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Papers presented during the Narodowy Bank Polski Workshop: *Recent trends in the real estate market and its analysis*, 2013

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The paper presents the personal opinions of the authors and does not necessarily reflect the official position of the Narodowy Bank Polski or the Warsaw School of Economics.

Article 1 Contents

The Narodowy Bank Polski organized during November 14-15, 2013 an international workshop to discuss current issues in the field of real estate analysis from the central bank's point of view. The development of residential real estate prices as well as commercial real estate prices and real estate financing were also covered during the workshop. The workshop was aimed at researchers who work in academia, private firms and central banks. The conference focused on topics:

- Real estate finance, fiscal and monetary policy and the macroeconomic and financial stability – analysis and the monitoring of real estate indicators,
- Modeling of real estate cycles (demand and supply),
- The development of property prices, its modeling and analysis.

The workshop was organized by Jacek Łaszek, Hanna Augustyniak, Krzysztof Olszewski and Marta Widłak. **Thomas Knetsch** (Bundesbank), **Michael Lea** (San Diego State University), **George Matysiak** (Krakow University of Economics & Master Management Group, Warsaw), **Derry O'Brien** (ECB) and **Francesco Zollino** (Banca d'Italia), **Hans-Joachim Dübel** (Finpolconsult), **Otmar Stöcker** (Association of German Pfandbrief Banks) served as keynote speakers.

In this overview of the workshop we first give a brief introduction to the recent trends in the real estate market and its analysis, which should allow a broader audience gain from the research that was presented during the workshop. We also give an overview of the papers, basing mostly on the original abstract (in case we created the abstract, it is marked with an *). Most of the papers can be found in the Narodowy Bank Polski Working Paper series, or in the Working Papers of the respective central bank.

Key issues in the analysis of the residential real estate market[1]

Real estate markets, including residential markets, are subject to cycles and are determined by local factors. This dependence is the result of local interactions of a variable demand and rigid short-term supply, which results from the relation between the real sector of the economy (real estate developers, construction companies, home buyers), the financial sector (providing financing for home construction and purchases) and the public sector (regulating the market).

The residential real estate sector is analysed as a system composed of various economic segments, pursuing a common economic objective, namely the generation of income from services provided by the housing stock. Housing is considered as a capital good generating a stream of services rather than a consumer good. Services may be sold to third parties or may be internally consumed. The main components of the housing market are:

- the housing stock, generating housing services for households,
- the financial sector enabling home purchases by changing capital into a stream of periodical payments and providing the sector with new capital inflow amidst growing demand,
- the residential construction sector, including, in particular, the real estate development sector transforming financial capital flowing into the sector, into fixed capital in the form of new housing stock,
- the external environment of the housing real estate sector, or the remaining part of the domestic economy with many sectorial interactions.

From this point of view, the analysis of the residential sector is the analysis of its components and relationships between them. As a result, there are new, important interactions affecting the components, the whole sector and its environment such as the domestic economy. The sectorial equilibrium is the main focus of the central bank. Such an equilibrium is a state, under which different segments can generate goods and services in a regular way, thus economic aims are achieved without excessive risk accumulation.

The analysis of housing services involves mainly the analysis of the situation in the residential market, mechanisms of housing needs satisfaction and domestic housing policy from the consumer's perspective. The housing policy or sectoral policy often has a strong impact on both the quality of housing needs satisfaction as well as the distribution of the housing stock and housing services.

The financial sector is the main driving force behind demand in advanced housing markets. The financial sector analysis involves both the examination of the assets of the banks' balance sheets (impact on the housing market liquidity and on investment in residential construction) as well as their liabilities (analysis of the sources of financing, financing

1 This introduction based on the introduction to the NBP "Report on the situation in the Polish residential real estate market in 2011 r.".

instruments, investors and deposit holders). This provides an answer to the following questions: a) whether the sector regularly offers financial instruments enabling liquid trading of the housing stock and its long-term financing without creating excessive tensions in this stock and b) whether the sector makes it possible to convert savings into housing capital goods. Borrowing costs and home prices should be adjusted to household income in the local market. A permanent provision of financial instruments means that they need to be adjusted to the needs of the primary and secondary markets. Other necessary conditions include sustainable and satisfactory economic performance of financial market agents as well as the prevention of the financial and market risk accumulation in the financial sector and residential market. The adjustment of the supply of necessary instruments to meet the market needs is a complex issue. Due to the cyclical nature of the residential market and its vulnerability to speculation and collective behaviour, the market and the financial sector, if unsupervised, may trigger cycles and crisis situations. As a result, it is necessary to manage housing demand in various ways. As experience shows, the most effective form of housing demand management is, apart from fiscal intervention, is a conservative behaviour of specialist banking. Moreover, the demand should be managed through systemic prudential regulations, market monitoring by financial supervision authorities and ad-hoc legal regulations.

The investment function of the financial sector transforms financial capital into housing assets and, as referred to in the previous point, in long-term financing of housing assets.

The analysis of the financial sector's liabilities should account for sustainability of the sector's financing – should ensure that liabilities match assets. This means that the assessment of sustainability of the sources of financing in the long-term and also the assessment of interests of capital providers i.e. rates of return generated in the long term should be analysed. The literature emphasises that sustainable systems have a diversified financing structure, thus financing origins from the deposit market and the capital market[2]. This ensures new loan financing and refinancing of the old portfolio even if one part of the system does not perform appropriately.

The investors' analysis has to take into account their expectations and alternative investment options. This is of particular importance during the period of transition from the deposit-based system into capital market based system. In the long run, the financial instruments need to generate a positive rate of return.

Analysis of the construction and real estate development sector, thus concerning both the market and single companies, provides an answer to the question whether housing output is and will be profitable. A separate aspect of the analysis, aimed to assess output stability, is the assessment of the market situation, both from the demand-supply ratio point of view and the economic situation of firms.

2 E.g. Lea M., Diamond D.B. (1995). *Sustainable Financing for Housing. A Contribution to Habitat II.* Fannie Mae Office of Housing Research.

The last element of the analysis are the relations of the real estate sector with other economic sectors. The residential real estate sector has strong interactions with the rest of the economy. From the point of view of economic policy, including monetary policy, the relations between mortgage banking and the rest of the financial sector, and between the residential construction sector and the rest of the economy are of particular importance. As monetary policy is pursued by influencing interest rate, and the residential sector is generally vulnerable to this instrument, the assessment of the impact of monetary policy on the situation in this sector is of particular significance. The reverse impact is equally important. As the bulk of factors affecting the sector development originate from the economic and social environment (for example income growth, foreign migrations and urban migrations), the analysis of the environment is essential for the assessment of the situation in this sector. An additional factor having a major impact on these relations is housing policy, in particular, policy supporting the sector. The coordination of monetary policy, fiscal policy and prudential policy are the key issues since, as experience shows, they are often contradictory and boost the sector's inherent risk.

1 Real estate finance, fiscal and monetary policy and the macroeconomic and financial stability – analysis and the monitoring of real estate indicators

The role of house prices in the ECB macro/financial policy framework*. *Derry O'Brien (ECB) and Thomas Westermann.*

Unsustainable dynamics in housing markets and house prices have been one of the root causes of the 2008 financial crisis. They emphasised the challenge for policy-makers to identify such dynamics in the context of their regular and systemic analyses of economic, financial and monetary developments. This paper gives an overview of a framework for analysing house price developments in the euro area. Analysing house prices for various purposes includes the ability to explain developments, to form expectations of their likely future path, and to evaluate them in terms of their sustainability.

These different ambitions suggest that it can be very difficult to find single best and all-encompassing tools, and that, in practice, the analysis of house prices may have to rely on different tools for different purposes. For the euro area, an additional challenge exists in the heterogeneity of housing markets across euro area member states. Together with the relatively long duration of house price cycles compared to economic growth cycles, this implies that at different points in time house price developments can be characterised by considerably less synchronisation across countries than other economic developments. In this respect, the unsustainable nature of house price developments prior to the financial crisis has been a pervasive feature of some member states but not of others.

Liquidity risk factors of construction firms in Poland*. Zbigniew Krysiak (SGH).

Different distortions in the past on the property market in Poland were caused by an inadequate amount of funding delivered by banks to the households and construction companies. We observed an asymmetry in funds offered to the households and developers and in different periods there were oversupplies and undersupplies.

On the one hand the oversupply of cash to the households affected the increases in property prices what limited the demand because of decline in the credit capacity of the bank's customers[3]. On the other hand, a not sufficient amount of funding offered by banks for the construction sector caused their higher risk and the risk of households[4]. This led to the decline in the production capacity, what was the additional factor triggering the property price increase and decline of the demand for the houses.

3 Kwaśniak W., *Rozwój kredytów mieszkaniowych w Polsce*, „Finansowanie Nieruchomości", Wrzesień 2013 nr 3(36), s.22-29.

4 Saniewski A., Meluch B., Bezpieczeństwo przedpłat nabywców w transakcjach developerskich, „Finansowanie Nieruchomości", Czerwiec 02/2011/27, s.4-13.

After the global financial crises the deficit of the funds, for housing projects in Poland were still an unresolved issue. This deficit was increased additionally by decline in the amount of mortgage loans extended to the households. In the period from 2008 to 2013 the value of new originated mortgage loans dropped down 10 times. The reduction in the production capacity in the housing business and the construction sector is continuing and being speeding up by the decline in the supply of the mortgage loans[5] and implementing more restrictive regulatory procedures, what can lead to the crises on property market in Poland.
Facing the above described problems of the deficit in the funding sources for the property market we can ask the following question: How can the risk of the construction enterprises be evaluated? Is this risk really very high in Poland and under what circumstances the risk rise or decline? How in that context the deficit of funding sources impacts the enterprise's risk and to what extend it is significant and what are the main drivers of that risk?

The goal of the paper is to characterize the selected factors impacting the financial liquidity risk of the construction companies in Poland. We stated the following hypothesis: *"The deficit of the funding sources and lack of their diversity may be perceived as main factors of the liquidity risk of the construction enterprises and the liquidity risk on the property market as a whole".*

We identified the auxiliary hypothesis which points to the limits in the dynamics of the increase in the supply of mortgage loans. The auxiliary hypothesis was stated as follows: *"Approaching the limits in the funding of the property market from banking sources triggers the risk-shifting from banks to the enterprises".*

Analysis of real estate developers production – demand and supply analysis from a market consultant point of view*. Kazimierz Kirejczyk (REAS).
This paper describes the evolution of the Polish developer sector starting from the socialistic times up to the recent years. The communist era left the construction sector of the new Republic of Poland a legacy of housing cooperative as an organization responsible for building dwellings, large panel as the dominant technology of their construction, housing estate planning adjusted to the system of construction crane rails, cities and towns with centers inhabited by *lumpenproletariat* and a mentality of Poles, used to the thought that a typical way of coming into possession of a dwelling was to "get, arrange to get or inherit" one. Contractors consisted of state-owned conglomerates, while the quality of work and the subculture of construction workers was a favorite topic of movie comedies and stand-up sketches.

The second part of legacy of the People's Republic of Poland was the list of what was either nearly or completely missing: regular mortgage loans and banks ready to grant them; professionals specializing in sales of dwellings; clearly defined ownership statuses for land property, especially in Warsaw; rules of operation for firms constructing and selling dwellings, including, most importantly, rules for sales of units under construction; management

5 Kwaśniak W., Rozwój kredytów mieszkaniowych w Polsce, „Finansowanie Nieruchomości", Wrzesień 2013 nr 3(36), s.22-29.

procedures for multi-family residential buildings comprising condominium units; a system of highly reliable and quickly updatable land registers.

The first direct impulse to start developer construction of dwellings was a slump in new cooperative construction combined with privatization of contractors. Some firms saw a chance in converting from building companies to entities which both constructed and sold dwellings independently. Gradually, also firms established by foreign investors emerged, initially expatriate capital companies and later companies established by foreign developers. The paper describes the evolution of the developer sector in detail and gives an outlook to its future.

Housing finance in the aftermath of the financial crisis. *Michael Lea (San Diego State University).*

The purpose of paper is to review the policy responses to the US mortgage market crisis and assess how much the market has changed. There were many contributors to the meltdown of the US mortgage market. As summarized by the Financial Crisis Inquiry Commission, the major causes of the crisis included a credit bubble fueled by low interest rates and imported capital, a housing bubble fueled by speculation and lax underwriting of mortgage loans, non-traditional mortgage instruments designed to improve initial affordability, incentive misalignments for participants in the mortgage market, government housing policy supporting mortgage lending to low and moderate income households, dependence on securitization for funding and excessive leverage in large financial institutions.

In the aftermath of the crisis there have been a multitude of legislative and regulatory initiatives addressing the perceived causes of the crisis. However, despite record levels of distress and taxpayer bailouts of major housing finance institutions it is surprising how little has changed in the US. The government sponsored enterprises and guarantee providers still dominate the market. The long-term fixed rate mortgage is still the overwhelming mortgage instrument provided to consumers. Sub-prime and Alt A lending disappeared but is creeping back on the fringes of the market. The Dodd-Frank financial regulation and reform legislation has created a massive increase in compliance costs for lenders but has not significantly changed the housing finance system. Important aspects of the legislation such as risk retention have yet to be implemented.

The lack of meaningful change in the US housing finance system, the continued dependence of the economy on housing and the mortgage market on government support suggest that important lessons about the causes of the crisis have not been learned and a repeat of the boom and bust could happen.

Assessing house prices in Germany: Evidence from an estimated stock-flow model using regional data. *Florian Kajuth (Deutsche Bundesbank), Thomas A. Knetsch, Nicolas Pinkwart.*
Based on a stock-flow model of the housing market we estimate the relationship of house prices and explanatory macroeconomic variables in Germany using a regional panel dataset for 402 administrative districts. Using regional data exploits the variation across local housing markets and overcomes time-series data limitations. We take the regression residuals as a measure for deviations of actual house prices from their fundamental equilibrium level. The model specification allows to aggregate district-level residuals for various regional subsets. During the past two years for Germany as a whole single-family house prices appeared to be in line with their fundamental equilibrium level, whereas apartment prices significantly exceeded the fundamental price suggested by the model. The overvaluation of apartments is higher in towns and cities and most pronounced in the major seven cities, while single-family houses in cities appear to be only moderately above their fundamental levels.

Housing Policy in Developing Countries* Guenter Karl (Kari-consult).
The paper first presents employer-provided housing applied to the Kibera-Soweto slum upgrading project in Nairobi. The widespread existence of slums in developing countries is not a new phenomenon in economic and social history. At the end of the 19th century in England where the industrial revolution started and at the beginning of the 20th century in continental Europe, housing and general living conditions of workers were unbearable. The living conditions of workers and their families gave rise to powerful political movements, including revolutions. The trade unions and the social-democratic political movement were the main driving force for the gradual improvement of the living conditions of workers and their families.

Further, the paper gives brief remarks on housing problems in developing countries. The prevalence and extent of slums in urban areas of many developing countries constitute the most serious housing problem in these countries. This phenomenon has of course also considerable health, social and political implications. “Housing” in slums is a separate market which is only loosly connected to the established official housing market. Governments in developing countries must directly intervene and deal decisively with the slum problem by devising slum upgrading policies. It also must play a key role in the provision of suitable land and contribute to the financing of new buildings, including so-called decanting sites.
Finally, the paper asks why does housing receive so little attention in national development and finds that countries are foreign exchange constraint, housing is not embedded in the national vision and there is a dominance of export-led growth strategies. To answer the housing problems the paper presents potential solutions. First, the country should develop a vision and a strategy, to solve the housing problem. Necessary points are the revision of the legal system to ensure legal security and predictability and the formation of a multistakeholder group and experts to develop the specific set of incentives. This actions should be in line with the content of the UN-Habitat Governing Council Resolution 21/7.

The Agency for Housing Mortgage Lending role in the mortgage and housing markets. Andrey Tumanov (AHML), Evgeniya Zhelezova (AHML).

The article is devoted to the role of the state in the housing market in Russia. The main role of the Government is to develop a sustainable and efficient housing market and to ensure the access of households to affordable decent housing. To achieve this goal by developing mortgage market the Government established in 1997 special agency - The Agency for Housing Mortgage Lending.

The main objective of the Agency is to implement governmental programs for providing affordable housing and ensuring improvement of housing conditions for the population in compliance with the priority national project Affordable and Comfortable Housing for Russian Citizens.

The goal of the Agency for Housing Mortgage Lending is to establish conditions so that all Russian citizens had equal opportunities for getting a mortgage loan, regardless of their social status, education, family composition, income, occupation, religion, place of residence or registration. A residential mortgage loan provided in accordance with AHML's standards is available for all categories of people, is good value for money and easy to arrange.

AHML pays particular attention to fostering the mortgage market in the regions where the level of per capita income is lower than the national average, and the housing and financial markets are underdeveloped.

The main goals, tasks, principles of activities will be outlined in the article. We will provide a brief history of mortgage lending sector in Russia and investigate the role of AHML in development of mortgage market.

In addition we will look at the connections between housing and mortgage markets outlining the effects of changes in legislation and the strategy of development of mortgage lending in Russia, including AHML Group Strategy.

Finally, we will describe the current approaches to construction of house price indexes and analyze its main drawbacks.

Covered Bonds in Europe - Legal conflict between secured bonds and deposits regarding insolvency remoteness and bail-in* Otmar Stöcker (Association of German Pfandbrief Banks).

This paper discusses the functioning of the covered bonds market in Europe, focusing on the legal conflict between secured bonds and deposits regarding insolvency remoteness and bail-in. Since the mid-90s and especially since 2007, there has been a tremendous revival of "Covered Bonds" in Europe, partly fostered by the financial crisis, because Covered Bonds proved to be a reliable funding source during the financial crisis.

Long-term Covered bonds are complementary instruments to shorter-term deposits. Covered Bonds stabilize bank funding. Covered Bonds are not the main drivers of Asset Encumbrance, but are the Asset Encumbrance related instruments, which are the most transparent, because of the transparency provisions of many national Covered Bond laws.

The Covered Bond models in Europe are very different from each other. In order to analyse their main legal structures, there is a need to classify them. Furthermore, CB definitions and criteria in all EU legislation should be harmonized.

Mortgage Lending Boom-Bust and Regulation Response in Transition Countries – Results Of A Six Country Study* Achim Duebel (Finpolconsult).

After some inertia during the early 1990s, transition countries swiftly built up market-based housing finance systems until ca. 2010. Developing housing finance had been an important public policy goal in order to revive construction activity, which had collapsed in the 1990s from their high pre-transition levels. Despite the significant stock built in socialist times, additional construction was needed to catch up with housing consumption levels in Western economies, to replace obsolete stock, to upgrade and modernize the remaining stock and to respond to migration into new job centres.

Yet, only in the isolated case, rental housing construction was revived, in small volumes, e.g. in Poland in 1994 with the 'TBS' rent-to-own schemes. Without such a corporate/communal lending portfolio, housing finance in the region developed almost exclusively as 'retail' lending to households essentially by private and frequently foreign banks. A secondary goal of its introduction exacerbating its retail character was to liquefy capital locked in the existing housing stock. Much of the publicly owned apartment sector had been privatized around 1990 to tenants for free and lending against this collateral was implicitly, and at times even explicitly, seen as an income substitute.[6]

After more than a decade of boom and first signs of market crisis, CEE countries should comprehensively reassess their mortgage finance systems. The regulatory and policy discussion should be sequenced: first primary, then – on the basis of sustainable asset cash flows - secondary market development.

This paper discusses what should be done to improve the housing market. Among the covered topics are primary and secondary market regulations, solutions to the FX loans problems, fiscal support and the shortage of rental housing. Policymakers both in the region and their supporter at the EU and international level should understand that a sufficiently diversified and healthy housing sector is a central pillar for both financial sector stability and economic prosperity.

6 For a review of the rental housing sector in transition, see Dübel, Brzeski and Hamilton (2006).

The activation of the covered bonds market in Poland – need for improving the regulations Agnieszka Tułodziecka(Fundacja na rzecz Kredytu Hipotecznego), Agnieszka Nierodka.

The institutional framework for the functioning of covered bonds (list zastawny - L.Z.) in Poland was established already in 1997 and first issues took place in 2000; by 2013, L.Z. accounted for a few percent of property market funding, mostly with respect to commercial property. The latest liquidity limits introduced by the requirements of Basel III and of the Capital Requirements Directive / Regulation (CRD / CRR4) will persuade banks to show greater interest in long-term funding instruments to some extent, but in order to improve the L.Z. system in Poland more comprehensively, further changes to the legal environment are necessary so as to achieve significantly better ratings compared to unsecured bonds. The adjustment of the mortgage banking business model that assumes a synergy between the credit policy and the policy for funding mortgage portfolios with L.Z. within groups will also be of essential importance.

The direction of systemic solutions represented by the Polish L.Z. and the quality of the collateral provided by safe assets are commensurate with the expectations of investors who tend to be wary following the sub-prime crisis. The key issue will be to achieve a larger issuance scale as well as to ensure market liquidity. The authors of this analysis express their opinion on success factors in the Polish market environment.

2 Modeling of real estate cycles (demand and supply)

A structural model for the housing and credit markets in Italy. Andrea Nobili and Francesco Zollino (Bank of Italy).

We estimate a fully-fledged structural system for the housing market in Italy, taking into account the multi-fold link with bank lending to both households and construction firms. The model allows the house supply to vary in the short run and the banking sector to affect the equilibrium in the housing market, through its effect on housing supply and demand. We show that house prices react mostly to standard drivers such as disposable income, expected inflation and demographic pressures. Lending conditions also have a significant impact, especially through their effects on mortgage loans, and consequently on housing demand.

Allowing short-run adjustment in house supply implies a weaker response of house prices to a change in the monetary stance or in banks' deleveraging process. Finally, we find that since the mid-eighties house price developments in Italy have been broadly in line with the fundamentals; during the recent financial crisis, the worsening in credit supply conditions dampened house price dynamics, partly offsetting the positive stimulus provided by the easing of the monetary policy stance.

Housing market cycles – a disequilibrium model and its calibration to the Warsaw housing market. Hanna Augustyniak , Jacek Łaszek, Krzysztof Olszewski (NBP) and Joanna Waszczuk.

This paper presents a simple disequilibrium model in the housing market, calibrated to the Warsaw market. We discuss the last cycle and show how a combination of slight demand shocks with short-term rigid supply leads to strong fluctuations. The cyclical character is a permanent feature of the property market and can be explained by the inelasticity of supply. Market participants form price and demand expectations based on past observations. This causes frequent cycles that, under specific conditions, can lead to economic crises. We believe that the model describes the reality of the real estate market better than equilibrium models do, so it can be useful for central banks and financial supervision institutions in the analysis of the impact of fiscal and monetary policy and regulations on the real estate market.

Panel analysis of house prices in Poland. Robert Leszczyński (NBP) and Krzysztof Olszewski (NBP).

We analyse the local determinants of house prices in the primary and secondary market of 17 regional cities in Poland during the 2002-2013 period. We find that prices are driven by fundamentals, such as income growth or rise in employment. Prices in the secondary market react to increases in the loan availability, that was driven by low interest rates resulting from FX denominated housing loans that were granted since 2006. This finding does not hold for the primary market, which is to a large extent financed with cash. We confirm empirically

that the house appreciation in the past period has a strong effect on the current price, which confirms herding behaviour in the housing market. Another finding is that the secondary market has a stronger effect on the primary market than the other way around. This means that housing demand is satisfied in the first place from the secondary market, and if prices rise, potential buyers go to the primary market. Finally, we find that price increases in Warsaw spill over to the local markets of 16 regional cities. This finding is consistent with the contagion theory in the real estate market, according to which price increases in the centre lead to price increases in the periphery.

Non-Listed Real Estate Funds: Asymmetric Effects and Drivers of Performance, Franz Fuerst, Wayne T Lim, George Matysiak (Master Management Group, Warsaw & Krakow University of Economics).

The study presented in this paper looks in detail at the drivers of unlisted fund performance. With the increasing significance of non-listed real estate funds as an investment vehicle, research on the performance attributes of non-listed real estate funds is becoming increasingly important. Nevertheless, there have been few published studies on non-listed real estate funds (Fuerst & Matysiak, 2013).

Using proprietary information from INREV and IPD (the Investment Property Databank), this study examines the drivers of fund returns and fund outperformance. Analysis of an 11-year panel dataset, capturing the initial years of explosive growth and sharp compression during the global financial crisis, seeks to determine how performance drivers behaved differently in market downturns and upturns.

This research aims to provide a better understanding of the key drivers of European non-listed real estate funds performance, which in turn will aid portfolio managers in making more informed investment decisions. It seeks to understand the extent to which stock-selection and management skills contribute to a fund's total return. The attribution of fund performance is primarily based on average return data in the markets to which the fund is exposed. Using the unique database compiled by INREV covering the period 2001-2012, allows us to analyse the characteristics and performance of non-listed funds, and to investigate whether funds' performance depends solely on leverage and market/sector exposure to deliver above-average returns. It is also possible to track fund performance and its drivers through the years of rapid expansion of the sector, followed by the sharp contraction during the global financial crisis to determine whether performance drivers have a differential impact on fund performance during market upturns and downturns. Ultimately, the research finds that while fund performance was predominantly driven by their underlying market and sector exposure, gearing, fund size, fund age, GDP and competing asset classes also played a significant role.

Analysis of Commercial Real Estate in Poland. Wojciech Doliński (comparables.pl).

The presented paper provides a general overview of the commercial real estate market analysis both internationally and locally, aiming to emphasize the importance of coherent market analysis and indicators in today's international investment market. Unfortunately, the commercial real estate market lacks coherent information and limits market transparency. The availability of data enables to suggest a certain market division, varying from undeveloped non-transparent markets through developed markets with limited market data to highly transparent developed markets with price indexes. The responsibility for the task of developing market analysis of the commercial real estate sector was assumed by the private sector incl. IPD databank, research departments in big consultancies and finally CoStar and Real Capital Analytics taking over a leading role in commercial property data analysis. From the beginning of XXI century interest of market analysis shifted from pure price monitoring into researching wider market sentiments. New data products have emerged not only on the wave of a developing information economy, but also as an answer to the post-crisis global real estate reality. However, in the circumstances of lack of market indicators coupled with market uncertainty, local consultants such as valuers have to resort to various forms of benchmarking their results, including reinstatement costs or land-to-capital ratios.

3 The development of property prices, its modeling and analysis

A New Residential Property Price Index for Austria. Wolfgang Brunauer, Wolfgang Feilmayr and Karin Wagner (Oesterreichischen Nationalbank).
As the availability and quality of residential property price statistics are very limited in Austria, the construction of a state-of-the-art residential property price index (RPPI) has become an urgent topic. In this paper, we therefore describe the setup of a new RPPI for Austria. So far, two separate indices – one for Vienna and one for the rest of Austria – have been calculated and weighted by population to get an aggregated time series for Austria. But besides the fact that the weighting is rather difficult to justify, both indices are calculated using a hedonic regression model with a fixed structure over time. This approach can lead to biased effects for current estimation results if changes in the variable effects occur over time. Thus, for the new RPPI, we use a different approach: On the one hand, we estimate a single model for Austria which makes arbitrary weighting by share of population unnecessary. We apply semiparametric models that take into account nonlinearity and spatial heterogeneity and result in unbiased quality-adjusted time effects as omitted variable effects are modelled adequately.

