CEE Mortgage Market Regulation

Sector risk, regulation and policy issues in Central and Eastern European transition countries, with a special focus on Romania, Serbia, Croatia, Hungary, Poland and Turkey

Author:

Hans-Joachim Dübel
Finpolconsult, Berlin

Research assistance:

Ioana Bejan
Freie Universität Berlin

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List of Abbreviations

ALM	Asset-liability Management
APRC	Annual Percentage Rate of Charge
ARM	Adjustable-rate Mortgage
CARRP	(Directive on) credit agreements relating to residential property
CB	Covered Bond
CCD	Consumer Credit Directive
CEE	Central and Eastern Europe
CHF	Swiss Franc
CLTV	Combined Loan-to-Value Ratio
CSH	Contract Savings for Housing (Bausparen)
CZ	Czech Republic
DE	Germany
PTI	Payment-to-Income Ratio
EIR	Ireland
ES	Spain
ESIS	European Standard Information Sheet
Fannie Mae	Federal National Mortgage Association
FFAR	Foreign Funding Adequacy Ratio
FR	France
Freddie Mac	Federal Home Loan Mortgage Corporation
FRM	Fixed-rate Mortgage
GSE	Government-sponsored enterprise
HEL	Home Equity Loan
HU	Hungary
LDR	Loan to deposit ratio
LHS	Left hand side
LTV	Loan-to-value Ratio

MBS	Mortgage-backed securities
MI	Mortgage Insurance
NSFR	Net stable funding ratio
PL	Poland
RHS	Right hand side
RO	Romania
SRB	Serbia
SVR	Standard Variable Rate
TK	Turkey
UK	United Kingdom
U.S.	United States

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Executive Summary

After some inertia during the early 1990s, transition countries have made progresses in building market-based housing finance systems in the past 15 years. Developing housing finance has been an important policy goal in order to revive construction activity, which had collapsed in the initial years of transition. Additional construction activity is needed in order to catch up with housing consumption in Western economies, to upgrade and modernize the building stock and in order to address the strong regional mismatches resulting from migration. A secondary goal has been to liquefy capital locked in the housing stock that was privatized at the time. With the strong growth of mortgage portfolios, however, underwriting standards and borrower credit quality has suffered in some countries in the region leading to the first instances of mortgage crisis in transition. Given parallel events in the United States and Western European countries, these have caught the immediate attention of international investors and become relevant for broader macroeconomic performance.

This study identifies sources of mortgage portfolio risk and related broader systemic risk in the CEE region that have emerged during this first mortgage market cycle. Based on six country case studies in Hungary, Poland, Croatia, Serbia, Romania, Turkey, it develops policy options to deal with key issues, makes specific recommendations for regulations based on best practice, and proposes priorities for the EBRD's policy dialogue with client countries. It also makes country-specific regulatory recommendations for four of the six countries. The study has been supported by EBRD as part of this effort to develop mortgage finance and local capital markets, building on earlier publications on legal development and mortgage standards.[1]

Defaults on mortgage loans in the CEE region have been driven by inappropriate product innovation and compounding risks, rather than excessive credit growth

From a stability perspective, mortgage debt-to-GDP levels in the region are still moderate (15-20% of GDP) compared to western crisis cases (e.g. in the US at around 80%). These values per se pose no systemic risk to CEE financial systems. Portfolio performance so far has also been reasonable, as is to be expected in an emerging market context where lending has focused on owner-occupied housing for what are typically higher-income borrowers.

However, there are important exceptions. The salient case is Hungary where the risk-layering effect of simultaneous interest rate and devaluation shocks had a severe impact on both debt service burdens and debt levels. The resulting surge in default rates enforced a portfolio restructuring. Home equity and investment lending, which took decades to develop in Western

[1] European Bank for Reconstruction and Development. 2007. "Mortgages in transition economies. The legal framework for mortgages and mortgage securities."

Europe but grew rapidly in the CEE region, are also seeing high default rates (e.g. in Hungary or Poland).

Recognition of these risks has in some countries now led into a deleveraging process accompanied by a change in the structure of product offers and tighter selection of borrowers. Mortgage portfolio growth has essentially come to a halt or declined since 2008. Home equity products and the most problematic foreign currency product tied to the Swiss Franc have lost in relevance or disappeared, and underwriting standards have been raised.

Inconsistencies of regulatory interventions in primary mortgage markets raise the risks of lender insolvency and may not lead to the desired default risk mitigation.

The design of primary market regulations in part determines mortgage credit, interest rate and currency risk exposures of lenders and borrowers. In performing that task the region is largely on its own – either technically as non-EU-members, or substantially, given that EU consumer protection rules so far have been limited on enhancing transparency, rather than on materially reducing risk by defining the limits of product innovation and underwriting. The proposed EU CARRP Directive will likely only modestly tighten underwriting standards.

The inconclusive process of EU legislation and its transposition in the region already in the past resulted in a patchwork of product regulations. The situation has been exacerbated by the responses to the current portfolio performance issues related in particular to foreign currency loans.

In three countries we have seen interventions into existing products, i.e. the interest rate adjustment regulations passed in Romania and Serbia and the Swiss Franc debt restructuring in Hungary. Ex-post interventions may seriously impede the ability of lenders to issue mortgage securities, which rely on a *predictable* mortgage cash flow.

Generally, the risks of foreign currency lending have been dealt with in vastly diverging fashions – not at all in Croatia, restrictively in Hungary through loan-to-value limits, and an outright ban in Turkey.

Critically, interventions are often made *before* fully developed alternative local currency products are available (Serbia, Romania, Poland, Turkey, partly Hungary). This could without intention raise default risk as borrowers are forced to pay far higher initial debt service in local currencies, when foreign currency lending is choked.

Local currency products are currently in the region not sufficiently adapted to high inflation and/or high real interest rates. An adaptation would demand either an initial burden reduction through subsidies – a likely insufficient interest buy-down programme for Forint lending has been set up in Hungary - or shifting the initial burden to later phases of debt service. Renewed credit risk could in regard to the latter strategy arise through unregulated interest-only phases or introductory rate arrangements in local currency.

The new foreign currency loan regulations in the region are biased towards restrictive borrower selection - through tight loan-to-value limits and income stress assumptions - and against developing material downward risk protections - e.g. through exchange rate caps. This approach in essence aims at protecting lenders rather than consumers and invites avoidance strategies, such as inflated income statements or appraisals. Given that most borrowers already with a foreign currency loan have conversion options into local currency, the resistance against limiting exchange rate risk seems implausible.

The design of new local currency products in the region is biased towards risky adjustable-rate mortgages. A preference among regulators for fixed-rate lending exists, yet it comes without the necessary material support to lenders - e.g. lower capital requirements or tax or guarantee support. Regulatory interventions capping or removing prepayment indemnities turn fixed-rate lending more expensive or non-feasible (all countries). Adjustable-rate products are based on interbank rates, as lender cost-of-funds indices as the alternative are rejected (Hungary, Serbia, Romania). Interbank indices in local currency face serious liquidity issues. A particularly problematic regulatory demand is to fix the spreads over underlying indices for the entire life of the loan. This severely raises lender solvency risk (Serbia, Romania).

Challenged by rising default rates, the foreclosure and consumer insolvency regimes are tested for the first time in the region, and apparently need improvement (Hungary, Serbia, Croatia, Poland). The risk of distortive foreclosure moratoria decreed by the state is highest where the default caseload is elevated and rules that permit the discharge of residual debt after a foreclosure are absent or highly restrictive (Hungary). Discharge rules generally require the borrower to service that debt for a number of years, which establishes a penalty for defaulting. Drastic reductions are currently proposed in Western Europe (e.g. Ireland, from 12 years to 3 years). Reducing discharge periods to very low levels could increase the probability of default, while keeping long periods in place could keep the risk of political intervention high.

Finally, the data situation supporting underwriting decisions remains deficient, specifically regarding the availability of house price data (no national standardized index concepts, except Turkey) and rental market surveys (all cases). Rent data are needed in order to begin departing from the open market valuation method that is currently dominating underwriting and increasing the risk of excessive credit growth (all cases). Risk could potentially be reduced at least for lending in the apartment sector if lenders were to use the income method, which ties valuations to the alternative of renting the property out. Flagrant misappraisals have also been recorded in new construction due to inflated profits of developers (e.g. Romania). This could be corrected by using the reconstruction value as additional benchmark.

Fiscal support efforts for local currency lending are insufficient and the shortage of rental housing may give incentives for lending to clients of poor credit quality

The countries studied currently provide a fair amount of mostly implicit mortgage subsidies which could be reorganized to support local currency retail lending, and possibly also the rental housing alternative.

Following the restructuring of Swiss Franc loans originated during 2004-2008, Hungary now massively subsidizes the second large mortgage portfolio within a decade, after having done so via drastically reduced interest rates on Forint loans during 1999-2003. The intention to spend a fraction of these amounts for a new Forint buy-down programme should be welcome. A buy-down programme had successfully supported local currency lending in the Czech Republic in the 1990s.

Romania and Serbia run high-LTV mortgage insurance and public loan systems supporting solely foreign currency lending, which in addition may create a large contingent fiscal liability. Subsidized contract savings for housing schemes – an alternative to high-LTV insurance potentially generating second mortgage loans in local currency - have been established in half of the case countries (Romania, Croatia, Hungary). These programmes did not take off in the past due to the foreign currency lending boom; now that they are in demand they need better integration for first mortgage lending (esp. Croatia, Romania).

Beyond mortgage subsidies, both the design and implementation capacities of housing policy remains limited in the region. This is amply demonstrated by the backlog in both private and public/non-profit rental housing production and maintenance of the existing stock (Romania, Serbia, Hungary, Turkey). Additional rental housing production, or stock repair and modernization, could cater to the needs of young and mobile households and thus avoid future subprime lending problems. These households currently have no other choice than buying, and in addition do so in urban centres where prices are driven up by migration pressure. Poland is the only country in the sample that has partly succeeded in rebuilding a non-profit rental housing sector; Croatia has plans for its revitalization. There are efforts in Romania to rehabilitate the old block of flats which could support the rental market.

Mortgage securities regulation remains incomplete while regulatory demands to increase long-term assets and raise liquidity ratios are increasing

Twenty years into the transition process the regulation of mortgage securities remains incomplete. This delay endangers the success of Basel III regulation intended to reduce interest rate and liquidity risk with mortgage lenders.

Banks will need to shift from the current benchmarks in loan-to-deposit ratios (LDR) to a net stable funding ratio (NSFR) methodology in their liquidity risk management in order to avoid creating purely deposit-funded mortgage finance systems. Such systems would be vulnerable to

both liquidity and interest-rate risk should deposits become less stable. Of the six countries at present only Hungary seems to be applying the NSFR to foreign currency lending.

The NSFR benchmark, which under Basel III/CRD4 is limited to one year, should also be monitored for longer terms to address the funding risks of mortgage finance. Long-term targets would give further incentives for using bonds over deposits. A particular problem in mortgage finance is that that legislation often limits prepayment indemnities severely (Romania) or outlaws them (Croatia, Serbia), resulting in high variation of asset duration depending on the interest rate scenario. Lenders ought to assess these risks properly and regulators should encourage appropriate funding instruments, e.g. pass-throughs in which investors bear the duration risks, or callable or soft bullet funding instruments, which provide the lender with additional duration risk management options. There is still implicit taxation of domestic bank bond issuance (e.g. reserve requirements in Croatia and Serbia), which – if applied to longer maturities - is defeating the intention of ensuring greater funding stability.

Potential issuers of mortgage backed bonds give mixed signals regarding their need for covered bond or MBS issuance, as the interbank and intragroup financing situation remains in flux (positive signals from interviews in Croatia, Romania, as opposed to more balanced views in Hungary). The central funding constraint reported is capital allocation, given the accelerated Basel III capital requirement schedule. Yet, foreign banks with issues in unsecured funding are aggressively issuing (e.g. Italian banks). Even though the mortgage portfolio is comparatively small and deleveraging is under way, covered bonds are hence a necessary funding instrument.

Insufficient liquidity of covered bonds is an issue. Pooling of residential and commercial mortgages is the standard in the region (except Hungary), which compromises transparency. Currency pooling is complicated by tightening counterparty requirements for swaps. Efforts to establish centralized issuers, still dominating smaller Western European markets (Switzerland, Denmark), have been unsuccessful so far in Poland and suffered setbacks in Hungary. Options for cross-border collateral pooling (e.g. via the home balance sheet in covered bonds issued from e.g. Austria or Italy) remain unused. Creating options for centralized issuance, e.g. through enabling loan sales to mortgage banks in Poland, remain a policy priority.

Governments in the region have difficulty in addressing the fiscal risk implied by the typical preference given to covered bond investors under national insolvency regimes. European bank resolution and deposit insurance regimes, both existing and proposed, so far do not address issues raised by national covered bond legislation. Fear of a conflict and heavy-handed government intervention has been the historic reason for the creation of special banks in Poland and Hungary. Such risk is present still today regarding universal banks as issuers: the introduction of the good bank concept for bank resolution (e.g. in Romania) conflicts with high levels of overcollateralization supporting covered bonds. This renders the imposition of issuance limits to covered bonds issued by universal banks more likely, which in turn could discourage specialized business models. A comprehensive legislative approach would address the consistency of the broader bank insolvency framework as well as try to limit overcollateralization or improve its management in the insolvency process.

Covered bond laws also historically have adopted a conservative credit risk management profile (low LTV, no foreign assets), which should be retained in new legislations in the region. Options for interest rate and liquidity risk management should be enhanced (soft bullet, pass-through issuance), and in this context parallel issuance options with backing by both static and dynamic pools should be considered. Up-coming EU legislation is likely to create larger room for prepayment indemnities for covered bond-backed loans.

MBS markets in the region are undeveloped, with laws shelved (Croatia, Serbia), in need of revision (Romania), or inactive (Turkey). A gold standard mimicking covered bond asset quality standards could help, but remains stuck at the EU level. The most realistic option for market development would be taking the existing mortgage insurance programmes (Romania, Serbia) and building an MBS bond insurance programme on that basis.

The mortgage securities investor base could be shrinking due to interventions in national pension systems or their lack of resources, and the investment grade rating cliff

Local investor demand for local currency duration via mortgage securities is high (e.g. Serbia), given the unattractive risk-return profile of alternatives government bonds, bank bonds or deposits. Except for Turkey, household saving ratios are encouragingly high, supported by the introduction of defined contribution pension funds. Yet, forcing these to invest in government debt or unwinding them has reduced the volumes for mortgage securities (Hungary, Croatia). More disturbingly, portfolio performance benchmarks actively discriminate against diversification into corporate risk as well as duration risk. That institutions can manage duration risk is essential to produce a meaningful division of labour with mortgage lenders, in particular where consumer protection rules create considerable prepayment risk.

Foreign investor demand for emerging market bonds is strong, but meets barriers in the region. European institutional investor demand remains subdued by host country regulations (investment grade limitation, cross-border limits outside the EU). Yield and in particular macro strategy investor demand is constrained by liquidity. Banks rely strongly on the ability to repo CEE covered bonds. This is essentially limited to the Eurozone member Slovakia, which also saw the strongest issuance activity in 2011. Regional dialogue is needed to address the regulatory barriers for European investors, possibly under the Vienna II initiative, and to reduce information and analysis cost associated with small issuers from small markets.

The regulatory and policy dialogue should be sequenced: first primary, then secondary market development

The interventions of regulators seen in the area of design of mortgage products together with the lack of fiscal support to alter the risk environment for lending fundamentally require adjustments in the funding and risk management strategy of banks. This is true for all reviewed country cases, and in particular Croatia, Serbia, Hungary and Romania, for which more detailed recommendations are made below.

For instance, if regulation demands lifelong fixing of the spread of a mortgage loan over an interbank index – as is the case in Romania and Serbia – the lender has sold a number of pricing options as his optimal strategy against insolvency would be to pass-through all interest rate risk to the market. Particularly toxic could be the risk of variation of the own cost of funds against the interbank index. The appropriate approach would be to issue securities that pass through the risk to long-term investors, and not standard covered bond or deposits, which keep it internalized with the lender.

Both primary market regulation and fiscal support are still mainly a national task, to which the dialogue could contribute international best practice review. The upcoming European regulation (CARRP Directive on mortgage consumer protection) will provide only limited additional guidance over the already existing EU laws, which have largely been implemented and have little effect on product design and underwriting. Specific suggested areas for further policy dialogue would be:

- Primary market regulation: consumer protection law (product regulation, underwriting/affordability tests), mortgage foreclosure/restructuring and consumer insolvency law development.
- Mortgage product fiscal support options, with a preference for reducing the initial burden of local currency products. For foreign currency products, the development of material protection mechanisms (e.g. payment caps) should be discussed. Current subsidies should be fiscally rationalized (capping of contingent liabilities), refocused on local currency products and targeted to reduce risk (e.g. by supporting borrower equity).
- Primary market infrastructure, with a focus on house price and rent index creation as well as the improvement of collateral valuation standards for lending.

Secondary market regulations should follow in a subsequent stage. The possible exceptions here are Poland, where primary market regulations are less problematic, and the on-going dialogue in Romania. For EU members, a review in particular of covered bond laws could also benefit from greater clarity about the specifics of EU bank resolution and deposit insurance design initiatives.

Going forward, in order to address the shortage of rental housing, broader efforts in building housing policy capacity could be an option, e.g. in co-operation with the EU Commission and other European development banks.

Country-specific recommendations

Based on interviews with regulators and market participants, the following specific recommendations are proposed, which are also spelled out in more detail in Section 6.

- **Croatia** has seen a rather stable primary market development but needs more conservative primary market regulations protecting against future risk and the integration of contract

savings for housing. Even with the currency peg operating satisfactorily, devaluation risk protections for the foreign currency portfolio should be considered. An attempt could be made to build a local currency portfolio of smaller housing and second mortgage loans around contract savings. A covered bond law should be supported; this requires addressing the reluctance of both bank and pension regulators to accept issuance of or investment into bank bonds. Croatia's efforts to rebuild a non-profit rental housing programme should be supported.

- **Hungary** has reacted to the catastrophic performance of the mortgage portfolio and has made a U-turn of both regulation and fiscal support strategy to develop local currency lending. These efforts should be supported with fine-tuning (e.g. question of indexation). Given the recession and on-going bank deleveraging it is advisable to consider in parallel euro mortgage lending that is both less restrictive (e.g. in terms of LTVs) and more protective (operating e.g. with payment or currency caps) programme. The special bank covered bond funding system will likely be boosted by the shift to local currency lending. The liberalization sought for by foreign lenders should come with co-ordinated bank insolvency and deposit insurance reforms. The country needs a comprehensive housing policy redesign with greater focus on rental housing.

- In **Romania**, the performance of the foreign currency portfolio might suffer from continued devaluation, which could reduce regulatory initiatives that some market participants perceived as arbitrary (e.g. the loopholes in the Prima Casa programme). Efforts to support local currency lending may need to be massively stepped up, including through a re-focusing of public insurance and possibly buy-down programmes as in Hungary. Again, the question is whether providing foreign currency borrowers with some devaluation risk protection could be the more effective alternative. Interventions into product design (e.g. lifelong fixed spreads over interbank indices) have increased lender solvency risk and warrant a correction. In the secondary market, passing the proposed covered bond law, together with adequate changes to bank insolvency and deposit insurance regime, should be the priority. The national housing agency is in need of a redesign.

- **Serbia** has a small primary market where some consumers have suffered from devaluation risk and arbitrary rate increases by lenders. The regulatory reaction to this has been pronounced (e.g. lifelong spread fixing over interbank indices) and distortive (retroactive intervention into existing contracts to reduce spread). The authorities seek to support local currency lending, though the potential for this is as yet only limited. A small local currency portfolio could be envisaged on the basis of different product design, or through contract savings for housing. The mortgage insurance programme could support a future capital market strategy, which presupposes passing both mortgage-backed security and covered bond legislation. The programme could be developed into a national housing (finance) agency supporting also rental housing.

Introduction

Between 2000 and 2009, supported by low initial market size, accelerated market entry of lenders, product innovation and declining interest rates, Central and Eastern European (CEE) countries swiftly expanded their housing loan markets. Since 2009 mortgage markets in the majority of countries have grown markedly more slowly, and in other countries have entered a recession, usually accompanied to elevated mortgage defaults. As the economic outlook for the region remains uncertain and devaluation risk hits the predominant foreign currency product portfolio, wider increases in defaults may occur.

The purpose of this study is to identify sources of mortgage portfolio risk and related broader systemic risk in the CEE region that have emerged during this first market cycle. Based on this evidence and leaning on the EBRDs 2007 landmark publication in the sector[2] it tries to think ahead regarding the design of both micro- and macro-prudential regulations and future support for market development that could mitigate risk. The findings are to be presented and discussed within the EBRD's regulation and policy dialogue with client countries.

A sample of six countries has been selected for in-depth analysis following a country priority list from EBRD's in-house mortgage market development study of mid-2011: Poland, Serbia, Croatia, Hungary, Romania and Turkey. Evidence from other CEE markets is added ad-hoc; the country sample, however, is representative of both the varying market development stage and regulation and policy issues encountered. None of the case countries, however, has had a successful local currency market development in mortgages. Outside Euro membership, so far this can generally be said for transition countries only for the case of the Czech Republic. All are potential targets for EBRD assistance to develop LC lending.

The report is organized as follows:

- Section 1 takes briefly stock of the dynamics and recent default performance of the housing loan portfolio;
- Section 2 discusses risk issues and developing regulations related to primary market design: transparency, products and their underwriting standards, insolvency as well as collateral valuation, particular attention is paid to changes often made in response to recent portfolio performance issues;
- Section 3 looks into fiscal support strategies that have been used to mitigate primary market risks, with a special focus on the support for LC lending;
- Section 4 discusses funding risk issues for housing loans and the related development of bank risk management, liquidity and mortgage securities regulations, with a particular focus on covered bonds;

[2] European Bank for Reconstruction and Development. 2007. "Mortgages in transition economies. The legal framework for mortgages and mortgage securities."

- Section 5 offers suggestions for priority areas of the regulation and policy dialogue;
- Section 6 summarizes individual country recommendations from the findings of the study.

Note: product and underwriting parameters are shortened by using acronyms, explained when they appear for the first time in text. The terms 'mortgage' and 'housing loans' are used synonymously.

1. Mortgage Portfolio Size and Overall Performance

This section takes stock of the dynamics and recent default performance of the housing loan portfolio. When discussing performance it is useful to differentiate between cash flow motives related to borrower income, unemployment, interest rate levels and loan design and balance sheet motives arising primarily from debt levels. The discussion is cursory.

1.1 Housing Loan Debt Dynamics

By 2011 the outstanding housing loan debt had considerably lost growth momentum, compared to the excessively rapid growth of the previous decade. A number of countries during both 2010 and 2011 still experienced growth relative to GDP. Inside our sample these were Croatia and Poland, outside Russia, the Czech Republic and Slovakia. However, we find a broadly equal number of countries that by 2011 are in a 'housing loan market recession'. In the sample, Hungary – at first sight surprisingly - only saw a mild reduction in 2011 after even some growth in 2010; this is an accounting effect due to the negative amortization in local currency (LC) resulting from devaluation, given that the main Hungarian loan product has been in foreign currency (FC) (see Figure 1, LHS). Outside the sample Estonia, Latvia, Bulgaria and Ukraine are in a market recession.

The drivers of the parallel credit boom of the 2000s in the mature housing loan markets of Western Europe and the U.S. have been well-explored in the literature; they include on the capital supply side lax monetary policy, increased competition both from banks and non-banks, loan product innovation, and on the capital demand side factors such as the availability of rental housing, capital gains speculation and tax arbitrage, as well as the use of housing loans for financing consumption expenditures.

The emerging markets of CEE, in contrast, during the period were still mainly characterized by catch-up effects. Currently these markets see the first real crisis since their inception, if we disregard the problems related to socialist period legacy portfolios in the first years of transition.[3] Looking beyond the current downturn, the primary effect will likely be a slowdown of credit expansion. Structural factors are still limiting credit growth, such as income levels

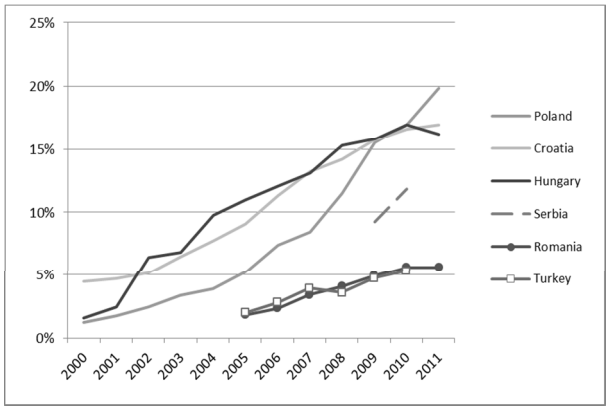
[3] The monopoly savings banks both in Hungary and Poland, OTP and PKO BP, started the transition with large mortgage portfolios indexed to inflation. The outstanding of the portfolios ballooned strongly during the initial high inflation phase and the loans later had to be restructured.

(bankability), distribution network reach (often only urban, main cities) and regional disparities. Romania is an example for limited distribution reach: the portfolio so far has been concentrated in cities and larger towns, as have bank branch networks, with a strong focus on Bucharest.[4]

Yet, noticeably, even some of the factors driving Western credit expansion were already present at this stage in the region. A full analysis is beyond the scope of this study. To focus just on the most salient factor, differences in growth dynamics have arisen between countries using FX lending (Hungary, Croatia) vs. those using a mix of LC and FX lending (Poland) vs those using LC lending only (Turkey). As the LHS of Figure 1 shows, the Polish market took off far more slowly than the Hungarian, despite comparable sector conditions. A key reason was higher LC interest rates in Polish Zloties. The slow market growth in Turkey in contrast, can serve as an example for the strong impact of product design limitations: the housing loan market remains tied to local currency (LC) as well as fixed-rate mortgages (FRM) by regulations.[5] Also for a wider set of countries, including Western Europe (see RHS of Figure 1), the correlation between predominant product and market growth has been strong. Both FX and adjustable-rate mortgage (ARM) lending products have favourable supply conditions, especially from international commercial banks, and bring lower initial rates to be paid by consumers. Both products, as will be explored below, however come with considerable risk.

Figure 1 Housing Loan Growth in the Region, Impact of Product Choice in the EU Perspective

Housing loan to GDP levels in case countries, 2000 – 2011 (December)



Mortgage market growth 2002-2007 and product choice in the EU-27 perspective

Source: National central banks, Finpolconsult computations. Notes: RHS – EU member states.

[4] Only few emerging market governments worldwide have tried to address this bias. Among them is Russia where mortgage distribution has been actively supported by regional public housing finance agencies funded by a federal housing agency.

[5] FX lending to consumers is prohibited in Turkey. Adjustable-rate mortgages (ARM) were banned until reform legislation passed in 2007, which proposed to enable the product if accompanied by interest rate caps. However, the Central Bank never passed the bylaws necessary to police the reform law, and ARM apparently is not practiced.

Gross new lending has also been declining in the region compared to the early boom years. Statistics are not available everywhere, most countries only report loans outstanding. The decline has been dramatic in Hungary where new lending in 2011 has likely been only a fifth of the 2010 volume. In Romania, in contrast, new lending has increased in 2011 over 2010, stimulated strongly by the public Prima Casa programme (see below). New lending in 2011 is still almost entirely in FX in Romania, Croatia, Serbia while Poland and most drastically Hungary have seen a dominance of LC lending. The LC share for 2011 for Poland is 62%, and for Hungary ca 80%. Most new FX lending in the region is now in EUR.

1.2 Portfolio Performance and Risk

Despite the present economic slowdown, a pronounced housing cycle and the predominance of FX lending, the sample countries still show the typical European picture of low owner-occupied mortgage default rates. In the 90-day overdue definition, the latest official data or interviews quotes yield: Romania 2% (quote by BCR), Croatia 1.5-2% (quotes from 2 lenders), Serbia 4% (Central Bank), Poland 2% (Central Bank), Turkey 1.5% (Central Bank). The outlier here is Hungary with 9.6% (Central Bank).

