. According to the NBP, households with foreign currency housing loans have significantly lower debt-service-to-income ratios – and thus default rates – than households with domestic currency housing loans (NATIONAL BANK OF POLAND 2008).

As in Hungary, most of the credit reported as CHF loans is lending where the cash flow is completely in zloty (PLN), but where the amount is indexed to the CHF/PLN exchange rate. When it comes to the characteristics of CHF and PLN loans, there are differences in the loan-to-value (LTV) ratios and in the maturity. Based on survey data on new mortgage lending, the NBP finds slightly higher LTV ratios for foreign currency (mostly CHF) lending and a 20% longer maturity for CHF loans than for local currency lending. Other terms (that is quality of collateral, using variable interest rates linked directly to interbank market rates) seem to be similar.

With over 70% of banks' assets held by foreign-owned institutions, the Polish banking sector is dominated by foreign banks. However, according to the NBP, there seems to be no significant difference between (public) domestic and (private) foreign banks as far as CHF lending is concerned. CHF loans are also offered by small as well as large banks.

Data from the NBP suggest that just over half of all foreign currency loans in Poland are refinanced through liabilities to customers. In September 2007, banks' liabilities to non-financial enterprises and households in foreign currency amounted to CHF 26.1 billion. This corresponded to 58% of foreign currency loans to non-bank clients. According to the NBP, the remaining open balance sheet positions are usually matched using off-balance-sheet transactions, mostly foreign exchange swaps. Some banks reduce their open foreign exchange positions by issuing foreign currency-subordinated debt, in particular to foreign parent banks.

4 Refinancing through the Swiss financial sector

Section 3 showed that CHF loans are largely refinanced by interbank loans and the issuance of bonds, particularly in the euro area. Focusing on CHF interbank funding from banks located in Switzerland and CHF bond issuance by non-resident (European) banks, this section examines the extent to which the Swiss financial sector is involved in this refinancing.

Banks located in Switzerland appear to play only a minor role in funding CHF lending in the rest of Europe.[3] The first column of Table 3 displays the CHF-denominated interbank loans of banks located in Switzerland towards the six euro area and the six non-euro area countries with the largest volumes of CHF lending. The column shows that in December 2007 total CHF interbank loans towards euro area countries were CHF 30 billion, amounting to 14% of the CHF credit volume extended in these countries. The largest ratio of CHF interbank funding from banks located in Switzerland relative to CHF credit outstanding is found in Luxembourg and Italy (both 21%), while it is 11% in Austria and a mere 1% in Greece. Outside the euro area, Switzerland-domiciled banks appear to be even less prominent in refinancing CHF loans. In 2007, total CHF interbank loans towards non-euro area countries was CHF 10 billion, of which CHF 9.3 billion was towards the UK alone. A comparison with Table 2 shows, for instance, that CHF interbank loans by Switzerland-domiciled banks to Hungarian and Polish banks made up a mere 0.2% of CHF lending by these banks in 2007.

Table 3: Refinancing of CHF lending (in CHF billion)

		CHF interbank loans by banks located in Switzerland	CHF bonds issued by European banks in:	
			Zurich	Elsewhere
Euro area	Austria	9.3	31.8	1.0
	Germany	9.5	36.5	1.8
	France	4.4	15.3	0.2
	Luxembourg	5.3	8.2	1.3
	Greece	0.1	0	-
	Italy	1.7	0	-
Non-euro area	Hungary	0.1	0	-
	Poland	0.0	0	-
	UK	9.3	7.8	0.5
	Iceland	0.0	1.2	0.0
	Denmark	0.5	4.3	0.1
	Croatia	0	0	-

Sources: Interbank loans: Swiss National Bank, data as per December 2007; CHF bonds issued in Zurich: SWX, data as per July 2008; CHF bonds issued elsewhere: Datastream, data as per August 2008.

3 The organizational criterion of most banking statistics is the country of residence of the reporting bank rather than its nationality. Thus, the term "banks located (or resident or domiciled) in Switzerland" refers to the head offices and domestic branches of Swiss banks as well as the branches of foreign banks in Switzerland. However, a limited amount of consolidated banking data also exists where the organizational criterion is a bank's nationality. The term "Swiss bank" is used in this context and refers to the head office and all (domestic and foreign) branches and subsidiaries of a Swiss bank on a worldwide consolidated basis.