On the other hand, since we use imputation methods, structural changes in estimated effects no longer result in distorting effects. Given the sophisticated modelling of variable effects, spatial heterogeneity and variation over time, the new RPPI can be considered a further milestone in residential property price modeling and data quality enhancement in Austrian residential property price statistics.

Measuring the Effect of the Real Estate Bubble: A House Price Index for Bilbao, WM. J. Barcena, P. Mendez, M.B. Palacios, F. Tusell (Universidad del Pais Vasco).
Houses are traded at relatively infrequent times and can hardly be standardized: two equally built and furnished houses may command widely different prices in the market on account of their different location or even orientation. Clearly, the computation of an index such as Laspeyres' cannot be contemplated, both because of lack of standardization and infrequent trading. On the other hand, there is little market visibility; transaction prices are seldom published, further increasing the difficulties inherent to the construction of a house price index.
In this paper we use advertised (selling) prices as a proxy of transaction prices, and geographically weighted hedonic models to account for heterogeneity in quality and location. This gives a workable alternative to conventional approaches with the added benefit that it can provide price information in near-real time.

Real estate prices in the Republic of Macedonia. Jovanovic Branimir (National Bank of the Republic of Macedonia).
We overview developments in house prices in Macedonia in the period 2000-2013, with a special focus on the movements during the Great Recession. House prices in Macedonia exhibit typical cyclical behaviour, where periods of growth are followed by periods of stagnation/decline. Price developments are well explained by standard fundamentals, such as income, mortgages and supply of new housing, and during these 14 years houses have not shown signs of substantial and persistent mispricing. Real house prices have declined by approximately 17 percent since the onset of the global financial crisis (end of 2008). The decline is in accordance with the lower demand during this period (due to the stagnation in real income and the slowdown in the credit growth) and the higher supply of new housing.

Hedonic Price Index on Bank Data and Impact of Economic Crisis on House Prices in the Czech Republic. Martin Lux and Petr Sunega (Academy of Sciences , Czech Republic).
In the first section, this paper describes the methods employed to calculate the first ever hedonic price index created in the Czech Republic using data from the country's biggest mortgage lenders. This section also presents the wider context of the creation of this index and its practical application. In the second section, hedonic price index data are used to demonstrate the impact of the global economic crisis on housing prices in the Czech Republic. The impact of the economic crisis on housing and mortgage markets is then analysed using methods from both neoclassic and institutional economics. The findings show that institutional factors relating to the housing system may have an important influence on the scope and character of the impact of the economic crisis on housing and mortgage markets in the Czech Republic.

The hedonic house price index for Poland – its modeling on NBP BaRN data*. Marta Widłak (NBP).
The literature abounds with arguments regarding the relevance of reliable measurement of home prices. The correct measurement of home price growth is very important due to decisions taken by various economic agents and the impact of these decisions on the current situation in the domestic economy and its development.

The construction of a reliable home price index is a challenging task mainly due to the nature of the housing market and housing itself and availability of relevant data sources concerning this market. The most important issues which have to be addressed by a researcher involved in the measurement of home price trends, are mainly connected with the following two features of a good called housing and the housing market itself: heterogeneous nature of a housing good (there are no two identical housing goods) and rare turnover in housing stock (that is, relatively small number of transactions as compared to the housing stock volume).

This paper presents solutions to the abovementioned problems. Especially, the paper shows the construction of the hedonic house price index for Poland and describes in detail ts modeling on NBP BaRN data.

Monitoring 15 years of residential house price development in Hungary with the help of the FHB House Price Index Gyula Nagy (FHB Mortgage Bank).

The working paper presents the development of the housing market in Hungary between 1998 and 2013 through the history of the FHB House Price Index. For computing the FHB House Price Index FHB applied the hedonic method. At its first publication in 2009 the Index was based on actual transaction data of residential real estate collected from the year of 1998 from appr. 1,000,000 residential properties located in appr. 3,200 municipalities. The source of data include the valuation records of FHB Mortgage Bank ,as well as the buying - selling transaction database purchased from NAV, the national tax authority. Since its first publication the Index is updated on a quarterly basis. The average index value in 2000 was 100 later it peaked at 200,7 in the first quarter of 2008. The 15 years of the housing price history were divided into 4 significantly different eras. When analysing the development of the housing market, relations between selected macroeconomic and financial environment indicators , money market and credit market indices and other data of the housing market were also taken into consideration.

Logit modelling as a tool supporting decision making in the real estate market. Łukasz Mach (NBP).

The article includes a logit model construction process to support the process of decision making in real estate market. The model of logistic regression which has been elaborated, shall define the probability of transactions in the real estate market and it will indicate statistic variables which influence the demand significantly. The process of decision making (based on logit models) - substantially prepared and correctly executed - is a key determinant having influence on improving the competitiveness of companies, especially during the global economic crisis.

2. Analysing euro area house price developments

Derry O'Brien, Thomas Westermann

Derry O'Brien, Thomas Westermann – European Central Bank

This paper is a summary note to a presentation given at Narodowy Bank Polski Workshop on Recent trends in the real estate market and its analysis on November 14th, 2013. The views are those of the authors and not necessarily of their institution.

Article 2 Contents

Introduction

Unsustainable dynamics in housing markets and house prices have been one of the root causes of the 2008 financial crisis. They emphasised the challenge for policy-makers to identify such dynamics in the context of their regular and systemic analyses of economic, financial and monetary developments. This paper gives an overview of a framework for analysing house price developments in the euro area. Analysing house prices for various purposes includes the ability to explain developments, to form expectations of their likely future path, and to evaluate them in terms of their sustainability.

These different ambitions suggest that it can be very difficult to find single best and all-encompassing tools, and that, in practice, the analysis of house prices may have to rely on different tools for different purposes. For the euro area, an additional challenge exists in the heterogeneity of housing markets across euro area member states. Together with the relatively long duration of house price cycles compared to economic growth cycles, this implies that at different points in time house price developments can be characterised by considerably less synchronisation across countries than other economic developments. In this respect, the unsustainable nature of house price developments prior to the financial crisis has been a pervasive feature of some member states but not of others.

1. House prices, the macroeconomy, and economic and financial stability: a synopsis

The background for analysing house prices in central bank's macroeconomic and financial frameworks is the prominent role that they can play in monetary transmission. They share this role with other asset prices such as stock market prices or bond yields. However, house prices distinguish themselves from other asset prices as for euro area households residential property tends to be the quantitatively most important and most directly held asset class.

On the one hand, house prices can move in response to changes in financing conditions and expectations triggered by monetary policy actions (see Chart 1). On the other hand, they can propagate monetary policy actions to economic growth and HICP inflation. House prices can have a direct influence on consumer price inflation via their possible link to housing rents, but mostly their influence tends be seen as working more indirectly through wealth effects on consumption and residential investment decisions. For instance, higher house prices might lead to improved financing conditions and better enable households to borrow and spend against housing collateral. It may also lead them to discount a perceived permanently higher value of their residential property in terms of lower saving rates and higher consumption.[1]

Given their enhancing role in determining financing conditions and economic confidence, house prices have often been found to be associated with the emergence of boom/ and bust cycles, which can have considerable impacts on output and demand. This link to boom- and bust cycles lends a key role to house price developments for economic and financial stability analysis. Such developments were arguably among the root causes of the 2008 financial crises in some euro area countries. Indeed, a pervasive feature of the house price developments was that they displayed larger swings than what would be justified by economic developments, often fuelled by speculative activity.

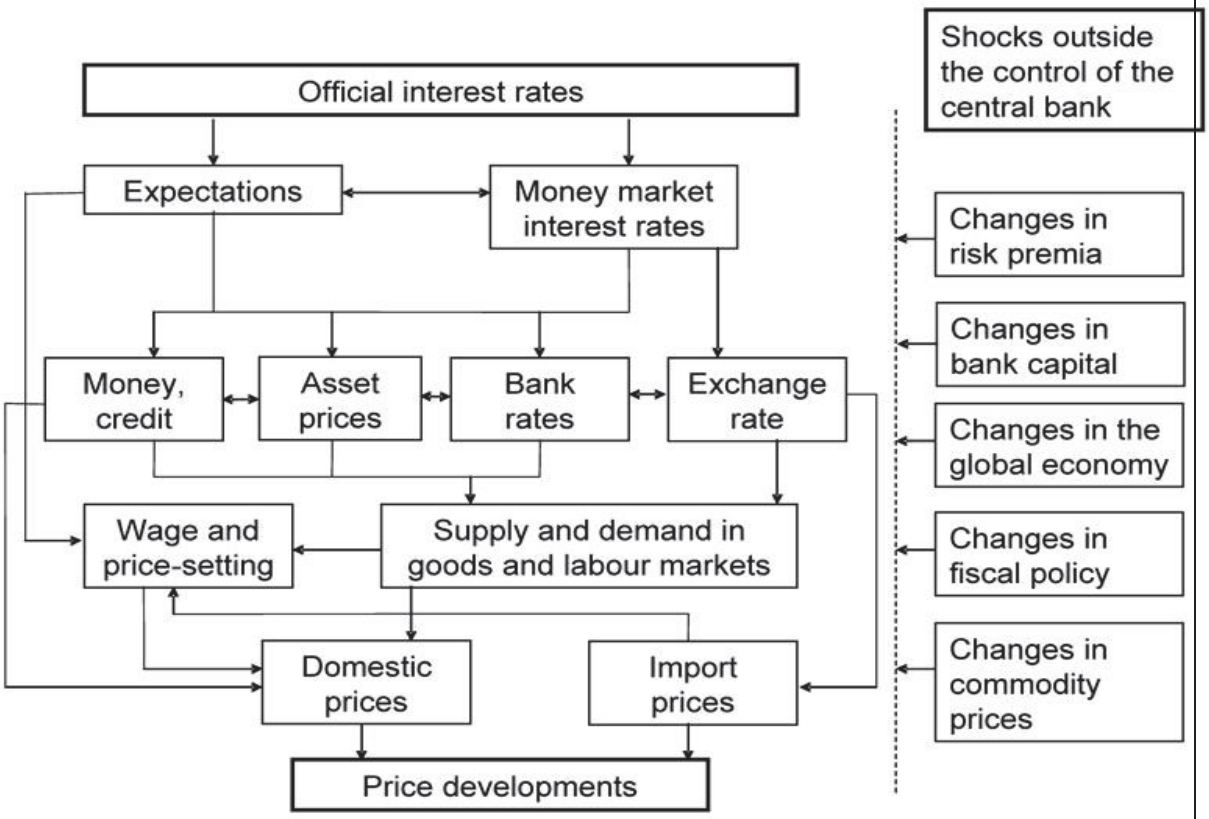
Policy-makers and central banks in particular have become increasingly aware of the fact that sizeable changes and significant periodic corrections in house prices may lead to financial and, ultimately, macroeconomic instability.[2] In the context of the ECB's monetary policy strategy, house prices can play an important linking role between the economic analysis and the monetary analysis. At the same time, the explaining, evaluating and forecasting of house prices poses many challenges. In

[1] The link between housing wealth and consumption seems to be quite country-specific and relatively low compared with Anglo Saxon experiences (e.g. for countries such as Austria, France, Germany and Italy). See "Wealth and asset price effects on economic activity", by Filippo Altissimo, Evaggelia Georgiou, Teresa Sastre, Maria Teresa Valderrama, Gabriel Sterne, Marc Stocker, Mark Weth, Karl Whelan and Alpo Willman, June 2005, ECB Occasional Paper No. 29.

[2] See for instance "Asset price booms and monetary policy", by Carsten Detken and Frank Smets, May 2004, ECB Working Paper No. 364, "'Real time'early warning indicators for costly asset price boom/bust cycles: a role for global liquidity", by Lucia Alessi and Carsten Detken, March 2009, ECB Working Paper No. 1039 and Chapter 6 "Interlinkages between money, credit and asset prices and their implications for consumer price inflation" in Lucas Papademos, Jürgen Stark (eds) "Enhancing Monetary Analysis", ECB Publication, 2010.

particularly, central banks need to understand the underlying sources of house price changes, such as whether they are driven by supply, demand or other "fundamental" economic shocks.

Chart 1: Transmission mechanism of monetary policy



Source: http://www.ecb.europa.eu/mopo/intro/transmission/html/index.en.html

2. House price analysis for the euro area

The various challenges surrounding the analysis of house prices are particularly prevalent in the case of the of the euro area as euro area aggregate data conceal very diverse housing markets across member states. Against this background, this section looks at the nature of the data used, the explaining and forecasting of house prices, and the framework for assessing house price misalignments.

House price data

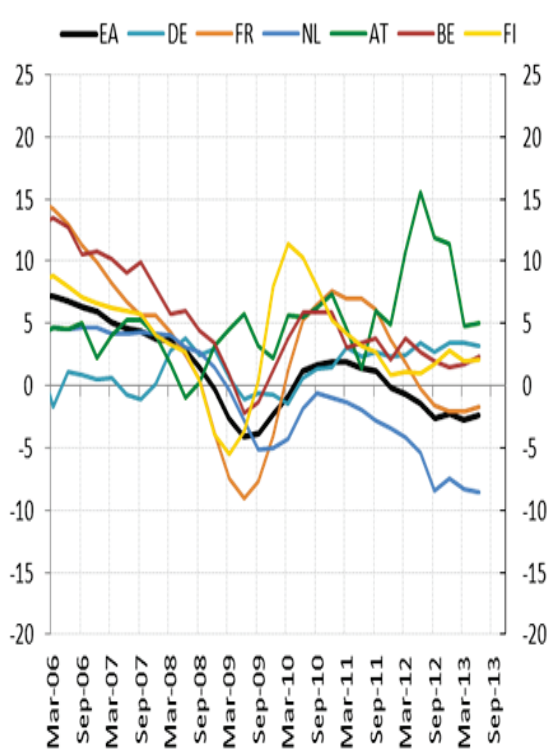
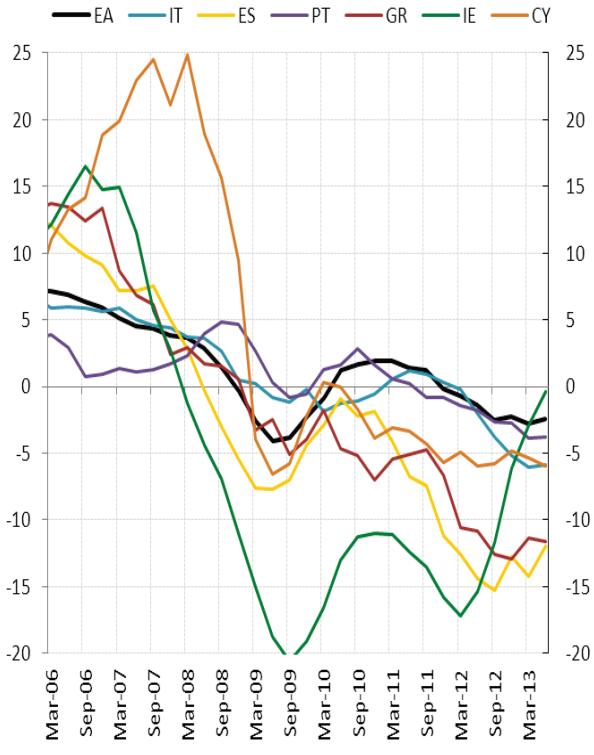
It is well understood that house prices are difficult to measure as no two houses are alike (e.g. location always differs), turnover of individual houses is low and capturing quality changes can be quite challenging. Partly reflecting these challenges, there remains weak comparability of the national house price data across the euro area, with important differences in definition, coverage, length and timeliness. The ECB has developed a euro area residential property price indicator, which has been available since 2000 while Eurostat began publishing an experimental house price index for the euro area in late 2010 (an official series was published for the first time in January 2013). Although the two sets of country indicators underlying the ECB and Eurostat aggregate euro area series continue to converge, there remain significant differences in the series for some countries reflecting different prioritisations of quality characteristics such as coverage, length and timeliness. Long time series are necessary for modelling purposes and more generally for the analysis of trends and deviations from these trends. The ECB has drawn on alternative data sources where possible to extend back the official house price series, and has thus constructed sufficiently long time series for 10 euro area countries. Needless to say, econometric analyses using these long house price series need to be treated with some caution as they may imply statistical breaks that can then affect the estimated significance and magnitudes of determinants. It is worth remarking also that house price data at the national level can be driven substantially by specific regions within a country and may then only poorly reflect determinants at the national level such as income or credit.

Explaining house price developments

House prices can be described as the outcome of the interaction of a number of interrelated markets: the owned-housing market, the rental market and the mortgage market. Each of these markets are characterised by quite distinct structural features and policy influences across euro area countries that can lead to significant variation in house price developments even in the case of similar developments of broad determinants such as interest rates or income. Some of these structural factors and policies may have contributed to the building up of imbalances in housing markets of some euro

area countries prior to the financial crisis, and have thus been at the origin of the strong cross-country heterogeneity in house price growth across euro area countries in past years as these imbalances needed to unwind (see Charts 2 and 3). In view of the high degree of country specificities, the ECB analysis of house price developments in the euro area has to be bottom-up in nature. While the main focus of the analysis is conjunctural in nature, the ECB has undertaken more in-depth studies of the structural features of housing markets in the euro area and EU (see for example ECB (2003)[3]).

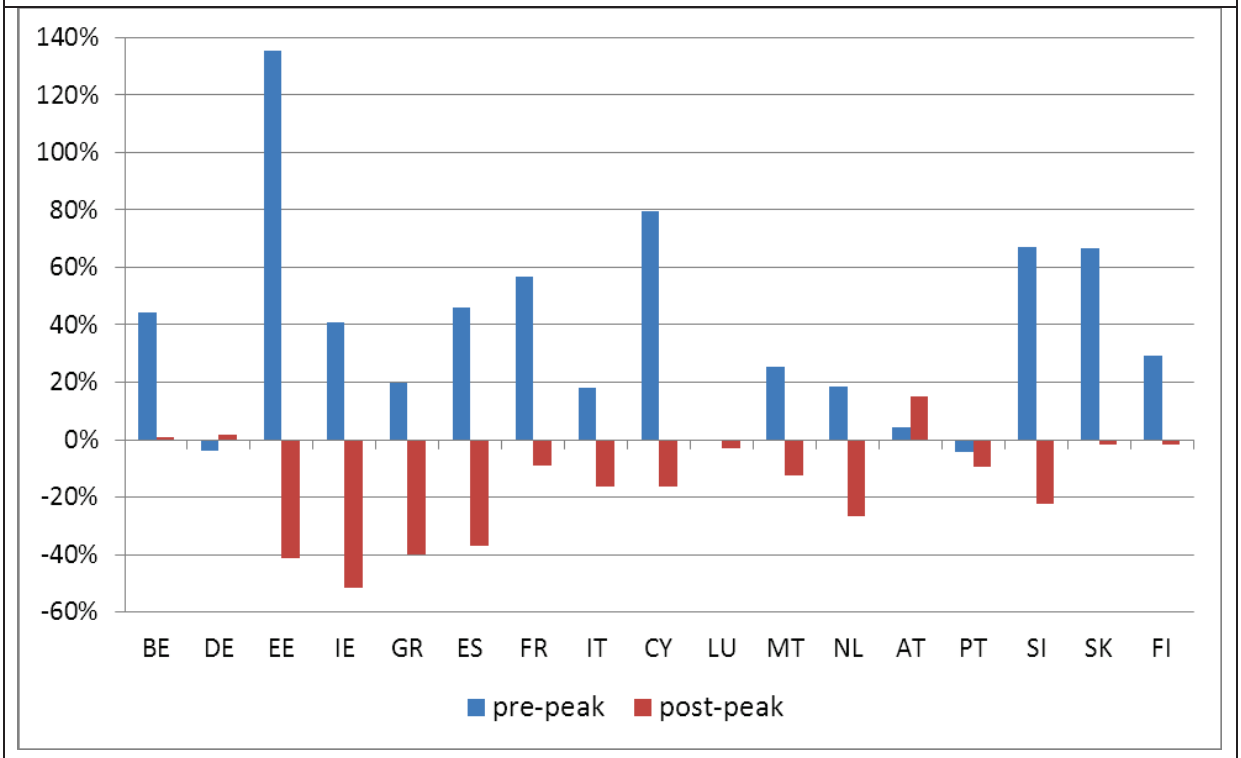
Chart 2: Residential property prices in the euro area

Non-stressed countries	Stressed countries
	

Sources: ECB calculations, Various national sources.

[3] ECB (2003), "Structural Factors in EU Housing Markets". Available at http://www.ecb.europa.eu/pub/pdf/other/euhousingmarketsen.pdf

Chart 3: Nominal house price percentage changes pre- and post-crisis in euro area countries



Sources: ECB calculations, Various national sources.

Partly due to data constraints, but partly also due to the lack of data for structural factors, econometric models of house prices tend to be quite parsimonious. They typically include key demand variables such as real disposable income per capita, real interest rate (mortgage and risk-free rates) and demographics (household formation). In certain cases, other indicators for demand pressures are also included such as the unemployment rate and the savings ratio. In cases where demand and supply are modelled simultaneously, indicators including vacancy rates or building permits are taken into account.

There is a wide range of institutional and regulatory factors that may influence developments in house prices[4]. Given that such factors – even if available - can be challenging to incorporate in an econometric model, economists would often only take into account these factors in an ad-hoc or judgmental fashion. Pertinent information in this respect are i) fiscal measures, including changes to transaction and property taxes, mortgage interest relief and capital gains taxes, ii) financial or

[4] For a comprehensive list of potential indicators for housing market conditions and trends, see IMF (2008).

prudential factors, including the volume of credit, the availability of credit and household debt, or iii) regulations in the rental markets, given that renting offers an alternative to purchasing a home.

Forecasting house prices

At the euro area wide level, workhorse models are typically of the vector error correction type. For instance, Gattini and Hiebert (2010) have fitted such a model to euro area wide data to produce forecasts for euro area house prices conditional on assumed paths for interest rates and income[5]. The motivation for the choice of model is driven by economic theory, empirical tractability and data availability. However, forecasts for house prices generated directly at the euro area aggregate level tend to differ from the aggregated country forecasts. While there is no systematic difference between the direct and aggregated forecasts when applying the same type of models, there can be substantial differences at individual points in time, possibly due to the fact that area-wide data smooth out country specific developments in the latest data that may give rise to different dynamics over the forecast horizon. As no one-size-fits-all model specification exists due to country specific institutional settings, there are comparative advantages to a bottom-up approach to forecasting euro area wide house prices.

Evaluating house price misalignments

In order to identify significant misalignments of house prices with fundamentals, the ECB uses four house price valuation measures, two standard statistical measures and two model-based measures. These measures are currently used and reported in the context of the ECB's Financial Stability Report[6]. Approximations of misalignments are useful in order to guide assessments of likely adjustments in house prices over forecast horizons beyond what is predicted by conventional determinants, or to inform of macroeconomic and financial risks associated with sharp corrections of imbalances. The construction and motivation of the four house price valuation measures can be summarised as follows:

1. The ***house price-to-rent ratio***, nominal house price index to the HICP rental index, calculated as a percentage deviation from its long-term average. In equilibrium, prospective buyers should be indifferent between buying and renting when there is an identical bundle of housing services in each market. When house prices are rising rapidly, households may choose to hold

[5] Gattini, L. and P. Hiebert (2010), "Forecasting and Assessing Euro Area House Prices through the Lens of Key Fundamentals", Working Paper Series No. 1249.
[6] See ECB Financial Stability Review, November 2013, P.40. Also, the tools used by the ECB for measuring possible misalignments in house prices from fundamentals were explained in the ECB Financial Stability Review, June 2011, Box 3.

off on purchasing and to rent instead. This may dampen the upward pressure on house prices and at the same time increase the upward pressure on rents. Over longer time horizons, the ratio of house prices to rents should then fluctuate around a constant mean. The house price-to-rent indicator is often used as a house price misalignment measure due to its simplicity. However, the rental market can sometimes be highly regulated and there may be a lack of substitutability between rented housing and owned-housing, distorting the interpretation of the house price-to-rent ratio;

2. The ***house price-to-income ratio***, nominal house price index to an index of GDP per capita, calculated as a percentage deviation from its long-term average. This can be interpreted as a crude affordability index, reflecting how many years of income need to be devoted to paying down the price of a house. This affordability index can be distorted by changes in the distribution of income across age groups and by changes in the average size of households;

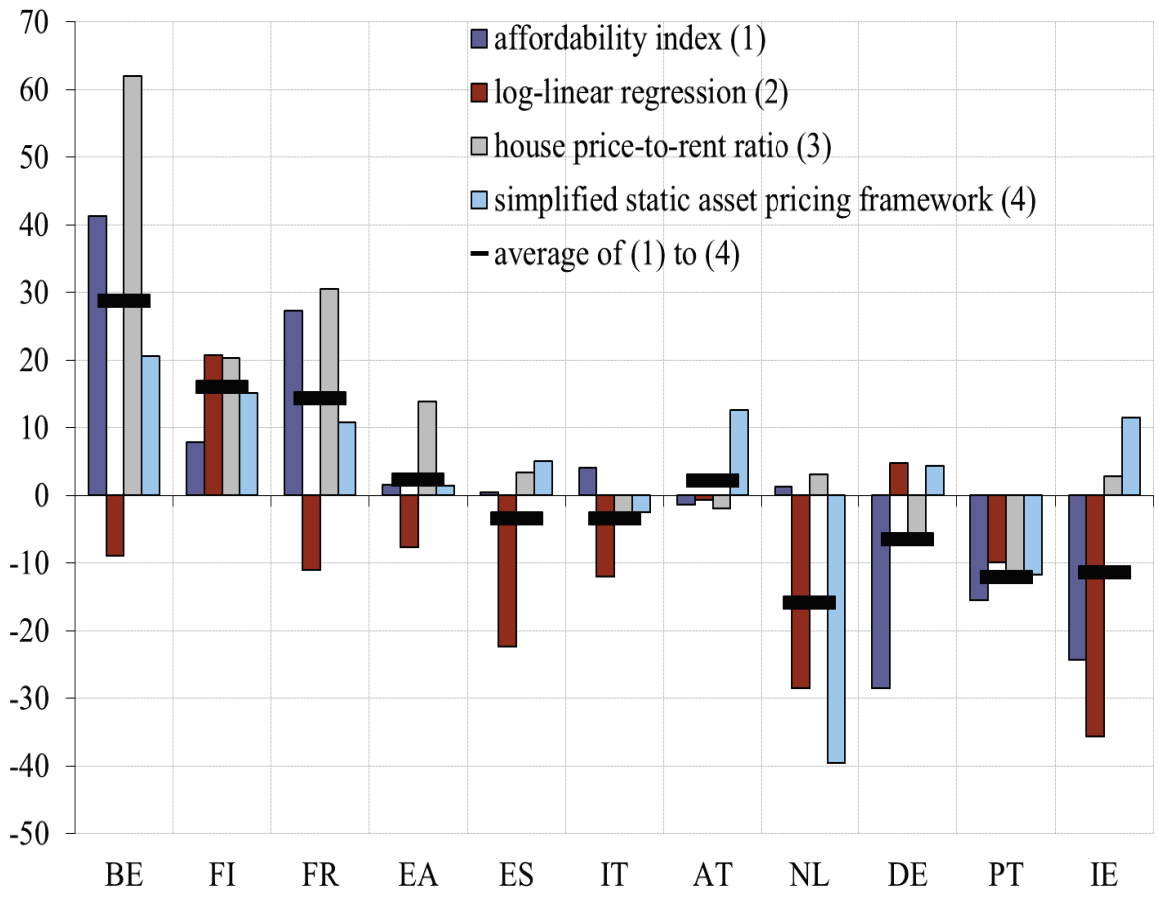
3. The ***residual from a regression in an error correction framework of the real house price on demand-side variables***, comprising real income per capita (proxied by GDP per capita), the real interest rate and population (all variables in logs except for the interest rate). The model is estimated using dynamic ordinary least squares and the misalignment is calculated as the percentage deviation between the actual house price series and the equilibrium house price level implied by the model;

4. The ***residual from a regression in an error correction framework of the house price-to-rent ratio regressed on the real long-term interest rate***. This is based on a concept whereby the return on housing investment (approximated by the house price-to-rent ratio) should be equal to the returns from alternative investments bearing the same risk. Similar to approach (3) above, the model is estimated using dynamic ordinary least squares and the misalignment is calculated as the percentage deviation between the actual house price series and the equilibrium house price level implied by the model.