While apart from Hungary the current performance of the portfolio is unsuspecting, in the forward looking perspective a larger part of the portfolio could be at risk of increasing defaults. It is useful to continue the discussion therefore by analysing the two main drivers of default.

Balance Sheet Motives of Default

FX lending in the region together with devaluations has resulted in strongly growing loan outstanding as measured in local currency ('negative amortization'). In combination with stagnating or declining house prices rising LC loan balances have provoked rising 'current' loan-to-value ratios (LTV). Especially affected by large negative amortization are the loan vintages of ca 2004-2006, which were initiated at the lowest exchange rates to the EUR or CHF.[6]

Sizeable portions of the FX portfolio in the region are already in or close to a negative equity situation, e.g. Hungary (56% of FX loans over 90% LTV, Central Bank), Poland(32% of CHF loans over 100% LTV, Central Bank; some 300,000 loans according to the Polish Financial Services Authority), Serbia ('close to 100%' for CHF, 10-15% for EUR; interviews). In Romania, the depreciation in particular of the first half of 2012 is also likely to have created a sizeable negative equity position.

Negative equity has been frequently questioned as a default driver in the case of owner-occupied lending, as homeowners are assumed to mobilize all efforts to keep their principal dwelling. However, it is firmly established by empirical research at least for the case of investment lending. Also, home equity lending (HEL) by homeowners with higher LTV for the same product has seen higher default rates. In that regard,a full 38.5% of Hungarian portfolio

[6] See Poland's FSR of Nov 2011, p 48, figure 3.25, for an empirical analysis of 'current' LTV.

have been HEL, and FX HEL have seen default rates of 14.76% by Dec 11, double the level of FX purchase loans at 7.09%.

Regarding purchase loans that are 'under water', recent U.S. experiences suggests that borrower awareness may grow gradually that house prices do not return to peak levels, which then increases default rates with a delay. A mitigating factor in the CEE region, compared to the U.S., is the absence or lack of detail of consumer insolvency legislation. This implies often that residual debt after proceeds from a court auction or repossession by the lender falls on the defaulting borrowers forcing him into long years of additional debt service. Reforms limiting this obligation are under way in several case countries (see below). However, aggressively limiting residual debt obligations could increase default rates going forward.

Cash Flow Motives of Default

With the exception of Hungary, which had a mortgage market established long before transition, the sample countries are in the early phase of market development where borrowers are generally selected from good credit risks. Nevertheless the interviews with lenders yielded sensitivity to classical cash flow stress-related default drivers such as income loss from unemployment or wage cuts. Lenders may have been caught by a false sense of stability when selecting borrowers from apparently stable income groups. An example are public sector employees, whose wages were cut in Romania cut by 40% recently, a fact that has apparently contributed to delinquencies.

The outcome regarding cash flow risk is also strongly affected by the loan design, esp. the choice of currency and the extent of subsidies attached to the product. In the Hungarian case, according to central bank data, the FX loan default rates (7.66%) in December 2011 laid in the middle between those for the subsidized LC loans (2.39%) and those for market-rate LC loans (11.6%).

- The subsidized LC portfolio was originated during the first Orban government around 2000 under the so-called 'Sczecheny plan'. The loans carry deep interest subsidies over their entire life. The subsidies represent between 50% and 65% of net present value of the loans.[7]
- A new round of subsidies comes from the on-going restructuring of the FC portfolio, much of which is in an over-indebtedness situation. This author finds with the help of a simulation under the assumptions detailed in Box 1 a subsidy ratio between 46% and 50%, depending on the restructuring option chosen. This strong support should mitigate future defaults.
- Market rate LC loans in Hungary – with the highest default rate - not only lack these subsidies, but also were mostly given as home equity loans. Such loans were typically used for consumption and not housing finance purposes and tend to have higher default

[7] During the period, HUF loans were originated at 5% (general case) and 3% (young families) interest rates over 20 years while market rates were in the range of 13-15%.

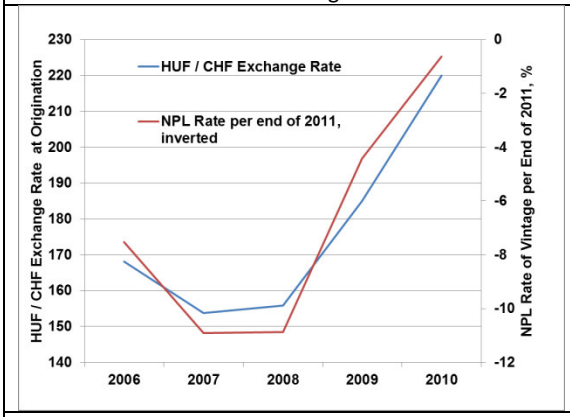
rates due to higher LTV or low credit scores, independently from the impact of interest rates.

Supported by the indexation of interest rates to interbank rates, as opposed to Hungary's reviewable rates (see Box 1, and discussion below), FX default rates in Poland are relatively low, and typically lower than LC default rates. However, again the comparison is distorted as Zloty loans also in Poland were frequently given as home equity loans, i.e. for consumption purposes. In the remaining jurisdictions of the sample, with their shallow LC markets, relative default rate analysis between the currencies is not meaningful.

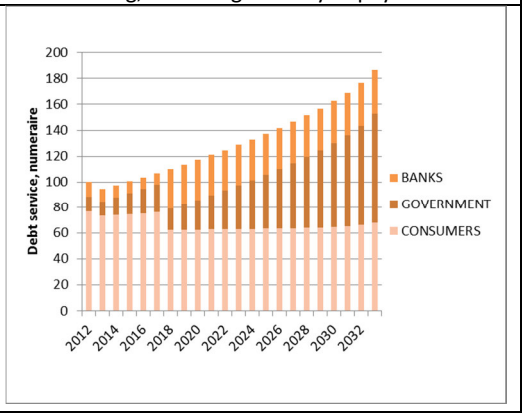
That default rates for deeply subsidized portfolio in the Hungarian case are low is hardly surprising. More interesting is that also the comparably mildly subsidized Romanian Prima Casa FX lending programme was reported to the Consultant with negligible default rates (0,06% per March 2012, both Raiffeisen and Alpha report rates as 'negligble'), despite its targeting to young households with partly substantial unemployment or wage risk. With the additional depreciation of the Ron later in the spring of 2012 default rates reportedly have increased.

Figure 2 Hungary: Exchange Rate Level upon Underwriting and NPL Levels, Likely Restructuring Outcome

Loan Vintage NPL Rates and their CHF-HUF Exchange Rate at the Time of Underwriting



CHF Legacy Portfolio Debt Service Simulation After Restructuring, Assuming no Early Repayment



Source: LHS - author's simulations. RHS – author's representation based on Hungarian Central Bank data.
Note: for assumptions underlying the simulation on the LHS see Box 1.

Is it possible to call the debate which of the triggers, balance sheet or cash flow motives, are responsible for rising defaults? Considering the widely publicized Hungarian case, the LHS chart in Figure 2 suggests a strong correlation between the negative equity situation of a given loan vintage and its default performance. However, in Hungary we also have seen a far larger impact of the devaluation on the cash flow stress facing borrowers, with a combined effect of devaluation and rising FX interest rates on monthly payments. In addition, interview partners report a large share of interest only loans, which adds to the 'pass-through' of devaluation on payment levels.

The question which drivers for default are relevant, and whether in particular there is an irreversible overindebtedness problem in the borrower population that must be addressed directly through modifications, is highly relevant for restructuring policies adopted. Box 1 discusses the Hungarian 'Home Protection Action Plan' in greater detail. Figure 2 serves as a companion to illustrate the cost distribution of the empirically most relevant restructuring option, which puts significant burden of the debt reduction on government.

Box 1 Some Comments on the FX Portfolio Restructuring in Hungary ('Home Protection Action Plan')

Hungary is the first European country reacting in the current crisis to mortgage over-indebtedness with portfolio-wide debt haircuts. Such hard restructuring measures have been avoided so far, both in Western Europe (e.g. Spain, Ireland, UK) and in the region (Romania, Poland). Elsewhere, some relief came through the widespread indexation of loan interest rates to interbank rates (either Euribor or Swiss interbank rates), which led to lower payment-to-income ratios than in the Hungarian case, where loan interest rates were unilaterally reviewable by the lender. Soft restructuring measures, such as the extension of loan maturities and the reduction of fees and spreads have been used more extensively.

Hungary had in vain tried to convince lenders to tie retail housing loans to indices retroactively, something which neighbouring Serbia has done in Dec 11 (see section on indexation). Missing this – possibly only intermediate – step HU has proceeded right to haircuts and burden-sharing between lenders and government. It is unclear whether a full actuarial analysis, taking into account the long residual life of the loan, growth, inflation and exchange rate scenarios, has been undertaken to substantiate the deal.

The conversion offer at a fixed CHF-HUF rate of 180 has been taken up per end of January 2012 by under 20 % of the outstanding, of which 80% have been estimated by the MNB to have been redeemed with cash (initial assumption was 90% with loans). Assuming a residual loan life of 20 years, CHF rates of 5% and HUF rates of 8%, the NPV of the loan repaid by the consumer is approx. 50% of the originally contracted amount.

Under the same assumptions, the NPV of the cash repaid by the borrower increases to approx. 54% when he remains in the revised CHF lending program. Here the credit volume under CHF-HUF 180 remains fully serviceable, the credit volume between CHF-HUF 180-270 is principal only for 5 years – with banks and government sharing lost interest and banks cancelling unpaid principal - and the credit volume cancelled by the government above CHF-HUF 270. The NPV share of the banks in this scenario is approx. 19% and of government 26%. The higher share of government is the result of inflation dynamics, as the cutting point for debt sharing has been fixed nominally while exchange rates are likely to depreciate further.

2. Primary Market Risk Issues and Regulation

This section discusses risk issues and regulation related primarily to consumer protection, and to a lesser extent to bank collateral law. Both are the main determinants of legal design of the primary market.

It starts with a brief overview over the status of consumer protection, followed by transparency (APRC). The following discussion of underwriting standards and products is intertwined:

- It begins with the amortization characteristics of the products used, where the predominant FX product has the salient feature of potentially generating negative amortization in local currency. This tests the usefulness of related underwriting standards such as loan-to-value rules or amortization rules.
- In the second part of the discussion focus is laid on cash flow characteristics of the products – adjustable-rate and fixed-rate – and implications for cash flow underwriting rules such as payment-to-income rules and income stress testing.

The section concludes with a brief discussion of the consumer insolvency and ancillary primary market regulation issues.

2.1 Consumer Protection Law Overview

Issues: A considerable body of new consumer protection legislation covering mortgages has been enacted since 2008 in the sample countries. The exception is Turkey which already in 2007 had passed comprehensive housing finance legislation. The legislation generally reacts to recent market events, esp. to elevated interest rates and default rates resulting from FX devaluation risk, and also implements EU legislation.

Within the sample, *retroactive* legislation has been implemented in Hungary (FX-LC conversion, FX restructuring) and Serbia (rate adjustment and spreads), i.e. the laws change existing product cash flows. This approach has generated considerable anxiety among mortgage lenders, which was communicated in interviews to the author. The new laws are going beyond transparency requirements typical for pre-crisis legislation and are intervening in product design. These moves do not appear to have seen much prior impact analysis. The Hungarian case is the exception, where several central bank articles have prepared regulation measures with empirical analysis.

Regarding the *Acquis Communautaire*, the EU Consumer Credit Directive (CCD)[8] does not require transposition to the bulk of the mortgage portfolio as it is limited to loans under 75,000 EUR. The semi-official reason for this limitation has been the protection of national mortgage funding models. Nevertheless EU members (Romania) and even non-EU members (Croatia) have transposed much of the Directive, and again without much impact assessment. An

[8] Directive 2008/48/EC.

example is the CCD limitation of prepayment indemnities to 1% of the prepaid amount, which Romania has transposed to all mortgages.

As a complement to the CCD beyond the 75,000 EUR threshold, a dedicated EU Directive on residential property lending (CARRP) as of the summer of 2012 is in the final discussion stages between the European Parliament, the European Commission and the European Council of Ministers. The proposed Directive places constraints on the underwriting in particular of FX and ARM loans and enhances the options to charge prepayment indemnities covering lender cost. Despite considerable addition of specificity over earlier regulation drafts, there remains large room for local jurisdictions to decide over mortgage product design regulations and many other material consumer protection issues. Vast areas of mortgage law, such as e.g. loan assignment (securitization), or foreclosure and insolvency treatment, are left to national discretion. Finally, the areas covered by CARRP are typically under minimum harmonization, which permits stricter national treatment.

Contrasting with the current regulation tightening in the rest of the sample cases as well as on the EU level, the Turkish regulation of 2007 had liberalized some of the tight regulatory reaction to the 2001 market crisis. For instance, the ban on adjustable-rate mortgage (ARM) lending was lifted against the requirement for lenders to write caps to protect borrowers. FX mortgages remain prohibited, however.

Options: Given the weak EU standards in this area, CEE countries can independently design product regulations or compare regulations with other countries in similar situations of crisis response. The latter could for instance be facilitated by EU / EBRD moderation. Transparency rules following the evolving EU standard can be expanded by material consumer protection standards limiting product design and underwriting practices. Gaps in regulation, especially in the area of foreclosure and consumer insolvency could be filled.

Recommendation: At a minimum, regulators in the region should share experience with each other and benefit from lessons learned in other countries. A far deeper level of empirical evaluation (impact assessment) is needed before drafting regulations, and if necessary ad-hoc rules that proved too costly need to be revised. The hurdles for interventions into existing contracts should be sufficiently high (e.g. systemic risk for entire market – e.g. default and foreclosure crisis, incompatibility with higher law). Regulations should not punish lenders collectively for misbehaviour of individual lenders. Some limitation of product innovation beyond the EU standards seems useful, given lower income levels and the level of risk stemming from non-suitable products.

2.2 Transparency / Effective Interest Rates

Issues: the Annual Percentage Rate of Charge (APRC) is the standard tool used to capture fees and other non-interest rate costs in loans, i.e. approximate the 'effective' interest rate paid by the borrower. Yet, the APRC has been designed for short-term consumer loans, and as practiced today is problematic in the context of mortgage finance:

- In long-term mortgages with adjustable rates, the dominant product in Europe, the applicable interest rate will change. Similarly, with FX products the underlying exchange rate may change. The current standard practice of assuming initial interest rate and exchange rate conditions as permanent for the APRC calculation is misleading consumers.
- Introductory discounts or fixed-rate periods followed by adjustable rates are a quite typical mortgage product. Combining two rate regimes in one product will generally render effective rates hard to capture under a single mathematical concept.
- Mortgage loans of whatever rate regime can typically be prepaid by the borrower, which conflicts with the maturity assumptions underlying the APRC formula. As a result of prepayments, a 30 year contractual maturity may easily become a 5 year 'expected' maturity, which increases the impact of a given fee on the effective interest rate.
- Mortgages are often sold in combination with investment products, e.g. interest-only mortgages with investment funds accumulated for their redemption. Also, second mortgages, loans of lower rank in the foreclosure process, often 'piggy-back' on first mortgages. Both types of combinations reduce the value of an isolated APRC computation on the mortgage product for the borrower.
- The numerous ancillary costs of mortgage financing are often outside of control of the lender, may be very high, and may vary strongly. [9] Examples are insurance or mortgage registration costs.

The proposed CARRP Directive reacts to the first point by demanding the APRC to use a long-term average of interest rates rather than the currently prevailing. Also, for FX loans the assumption of a 20% devaluation shall be built in the calculation.

In CEE countries, hiding fees has been a problem with FX loans as low nominal interest rates create room for this practice. Within the sample, Turkey, Hungary, Croatia, Serbia are mandating a standard APRC concept, while Poland and Romania do still not. This also means that none are addressing the above issues for the case of mortgage finance. None of the countries has adopted product specific differentiations of the APRC formula; this might become enforced through CARRP.

Options: CEE countries could be satisfied with the CARRP Directives approach or proceed with a more elaborate own mortgage APRC concept. Regarding CARRPs approach to the APRC of ARM and FX loans, different assumptions could be made (e.g. by using the 3-year swap rate as opposed to a long-term average), if these are stricter than CARRP.

Recommendation: Considering the hidden fee issues especially in FX lending introducing a standard APRC concept is an unavoidable first step. Realistic assumptions should be formulated depending on the local (now generally legislated) product set. For example, fully-indexed rates

[9] See Dübel and Rothemund (2011) for more detailed analysis.

should be quoted only, and there should be a realistic maturity assumption (e.g. 5 years). Product combinations sold in one offer should fetch a single APRC quote for the entire financing in addition to APRCs for the individual components.

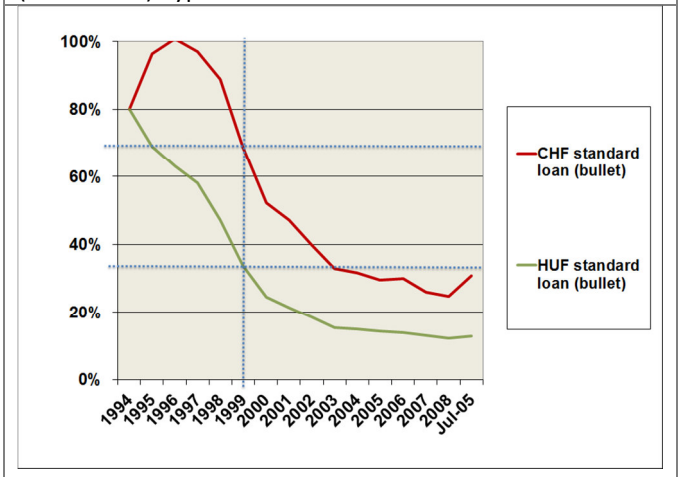
2.3 Product Design and Underwriting: Balance Sheet Issues

Loan Amortization - FX Lending

Issues: FX mortgage products are premised on the so-called *'Tilt effect'* which arises from high inflation levels as reflected in the in the local currency interest rate. Keeping loan volumes nominally constant in LC terms during high (house price) inflation will lead to rapidly declining LTV ratios. This change in LTV implies a front-loading of the real amortization burden and severely curtails affordability. Under low inflation, by contrast, the LTV will only fall slowly and the real amortization burden will be lower. The LTV – time profile is tilted in the high inflation case towards the front end of the financing.

Figure 3 Tilt Effect in Local Currency Lending Arising From High Inflation

Current LTV ratios of HUF loans underwritten in 1994 vs. (at the time) hypothetical CHF alternative



Source: Dübel and Walley (2011).
Notes: simulation comparing house price index and interest-only loan outstanding development.

Figure 3 illustrates the effect through a simulation with the example for two loans underwritten in Hungary in 1994, one in HUF and one in CHF[10]. Both are assumed to carry zero nominal amortization:

- As house prices in HUF rise through inflation, the loan-to-value ratio even of a non-amortizing HUF loan would have dropped from 1994 until 1999 from 80% to 35%. This means that the borrower would have amortized each year (80%-35%) / 5 = 9% of the value of the property acquired in real terms.
- During the same time period, house prices as measured in CHF, the currency with the lower inflation rate, have not nearly risen as fast as in HUF. The LTV of a non-amortizing CHF loan would have fallen only from 80% to 70%. In the first five years of the financing, the borrower hence amortized only (80%-70%)/5 = 2% in real terms. A 7% lower real amortization rate per annum makes a drastic improvement in affordability.

This logic obviously relies on a number of assumptions. The most important is the one that the

[10] At that time CHF loans were not on offer in Hungary. However, the argumentation delivered here served to justify their introduction from the early 2000s on.

exchange rate approximately follows purchasing power parity (PPP), i.e. that the real exchange rate is stable. If true, this means that negative amortization will be well-behaved, i.e. loan volumes in LC will increase with inflation as will incomes and house prices, and loan-to-value ratios will not strongly rise.

There is some reason to believe that this assumption could be true in the long-term. Proponents of FX lending have argued that other influencing factors of the exchange rate, especially capital flows, will be short-term only and not relevant for long-term housing finance.

As the crisis has shown, however, changing capital flows can lead to massive and potentially long-term dislocations of the exchange rate. The crisis has also taught us that there may be negative feedback loops where investors make a connection between high FX indebtedness in the mortgage sector and the sustainable exchange rate path (e.g. such a connection was made during 2008-2011 between CHF debt levels and HUF devaluation).

Yet, as shown above, even where potentially strongly appreciating currencies such as CHF have been used, we have inconclusive results regarding the relative default rates of FX vs. LC lending. Headline CHF loan default rates in Hungary are higher, yet in Poland they are lower than in the LC portfolio, with the Hungarian result being distorted by LC product subsidies. In Romania and Croatia we find low EUR default rates, with only Croatian borrowers being to a greater extent hedged euro-denominated incomes.

A second look reveals that it is product design issues, especially when leading to a dual interest rate and FX shock that have driven FX default rates. In the case of Hungary both applicable CHF interest rates increased – unilaterally adjusted by lenders - and the loan balance increased. The alternative to this would be to tie the FX interest rate to a foreign interbank index, which tends to fall when the foreign currency appreciates. This has been practiced e.g. in Poland in the case of CHF lending and it has helped to avoid a default crisis of comparable proportions to Hungary.

However, the contrarian movement between foreign interbank rates and the exchange rates seen in the current crisis is an ex-post result and in fact an indirect bailout of the FX portfolio. A similarly helpful act was the decision of Switzerland in August 2011 to peg the CHF to the EUR. Such moves cannot be assumed to be repeated. Also, the exchange rate shock may not be compensated enough for by declining rates to avoid higher default rates. The types of shocks seen should be generally mitigated in consumer finance, where the shock absorption capacity of borrowers is limited.

Options: Abolishing or strongly rationing FX lending is unfortunately not a credible policy option if there is no feasible LC alternative. Future inflation trends and to some extent real interest rates will determine the socially optimal product choice. The principal choices are

1. regulate the FX product (high and mid inflation levels), or
2. replace it by an LC product negatively amortizing LC inflation (mid inflation levels, so-called price-level adjusted mortgage), or
3. replace it by a standard amortizing LC product such as ARM or FRM (low inflation levels).

Many governments underestimate the resilience of inflation and prematurely opt for the exit option 3, ending up with high mortgage subsidies (example Hungary, before the CHF lending boom up to 2003). Regarding option 2, it is noteworthy that Poland and Hungary as well as Serbia's and Croatia's predecessor Yugoslavia had extensively used negative amortization LC products in the high inflation phases of the1990s and 1980s.

In Latin America such products have been the standard (Mexico, Colombia, Brazil, Chile). Yet, even if re-established, funding problems may arise as investors are used to fixed or regularly amortizing nominal balances of securities. Generally, real interest rate differences, resulting from deeper FX markets, may speak in favour of FX in the mid-level inflation scenario.

If the FX product is accepted as part of the product menu, then for option 1 there are three basic regulatory approaches:

- Heightened transparency (see Box 2 regarding the ESRB recommendations);
- Rationing credit via tighter underwriting (see Box 2 regarding FSB and EU requiring higher or even matched borrower income, higher borrower capital);
- Introducing material risk protection, i.e. forcing lenders to limit downside risk, which increases the FX interest rate by adding protection cost. Protection could be delivered via interest rate, payment or negative amortization caps. Adding cap cost to FX rates should be result in still lower rates than when using LC.[11]

Box 2 Evolving International Regulation Standards for FX Mortgage Products

The European Commission in a November 2009 consultation paper on possible further changes to the Capital Requirement Directive demanded a steep increase of capital requirements for FX currency LTV exceeding a low level, e.g. 50%. After the consultation process, the proposals were not further pursued. However, KOM continues to have latent plans.

European Systemic Risk Board (ECB) 2011 came out with 8 recommendations, however, with a lesser intensity of intervention. Primary focus in consumer protection is on 'appropriate information' for borrowers and 'encouraging' the extension of local currency credit and hedges against foreign currency risk. Regarding credit institutions, the Board demands an improvement of internal risk management systems, of funding structures, and – on the national level - both pillar I and II measures to account for the 'risks stemming from the non-linear relation between credit and market risks'. ESRB also demands reciprocity of treatment across borders, in the case of regional banking groups.

The Financial Stability Board (2011) in their Mortgage Underwriting Principles asks jurisdictions to require appropriate compensatory tightening in one or more dimensions to offset an easing in other dimensions. For example, foreign currency denominated loans could be offset by tighter serviceability requirements.

Before the crisis, regulations of FX products were either absent or were focused on heightened transparency[12]. Following the crisis, the overwhelming reaction delivered by international and national regulation initiatives has been to ration credit rather than demanding material protection.

[11] As an intuition, consider that with a cap product the borrower takes some of the expected exchange rate change that – under PPP and assuming the same real rates – is identical to the difference between LC and FX rates.

[12] Dübel and Walley (2011) describe the regulation history for CHF mortgages in Austria and Hungary

National regulation in the case countries has fallen broadly into the first two categories. Romania is 'implementing the EBRD recommendations' (NBR interview) and has cut permissible LTVs. Romania also introduced a cumulative interest and FX stress test, which Poland had introduced already in 2009. Yet, Poland so far has abstained from specific LTV limits for FX loans (as has the upcoming EU CARRP Directive). Hungary has massively cut back on permissible LTV for FX loans while increasing the minimum required borrower income to 15 times the minimum wage. This policy has effectively limited FX to very high-income or FX-income receiving ('matched') borrowers. Serbia has cut back somewhat on the LTV, but not as far as Hungary. Turkey at the extreme end has banned FX lending after the 2001 currency crisis, something which has been temporarily implemented during the current crisis in Hungary and also Ukraine. Croatia is the only sample case that has not tightened FX lending standards (but practices higher capital requirements since a de-euroization[13] campaign of the mid-2000s). Table 1 on page 20 provides an overview.

Differentiation of the payment-to-income ratio (PTI) by currency has also been used in order to discourage FX lending. However, the lower ratios are generally still not binding constraints, given the far lower interest rates of FX compared to LC loans.

Material FX risk protections, such as payment or negative amortization caps, have largely not been favoured by regulators. They also have been made more difficult by a parallel host of regulations that have demanded higher internal FX risk management controls and hedging requirements. The exception in this area seems to be FX-LC conversion offers to borrowers, which banks are forced to underwrite. Terms differ: Hungary has ex-post capped the applicable FX-HUF exchange rates under the *Home Protection Action Plan*, while in Poland lenders must offer borrowers conversion at the going FX rate at any point in time. Mandatory conversion at any time is also a likely requirement of the upcoming CARRP Directive.[14]

Recommendation: Where no exceptions have been available, as in the case of the Romanian Prima Casa programme, the regulatory approaches on FX lending taken so far have had recessionary impact on the market and severely restricted the number of borrowers. This will trigger resistance in countries without a credible LC alternative. In particular young borrowers will lack either the equity (LTV rules) or income (stress test), or both, needed to fulfil the demanded FX stress scenarios. Some economies will objectively have to stick to FX lending for the foreseeable future. Regulations should strike a better balance between bank risk protection and consumer risk protection while trying to limit the credit rationing impact.

[13] A more familiar term for currency substitution processes in banking is 'dollarization'.

[14] From a financial economics perspective, it is hard to see why mandatory FX-LC conversion options are demanded by regulators while caps are rejected. From a funding perspective, mandatory conversion brings considerable negative maturity transformation risk in the FX dimension (funding in FX with longer terms than assets as they are converted into LC). Pricing is also more difficult: in contrast to automatically triggered caps, which are only a function of FX volatility, the conversion offer is an option in the hands of borrowers, whose exercise behaviour is very difficult to model. An analogy is the prepayment option (see below) whose calibration has caused problems even within sophisticated financial markets.

The suggested route would be to narrow the FX-LC pricing differential by demanding FX caps (possibly moving with LC inflation), i.e. raise FX rates. The type of cap – rate, payment, negative amortization – should be further evaluated. Underwriting should be done on the interest rate level including cap cost, rather than on arbitrary FX stress assumptions (that will fail to map a large FX shock). Capping negative amortization would even allow somewhat higher LTV than under current highly restrictive levels. Avoiding risk layering practices in FX lending (e.g. slow or no amortization, unilateral rate adjustment) can provide additional protection.