Note that Table 3 does not include all potential CHF refinancing channels available to banks located in the listed countries. For example, off-balance sheet operations (for example foreign exchange swaps) with banks located in Switzerland are not included. Secondly, neither loans from, nor off-balance sheet operations with, foreign branches of Swiss banks are included.[4] While data on off-balance sheet operations are hardly available, consolidated (on-balance-sheet) claims of Swiss banks suggest that their foreign branches are not substantially involved in refinancing CHF lending in most of the listed countries. For example, total consolidated claims (loans and securities, in all currencies) of Swiss banks on Austrian banks amounted to only CHF 11.8 billion in December 2007, while for Poland and Hungary together they were only about CHF 1 billion.[5]

CHF bond issues by European banks appear to be more important than CHF interbank loans in refinancing CHF lending in Europe. The second and third columns of Table 3 display the total amount of outstanding CHF bonds issued by banks from the six euro area and six non-euro area countries. The two columns show that euro area banks currently have CHF bonds worth CHF 96 billion outstanding, an amount equivalent to 44% of total CHF loans extended in these countries. Interestingly, an overwhelming share of this debt is traded on the Swiss securities exchange (SWX Swiss Exchange), rather than on the Eurobond market. A comparison with Table 1 shows that the ratio of outstanding CHF bank bonds to total CHF loans exceeds 60% in Germany, is about 50% in France and roughly 40% in Austria. By contrast, banks in Italy and Greece have no outstanding bonds denominated in CHF. Banks outside the euro area have issued much lower amounts of bonds denominated in CHF. Besides the UK and Denmark, no country displays a significant volume of such debt. In particular, banks from Hungary and Poland have no CHF bonds outstanding.

Table 3 suggests that the Swiss financial sector is substantially involved in refinancing CHF lending activities in the euro area countries of Austria, Germany and Luxembourg. By contrast, the Swiss financial sector shows almost no direct involvement in refinancing of CHF lending in Hungary and Poland, at least as far as on-balance sheet transactions are concerned.

4 See previous footnote for the definition of a "Swiss bank".

5 A notable exception is the UK. Total consolidated claims by Swiss banks on UK banks amounted to CHF 171 billion in December 2007, of which CHF 78 billion were claims by foreign branches of Swiss banks in currencies other than GBP. Assuming that a major part of these claims are denominated in CHF, their magnitude is consistent with reports that UK banks may play an important role in refinancing CHF lending in Eastern Europe.

5 Conclusion

This paper documents and characterises Swiss franc lending by banks in other European countries to their non-bank clients. The data compiled suggest that the prevalence of CHF lending varies strongly, both among neighbouring countries and emerging countries in Eastern Europe. In contrast to the prevalence of CHF lending in Austria and Germany, France and Italy display only low levels of Swiss franc loans. Moreover, while CHF loans account for a substantial share of lending in Poland and Hungary, this is not the case in other similar emerging countries of Eastern Europe (Czech Republic, Slovak Republic, Romania and Bulgaria).

CHF lending in Austria, Poland and Hungary is characterised overwhelmingly by CHF or CHF-indexed residential mortgages. In each of these countries, CHF loans are much less prevalent in consumer credit or corporate credit. In Poland and Hungary, CHF loans are not just offered by foreign-owned banks, but also by large and small domestic institutions. CHF lending in other countries is less specific in nature. In Germany, CHF lending is evenly distributed between domestic and foreign clients and between households and firms. In Luxembourg, CHF lending is dominated by foreign lenders and foreign borrowers (mostly firms and households).

The refinancing and hedging of CHF loans varies across countries. In Austria, Germany and Luxembourg, CHF assets of banks are largely refinanced by deposits, interbank loans and bonds issued. In Hungary and Poland, CHF assets appear to be hedged to a substantial degree by off-balance-sheet operations.

The Swiss financial sector is substantially involved in refinancing CHF lending by banks in the euro area, where refinancing through the bond market is much more common than through the interbank loan channel. Banks in Eastern Europe do not refinance their CHF loans either through the Swiss interbank loan market or the Swiss bond market. Lack of data does not allow us to make any statement about the involvement of the Swiss banking sector in hedging open CHF positions in the rest of Europe (for example foreign exchange swaps). Together, these findings suggest that, while the Swiss financial sector is involved in refinancing CHF lending in the rest of Europe, the corresponding risks seem to be low and are carried by final investors, rather than by financial institutions located in Switzerland.

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