However, these (and other) valuation measures are subject to several important caveats. For instance, the estimation of reliable long-term averages and equilibrium levels is clearly dependent on the availability of sufficiently long time series. Unfortunately, this is not always feasible in practice as house price series for some euro area countries only begin in the 2000s. It is also worth noting that benchmarking against long term averages is just a proxy for "equilibrium" valuations, given that only house price indices are available and not median house price levels. Moreover, even when the house price series are sufficiently long, the individual valuation measures do not control for structural changes in the relationship between house prices and key determinants. In this respect, changes in institutional settings (e.g. non-market distortions in the rental market, the role of tax policies, owner-

occupancy rates, etc.) can induce strong changes in historical or equilibrium relationships. In view of these caveats, these somewhat crude valuation measures are only intended to give a first-pass analysis of the state-of-play in national housing markets. Indeed, for individual countries there is often a wide dispersion of the indicators, casting some doubt on the reliability (see Chart 4). A general feature is that the regression based measures point to lower overvaluation or larger undervaluation that the statistical measures (crude affordability index and house price-to-rent ratio). Cutting across the four valuation measures suggests that for the euro area as a whole the past declines in house prices have brought the degree of residential property market overvaluation largely back in line with fundamentals.

Chart 4. Valuation indicators for selected countries and the euro area, 2013 Q2 percentage deviations from equilibrium level or long-term averages*



Sources: ECB, Eurostat, OECD and ECB calculation.
Based on data until 2013Q3, except for AT (2013Q2)

* These indicators were published for a selection of euro area countries in, for example, the ECB Financial Stability Review, December 2011.

3. Concluding remarks

A framework for cross-country house price analysis in the euro area needs to consist of tools to identify notable house price trends and significant misalignments with fundamentals. A country based, bottom up approach is needed to properly acknowledge the structural differences in housing markets across euro area countries. Judgmental input of country experts is crucial for complementing analysis and forecasting based on parsimonious models. Upgrading such models would need to include the important structural features of the housing, rental and mortgage markets in the individual countries. Recognising and understanding these features will also help to better assess valuation indicators that are currently applied in a common manner across countries but may in fact have different strengths and weaknesses in each case. Advances in the explaining and modelling of house prices in euro area countries are important to enhance the role that house prices can play in the analysis of macroeconomic and financial interlinkages and of the risks associated with excessive house price movements.

3. Determinants of the liquidity risk in the construction sector in Poland

Zbigniew Krysiak

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Article 3 Contents

1. CHARACTERISTICS OF GOALS, SCOPE AND MAIN HYPOTHESIS

Different distortions in the past on the property market in Poland were caused by not adequate amount of funding delivered by banks to the households and construction companies. We observed very big asymmetry in funds offered to the households and developers and in different periods there were oversupplies and undersupplies.

On one hand the oversupply of cash to the households affected the increases in property prices what limited the demand because of decline in the credit capacity of the bank's customers[1]. On the other hand not sufficient amount of funding offered by banks for the construction sector caused their higher risk and the risk of households[2]. This led to the decline in the production capacity, what was the additional factor triggering the property price increase and decline of the demand for the houses.

After the global financial crises the deficit of the funds, for housing projects in Poland were still an unresolved issue. This deficit was increased additionally by decline in the amount of mortgage loans extended to the households. In the period from 2008 to 2013 the value of new originated mortgage loans dropped down 10 times. The reduction in the production capacity in the housing business and the construction sector is continuing and being speeding up by the decline in the supply of the mortgage loans[3] and implementing more restrictive regulatory procedures, what can lead to the crises on property market in Poland.

In the past, several banking experts argued that the risk of the housing sector is one of the highest in the polish economy. Arguments about high risk of the construction sector were contradictory to the fact, that the revenues of the banks generated by the

[1] Kwaśniak W., ***Rozwój kredytów mieszkaniowych w Polsce,*** „Finansowanie Nieruchomości", Wrzesień 2013 nr 3(36), s.22-29.
[2] Saniewski A., Meluch B., ***Bezpieczeństwo przedpłat nabywców w transakcjach developerskich***, „Finansowanie Nieruchomości", Czerwiec 02/2011/27, s.4-13.
[3] Kwaśniak W., ***Rozwój kredytów mieszkaniowych w Polsce,*** „Finansowanie Nieruchomości", Wrzesień 2013 nr 3(36), s.22-29.

mortgage loan portfolio were the main drivers of the profits. In the middle of 2013 almost half of the banking loans were related to the mortgage loans.

Facing the above described problems of the deficit in the funding sources for the property market we can ask the following question: How can be evaluated the risk of the construction enterprises? Is this risk really very high in Poland and under what circumstances the risk rise or decline? How in that context the deficit of funding sources impact the enterprise's risk and to what extend it is significant and what are the main drivers of that risk?

We think that the answers on the above questions and the implementation of the elaborated solutions as an conclusion drawn from the analytical studies is an strategic issue which should attract the involvement either the banking institutions[4] and the other financial organizations and the government bodies as well.

The goal of the paper is to characterize the selected factors impacting the financial liquidity risk of the construction companies in Poland. We stated the following hypothesis: "*The deficit of the funding sources and lack of their diversity may be perceived as main factors of the liquidity risk of the construction enterprises and the liquidity risk on the property market as a whole***"**

We identified the auxiliary hypothesis which points to the limits in the dynamics of the increase in the supply of mortgage loans. The auxiliary hypothesis was stated as follows: "*Approaching the limits in the funding of the property market from banking sources triggers the risk-shifting from banks to the enterprises***"**

The scope of the presented paper relates to the following topics:

- Lack of the alternative funding sources to the banking loans,
- Not yet mature but the prospective bond market created on the Catalyst platform at Warsaw Stock Exchange,

[4] Kwaśniak W., ***Rozwój kredytów mieszkaniowych w Polsce,*** „Finansowanie Nieruchomości", Wrzesień 2013 nr 3(36), s.22-29.

- Increase of the risk level related to the growth in the value of non-performing loans,
- Deficit of the long-term funds in banks,
- Reduction of the interest rates triggers the decline of the bank's deposits resulting in the cash flowing into the capital market instruments.

2. OBSTACLES IN OBTAINING FUNDS FOR HOUSING BUSINESS IN POLAND

There are several issues which were not resolved in the past, leading to the existing troubles. Only the banks are extending the funding to the property market. The main issues are: lack of different regulations related to the housing construction business, very limited supply funds from banks to the developers, lack of balance between the supply and demand of the houses[5].

Poland among the European countries has the highest deficit in the number of houses per 1000 citizens. The deficit force to create the conditions triggering the boom in the production of the houses, what without the appropriate financial funds can't happen[6]. The fundamental for property market development are the adequate production capacity. This condition can be implemented if capacity of the funding sources on the financial market and their diversity reach certain maturity, what doesn't exist now whereas the funds supply is "monopolized" by banks.

In west European countries and in US the banks extend the loans to the construction sector up to certain limited level and the rest is arranged by the capital market and other investors. Banks can't incur too much risk therefore the limits on the mortgage portfolio are imposed[7]. The Figure 2.1 presents the share of mortgage loans in total bank's loan portfolio in Poland. The share in 2003 of 10% increased up to 40% in 2013. In the future we may anticipate the share to be stable on the current level since it is the highest among the European countries[8].

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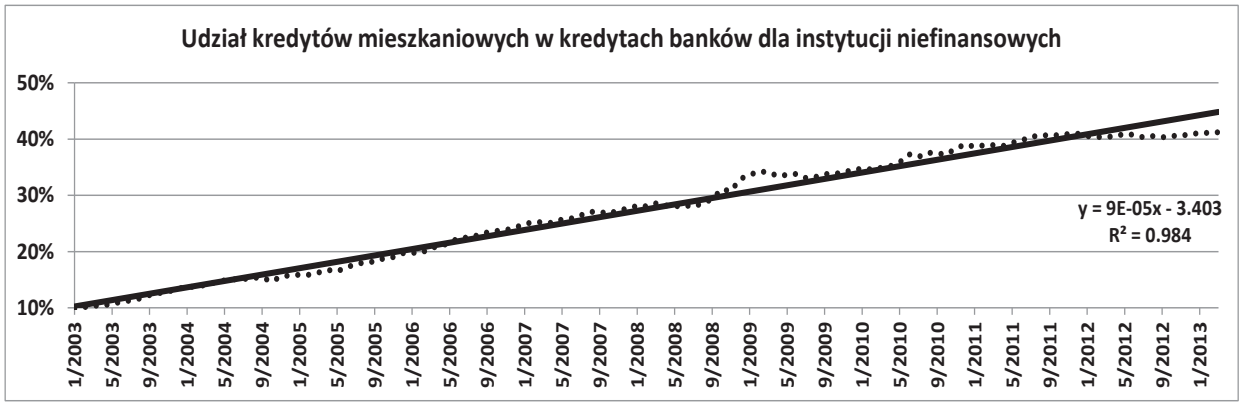
[5] Saniewski A., Meluch B., ***Bezpieczeństwo przedpłat nabywców w transakcjach developerskich***, „Finansowanie Nieruchomości", Czerwiec 02/2011/27, s.4-13.

[6] Bratkowski S., ***Jaka szansa na boom budowlany?***, „Finansowanie Nieruchomości", Marzec 2013 nr 1(34), s.34-39.

[7] Krysiak Z., ***Rynek kredytów hipotecznych w USA nadal nie podniósł się z upadku po kryzysie***, „Finansowanie Nieruchomości", Wrzesień 04/2011/29, s. 51-57.

[8] Kwaśniak W., ***Rozwój kredytów mieszkaniowych w Polsce,*** „Finansowanie Nieruchomości", Wrzesień 2013 nr 3(36), s.22-29.

Figure 2.1 The share of the mortgage loans in the entire bank's loan portfolio



Source: Author's elaboration based on data from *Narodowy Bank Polski*

We believe that, the limits of the cumulated by banks, risk related to property market in Poland exceeded the acceptable level, what challenge to implementation new solutions for financing properties[9]. There are following alternative forms of property funding:

- Issueing the corporate bonds,
- Securitization of mortgage portfolios[10],
- Covered bonds[11],
- Leasing[12],
- Construction for renting the houses financed from the monthly rents,
- Investemnt funds[13],
- Social housing supported by government funds[14],
- Pfand Brife, the German type of covered bonds[15],

[9] Krysiak Z., ***Granice ponoszenia ryzyka kredytów hipotecznych przez sektor bankowy w Polsce***, „Finansowanie Nieruchomości", Czerwiec 02/2012/31, s.10-15.
[10] Kwaśniak W., ***Rozwój kredytów mieszkaniowych w Polsce,*** „Finansowanie Nieruchomości", Wrzesień 2013 nr 3(36), s.22-29.
[11] Stoecker O., ***Modele covered bonds w Europie: najistotniejsze elementy stosowanych struktur prawnych***, „Finansowanie Nieruchomości", Marzec 01/2012/30, s.40-53.
[12] Główka G., ***W poszukiwaniu punktu równowagi finansowania nieruchomości w Polsce***, „Finansowanie Nieruchomości", Marzec 2013 nr 1(34), s.22-29.
[13] Meluch B., ***Budownictwo mieszkaniowe dla seniorów – warunki realizacji przez fundusze inwestycyjne (część I)***, „Finansowanie Nieruchomości", Marzec 2013 nr 1(34), s.12-17.
[14] Szelągowska A., ***Nowy paradygmat finansowania budownictwa społecznego w Polsce - Implikacje dla rynku finansowego***, „Finansowanie Nieruchomości", Marzec 2013 nr 1(34), s.22-29.

- Commercial renting[16],
- Credit institutions alike the credit union in US[17].

The precondition for exploitation of the listed funding forms is the creation of the regulatory environment in Poland letting for free market entities to obtain the profits on the investments in the property market. The discussions in Poland on alternatives to bank's loans for funding the property have been taking place from about 10 years, but there were obtained no satisfactory results. The main attention, in that discussion, was put to the covered bonds, securitization and the issuance of the corporate bonds.

There is a following list of the urgent topics, which were identified by the working groups of the experts in the past, to be resolved or implemented in the future to trigger the faster development of the property market in Poland:

- Legal issues of the securitization process[18],
- Rating of the securitization bonds in the risk assessment,
- Rating of covered bonds[19],
- Methods and principles applied for the risk sharing in the securitization process[20],
- Models for the risk management and risk assessment in the securitization process[21].

Efficient implementation of the above listed issues need reasonably long time, what means that liquidity risk of the construction enterprises in Poland will be not mitigated in short term perspective.

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[15] Kwaśniak W., ***Rozwój kredytów mieszkaniowych w Polsce,*** „Finansowanie Nieruchomości", Wrzesień 2013 nr 3(36), s.22-29.
[16] Brzeski W. J., ***Komercyjny rynek najmu istotnym ogniwem finansowania mieszkalnictwa***, „Finansowanie Nieruchomości", Czerwiec 02/2011/27, s.14-21.
[17] Smith D., ***Efekt mnożnikowy na rynku nieruchomości***, „Finansowanie Nieruchomości", Marzec 01/2012/30, s.64-65.
[18] Jeziolowicz N., Mach J., ***Securitization of Bank Assets in Polish Law,*** red. Jajuga K., Krysiak Z., ***Credit Risk of Mortgage Loans - Modelling and Management***, Polish Bank Association, 2005, s. 315-329.
[19] Skała D., Nelson C., Beck T., ***Rating Methodology for Polish Covered Bonds,***, red. Jajuga K., Krysiak Z., ***Credit Risk of Mortgage Loans - Modelling and Management***, Polish Bank Association, 2005, s. 226-239.
[20] Zombirt J., ***Risk transfer in Securitization Process,*** red. Jajuga K., Krysiak Z., ***Credit Risk of Mortgage Loans - Modelling and Management***, Polish Bank Association, 2005, s. 315-329.
[21] Kalasińska M., ***Sekurytyzacja aktywów bankowych,*** Polish Bank Association, Warszawa, 2007.

3. RISK-SHIFTING FROM BANKS TO THE HOUSEHOLDS AND DEVELOPERS

After Poland went to the free market economy we did not observed that the construction enterprises triggered any crises in the banking sector, which was and still is the monopoly for funding the property business. On the other hand we can observe that the banks shift the risk to the enterprises, which is triggered by the reduction in the funding capacity and the turbulences linked with the frequently varying credit policies. The sources of the turbulences are following:

- The lack of the long term funding sources in banks force them to the lessening in the origination of the mortgage loans to the households, what reduces as well the cash flow to the construction companies resulting in decline of the production capacity, what finally is perceived by banks as the increase of the risk on the developers side;
- The regulators steady increase the restrictions on the mortgage loans origination;
- Decline in the interest rates resulted in transfers of the funds from the deposits into the investments on the capital market;
- High number of negative bank's decisions against the application for the mortgage loans;
- The quality of risk assessment is not sufficient[22].

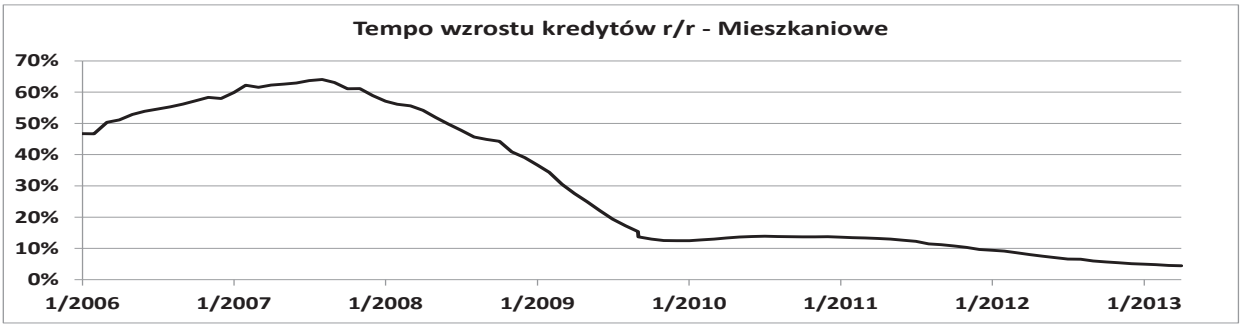
The process of property funding can be considered in the mainframe of so called triangular model, where banks, households and developers create each corner of the triangle and the cash flows around each entity. Any distortions of the cash flow created by one of the "players" will result in risk shifting to the other parties. Any turbulences arriving from the banks shift the risk to the counterparties, what finally shifts partly the risk back to the bank. Banks and regulatory bodies need to be very carefully when creating the funding and risk management policies, so that to avoid triggering the back-

[22] Kwaśniak W., ***Rozwój kredytów mieszkaniowych w Polsce,*** „Finansowanie Nieruchomości", Wrzesień 2013 nr 3(36), s.22-29.

risk-shifting mechanism, which threatens the stability of the banking and financial sector in Poland. We can conclude, at this stage, that not adequate credit policy in the banking industry and not adequate regulatory policy may become a very significant factor in creating the turbulences of the cash flow, without being triggered by the fundamental problems in the real economy. Finally these turbulences invoked by banks may destabilize not only the banking sector but also the economy as a whole. We think that there is very high chance to face the turbulences in the financial sector and the economy in Poland until the reasonable capacity and diversified forms of funding sources will appear.

In the past developers usually utilized the cash flow from byers to fund the projects. As far the money supply by the banks was high we observed the fast development of the property market which was associated with lesser number of the risk factors. The Figure 3.1 shows the trends and the annual dynamic in the value of the new originated mortgage loans since 2006 until 2013. The dynamic in 2007 was the highest one reaching the level of 65% and in 2013 dropped down to the level of 4%.

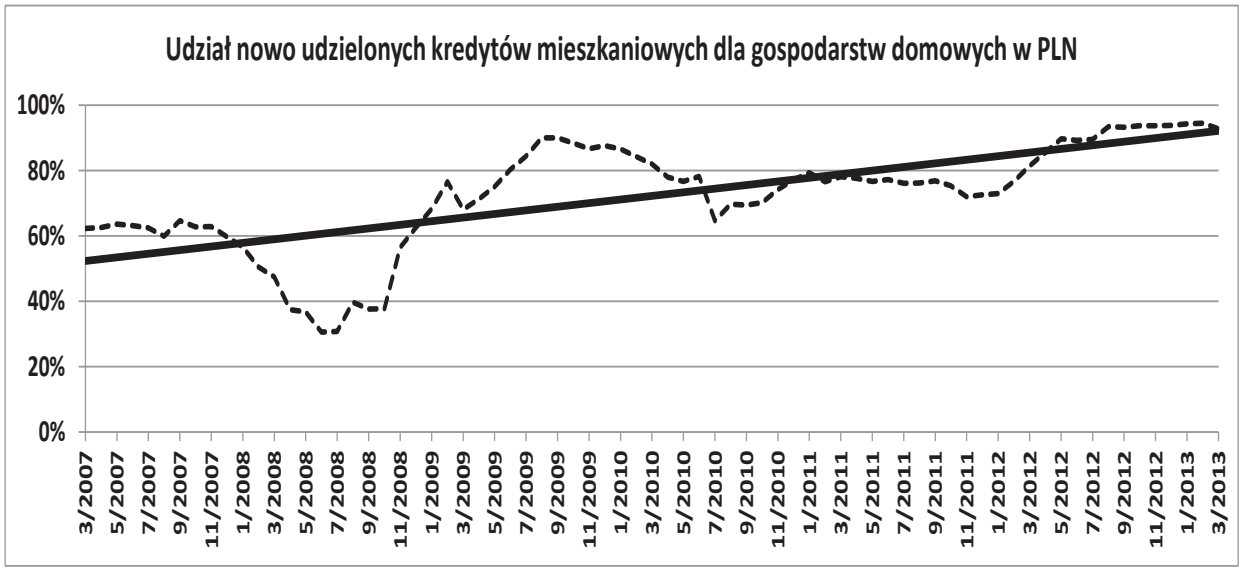
Figure 3.1. The annual dynamics of the new originated mortgage loans



Source: Author's elaboration based on data from *Narodowy Bank Polski*

We think that in 2008 there were not fundamental reasons in Poland for declining the annual rate of the new originated loans, which approach in 2010 down to 10%. This result was purely affected by strengthening the regulations in the banking business.

Figure 3.2 The share of new originated mortgage loans in polish currency



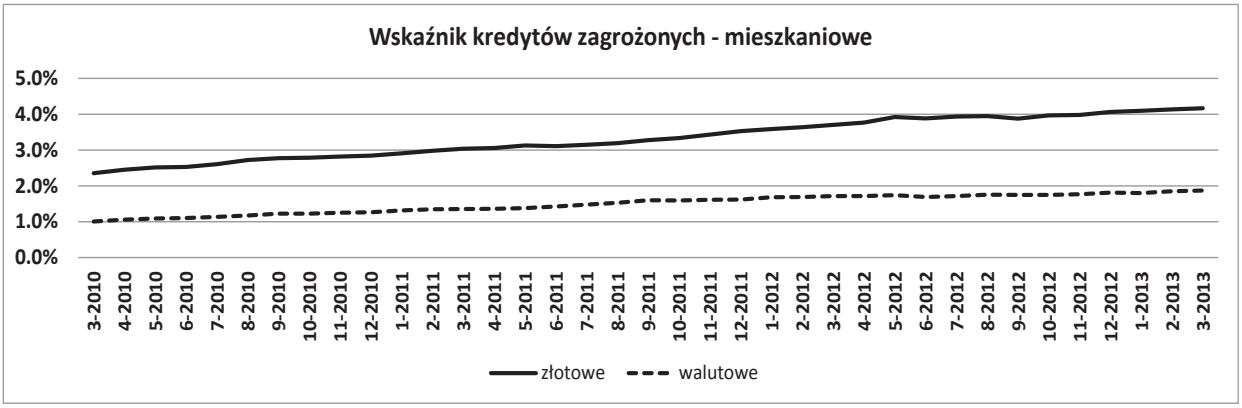
Source: Author's elaboration based on data from *Narodowy Bank Polski*

The Figure 3.2 presents the share of loans originated in polish currency in the period from 2007 till 2013. The high share in the foreign currency in the period from 2007 till 2008 was becoming strongly reduced from 2009. In 2013 the share of the new originated loans in local currency raised up to 95%. We observed that along the increase of new loans in polish currency the dynamic of all new originated loans was rapidly declining, what was, as we stated before, triggered by increase of the restrictions both in the regulator's and bank's policies. The reduction of the customer's risk, affected by removing the loans in foreign currencies increased much the risk of attracting the long term funding sources. The capacity of foreign funding sources was relatively very high, therefore now banks face a big issue related both to the declining trend in the business and the increasing liquidity risk.

As a result of the above discussed issues the quality of the entire loan portfolio dropped down very much. The indicator of the loan quality in polish currency was in the 2010 equal to around 2% and grown up to 4% in 2013, what was presented in the

Figure 3.3. The similar indicator for foreign currency doubled in the same period as well.

Figure 3.3 The indicator of the quality of mortgage loans issued in polish and foreign currencies



Source: Author's elaboration based on data from *Narodowy Bank Polski*

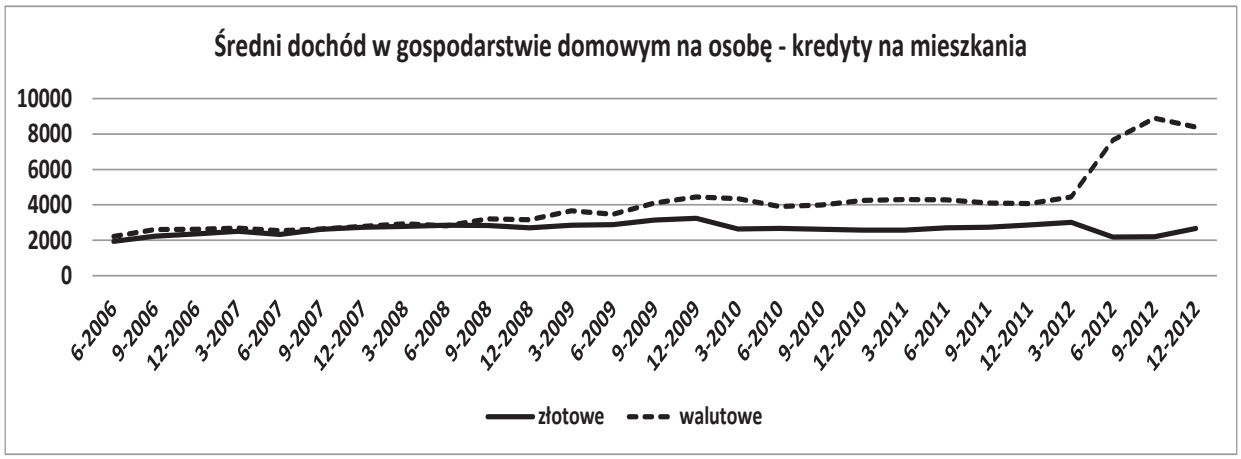
We think that both the financial condition of the households and sharp decline in the property prices after 2009 were not the reasons for decline in the quality of mortgage loan portfolio in the banks, but direct impact on that was due to the policy implemented by the institutions in the banking sector in Poland.

Figure 3.4 The average value of the indicator of the quality of household's loans

Source: Author's elaboration based on data from *Narodowy Bank Polski*

We can argue that since the 2010 the indicator of the quality of the household's loan portfolio was till 2013 on the very stable level amounting to 7.5%, what was presented on the Figure 3.4. The Figure 3.5 shows average income per capita in households drawing the mortgage loan. This income was equal to 2 500 PLN, in the period from 2007 till 2013, for customers applying for mortgage loans in the polish currency. The income for the customers applying for the loans in foreign currency was till 2012 almost equal to the loans issued in polish currency, but since 2012 was growing rapidly to the level of about 8 000 PLN.