Loan Amortization – Interest-only Products

Issues: Bank regulation in the CEE region is becoming more restrictive on underwriting LTV, but has little vision of the 'current' LTV which measures capital left to protect the loan on an on-going basis. In particular the amortization profile of loans is frequently neglected; lowering initial amortization to zero (interest-only or 'IO' loans) or even negative (capitalization into the loan balance) has been a popular feature to boost initial affordability.

What could be an acceptable method to improve the initial affordability of LC loans, becomes dangerous as an additional layer of risk in the case of FX lending with already embedded future payment shock risk in the form of a potential devaluation. See Figure 5 for a graphical representation, and a more detailed discussion of FX lending below.

Products introduced by banks from countries with supporting tax regimes, such as Austria, had encouraged interest-only mortgages with principal redemption via investment vehicles. The redemption can be arranged via funds accumulated under life insurance contracts, mutual funds or funds from contract savings for housing. Problems with such combined financings include currency mismatch – typical is a loan in FX to be repaid with funds accumulated in LC - the performance risk of the repayment vehicle leading to insufficient fund accumulation, and the potential to charge fees twice and hide them.

- In Hungary an interview partner estimated that 30% of FX loans are not amortizing. More than 25% of the Hungarian CHF mortgages are combined financings, which generate a „stairway" of gradual amortization increases in future years. In combination with using variable interest and exchange rates slow or no amortization generates a maximal responsiveness of the debt service to respective shocks. Hungary since April 2012 has banned outright interest-only loans; however, the situation with combined loans has not changed.
- Poland currently asks lenders to cap the maximum loan maturity applicable for assessing debt service capacity to 25 years. This sets a floor under the amortization portion of the debt service. Figure 4 below highlights the empirical motivation for this measure: during the price peak, loan maturities had been considerably extended in order to reduce initial debt service and compensate for higher prices. This helped extending the house price boom, if only shortly, and put borrowers with such financings at particularly high payment-to-income and current loan-to-value ratio risk.\

Options: A first reaction of the U.S. to the subprime crisis has been to impose fully-indexed-fully-amortizing (FIFA) underwriting, i.e. prohibit assuming no amortization when calculating the payment-to-income (PTI) ratio. Rules demanding creditworthiness checks by banks can be interpreted to include minimum amortization assumptions. Minimum amortization can be demanded for assessing creditworthiness only, or alternatively for the product itself. The latter is for example demanded by the *EBRD Minimum Standards* (see Annex, EBRD (2011)). Within product regulation, amortization requirements can be tightened for products with negative amortization risk, as e.g. FX lending, or payment shock risk as LC ARM lending.

Recommendation: FX lending should see faster amortization than LC lending to compensate for negative amortization risk. Interest-only products should be prohibited for FX and curtailed for LC ARM lending, a general time limit for the interest only phase should be introduced (e.g. 5 years). Regulation should adopt a maximum maturity (i.e. minimum initial amortization) for underwriting purposes, whatever the actual product design.

Loan-to-Value (LTV) Ratio Limits

Issues: underwriting loan-to-value (LTV) rules have been tightened recently in 3 of the 6 sample countries in response to house price cycles and increasing defaults, including in LC lending. FX lending has been particularly discouraged, with the most extreme case being Hungary limiting EUR LTV to 60% and for CHF lending even further. Poland, in contrast, only 'recommends' an LTV of 80% for FX loans while leaving the LC LTV unlimited. At the extreme of the spectrum, Croatia does not limit LTV, neither for LC nor for FX lending. There are several issues with LTV policies:

- LTV tightening of the kind seen is usually highly pro-cyclical, i.e. when adopted higher LTVs could be economically suitable. An example is Romania, where high developer margins on newly constructed housing were the main reason for high price levels during the boom. These margins have been squeezed since 2008, as developers fought for survival, and nevertheless LTVs for new lending under regulation pressure have fallen by 20% points. In the light of low default rates, Romanian lenders interviewed consider this reaction as excessive and accelerating the price decline. The counterargument used by regulators (e.g. NBR in Romania) is the perceived need to break expectations and enforce rules applicable in the long-term.
- LTV tightening focusing on a single product only may invite arbitrage via moving into alternative products or by adding personal loans by banks or intra-family loans. Competition of higher-LTV programmes is an issue in Romania, where the Prima Casa programme targeted to lower-income households allows for a 95% LTV on EUR lending. Violations of 'combined' LTV rules that would capture additional loans is far harder to police than rules for individual loans.
- Even at face value conservative LTV limits, such as Hungary's 60% LTV limit on EUR lending, do not completely avoid negative equity risk unless limitations are placed on the amount of loan amounts in the nominator, i.e. negative amortization. Rules typically only control for the underwriting situation, and disregard the 'current' LTV.

- Finally, the definition of 'value' is frequently problematic when the predominant valuation technique is the open market value (see discussion on valuation below).

Table 1 on page 20 compares current LTV regulations in the case countries.

Options: The strategy breaking the expectations could be softened through a delayed implementation, allowing for price recovery first. The U.S. discusses to permit temporarily higher LTV than the 80% ceiling used for Fannie Mae and Freddie Mac bond insurance eligibility, to allow performing borrowers with high LTV as a result of fallen prices to refinance. Romania is adopting implicitly a softened approach by keeping the Prima Casa programme open (60% of new production in 2011). Banks commented that this has been putting a floor under house prices.

Anti-cyclical LTV policy: there has been an intensive debate in the U.S. whether LTV should be anti-cyclically tightened or loosened according to indicators, such as the house price-to-rent ratio. The alternative would be constant LTV limits, considering the policy lags and moral hazard risk associated with variable LTV limits.

'Product risk-based' LTV: Adopting a constant underwriting LTV over the price cycle, but differentiating it by the negative amortization risk of the product, as in the case of FX. This could be a stand-alone measure or combined with a negative amortization ceiling. Promoting savings and supporting down-payment, especially for young households, can help to support LTV rules.

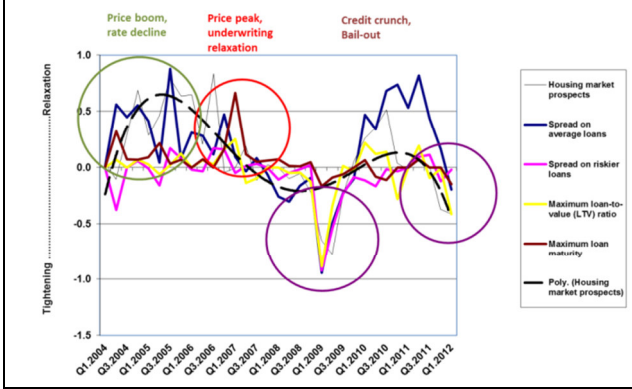
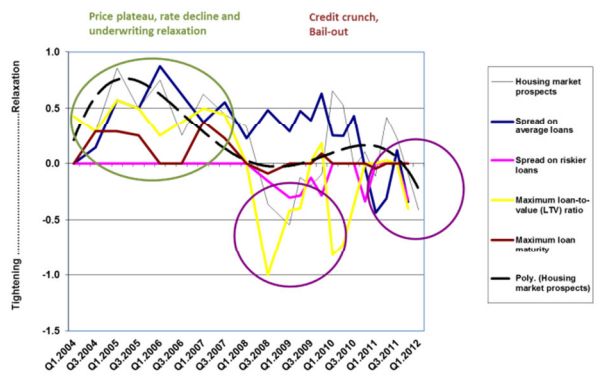
Strict limit vs. regulatory preference: In the U.S. an 80% underwriting LTV limit has been used in the Dodd-Frank banking reforms to define the 'Qualified Residential Mortgage'. This concept will fetch regulatory benefits only, so higher LTV lending is still possible, at an interest rate penalty. The alternatives are strict limits or splitting first and second mortgage, with the latter enjoying special protection (see discussion on insurance and contract savings for housing below).

Recommendation: LTV is the central leverage control instrument of a home-owner's balance sheet and there is broad consensus that it should be limited by regulation. The optimal regulation goal would be the 'current' LTV, i.e. trying to minimize negative equity risk throughout the life of the financing. The theoretical optimum is a combination of anti-cyclical and product risk-based LTV differentiations, addressing both house price and product risk in interaction. The pro-cyclicality and policy lag issues observed in practice, however, speak in favour of constant initial ratios. The LTV limit rulebook should include a measure of combined LTV for all loans secured by the household.

An 80% initial LTV limit is a standard figure that at least should mark a threshold for a changing regulatory treatment. Special high-LTV products with specific protections should be developed to address the low equity available from certain target groups (young and low-income households). The negative amortization character of FX lending would suggest tighter LTV limits

at the stage of underwriting combined with loan volume ceilings in local currency. Operating with conservative loan volume ceilings – e.g. 120% of the initial outstanding - would allow for less restrictive underwriting LTV limits. Using only underwriting LTV in order to compensate for FX risk will either lead to extreme rationing (Hungary), nevertheless without full protection against downside risk, or too high LTV levels from a risk perspective (Serbia). In the LC case, the loan volume is limited by the initial outstanding. This allows for higher underwriting LTV. Where LC loans are indexed to inflation underwriting LTV limits should be lower.

Figure 4 Dynamics of Mortgage Loan Underwriting during Credit Boom and Bust in Poland and Hungary

Poland	Hungary
	

Source: Loan officer survey. Notes: change over previous quarter in diffusion index. Note: housing market prospects for Hungary approximated by banks willingness to grant housing loans due to insufficient data.

2.4 Product Design and Underwriting: Cash Flow Issues

Introductory Rates

Issues: At current interest rate levels in the region, LC lending requires between 25% (Romania) and 100% (Hungary) higher initial payment compared e.g. to EUR lending. Lenders have offered introductory fixed rates in order to stimulate demand for LC products (e.g. in Romania Alpha Bank and CEC Bank, Hungarian banks interviewed). This turns the product into a fixed-to-float scheme, where payment shock risk during the transition from fixed to float may become an issue. The alternative would be to defer interest into the loan balance, a product popular in the U.S. in the 1970s and called graduated payment mortgage, or equivalently public interest rate buy-down programmes (see also Figure 7 and discussion below). Some countries have prohibited introductory rates on FX mortgages to avoid further increasing risks of payment shocks: Romania and Serbia enforce the use of either fixed rates (to maturity) or fixed spreads over the interbank index, Serbia has even demanded in Dec 11 legislation that introductory spreads fixed initially should be applied permanently to the loan. This 'claw-back' of future spread is a central point of contention with the industry.

Options: The broader regulation trend (also in the U.S., U.K.) discourages underwriting based on introductory rates and demands to assume 'fully-indexed' rates. Introductory rates can be regulated in terms of their level (via imposing a floor) or gap to the fully-indexed rate. They can

also be limited in time, as interest-only periods. Creditworthiness of fixed-to-float arrangements can be determined based on the maximum of either the current fixed or the adjustable-rate, or on the fully-indexed and fully-amortizing (FIFA) adjustable rate only.

Recommendation: fixed-to-float products with payment shock after the end of the fixed rate period have been at the heart of the U.S. subprime crisis. Borrowers should be able to bear the current fully-indexed-fully-amortizing rates upon underwriting. Still, introductory rates or deferred interest payment can reduce initial default risk of LC products and thus bans would be counterproductive for the goals of stimulating both LC lending and competition. Banning introductory rates or deferred interest appears reasonable for FX products, however, where initial rates are already low and further deferral of payments would add to payment shock risk.

Adjustable-rate Mortgages (ARM)

Issues: Regulators have reacted to perceived detrimental lender practices in ARM lending. The most salient was rolling over funding and risk costs in CHF and EUR products under contracts allowing for unilateral rate adjustment ('reviewable-rate mortgage'), which became an issue in Serbia and Hungary. Instead, the use of interbank rates plus fixed spreads has become the mandatory product design now for both LC and FX in Hungary[15], Serbia and also Romania. Using interbank rates is the universal market standard in Poland; Turkey currently still discourages ARMs, as necessary bylaws to enable the product have not been passed. Croatia is the only country in the sample that retains reviewable-rate ARMs; rate increases during the crisis have been far more limited here.

Using interbank rates as benchmarks in the region is problematic because of an even greater lack of liquidity characterizing the LC interbank market than other LC markets. Most banks in the region possess ample LC liquidity and will not demand LC credit from others. The current debate over Libor also suggests that the risk of manipulation is not negligible. There is specifically a conflict of interest when the interbank rate setters are identical with the mortgage lenders. Regulators in interviews, in contrast, appreciate the use of interbank rates because of their greater 'stability'. There must be doubts, however, whether this feature is not directly related to low liquidity. Hungary permits also in addition to interbank indices the use of 6mth government bond rates. This benchmark was commented by a bank as having seen 'twice the volatility' of interbank rates and being a less preferred option.

Critically, in Serbia and Romania, spreads over interbank rates are required to be fixed for the life of the loan (which can be maturity, if spreads are low and thus there is no incentive for the borrower to prepay). In Hungary, in contrast, spreads are now allowed to be changed every 3 years to enable the bank to adjust to cost increases. The new policies in the region contrast with those of the UK and Ireland where lenders have all but stopped offering indexed products and regulators increasingly see 'index trackers' as a toxic product responsible for major bank losses and house price appreciation. Again, Table 1 on page 20 gives a comparison.

[15] At the time of writing, there were signs that the HU regulation might be softened and additional indices be permitted.

Table 1 Issues in Mortgage Consumer Protection found in Case Countries

	Croatia	Hungary	Poland	Romania	Serbia	Turkey
Source of Law (last change)	CP law (Jan 11)	CP and BR law (April 12)	BR law (2009 bis), no CP law	CP law (Nov 2011)	CP law (Dec 2011)	Housing finance law (2007)
Transparency	Mandatory APRC.	HFSA Code of Conduct. Mandatory APRC.	APRC recommended but not regulated.	Mandatory APRC.	n.a.	Single page information, mandatory APRC.
Loan-to-value ratio	No official limit (bank practice 90%).	FX LTV 60% LC LTV 80%	No official limit. FX recommended limit of 80%.	FX LTV 75% LC LTV 85%.	FX LTV 80% LC LTV n.a.	LC LTV 75%
Valuation standards	Open market.	Open market.	Open market. Appraisal intervals depend on LTV.	Open market.	Open market.	Open market.
Payment-to-income ratio, income definition	No limit.	30%-50% LC 23%-38% FX, depending on net income.	50% (42% for FX), 65% if income level > national average, net income	35% (all loans 40%), without FX differ, net income	No LC limit. FX 50% for EUR loans	50% max, LC loans only
Payment shock, introductory rates	None	n.a.	n.a.	Introductory rates are prohibited	Discouraged by ex-post fixing of spread to initial level.	N.a.
Payment shock, balloon risk*	None	FX-LC preferential conversion option & FX debt ceiling	Max 25 year amortization assumption.	None	None	FX lending prohibited, no rules on LC negative amortization.
Payment shock, rates	None	Caps on interest rate increases	None	None	Retroactive indexation, spread fixed to initial level.	Interest rate cap mandatory.
Reference index	Not mandatory, reviewable-rate lending market practice.	Mandatory (interbank, gov bond).	Not mandatory, interbank rate is market practice.	Mandatory (interbank).	Mandatory (interbank).	
Spread fixing	None.	3 years and longer over index	None.	Life of loan over index	Life of loan over index	
Early repayment	Universal right, indemnities banned.	Universal right, yield maintena-nce indemnity max 3 yrs.	Universal right. Indemnity subject to negotiation.	Universal right, Indemnities limited to 1%.	Universal right, Indemnities banned.	Universal right, Indemnities limited to 2%.
Income stress	None	Min income for FX is 15 times minimum wage, or income in FX.	Cumulative FX (30%) and interest rate (400 bp) shock	Cumulative FX shock and interest rate shock	None	None

Restructuring & foreclosure, consumer insolvency	No insolvency regime (plans for 2012) .	FX conversion. Quarterly foreclosure quota. No insolvency regime (Central bank proposal).	Severe eviction delay discouraging foreclosure. 2009 consumer insolvency law.	Moratorium lifted in late 11, foreclosure encouraged. 2006 consumer insolvency law.	N.a.	Extrajudicial foreclosure.

Sources: author's interviews conducted between December 2011 and February 2012. Notes:*negative or zero amortization in local currency (FX is a negative amortization product, if the local currency devalues). Abbreviations: APRC – Annual Percentage Rate of Charge (effective interest) CP – Consumer Protection, CI – Credit Institution, FX – Foreign Currency, LC – Local Currency, LTV – Loan-to-value ratio, PTI – Debt to income ratio.

Options: Minimum liquidity requirements for the selection of interbank rate indices could be imposed. Short-term government bond rates could be more widely accepted as benchmarks: the problem with this is greater volatility. Verifiable cost of fund indices could be constructed by lenders or associations. Cost of funds indices are the law since 1994 in Spain, the pioneer of index-trackers in Western Europe; but so far have been rejected in the region with the argument of lack of transparency. The problem to avoid is that a roll-over of increased credit default swap or bond funding cost may raise portfolio default risk and thus become self-defeating. Using deposit rates, which are less sensitive, as singular cost of fund index could be a way out.
The fundamental alternative to using indices would be the Danish practice to annually auction the ARM mortgage portfolio to capital market investors. Changing the system radically is probably unrealistic for the region.
Fixing spreads for loan lifetime over the index, esp. if it is not a cost of funds-index, is highly dangerous as future cost of funds and administration may be varying against the yield of the loan. Fixing spreads to a few years and rolling them over gives rise to payment shock risk after roll-over; this can be mitigated, however, by forward rate agreements; again much depends on whether the underlying index is close to reflecting cost of funds.

Recommendation: there are no easy options for ARM regulations since in shallow LC markets the price or cost revelation problem is 'systemic': case-by-case decisions should be made over the index to be used based on liquidity of bank funding, interbank and capital market conditions. Regulators should be more open to bank cost of fund indices and force lenders to reveal cost. Cost pass-through could be limited by slowing down its impact on the index. An example for this is the German comparative rent system, where average rents over the last 4 years are taken as a usury benchmark.[16] Cost pass-through could be limited to some cost elements (e.g., as in the Danish mortgage system to credit risk costs). Reviewable-rate mortgages should be tied to some bank cost of fund index. Fixed-rate lending will be usually fixed-to-term and could be tied to less volatile long-term government bonds.

[16] Rent regulation in a tenant society as Germany are comparable in their social function to interest rate regulation in home-owners societies.

Fixed-rate Mortgages (FRM) and Early Repayment

Issues: The nature of fixed-rate mortgages (FRM) changes fundamentally with the legal formulation of the consumers' right to make an early repayment and the right of lenders to charge the consumer prepayment indemnities or fees. FRM in FX used to be present in the region during the early years of the market (e.g. Serbia, Croatia), but are now available only in isolated cases (e.g. SocGen in Serbia offers fixed-to-maturity EUR loans as in FR), FX loans are overwhelmingly tied to foreign interbank indices.

FRM in LC have been unaffordable due to absence of long-term funding and more generally interest rate volatility. The exception is subsidized lending (e.g. the Szecheny programme HUF portfolio). Most contracts marketed as 'fixed-rate' in the region either present fixed introductory rates to ARM contracts (fixed-to-float) or are fixed-to-term of 2, 3 or 5 years with the need to roll-over. Governments clearly intend to promote LC fixed rate loans, e.g. in Hungary there are hopes for a 5 year market in HUF, but regulation and support policies are often inconsistent with that goal. The only successful cases of an established longer fixed-to-term LC market in the region seem to be the Czech republic (usually 5 years) and Slovakia.

The right of early repayment is now a universal feature in case country legislation, with few exceptions. Mortgage banks in Hungary and Poland that issue covered bonds can exclude prepayments, however they de-facto generally accept a prepayment against an indemnity. Of concern is that countries in the region are increasingly eliminating or minimizing early repayment indemnities. This is done in response to either abusive (non-fair-value) indemnity levels, or in order to facilitate switching from lenders that have increased rates, or in order to follow other European trends. For example, Italy (IT) eliminated prepayment indemnities altogether in 2009, or to facilitate currency conversion (Hungary). Croatia and Serbia have now completely eliminated indemnities while Hungary (1-1.5%) and Romania (1%) limit them drastically (see Table 1 on page 20). In the Romanian case, the 1% limit intended by the EU CCD for small consumer loans has simply been transferred to the mortgage portfolio.

A general policy trend to minimize or eliminate prepayment indemnities is problematic for two reasons:

- in fixed-rate mortgage lending an early repayment causes a reinvestment loss for the lender, which may lead to drastic ex-post spread reduction or loss over funding. Lenders confronted with indemnities that do not cover costs will either shorten fixed-rate periods and/or reduce funding maturities to try to match the 'expected' loan maturity, after prepayments, as opposed to the longer contracted maturity. Expected maturities are highly variable, and funding in this context involves highly complex ALM strategies, which lenders in the region are unlikely to master (as in most of Western Europe).
- for any type of loan, ARM or FRM, a lender facing a prepayment to another lender will lose future net income from the loan, which – if not captured by an indemnity – will lead to higher upfront charges resulting in lower affordability. This hits in particular LC lending with its higher initial payment burden compared to FX lending. Only Hungary allows for a 1% indemnity in case of switching to capture this risk.

The proposed EU CARRP Directive will address these issues partly, by formulating a right for the lender to charge indemnities within economically reasonable limits. A maximum harmonization, however, leading to an overriding of legislation that has either severely reduced or removed indemnities is unlikely to be the outcome.

Options: early repayment can be legally excluded for the first few years, e.g. for the fear that future regulations could limit indemnities excessively, can be limited to certain hardship cases (divorce, death of spouse) and contingencies (e.g. home sale), or can be a universal right. Early repayment indemnities can be fixed ex-ante (UK, France) or be calculated ex-post based on cost of lender (Germany, Sweden, Netherlands, based on yield maintenance). The cost calculation can include or exclude foregone net profit of the lender. Indemnities can be eliminated (IT), and/or differentiated by hardship cases and contingencies (e.g. Netherlands, no indemnity when moving house). Indemnities on very long-term FRM (e.g. over 10 years) and high-interest rate loans may raise default risk, and thus applicable fixing periods are generally limited. The U.S. has therefore banned indemnities on high-interest rate loans; Germany places a limit on the applicable term for the indemnity formula of 10 years.

Recommendations: Early repayment should be a universal right of the borrower (the alternative of legal exclusion may lead to excessive loss of financial mobility). At the same time the lender should be able to recover his cost, within limits that protect the consumer.

Crucially in that regard, cost-covering 'yield maintenance' prepayment indemnities in the high-interest rate LC environment of CEE cannot be charged over very long time horizons. However, yield maintenance indemnities for up to 5 years should be considered. This could help to expand the 'mortgage yield curve' by introducing 5 year roll-over 'fixed-rate' mortgages (which e.g. are the standard in Canada). For lending in EUR and other low interest rate currencies, a limit of 10 years for yield maintenance indemnities – in line with the CARRP treatment of covered bond backed loans - would be advisable. Ex-ante fees could lead to potentially severe mispricing of the cost, but may be preferable if communication of yield maintenance indemnities proves too difficult or the jurisdiction starts from very low or zero indemnities.

Regarding ARMs, a small permissible lump-sum fee (e.g. 0.5%) for consumers switching lenders should help avoid an increase in loan origination fees compensating for lost future net income also. Such origination fees (in the U.S. 'points') go to the detriment of initial loan affordability and particularly discourage LC lending with already high initial burden.

Payment-to-Income (PTI) Ratio Limits

Issues: PTI differentiation between currencies has become the standard practiced in the region since the CHF shock of 2008. In Serbia the permissible PTI for LC lending is 20% higher and in Poland 19%. In Hungary, the LC PTI is now 30% higher than for EUR, and double for CHF. The problem here is that PTI differences have been largely ineffective on FX lending because lower FX interest rates lead to far lower initial debt to income ratios. Thus, even if PTI is differentiated, it usually remains a binding constraint only for LC lending, but not for FX lending.

Consider the example of Poland, where the permissible PTI for FX is 84% of the PTI for LC, but debt service for the typical FX loan is only 65% of the typical LC loan debt service[17] In Hungary or Serbia, the discrepancies between the regulation and market data are even wider. For a graphical illustration, see RHS in Figure 5.

A second issue is that the benchmark PTI limits vary in the region without much empirical motivation: for LC, a 35% max in Romania contrasts with 50% max in Turkey and Hungary and a 65% max in Poland. Higher PTI usually result from higher nominal LC rates, and local regulations typically accommodate high local rates. Nevertheless, regardless of the jurisdiction, the early payment default risk associated with a 50% ratio is considerably higher than with a 35% ratio (which is a standard ceiling used in U.S. and Western European regulations), which means that these regulations accept high risk.[18]

Hungary has in consequence reduced the PTI for moderate and low-income households below the general ceiling of 50%, to 40% and 30%, respectively. Poland's PTI limit is lowered for below average income households from 65% to 50%. There is no such differentiation in Turkey, however.

Options: PTI rules could be formulated variably responding to a broader range of loan and income parameter constellations. An alternative to the PTI rules as a percentage of net income formulation is to demand a minimum residual income after payment only. The threshold could be defined on assumptions on standard per-capita household expenditures. Such a move would reduce the very high permissible PTI ceilings for LC for the most problematic cases.

Alternatively, the PTI ceilings could be moved down to internationally practiced levels (35-40%). However, this step would be in serious conflict with the goal to promote LC lending. Determining a lower FX PTI seems straightforward; however, if FX caps are made mandatory, moderate additional room could be made for debt service since this protection buys the consumer lower future payment shock risk.

Recommendations: the method of demanding sufficient residual income seems preferable to rigid PTI limits, which in order to allow for LC lending tend to be formulated too high. Combinations of both measures are conceivable.

An FX PTI limit can be determined via either the FX stress test, or preferably on the basis of mandatory FX caps written by lenders. In cases where protection is bought with the FX loan, the permissible FX PTI limit should be moderately higher.

[17] Assumes LC and FX interest rates as of December 2011, plus 1% initial amortization.

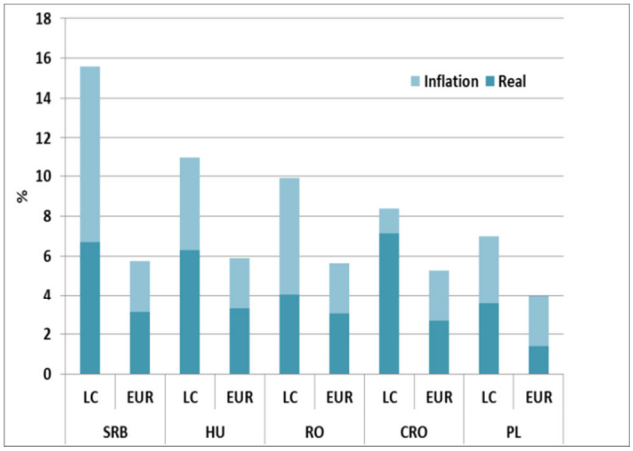
[18] This is also an issue with EBRDs minimum standards – see Annex – which allow for a 50% PTI.

PTI-related Income Stress Testing

Issues: PTI rules can be complemented by income stress tests or currency matching requirements. This would further limit the number of eligible borrowers, in particular for FX lending. Romania and Poland for borrowers with LC incomes assume a cumulative FX (Poland 20%) and FX interest rate shock (Poland 400bp). An approach similar to the one adopted in Poland is now taken by the CARRP Directive, which will assume a combination of a 20% devaluation shock and at least average historic interest rates when determining the APRC for FX ARMs.

Figure 5 Local and Foreign Currency Inflation and Real Interest Rates

New lending for housing, interest rates LC and EUR, Dec 2011



Sources: National central banks, author's computations.
Notes: Real interest rate computed by subtracting average of inflation rates 2009-2011 from nominal rates.

These approaches however ignore the negative correlation seen between the foreign currency interest rates and the exchange rate recently (see discussion above). They seem better motivated by the Hungarian experiences with unilaterally reviewable rates, which brought a positive correlation. Regarding FX, Hungary has proceeded further to ration lending to households with incomes of 15 times the minimum wage. The Polish experience with rules imposed as early as 2006 (Recommendation S) reported by Dübel and Walley (2011) suggests that tighter underwriting conditions by lenders are likely to become undermined during phases of renewed upward house price pressure. House price inflation may lead to laxer lending standards (see Figure 4) elsewhere; hence tighter income constraints might trigger e.g. longer maturities in an effort to compensate for the regulation's impact. It is noteworthy that LC ARM lending is not subjected to interest rate stress in any of the sample countries; however, the EU CARRP Directive will here impose minimum standards for the APRC.