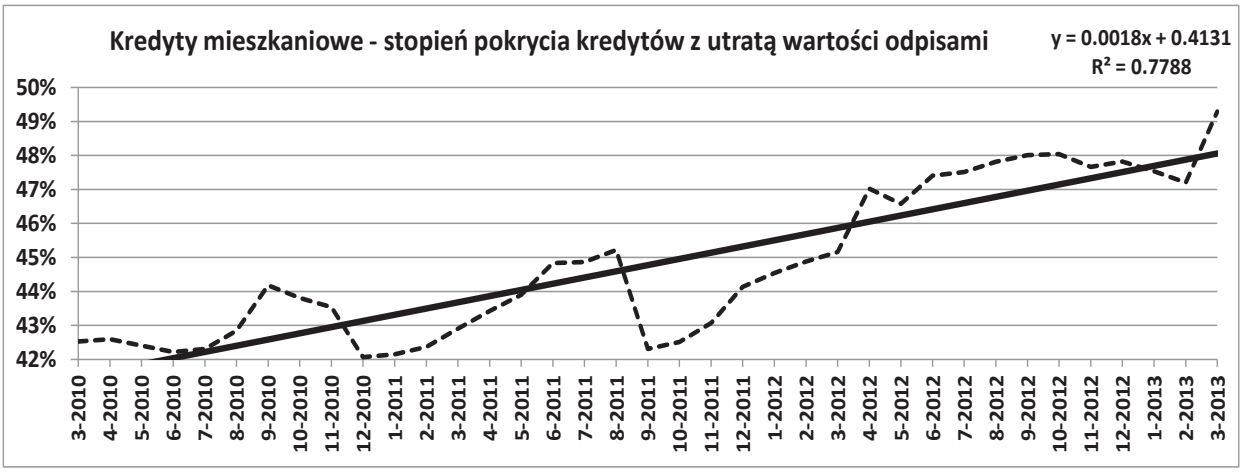
Figure 3.5 The average income per capita in the household drawing the mortgage loan



Source: Author's elaboration based on data from *Narodowy Bank Polski*

The Figure 3.6 reflects the share of the accruals on loans with significant losses in value. The accruals, for losses in the mortgage value in 2010, were equal to 45% and afterwards were increasing up to almost 50% in 2013. As a result of that may be considered the dramatic decline in dynamic of the new originated loans.

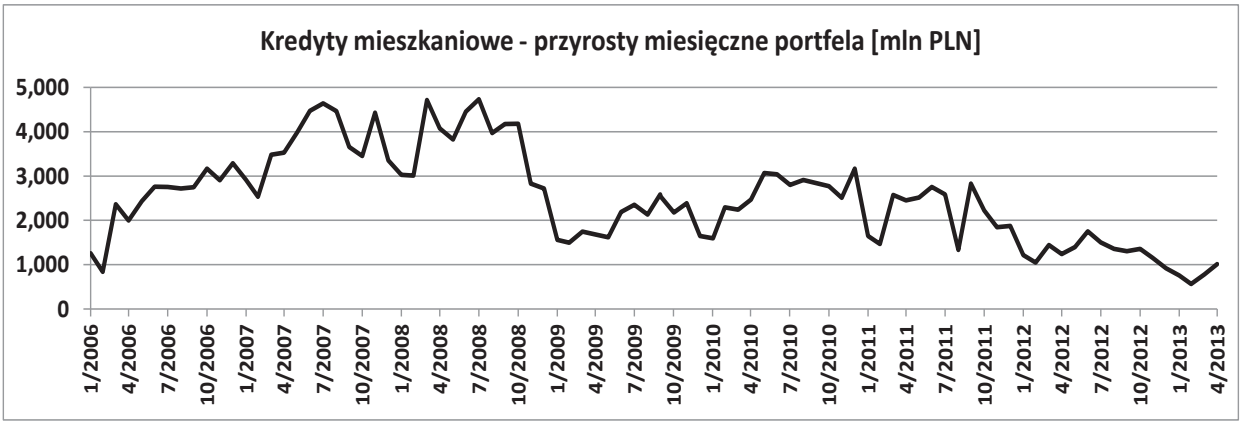
Figure 3.6 The share of accruals on loans with significant losses in value



Source: Author's elaboration based on data from *Narodowy Bank Polski*

The nominal value of the new originated loans was exhibited on the Figure 3.7. In 2008 the new originated loans amounted to 5 bln. PLN per month but in 2013 it was only 0.5 bln. PLN, what indicates the decline by ten times. This rapid decline of the cash flowing to the developers caused the rapid increase in their liquidity risk.

Figure 3.7 The nominal value of the new originated mortgage loans per month

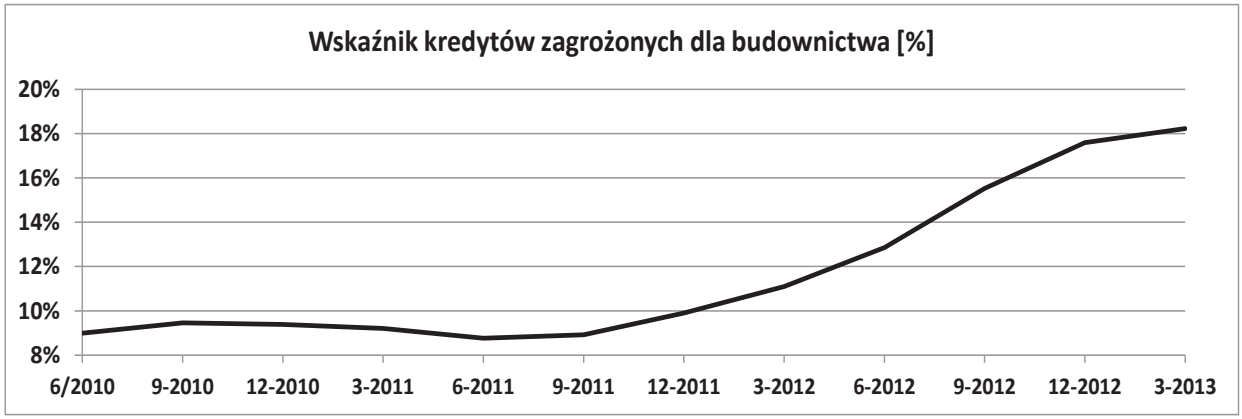


Source: Author's elaboration based on data from *Narodowy Bank Polski*

The Figure 3.8 shows the indicator of the quality of the loans extended to the construction sector, which seems to be much impacted by the reduction in the loan originated by banks to the households. The quality of loans for the developers

worsened from 9% in 2010 up to 18% in 2013. We claim that this indicator doesn't reflect the adequate level of risk in the housing construction business, which according to us is much lower than the presented indicator shows.

Rysunek 3.8. Indicator of bad debt in the construction sector



Source: Author's elaboration based on data from *Narodowy Bank Polski*

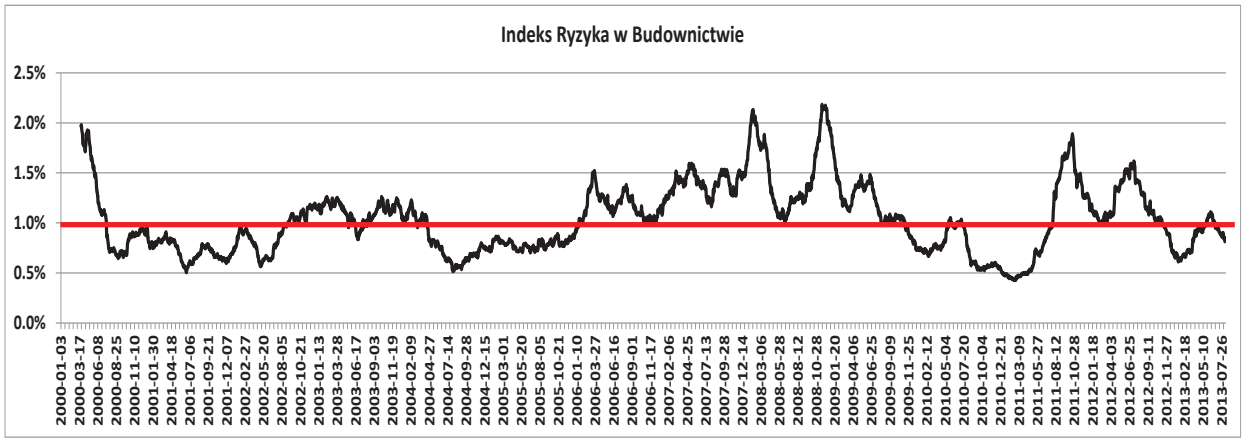
4. NEW MEASURES OF THE RISK ASSESSMENT IN THE HOUSING SECTOR

The credit risk assessment related to the different funding sources can be modeled from the perspective of: banks, insurance companies, investors on the share market, investors on the bond market, enterprises issuing the shares, issuers of bonds. The lack of the diversified funding sources for housing business in Poland doesn't permit for unbiased risk assessment, because currently the risk is assessed only from the one perspective of banks. The right approach to the risk assessment referred to the construction sector impact very much the supply of funds for implementation the housing projects. The more entities operating on the property market are engaged in the the risk assessment process the more objective information can be collected on the credit risk[23]. So the extending the number of the entities engaged in the funding process in Poland can support the verification of the risk evaluated by banks.

Capital market in Poland created, since the 2009, the new platform, called Catalyst, for issuance and trading the corporate bonds, where many construction companies have been attracting the funds by issuing the bonds. The volume of corporate's bonds on the Catalyst is not still big but slowly is growing and it is going to become very important source of funding. The price of bonds quoted on the Catalyst can create a good fundament for creating the measures in the risk assessment of the construction companies. These measures can be utilized as references to assess the risk of the companies and single projects. The risk measures can be established on the quotations of the bond's prices, bond's daily returns and bond's daily volatility. In the following part of the paper we present some selected measures of the risk which were elaborated based on the stock prices, stock daily returns and stock daily volatility observed on Warsaw Stock Exchange (WSE).

[23] The credit risk is understood as not keeping the conditions stated in the loan contract and this applies not only to the regular bank's loans but also to any form of lending the money.

Figure 4.1 The risk index of the construction sector

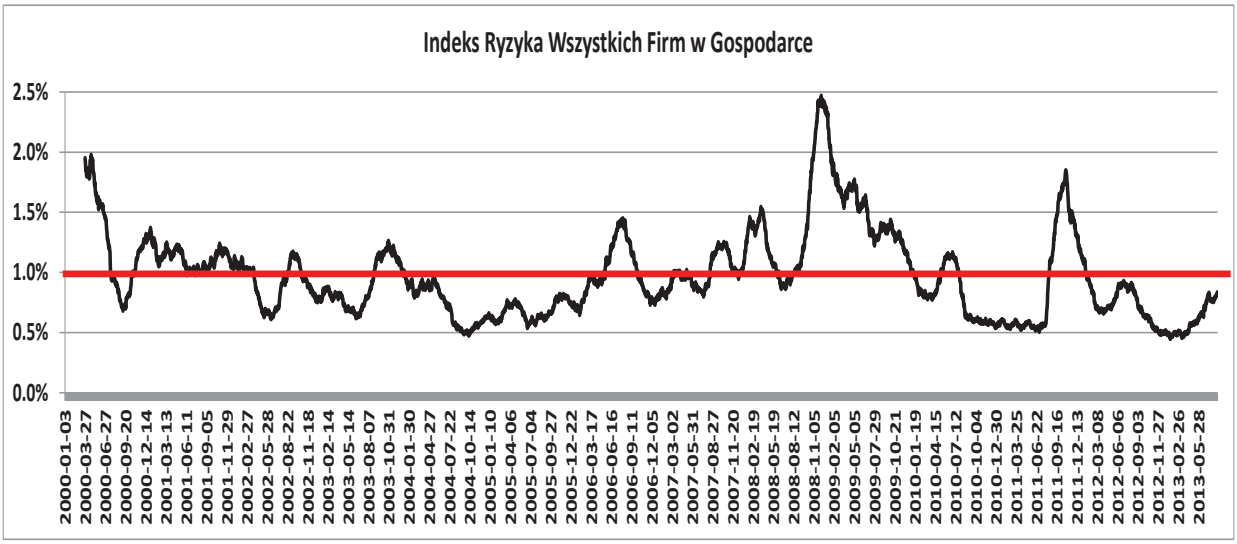


Source: Author's elaboration based on data from WSE (*Warsaw Stock Exchange*)

Figure 4.1 exhibits the index of the construction sector in the period from 2000 till 2013. This index includes not only the companies from the housing business but as well from the entire construction sectors. The measure reflecting the risk level is computed as the volatility of the stock returns observed on the WSE. We suggest applying four classes of risk to assess the liquidity risk of the construction enterprises. To each class we assign the number which is the measure of the risk. Graphical representation on the several figures below will give the idea about the level of risk.

We assumed the very low level of risk happens when the risk index is below 0.5%, the low level of risk when the risk index is in the range between 0.5%-1%, the middle level of risk when the risk index is in the range of (1.0%-1.5%), the high level of risk for the risk index in the range of (1.5%-2%) and the very high level of risk when the risk index is over 2%. Additionally we assume that a risk index equal to 1% serves as the reference level over which the forewarning signal should be switched on, so that afterwards to perform more detailed analysis of risk evolution.

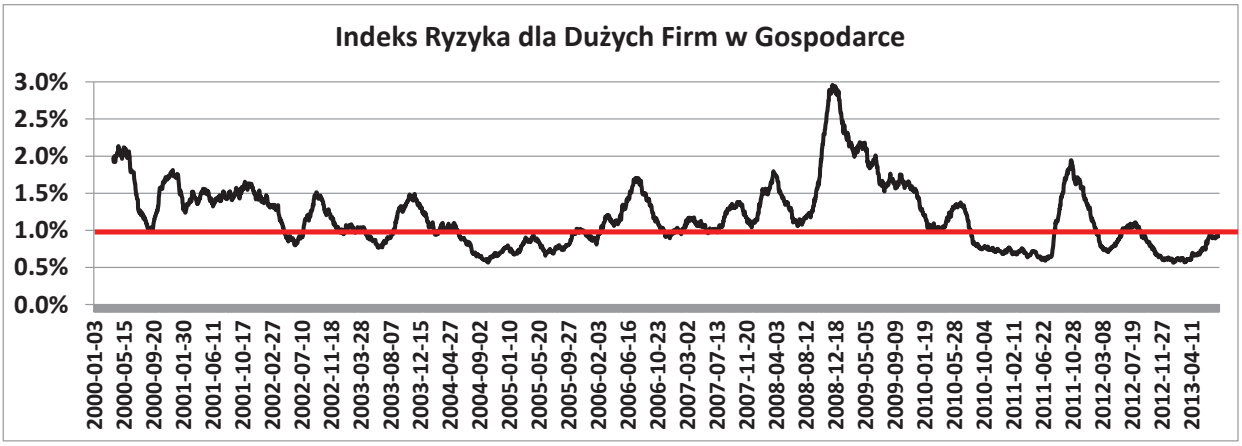
Figure 4.2 The risk index for all enterprises in the economy



Source: Author's elaboration based on data from WSE (*Warsaw Stock Exchange*)

Figure 4.2 reflects the risk index for all companies traded on the stock exchange. In 2013 the risk is low therefore we can comment that the risk is acceptable. The companies in the construction sector have higher risk than the average in the economy but it is still not alarming level.

Figure 4.3 The risk index for big companies in the economy

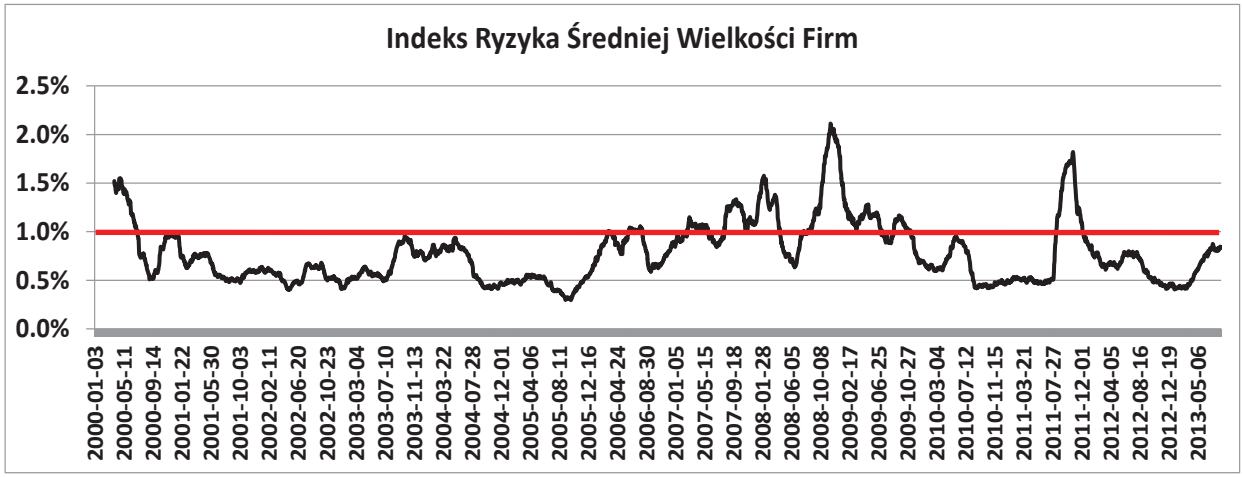


Source: Author's elaboration based on data from WSE (*Warsaw Stock Exchange*)

Figure 4.3 exhibits the risk index for big companies traded on the stock exchange. The risk level is close to the construction sector but with declining tendency. Some of the

companies in the construction sector belong to the big size enterprises therefore it makes sense to compare the risk index of big companies with the risk index of the construction enterprises.

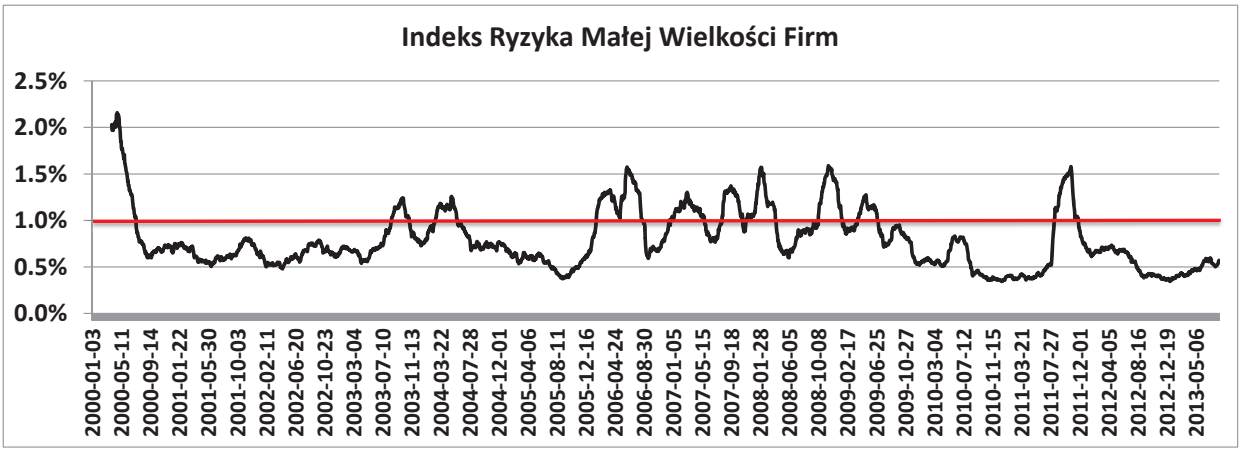
Figure 4.4 The risk index for a middle size companies in the economy



Source: Author's elaboration based on data from WSE (*Warsaw Stock Exchange*)

Figure 4.4 presents the risk index for the middle size enterprises, which in 2013 stays on the low level and took over the increasing trend but did not exceed the alarming level. A big number of the developers in Poland belong to the middle size companies, therefore it is worth to utilize this risk index for assessment the risk level of that size construction companies.

Figure 4.5 The risk index for a small size companies in the economy



Source: Author's elaboration based on data from WSE (*Warsaw Stock Exchange*)

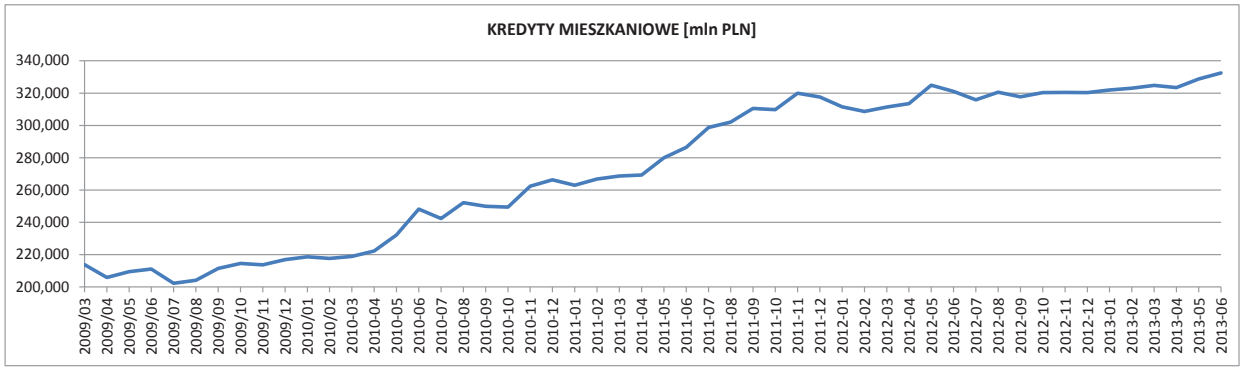
Figure 4.5 shows the risk index for small size companies which in 2013 is around the very lowest level. This reference is very valuable since many enterprises in housing sector are small size.

We can summarize, that the risk indexes show, surprisingly, in some cases the risk level lower than that anticipated by banks. Of course, the risk index is reflecting the average risk level in different groups of companies, what means that some of them are above and some below the average level. After some adjustments of this approach this measures may become very useful when evaluating certain case.

5. THE BOND MARKET MAY BE PROMISING FUNDING SOURCE FOR HOUSING

The development of the Catalyst market may be very promising in extension the capacity of the funding delivered to construction sector in Poland. One of the very important drivers supporting the development of the Catalyst is the lack of the long term funding sources in the bank's balance sheets. The Basel III force banks to attract the long-term funding sources to keep the liquidity ratio, defined as NSFR (***ang. Net Stable Funding Ratio***), which banks should to ensure in the future. The lack of long term funding sources will, in the future very much indeed, limit the progress in the mortgage business, and additionally harm or destabilize the development of the financial sector and economy as a whole[24]. Figure 5.1 exhibits the growth in the value of the housing mortgage portfolio, which in 2009 was around 200 bln PLN and in 2013 it was 330 bln PLN. This figure shows that we face very huge amount of long term funding sources needed to finance mortgages.

Figure 5.1 The value of the outstanding mortgage loan portfolio in banks in Poland



Source: Author's elaboration based on data from *Narodowy Bank Polski*

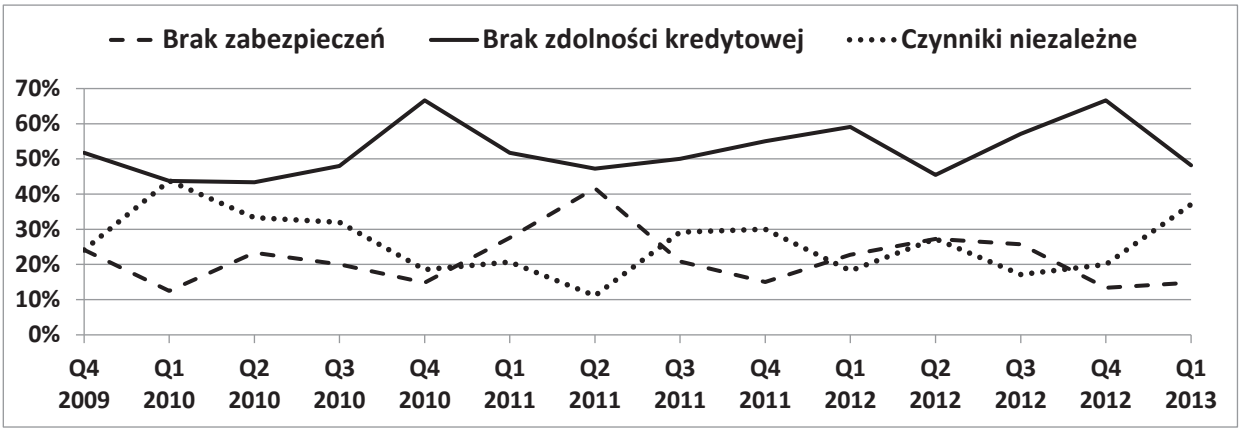
The bond market on Catalyst may be assumed as the prospective source of funds for enterprises which don't get the loans from banks. The investors, both individual and

[24] Gabriel Główka, Wywiad," Finansowanie Nieruchomości", Wrzesień 2013 nr 3(36).

institutional being offered higher interest rate than on bank deposit, will increase their appetite for such investments, what will support faster development of Catalyst market.

Figure 5.2 shows the reasons of the negative bank's decisions against loan's applications. On average, out of the total number of negative decisions about 50% are due to the lack of credit capacity. In 30% of cases the rejection is caused by not adequate collateral, and in 20% cases there are different other reasons. Facing that statistic we may claim that a big portion of these customers would be entitled for drawing the funds by issuing the bonds on the Catalyst market.

Figure 5.2 The reasons for the negative decision upon the loan origination in banks



Source: Author's elaboration based on data from *Narodowy Bank Polski*

Increasing competition is more frequently offering higher interest rates, than that one on bank's deposits, therefore the customers in the future will be more willing to draw back the cash from bank deposits. This will drive the increase of the cost of money forcing banks to increase the interest of the mortgage loans. We already observe that some banks issuing the bonds on Catalyst market have to pay around 6%-7%, what is much above the interest rate of the mortgage loans.

Figure 5.3 exhibits the change of the effective interest rates of banks funding sources in the period from 2010 till 2013. As of the end of the 2011 we observe the increase in the cost of funding sources which approached the level of 3.2%. It shows

that the cost of funds from deposits is much lower than in case bank would issue the bonds on Catalyst.

Figure 5.3 The average effective interest rates of the liabilities in banks

Source: Author's elaboration based on data from *Narodowy Bank Polski*

The outflow of the funds from the bank's deposits in the future due to the better investment opportunities will force banks to go on the bond market or refinance the mortgage portfolio with higher cost than the interest paid for deposits, what will decline the return on assets and return on capital.

In Poland the outstanding corporate bond portfolio in relation to GDP equals to 6%, whereas in another countries like Japan equals to 50%, and Irland or Island up to 300% [25]. In Germany this ratio stays on the level of around 100%, and in the USA 150%. The significant part of the corporate bonds in western countries, are used to finance the housing projects and other projects on property market.

Now-days the Catalyst market is very huge amounting to the value of 562 bln PLN and the value of stock market in Warsaw equals to 540 bln PLN. The majority of the bond market of the about 90%, are the government bonds and only 55 bln PLN states for the corporate bonds.

[25] Grant Thornton, Raport Catalyst – podsumowanie rozwoju, grudzień 2012, https://gpwcatalyst.pl/pub/files/materialy_do_pobrania/Raport_CATALYST_12_2012.pdf

6. CONCLUSIONS

- The market of the property funding in Poland does not yet have enough competitive sources against the bank's loans, what in the last years harms very much the development of the financial sector and the economy.
- The risk assessment in the funding process should be performed from the perspective of system composed of the bank-customer-producer.
- We think that the big decline, within last four years, in the new originated loans was resulted by the lack of alternative, to the bank loans, funding sources.
- The Catalyst market seems to be in the future very promising source of the long term funding sources for the housing business in Poland.
- Many enterprises operating in the housing business will have an opportunity to draw funding on Catalyst in case banks will reject to extend the loan.
- We finally believe that the key factor of the liquidity risk in the construction sector in Poland appears to be the big deficit of funding capacity and lack of the diversity in the funding instruments.