Options: ex-ante caps on relevant financial variables such as interest and FX rates are the main alternative to stress testing. When determining joint stress, hedging effects of FX and FX interest rates could be acknowledged within limits. LC lending could be subjected to interest rate stress.

Recommendation: if the goal is credit risk protection, capping interest or exchange rate risk ex-ante is preferable to stress testing. The former determines a price for a full protection service, the latter does provide a buffer only and no downside risk protection. FX related stress testing is thus clearly second best, and likely to get undermined in practice. If the approach is adopted, LC lending should be treated equally regarding interest rate risk stress. Minimum income conditions should be formulated as minimum residual income after debt payments, not absolute income.

2.5 Consumer Insolvency

Issues: For a detailed analysis of mortgage law in transition including foreclosure regimes, see EBRD (2007). This current period is the first major test for foreclosure legislation created in the region during the 1990s. The legislation usually on paper allows faster track enforcement, partly in extra-judicial form (e.g. Turkey, Ukraine), than in Western Europe.[19] The crisis, however, reveals that the default caseload, foreclosure and insolvency regimes are closely interacting and can produce unintended outcomes.

Croatia and Hungary are currently without a consumer insolvency law.[20] This means that a default debt discharge option for consumers is absent. This could mean lifelong liability of the consumer for residual debt that remains after foreclosure or repossession of the home. In the Hungarian case, in combination with the high default case load, that legal gap has stimulated an arbitrary government foreclosure moratorium intervention (max of 3% of NPL permitted to be foreclosed per quarter during 2012).

Such moratoria are also frequent in developed markets; for instance, Ireland has since 2007 foreclosed only on a small number of consumers, despite large numbers of defaulted loans, and the U.K. in 1994 stopped foreclosures for some time period altogether through a central government act.

In contrast to Hungary, in Romania where the default caseload has so far been low, earlier regulatory pressure to avoid foreclosures has been given up and evictions are now pursued with greater consequence (BCR interview).

Poland has passed a consumer insolvency law in 2009, establishing a debt discharge period of 5 years. Under the impression of a large numbers of foreclosures, the so far most conservative Western European jurisdictions are planning or implementing drastically shorter discharge periods. [21]

Options: Defining a special consumer insolvency regime seems to be without alternative when developing the consumer finance market. Within the regime, calibrating the default penalty is the most sensitive task. In that regard, specifying too long a discharge period or even lifelong liability for residual debt may render execution (foreclosure) politically infeasible, whenever the caseload is high. If discharge periods are formulated too short or are absent altogether meaning immediate debt waiver this encourages 'strategic' default decisions (e.g. U.S. states with max 2

[19] For a detailed evaluation of mortgage execution processes written without the benefit of crisis experience, see EBRD (2007).

[20] In interviews the consultant was told that the Hungarian Parliament is currently lobbying the government for legislation introducing a consumer insolvency regime. It would include a government-moderated negotiation process between lender and consumer and discharge provisions. Similar plans seem to exist in Croatia.

[21] Ireland is implementing a general reduction of the discharge period from 12 to 3 years. In Spain, there are plans for immediate and complete discharge when within a distressed financing the house is sold, down from 20 years.

year discharge period). While EU legislation is absent, national European legislation converges to a range between 3 and 7 years before discharge is granted. Partial debt repayment showing consumer goodwill may be combined with permitting shorter discharge periods. Judicial foreclosure can be substituted with extra-judicial procedures.

Recommendation: EU legislation in the mortgage foreclosure area is missing and unlikely to be passed in the near future. CEE jurisdictions are free to set parameters, which should take up lessons from the current crisis in some markets. Consumer insolvency law may put a brake on excess lending and limit hardship (e.g. young households bearing residual mortgage debt lifelong) and should be adopted universally. A discharge period within the 3-7 year range should provide sufficient deterrence against strategic defaults by consumers. Discharge could be accelerated when a partial repayment of residual debt is made. Foreclosure and eviction are local social policy decisions, linked intimately to the availability of alternative social housing (see below).

2.6 Collateral Valuation

Monitoring House Prices and Rents

Issues: house price and rent data are essential steering devices for both housing policy formulation and financial stability purposes. They support collateral valuation for mortgage lending, help to calibrate consumer protection rules (such as e.g. comparative rent system with benchmarking of individual rent payments vs. market), improve tax revenue and targeting (via fiscal cadastres for housing, rent taxation), target subsidy programmes (house price limits), and to support monetary policy (monitoring of asset price inflation; discrimination of rent and financial cycles).

House price indices still need to be fully developed in the region. Turkey from March 2012 on has published a national house price index, with historic data available back to 2010. Serbia has a national house price index under development by the national mortgage insurer. The remaining four sample countries only have individual bank information; of which the only regularly published is the transactions-based index by Hungarian publicly owned specialized mortgage bank FHB. Price indices produced by real estate brokers are frequently available in the region, but of limited value since they are usually not transactions-based. Rent indices are similarly mainly available from brokers only, where they tend to cover high-price segments. The Consultant is unaware of official city indices in the region; the widespread tax informality of rental contracts is one major impediment against successfully organizing the necessary city surveys.

Options: Creating reliable house price indices means collection of property and lending transaction data. This requires collection from and deepening of data sitting with either lenders or notaries, or both. In the Czech republic, a national index is currently being created through a data pooling project involving 3 of the largest lenders (led by Charles University in Prague).

Hedonic regression methodology is needed, which requires sufficient descriptive data on housing unit characteristics in the underlying datasets. Where a national house price index is not feasible, efforts could be made to standardize the methodology of private bank indices. In rental housing, larger cities will usually start with rent surveys that are gradually expanded. Best practice here is Germany with a nationwide system of city rent surveys. The alternative is a mandatory rental contract registration system.

Recommendation: National house price indices are a sine qua non for sector monitoring and central area for technical assistance. Their development should be part of a broader initiative in housing policy capacity building in the region. The largest cities in the region should be put into the financial position to perform regular rent surveys.

Real Estate Appraisal Standards

Issues: most lenders in the region, except for the specialized mortgage banks in Poland and Hungary, use open market valuation standards, i.e. appraisals are benchmarked against the prices of current transactions of similar quality and location housing units. There are significant incentive problems for appraisers, developers, sellers and lenders against reducing valuations to more conservative levels, if a general price inflation trend has occurred. This has turned out to produce collateral valuations that have exceeded long-term property values, damaging bank and borrower balance sheets.

Romanian market leader BCR in Jan 12 told the Consultant that in 2011 it cut back all historical appraisals in its residential portfolio, by on average 25%. Even in countries that designed their appraisal system with great care the situation is similar. An example is Poland, which is one of the few countries in Europe demanding external appraisals for residential mortgage lending. Poland has reacted to misappraisal risk by increasing the frequency of collateral valuation for high-LTV loans: for loans with LTV between 80% and 100% re-appraisal is now mandatory every 3 years, and for loans with LTV greater than 100% appraisal must be performed every year. Such moves are primarily improving risk management, and are not addressing the general incentive problems surrounding appraisal.

Options: The open market value (sales of comparable unit) method competes with the income value (discounted cash flow of rents of comparable unit) and the reconstruction value (construction cost of comparable unit) methods. The income valuation method – based on actual or hypothetical (imputed) rental income - is the backbone of the 'mortgage lending value' concept popular in some traditional covered bond issuing countries (Germany, Denmark). Regulation in these countries demanded special conservative assumptions with regard to rental income and discount factors. An alternative also found under the heading of 'mortgage lending value', esp. for single-family house appraisal where rental data are hard to obtain, are flat haircuts applied to sales prices (e.g. Germany uses 10%). Appraisal can be in-house in banks, external, or both.

Recommendation: Lenders face asymmetric risks regarding collateral values. They are unable to participate in the upside (only the borrowers do), and are fully exposed to the downside, if the borrower defaults. It is central for them to introduce conservative standards into valuation and abandon methods that simply track price inflation. This means defining some operational concept of mortgage lending value. Regulations should ask at least for haircuts and infrastructure should be created to support the income value. Generating the necessary rental data seems feasible in the mid-term in the largest urban centres and for apartments, where markets are sufficiently deep. The Polish rules demanding higher frequency of valuation at higher LTV can improve ex-post risk management. The key to appraisal quality standards appears to be external certification and independence of the appraisal process from other loan underwriting, whether appraisers are located inside or outside the bank.

2.7 Other Primary Market Regulation

- The **accessory type of mortgage**, which ties the loan contract to the mortgage, is the standard throughout the region. Accessoriness can be potentially costly, as changes in loan contract terms demand changes in the mortgage and thus frequently a notary's involvement, but also provides for a high level of consumer protection. The reform route used in Western Europe, e.g. France, has been to reduce 'accessoriness' for everyday contractual changes such as prepayments or loan assignment to another creditor, usually combined with higher levels of consumer protection. For transactions for which notarisation requirements remain in place, an alternative is to reduce notary costs. A more fundamental alternative is a fiduciary mortgage system (contract changes to not trigger re-registration; transferable) practiced in Germany, coupled with additional (contractual or statutory) consumer protection rules tying loan contract and mortgage surety.
- The **assignment of a loan** to another investor, and more generally the separation of loan origination, administration ('servicing') and investment, is either unregulated in the region or dealt with under special securitization law, i.e. for a certain funding exit. EU regulation in the CCD is unspecific, its transposition is not mandatory for mortgages, and as a result has been overridden by national rules.[22] This leads to scattered solutions, e.g. Croatia, Serbia partly block assignment, and in Romania the consent of the borrower is needed. In the small markets of the region, and for smaller lenders, at least transferring loan servicing from portfolio lenders (originator = investor) to larger administration units might become important to keep cost low. One option could be to facilitate assignment of general loan administration (servicing) while keeping foreclosure management (special servicing) with the original lender.
- Before the wave of transpositions of the EU CCD, local regulations regarding **conflicts of interest between banks and developers** formed a nucleus of mortgage consumer protection in the region. Developers are frequently financing construction relatively unprotected consumer deposits. When these in turn have been financed by banks, in particular when banks are also directly funding developers or assisting their distribution, a

[22] For instance, Germany in 2009 passed legislation demanding that the originator remains contract counterparty throughout the life of the loan.

linking of the legal fate of the mortgage with the fate property sales contracts can be established. Romania has been facing major problems in this area with so far limited legal response. The debate is also active in Russia and Ukraine. Turkey practices an elaborate system of protections via escrow accounts managed by the corporate finance departments of banks as a de-facto market standard. Poland is struggling since years to implement a similar system. Again EU legislation is not very specific in this area[23], and legislation in the region could benefit from a regional best practice review. [24]

3. Fiscal Support for Primary Market Risk Mitigation

Public insurance, lending and subsidy programmes in housing finance can help to mitigate primary market risk outside the ambit of regulations, in particular if focused on local currency lending. Implemented the wrong way they can add to risk, or at least fiscal cost. This section discusses four central approaches – high-LTV insurance protecting lenders, down-payment savings subsidies, loan interest rate subsidies and the fundamental alternative of promoting the rental sector.

3.1 Public High-LTV Mortgage Insurance and Lending

Issues: Public programmes that help raise the LTV for households with low down-payment deposits have been developed in the U.S, Netherlands, France and Canada, and were subsequently copied in the CEE region. Badly implemented or poorly regulated programmes carry major risks for financial stability. An example is the collapse of the U.S. mortgage finance system that strongly relied on high LTV lending as an explicit government policy.[25] Benefits of such programmes include greater access to credit and a higher homeownership rate. Programs can also be activated opportunistically in a credit crunch situation.

The financial crisis has revealed incentive and information issues between insurer and insured, and highlighted the dangers of non-actuarial enrolment and pricing conditions administered by public insurers. Another incentive problem is that lenders might use insurers to technically fulfil regulatory conditions or improve credit ratings, rather than adding a layer of underwriting and performance control. This has led to situations where the insurance is not called by the lender when there are defaults, to avoid losing regulatory or rating benefits.[26]

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[23] The CCD does not apply to mortgages, moreover the definition of a 'linked contract' between loan and sale specified in the CCD will apply only to very few cases.

[24] See Dübel (2006) for a synopsis.

[25] See Pinto (2010).

[26] The relations between the U.S. mortgage insurance industry and the insured entities Fannie Mae and Freddie Mac in the first 3-4 years since the outbreak of the Subprime crisis can serve as an example. The insured entities rarely called on the guarantees and preferred putting the loans back to the originating bank or finance companies under representation and warranty clauses in the sales contract. The background is that by their regulation Fannie Mae and Freddie Mac cannot purchase loans over 80% LTV. If insurers would have faced a wave of calls reducing their capital base, the business of the insured entities would have severely suffered.

Finally, there is a fragile price competition between high-LTV insurance and savings programmes such as contract savings for housing (see below).

Within our sample, public high-LTV programmes were implemented in Romania and Serbia.

- The Romanian *Prima Casa* programme supports high-LTV *FX* lending (95%) via mortgage insurance up to a sales value of EUR 60,000. Prima Casa is used by developers to squeeze construction overhang at discount pricing into the market.[27] It effectively splits the mortgage market; for the generally admissible LTV for FX loans is only 75%. The insurance programme is neither capitalized nor actuarially priced; only a risk-sharing budget is agreed with lenders. However, this budget, agreed in 2010, has not increased with continuing loan enrolment during 2011, which has led to a de-facto reduction in insurance coverage. The regulatory consequences of this loss in protection are unclear. Such rationing of public risk budgets are typical of public mortgage insurance, a parallel in Romania is the treatment of public premiums for Bausparen. Finally, there is no regulated and capitalized financial entity supporting the insurance programme.
- Serbia runs a non-targeted mortgage insurance programme whose coverage is more conservative, limited to 75% LTV. The scheme is modelled after Canada's CMHC mortgage insurance, which in turn goes back to the Canadian National Housing Act that mandates banks to seek protection for all mortgage lending above this LTV, or refrain from lending. In contrast to CMHC and more comparable to the U.S. FHA, administration of the Serbian National Corporation for Housing Loan Insurance is through an office in the ministry and not a regulated financial institution. However, the fund is capitalized by the government.

  For young households, Serbia in addition had established a zero interest second mortgage loan programme supporting high-LTV lending up to 90%. The design mimics France's 'Pret a Taux Zero'. The programme was intermittently stopped for fiscal reasons. However, in Jan 2012 the launch of a new public loan programme was announced for this target group that would limit new lending spreads over Euribor and permit up to 95% LTV.

The high-LTV programmes in both countries have in common that they so far have not been focused on promoting LC lending. Other countries in the region, e.g. Ukraine, try to establish new low-income housing finance programmes to stabilize the market during crisis. However, the majority of countries do not seem to sponsor high-LTV programmes.

Options: Designing sound high-LTV insurance and lending is a resource intensive policy initiative. Some of the issues to be solved are: ad-hoc fiscal programmes vs. design of a system

[27] The U.K. has announced a similar 95% LTV insurance program, NewBuild Guarantee, for the spring of 2012, with 10% first loss coverage and run by a Jersey insurance company.

with regulated lenders/insurers, public vs. private ownership of the insurers, actuarial capitalization required. Particular attention should be paid to the question of targeting, e.g. to low-income borrowers or to LC lending only, vs. the de-facto universal portfolio enrolment seen in Romania and Serbia. High-LTV lending and insurance programmes also compete directly with down-payment savings programmes; countries usually take decisions for subsidizing only one option. The exception in the CEE region appears to be Romania.

Recommendations: A financial cost-benefit analysis covering the benefit (greater access, lower rates) and actuarial cost of the high-LTV insurance or loan products should be the minimum, a social cost benefit analysis is desirable. Alternatives included in this should be bank self-insurance and contract savings. A public programme setup via an agency as opposed to the creation of a system is likely unavoidable, given the limited scale of local markets in the region. However, typical traps can be avoided such as lack of capitalization, unlimited coverage, unrealistically low pricing, excessive regulation benefits 'attracting' lenders. The agency should be regulated 'as if' it was a regulated insurer. Programmes should be strictly targeted to support the higher early payment default risk of LC lending. This could be a feasible option especially in Romania, where the LC-FX differential is small. If enrolling FX lending, insurance premium and underwriting conditions should take the higher negative amortization and payment shock risk into account.

3.2 Promotion of Borrower Savings / Contract Savings for Housing (CSH) in Local Currency

Issues: CSH is a typically LC-only closed savings and loan product run by specialized banks ('Bausparkassen') that can produce small fixed-rate mortgages funded by long-term deposits. The system has Anglo-saxon origins in the 19th and early 20th century. CSH has been introduced in the Czech republic, Slovakia, Croatia[28], Hungary and Romania in the form practiced today in Germany and Austria.

A closed savings and loan fund is created that permits households to save and borrow below market interest rates. Loans can only be extended in proportionality to the savings accumulated. This principle achieves a certain degree of delinking of the CSH loan from local currency capital market conditions, since outside funding for the loan is not needed.

The system can always be used to avoid high *real* interest rates, and when inflation is low or moderate, also to avoid high *nominal* interest rates. When inflation rates are high and volatile, however, the financing function of accumulated nominal savings at low nominal rates becomes very limited, and rates may have to be partly indexed to inflation. An example for this approach can be found in Slovenia (SLO). Also the French Epargne Logement system operates with variable rates, but fixed spreads between loans and deposits.

[28] Croatia's Bauspar system is forced to be denominated in EUR, as the entire mortgage market.

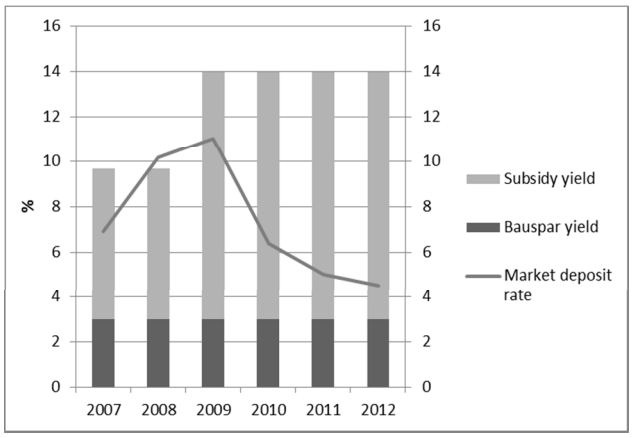
The principle of a closed savings and loan scheme moreover only allows for small loans (ca. 10%-15% of a house price, family members can double up).

The system in practice is invariably supported by a state premium. The premiums is paid as a percentage of the annual new savings into the contract. State premiums are disbursed only after the end of the savings period. In contrast to insurance schemes, which generate contingent liability, the fiscal budgets needed to fund the state premiums are highly transparent. The downside is that it is highly vulnerable to politically interference.

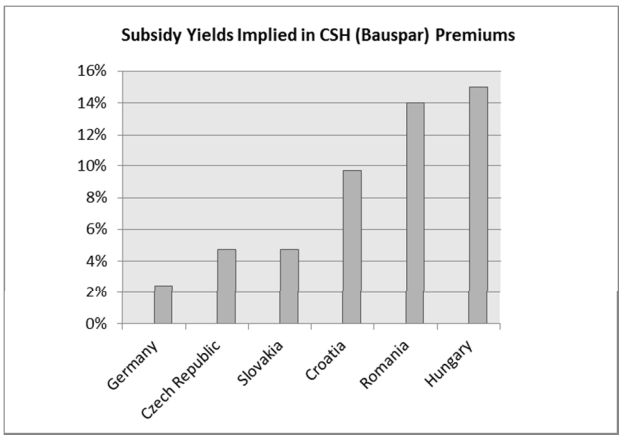
In the Czech republic and Slovakia, CSH systems have operated since 1992 and materially contributed to keep LC mortgage rates low and avoid FX lending. In both countries, initial premium levels and subsidy budgets were considerable and were later lowered.[29] In Romania, Croatia and until recently Hungary, despite high premium levels, CSH has been less successful because of crowding out from predominant FX lending as well as absence of any LTV limits (esp Croatia). With the collapse of FX lending during 2010 and 2011, in Hungary CSH as the main, neither liquidity nor capital-constrained LC lending branch of the housing finance system experienced a boom. Erste Bank plans to open a new Bausparkasse, after having rejected this step only a decade ago. See also Figure 18 for some data.

Figure 6 Local Currency Funding Subsidies – CSH (Bausparen) Subsidy Yields

Changes in market deposit rates and CSH subsidies, policy lag (Romania)



Subsidy yields in Germany and different transition countries per 2011 legislations



Source: National CSH legislation, Consultant computation.

As CSH produces by its closed nature only small loans, the combination of a low-LTV first mortgage with a CSH loan as a second mortgage is a natural application. This is a standard

[29] http://finpolconsult.de/mediapool/16/169624/data/Duebel_CSH_in_CZ_SLK_Final_Report_03.pdf

combination for purchase lending in Germany and Austria.[30] CSH however has also stand-alone financing relevance, e.g. for home modernizations and land acquisition, which may matter in economies with a significant share of progressive housing construction.

A combination with CSH second mortgage lending may lower the default risk of the first mortgage via a) the signalling effect of earlier savings, b) the equity effect of both the accumulated savings and public premiums, and c) the fact that CSH is likely the only part of the financing with LC rates fixed to maturity, adding interest rate or FX risk protection for borrowers. A Hungarian bank CEO told the Consultant that the 90day+ delinquency rates of combined financings including CSH (along the lines of Germany) is 30% lower than average. The CSH institutions in the region have frequently faced problems to offer this combination, however. From a legal standpoint, both mortgage and foreclosure laws in the countries having established CSH allow for a first-second mortgage distinction. Yet, in Romania the consultant was told that both Bausparkasse and universal bank – even within the same group – simply compete for first rank registration for economic reasons.[31] In Croatia, no LTV constraints on FX lending are applied and similar conflicts over the first mortgage position prevail. Here the CSH system has been attacked by large banks as an allegedly subsidized competitor. In Hungary there are signs that combined first-second mortgage financings are gaining traction on a larger scale.

Political risk has been introduced as fiscal premiums were introduced. The main proponents in the early 1990s were Austrian lenders, which traditionally had subsidized CSH to a far greater extent than in Germany. The goal of Austrian subsidy policies historically was to match or even exceed prevailing deposit rates on the market.[32]

The left-hand side of Figure 6 shows a typical example of a resulting policy distortion for Romania. Here the premium was increased from 15% to 25% in 2009 to match rising deposit rates; however, when rates fell again, the premium was not simultaneously decreased.[33] The right-hand side of the Figure shows the considerably different fiscal treatment of CSH currently in the region: it compares subsidy yields computed from taking averages over the vintage subsidy yields and taking into consideration the legal minimum period to save required that

[30] In Austria, in contrast, Bausparen typically ranks pari passu or even the first mortgage. As many transition countries, the Austrian market suffered from a large share of FX lending, too.

[31] This could be due to the Austrian origin of the interviewed lender. In Austria CSH often ranks pari-passu or even first rank over other mortgage lending.

[32] The German interpretation, in contrast, is that the system needs limited subsidies only as the option of receiving a future loan below market will compensate for a below-market savings return. Since both the value of the loan option and opportunity deposit rates will vary over time strongly, some subsidies may be justified to stabilize demand.

[33] A Romanian Bausparkasse told the Consultant that the government had paid out only 50% of the premium amounts due during 2010 and 2011. This matches experiences with the budgeting of the Prima Casa mortgage insurance program described. A Croatian Bausparkasse told the Consultant that the Croatian government had paid out the premium for the year of 2010 only by February 2012 and that premium had consistently been paid with delay, jeopardizing the credibility of the system.

entitles to the subsidy.[34] There has been also harsh reaction to exuberance: contrasting strongly with the Romanian increase, premiums in Croatia were *lowered* from 25% to 15% in 2005. This step was taken retroactively, affecting existing contracts marketed to consumers at the higher premium level, diminishing the trust of savers in the system.

Options: There are four central design questions in a CSH system: i) whether a special bank is needed to offer the product, ii) what minimum level of premiums is needed to generate sufficient demand, iii) how to deal with high and volatile inflation and iv) how to stimulate sufficient lending and integration with the rest of the mortgage market.

Regarding i): in a fixed-rate system at least intensive regulation is needed since the product could be easily abused by creating a snowball system. Regulation in many jurisdictions therefore forbids tying savings products to a loan promise. Regulation at a minimum would require a separate trust fund within a universal bank, specialized management and strict ALM rules. France applied a floating-rate system (via indexing) that was run by universal banks; in the floating rate case there is lesser need for regulation (as funds can be mixed if there is excess demand), but also lesser incentive to save. Concerning ii) subsidy yields in the range of a few percentage points, e.g. ca 4-5% as currently the case in the Czech republic and Slovakia, should suffice to support consumer demand, given the partly strong CSH loan rate advantages over LC market rates. This picture changes, of course, with low-rate FX lending present, which might make CSH infeasible. Considering iii) the SLO solution of indexing interest rates to inflation for both savings and loans seems conducive for countries with higher inflation expectations. The answer to iv) is difficult: as long as (LTV-) unconstrained FX lending prevails and underpriced public mortgage insurance is present, the incentives for using CSH loans are minimized. If these problems were overcome, governments could set loan-to-deposit targets for CSH lenders and tie subsidy levels to these in order to stimulate lending.

Recommendation: A fundamental decision needs to be taken whether savings or high-LTV mortgage insurance should be pursued to promote better access to credit. Financial stability concerns favour the former. More popular with lenders and possibly also many borrowers is the high-LTV option. If CSH were to be chosen to promote access, it needs proper positioning in the mortgage finance system, which realistically requires establishing it as a second mortgage product and corresponding regulation. This should be followed by a subsidy review taking into account the value of receiving a below-market rate loan. CSH is promising a future loan and thus should preferably be offered only by tightly regulated financial institutions.

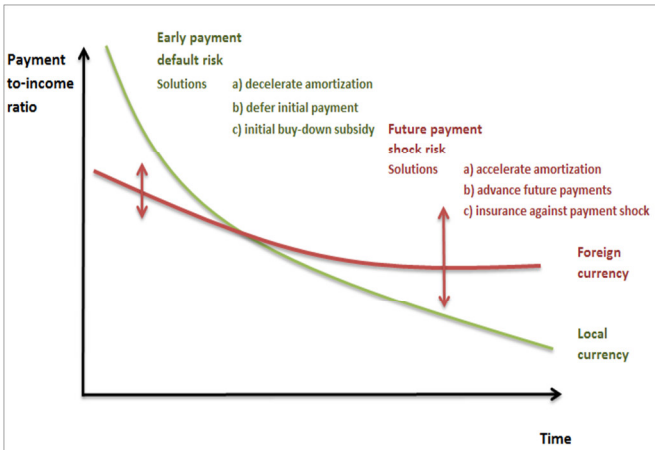
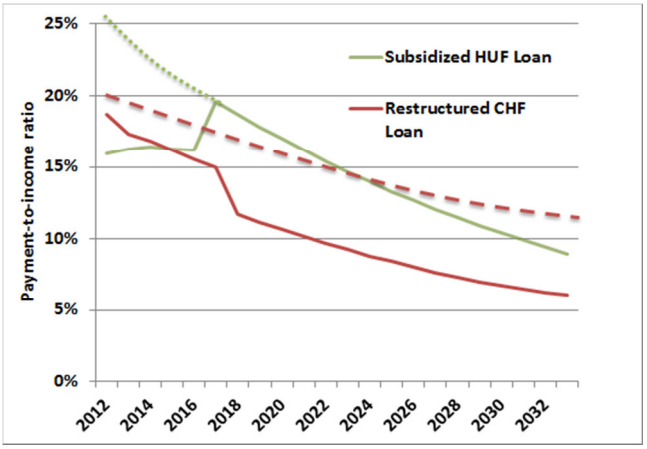
[34] The premium is paid once per savings vintage and disbursed only after all vintages have been saved. If the minimum savings period of a CSH contract is 5 years and the premium level is 25%, the first vintage has the lowest subsidy yield (ca 5%) and the fifth vintage the highest (ca 25%). The shorter the minimum savings period, the higher the average return. Subsidies are usually rationed by limiting the absolute premium obtainable per year and contract (person). This in turn determines an optimal amount of annual savings.