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4. Twenty years of developer sector in Poland

Kazimierz Kirejczyk

Kazimierz Kirejczyk – FRICS; Partner, President of the Board of REAS Sp. z o.o.

Article 4 Contents

1. The starting point

The communist era left the construction sector of the new Republic of Poland a legacy of housing cooperative as an organization responsible for building dwellings, large panel as the dominant technology of their construction, housing estate planning adjusted to the system of construction crane rails, cities and towns with centers inhabited by *lumpenproletariat* and a mentality of Poles, used to the thought that a typical way of coming into possession of a dwelling was to "get, arrange to get or inherit" one. Contractors consisted of state-owned conglomerates, while the quality of work and the subculture of construction workers was a favorite topic of movie comedies and stand-up sketches.

The second part of legacy of the People's Republic of Poland was the list of what was either nearly or completely missing: regular mortgage loans and banks ready to grant them; professionals specializing in sales of dwellings; clearly defined ownership statuses for land property, especially in Warsaw; rules of operation for firms constructing and selling dwellings, including, most importantly, rules for sales of units under construction; management procedures for multi-family residential buildings comprising condominium units; a system of highly reliable and quickly updatable land registers.

Yet above all Poland lacked Polish capital and capitalists. There were virtually no Polish entrepreneurs experienced in building dwellings for sale, nor even a word in the Polish language to describe such activity. The word "developer" appeared only after a few years, initially in a slightly more Polish-sounding form "developer" and several more years were required before the final spelling "deweloper" took hold.

In most sectors of the Polish economy, the transformation took a form of privatization. Typically, a foreign, and sometimes also a domestic, investor took over a Polish factory, yet there was a continuity of establishment's functioning, brand, product, staff, market, which, obviously, required many changes, however still allowed to continue and modernize operation. The developer sector was deprived of such a chance, as it was impossible to create development companies by privatizing housing cooperatives. On the contrary, in the first decade of the transformation cooperatives became a strong rival for new companies, impeding evolution of the private developer sector thanks to the advantage offered by investment land property stocks obtained – largely for free – before 1989.

In spite of this fact, successive governments in the nineties saw was no need to accelerate the development of the sector. In the case of right-wing and liberal governments a belief in "the invisible hand of the market" prevailed, while the left-wing was distrustful of the private sector and traditionally strongly bound to cooperative housing. The key priority in this period was the development of the banking sector and fighting inflation, which was particularly important also to the development of the residential market.

The first direct impulse to start developer construction of dwellings was a slump in new cooperative construction combined with privatization of contractors. Some firms saw a chance in converting from building companies to entities which both constructed and sold dwellings independently. Gradually, also firms established by foreign investors emerged, initially expatriate capital companies and later companies established by foreign developers.

The first developers had to face problems which are now hardly imaginable. The Polish law provided no simple solutions alternative to the mechanisms functioning in cooperatives. Obtaining a construction loan was difficult and also very expensive due to high inflation. For this reason, Adam Zaremba-Śmietański, for a Krakow-based company Geo, proposed a method of financing projects under construction by raising capital in limited liability companies which had future inhabitants as their shareholders. In 1994 the Parliament passed a bill on the ownership of dwellings, which defined the basic mechanisms for transactions with condominium dwellings and which established the market's operational framework for the next eighteen years until 2012, when the act on protection of buyers' rights came into effect.

The years 1990-1995 also saw fundamental changes to the construction technology of multi-family residential developments in Poland.[1] Introduction of market economy resulted in falls and divisions and privatization of large state-owned housing conglomerates, employing from several hundred to several thousand workers. Simultaneously, the dominant large panel system began to retreat. While in 1990 over 80% of completed buildings were constructed in prefabrication technology, already in 1994 more than a half were built in an enhanced traditional or monolithic technology. As the developer sector evolved, prefabricate-based technologies were completely replaced by monolithic reinforced concrete constructions for the larger buildings and different variants of enhanced traditional technology for the smaller. This allowed better adjustment of buildings to land plots located within the inner urban fabric and improved architecture by offering more attractive design and functional solutions.

Innovation was visible especially in the segment of dwellings offering the then-highest possible standard and increasingly often called apartments (in distinction from units built mostly by housing cooperatives). The innovation showed in functional solutions (sometimes adopted from abroad), employed both for individual dwellings and for whole buildings. It was then when notions such as penthouse, master suite, or wintergarden started to appear for the first time in Poland, and glazing, sandstone cladding or ceramic cladding were used instead of plaster. We need to remind that around that time (i.e. 1994) a new Construction Law was passed in the form of an essential legal act comprehensively regulating important aspects (standards, procedures) of design and construction market.

[1] See: Kirejczyk, K, Łaszek, J., "Vademecum developera", KIN, Kraków, 1997

In the second half of the 1990s, as the economy expanded, the hyperinflation was under control and the situation of households improved, the demand for dwellings in higher standards began to grow. In Warsaw, an additional impulse was also a demand for dwellings for rent by foreign managers and employees of diplomatic institutions. As the demand outpaced the scarce supply it became common practice to launch sales prior to construction start and to finance the implementation process mostly with buyers' prepayment. At the same time, in the face of a still high inflation and the need to valorize the quickly rising construction costs, the prices of dwellings were indexed with inflation rate or established in dollars. In these conditions, developer activity became highly profitable, and the risk relatively limited. This caused a real boom of development companies, greatly varied in terms of the level of experience of their managements, financial resources and visions of development. The second half of the '90s saw development companies being established by banks, real estate agencies and construction companies – both leading, such a Mostostal Export or Exbud, and multiple small contractors. Developer activity was becoming an important or dominant type of activity also for firms previously operating in entirely different sectors, of which one instance is Echo Investment.

The end of the '90s in Poland was also the first period of establishing of a great amount of development companies by foreign capital. The most courageous at that time were Israeli companies, although gradually also Scandinavian, German, French and British capital began to appear. Their entrance to the market brought new diversity of architectural solutions and marketing strategies. However, already then the Polish companies were definitely playing the leading role.

The scale and oscillations of demand in the '90s were greatly affected by tax reliefs. It is worth reminding that these comprised both PIT reliefs for natural persons purchasing or building dwellings (or houses) for their own needs as well as co-investors for buildings with dwellings for lease. A great support for to the sector was also a zero VAT rate for sales of developer-built dwellings. From today's perspective we can clearly see that thanks to those reliefs the housing construction in Poland began to develop earlier and more dynamically than in the other countries of the region.

Unfortunately, late '90s brought gradual process of cancellation of tax reliefs. First, the character of the relief changed (deduction from tax instead of income reduction before taxation), then the relief on lease was eliminated with the end of 2000. The end of 2011 brought an end to the so-called "large housing relief" and the zero VAT rate. What was worse, each announcement of tax policy changes caused a destabilization of the developer market, artificially inflating the demand prior to the change and lowering it after the new regulations entered into force. This period was also the least favorable in terms of demography – the age groups entering the labor market were relatively sparse. The abovementioned factors as well the economic slowdown in the years 2001-2001 resulted in a first developer market crisis. Its major symptoms were: a drop and later a stabilization of

prices, reduced number of sales transactions, cooperatives and some companies withdrawing from implementation of new projects as well as difficulties with financing developer projects. Bankruptcies of development companies, in turn, were relatively scarce, although a portion of them decided to close their businesses.

As the developer market expanded various initiatives aimed at creating a representation for the industry and ground for exchange of opinions began to appear. One factor particularly strongly binding the sector was the need to develop and express a common stand on planned unfavorable changes to the system of construction reliefs. These experiences lead to formation of the Polish Association of Developers (Polski Związek Firm Deweloperskich) in 2002, which soon became the main body representing and integrating the milieu of Polish developers.

Over the next decade (i.e. 2001-2010) the events in the developer market were largely shaped by the following phenomena and processes:

- A still low level of satisfaction of housing needs, compared to other EU countries and the then-aspiring members (excl. Slovakia) as well as compared to the aspirations of young members of the society. The gap was visible both in statistics (number of dwellings per 1000 inhabitants, floor area per 1 inhabitant, average units), and in quality (age, standard).
- Taking control over inflation and, consequently, drop of interest rates to less than 10% in 2002 as well as gradual popularization of foreign currency loans, which brought massive growth of new loans. Growth of demand for loans was additionally encouraged by introduction of an interest relief allowing to lower tax base by deducting expenses incurred for repayment of interest on a loan taken out to finance a residential project. Announcement of cancellation of this relief with the beginning of 2007 caused additional increase of an already noticeable surplus of demand over supply in 2006, followed by skyrocketing prices.
- Gradual coming of age of persons born in the second demographic peak (i.e. between 1977 and 1986). During the decade, around seven million young people in total entered adult life (were over 24 years old), while some of them started families or independent households. Until 2010 each subsequent year brought increasingly favorable demographic conditions for demand growth.
- 2004 introduction of changes to regulations on planning (elimination of general plans), which lengthened permit procedures and, in consequence, curbed the supply in the conditions of a rapidly growing demand.

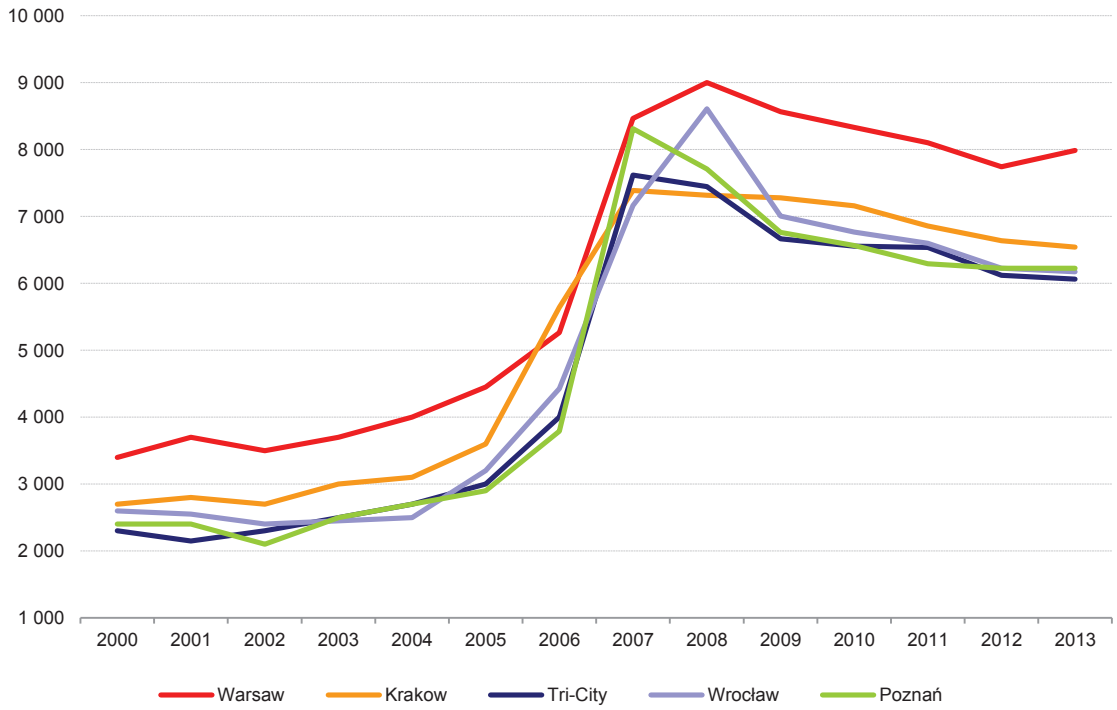
- Poland's accession to the EU (2004) and the consequent inflow of pre-accession, accession and structural funds as well as foreign investment. This was the key phenomenon for a nearly four-year period of fast economic growth.
- Clear concentration of new investment (particularly new jobs) and a following domination in terms of the economic growth rate of five major urban centers (Warsaw, Krakow, Poznań, the Tri-City and Wrocław), resulting in increasing migration to these cities.
- Inflow (especially after 2004) of foreign development companies, which contributed to rising numbers of dwellings available for purchase in the largest urban centers. Some of the firms, however, bought land at unrealistically high prices, based on hugely overestimated forecasts of dwellings sales prices.
- Inflow of foreign speculative capital (2006-2007) and spreading phenomenon of speculative investing in the residential market practiced by Polish investors. From May 2007 a rapid outflow of speculative investors from the market.
- Unprecedented rise in foreign currency (Swiss franc) new loans in 2007/2008, which sustained the weakening demand and partly delayed and slowed down price depreciation. At the same time (since the end of 2007), a growing conviction that the real estate prices will inevitably fall.
- The credit crunch (September 2008) – global bank and financial crisis, and in Poland also a collapse of new mortgage loans and severe cuts in crediting of new developer projects.
- From mid-2009 careful and slow regaining of optimism both in the banking sector and among buyers and developers („Poland as a green island"). Favorable conditions for issue of corporate bonds.

It is hard to overestimate the importance of the mortgage market's development to the development of the country's residential construction as a whole. Although granting credits for housing under conditions based on the American standards began already in 1992 in the Polish-American Mortgage Bank (Polsko-Amerykański Bank Hipoteczny) as well as based on standards recommended by the World Bank and adapted to the Polish situation in the PKO BP Bank (double-indexed mortgage), the majority of transactions in the market were in cash, largely due to high inflation and interest rates, also for loans denominated in USD. Crediting reached significant scale after 2002, when low inflation and interest rates in short time caused a massive boost of credit availability, and competition in the banking sector resulted in a dozen-or-so banks fighting for clients.

The past decade brought profound changes to the Polish residential market, showing most strongly in soaring prices. The appreciation occurred mostly in the 2004-2007 period, first in the primary market and later in the secondary and other segments of the market. Its principal

source was a huge disproportion between the demand and the supply in the fastest growing cities with best labor market situation. This was also related to the geographic distribution of investment demand, which concentrated on major urban centers and second-home markets. Price appreciation in subsequent cities was , on the one hand a result of expansion of areas with faster economic growth, and on the other of a kind of "national convergence" of striking price disproportions between different parts of the country.

Graph 1. Average asking prices per sqm in five most active agglomerations in Poland between 2000 and 2013.



Source: REAS

Additionally, in global and European scale this period was characterized by an exceptionally excessive liquidity of financial markets. The availability of capital was many times greater than the supply of investment projects able to be finance by it. From the viewpoint of the Polish real estate market this meant, on the one hand, a possibility for developers to finance purchase of land for their investment with a loan and reduction of the required equity in crediting of the project, and on the other a greatly increased creditworthiness of residential buyers and an inflow of numerous institutional investors interested in purchase of dwellings for speculative purposes.

The years 2004-2008 were also a period of a rapid expansion of the development industry. The demand considerably outpaced the supply, which caused the prices to rise. Stability of demand was guaranteed by a growing supply of mortgage loans in CHF, which were noticeably cheaper than in PLN. The largest of share of loans in Swiss franc in new loans was

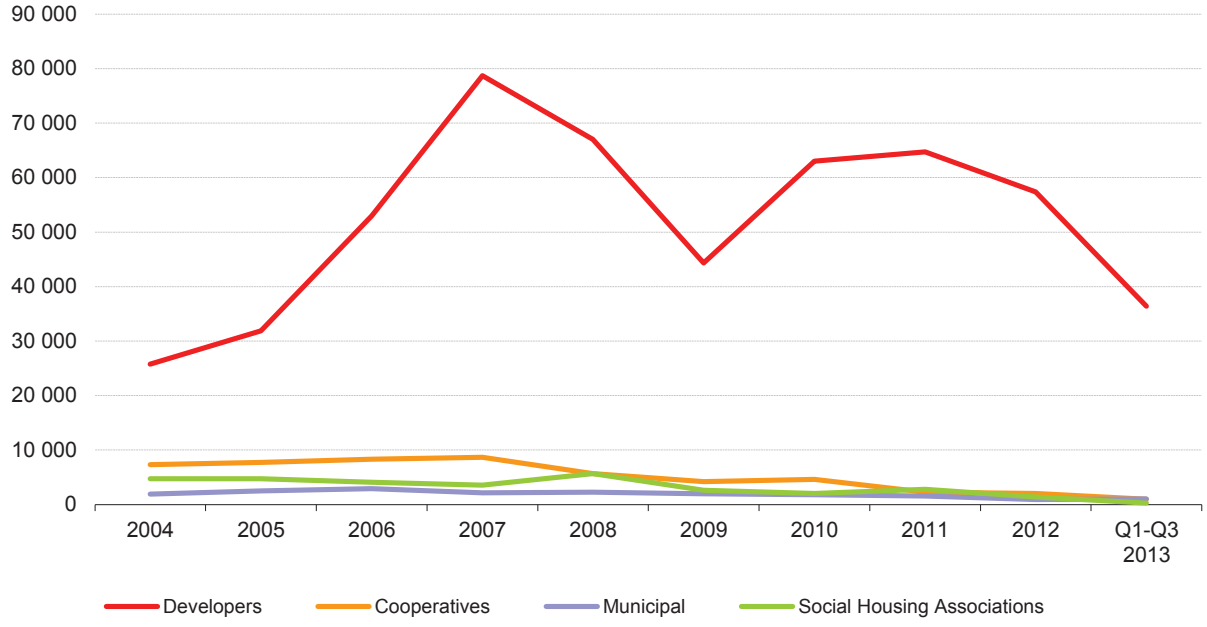
recorded the first three quarters of 2008. Particularly favorable, compared to the rest of the country, was the situation of inhabitants of a small group of five Polish metropolises – „the powerhouses of the market", enjoying fast expanding economy, low unemployment, relatively high incomes and stable demographic situation. These were: Warsaw, Krakow, Wrocław, the Tri-City and Poznań. The cities saw and planned new jobs. They were also centers for the dynamically developing banking and financial sector and multiple competing banks ensured the availability of mortgage. At the same time the quality and volume of residential stock were far from the aspirations of the quickly expanding middle class.

Inflated prices of dwellings in Poland combined with good economic prospects and risk reduced thanks to Poland's accession to the EU resulted in a fast growing number of new development companies established by foreign investors. The largest portion of them were created by Spanish, British, Irish and Israeli capital, although it would be difficult to point to a country that would not have at least one new company planning or implementing a project in Poland.

Simultaneously, numerous new firms with Polish capital began to crop up, and the already functioning ones increased the scale of their operations. Profitability of projects skyrocketed, and ever more bold concepts appeared (including a dozen-or-so ideas for spectacular skyscrapers). A few financial groups were planning to implement projects of a scale unheard of before and deserving to be called new towns. Construction of the largest new residential district in Poland implemented according to a coherent urban concept, i.e. Miasteczko Wilanów in Warsaw gathered momentum. However, also the prices of land and construction costs were growing.

In the face of such conditions, development prospects for the residential market in Poland were seen as excellent, both by developers and by analysts and the financial sector. Developers' optimism was reflected in a record-high number of unit construction starts in 2007.

Graph 2. Number of unit construction starts by developers between 2004 and H1 2012 as compared to construction by housing cooperatives, municipal and construction by Social Housing Associations (TBS); accumulated data for Poland



Source: GUS

Starting from 2007, the Polish developer market began to feel negative consequences of the events occurring in the global financial market. The beginning of the global crisis was the meltdown in the US housing market in May 2007 due to irrational development of the market of subprime mortgage products. For the Polish market, a consequence of this phase of the crisis was outflow of foreign investors who earlier sought property for speculative purchase. Gradually, problems with fund raising began to be visible in some foreign capital firms, especially the ones from Spain and Ireland.

In successive quarters the experts and the public opinion began to receive increasingly disturbing information on the scale of risky investments and growing number of banks holding junk bonds. September 2008 saw the collapse of Lehman Brothers, and the following phenomena occurring in the banking and financial sector all over the world brought about a global crisis of such a scale that the leading experts described it as the greatest crisis since the World War II. Panic spreading due to lack of transparency of the largest financial institutions, combined with a maze of interconnections between institutions „too big to fail" caused the credit market to collapse.[2]

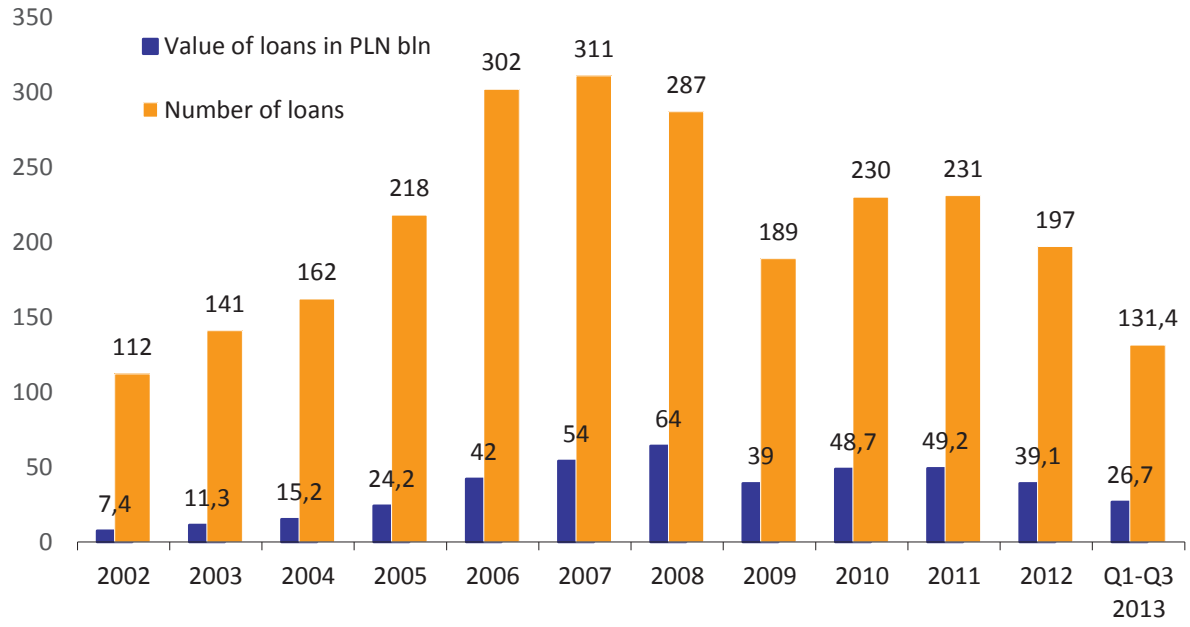
As a consequence, the Polish economy has slowed down from a 7-5% GDP growth to 1.6% in 2009 (still one of the best results in the EU at the time). The income growth rate dropped, the

2 Final Report of the National Commission on the Causes of the Financial and Economic Crisis in the United States, U.S. Government Printing Office, January 2011. www.gpo.gov/fdsys/pkg/GPO-FCIC/pdf/GPO-FCIC.pdf

unemployment grew, but most importantly the credit market saw a breakdown in both developer loans and mortgages.

The way financial institutions perceived the real estate sector changed: it became a high-risk sector. From November 2008 to mid-2009 banks in Poland, just as in other European countries (the credit crunch) almost entirely suspended new loans for developer projects and drastically reduced granting of mortgage loans for natural persons. According to the Polish Bank Association's (ZBP) data new loans dropped by as much as 57% in H1 2009 relative to H1 2008 (in 2009 the y/o/y drop was 25% compared to the value of loans granted in 2008). Secondly, from 2009 the credit market became dominated by loans in Polish zloty. As a consequence of this currency shift, tightening lending conditions, growing margins and interest rates for loans in PLN as well as slowing income growth, the creditworthiness of potential buyers sunk.

Graph 3. Number (in thousands) and value (in PLN bln) of new mortgage loans in Poland in the years 2002 – Q3 2013). Accumulated data for the whole market (primary, secondary and single-family construction).



Source: Polish Bank Association (ZBP), AMRON-SARFIN

Particularly important for the residential market was the labor market situation of the young. As an after-effect of the 2009 crisis, positive growth trends in young adult employment decelerated. This additionally curbed their ability to take out loans for residential purchase. In 2010, the employment index in the 15-24 and 25-34 age groups continued to decrease.

The third direct consequence of the crisis, which considerably hampered the housing demand, was the psychological factor. Some potential buyers resigned from purchase for fear of deterioration of their personal or their family's financial situation due to possible job

loss; others, who had sufficient incomes, felt that the prices should drop even further before they decide to make the purchase.

New, large-scale developer projects were particularly vulnerable in this situation. Financing of developers was at that time limited to continuation of already signed loan agreements, while decisions on financing new undertakings were being indefinitely postponed or rejected altogether.

The Polish developer companies' reaction to the 2009 crisis was to slow down launching of new projects, while many of the ongoing schemes were withdrawn from the market in order to be redesigned or reduce their size and adjust them to the new market conditions (change of the living/commercial area ratio, reduction of the average floor area of units, lowering of finishing standards and cost reduction and most importantly reduction of prices) as well as to adjust the project to the altered expectations of financial institutions (type of security, amount of equity, minimum presales, etc.). Instances of such actions may be found all across Poland.

2. The developer sector's input into construction of Polish cities and the present shape of the market.

When assessing the Polish developers' achievements in the past decade, we need to highlight that it was mostly them who took on the task of creating new multi-family housing stock in Poland. This, on the one hand, was a result of a massive slowdown of investment activity of housing cooperatives, and on the other of elimination of the social tenement housing construction program as well as a very limited scale of municipal construction. Simultaneously, the demographic situation caused rapid growth of residential demand, especially in the largest cities, while dwellings available in the secondary market were unable to satisfy the growing aspirations of the young generation.

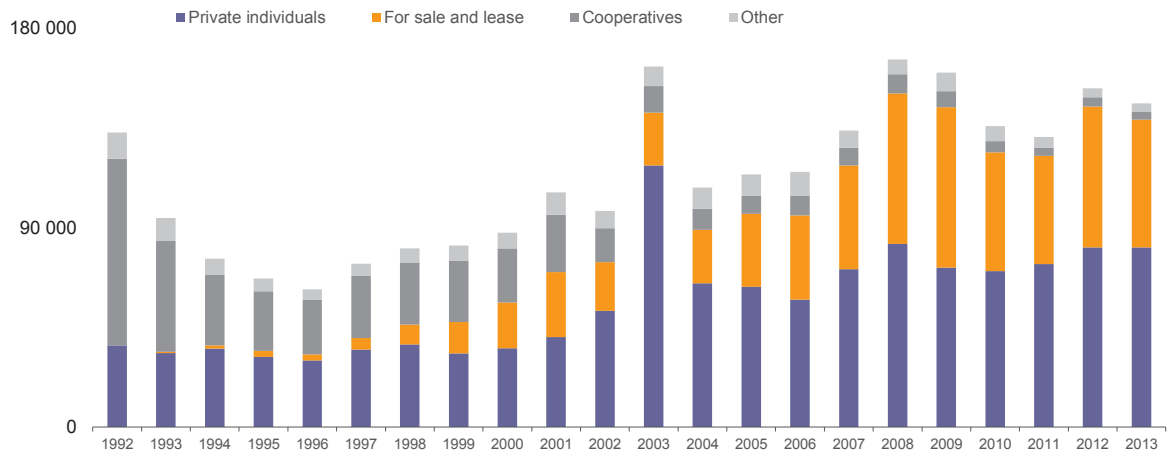
Dwellings completed by developers account for some 90% of all units constructed in multi-family buildings in Poland. They are dominant especially in the largest urban centers, however they do have vital importance for the landscape of many smaller localities.