3.3 Interest Rate Subsidies for Local Currency Lending

Issues: despite the small size of markets and the higher income levels of borrowers initially targeted, governments in the region already have a long history of supporting LC mortgages through subsidies. U.S. and European bank sponsored advisory work in the 1990s brought mortgage interest deduction to a number of countries. Interest deduction is, however, highly regressive in terms of distributional impact, fiscally expensive, supportive to high borrower leverage and therefore potentially destabilizing for both banks and sovereigns. A more rational system would demand the parallel taxation of the benefit of the owner-occupier (saved, or 'imputed', rent). An alternative is the adaptation of the 'consumption model' of housing investment that denies tax deduction (as e.g. rent payments of a tenant are not deductible). An overview over tax support options for mortgages is beyond the scope of this paper.

Locally designed LC lending subsidy schemes emerged with the goal to stem the first large FX lending wave in the late 1990s and took mostly the form of direct interest rate subsidies ('buy-downs'). Yet, in different countries different LC rate levels underlying the buy-downs were politically acceptable, and this led to vastly differing programme cost and success rates.

Figure 7 Different Strategies for Promoting LC over FX Mortgage Lending

Tilt Effect, Strategies to Address Default Risk in LC vs. FX Mortgage Lending	Hungary – Comparison of the PTI profile of restructured CHF loans with the newly designed subsidized HUF loan (see also Box 3)
	

Sources: LHS - author's simulation, RHS – author's representation. Notes: LHS – vertical arrows denote potential dislocation of payment-to-income profile when exchange rate depreciates (upward) or appreciates (downward). RHS - stylized simulation, dotted lines indicate unsubsidized payment-to-income ratio profile.

Around 2000, in Poland the acceptable interest rate level in programmes was fixed at 9%, in the Czech republic at 7%, in Hungary at 5% and even 3%.[35] In Poland, the LC interest rates quickly

[35] See also discussion above on default rates of subsidized HU LC lending programs.

dropped below 9% and the local programme never got started. In Hungary, at the other extreme of acceptable rate levels, due to the large difference to market rates, the programme cost exploded. The programme had to be terminated in 2004/5. Only in the Czech republic the interest rate was bought down over a period of 3 years to the desired 7% level, and the programme was executed and terminated as planned.[36]

The failure especially of the Hungarian programme encouraged the surge of FX lending, as no suitable LC product was developed. Hungary in Sept 2011 adopted a less costly and more targeted interest buy-down programme, which is discussed in Box 3. Subsidies are focused on the initial years of the financing, where affordability pressure are highest.

Box 3 New Interest rate Buy-Down Subsidy Scheme for Hungarian Forint Lending adopted September 2011

Targeting:
- Purchase or construction of existing/new homes up to ca. EUR 50K (apartments) and EUR 100K (homes);
- Applicable loan volume limits in case of apartments limited to EUR 33K(new)/EUR 20K (used);
- Subject to price limits and family size differentiation.
- Applicable for CHF repayment, but only for defaulted borrowers.

Buy-down subsidy:
- First year: 50-70% of government bond yield
- Paid over 5 years, with 5% stepwise decline per year.

Evaluation (see RHS of Figure 7):
- Addresses high HUF initial payment burden without clawing back the benefit of low future HUF payments. Alternatives: defer initial payment via loan (limited negative amortization) instead of subsidy.
- Targeting misses majority of CHF borrowers who have not defaulted, introducing a penalty for non-default and reduces potential size of HUF market. Large families are subject to same house price ceilings as small.
- Declining interest buy-down less costly than historic steep, permanent HUF subsidies; however, 5 years appears too short (PTI may jump). Figure 7 compares with payment profile of CHF loans that are being restructured (see also Box 1).

Options: alternatives to buy-down subsidies are buy-down loans, which claw back subsidies in later phases of the financing, or product designs involving deferring interest or amortization as discussed before. Figure 7 on the left hand side provides for a visual evaluation: the key point is to reduce the initial payment-to-income ratio. In the context of mortgage lending, not limiting interest rate subsidies to the initial phase will both lead to ballooning fiscal cost and not be necessary to improve affordability.

Recommendations: Fiscal measures to support mortgage affordability should be a second step only, after alternative product design options have been explored. Support should preferably target borrower equity, if lending is targeted there should be a limitation in terms of time and scope and thus focus on the initial phase of the financing. Interest rate targets should not be far lower than market rates (see the Hungarian history). If mortgage interest deduction is kept it come with imputed rent taxation (practiced e.g. in Australia) in order to avoid arbitrary subsidization. Preferably, the consumption good concept should be applied, implying no mortgage interest tax deduction.

[36] See Dübel (2004) for detail.

3.4 Rental Housing as Alternative to the Retail Market

Issues: The Zeitgeist stimulated tenant privatization of the public apartment sector in the 1990s ('ownership society') and left almost the entire CEE region with very high home-ownership rates.[37] A lack of rental housing has been the result, together with larger than necessary mortgage market penetration in the main migration hubs (e.g. Bucharest, Budapest). Serbia, Romania feature homeownership rates in the 90% range, Hungary is not far below. This means that these countries lack some 20-30% of units as rental housing stock. It also implies that median voters are homeowners and will be attracted by potentially costly mortgage subsidy programmes. In the meantime, the 'micro-privatized' stock continues to face a major rehabilitation backlog.

The EU Commission is hobbled by a de-facto prohibition[38] to intervene in rental housing finance through the EU Treaty, for fear of a repetition of a new large subsidy programmes as in agriculture. Again, CEE countries are on their own to devise policies in the sector.

Regarding social (public) rental housing, some revival activity can be noticed recently. Poland since the mid-1990s created a lease-to-buy system (TBS) that is operated by ca 450 housing associations and funded by the public agency BGK. Subsidies for the system have been reduced to the point that capital market access is in reach, as the basic bankability of the associations has been demonstrated. Croatia has announced plans to revive a local version of a similar system. In Hungary, public rental housing might be revived via the creation of a new public rental company intended to house evicted homeowners.

Table 2 Supporting Regulations and Subsidies for Local Currency Mortgage Lending

		Croatia	Hungary	Poland	Romania	Serbia	Turkey
2011 LC % (housing)		0%	Ca 80%	62%	Lower than 20%	0%	100%
Main impediments for LC lending		Property market and banking system euroized. High real rates.	Property market euroized. High real rates. High inflation level (Tilt).	Property market euroized.	Property market euroized. High real rates. High inflation level.	Property market and banking system euroized. High inflation level (Tilt).	Not applicable.
Regulatory support	LC offer mandatory	No	No	No	No	Yes	Only LC lending permitted
	LTV & PTI differentiation	No LTV or PTI diff.	LTV 80% (vs. 60% EUR).	No LTV limits. Higher	LTV 85% (vs. 75% EUR).	No LC LTV limit. Public	Not applicable.

[37] See Dübel, Brzeski and Hamilton (2006). While there is little agreement in the literature over optimal home-ownership ratios, rental sectors under 20% of the housing stock as frequently found in the CEE region are widely held to be too small, given the housing needs of young, poor/migrant and elderly households as well as supply factors (e.g. densification of building stock).

[38] This is notwithstanding the occasional program by CEB or EIB, which under this type of political pressure have declared rental housing investments under different headings, such as urban development investment.

			PTI 30-50% (by income, vs. 23-38% for EUR); min income for FX.	PTI (50%). Severe FX stress test.	Public 95% LTV LC pgm. Severe FX stress test.	95% LTV for LC. (FX 80%). Higher PTI (by 20% points).	
	Deferral of interest or amortization for LC product	Possible.	IO explicitly prohibited, but negative amortization is not.	Discouraged by underwriting regulations	Introductory rates discouraged. IO possible. Negative amortization seen as restructuring.		Not applicable.
Subsidies	Downpayment savings subsidies supporting LC product	Bauspar** (15% premium, down from 25%; 5 years).	Bauspar ** (30% premium, min 4 years)	Savings for housing programme under discussion.	Bauspar** (25% premium, up from 15%, min 5 years).	None.	None.
	Interest rate subsidies for LC product	None	New HUF interest rate buy down**	None (earlier plans abolished).	Public programme interest limits.	Zero interest rate loan***	None
	Public insurance & loans supporting LC product	None	None	None	Public programme not focused on LC.	Public programme not focused on LC.	None
Likelihood of strong increase in LC lending market share		Zero, public support unlikely.	Low, unless LC product redesigned.	Moderate to high, with greater public support.	Moderate, with greater public support.	Zero, unless LC product redesigned.	Not applicable.

Sources: author's interviews conducted between December 2011 and February 2012. Notes: Targeting: *means-tested (income), **price of unit and/or volume of financing (self-targeting), *** categorized (e.g. young families); all other measures are untargeted. § applies also to FX lending. Abbreviations: CP – Consumer Protection, CI – Credit Institution, FX – Foreign Currency, LC – Local Currency, LTV – Loan-to-value ratio, PTI – Debt to income ratio, IO – Interest-only.

In the private rental sector, major issues with rent control and insufficient design of tenant-landlord relations remain, in particular in Serbia and Romania, but partly also in Poland. Romania for instance in parts of the old apartment stock still limits rents to 15% of income, rendering repair and modernization and sometimes even maintenance impossible. Rental investor taxation in the region is typically based on gross rent revenue and by not permitting (sufficient) cost deducation discourages investment. Poland has been partially successful in stimulating the interest of small private investors by lifting rent controls for some parts of the stock and improving the tax treatment. Recently mortgage lenders have also become active in the Polish private rental housing sector.

Options: New social housing production is an expensive approach to house low-income households, so compromises between selective new production and mobilization of existing stock are necessary. Best practice elements of social housing finance exist in UK (public insurer,

providing housing associations with capital market access) or Denmark (subsidy auctioning system) or Germany (private finance broker model providing access to banks for associations). A minimum requirement is sufficiently well-managed housing associations or companies, which can be achieved via incubator public loan programmes. The private rental sector can be frequently better regulated, e.g. replacing hard with soft rent controls (e.g. a usury concept based on rental surveys). Taxation schemes could allow for deductions for modernization and investment, including for non-incorporated investors (private).

Recommendation: CEE countries need fully developed housing policy menus, going far beyond reactive mortgage market regulations. Large gaps in housing policy formulation, implementation and financing capacity have been primarily responsible for a lack of rental housing. This in turn stimulates excessive credit expansion to young and migrant households. Corporate housing finance via private and social rental housing companies should receive just the same attention from governments as retail.

4. Mortgage Securities Risk Issues and Regulation

There are close interactions between the primary market regulation and fiscal issues described so far, and the design of mortgage securities in the secondary market:

- Some of the primary market issues described above, e.g. prohibitions on early repayment indemnities, the tying of adjustable rates to interbank indices and the use of idiosyncractic currencies such as CHF, may further complicate funding as investors may be unwilling, and lender unable, to take the interest rate or spread risk.

- Risky products may either be non-eligible for mortgage securities funding (e.g. Home Equity Loans for covered bonds) or their credit risk impact may reduce the notching available for such securities from rating agencies over unsecured bank funding.

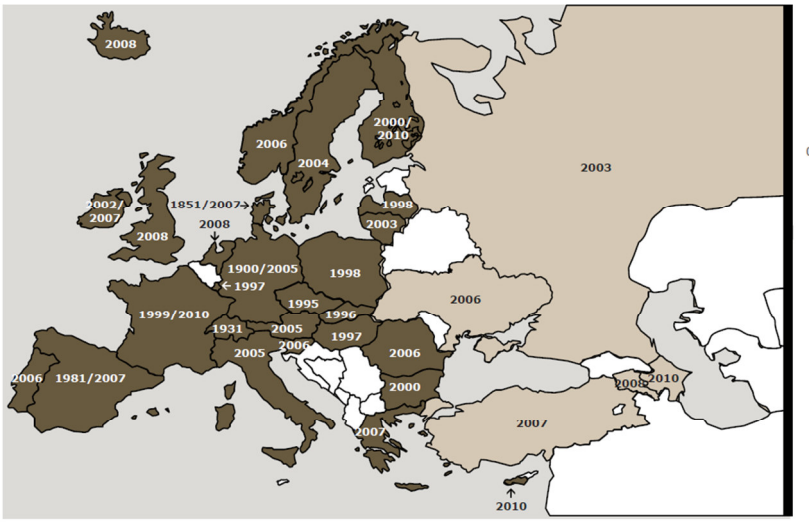
- More generally, the setup of the primary market determines the cash flow and risk profiles that must be intermediated into mortgage securities cash flows and risk profiles. Mortgage securities can only take up that part of risk profiles of mortgage assets for which investors in the particular jurisdictions securities market have appetite. In a developing securities market context this amount is usually limited.

In addition to risk factors, twenty years into the transition the process of developing mortgage securities legislation also remains incomplete, which renders transfer even of well-behaved or managed risk difficult or impossible.

These issues endanger the success of Basel III and other regulation intended to reduce interest rate and liquidity risk with mortgage lenders.

The section starts by giving a brief overview over the market – mostly covered bonds. It goes on to discuss the current funding strategies pursued by lenders and associated risk and regulatory approaches. It then proceeds by reviewing the status of mortgage securities issuance current and regulation issues, where again the focus is on covered bonds. It concludes by discussing domestic and foreign investor interest and constraining regulations in holding mortgage securities in the sample countries.

Figure 8 Geographical Overview of Covered Bond Legislation in Europe, End of 2011



Source: Verband deutscher Pfandbriefbanken.

4.1 Status of Mortgage Securities Legislation and Markets

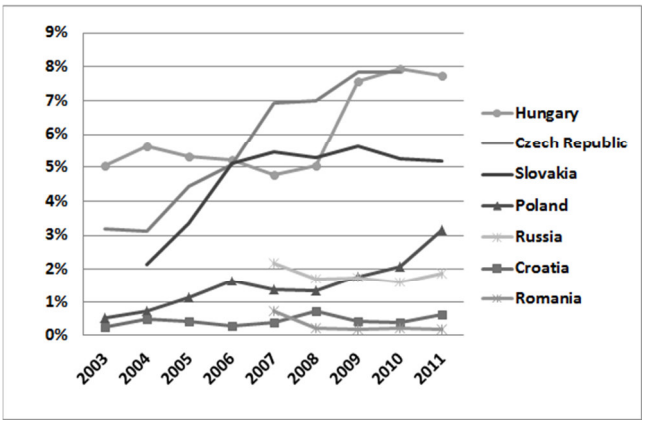
The origins of the covered bond market in the region lie in legislation implemented in the 1990s: Czech republic and Slovakia started in 1995 and 1996, followed by Hungary 1997 and Latvia and Poland in 1998. Additional legislation was passed in the 2000s in Bulgaria, Romania, Slovenia, and Lithuania (see Figure 8). The consultant met interest for developing a law in Croatia.

Of the above list of countries, only the first three today have a market of relevant size for bank funding – see data presented below in Figure 9. The Hungarian covered bond market at its peak reached 8% of GDP, the Czech and Slovak markets 6% of GDP. The next following market, Latvia, peaked at 0.5% of GDP only, the Polish market 0.3% of GDP. Some markets are in decline, e.g. Hungary and Bulgaria, where the market is disappearing through buybacks. Others, such as the Russian, are starting to see positive dynamics. The potential in the late-coming markets, esp. Poland, Russia, and Romania, is high.

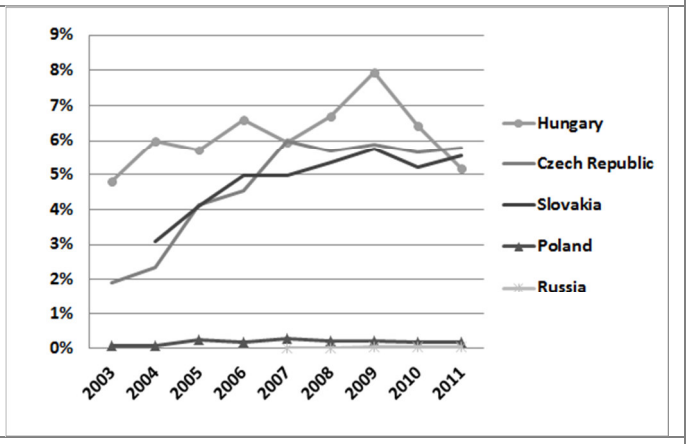
Where successfully implemented covered bonds have been a key driver of bank bond market development during the early years. Covered bonds made up for the lions' share of issued bank bonds in the Czech republic, Slovakia and Hungary: statistical discrepancies by different reporting agents make it hard to assess a figure, it probably reached 80-90% in the three countries in the early 2000s. Unsecured bank bond markets developed later strongly in the Czech republic. In Poland, Russia and Romania, the unsecured market is developing in a reverse sequence before the covered bank bond market, but with considerable time delay.

Figure 9 Bank Bond and Covered Bond Markets in Central and Eastern Europe

All bank bonds outstanding



Covered bonds outstanding



Sources: LHS - national central banks, RHS – European Covered Bond Council. Notes: unexplained statistical discrepancies between both sources, e.g. Hungary.

The Factbook of the European Covered Bond Council of 2011 lists 26 issuers in Central and Eastern Europe with a total outstanding of EUR 18.6 billion per end of 2010. In Hungary and Poland, the law requires the issuance of covered bonds through specialized banks only. These are in Hungary maintained by a foreign bank (Unicredit) and two local banks (OTP, FHB), in Poland by three foreign banks (Unicredit, Commerzbank, ING). In the Czech Republic and Slovakia, there is a licensing system for universal banks, and each country features 8 active issuers. In Russia there are four issuers (Unicredit, Credit Delta, VTB24 Bank, Moscow Mortgage Agency), including non-banks. The federal mortgage agency AHML is issuing de-facto MBS under the heading of covered bonds

There is no updated coverage of the current status of the CEE MBS market by the European Securitization Forum (requested by the author for this study). Banks have discontinued coverage of the market after the financial crisis, which saw a massive drop in issuance in the core markets in Western Europe. [39]The most active market appears to be Russia, where the concept of MBS and covered bond has been implemented under the same law. For detail of issuances see Lassen (2012). The author is unaware of MBS issuances in the sample countries. Relevant securitization laws have been implemented in Romania and developed but shelved in Croatia and Serbia.

[39] The last comprehensive country review that includes CEE countries is Batchvarov et. al. (2007).

4.2 Mortgage Portfolio Funding: Risks and Pitfalls of Regulations

Issues: The issuance of mortgage-related securities in the region is a relevant topic only for portfolio lenders, i.e. banks. Finance companies that e.g. contributed to lending in the Netherlands, Spain and United States through 'create and trade' in particular of MBS have not developed.

Mortgage portfolios on the books of banks are long-term and de-facto illiquid in the CEE market context. Nevertheless they have been primarily financed through cross-border investment from mother banks and the interbank market. This contrasts with U.S. or Western European mortgage markets, where mortgage securities sold to investors, in particular central banks, institutions and – indirectly via shadow bank vehicles – money market funds, have funded or even transferred bank portfolios. As Figure 10 shows, even where mortgage bonds have been developed in the region, as e.g. in Hungary, mother bank and interbank sources have driven peak liquidity. It contrasts developments with the U.S., Spain and Ireland, three other countries experiencing considerable lending boom, of which the first two were primarily financed by mortgage securities.[40]

The effect of the reliance on, and abundant availability of, mother bank and interbank sources for the region has been both an acceleration of market penetration and an increase in funding risk for lenders: the share of housing loans in bank portfolios has quickly risen (Dec 11: Hungary 18.5%, Poland 32.3%, Turkey 8.9%, Romania 9.5%, Serbia 12%; Oct 11: Croatia 14.7%), i.e. is approaching or has reached typical Western levels of ca 20-30% fast. Yet, funding maturities have not kept pace with lending maturities and in the FX area have even shortened during the crisis[41]. While intragroup lending maturities shortened for foreign banks, the third-party interbank market first saw massive funding (swap) cost increases for local banks. The private swap market finally collapsed and counterparties were replaced by central banks. Even before the crisis, FX swaps rarely exceeded 3 years, even for the largest lenders, and roll-over was a serious concern for regulators.[42]

FX deposits that would provide some funding risk protection have increased only slowly, despite the fact that the currency risk realized during the crisis has brought euroization back. An example is Croatia, where a campaign to reduce the role of EUR in the financial system after 2004 had brought a decline in FX-indexed deposits from 85% to 65%. That ratio has now reversed again. FX deposits remain quantitatively insufficient to fund the mortgage portfolio in the large FX lending markets Hungary and Poland (see Figure 11 below). They are sufficiently large in Croatia, however.

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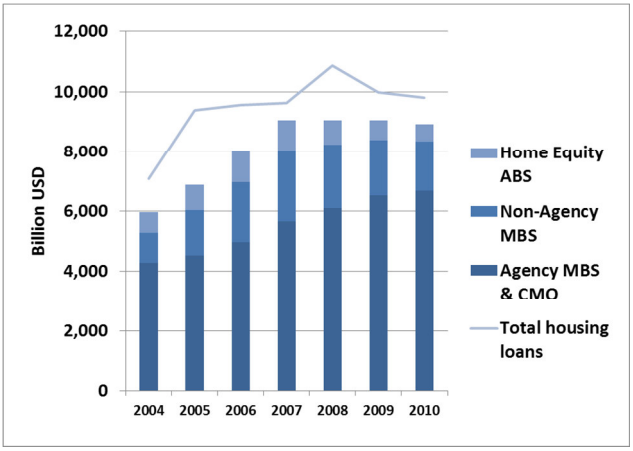
40 Source: Dübel (2012).

41 See e.g. HU Financial Stability Report, Nov 11 for a detailed discussion.

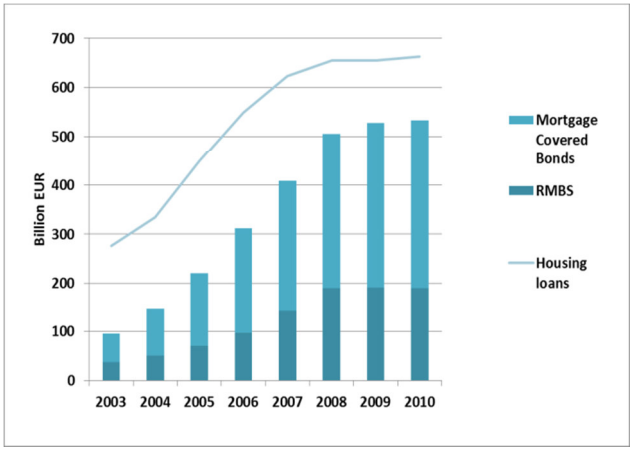
42 Earlier consultant interviews with OTP, PKO BP ca 2008.

Figure 10 Role of Mortgage Securities in Economies experiencing Housing Loan Booms

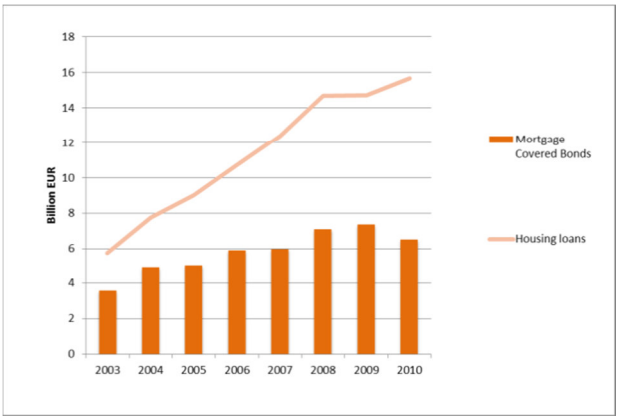
U.S. Mortgage-related Securities and Housing Loan Outstanding, 2004 - 2011



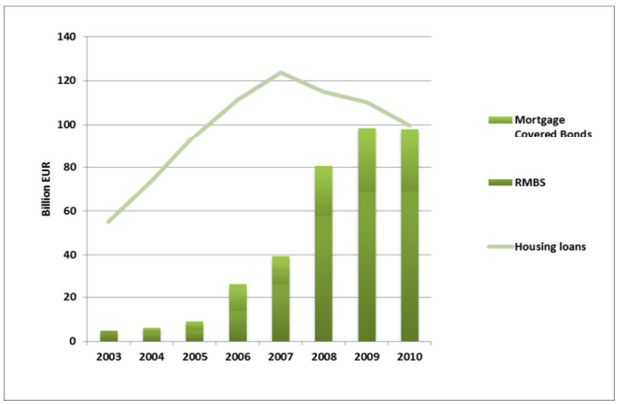
Spain Mortgage-related Securities and Housing Loan Outstanding, 2003 - 2010



Hungary Mortgage-related Securities and Housing Loan Outstanding, 2003 - 2010



Ireland Mortgage-related Securities and Housing Loan Outstanding, 2003 - 2010



Source: SIFMA, European Covered Bond Council, CEPS, author's computations. Notes: the assessment is highly approximative as disaggregated funding analysis of the national housing loan portfolio is unavailable.

In LC mortgage lending, where relevant, similarly maturity mismatches remain high: the extreme case is Turkey, where funding instruments are all shorter than 3 months while mortgage loans in fixed rates in TRL go out to 15 and 20 years.

Regulators in home and host countries so far have reacted to the increased liquidity risk in FX by reducing their banking system target loan-to-deposit ratios (LDR). The Austrian regulator's move in Dec 2011 to demand a reduction of the incremental LDR for individual bank

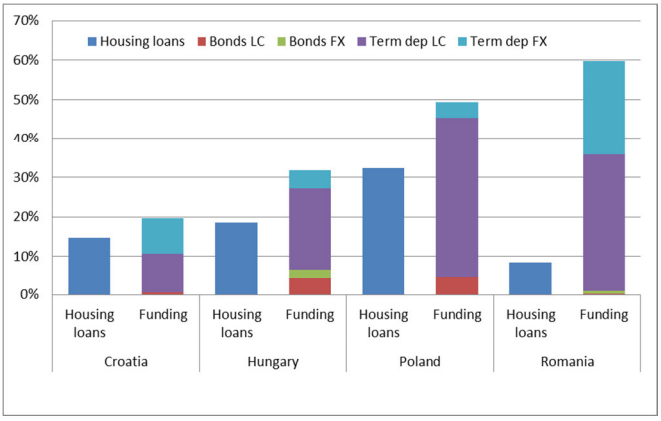
subsidiaries of 110%[43] was highly publicized. Some host regulators also have directly discouraged FC interbank and bond funding. The typical mechanism is high reserve requirements at zero interest rates, which raises funding cost proportionally to the reserve ratio: in Serbia and Croatia the ratio is currently 20% of bond or funding proceeds, a 2006 bond issued by Raiffeisen Bank in Croatia even was penalized with a 40% ratio. Regulators have also discouraged banks from issuance altogether (Croatia in 2008, according to an interview with Zagrebska Banka (Unicredit)).

The LDR approach appropriately cuts back directly on potentially excessive domestic credit volumes. Yet it less desirably also reduces the room for long-term bank bond issuance that could match long-term assets and thus improve funding stability. The LDR approach:

- simply assumes that deposits will be more stable than wholesale funding. That this is not necessarily the case is amply demonstrated to the region by the capital flight from GR, and intermittent bank runs, e.g. 2011 in Hungary. Other historic examples of instability of deposits causing problems in mortgage lending abound, e.g. the loss of U.S. S&L deposits to money market funds in the 1970s and early 80s that preceded the S&L crisis.

Figure 11 Housing Loan Funding in Four Sample Countries

Housing loans and long-term bank funding sources, % of total assets



Sources: national central banks, author's computation.
Notes: LHS – 'LC bonds' in the case of Croatia and Poland include FX.

- forces long-term assets to be funded by mostly short-term deposits. While regional central banks classify a substantial portion of deposits as term or 'time', truly long-term deposits with maturity of 1 year and more are extremely rare. 1 year, however, is the cutting point for the Basel III net stable funding ratio (NSFR); even at generous roll assumptions for deposits, the contradiction with a policy minimizing the LDR is obvious.[44] Banks operating under such incentives will keep aiming at yield curve profits, and savers will remain deprived of long-term investments via mortgage securities carrying higher yields.
- will keep promoting the use of ARMs that match the re-pricing profile of deposit remunerations. These products pass interest rate risk to borrowers, stimulate pass-through of monetary policy

[43] Interviews with subsidiaries of Austrian banks yielded that the Austrian home regulator had significantly watered down the initative over time, by redefining the LDR metric and formulating it as a recommendation rather than regulation.

[44] The NSFR demands coverage of assets with maturity greater than 1 year by liabilities with maturity greater 1 year. For individual asset and liability classes, roll-over assumptions are made when the maturity is shorter than 1 year, e.g. 85% of the deposit base is assumed to be rolled over.

signals and intensify credit booms.

The regulation approaches taken in the CEE region mimic IMF policies during this crisis, which e.g. in Ireland had imposed a system-wide LDR ceiling of 120%. By February 2012, however, the IMF had reacted to the criticism and replaced the LDR metric for Ireland with the NSFR. While the NSFR still makes too heroic assumptions about the stability of deposit funding, it promotes bank bonds and other funding with maturity over one year as basic alternative. The approach could reduce pressure towards deleveraging, which will be triggered, however, if long-term funding is not available.

Hungary has extended the NSFR concept to the FX dimension with the FFAR ('foreign exchange funding adequacy ratio'). A ratio of 65% is required from July 2012 on.[45]
Crucially, for the case of mortgage finance, both NSFR and its FX version FFAR remain too crude as asset-liability management metrics. The one year threshold applied under Basel III only contains the most extreme mismatch risk. To begin with, mortgage portfolios have long contractual maturities, e.g. Hungarian lender OTP's average maturity is 15.3 years. More important than contractual maturity is the expected duration of the loan, after taking into accounts prepayments and defaults, i.e. the expected time horizon for which funding is needed. In normal times, expected duration will be far lower than maturity. However, especially when originated in good times (high house prices) followed by an extended crisis characterized by increasing spreads and low prepayments, expected duration will be increase. Box 4 discusses the idiosyncrasies of mortgage duration and its funding alternatives.

Aggregate expected durations of 5-8 years can be assumed to be the rule in the region currently. The NSFR or its foreign currency version FFAR – by demanding liabilities of at least 1 year maturity - therefore will reduce the mortgage duration *gap* only very mildly, for example from 6 to 5 years. What these ratios are indicative for therefore rather is a bank's ability to attract long-term funding *at all*.

Options: for the case of mortgage finance, the LDR is a potentially dangerous concept, as shown above, and should be avoided. The NSFR/FFAR is a first yardstick in regulation: it can be further differentiated into a full duration matching concept for the mortgage portfolio. This is already the standard for covered bonds, where enabling laws routinely call for a net present value (NPV) valuation of all cash flows. The alternative is the traditional maturity bracket approach. Roll assumptions esp. regarding deposits and interbank instruments ought to be tightened, giving more emphasis to the use of either long-term deposits or bonds with clear contractual maturities. Such bonds could have soft-bullet (or pass-through) features in order to better (or perfectly) match the changing duration of mortgage portfolios. Box 4 below goes into the detail.

[45] See the HU FSR of November 2011, pp. 51-52, for the development of the concept of the FFAR and some data.

Box 4 Mortgage Asset Durations – A Moving Target for Funding Strategy, Even if Rules are Not Changed During the Game

The economic life of a mortgage is usually shorter than its contractual maturity of 15, 20 or 30 years; life is shortened by either default or early repayment. Beyond FX-LC conversions, mortgages in the CEE region are now almost universally pre-payable, and indemnities in most cases have been set to negligible values or zero. This tends to render the duration of mortgages far more variable than if yield maintenance indemnities could be charged. In this situation, if interest rates or spreads over benchmark indices fall, loan durations will shorten drastically.

This leaves a lender that has issued long-term bonds with negative maturity transformation risk. In contrast, when interest rates or spreads over indices rise, and / or current loan conditions are favourable (subsidized), mortgage duration will expand. This leads to far longer funding maturities needed, potentially up to contractual maturity (usually unavailable in the region).

The NSFR, which creates only two broad maturity buckets (maturities over and under 1 year) will not address the issue of duration risk.

Lenders could 'pass through' duration risk to investors via instruments such as MBS or the Danish version of covered bonds. In practice, the pricing interventions in the CEE region turn this into a difficult task. Serbia has ruled, for example, that pricing of mortgages need to follow the initial (hypothetical) spread over an index This has de-facto extended the duration of the portfolio as usually introductory spreads were low and there are no incentives to prepay. Potential investors in an MBS may not only want to avoid such politically induced risk; also, portfolio selection characteristics that affect prepayment behaviour are hard to monitor.

A second route for lenders is to issue callable and extendable (soft bullet) bonds that avoid this political and behavioural risk. These would allow lenders to vary the funding duration within transparently predetermined limits, against paying an options cost to investors, while taking the idiosyncratic risks of mortgage portfolios onto their own balance sheet.

Recommendations: The NSFR is recommended as a superior metric compared to the LDR. The expansion of the NSFR concept by Hungary in the FX dimension to the FFAR should be adopted by other CEE countries. Within the NSFR/FFAR concept, roll-over assumptions for LC and FX deposits from both retail and wholesale sources as well as for FX swaps should be conservative. For the case of mortgage finance, the NSFR ought to be expanded by local regulators via the NPV or maturity bracket concepts. Both are likely to exist in local bank practice, covered bond or other regulations. Lenders should be encouraged to develop mortgage prepayment models that approximate loan duration risk. The development of pass-through and soft bullet bonds, i.e. MBS, related covered bonds, callable and extendable bonds, should be supported; they come at the expense of higher interest rates, but provide better protection for issuers.

4.3 Mortgage Securities: Issuers and Product Design

Covered Bonds: The Issuer Perspective

Issues: once regulators have incentivized lenders to issue long-term mortgage securities through regulations such as the NSFR, the central question is: can mortgage securities help the issuer to achieve reduced aggregate funding cost, or are other funding instruments more cost-effective. The answer depends on i) the securities issuance programme cost, ii) the pricing

achievable for the alternative instruments, which differs greatly between local and foreign banks, iii) the need for swaps and thus counterparties to support covered bonds issuance and iv) primary and secondary market liquidity in the respective currency. The broader issue of government support for covered bonds from a credit perspective is discussed further below.

Programme costs depend on transparency, institutional and regulation requirements and taxation regimes. Securitization laws try to deal with all these issues in order to reduce cost for MBS issues (passed in Romania, shelved drafts in Croatia and Serbia). However, covered bonds remain structurally advantaged through their nature as permanent issuance programmes operated by regulated institutions. This reduces disputes over regulation authority, limits mortgage pool reporting dues (arguably too limited with covered bonds), reduces formal prospectus requirements (EU Prospectus Directive exemption), and minimizes stamp duties or registration fees (since only term sheets accompany an individual bond issue).
However, an issue with covered bond programme cost has been the need for credible due diligence of the dynamic pool that backs the bonds. This is done in most jurisdictions through third-party cover monitors, who typically are auditors. The structure of the auditor market may raise cost. Some laws do with only very general due diligence provisions, unspecific cover pools and charging understaffed public regulators with the task. Spain is currently experiencing a loss of investor trust that is partly related to this setup.

Fee revenue is a point of contention frequently with securities regulators, which try to attract high-quality staff through such third-party revenue (e.g. Romania 2012, in Turkey during 2005 the SEC objected to the covered bond law formulation for the same reasons). In the other countries with covered bond laws (Poland, Hungary, Czech republic, Slovakia), the programme authorization is entirely with the bank regulators, which are financed by the industry and/or government. The issuance programme cost will increase when the covered bond issuer has to be a special bank (see below).

The relative pricing advantage of covered bonds over unsecured bank bonds largely depends on the implicit subsidies of government for either. These are closely linked to the institutional design chosen for the covered bond (explored further below) and the depth of deposit insurance coverage, which occasionally covers unsecured bonds. Above all, differences in the funding profiles of local and foreign banks matter.

The market shares of foreign banks in Central Europe and the Baltic States are extremely high, in the sample they are between 70-90%, with the exception of Turkey (16%). The covered bond issuance decisions of these banks are fundamentally different in nature from local banks. They have direct access to (mainly EUR) central banks, to EUR bond markets, and generally feature a broad investor base. In addition, the covered bond laws in home countries permit under certain circumstances the inclusion of assets from countries in transition in the cover. This option has obviously not yet been applied yet.

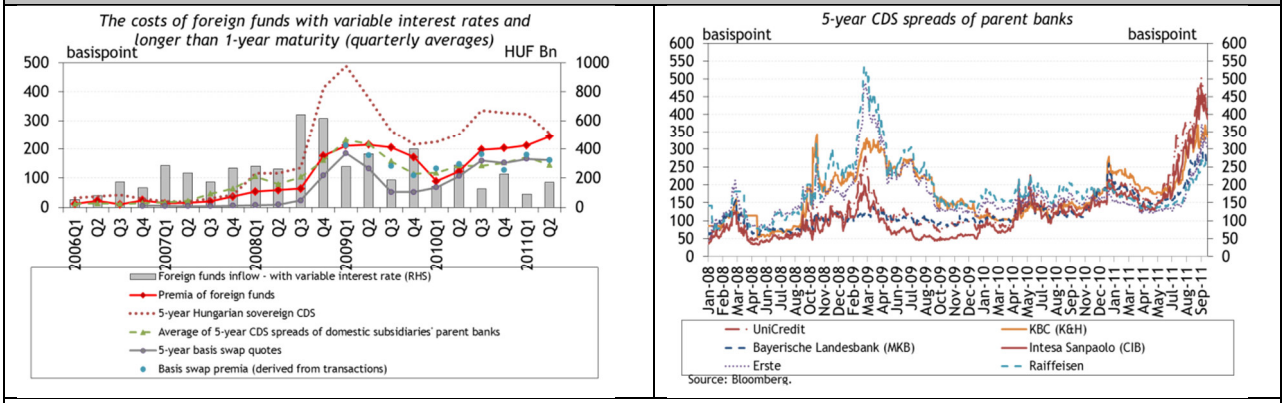
At the same time it is large foreign banks that have created large mortgage portfolios in the region with high roll-over needs, that feature often high LDRs and sometimes very low NSFRs.

Aggressive Greenfield entry strategy is partly responsible for this result, where the major local banks with sufficient deposit resources were not sold to foreign investors. Figure 12 highlights the volatile funding cost situation of foreign banks in Hungary.

The interaction between tightening in interbank or mother bank funding conditions and public bailout initiatives loosening conditions again is sending mixed signals to the lenders interviewed:

- in interviews held in Croatia and Serbia in early Dec 2011 several subsidiaries of Western European banks stated to be 'on our own' regarding funding, implying steep opportunity cost of intragroup funding. The largest Croatia lender voiced his interest in developing covered bonds, as a result and despite of earlier problems with issuing bank bonds.[46]
- Other subsidiaries of the same banks during interviews held in late Jan 2012 in Hungary and Romania in contrast reported business as usual, i.e. no tightening in transfer pricing formulae. These formulae, when applied to EUR funding, typically combine the basic (senior unsecured) funding spread of the mother, the country risk premium (approximated by CDS) and a liquidity factor.

Figure 12 Funding Conditions of Subsidiaries of International Parent Banks in Hungary



Source: Hungarian central bank.

Expansive ECB long-term liquidity repo operations (LTRO) during early 2012 may explain the changes in perspective from one month to another. The 3-year ECB programme has helped keeping transfer pricing levels low, esp. for IT banks (12% of balance sheet funded by LTRO, 6% for Austrian banks, by the end of Feb 2012). The major funding constraint reported in late Jan 12 consequently was mother bank equity capital, resulting from the advancement of the 9% minimum capital to risk-weighted asset ratio of Basel III to 2013.

Yet, ECB funding support is temporary, and beyond the LTRO is short-term only – a violation of the NSFR funding stability rules. Except for the shortest tenors, senior unsecured debt is likely

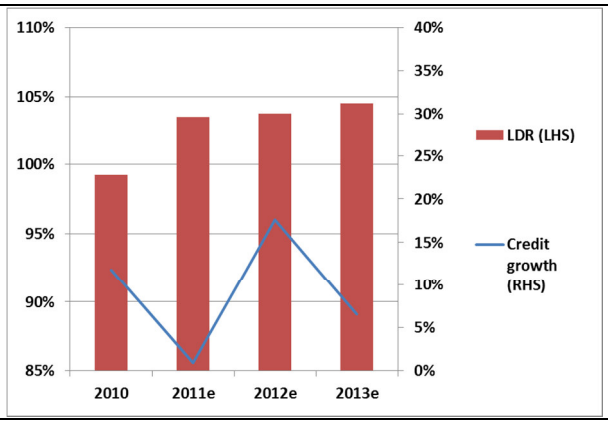
[46] These included: reserve requirements by the Croatian central bank ('general opposition'), a high spread over deposits (steep yield curve), capacity constraints by Croatian institutions hobbled by large government financing and prohibition to invest in paper issued by the same banking group.

to be hit by 'bail-in' legislation proposals launched by the EU KOM in June 2012. This combination keeps pressure high to issue covered bonds. Lenders such as Unicredit, Intesa, Erste Bank and Raiffeisen have either already embarked on a number of national covered bond programmes or have firm plans to start programmes. For example, Unicredit already is an active covered bond issuer in Hungary, Poland, Russia, and Slovakia.

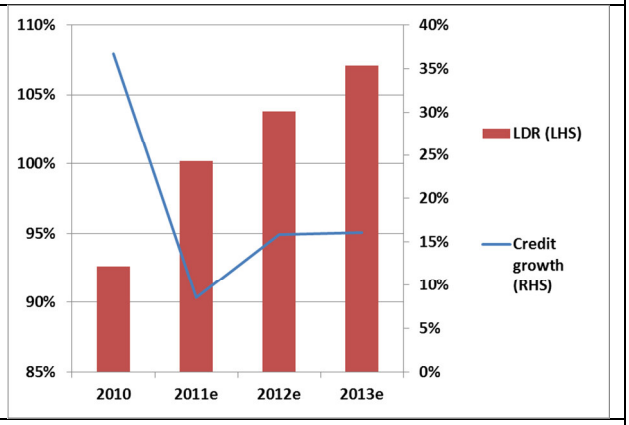
Regarding local banks the situation of the remaining local CEE savings banks (e.g. PKO BP in Poland) as well as regional banks (e.g. Bank Transsylvania in Romania) is of interest. Figure 13 derived from Erste Bank estimates looks at the main potential covered bond issuance drivers credit growth and the loan-to-deposit ratio for local banks in Turkey compared to local banks in Poland. Significant is both the stronger loan growth in Turkey than in Poland, and the increasing insufficiency of the deposit base there to fund growth.[47] In Poland, the expected LDR of PKO BP for 2013 is also high at 102%, which likely confines future growth to funds from bond issues. Recently, Poland had the most active unsecured bank bond market in the region (see Figure 11 above). Other regional lenders are under less pressure, e.g. Bank Transsylvania's expected LDR by 2013 is only 87%.

Figure 13 Drivers of Potential Covered Bond Issues in CEE, Local Banks

Polish banks



Turkish banks



Source: Erste Bank, CEE Valuation Monitor. 2.April 2012. Notes: arithmetic mean over banks covered.

As discussed before, the LDR metric is not sufficient for a full issuer needs analysis for the issuance of covered bonds: this must at least also take into account the needs arising from fulfilling the NSFR or FFAR.

As important as issuer characteristics are wholesale counterparty relations needed for covered bond issuance. Banks in the region will have to be target issuances to several currencies. This has been regular practice in the recently most active markets Slovakia and Hungary. Moreover bond maturities will differ from loan maturities. Both leads to significant asset-liability

[47] A similar tightening trend regarding deposits can be discerned for Russia, where covered bond issuance activity has picked up during 2011.

mismatch. A substantial amount of swaps so far has been used to fulfil the covered bond-specific market risk limits demanded by regulators or rating agencies and reduce overcollateralization needs. This policy has presupposed either an active interbank swap market or swaps written by mothers.

Apart from swap pricing increases in the interbank market, esp. with some currencies in the CEE region (such as HUF) a fundamental problem is that swaps registered to protect the cover pool of a covered bond require an asymmetric margin contract. Margin is usually posted whenever a counterparty is in a debt position under the swap. In a swap between two banks margin requirements apply to both counterparties. However, in a swap between a bank and a cover pool, when the cover pool is in a debtor position it cannot post collateral to the counterparty without violating either legal or rating agency conditions. In turn, the reverse situation is usually possible: the related substitute asset limitations for cover pools have largely become relaxed during the financial crisis as awareness grew that cash is safer than mortgages. Rating agencies have strongly tightened their requirements.[48] As a result, third-party swaps registered for the benefit of the cover are a very expensive funding option. Market sources interviewed assumed additional cost in the range of 1%.[49]

Having the swaps written by the mother bank in turn minimizes the rating uplift of covered bonds over unsecured bonds. In sum, achieving both attractive funding and a rating uplift seems only possible with a very limited use of swaps.[50] This might inter alia imply deepening euroization by selling EUR-denominated bonds to local investors.

Rating uplift (and the associated market reactions) depends not just on the swap issue but also on the implicit government support, esp. via the accepted level of overcollateralization, and the quality of collateral. The Hungarian case, as well as currently some Eurozone periphery cases, suggests that covered bond issuers may even pierce the sovereign rating ceiling and also fetch better market pricing. In contrast, rating uplifts of covered bonds issued in the region over the issuer standing are largely absent. Moodys provides no rating uplift ('TPI leeway') for both Hungarian and Polish covered bond programmes. This is due to credit quality and legal risk, some of which were discussed before.

In a market where liquidity premiums can easily reach 50bp or more, and considering the use of multiple currencies and the swap market constraints, market liquidity has to be a central concern for issuers. Historically, covered bond systems in European economies developed as

[48] According to March 2012 FitchRatings analysis, the cover pool *must not* post any collateral in swap arrangements, and counterparty rating requirements have been significantly tightened. Also, swaps registered to protect the cover must not be cancelled upon the event of issuer insolvency in order to be eligible for rating recognition. This is a legal feature in some jurisdictions.

[49] Interviews with HU issuers.

[50] German Pfandbrief issuers for this reason hardly use any swaps. This is easier in the single-currency environment of the EUR, however, in which most cover assets are denominated.

centralized lenders, even in countries as large as FR (Credit Foncier de France). Mortgages were either sold or pledged to these lenders, which turned around and issued covered bonds. The first secondary mortgage market between savings banks was created in Bohemia, today's Czech republic, in the late 19th century. Today centralized covered bond issuers still play a major role in FR (Caisse de Refinancement Hypothecaire), CH (2 centralized issuers, for private and public banks), and Denmark (Totalkredit, issuing on behalf of ca 50 local lenders). FR and Denmark have a dual system of centralized issuers and individual bank issuers. Second-tier banks in numerous EU states operate as de-facto centralized issuers, e.g. Landesbanken for small and mid-sized Sparkassen in Germany. Most of the issuers use pledges of portfolios as sureties, but some also buy loans (e.g. Totalkredit).

Transition countries have failed to develop national centralized issuers for residential mortgages so far. The exception is Russia's housing finance agency system issuing through a central national agency, in competition with banks. In Central Europe, Hungary has come closest so far to a centralized issuer model. Hungarian mortgage banks in the early 2000s benefited from subsidies to originators for pledging their portfolios to them and thus grew dramatically. Of the three issuers, two had a third-party refinancing function on this legal basis. They lost this market in the second half of the decade, however, partly due to the CHF boom which required deposits or interbank funds, and partly after the origination subsidies were cut back. MNB has questioned the centralized issuer concept for Hungary broadly, arguing with the cost of legal perfection of liens; this argument is being rejected by the mortgage banks. The question seems rather the stability of covered bond issuance incentives and the competitive impact of a centralized issuer solution, given that foreign lenders have other options (including issuing Hungarian collateral via Austrian or IT covered bonds). Poland is still developing a pooling model. The mortgage banks were kept unsubsidized, but also their market relevance remained small to the present day, moreover limited to commercial real estate. As in Hungary, the CHF boom financed primarily interbank slowed down the desire for covered bond pooling. Government and banks recently resumed the work program, but stopped in the process implementing a legal model for sub-participations comparable to the synthetic constructions used elsewhere. Instead, there is now fresh work under way to improve the legal, tax and regulatory conditions for loan sales to mortgage banks.[51]

Options: Reducing programme issuance cost speaks in favour of covered bonds currently from the perspective of issuance fees and reporting. However, regular due diligence of the dynamic pool is a sine-qua-non condition, and third-party provision of that service is costly. Reporting could follow the existing, basic requirements enshrined in European laws (basic aggregate portfolio composition data) or follow more detailed reporting standards of MBS. The industry's professional body ECBC is developing a new reporting standard currently. The basic alternative to covered bonds would be unsecured bank bond issuance and continued cross-border funding. Unsecured bank bond funding is under heavy pressure after the crisis and its stabilization requires a comprehensive legal and protection approach (see below for conflicts with covered

[51] Sub-participations are also used between savings banks ('Sparkassen') and wholesale banks ('Landesbanken') in Germany with the goal to avoid selling loans from the balance sheet of savings banks.

bond holders) and cannot mobilize sufficient volume for the mortgage sector; continued cross-border funding under improved regulations such as the FFAR seems a more stable alternative, however increasingly volatile. Swap market conditions may require implicit government support, whose pricing conditions should be specified. Liquidity can be improved via collateral pooling, swaps, centralized issuers or regional cross-country issuers.

Recommendation: In a market environment for banks, where access by investors to collateral in the insolvency case increasingly matters, the development of efficient covered bond and MBS funding tools is a priority. Covered bond and MBS programme cost should be kept free from arbitrary regulator fees and taxes, in particular covered bonds should be set up as permanent issuance programmes without individual prospectus requirements. Yet minimum due diligence standards must be set – in the interest of sustainability of access of issuers to the funding tool - that will lead to rather insignificant programme cost differences between covered bonds and MBS. Preferable service providers over regulators are third-party auditors. Reporting standards for covered bond and MBS programmes should converge (with MBS reporting currently setting the standard). Governments can help to stabilizing relative price conditions between covered bonds and unsecured funding of same maturity (see below). Centralized special bank issuers are a rational response to small LC mortgage markets; they should co-exist with individual bank covered bond issuance (e.g. characteristic for the market in FR or Denmark).

Covered Bonds: The Government Perspective

Issues: Covered bonds, MBS, repos and other secured credit transactions are mechanisms that alter the rank of claims of debt investors in banks through asset encumbrance. In the CEE context this affects in particular cross-border funding for mortgages. Rank improvements go from unsecured to segregation status, where execution can be performed on behalf of investors without the collateral entering the insolvency mass. Segregation in the case of MBS is achieved always ex-ante, and in the case of covered bonds in most cases ex-post, upon the insolvency event. The exceptions are covered bond legislations that use SPV or SPC concepts to reach de-facto ex-ante segregation status (e.g. IT, UK structured covered bonds). Only in isolated cases, e.g. Spain, the covered bond holder is only prioritized during the insolvency.

In addition to segregation, covered bonds receive additional credit support through overcollateralization, i.e. an excess of mortgages over the bonds issued. Empirically, overcollateralization varies in Europe between 5-10% (Denmark) and 70%-100% (Spain). High levels of overcollateralization are provoked either by legal fiat – e.g. in Spain the entire mortgage collateral of a bank backs the bonds, instead of a dedicated cover – or by mandatory and market requirements (‘voluntary’ overcollateralization).

Finally, the so-called cover monitor of a covered bond will during the going concern permanently release non-performing or non-eligible assets (e.g. lack of a mortgage) back to the rest of the bank. This process called asset substitution ensures that a covered bond upon

insolvency will have the nature of a good bank[52], serving to satisfy covered bond investors only. Most types of MBS in contrast, do not foresee, or even forbid, asset substitution.

Europe (e.g., UK, Germany) and the CEE (e.g. Romania) region are increasingly converging to the good bank approach for bank resolution. The good bank is a pool of high-quality assets that will be allocated to highly ranked bank creditors and spun off into a 'bridge bank'. This insolvency approach is quite similar in spirit to covered bond insolvency – segregating good assets. The key difference is that after insolvency the good bank will live on as the bridge bank while a covered bond on its own will be either wound down or sold to another bank. Subordinated debt, hybrid debt and equity will be allocated to the remaining pool of assets of lower quality, which also might hold equity in the bridge bank.

Figure 14 visualizes the situation for two scenarios: a universal bank issuing a covered bond and a universal bank using senior unsecured bonds and deposits instead. The issuer uses interest rate or FX swaps to protect the net present value of the cash flow of cover assets minus the cash flow of covered bonds. Swaps are generally super-senior, except for the case when they are registered to protect the covered bonds and become segregable, as the mortgage assets themselves. Senior unsecured funding is junior to both swaps and covered bonds. Publicly insured deposits in Europe are typically pari passu with senior unsecured; in contrast, in the U.S. and the U.K. they are senior to senior unsecured debt. Figure 14 presents the European case, which is applicable to most transition countries.[53]

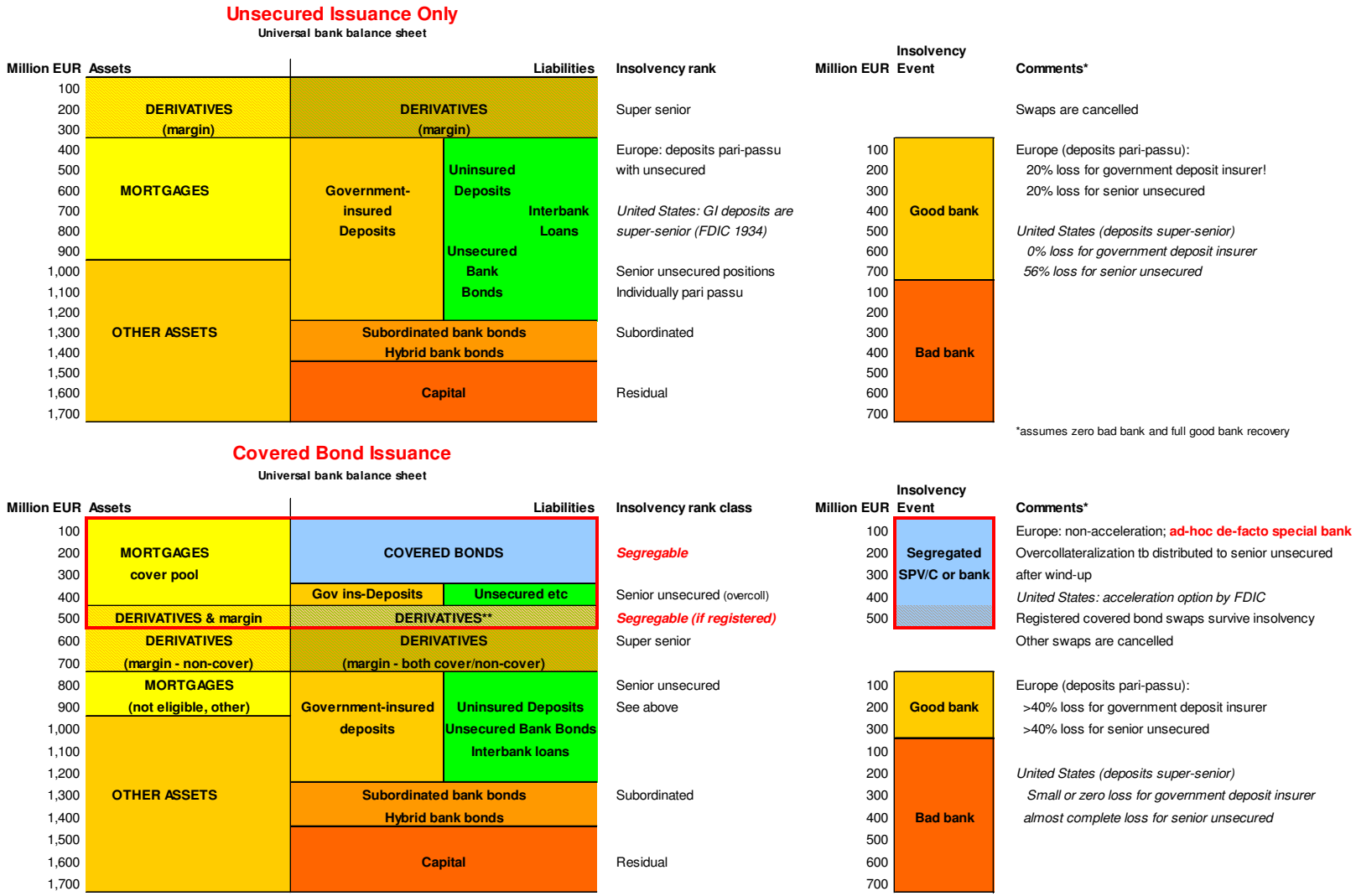
As the numerical example shows, the changes in rank brought about by the introduction of covered bonds on other creditors can have severe implications for their loss expectation:

- Senior unsecured debt will be most seriously affected. It funds the overcollateralization that is segregated during insolvency and allocated to covered bond investors. As a result, the good bank will be considerably smaller. Due to the on-going asset substitution undertaken by the cover monitor, the overcollateralization consists typically of good assets that will be missing from the new good bank, until finally released.