According to data published by the CSO, over the 2002-2011 decade development companies completed a total of at least 430,000 units (i.e. dwellings and houses) countrywide. These statistics comprise a category of units described as "for sale and lease", however the figures ought to be extended by an additional several thousand units annually, implemented by small companies and classified by the CSO as private individual output.

In the over ten-year history of the industry, the highest number of units were delivered by private developer companies in 2009: in excess of 72,300[3]. This was a result of the aforementioned exceptionally favorable conditions as well as high figures of construction starts in the 2006-2008 period. In this situation it would be justified to assume that the 2009 results are a mid-term maximum of output capacity of the sector under the current economic conditions.

[3] Statistical category „for sale and lease"

Graph 4. Dwellings completed between 1992 and 2013 in Poland by individual categories of investors.

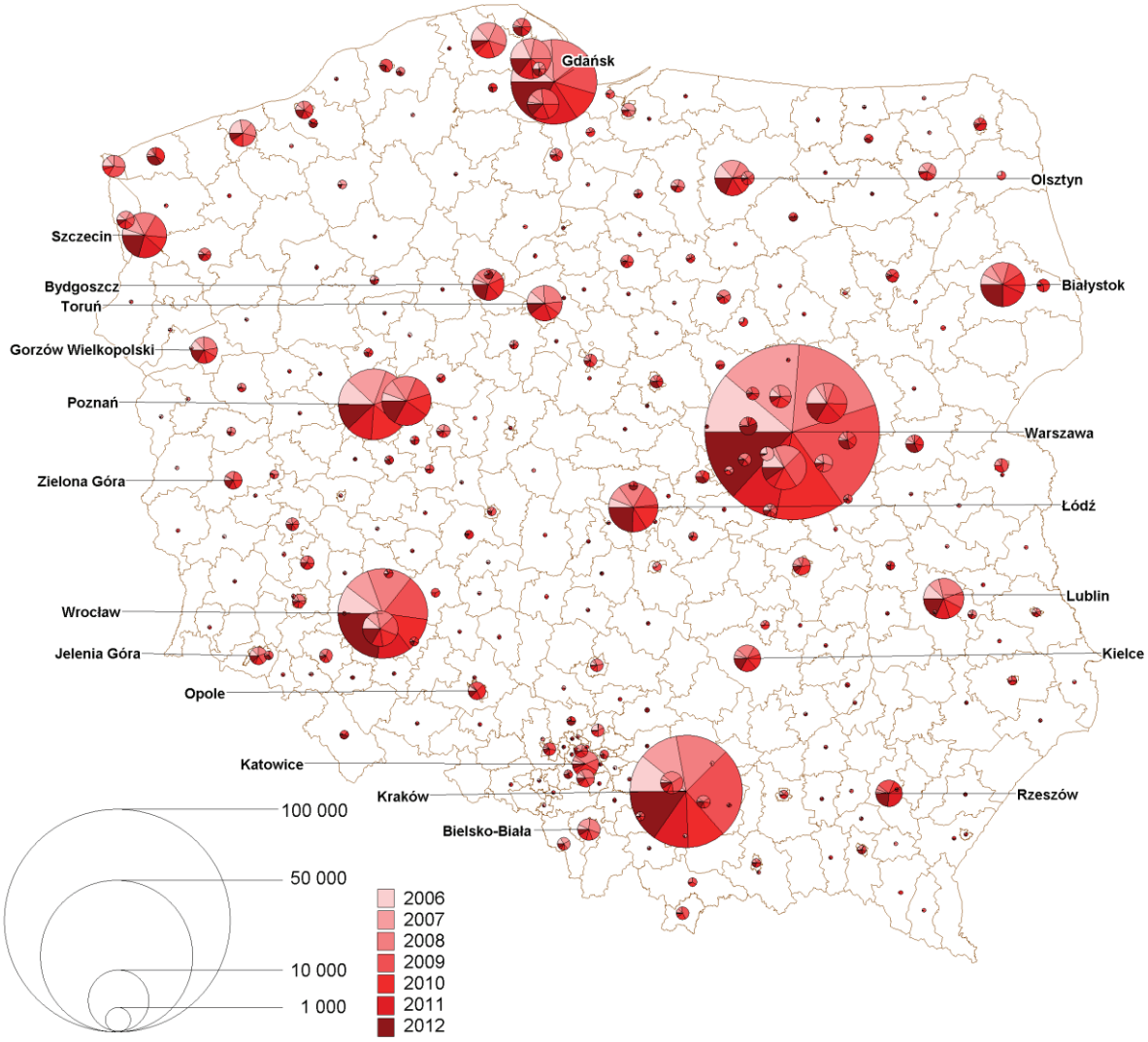


Source: GUS

Development companies play a dominant part in implementation of multi-family projects in Poland. Investment activity of housing cooperatives is in retreat: in 2011 countrywide they completed around 3,800 units in total, most of which were condominiums. Last year, the remaining institutional investors (communes, enterprises and Social Housing Associations) have delivered a total of 4,800 dwellings.

Multi-family construction for sale today concentrates largely in several urban centers which have the best economic situation (Warsaw, Krakow, Wrocław, the Tri-City and Poznań), and are at the same time capitals of the only regions with positive migration balance. From this viewpoint we may say that the production output is rational. More than a half of all dwelling for sale in Poland are constructed within the limits of these cities, while adding units built in the adjacent localities gives them a share of some two thirds.

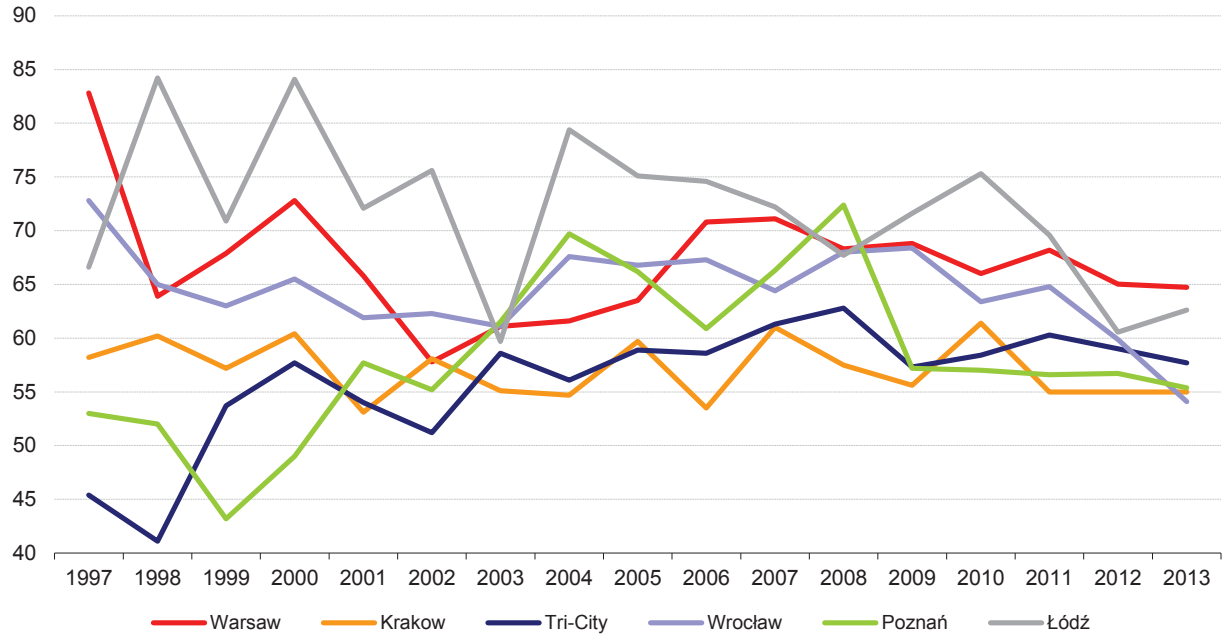
Map 1. Dwellings and houses for sale and lease and by housing cooperatives completed in individual districts in the years 2006-2012.



Source: CSO

The output of developer companies is clearly dominated by dwellings in buildings of three or more units. They constitute roughly 95% of all residential units, while the remaining 5% are single-family houses. An average residential unit completed in 2009 by developers in Poland had a floor area of 65.7 sqm, however this includes also single-family houses. A more thorough examination of the statistical data allows to conclude that depending on the characteristic of a building, floor areas of units in multi-family developer construction averaged 55-63 sqm.

Graph 5. Average floor area of units completed in six largest residential markets in Poland in the years 1997-2011 ("sale and lease" category).



Source: GUS

An average period of project implementation, i.e. from its announced construction start to obtaining occupancy permit has for a number of years now been some 24 months, which attests to efficient organization of entities operating in this sector.

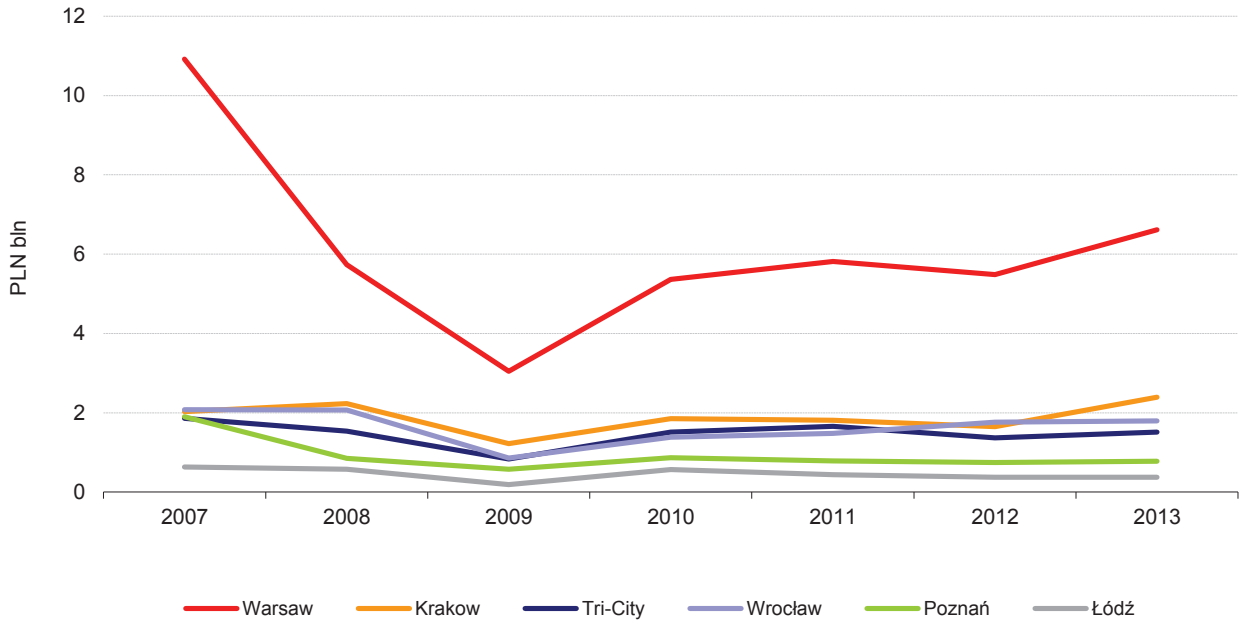
The total value of sales in gross prices (incl. VAT) understood as a total value of sales contracts concluded by all development companies countrywide in 2010 and 2011 when the results were comparable is estimated at around PLN 22-23 billion. 2012 sales will most likely be marginally lower.

The above value is comparable to a sum estimated to be the annual costs incurred by Poles for construction of single-family houses in individual investment. While estimating the value of the market we need to remember that an integral part of every project, apart from the dwellings themselves, are parking spaces in multi-space or individual garages, which are also sold to buyers as well as often implemented commercial premises.

The major factor affecting actions of the development market participants in the first half of 2012 was the late-April introduction of a new act on protection of the residential buyers' rights. On the one hand, as expected, the act triggered earlier sales launches of many new projects or phases and, consequently, a soaring number of units for purchase. On the other, in the face of many ambiguous regulations, it has caused confusion among developers, buyers, notaries and bankers learning to operate in the new formal and legal conditions. The figures presenting the sector's performance at the end of June may therefore greatly diverge from the general medium-term trends and their interpretation ought to take into consideration the unusual events occurring in the market environment. The act's impact will

undoubtedly be felt in the final quarters of 2012 and observed in the changes to the sector in the long-term perspective.

Graph 6. Estimated value of the primary market in PLN bln for: Warsaw, Krakow, Wrocław, the Tri-City, Poznań and Łódź between 2007 and 2013.

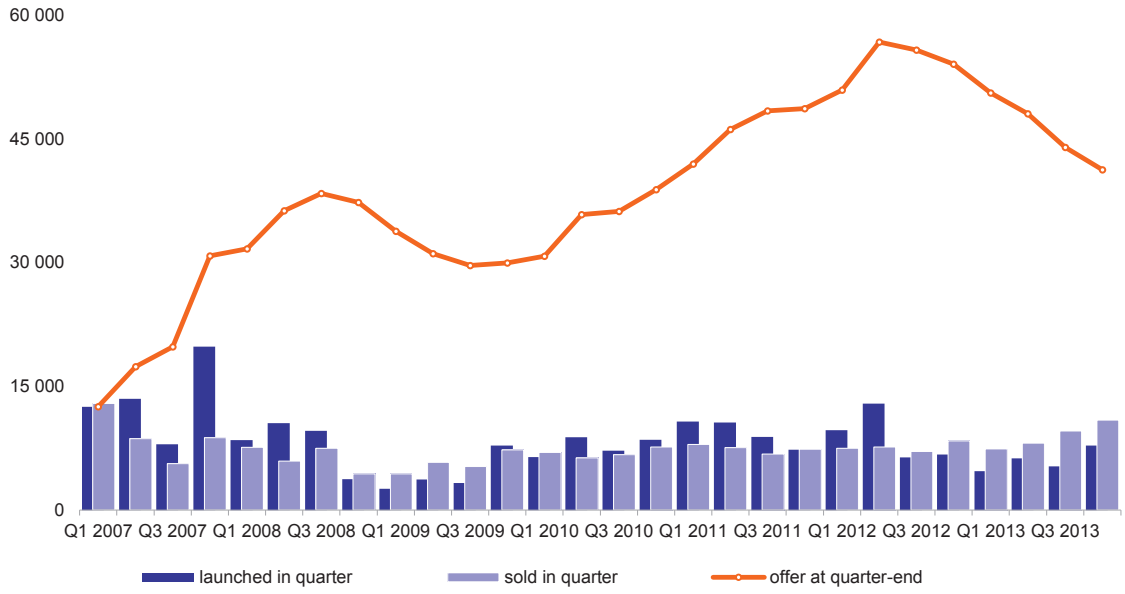


Source: REAS

At present, the scale of 2012 sales in the developer market in Poland is estimated at some 60,000-65,000 dwellings and single-family houses. At the same time, the number of residential units offered for sale has reached the highest level ever recorded for this market. According to REAS market monitoring, at the end of H1 2012, the number of units available for purchase in six urban centers with the most active primary market (Warsaw, Krakow, Wrocław, the Tri-City, Poznań and Łódź) amounted to nearly 56,700 and grew by more than 23% over the past 12 months. At the end of H1 2012 the offer in the largest cities comprised: over 21,000 units in Warsaw; 10,800 units in Krakow; 9,500 units in Wrocław; 7,900 units in the Tri-City; 4,600 units in Poznań and over 2,800 units in Łódź. The two last cities saw relatively the weakest offer growth, nevertheless its size was record-high in all of the cities.

Over the past twelve months sales of around 29,400 dwellings was secured, a 1.5% drop compared to the same period a year earlier (i.e. Q3 2010 – Q2 2011). The relatively good sales, however, also had its price: in the face of the expanding offer and stable sales, attracting and service of buyers required more effort, while sales per average project decreased significantly. It is enough to remind that at the end of 2010 the offer comprised some 39,000 units.

Graph 7. Units launched for sale and sold quarterly in the primary market vs. Offer at quarter-end (accumulated data for Warsaw, Krakow, Wrocław, the Tri-City, Poznań and Łódź).



Source: REAS

Such vast offer size was a result of accumulation of a surplus of supply over demand since the end of 2009 over most of the successive quarters, and, particularly, an exceptionally high number of units released to the market in the January-April 2012 period in order to avoid the requirement of setting up escrow accounts in the form regulated by the act on protection of buyers' rights. In Q2 2012, and in practice in April alone, the aforementioned six urban centers launched sales of nearly 12,900 dwellings. The result is up 33% compared to the previous quarter and up 21% y/o/y. In the first half of 2012 the number of dwellings launched for sale totaled 22,600 for markets with less than 30,000 average annual sales, while the offer reached 49,000 units already in the early Q1.

REAS' data on the number of dwelling releases is consistent with the CSO's statistics after the second quarter. Countrywide, developers started construction of 35,000 units (up 21.9% compared to the same period last year) and were granted building permits for over 40,000 units.

Such intense developer activity, however, was not irrational. Securing at least a several-month reserve of units for sale under former conditions seemed fully justified in the face of a vague picture of market functioning in both developers' relations with their clients and, especially, banks after the act takes effect.

The market is still dominated by units under construction, comprising 66% of all offered dwellings, however the share of completed unsold units increased by 8% compared to the previous quarter and by over 29% in twelve months. At the end of June there were around

4,600 such units in Warsaw and 12,500 in all six urban centers. Considering the substantial number of completions scheduled for H2 2012, the share of ready unsold units will most probably grow in the coming 2-3 quarters.

3. The challenges of the future

It is worth highlighting that, despite lack of state support, over a decade the sector has developed a capability to complete – in its peak – nearly 100,000 residential units. Development business in Poland is at present run by several thousand entities of highly diverse scale of activities and potential. On the one hand there are the market leaders: firms such as Dom Development, JW. Construction or Polnord, public limited companies listed on the Warsaw Stock Exchange, implementing simultaneously at least a dozen various projects in different cities and different market segments, selling from one to two thousand dwellings annually. On the other, there are hundreds of small companies, usually combining the roles of a developer and a general contractor, implementing typically up to two projects at the same time, with annual sales of a dozen to several dozen units.

The sector is still strongly scattered: firms delivering more than 100 units annually comprise a few percent of the market in the largest cities. We may expect that several major Polish developers each have a share of some 2% in the country's market, while the remaining companies, considered as large, have a less than 1% share.

The strength of the Polish market is its broad base of potential clients. Unlike in some of the post-communist countries, where new dwellings are still available only to the high-earners, in Poland the main group of purchasers are young people who either buy their first homes for their own needs or move-up to improve their living standards. This is possible partly thanks to crediting of purchase of dwellings under construction offered by most banks, and partly thanks to mobilization of resources, often by whole families, to provide young couples with a new home.

At the same time, due to strong competition, dwellings built in the low-end segment are of relatively high quality in terms of materials and functional and aesthetic solutions.

In many respects, the Polish developer market may be described as quite mature, especially considering phenomena occurring in the other post-communist countries. The maturity manifests itself in the market's functioning, financing mechanisms, communication standards as well as access to information on the market, collected by specialized entities such as REAS. In this sector's activity, there exists practically no illegal construction or long-term inhabitation of formally uncompleted buildings, which is sometimes seen in other countries. An essential element of this market is also the work of PZFD (PAD), an association of companies which supports the processes of information exchange and setting standards, which reviews or supports legislative actions and which promotes effective solutions and encourages build up of trust between developers, buyers and institutions financing the market. This does not mean, however, that the Polish developer market is free from threats or that as of today its future looks entirely bright.

The latest macroeconomic forecasts confirm that the year 2013 will be a period of economic growth slowdown and at the same time a period of consolidation of public finance, which on the one hand will manifest itself in a decreased level of investment in the public sector, and on the other – a stricter tax policy resulting in lower real incomes of Poles. One of the possible consequences of this might be reduction of the number of transactions taking place in the residential market, yet unless other negative factors appear, its scale should be less dramatic than in the first half of 2009. Comparing the current situation with 2009, we need to point to two important positive phenomena. Clearly, the current offer today is much better adjusted to buyers' financial possibilities than at the beginning of 2009; the offer is generally "sellable". Secondly, price to income ratio is now much closer to the long-term average for the Polish market. Finally, the vast majority of both banks and developers are prepared for the upcoming slowdown and the possible lengthening of sales period, while developers' plans for 2013 are much more conservative than the completions scheduled for 2012.

Also the scale of impediments caused by the new act on protection of buyers' rights is likely to recede with each subsequent month, until the reserve of units offered in the market shrinks and developers begin to apply to banks for escrow accounts more often. Most probably, however, the process will be gradual and allow both banks and developers to develop and verify new cooperation mechanisms. Establishing of the account will surely be problematic for some companies, which will constitute another factor limiting new supply in 2013.

Statistics presented by the banking sector confirm the phenomenon visible in the market: it is increasingly difficult for potential buyers to take out mortgage loans, while the assessment of their creditworthiness is much more cautious today than it has been a year or two ago, let alone the boom period. The already largely limited importance to the primary market of the "Family's Own Home" program is also diminishing. The result of this is real demand, dependent mainly on the price policy adopted by developers.

On the other hand, most unfavorable crediting changes such as the dramatic shift in proportion of foreign currency and PLN loans, the tightening of creditworthiness assessment rules, the rising of margins or the coming into force of the act on protection of residential buyers' rights have already been introduced. Any further changes should definitely have less dramatic effect. The H1 2012 level of new loans will most likely cease to decrease and in long-term might even witness some growth. In the medium-term perspective, falling inflation should result in decrease of interest rates which, together with growing salaries, will have a positive effect on the average creditworthiness of clients. It is difficult, however, to expect this decrease in the nearest future.

The future market situation might be strongly influenced also by banks' policy towards developers. Already the end of 2011 saw some signals of the plan to limit the scale of crediting of residential investments both because the sector is often seen as risky, and due to

the potential threats to the image related to escrow accounts. In mid-2012 the concerns are being confirmed: in off-record talks and statements during conferences bank representatives announce a more cautious approach towards financing of new development schemes. Some banks have virtually withdrew from this kind of activity. At the same time, the outlook on sales of corporate bonds issued by development companies is also deteriorating. This means that in 2013 some companies might experience serious financial liquidity problems and be forced to further reduce their prices. They will also find it more difficult to obtain financing for their new schemes. These phenomena will cause dramatic differences between companies and entities with guaranteed financing or strong owners will gain considerable competitive advantage.

Finally, the developer sector might be greatly affected by the situation in the construction market, which is already alarming. Further reduction in the number of contracts due to investment plan cuts in the public sector and limitation of new investment in private companies might put some construction companies in a dramatic situation. Although this may mean lower construction costs, especially if the prices of basic materials also note a minor drop, the situation will certainly not act in favor of the image of the sector in the eyes of financial institutions which have a general tendency of placing developers and constructors into the same category.

Among factors which positively impact the demand are a probable further decrease of prices of residential units as well as exceptionally large offer, probably accompanied by a broad range of promotions. Also positive, although weaker than in the preceding years, should be the impact of demographic trends encouraging creation of new households. In the long-term perspective, however, the industry needs to ready itself for a gradual growth of importance of buyers, who already own homes and are planning a purchase to upgrade their housing conditions. A challenge for the whole society, including developers, is the increasing number of persons in retirement age. So far, their impact on the marketplace has been marginal, however, as those born in the first post-war demographic boom are now beginning to retire, the numbers will skyrocket.

It is difficult to point to any governmental actions aimed at supporting the housing market development in the coming years. Already Q3 2011 brought the first stage of closing of the "Family's Own Home" program, which is to be abandoned with the end of December 2012. Alternative solutions presented by the resort are at an early stage of inter-resort and social consultations. Despite earlier announcements, practically no other suggestions have been presented for the improvement of housing market. Although there exist plans of liberalization of some regulations regarding protection of tenants in institutional rental, in needs to be remembered that today profitability of investing in dwellings for lease is less competitive than other, much safer investment. Discussions take place on introduction of – yet another in the past twenty years – a savings program in the form of building societies. Apart from the question of finding finances for incentives for savers we need to mention that

the effect of such a program on the marketplace would be felt after several years from its start.

One of the challenges of the future is also the spreading application of eco-minded solutions, both the those lowering maintenance costs and those aimed at reducing harm to the natural environment occurring during the construction process, maintenance as well as future demolition. In this matter, we may expect not only regulations tightening requirements and increasing construction costs, but, hopefully, also some mitigating financial and fiscal regulations or partial subsidies.

As countywide statistics show, an average developer project is small, which translates into amount of work, time and, consequently, costs in the preparatory stage which are disproportionately high relative to the total cost. This issue could be solved by systematic preparation of investment land by local governments. However, the limitations imposed by the Ministry of Finance on local spendings will most likely result in an arrest of investments comprising infrastructure complementary to residential construction.

The boom and the crisis period proved that apart from measurable factors influencing residential demand, psychological factors also play a significant part in clients' decisions. In this context it seems unlikely that the second half of 2012 and 2013 brought a significant improvement of public mood.

Generally speaking, it should be emphasized that the current market situation is highly uncertain. For many of the discussed indicators which may influence demand and supply in the coming quarters, it is difficult to estimate their actual impact on the market or even the probability of their occurrence. It appears, however, that the housing industry is already largely immune to crisis phenomena. Together with the improvement of macroeconomic situation, the market should see return of optimism and buyers awaiting the best possible time to make a purchase. If this coincides with shrinking offer, it will stimulate a next cycle in this market, in a next, third, decade of activity of Polish developers.

5. US housing finance policy in the aftermath of the crisis

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The author wishes to thank the participants in the Narodowy Bank Polski workshop on Recent Trends in the Real Estate Market and Its Analysis for their helpful comments.

Article 5 Contents

Summary

The purpose of paper is to review the policy responses to the US mortgage market crisis and assess how much the market has changed. There were many contributors to the meltdown of the US mortgage market. As summarized by the Financial Crisis Inquiry Commission, the major causes of the crisis included a credit bubble fueled by low interest rates and imported capital, a housing bubble fueled by speculation and lax underwriting of mortgage loans, non-traditional mortgage instruments designed to improve initial affordability, incentive misalignments for participants in the mortgage market, government housing policy supporting mortgage lending to low and moderate income households, dependence on securitization for funding and excessive leverage in large financial institutions.

In the aftermath of the crisis there have been a multitude of legislative and regulatory initiatives addressing the perceived causes of the crisis. However, despite record levels of distress and taxpayer bailouts of major housing finance institutions it is surprising how little has changed in the US. The government sponsored enterprises and guarantee providers still dominate the market. The long-term fixed rate mortgage is still the overwhelming mortgage instrument provided to consumers. Sub-prime and Alt A (limited documentation) lending disappeared but is creeping back on the fringes of the market. The Dodd-Frank financial regulation and reform legislation has created a massive increase in compliance costs for lenders and slowed the flow of new mortgage credit but has not significantly changed the housing finance system. Important aspects of the legislation such as risk retention have yet to be implemented.

The lack of meaningful change in the US housing finance system, the continued dependence of the economy on housing and the mortgage market on government support suggest that important lessons about the causes of the crisis have not been learned and a repeat of the boom and bust could happen.

Keywords:

Mortgages, regulation, government-sponsored enterprise

JEL Classification: G21 Financial Institutions Mortgages

1. Introduction

The causes and consequences of the US mortgage market meltdown have been extensively analyzed and debated over the past 5 years. The Financial Crisis Inquiry Commission issued a 662-page report analyzing the causes of the crisis in 2011 (FCIC 2011). The Commission's majority report identified many contributors to the crisis focusing on regulatory failure to spot and stop excessively risky practices. They pointed to the collapse in mortgage lending standards, lack of oversight of the derivatives market, lack of regulation of the shadow banking system allowing extraordinarily high leverage and off-balance sheet finance, a flawed rating agency model and failures of corporate governance and risk management as the primal causes of the crisis.

With a crisis of this magnitude it is not surprising that there are conflicting views on its causes. The Commission's report contained two minority views. The first emphasized the global nature of the crisis pointing to housing bubbles and financial firm failures in other countries (Hennessey et. al. 2011). The major causes of the crisis included a credit bubble fueled by low interest rates and imported capital, a housing bubble fueled by speculation and lax underwriting of mortgage loans, non-traditional mortgage instruments designed to improve initial affordability, incentive misalignments for participants in the mortgage market, government housing policy supporting mortgage lending to low and moderate income households, dependence on securitization for funding and excessive leverage in large financial institutions.

A second dissenting view focused on government housing policy to channel funds to low and moderate-income borrowers (Wallison, 2011). The government-sponsored enterprises (GSEs), Fannie Mae and Freddie Mac, were subject to housing goals that mandated that a majority of their purchases be for loans to borrowers at or below area median income. Depository institutions were subject to the Community Reinvestment Act that encourages them to provide loans in proportion to the deposits they receive in areas they lend with focus on low and moderate-income neighborhoods.

The purpose of paper is to review the policy responses to the US mortgage market crisis and assess how much the market has changed. In section one we briefly identify the causes of the mortgage market crisis. Our focus is not to come to a particular answer but rather to create a context for the subsequent policy initiatives undertaken in the name of housing finance reform. In section two we review the major legislative and regulatory actions taken since 2008 to reform the housing finance system linking them

with the contributors to the crisis. In section three we review the current state of the housing finance system comparing its structure and performance with the period preceding the crisis.

The major conclusion of the paper is despite record levels of distress and taxpayer bailouts of major housing finance institutions little has changed in the US. The government sponsored enterprises and guarantee providers still dominate the market. The long-term fixed rate mortgage is still the overwhelming mortgage instrument provided to consumers. Sub-prime and Alt A (limited documentation) lending disappeared but are creeping back on the fringes of the market. The Dodd-Frank financial regulation and reform legislation has created a massive increase in compliance costs for lenders with an excessive constriction of credit. Actions forcing lenders to repurchase mortgages have also had a great influence on mortgage underwriting.

There has been a significant tightening of underwriting of mortgages. A requirement that lenders ensure a borrower's ability to repay is surely a step in the right direction. However the prescriptive nature of legislation dealing with mortgage product characteristics has limited the choices available to consumers. While non-traditional and risky affordability products have largely disappeared from the market they are likely to return, offered by non-bank lenders, as the Federal Reserve begins tightening monetary policy. There have been a number of policy initiatives dealing with mortgage defaults – some successful and others not. However, legislative and judicial actions to deal with mortgage distress have weakened the collateral value of housing.

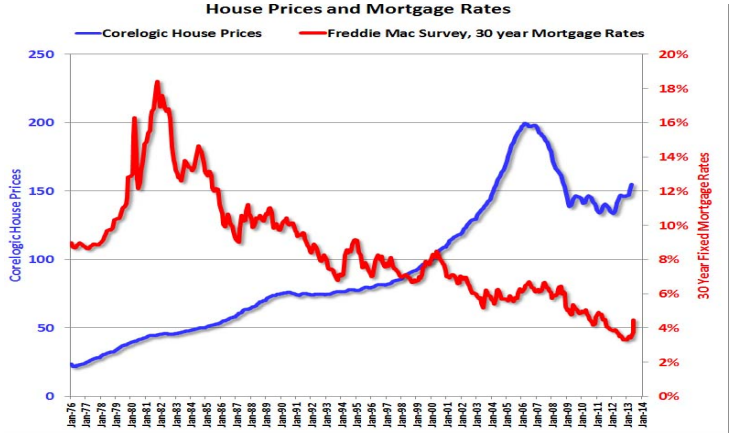
US private label mortgage securitization has yet to rebound reflecting regulatory uncertainty and the dominance of the GSEs. There has been little movement towards creating a legislative basis for covered bonds. Important aspects of the Dodd-Frank legislation such as risk retention have yet to be implemented and the mortgage Government Sponsored Enterprises have yet to be reformed.

Despite all the problems in the housing finance system over the past 5 years remarkably little has changed. The political allure for supporting housing and homeownership remains strong and the incentives of lenders to maximize volume and market share continue to exist. The lack of meaningful change in the US housing finance system, the continued dependence of the economy on housing and the mortgage market on government support suggest that important lessons about the causes of the crisis have not been learned and a repeat of the boom and bust could happen.

2. Causes of the US Mortgage Market Meltdown

The genesis of the mortgage crisis lies in the benign economic climate of the late 1990s and early 2000s ("the so-called great moderation"). The US and world economies enjoyed good economic growth combined with low inflation. Low consumer price inflation allowed central banks to keep interest rates low, a tendency that was accentuated in the aftermath of 9/11 when they flooded the market with liquidity to avoid a recession. As a result U.S. long-term fixed mortgage rates were historically low, increasing the amount of home a family could afford on a given income (Figure 1).

Figure 1: House Prices and Interest Rates



Source: Calculated Risk

The benign economic environment with low interest rates fueled a housing bubble that developed post 911. By almost all measures, the housing market enjoyed record growth – in homeownership, starts, sales and prices. House prices (nominal and real) skyrocketed in the early 2000s. The increase was fueled by the low mortgage rates, easy credit terms, government homeownership policy and speculative investment.

The rise in homeownership in the early 2000s (from 66 percent in 2002 to 69 percent in 2008) was due to a combination of falling mortgage rates, relaxed underwriting and numerous government policies designed to support it. Homeowners can deduct mortgage interest and property taxes and benefit from highly favorable capital gains tax treatment which lower the after tax cost of homeownership.

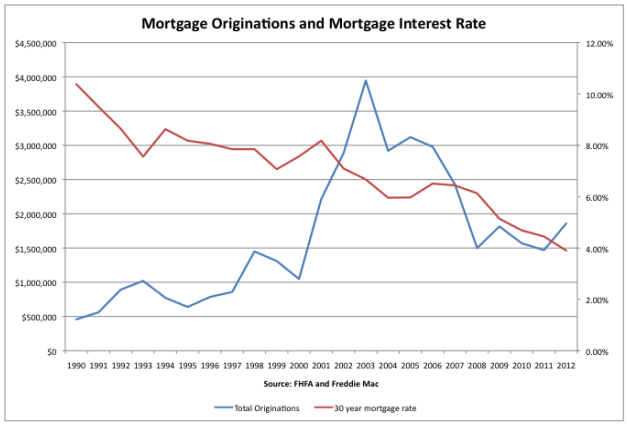
The 1997 change in capital gains tax treatment of homeownership may have fueled a speculative bubble. Prior to the change, homeowners were required to reinvest cumulative capital gains from the sale of a house into a unit of greater or equal value. They could claim a limited one-time exemption after the age of 55. The change dropped

the reinvestment requirement, greatly raised the exemption (to from $125,000 to $500,000 per transaction not just one time) and dropped the age requirement. These changes induced speculation as investors could pocket up to $500,000 (joint filing) tax-free.

It is well known the housing boom was stoked by federal policies underpinning the mortgage market. The debt financing and securitization activities of the government sponsored enterprises, Fannie Mae, Freddie Mac and the Federal Home Loan Banks ("GSEs") drove down the cost of mortgage debt. FHA (Federal Housing Administration – a government mortgage insurer) borrowers benefited from low downpayment mortgages and lower rates through Ginnie Mae (a government agency) guarantees. Congressional mandates required the GSEs to expand their financing to lower income and minority households leading them to relax their eligibility standards in order to meet their "housing goals". Community Reinvestment Act guidelines encouraged similar lending by banks.

Fueled by low interest rates, speculative housing demand and government policy support, mortgage originations rose to record levels (Figure 2). In 2003 the U.S. mortgage market recorded record originations of nearly $4 trillion, almost twice the level of 2 years prior and 50% higher than the year before. After building capacity to handle a record volume of originations, lenders were faced with a 30 percent decline in volume.

Figure 2: Record Originations and Falling Rates

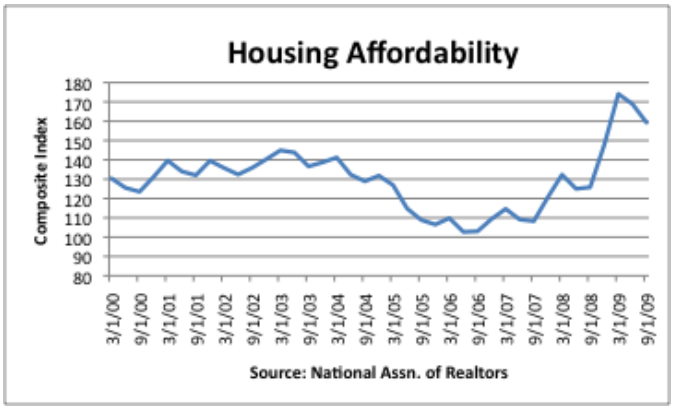


The combination of easy money and tax-free capital gains spurred US households to borrow more against their housing equity. The rate of equity withdrawal rose substantially during the housing boom accounting for 6 to 9 percent of household

disposable income between 2003 and 2006 (Greenspan and Kennedy 2006). Borrowers took out equity through high LTV loans, cash out refinance and second mortgages.

However, as rates began to rise after reaching their lows in 2003 and house prices continued to appreciate, housing affordability began to wane. Figure 3 shows the drop in housing affordability. The National Association of Realtors Index, which measures the ability of the median family to afford the median home using a 30-year fixed rate mortgage, dropped from 138 in late 2003 to 104 in June 2007.[1]

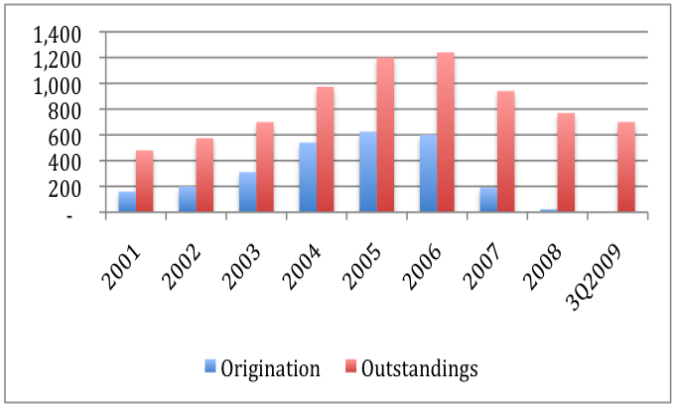
Figure 3: Housing Affordability



Source: National Association of Realtors

To keep volumes up, the mortgage lenders relaxed standards. Subprime lending rose sharply in 2004 and remained high through 2006 and early 2007 (Figure 4).

Figure 4 Subprime Lending



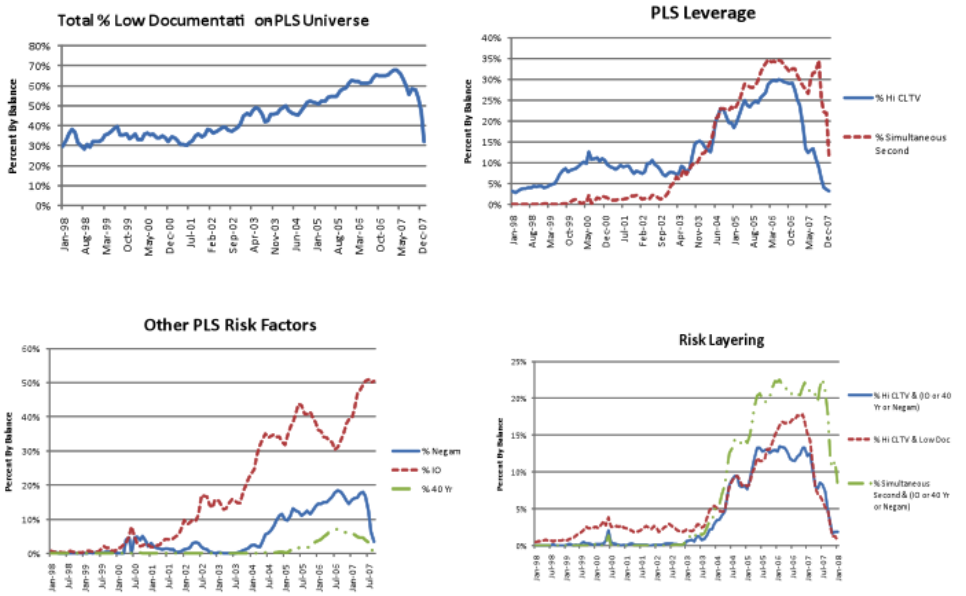
Source: Inside Mortgage Finance

During these years lending standards were progressively and aggressively loosened. It was not only the growth of subprime lending. Lenders began layering risk

1 A value of 100 means that a family with the median income has exactly enough income to qualify for a mortgage on a median-priced home.

by provided adjustable rate loans, either non-amortizing or negatively amortizing, at high LTVs with limited documentation on private label securitized loans (PLS Figure 5). The expansion of subprime lending and risk layering was accompanied by predatory practices. Borrowers who could have qualified for prime fixed rate mortgages ("FRMs") were often steered into subprime adjustable rate mortgages ("ARMs") that generated higher commissions for brokers and loan officers.

Figure 5: Risk Layering



Source: Loan Performance, Amherst Securities

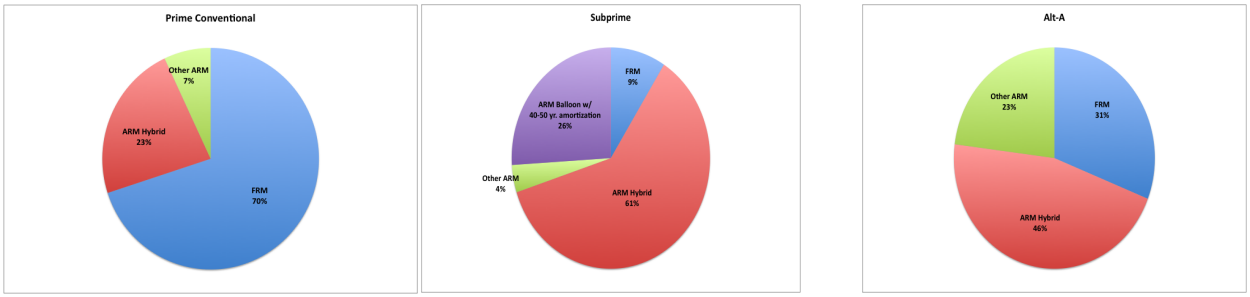
Piggyback lending increased the supply of second mortgages and higher combined loan-to-value ratio loans.[2] Silent seconds wherein the first mortgage lender/investor did not know about the second lien became more prevalent.

With affordability becoming an increasing constraint, lenders and borrowers turned to alternative mortgage instruments in order to qualify borrowers for loans. These included interest-only mortgages, 40-year mortgages and loans which allowed negative amortization in the early years. As shown in Figure 6, ARM hybrids became the dominant mortgage instruments for Alt A and subprime loans. Twenty-six percent of subprime loans originated in 2006 were balloon loans (balance due before end of term

2 Piggyback loans are combination first (up to 80 percent LTV) and second mortgages. They were designed to get around the requirement that loans sold to the GSEs had to have private mortgage insurance if the LTV was greater than or equal to 80 percent.

typically 10 years or less) with long amortization periods to reduce monthly payments. The hybrid loans carried a fixed, often below market rate for 2-3 years after which the loan had an annually adjusting indexed rate with a high margin. The low start rate improved initial affordability. However, these loans were almost guaranteed to create payment shock upon adjustment. So borrowers, encouraged by lenders, planned to refinance the loans before adjustment.

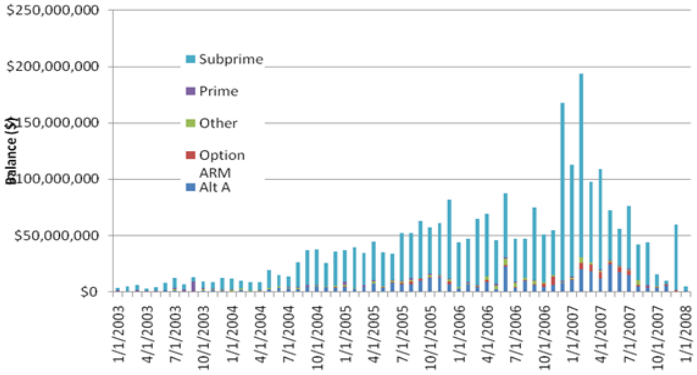
Figure 6: 2006 Mortgage Product Composition



Source: Barth

While lenders were easing or eliminating underwriting standards, borrowers were becoming increasingly aggressive and in many cases fraudulent. The no-doc and low-doc loans originally meant to give market access to self-employed borrowers led to an explosion in liar's loans where the borrower (or sometimes the broker) intentionally miss-stated income and/or assets. The evidence of fraud in the market can be seen in the high proportion of early payment defaults (Figure7). Appraisers were pressured to increase valuations to support aggressive loan amounts, which led to overstated valuations and artificially low loan-to-value ratios.

Figure 7: Early Payment Defaults

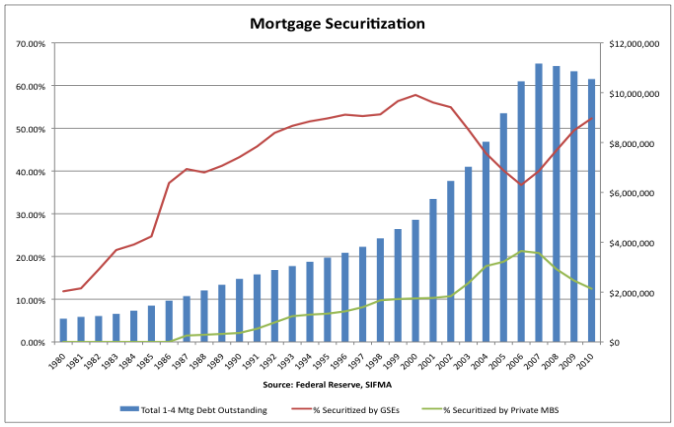


Source: Loan Performance, Amherst Securities

The expansion of subprime lending in particular and mortgage lending in general in the 2004-2006 time period was facilitated by the growth in the private label,

non-agency securitization market. As shown in Figure 8 the agency share of the MBS market peaked in 2000 and began falling. It dropped from 58% in 2000 to 38% in 2006. The drop in the agency share was mirrored by the rise in the private label share from 10% to 22% over the same period. The FHA market share dropped to less than 5 percent – a post war low – supplanted by subprime mortgages with more lenient documentation requirements.

Figure 8: Securitization Share

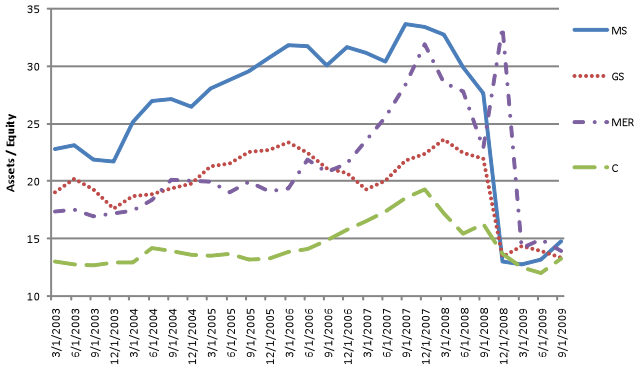


Most of the large investment banks created conduits and set up structured investment vehicles (SIVs) to originate and fund subprime and Alt A mortgages which were placed in collateralized debt obligations. The SIVs, conduits and large originators were increasingly funded through the asset-backed commercial paper (ABCP) market– a classic maturity mismatch. When the GSEs lost market share at the height of the boom, they compensated by investing in the AAA tranches of subprime and Alt A securities. During 2004-06 they purchased around half the private label AAA sub-prime and Alt A production, fueling growth in both Alt A and subprime loan markets.

The private label securitization market benefited from strong investor demand for the securities that was supported by a ratings process that created a high percentage of AAA rated securities. Foreign institutions became major investors in US agency and non-agency securities. Leverage was also a significant factor. On-balance sheet leverage increased for all players in the mortgage markets, in particular the GSEs and the investment banks. Figure 9 shows the growth of leverage for select banks and investment banks. Note that the growth during the years 2004-2007 was quite dramatic. And the SIVs were not included in the leverage numbers. The creation of SIVs allowed

large commercial and investment banks to expand off-balance sheet as well creating deep pools of funds for mortgages.

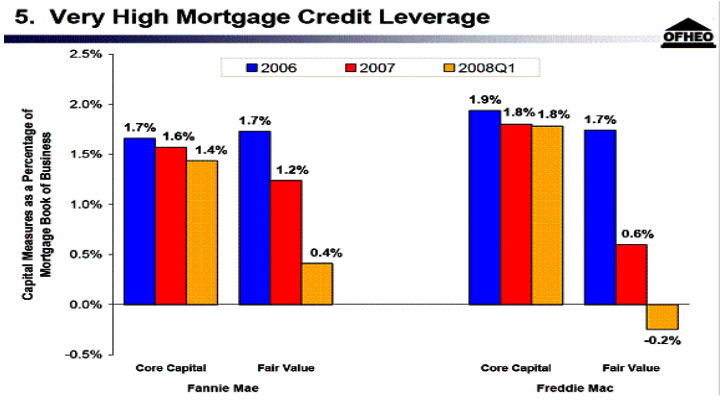
Figure 9 Leverage Ratios for Select Financial Firms



Source: Federal Reserve: MS: Mortgage Stanley, GS: Goldman Sachs, MER: Merrill Lynch, C: Citigroup

The kings of leverage were the GSEs. Their legislated capital requirements were 2.5 percent against on-balance sheet assets and 0.45 percent against off-balance sheet guarantees. Of course the credit risk was not off-balance sheet as they provide timely payment guarantees on the securities and make investors whole for any defaults. Figure 10 shows the capital ratios of the GSEs prior to the government takeover. The thin capital cushion could not support the rising default rates on purchased loans or the mark-to-market write downs of the sub-prime and Alt A bonds they purchased.

Figure 10: GSE Leverage



Source: Office of Federal Housing Enterprise Oversight (now FHFA)

As the GSE problems became apparent the Congress enacted the Housing and Economic Recovery Act in July 2008 that strengthened their regulator and gave Treasury powers to guarantee debt and inject equity. However their share prices

plummeted in August 2008 on fears of the need of a bail out and in September 2008 they were taken into conservatorship.

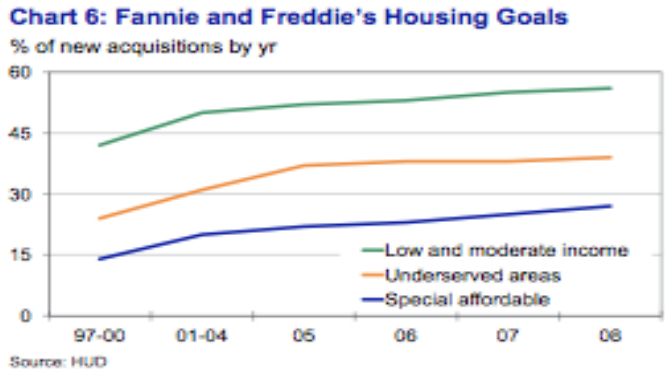
The GSEs have dominated US mortgage finance since the early 1980s. They came into prominence with the demise of the savings and loans that could not manage the risk of long term fixed rate mortgages. They steadily gained market share as interest rates fell, encouraging refinance into long term fixed rate mortgages. The GSE advantage lies in the "implied" guarantee of their debt and mortgage-backed securities. As government-chartered corporations with an important social mission they were widely believed to be too important to fail. Thus their debt typically traded as a low spread over comparable maturity Treasury securities.

The GSE market share dropped significantly in the 2002-2005 time period. Several factors accounted for this drop. First, with rising house prices an increasing share of mortgages were above the GSE loan limits.[3] Second, as private label securitizers relaxed underwriting standards, an increasing share of mortgages was sold to private conduits rather than the agencies. Third, both Fannie Mae and Freddie Mac had accounting scandals in the early 2000s that led to regulatory restrictions on the loans they could purchase for portfolio.

The GSEs were major contributors to the crisis. Not only did they fund a majority of mortgages made during the house price boom, they were under regulatory and political pressure to expand their funding of mortgages to low and moderate-income households. The political pressures were put into regulation in the form of housing goals to which the GSEs were subject. There were three goals: a low-moderate income, special affordable and underserved area goal. As shown in Figure 11, these goals were steadily increased in the early part of the decade. The rising goals and shrinking market share made it difficult for the GSEs to maintain underwriting standards and meet the goals. They began relaxing their standards taking lower credit score and Alt A loans. They also purchased the AAA tranches of subprime and Alt A private label securities which their regulator allowed to be used to meet the housing goals for a period of time.

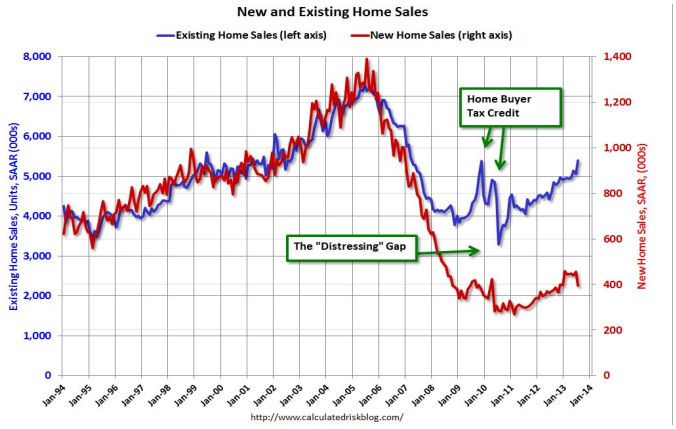
3 The GSEs are subject to limits on the maximum loan size they can purchase. Prior to the crisis the maximum was $417,000 nationwide for a single family house. During the crisis the loan limits were raised for high cost areas – up to $625,500.

Figure 11: GSE Housing Goals



The consequences of the US mortgage market meltdown are now well known. House prices declined sharply starting in 2006 (Figure 1). Housing starts declined precipitously reaching record lows. The homeownership rate dropped from over 69 percent to 65 percent. New and existing home sales dropped sharply in part due to rising rates of negative equity (Figure 12)

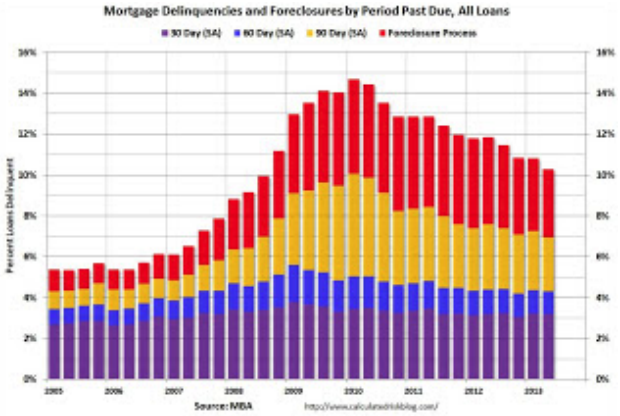
Figure 12: Falling Home Sales



Source: Calculated Risk

The most serious manifestation of the meltdown was record levels of mortgage default and foreclosure (Figure 13). Serious delinquency (90 days plus and in foreclosure) rose from 2 percent in 2005 to over 9 percent in 2010. Rising rates of foreclosure accelerated the house price decline as distressed housing typically sells at a 25-40 percent discount.