[52] Under most laws the cover pool now gets an insolvency administrator and a partial banking license.

[53] An EU KOM bank insolvency reform proposal of June 2012 proposes to make publicly insured deposits senior to other unsecured debt, as in the U.K. The proposal would come into force from 2018 onwards.

Figure 14 Universal Bank Insolvency Waterfall: Unsecured Funding Only vs. Covered Bond Issuer



Source: author's representation. Notes: chart presents European case of pari passu deposits. 'Swaps are cancelled': residual debt from swaps remains super-senior (subtracted from or added to good bank).

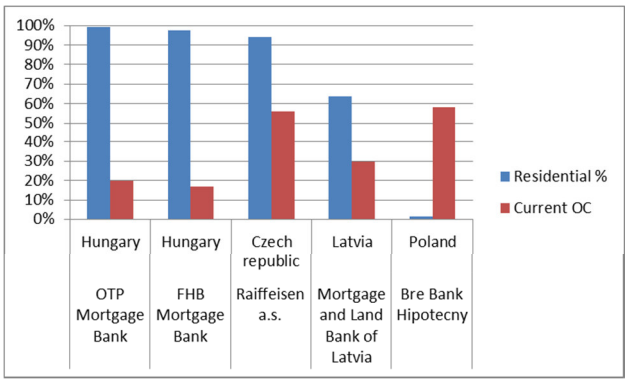
- Government-insured deposits funding the good bank will suffer in credit quality proportionally to the scale of the covered bond issued and to the extent that they rank pari passu with other unsecured bank debt. Both factors could severely depress the value of deposits in the insolvency case. This in turn could mean a high implicit government subsidy for the covered bond. In the context of U.S. law, the public deposit insurer FDIC has seniority over other unsecured creditors, and will suffer lower losses.

Wording in European covered bond laws typically suggests a prompt release of collateral not considered necessary to satisfy the covered bond creditors, which would benefit both investor groups. However, none of the European laws puts up time frames or specific release procedures to substantiate these provisions. There is a high likelihood that the time lag until an eventual release will be very long.

In the meantime, in the presence of high overcollateralization levels, the deposit insurer or the central bank might have to stem large volumes of financings to fund the insolvent entity. This complicates the sales or privatization process of the bridge bank.

In the U.S. case, the deposit insurer himself, the FDIC, is in control of the bank resolution process as the bankruptcy receiver. During the U.S. covered bond law discussion in 2010, the FDIC demanded acceleration rights over the covered bonds in order to be able to repossess the collateral and pay out covered bondholder. This would have allowed the insurer to contain the negative impact of overcollateralization on insured deposits.

Figure 15 Current CEE Covered Mortgage Bond Programme Characteristics



Sources: Moodys, data per Q III 2011; Notes: OC = overcollateralization.

Deposit insurers exist in the CEE region, but have generally far more limited powers than the FDIC. In this context, a potentially heavy-handed direct government intervention into a universal bank resolution in order to protect depositors is highly likely. Early CEE covered bond regulations prepared for this challenge by maximizing the legal protection of covered bond investors and at the same time separating the cover pool institutionally from other bank assets, via special banks. Requiring a **special bank** is a mechanism to protect the government from subordination, by limiting the deposit issuance abilities of the covered bond issuer.[54] The ECBC Fact Book 2011 lists 26 issuers in Central and Eastern Europe with a total issuance volume of 18.6 billion euros. In Hungary and Poland the law enforces special banks as issuers. In the Czech republic and Slovakia, there is a licensing

[54] In the historic German legislation abolished in 2005, the mortgage bank had to observe a leverage ratio which limited the proportion of any type of unsecured funding that could be issued beyond Pfandbriefe. Similar rules are valid for PL and HU special mortgage banks today.

system. As a result the Czech republic and Slovakia had a far higher number of active issuers than Hungary and Poland (see RHS of Figure 15).

Figure 15 on the LHS suggests, however, that there might also be benefits from demanding special banks, at least from the perspective of government. When rating agencies and investors determine overcollateralization needs, the price risk of the collateral plays a significant role. The special banks in Poland are not well integrated into the relatively low-risk housing sector and focus heavily on commercial real estate. They therefore must maintain high overcollateralization. In Hungary, however, the overcollateralization level is small - the two main issuers are specializing in residential lending. Interesting is the comparison with a similar residential lender in the Czech republic, a licensed universal bank, which is either forced or voluntarily holds far higher overcollateralization levels.

These observations deliver context to the current Romanian covered bond law proposal. It permits universal bank issuance while demanding a 20% limit to nominal overcollateralization. This seems explicitly motivated by taking into account the perspective of the Romanian deposit insurer. Figure 15 suggests that with this limitation, Romanian issuers from a government or unsecured investor perspective would be closer in nature to special banks. Further down this route goes the Danish system relying on static mortgage pools (see discussion below). For Romania, a good bank-based resolution concept has been proposed by the IMF. Its integration with the proposed covered bond law has not been explicitly addressed so far.

In Hungary, the fundamental legal discussion about protection of government or unsecured investors has been superseded by the programme cost debate. The central banks hypothesis that programme cost are higher under the special bank principle is rejected by the mortgage banking association, which hints to the cost efficiency of pledging collateral by a universal bank to the specialist. While a return to the historic high subsidies for specialized issuers is out of question, there is also no discussion over ways to limit the implicit subsidies for a universal bank issuer. Hungary is likely to adopt the upcoming EU bank resolution legislation, which will likely determine seniority for public deposit insurance but not address the role of covered bonds.

While government subordination risk might be lower for special banks as long as universal bank insolvency law issues are not addressed, these might have higher needs for liquidity support than universal banks since their unsecured funding is frequently wholesale. Experiences during the German Pfandbrief crisis of 2008/9 suggest that the result could be indirect (Eurohypo) or direct (Hypo Real Estate) nationalization. Such risk is minimized if the industry as a whole or parts of it supports a centralized issuer (e.g. the FR CRH), including with liquidity commitments. Another strategy of liquidity risk minimization is adopting the Danish static pool concept (see below).

Options: Typical covered bond law design has that a covered bond issued by a universal bank is de-facto a dormant special bank within the bank; its limitation to high-quality assets and overcollateralization will as shown in Figure 14 above substantially reduce the good bank,

which is the currently preferred model for universal bank resolution. Subordination effects of this kind can be limited via issuance limits (Australia, Canada). This, however, is impractical with smaller banks, real estate specialists, and generally undesirable as greater long-term bond issues are intended.

The competing special bank concept is a legally cleaner solution, but requires well-designed originator-centralized issuer relations. It still may require high liquidity support if the specialist does not issue deposits and needs to fund overcollateralization.[55]

The alternative to a special bank is either unlicensed or licensed issuance by universal banks. Unlicensed issuance drastically increases the number of issuers, but also raises concerns about individual lender ability to perform on implementing the programme and fragmentation of the market. [56] The Czech republic has recently introduced licensing to reduce the number of issuers again.

A more developed, FDIC-style deposit insurance concept could accept universal banks as issuers, adopt risk-based pricing (considering reduced collateral availability for deposits), limit overcollateralization, design collateral monitoring and due diligence processes and be empowered with acceleration options. Acceleration could be at par or (preferable for investors) at the bond's market value.

The key alternative to acceleration in insolvency is the assumption of cover pool and bonds by another issuer used extensively during the financial crisis, e.g. in the U.S. and Germany.

Figure 16 Covered Bond Regulations: LTV and Collateral Valuation Standards for Residential Mortgage Covered Bonds

DE	60% of MLV*
HU	70% of MLV
SK	70% of MLV
ES	80% of MLV
FR - Obligations Foncières	80% of MLV
IE	75% of MV**
SE	75% of MV
DK-SDO	75% or 80% of MV
DK-SDRO	75% or 80% of MV
FR general law based	80% of MV
FR - Obligations á l' Habitat	80% of MV
DK-RO	80% of MV
IT	80% of MV
NL	80% of MV
PT	80% of MV
UK	80% of MV

* MLV= Mortgage Lending Value, ** MV= Market Value

Source: Ahlswede (2011), based on European Covered Bond Council

The special unwinding vehicle concept determined in many laws is another insolvency option; yet it brings high reputation risk for the system and in all practical cases de-facto nationalization (e.g. Germany). Anticipating that the good bank approach and thus bail-in will become the EU norm, but that at the same time EU legislation will not cover the links to covered bond

[55] A special bank issuing covered bonds does also cherry-pick assets from the banking industry for bond issuance, which could be seen as a disadvantage. However, cherry-picking is also done by a universal bank issuing a covered bond. In practice of the originator-centralized issuer setup its extent will depend on whether the servicing and thus credit risk assumption is transferred to the special centralized issuer or not. Cherry-picking has been a second reason, next to subordination, for regulators to limit covered bond issuance.

[56] In Germany, after the special bank law (Hypothekenbankengesetz) was lifted in 2005 and replaced by a covered bond law (Pfandbriefgesetz) with a licensing system run by the bank regulator, the number of issuers has risen from the 18 (2003) to 35 (2009). Issuers now include a number of mid-cap savings banks.

legislation, the process of overcollateralization release from covered bond investors to the good bank could be explicitly formulated.

Recommendation: when universal banks are covered bond issuers it is a sine-qua-non to properly balance the interest of the deposit insurer, of senior unsecured investors and of the covered bond investors. This is the task of a well-designed insolvency framework taking into account all bank funding products, as well as the implementing bankruptcy receiver. The receiver should interact with the deposit insurer and the covered bond insolvency administrator. A legal limitation of overcollateralization ex-ante will be feasible only at elevated levels, given investor and rating agency demands. A quantitative limitation of issuance beyond requirements to provide bail-in capital could destroy important business models.

Important therefore is a clearly defined due diligence phase during insolvency which an informed decision about the release of overcollateralization back to the insolvency mass can be taken and disputes between administrator and receiver be settled. During this phase, covered bonds should be extendable (soft bullet). Acceleration of the covered bonds at the market value (not par) should be an option within that process. Licensing appears as a sine-qua-non to reduce the number of issuers to those able to perform on a covered bond programme. If in doubt over the described legal processes, requesting a special bank should remain an option.

Other Covered Bond Design Issues

Static vs. dynamic pool concept. Covered bond laws are generally formulated under a dynamic pool concept, i.e. with permanently substituting loans and limited cash flow relations between individual loans and individual bonds. The amount of intermediation needed in this construction, in particular the liquidity risk, can severely influence the covered bond rating. Regulation might also to be tightened going forward on more long-term liquidity risk than currently addressed under the NSFR (limited to the 1 year threshold, see Box 4 above).

Static pools mostly pass through cash flow of individual loans collected in a single pool and are the conceptual basis of MBS. In the U.S. only static pools that are self-liquidating are permitted, due to concerns over loan substitution, which might impair transparency and credit quality, and possible diversion of cash flow.

A covered bond issued under a static pool concept entails the full guarantee of the issuer. An example is the traditional Danish mortgage bond (Realkreditobligationer). This product is issued on tap, i.e. loans of the same interest coupons are written continuously into an open pool and simultaneously issued on the market. After some time period, in practice up to 3 years, the pool is closed. This pooling mechanism allows loans to be effectively traded, and this so very efficiently as the underlying pool is homogenous and easy to analyse for investor. In addition, the structure creates additional important borrower options.

The most important option is that the borrower can buy back his particular loan directly from the pool, i.e. can redeem his loan at its market price. Usual mortgage contracts only allow for

redemption at par. If the market price is below par, which happens in particular during crisis when interest rates rise, the borrower has a heightened incentive to buy the loan back. This reduction of capital demand stabilizes the bond market. Also, in crisis a declining value of the bond will tend to match a declining value of the house, which preserves the market value of the borrowers equity. This reduces the likelihood of default.[57]

Permitting both dynamic and static pool concept under one law could provide additional options for issuers regarding liquidity and interest rate risk management as well as target different investor classes. In Denmark, static and dynamic pool covered bond concepts were formulated in 2007 under the same legal and regulatory framework for this purpose.[58] Within the same issuer, different products will be allocated to different capital centers, whose surpluses/deficits will be consolidated in insolvency. Capital (overcollateralization) requirements and matching rules are defined in combination with stress tests to discriminate between both products. Liquidity management needs for the static pool product are de-facto zero since it is only a pass-through from borrowers to investors. Overcollateralization requirements for interest rate risk are also practically zero (some interest rate risk has been permitted by the regulator). For these loans the lender profit basically is determined by a fixed administration fee that covers credit risk and expenses. Despite the lower profit generation options, most Danish capital centers are using the traditional pool concept.

In the region the laws in Romania, Russia and Ukraine have both static and dynamic pool concepts enabled in the same mortgage bond law. Of these, the Russian market is actively issuing both types of products.[59] Romania is currently removing this early law version (of 2006) in favour of only dynamic pools, the concept also practiced elsewhere in Europe. Given the trends in rating and regulation described it might be advisable to keep enabling both products under the same legislation.

Credit risk management. New covered bond legislation will seek to start with a minimal set of eligible assets to boast credibility, esp. when the sovereign and individual bank standing is weak. The classical limitation is to real-estate-backed assets, limited to national real estate only, to assets subject to certain primary market standards (valuation, execution, prepayment) and with the bonds enhanced by additional safeguards (low issuance LTV between 60 and 75-80%, LTV differentiation between commercial and residential, possibly total LTV limits for individual loans). The Polish and Hungarian laws are examples for such conservativeness in asset selection. However, both laws created distortions by introducing primary market regulation that ended up splitting the market between covered bond issuers and other banks (e.g. regarding LTV limits (Hungary), early repayment fees (both Hungary and Poland)).

[57] For more detailed analysis provided by a joint venture between the Danish IT company VP Securities and George Soros Corporation see www.absalonproject.com

[58] For a description of this regulation, see http://www.danskebank.com/da-dk/ir/Documents/Other/Danish-Covered-Bond-Handbook-2012.pdf

[59] See Lassen (2012).

Issuance LTV generally are lower than total LTV of a loan in modern covered bond laws. This was different until a liberalization wave of laws of the 1980s, which limited total LTV. The traditional Danish covered bond model avoids a split between total LTV and issuance LTV. Restricting covered bonds to national real estate assets is a straightforward public risk management approach in the initial stage (Poland, Slovakia). German regulators have taken the route to accept foreign mortgage collateral country by country to be inserted in pools. Regulators also have placed low ratios on the use of land and unfinished construction, or underwriting requirements (same borrower as standing investor), which may facilitate development finance. Adopting high ratios, such as in Spain (up to 20%), may mean higher and more volatile pricing.

Starting with a public sector cover pool in the CEE region appears problematic, given partly unresolved intergovernmental fiscal relations that could govern general obligation finance as well as constraints placed on collateral execution (Romania). Western European covered bond laws have operated with lavish underwriting exemptions for public borrowers and also not discriminated against 'wraps', i.e. using a covered bond to re-securitize public sector bonds (in FR even mortgage covered bonds can be wrapped). All major German insolvency cases can be traced back to indiscriminate pooling of public sector assets and wrapping of bonds (Duesseldorfer Hyp, Eurohypo, Depfa/HRE, AHBR). Similar caution should be applied when accepting public guarantees, which should not supersede LTV limits (example Romania Prima Casa programme).[60] Substitute asset limits (cash, government bonds) have been gradually lifted Western European covered bond legislation; they used to be strict (e.g. 15% in the German case) and be used as an argument against allowing borrowers to prepay mortgage loans.

Market and liquidity risk management. On swaps, see discussion above. Mandating the split of FX and LC pools (Poland) or at least impose limits to FX-LC mixing and the use of swaps (roll-over assumptions) should be considered. Rating agencies are increasingly focusing on the minimization of market and liquidity risk. Pass-throughs are getting the highest rating uplifts since they eliminate liquidity risk for issuers. With the same logic, soft bullet bonds allowing for maturity extension are preferred over bullet bonds with fixed maturities.

For example, backing a covered bond with index-trackers, which many regulators in the region now made mandatory, would suggest a pass-through structure. This would force the lender to seek explicit capital market pricing up-front for the considerable funding risks associated with this product.

Covered bond issuers in the EU have responded with matching rules to the crisis. For example Germany demands a 180 day advance cash flow matching. This further enhances the existing NPV matching concepts.

[60] Credit default swaps have been used in Germany (KfW Provide program in the early 2000s) to swap mortgage collateral, subject to LTV limits, into public sector collateral, not subject to LTV limits. This works obviously if the public sector has a strong rating, but such tactics should raise doubts in transition countries.

Mortgage-backed Securities (MBS)

Issues: European MBS have been far less affected by the defaults than US MBS. Performance was supported by the voluminous central bank interventions that reduced interbank lending benchmarks for the British, Spanish and Irish index tracker portfolios, i.e. in three of the four largest MBS markets. The fourth is the Netherlands where lending is predominantly fixed-rate and high leverage and price declines may put the MBS market to a test.

Despite the relative performance success and recently declining spreads, MBS in Europe is under strong regulatory pressure with drastically tightened capital and transparency requirements. For instance, loan-level reporting is now required by the ECB for repo eligibility, a standard not on the horizon for covered bonds. The ECB also treats highly rated MBS far less favourably than equally rated covered bonds. Capital requirements for both banks and insurers holding highly rated MBS agreed on under CRD IV are also drastically higher than for highly rated covered bonds.

The regulatory reaction mirrors investor concern in the light of continuing housing market stress in Western Europe that reject the traditional senior-subordinate structuring approach as insufficient and demand additional safeguards.

The CEE regions existing MBS / ABS legislation that where passed (e.g. Romania) so far apparently have not been tested.[61] The structuring approach seems particularly problematic against the background of an emerging market with limited stress experience. Significant skin in the game by MBS originators, and/or guarantees by them or by third parties could remedy this. Within the sample, a potential specialized third party guarantor exists in Serbia. A significant problem for MBS issuance in the region could be the lack of predictability of cash flow resulting from ex-post regulatory interventions into ARMs (Serbia) or FX loans (Hungary). Again this may prompt investors to demand protection.

Options: The CEE region has considerable potential for the development of MBS markets. The public mortgage insurance programmes run by Romania and Serbia could be developed into a publicly insured MBS programme along the lines of the U.S. (FHA-Ginnie Mae) or Dutch (WSW fund) models. However the caveats made about proper regulation of guarantors apply (see page 30 above). Given that public insurance in these cases already entails lender co-insurance, and many lenders are better rated than the sovereign, public ratings would be enhanced by the issuer rating. This is consistent with EU skin-in-the game rules. The issuer could receive pro-rata capital relief. Public bond insurance would have to be priced sensitively in order to create a level playing field with covered bonds. Hungary implicitly has given investors public co-insurance programme regarding the restructured CHF portfolio, which could render a securitization feasible. Securitization laws in the drawers (e.g. Serbia, Croatia) could be passed, alternatively the issues regulated could be dealt with in the relevant pieces of legislation.

[61] The European securitization forum contacted for this project was unable to provide data.

Recommendations: A pilot programme using public insurance could be of interest e.g. for both lenders and investors in Serbia or in order to remove legacy portfolio from bank balance sheets, such as the CHF portfolio in Hungary. Dormant or unused ABS legislation should be passed (Serbia, Croatia) or revised (Romania), and – as covered bond legislation – reviewed for their subsidy content. Securitization (and covered bond) laws should not override general consumer protection, bank regulation or taxation rules; rather these laws should be changed consistently.

4.4 Mortgage Securities: Investors

Local Investor Perspective

Issues: A shift from low yielding government bonds and short-term bank deposits towards long-term covered bonds could substantially improve the performance of institutional investors in the region. It would only immaterially change their credit risk profile and add badly needed duration in order to match long-term policyholder pay-out commitments.[62] The restrictions against such a rebalancing embedded in policy and regulation measures are under evaluation by EBRD's LC and Local Capital Markets Initiative assessment programme.
Pension fund investment capacity to invest in corporate bonds in general, after years of steady build-up, is declining in parts of the region again due to re-nationalization (Hungary), contribution cuts (Poland) or financial repression into government bond holdings (Croatia, implicitly Hungary and Poland via performance benchmarks). The exception currently appears to be Romania, where both contributions and investment capacity have been reported in the Nov 11 FSR to have substantially increased.

Performance benchmarking practices of institutions have become extremely short-term. An example is Poland, where insurers and pension funds are forced to use short-term benchmarks. This does not only discriminate against corporate bonds but also often against duration, which hits mortgage funding from two angles. Both credit and market risk exposures of mortgage instruments necessarily create price volatility in the short-term. This will not matter, however, for a buy-and-hold investor.[63]

A related constraint is the lack of historic asset diversification and, as a result, staff expertise. Only in Hungary do institutional investors seem to be familiar with covered bonds; in the Polish market, even the largest institutions (e.g. the largest insurer) according to earlier interviews by the Consultant do not employ specialized mortgage sector expertise.

Both latter factors trade strongly against key risk management needs of mortgage funding. For instance, if lenders would like to protect themselves against interest and liquidity risk while

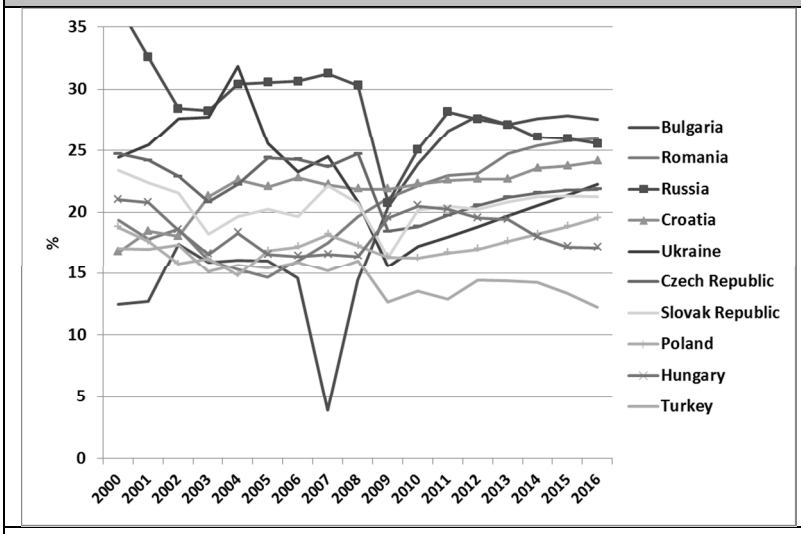
[62] See e.g. RO FSR Nov 2011, chart 3.55 on different asset performance levels, and discussion above on ranks of covered bond investors vs. depositors and unsecured bank bond investors in bank insolvency. At least in HU, covered bond ratings have pierced the sovereign debt ceiling.

[63] One of the salient crisis developments in Germany during 2008 and 2009 was an increase in the share of name Pfandbriefe issued over bearer Pfandbriefe. The reason is that name Pfandbriefe did not have to be marked to market.

retaining credit risk, e.g. through the issuance of callable debt or pass-throughs, this would require an understanding of mortgage cash flow on the side of investors.[64] Lack of education of investors vice versa increases liquidity risk in the banking system. The treatment of high duration and duration risk is particularly critical with regard to policy moves to eliminate prepayment indemnities, and thus turn mortgage funding less government-bond like and more idiosyncratic. Also, MBS programmes are particularly discouraged.

In the smallest financial systems the typical simultaneous ownership of pension funds and banks combined with the potentially large scale of mortgage bond issuance imply that prohibitions of distribution to connected parties as well as large exposure rules may be a constraint.[65] During interviews both the largest Croatian lender, Zaba, and Erste Bank reported regulations as substantially limiting issuance volumes, although figures given about the potential for investment into bank bonds and covered bonds differed widely. Both Croatian lenders indicated that public sector covered bonds might be an easier sell to regulators, given the tendencies of financial repression that discourage non-public sector bond investment.

Figure 17 National Savings Ratios, 2000 – 2010 and Forecast



Source: IWF, World Economic Outlook September 2011

With regard to the absorption potential of local investors the IMFs national savings ratio projections sends mixed signals (see Figure 17). Romania and Croatia, two countries with interest in covered bond introduction, are the leaders regarding savings. Capacity in Poland is rising, while Hungary – probably exacerbated by the renationalization of private pension funds – is falling back. Turkey has both a weakly developed non-bank system and the lowest savings rate in the sample. The dangers of using mortgage securities to tap primarily international savings are amply highlighted by current events in Western Europe, esp. in Spain and Ireland.

Options: Institutional investor benchmarks could be altered to enforce a long-term perspective matching their long-term liability profile. This would mean encouraging, rather than discouraging, asset diversification. Investors could in particular be encouraged to take duration

[64] A fundamental precondition for the functioning of the Danish mortgage bond system is that institutions have developed this capacity.

[65] The UCITS-eligilibity of covered bonds has historically centered around exemptions from large exposure rules granted to ease this problem of small jurisdictions. A driving force here was Denmark with her large covered bond and small government bond market.

risk in order to reach a sensible division of labour with banks. This would ideally allocate liquidity risk to institutions and credit risk to banks.

The Danish model of Realkreditobligationer with pass-through of liquidity and interest rate risk to investors here has led to an important education process for the institutional investment industry. Where this is not possible, borrowers might end up with interest rate risk (ARMs). Financial repression moves, if unavoidable, could consider mortgage securities as part of a broader 'government-sponsored' bond market regime. Large exposure rules could be handled more flexibly. National savings capacity could be stimulated by discouraging excessive cross-border funding and speeding up institution-building (esp. Turkey).

Recommendation: Local institutional investor demand needs to be mobilized for optimal mortgage risk management, both in terms of quantity and quality (risk-taking abilities). This implies less financial repression benefiting governments and keeping savings flows into the second and third pension pillars as well as insurance intact. A redefinition of portfolio performance benchmarks and asset allocation rules is needed. The optimal risk allocation between banks and investors would be analogous to the Danish mortgage bond market model, where institutions take full liquidity and interest risk of the portfolios and thus are an integral part of mortgage funding risk management. Initiatives in the areas of financial education, specialization and diversification within institutions should be taken.

International Investor Perspective

Issues: common purchase criteria for all foreign investors are sovereign rating, macro factors, the credit quality of covered bonds and bond market liquidity. According to interviews with issuers and investment banks, most **European institutional investors** only invest in the investment-grade range and respond to reductions in the sovereign rating very sensitively. This affected for example the Hungarian issuer OTP after the downgrade of the sovereign in 2011 to junk, even though its bonds remained rated investment grade. A road show to Germany and Austria at the end of 2011 according to the author's interviews with the issuer showed only low investor interest. For this type of investors within the sample also Croatia and Romania (at the edge of junk) or Turkey (in junk territory, but close to investment-grade) are currently unattractive. A Croatian sovereign deal in April 2012 attracted only 15% European interest with the bulk picked up by U.S. and UK accounts. In contrast Polish sovereign issues in June went almost entirely to European addresses.

Mostly Anglo-Saxon **yield investors**, according to interviews with investment banks are more willing and able to analyze the particular law, deal structure and credit quality of the underlying mortgage pools. Demand from these investors for recent OTP issues stayed open. Technical and fundamental data for emerging markets remain supportive for yield investors, even below investment grade. Flows into emerging markets bond funds throughout the year 2012 have been positive, with 1/3 flowing into LC or mixed LC-FX funds.
Strategy investors in contrast have limited interest in covered bonds as the market is still too

illiquid and the sovereign is the target of choice. The Hungarian sovereign market became dominated by macro strategists during 2010 and 2011.

A major problem for all investor classes is the general lack of **secondary market liquidity** for covered bonds that would allow foreign investors a simple exit. The exceptions are banks benefiting from repo eligibility with the local central bank. Some issuers have been fighting for approval of their CEE-based emissions in EUR for repo with the ECB. However, some such as FHB are issuing **ECB repo** eligible covered bonds via the Eurozone. It is likely that the high covered bond issuance growth of the Slovakian market during 2011 has been stimulated by ECB repo eligilibity.

So far, very few issuers in the region are actively **targeting foreign investors**. The high foreign currency issuance share in Hungary (about 40%) is partly now driven by high issuance volume in combination with declining local investment as a result of government intervention into pensions. In some cases there are impediments for foreign investors, such as in the Czech republic where an income tax deduction benefits only domestic investors. This lowers covered bond spreads, which weakens foreign demand. A problem for the Turkish covered bond development is competition via international unsecured lending through short-term syndicated loans or facilities combined with cross-currency swaps. This dominant funding model limits issuer interest to develop more long-term funding. Overall currently there are more or less large negative factors reducing foreign investor demand in existing covered bond programmes. The medium-term potential should, however, be high especially in the larger markets.

Options: regulators in Europe have tightly controlled institutional cross-border (ex EU) and non-investment grade investment, which has limited the potential for CEE issuers to tap them. Once the threshold is overcome, demand could be very strong. Expansion of the regulatory dialogue to home country regulators of institutions could be an option. Issuers could be encouraged to diversify funding sources and more actively target international investors. At the same time they could be discouraged from short-term funding in international markets via applying the NSFR/FFAR (see above).

Recommendation: an attempt could be made to involve pension and insurance regulators within the EU into the regional policy dialogue initiatives. Foreign investors could be assisted by systematic bond market information provided by EBRD (in analogy to ADB efforts). Issuers in CEE should be discouraged from tapping short-term international funds for funding long-term illiquid assets.

5. Suggested Priorities for the Regulation and Policy Dialogue

Regulators and policy makers in the six-country sample presented here, as well as elsewhere in the region, have made considerable progress in developing their legal and policy frameworks for mortgages. A number of countries have reacted to local crisis or perceived risk promptly.

Yet, the analysis here identifies a number of gaps, risks and inconsistencies, both regarding regulations as well as fiscal support for the mortgage sectors. Some of the issues identified have the potential to generate new financial stability and become fiscally costly and therefore require attention with priority:

- Certain interventions into mortgage product design could add to financial instability, such as demanding long-term index trackers with invariable spread and eliminating prepayment indemnities that discourage fixed-rate lending.
- Rigid constraints placed on mortgage underwriting may add to future fiscal risk, such as tight limits for FX underwriting (e.g. very low LTV) without having a affordable LC alternative developed. This could lead to either renewed explicit subsidies for the LC products or a revocation of the FX regulations, resulting in greater implicit subsidies.
- Reluctance to develop material protections against market risk for mortgage borrowers, either inside banks (e.g. interest rate, FX or payment caps) or in cooperation between banks and governments, adds to potential instability. The choice for lenders between either taking market risk or taking default risk is still not clearly understood. Governments provide only implicit rather than explicit backups for lenders. Institutional investors are discouraged to take market risk that lenders can't take, e.g. by being forced to follow performance short-term benchmarks and by crowding out.
- Significant gaps in the market data environment persist, in particular industry cost of funds indices and house price and rental indices, which weakens the basis for regulations.
- Gaps in the legal enforcement infrastructure regarding foreclosure, eviction and consumer insolvency may lead to more ad-hoc interventions into enforcement, increasing credit risk for lenders.
- Risky fiscal policy approaches, such as high-LTV mortgage insurance, and inconsistent fiscal support programmes for mortgages add to fiscal waste or risk.

The current consolidation phase of the market should be used for a review in which the Regulation and Policy Dialogue can assist. The following elements of a policy dialogue initiative are suggested:

1. Primary market regulation
    a. APRC and other transparency regulation, the EU CARRP will add significant innovation (all countries).
    b. FX product regulation, evaluation of material FX and interest rate risk protection options (priority in Hungary Romania, Poland, Serbia).
    c. Review of index choice, interest rate adjustment, spread and early repayment regulation (all countries).
2. Local currency product design and fiscal support
    a. Local currency product design workshop (priority in: Hungary, Romania, Serbia, Turkey).

   b. Savings for housing programmes/Bausparen: review of design and subsidies (priority in Croatia, Hungary, Romania), moderation in the discussion over Bauspar legislation (Poland).
   c. Mortgage insurance design, re-focusing on supporting LC lending.
   d. Tax support and subsidy design for mortgages supporting LC lending.
3. Primary market infrastructure
   a. House price valuation standards (all countries).
   b. Development of house price and rent indices (all countries).
   c. Mortgage execution and consumer insolvency legislation (priority in Croatia, Hungary).

The priorities here are primary market regulation and local currency product design and fiscal support, 1 and 2. This assumes that the deleveraging and short-term funding support provide for sufficient funding. A broader Regulation Dialogue would include the funding side:

4. Secondary market regulation
   a. Bank issuer regulation: bank resolution, deposit insurance and covered bond law design where new laws are being designed (Romania) or old laws reviewed (Poland, Hungary). This is part of broader bank regulation reform initiative with EU KOM.
   b. Revival of dormant securitization laws (Croatia, Serbia).
   c. Investor regulation: Review of domestic investor regulations affecting the investment in mortgage securities.

Going forward, developing a Housing Policy Dialogue could address the more fundamental risk background of mortgage finance, in particular the lack of rental housing programmes catering potential subprime borrowers and development of rental housing finance, as well as the lack of policy formulation and implementation capacity (priority in Romania, Hungary, Croatia, Serbia, Turkey).

6. Individual Country Recommendations

6.1 Croatia

Croatia has been largely unaffected by the foreign currency lending crisis in the region, despite an almost complete foreign currency denomination of the portfolio. The reasons for better performance lie in the limited use of Swiss Francs and the de-facto peg of the Kuna to the Euro, the main borrowing currency, which is credibly supported by large central bank reserves. Lenders in Croatia were also somewhat less aggressive than in neighbouring countries in pushing funding cost increases through to interest rates - despite the absence of use of interbank index based lending.

Despite the satisfactory performance, the primary market in Croatia could benefit from improved regulations and a public support menu:

- The removal of prepayment indemnities is a restrictive move that will increase the cost of fixed-rate lending and force consumers into greater dependency from lender decisions, who can unilaterally review Euro interest rates.
- There are no loan-to-value ratio or payment-to-income limits. This risks high borrower leverage going forward, should prices rise, and in combination with the predominantly adjustable rate lending, risk layering. The contract savings for housing system that has been established in order to build borrower equity has little chances of operating as intended when bank lending remains unconstrained.
- Consumer insolvency legislation envisaged for mid-2012 could benefit from guidance regarding best practice.

Even with the currency peg operating satisfactorily, devaluation risk protections for the Euro portfolio should be considered. An attempt could be made to build a local currency portfolio of smaller housing and second mortgage loans around contract savings.

In the secondary market, the partly aggressive stance of the bank regulator against domestic bond issuance should be softened, considering the needs of banks to arrange their own domestic long-term funding and fulfil the net stable funding ratio. Similarly, regulators could relax constraints placed on using pension fund assets to purchase bank bonds. Provided that these issues, the prepayment indemnity issue, and issues related to bank insolvency and deposit insurance (see discussion above) can be dealt with, the formulation of a covered bond law should be envisaged. The mortgage-backed securities legislation developed by an interbank working group should be un-shelved.

Croatia finally seems to need support in housing policy formulation and capacity-building. A national housing agency following the Slovenian example could build capacity and generate funding, e.g. for the proposed rental housing programme, or at least monitor the use of other public funding.

CROATIA	
Market trends	**Earlier successes of de-euroization reversed.** **Low default rates on owner-occupied ('under 2%', Erste).** **Isolated legacy issues in FX (CHF only).** **Portfolio stagnating: 'lack of mortgage demand'** **Ca 10% house price decline in past two years.** **Euroized property market.** **No LC mortgage market. High real LC rates.**
Consumer protection law	**Unreflective transposition of EU CCD (not intended to regulate mortgages).** **No FX crisis = no direct regulatory reaction.** **Reviewable FX rate lending remains permitted, questions remain regarding the interest rate adjustment mechanisms.** **Complete removal of prepayment indemnities increases cost of fixed-rate lending.** **There is no public or individual bank affordability concept for LC lending.**
Collateral law	**Open market valuation method only tracking inflation.** **Rank conflicts between Bausparkassen and banks.** **No consumer insolvency regime so far that could make foreclosure more feasible (plans to address, introduce discharge period).** **Lengthy eviction process (5-7 years).**
Fiscal and macroprudential issues	**No (hedonic) nationwide house price index.** **CSH (Bauspar) system subsidized, but not integrated with remainder of market (no concept).** **No specialized housing policy expertise in gov/national housing agency.** **Positive: social rental housing programme to be revivied.**
Bank regulation	**No LTV or PTI limits.** **2004 elevated capital requirements to stem FX lending proven ineffective.** **Ad-hoc strong central bank interventions (e.g. lending growth caps).** **All non-deposit funding treated as foreign funding (taxed via reserves).** **Positive: bank insolvency tested.**
Covered bonds and MBS	**Conservative loan-to-deposit ratio policy, banks highly liquid.** **2 outstanding bank bonds only (2008 central bank measures, reserve requirements - also ad-hoc, financial repression via pension fund regulation).** **Absence of covered bond legislation. Central bank blocks securitization law.**

	Distribution to connected investors, depositor base problematic (prohibited in case of pension funds).
SUGGESTED PRIORITIES FOR DIALOGUE	**Consumer insolvency legislation (due mid-2012).** **Basic consumer protection legislation.** **Covered bond legislation (new).** **Integration of CSH (Bauspar) system.** **Broader issues:** **Public sector covered bonds (high municipal loan demand)** **Housing policy capacity building (rental sector, establishment of national housing agency).**

6.2 Hungary

Hungary started the transition with the largest mortgage market and has strong vested interest groups that influenced policies and regulations. The country has been hit by a foreign currency mortgage lending crisis that has led to high default rates, a serious hit for bank profitability, speculative attacks on the currency and ultimately threatened to turn into a sovereign debt crisis.

The reasons for this performance lie in the almost exclusive use of Swiss Francs, whose different nature from Euros as a funding currency for speculative investment leading was misjudged, by both lenders and regulators. Hungarian lenders also aggressively passed on their funding cost increases during the crisis to borrowers, which in combination with the devaluation and other malpractices (such as a high amount of interest-only lending) lead to risk layering. In the meantime risky mortgage lending for consumption purposes had also ballooned. Contract savings for housing in Forint, in contrast, which could have supported weaker credits, was unable to take off against Swiss Franc competition. The Swiss Franc boom of 2004-2008 ended as the 1999-2003 Forint lending boom began: with high and untargeted government subsidies.

The sovereign is forced to push back against interest groups and build a fiscally more sustainable lending programme. The choice taken to focus in it on Forint lending has chances to succeed: beyond tightened regulations, Hungary has introduced a buy-down programme for Forint lending and can build on the revival of the contract system; also mortgage banks that distribute long-term Forint covered bonds are in place. Problems exist with recently introduced product regulations, which demand the use of government or interbank indices. On the positive side from a lender risk perspective, spreads will have to be fixed for time intervals only.

While the designed Forint programme should be given some time to take off, it is advisable to give thought to a less restrictively operated EUR lending programme, where the current tight underwriting limits would be replaced by material devaluation and interest rate risk protections provided by lenders. Most Hungarian lenders have options to fund themselves in EUR.

As Croatia, Hungary has a discussion on consumer insolvency and foreclosure law reform which, given the recent crisis experience, could suffer from a populistic bias. This could make a best practice review and political moderation effort valuable.

In mortgage capital markets, the central theme has been liberalizing the current special bank system. The system had been put out of work by the Swiss Franc and interbank lending/swap boom and should benefit from the return to Forints. Still, foreign lenders are uncomfortable with sharing data with local peers. In order to permit liberalization (for this group and local lenders) from a fiscal risk perspective, fundamental reforms in bank insolvency and deposit insurance formulation should precede it. This would be a broader work programme with government that would have to consider current EU and IMF initiatives.

Hungary had de-facto abandoned the public rental sector with the transition and with the mortgage debt crisis is making first steps to revive it. These efforts are constrained by capacity, funding and affordability issues and need a more substantial public commitment.

HUNGARY	
Market trends	**Elevated default rates, including in owner-occupied housing.** **Sharply reduced new lending. FX prepayments have not reignited the LC market (cash repayments).** **The remaining FX portfolio is highly subsidized; the envisaged new LC portfolio has some affordability support.** **House price plateau (since ca 1999) with some 15% decline from peak. Unclear interpretation of decline ('illiquidity', alternative: long-term bubble via subsidized lending burst)** **Additional market recession, house price decline likely as a result of strong FX rationing.** **Temporary shift in market shares towards savings banks / Bausparkasse with historic LC portfolio, outstrips lending capacity.** **High real and nominal LC rates.**
Consumer protection law	**FX too severely rationed by regulation, given high LC interest rates and Tilt effect.** **Material FX risk protection has not been explored.** **New LC product: Government bond or interbank reference index mandatory, yet bond index highly volatile and HUF interbank index illiquid. Cost of funds index should be explored.** **Positive: 6 month index; spread over index can be re-priced after 3 years.** **Limits for introductory rates, interest only / negative amortization outstanding should be defined. Preferential treatment for LC lending?** **Combo product (partly using interest-only with repayment vehicles) issues widely used are not sufficiently addressed.** **Prepayment indemnities fixed at low level (1-1.5%), short period (2 years), which will steepen mortgage yield curve vs. benchmark yield curve considerably (additional options cost, esp if fixing term is >2 years), discouraging FRM.**
Collateral law	**Open market valuation method only tracking inflation.** **Tight foreclosure moratoria related to absence of consumer insolvency regime, i.e. lifelong consumer liability for residual debt.**
Fiscal and macroprudential issues	**LC product affordability support does not apply to FX-LC refinancings. Support for other uses insufficiently calibrated.** **CSH (Bauspar) subsidies too high; system insufficiently integrated, subsidies tb**

	integrated with LC product support. **Extreme scarcity of formal rental housing adds to 'subprime lending risk'.** **Reliability, depth of 2 competing private house price indices questionable.** **Scattered housing policy expertise, no national agency/strategy development.**
Bank regulation	**LTV differentiation by currency excessive, not reflecting risk layering issues and value of protection written to consumers.** **No capital requirement differentiation, focus on provisioning, pillar II.** **Positive: FX net stable funding ratio.** **Bank insolvency 'EU regulation will be copied', as opposed to tailored approach (foreign banks).**
Covered bonds and MBS	**Funding situation for special banks tight, but less so for foreign banks. Capital constraints generally binding.** **Central bank proposes lifting of special bank principle for covered bonds; existing special banks opposed. Lack of bank insolvency regulation and limited powers of deposit insurance would provoke structural subordination.** **Local investor demand for corporate bonds structurally reduced through re-nationalization of pillar II of the pension system.**
SUGGESTED PRIORITIES FOR DIALOGUE	**LC product design and affordability concept.** **Modified FX product regulation.** **Integration of Bauspar system, review of subsidies.** **Consumer insolvency legislation.** **Bank insolvency legislation, deposit insurance reform, followed by mortgage bank reform.** **Broader issues:** **Housing policy capacity building (private and social rental, rationalization of mortgage subsidies, national housing agency).**

6.3 Romania

Romania's mortgage default rates have been moderate, even though by mid-2012 there is the notion that the accelerating devaluation might start to trigger an increase. Performance benefited ex-post from the use of Euribor interbank rate indexation of loans, which reduced loan rates while the currency depreciated. The most negative factor was a large price cycle, much related to temporarily inflated developer profit for newly built units, that left buyers especially in the Bucharest region with high debt levels. In the absence of a marketwide crisis so far, foreclosures are executed rather promptly.

The government nevertheless has responded quite rigidly to the regional foreign currency lending issues. Loan-to-value limits were tightened for foreign currency lending. Yet, with the Prima Casa public guarantee programme an important high-LTV option was left to finance lower-cost housing units. Lenders defend this programme strongly. Stress test assumptions were introduced that are unlikely to prevail in practice. The use of interbank indices is now mandatory and spreads must fixed for lifetime over them, which may cause significant risk for lenders. Prepayment indemnities have been limited to 1%, in a misinterpretation of the relevant EU Directive which increases the risks for lenders doing fixed-rate lending and ties the system to adjustable rates for the foreseeable future.

Local currency lending is battling with high real interest rates, has not been targeted by public programmes and is marginalized in the case of mortgages. The Government and the National Bank of Romania have difficulty to reconcile their high-LTV insurance initiative with the contract savings for housing programmes set up in parallel, both taken together give contradicting signals to borrowers and lenders.

A sound fiscal support approach to mortgage affordability support is needed. The sense of urgency may increase with the current devaluation. Given the complete dominance of foreign currency lending and lack of history, pushing for local currency lending is harder than in Hungary. As with the neighbouring country, material devaluation risk protection for foreign currency lending and fiscal or regulatory incentives to a greater use of local currency lending should be considered. One option is also to split lending between a first foreign currency mortgage with lower LTV and a contract savings for housing or other local currency loan as a second mortgage.

Romania has an initiative under way to develop a covered bond law, which would allow funding of both currencies. The primary market regulation constraints described here are limiting its benefits for lenders; the most likely effect will be relieving funding pressure of foreign lenders at home. Provisions of the new bank insolvency regime and of the deposit insurance regime should be integrated with the new covered bond law; a first step in that direction are suggestions to limit overcollateralization, which, however, need refinement.

The lack of rental housing in urban centres is another feature of the Romanian market. Small public programmes meet a huge modernization backlog in the existing stock. Tight rental supply

might give rise to a subprime market going forward. The capacities of the national housing agency and in particular of local governments as housing policy agents would require considerable strengthening to meet the challenges.

ROMANIA	
Market trends	**Owner-occupied mortgage defaults moderate (1.5-2% over 90 days).** **New lending still increasing. Public housing finance programme Prima Casa accounts for 60% of new lending (2011).** **35% house price decline in 3 years, likely has bottomed out.** **No significant trend towards LC lending.**
Consumer protection law	**Unreflective transposition of EU CCD (not intended to regulate mortgages).** **FX lending LTV limit undermined by higher public programme limit.** **New LC product: reference rate indices mandatory, but not credible (no unsecured interbank market). Spreads over reference rates must be fixed for life of the loan, creating severe profitability and liquidity (loan extension) risk.** **Limits for introductory rates, interest only / negative amortization outstanding to support LC should be defined (avoiding interpretation of restructuring).** **Prepayment indemnities limited to 1%, effect to steepen mortgage yield curve and discourage FRM.** **Problems with linked credits (consumers borrowing from banks to finance developers during construction phase, exposed to project risks).**
Collateral law	**Open market valuation method only tracking inflation; banks are correcting misappraisals ex-post, no concept to address high developer profit margin.** **Rank conflicts between Bausparkasse and bank.** **Positive: accessory mortgage with limited legal transaction cost (notary) only.** **Absence of consumer insolvency law potentially pre-empting larger number of foreclosure.** **Positive: foreclosure tested in certain scale.**
Fiscal and macroprudential issues	**Prima Casa programme targets FX instead of LC lending. Effectively splits FX market (lower capital req, higher LTV).** **CSH (Bauspar) subsidies too high; system insufficiently integrated, subsidies tb integrated with LC product support.** **Lack of public infrastructure finance, planning for new construction projects.** **Extreme scarcity of formal rental housing adds to 'subprime lending risk'.** **No national house price index. No rental data surveys. National housing agency (writing mortgage insurance) with limited capacity.**

Bank regulation	**LTV constraints procyclical.** **Positive: LTV levels chosen adequate.** **FX debt stress test with unrealistic assumptions (FX interest rate and devaluation shock cumulating), may undermine credibility.** **Bank insolvency not so frequently tested, legislation likely insufficient (chapter in corporate bankruptcy law, however bridge bank legislation).**
Covered bonds and MBS	**Very limited bank bond, large long-term deposit market.** **Covered bond law proposal to be integrated with new bank resolution regime, questions regarding market risk (FX swaps).** **Municipal lending in covered bonds without clarity on municipal insolvency, collateral execution.** **Improvement of existing MBS legislation.**
SUGGESTED PRIORITIES FOR DIALOGUE	**LC product design and affordability concept. Prima casa programme design.** **Consumer insolvency law.** **Integration of Bauspar system, review of subsidies.** **Bank insolvency law.** **Covered bond law.** **Broader issues:** **Fragmentation of regulators.** **Intersections between developer, public utility and local government finance.** **Improved housing policy design (private and social rental, mortgage insurance programme).** **Capacity-building with national housing agency.**

6.4 Serbia

Serbia has no local currency mortgage market and ran into considerable default problems with foreign currency lending. There was more Swiss Franc lending than in Croatia, and also lenders – led by Greek banks – had raised reviewable interest rates, or spreads over indices, more strongly. The strong concentration of the small portfolio on rather higher income urban clients has moderated default risk.

The regulatory interventions made into the market have been strong and included a retroactive cap of spreads over the interbank index used (mostly Euribor) to the level at underwriting. This has hit lenders who had operated with initially lower spreads to attract business. As in Romania, spreads now have to be fixed for lifetime and interbank indices have to be used universally, which both increases solvency risk. Loan-to-value ratios have been tightened; however, the government has been announced a new high-LTV lending programme for young households. A better approach could be to support equity generation.

The approach to local currency lending is currently purely legalistic – lenders have to make a price quote before proceeding to foreign currency lending. There is no affordability support concept to buy down the high interest rates or find other ways to defer the high initial burden of local currency lending.

The public loan co-insurance programme – targeting foreign currency lending - seems reasonably managed, even though not as an actuarially run insurance entity. It has the potential to both deliver badly needed house price data and – with loan performance data accumulating - possibly become the basis for a limited capital market initiative. The nearest option would be bespoke mortgage-backed securities transactions, if the shelved law becomes passed; however, the interventions into mortgage cash flow in the primary market could discourage investor interest.

This is also an issue when considering the possibility of a covered bond law. Resistance sitting with the regulator against foreign currency bond issuance will be an impediment for both types of instruments; within the sample, building a local currency portfolio in Serbia seems to be farthest away; Serbia would need aggressive and disciplined interventions into fiscal support and product design to build an affordable product.

Serbia might want to consider developing the mortgage insurance institution into a housing finance agency with wider responsibilities, including for rental housing finance and housing market monitoring.

SERBIA	
Market trends	**Low owner-occupied housing default rates (cash flow motives addressed via ex-post pricing intervention; portfolio in CHF entirely, EUR, 10-15% underwater). Small market, started only in 2005. Subdued new lending. Euroized property market. Ca 15% house price decline in the past two years. No LC mortgage market. High real and nominal LC rates.**
Consumer protection law	**Requiring LC lending quote from banks lacks credibility (17% rate), could backfire on LC initiative. New CP law of Dec 2011 Retroactively caps interest rates in the existing portfolio Limits new variable rate lending to reference rate plus spread fixed over life of loan (cost-of-funds risk, extension risk). Mortgage assignment complicated (de-facto no change of servicer possible).**
Collateral law	**Open market valuation method only tracking inflation**
Fiscal and macroprudential issues	**No affordability concept for LC mortgage, enforces further use of FX. Public mortgage insurance, lacks anti-cyclical characteristics (LTV). Constant reserve rates for FX funding, procyclical effects. Positive: nucleus for national housing agency in national mortgage insurer. Runs house price index in infancy status.**
Bank regulation	**No specific bank insolvency regime.**
Covered bonds and MBS	**High reserve requirements for bank bonds (20%). Covered bonds problematic: no bank bond market, untested bank insolvency. Existing MBS regulation shelved by central bank.**
SUGGESTED PRIORITIES FOR DIALOGUE	**LC product affordability initiative. Review of consumer protection law, mitigation of retroactive elements. Bank insolvency regulation. Review of reserve requirements for bonds issued. Passing of existing MBS regulation and drafting of covered bond regulation.**

	Possible support for MBS deal with publicly insured mortgage loans **Broader issues:** **Housing policy capacity building (rental sector, upgrading of national mortgage insurer into national housing agency).**

Annex

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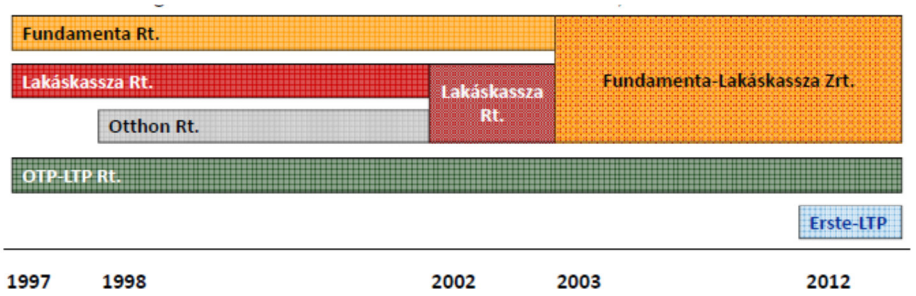
Additional Material

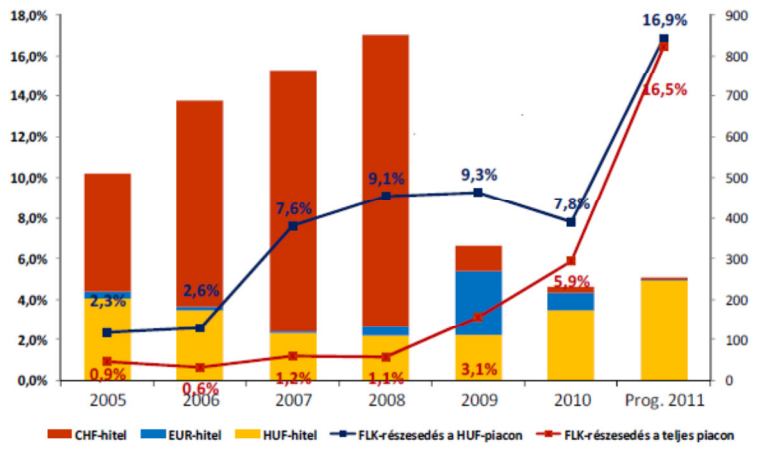
Table 3 List of the Minimum Standards (LMS) for Mortgage Lending Comparative Eligibility Criteria (July 2007)

Terms and Conditions/Eligibility Criteria	Current levels/provisions
1. Currency of the mortgage loan	EUR, USD, local and other currencies
2. Profile of repayments	Repayment of interest and capital
3. Loan to Value (LTV)	Max. 80%
4. Payment to Income Ratio (PTI)	Max. 50%
5. Life Insurance and Insurance of the financed Real Estate	Yes
6. Buy-to-let mortgages	Max. 80% LTV and Max. 50% PTI
7. Maximum amount of mortgage sub-loans	Specified in the Loan Agreement
8. Security	First rank mortgage on the Real Estate financed
9. Maximum maturity permitted for sub-loans	Not specified
10. Maximum age of the sub-borrower at final maturity	Max. 70 years
11. Type of interest rate recommended for mortgage sub-borrowers	Full flexibility
12. Written information on market risks and on risk of non-repayment (pre-contractual package of information with illustrative example about interest and/or depreciation move for mortgage loans)	Yes, with the flexibility for the sub-borrower to buy insurances from the best providers
13. Other terms and conditions of LMS	Yes

Source: EBRD (2011).

Figure 18 Number of CSH institutions (Bausparkassen) and Recent Market Share Development of Largest Institution Ladakassza in Hungary





Source: Ladakassza.

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Hungary

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Serbia

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