Figure 13: Mortgage Delinquency



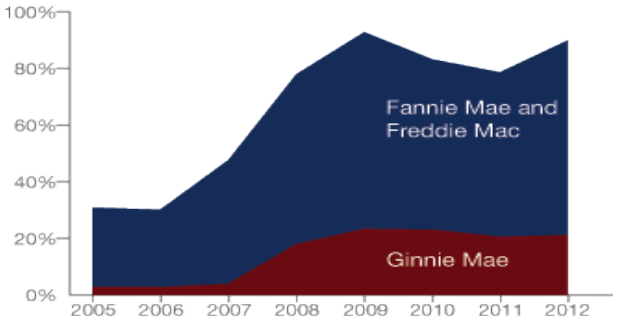
Source: Calculated Risk

Financial fragility, worsening economic conditions, a deterioration of the housing market and regulatory pressure led to a further tightening of mortgage credit – perversely increasing the severity of the crisis. Even though the GSEs were under government control, they tightened credit through stricter purchase requirements (in particular documentation and credit score) and loan and adverse market fee increases.

Banks began tightening mortgage credit in 2007. Jumbo loans (over the GSE loan limit) joined the subprime and Alt A (limited documentation) products on the endangered species list. With the disappearance of the private label securitization market the only place for jumbos is bank portfolios with increased capital requirements.

With banks reluctant to put loans on the balance sheet and the private label securitization market moribund, the government share of mortgage funding rose to more than 90 percent (Figure 14).

Figure 14: Government Share

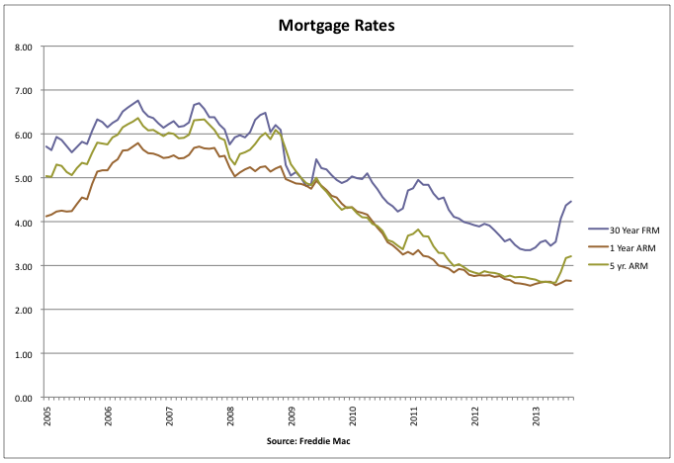


Source: Inside Mortgage Finance

3. The Government Response to the Mortgage Meltdown

Monetary Policy: There have been many initiatives to address the crisis. The most important has been Federal Reserve Policy to reduce mortgage interest rates. The Federal Reserve has run an exceptionally accommodative monetary policy since the onset of the financial crisis in 2008. In addition to keeping short-term interest rates near zero, the Fed has conducted several rounds of "quantitative easing" (QE) in which it purchases long term Treasury and mortgage-backed securities (MBS). The latter has been instrumental in keeping long term fixed rate mortgage rates exceptionally low (Figure 15). Research by Krishnamurthy and Vissing-Jorgensen (2011) finds that the purchase of MBS that lowered mortgage rates encouraging mortgage refinance stimulating the economy. They find that the large reductions in mortgage rates due to QE1 appear to be driven partly by the fact that QE1 involved large purchases of agency-backed MBSs (thus reducing the price of mortgage-specific risk). In contrast, for QE2, which involved only Treasury purchases, they find a substantial impact on Treasury and agency bond rates, but smaller effects on MBS and corporate rates.

Figure 15: US Mortgage Interest Rates



There are signs that this policy is losing effectiveness. The May 2013 announcement that the Fed may begin to reduce its purchases of MBS resulted in a one-percentage point rise in the long term fixed rate mortgage rate. Refinancing activity has slowed significantly, off 70 percent since its peak in May and down to 2009 levels. The Mortgage Bankers Association (MBA) predicts mortgage originations to be down 36 percent in 2014 entirely due to lower refinance activity. This decline puts a great strain on the industry. Mortgage companies have been laying off thousands of staff in response

to the decline in activity. Most production staff are paid on commission and in response to the decline in market activity put pressure on the credit departments of lenders to relax underwriting standards – a feature of the market in the wake of the record 2003 refinance boom.

Another objective of QE is to re-inflate the housing market the crash of which is responsible for much of the loss from the financial crisis. As shown in Figure 1, house prices have indeed rebounded, rising by more than 10 percent in many markets. The widely viewed Case-Shiller repeat sale index has risen 13.6 percent year over year as of October 2013 with 13 out of 20 cities in the index registering double-digit gains [S&P Case Shiller 2013]. This has led some commentators to ask whether the US is heading for another housing bubble.[4]

There are reasons to think that the rise in house prices will slow. Rising mortgage rates will slow demand. Rising prices also pulls more households out of negative equity potentially increasing the inventory of homes for sale. Nevertheless it is clear that the US economy depends heavily on the performance of the housing market necessitating aggressive policy actions to resuscitate it.

Regulation: The US government has attempted to deal with the causes of the meltdown with a slew of new mortgage regulations focusing on tightening underwriting and eliminated "dangerous" products. The most significant action was the passage of the *Dodd–Frank Wall Street Reform and Consumer Protection Act* in July 2010. Dodd-Frank is a wide-ranging bill covering many of the parts of the financial system. The mortgage specific aspects of Dodd-Frank address mortgage underwriting, products, disclosure, lending practices and securitization. The legislation also created the Consumer Financial Protection Bureau (CFPB) that centralizes consumer financial protection in one agency. Notably it does not address the future of the GSEs.[5]

Dodd-Frank had a number of mortgage specific provisions. In particular it mandated regulators to create a class of very safe mortgages that would enjoy legal and regulatory protection and an even safer mortgage that would be exempt from risk retention by lenders that sell the mortgages.

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4 http://www.reuters.com/article/2013/10/17/us-usa-fed-fisher-qe-idUSBRE99G0MP20131017

5 Despite concern about regulatory fragmentation in the US, Dodd-Frank did not materially change the institutional landscape. The Office of Thrift Supervision was abolished and the CFPB created.

Qualified Mortgages*:* The Dodd-Frank Act has two definitions of mortgages: qualified mortgages ("QM"), to be defined by the CFPB and focusing on a borrower's ability to pay; and qualified residential mortgages ("QRM"), to be defined by six regulatory agencies, focusing on mortgages with underwriting and product features related to the probability of default. A qualified mortgage would give lenders a "safe harbor" against future litigation, while a qualified residential mortgage would be exempt from risk-retention requirements associated with issuing mortgage-backed securities.

A qualified mortgage is a home loan that meets certain standards set forth by the federal government. Lenders that generate such loans will be presumed to have also met the Ability-to-Repay rule mandated by the Dodd-Frank Act.[6]

QM requires:

- Full documentation
- No interest-only (IOs) or balloon payments
- No negative amortization
- Term of 360 months or less
- Back-end (all-inclusive) debt-to-income ratio (DTI) of 43 percent or less;[7]
- Prepayment penalties of three years or less
- No excessive upfront points or fees: the points and fees paid by the borrower must not exceed 3% of the total amount borrowed[8]

Lenders that generate QM-compliant mortgage loans will receive a degree of legal protection against borrower lawsuits. The level of protection they receive will depend on the type of loan they make. There are two types of QM loans:

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6 Before making a mortgage loan, a creditor must make a reasonable and good-faith determination, at or before consummation, of a consumer's ability to repay the loan according to its terms. Lenders must measure the borrower's ability to repay the principal and interest over the long term, not just during an introductory period when the rate might be lower. CFPB has put out detailed regulations on how lenders should determine ability to pay. See www.qualifiedmortgage.org/ability-to-repay

7 The debt-to-income ratio compares the amount of money a person earns each month (gross monthly income) to the amount he or she spends on recurring debt obligations including property tax, insurance and homeowners association dues if applicable.

8 In the US, lenders charge points that are in effect pre-paid interest. Points can be positive (paid by borrower to lender) or negative (rebate paid by lender to borrower used to defray other closing costs). Positive points are associated with a lower note rate and negative points a higher note rate.

Safe Harbor — Of the two types of QM loans, this one gives lenders the highest level of legal protection. These are lower-priced loans with interest rates closer to the prime mortgage rate. They are typically granted to consumers with good credit histories (less risk). If the borrower ends up in default / foreclosure down the road, the lender would be considered to have legally satisfied the Ability-to-Repay rule. Thus, it would be harder for the borrower to sue the lender in court. However, borrowers can still challenge their lenders in court if they feel the loan falls short of the QM parameters outlined above.

Rebuttable Presumption — These are higher-priced loans that are typically granted to borrowers with lower credit scores. In this context, 'higher-priced' refers to a loan with an interest rate that is more than 1.5 percentage points higher than the current prime rate.[9] Lenders who grant these types of mortgages will receive a type of legal protection known as rebuttable presumption, which offers less protection than the safe harbor explained above. If the borrower ends up in a foreclosure situation, he or she could still win an ability-to-repay lawsuit if they can prove, for example that "the creditor did not consider their living expenses after their mortgage and other debts."

Ranieri et. al (2013) point out that the 1.5 percentage point spread is too low for loans not eligible for GSE purchase. They fear that a non-agency jumbo loan in many circumstances may be pushed out of the QM safe harbor and into a QM rebuttable presumption status merely because of a higher mortgage rate. They also note that the 3 percentage point cap on fees and points is quite limiting and will disadvantage smaller loans. They believe the QM and other new rulings will limit lender discretion and result in fewer loan approvals and more loan denials. "The combination of new rulings appears to be leaving lenders with no choice but to attempt to create a risk-free loan. The significant costs of complying will ultimately be passed onto borrowers in the form of higher rates and fees."

As noted by Lawler (2013), in defining a QM the CFPB did not take into account important variables/factors that impact the probability that a mortgagor will default. In setting the QM definition, the CFPB focused on (1) product features; (2) up-front fees charged; (3) verification of relevant borrower information; and (4) a maximum back end total debt-to-income ratio of 43% (with some exceptions). "Strikingly QM does not

9 The typical definition of a prime mortgage rate is the one reported by the Freddie Mac Primary Mortgage Market Survey. http://www.freddiemac.com/pmms/

include a LTV requirement. This is despite the fact that the loan-to-value ratio is a key determinant of default".

The lack of an LTV requirement reflects the politicization of the reform process in the US. Industry participants have lobbied aggressively for a weakening of the standards arguing that "too tough" a standard would derail the nascent housing recovery. This pressure can also be seen in the decision by the Federal Reserve to drop a provision on bank capital requirement that required banks to hold higher amounts of capital against riskier loans. Industry revenue and production compensation is driven by volume so participants strongly resist any measures that might reduce the volume of lending.[10]

Qualified Residential Mortgage*:* Dodd-Frank also mandated regulators to create a class of mortgage called the "Qualified Residential Mortgage" (QRM). MBS that are backed by loans that are QRMs are not subject to risk retention (holding 5 percent of the risk of loans sold), which according to the legislation most other MBS should be.[11]

The original proposed definition of a QRM included a hefty (20% down) down payment, a debt-to-income ratio no greater than 36%, restrictions on a borrower's credit, and excluded the loan features excluded from a QM. Lawler notes that the real estate and mortgage industry lobbied hard against the initial QRM proposal claiming that (1) the "massively inflated costs" to issuers/originators of the risk-retention requirement would be passed on to consumers; (2) many potential borrowers would be excluded from getting mortgage credit; and (3) having a QM definition that differed from a QRM definition would add to the growing regulatory burden being placed on mortgage lenders. They have lobbied extremely hard to make the two definitions the same – even though the legislation explicitly differentiated between the two.

At the end of August 2013 the regulators proposed an alternative definition of QRM equating it to QM. The proposal also asked for comments on an alternative QRM definition (dubbed QM-Plus or Alternative QRM), which would, in addition to the QM standards, require a 30 percent down payment, limit second mortgages, require owner occupancy, and include restrictions on credit history. Despite the fact that the US is 5 years removed from the onset of the crisis the regulatory treatment of residential MBS

10 Mortgage brokers and retail loan officers are paid almost entirely on commission. They receive a fee, around 1.5 percent of the loan balance. Thus they have an incentive to see that the loan is funded and is as large as possible.

11 Another non-clarified matter is the definition of risk. Alternatives include a 5 percent first loss position "horizontal slice" or 5 percent of each tranche (a "vertical slice"). Rossi [2011]

is still un-clarified which is a major factor in why the private label securities market has yet to recover.

More importantly, regulators have proposed that loans being sold to Fannie Mae and Freddie Mac be exempt from QRM. The original intent of the Dodd-Frank risk retention rule was to make sure that issuers/originators had "skin in the game," which it was hoped would better align the interests of issuers/originators and investors. Mortgage and real estate industry lobbyists argued that "low-risk" mortgages should be exempt from the risk-retention requirement. Risk retention was a clear intent of legislators in Dodd-Frank, and real estate and mortgage lobbyists have effectively eliminated it for the vast bulk of mortgages that will be originated.

Products: As pointed out by Lea (2010) one likely result of the QM rule is to further ensconce the long-term fixed rate mortgage as the dominant instrument in the US. Requiring ARM qualification at the highest possible rate in the first five years takes away its affordability advantage. QM is likely to greatly reduce the incidence of non-traditional "affordability" products such as interest only, balloon and teaser ARMs. Although the product types and features that cannot be included in a qualified mortgage are not banned, lenders will be reluctant to make them due to the lack of a legal safe harbor against borrower lawsuits.

Regulations other than Dodd-Frank restrict the mortgage product menu in the US. One of the early attempts to address the issue was the passage of the Home Ownership and Equity Protection Act (HOEPA) in 1994. HOEPA identifies a class of high-cost mortgage loans through rate and fee triggers, and it provides consumers entering into these transactions with special protections.[12] HOEPA restricts certain loan terms based on evidence that they had been associated with abusive lending practices. These terms include short-term balloon notes, prepayment penalties, non-amortizing payment schedules, and higher interest rates upon default. HOEPA imposes a strict liability rule that holds purchasers and assignees, as well as creditors, liable for any violations of law.

Subsequent regulation (CFPB 2013) is aimed at strengthening HOEPA by lowering the definition of high cost loan to 650 basis points over the average prime mortgage rate for first liens and 850 basis points for subordinate liens. It required lenders to verify the consumer's repayment ability (e.g., verifying the consumer's

12 Risk-based pricing was introduced in the US in the early 1990s as data on mortgage performance became more available. This encouraged the development of the sub-prime mortgage market, as lenders believed that higher risk could be offset with higher mortgage cost.

income, assets and current obligations). In addition to regulatory enforcement, the regulation increased the legal liability for lenders. If a high cost loan goes to default or foreclosure, a plaintiff could claim that the lender did not comply with the underwriting requirements. Prepayment penalty restrictions were also tightened: No prepayment penalties for loans where the payment may change in first four years; and prepayment penalties limited to a two year duration for other loans and cannot be imposed in a same creditor refinance.

A particularly important aspect of US mortgage market design is the dominance of the long-term fixed rate mortgage (FRM). To understand the US housing finance system one has to focus on the key role of the FRM that can be prepaid without penalty. The FRM is a creation of the government. It is not a naturally occurring instrument in modern financial systems as it creates substantial financial and taxpayer risk. The FRM was born in the Depression as a solution to the refinancing problems of borrowers with non-amortizing mortgages. The FHA insured these instruments and when private lenders refused to make them due to concern over the financial risk, the Federal National Mortgage Association (Fannie Mae) was created to purchase them funded by Treasury debt. The dominance of the instrument was entrenched when savings and loans were required to originate only FRMs in the 1960s and 70s.

Dependence on the FRM bankrupted the savings and loan (S&L) industry in the 1980s when the rise in interest rates exposes the mismatch in S&L portfolios. The government continued to support the instrument through the activities of the GSEs. In the current low rate economic environment over 90 percent of US mortgages are FRMs backed by government guarantees.

The long-term fixed rate mortgage has undeniable consumer benefit including payment stability and simplicity. However there are significant costs (Lea and Sanders 2011). The interest rate and prepayment risks in the FRM are costly and difficult for investors to manage. A huge volume of derivative instruments is necessary for investors to manage the risks. The premium for the long term and the prepayment option raise rates for all users of the mortgage. The FRM can create negative equity in an environment of falling house prices. And the taxpayers have billions of dollars in losses backing the credit risk guarantees provided by the GSEs to support FRM securities. Yet the industry and affordable housing groups are wedded to this instrument and support government guarantees to ensure its continuation (Min 2010).

Regulation restricts the use of prepayment penalties (CFPB 2013). They cannot be used on qualified adjustable rate mortgages. Even when permitted, a prepayment penalty on a qualified mortgage must not apply after the three-year period following origination and must not exceed 2% of the outstanding loan balance prepaid during the first two years or 1% of the outstanding loan balance prepaid during the third year after consummation.[13] In addition, if the creditor offers the consumer a mortgage with a prepayment penalty, it must offer an alternative mortgage without a prepayment penalty that meets certain conditions to qualify as an alternative. The restrictions on prepayment penalties suggest that it will be difficult to introduce covered bonds into the US market (other than the Danish Principal of Balance version). Furthermore, many states ban the use of prepayment penalties on FRMs and the GSEs do not enforce prepayment penalties on any FRM.

It is important to note that the product and underwriting restrictions contained in Dodd Frank do not preclude offering of loans with more liberal underwriting, documentation and product features. In fact some lenders currently offer subprime and limited documentation loans.[14] Such loans resemble those made in the 1990s with high downpayment requirements. But the legal risk associated with originating a loan that does not meet the QM safe harbor or rebuttable presumption mean that such loans are likely to be made by smaller non-bank lenders.

A major factor limiting housing credit is the ongoing litigation and regulatory exposure for past sins. Lenders face uncertainties about GSE repurchase demands and indemnifications requested by FHA, and how agencies will interpret loan acceptability in the future. The agencies have forced lenders into huge settlements for alleged bad past lending practices.[15] This is causing lenders to limit access to credit to all but the best quality borrowers. This result can be seen in the average FICO scores of newly originated loans. FHA-borrower FICO scores have increased to 698 in 2013 from an average of 658 in 2009. GSE borrower FICO scores elevated to more than 750 from an average 723 in 2003 (Ranieri et. al. 2013). They note that the net result is that the GSEs and FHA are providing credit to better-off borrowers buying larger homes.

If the vast majority of lenders choose to originate only QM loans that fall clearly inside the prescribed safe harbor and avoid making the QM loans that carry a rebuttable

13 If a non-QM loan has a prepayment penalty in excess of these restrictions it is considered a "high cost" loan under HOEPA exposing the lender to greater regulatory and legal risk.

14 http://articles.latimes.com/2013/apr/27/business/la-fi-subprime-mortgage-20130427

15 http://www.foxbusiness.com/industries/2013/11/19/jpm-settlement/

presumption, the QM rule will prove to have the unintended consequence of denying lower and moderate income potential borrowers access. If any lenders decide to venture outside the QM box, it is most likely they will do so only for pristine borrowers.

Incentives: As the previous discussion indicated, incentive incompatibility was a major factor in the crisis. Such incompatibilities existed throughout the mortgage value chain. Mortgage brokers and loan officers were paid almost entirely on commission creating an incentive to close a loan regardless of quality. Appraisers were pressured by lenders to support desired loan amounts with the threat that low valuations would result in less business. Lenders were driven by volume and market share with no regard quality as most mortgages were sold in the secondary market without recourse.[16] Fees and gains on sale reflecting the accounting of future income to create and distribute mortgage-backed securities incented investment banks (Gorton and Metrik, 2012). The rating agencies were (and are) paid by debt issuers. They were incented by volume of ratings and pressured by investors to overstate the quality of the security.

There have been some attempts to align incentives in the US mortgage market. Chief among them is the de facto banning of yield spread premiums (YSP), a method of broker compensation. YSPs are a by-product of secondary mortgage markets. Mortgage brokers (and loan officers in bank retail branches) are given "wholesale" prices that represent the minimum yield that the lender will accept for a given loan type.[17] If the broker can get a higher yield from the borrower (e.g., a higher note rate with given points or more points with a given note rate) he/she receives the present value of the yield difference over an assumed life of the loan as compensation. Retail loan officers receive an equivalent payment for a loan "overage".

Regulation has made the yield spread premium more transparent by requiring its disclosure to borrowers. Disclosure forms now show that the YSP belongs to the borrower – a credit to the borrower that can be used to offset other closing costs. Federal Reserve regulation from 2010 states that "a loan originator may not receive

16 Loans are sold in the secondary market with lender representations and warranties that purchase and servicing guidelines of investors were being followed. Subsequent defaults have shown that the reps and warrants were often not followed which has triggered loan repurchase demands from investors.

17 Broker and loan officers are given a menu of rate/point combinations that generate the same yield on the loan. The second column refers to points charged to the borrower. The borrower pays points for a below par loan and receives a rebate for an above par loan.

compensation that is based on the interest rate or other loan terms.[18] This will prevent loan originators from increasing their own compensation by raising the consumers' loan costs, such as by increasing the interest rate or points. The rule also prohibits a loan originator that receives compensation directly from the consumer from also receiving compensation from the lender or another party.

However, as the regulation states, "loan originators can continue to receive compensation that is based on a percentage of the loan amount, which is a common practice." Despite the widespread knowledge that volume based incentives were a root cause of the crisis, nothing has been done to change the way mortgage originators are compensated. They are paid a commission based on 1) closing of the loan and 2) value of the loan. Thus there is a great incentive to "do what it takes" to get a loan closed and encourage borrowers to take out larger loans. These incentives have not been addressed in post-crisis regulation.[19]

Another area of abuse in the run up to the crisis was inflated appraisals. Brokers and loan officers were known to pressure appraisers for higher valuations to support larger loan amounts. The regulatory solution was to adopt the Home Valuation Code of Conduct ("HVCC" Freddie Mac 2009). A major aim of the regulations was to ban direct contact between the broker/loan officer and appraiser. Specifically, " lender's loan production staff is prohibited from being involved in the selection of the appraiser, or having any substantive communications with an appraiser or appraisal management company about valuation." In effect, appraisals have to be ordered and reviewed by the credit department of the lender. Furthermore, the appraiser's compensation cannot depend on the final estimate of value or the closing of the loan.

Institutions that deliver loans to Fannie Mae or Freddie Mac must represent and warrant that the appraisals obtained adhere to the requirements found in the HVCC regarding appraisal management, ordering and review by lenders. To comply, many lenders have outsourced the appraisal process to Appraisal Management Companies (AMCs) that manage a large network of appraisers. This practice in turn has led to complaints that AMCs use appraisers who are unfamiliar with the neighborhoods in which valuations are requested and has raised appraisal cost.

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18 Federal Reserve's "Reg Z" implements the consumer credit protections of the Truth in Lending Act. http://www.federalreserve.gov/bankinforeg/regzcg.htm

19 In Australia mortgage brokers are paid trailing commissions on a declining scale over 3 years. The commission can be "clawed back" if the loan prepays or defaults in less than a year.

A consistent complaint about appraisals in the aftermath of the crisis is a downward bias in valuation that makes borrower qualification more difficult. In part this reflects the influence of distressed sales on the market. Often in distressed areas such sales make up the majority of transactions available as comparables. To date there has been no discussion of moving to a mortgage lending value concept similar to that used in collateral valuation for German Pfandbrief lenders.[20]

The crisis exposed another long-standing incentive problem in the US financial markets. The rating agencies were key players in the development and proliferation of private label securities. There ratings were key to the issuance of securities and investors depending on ratings often in lieu of their own due diligence. Rating agencies have a fundamental conflict of interest as issuers as opposed to investors pay them. Like mortgage originators they were incented by volume and received fees for rating thousands of mortgage-backed securities. They were subject to pressure from issuers to increase the size of highly rated tranches so as to reduce the necessary credit enhancement provided.

Rating agency incentive conflicts increased with their securitization business. Issuers figured out how to game the rating agency criteria. Flawed methodologies and data inputs were often used to assign ratings, and the investors who relied on them did not always have access to sufficient information to question and assess them. The methodologies and inputs used to rate nonprime residential MBS (and CDOs backed by MBS) were particularly flawed, overestimating the quality of the underlying loans and underestimating the correlation of their performance. As a result, most of the senior tranches of such products have been downgraded Figure 24 (IMF 2009).

There have numerous proposals to reform the credit agencies. The SEC requires Nationally Recognized Statistical Rating Organizations (NRSROs) to publish descriptions of rating methodologies and share information on structured product ratings with other CRAs. They have proposed a requirement for CRAs to disclose preliminary ratings to discourage ratings shopping. However the industry push back has been intense and the SEC has indicated that for the foreseeable future they would not bring enforcement actions against issuers that do not disclose ratings.

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20 Mortgage lending value "the value of the property which based on experience may throughout the life of the lending be expected to be generated in the event of sale, unattached by temporary, e.g. economically induced, fluctuations in value on the relevant property market and excluding speculative elements." In other words it is a value based on the concept of a long-term loan designed to smooth valuations over the cycle. Quentin [2009].

A recent Senate bill proposes to clean up the credit rating system by making sure a bank or financial institution can't shop around among credit rating agencies to get a product's initial rating.[21] The bipartisan proposal creates a board, overseen by the Securities and Exchange Commission to assign credit rating agencies to provide initial ratings in order to eliminate inherent conflicts of interest. The bill passed into law requires that the SEC study the problem. If the SEC does not develop an alternative mechanism to address the conflict of interest problem, the proposal will go into effect.

Over the years, lawmakers have tried to open up the oligopolistic world of ratings agencies to greater competition and, therefore, better performance. Legislation in 2006 encouraged the Securities and Exchange Commission to let new companies into the ratings club. The commission set up the Office of Credit Ratings to register new entrants and to monitor all participants' activities. Today, 10 credit ratings agencies are recognized by the S.E.C. but the market is still dominated by the Big 3. Gaining regulatory approval to join the ratings arena is exceedingly burdensome (Morgenson 2013).

GSE Reform: The two largest government sponsored enterprises, Fannie Mae and Freddie Mac, were put into conservatorship in September 2008.[22] Since then more than 50 bills have been proposed to address various aspects of the GSE ranging from liquidation to switching GSE pay to government rates. Notably none have passed.

As shown in earlier in Figure 14, the government share of mortgage originations has swelled to 90 percent, up from less than 40 percent in 2005-06. Fannie Mae and Freddie Mac fund approximately 70 percent of new originations and Ginnie Mae approximately 20 percent. Since taken into conservatorship there has been debate about the future of the enterprises. The US Department of the Treasury issued a white paper in 2011 outlining 3 options for the future of the GSEs (US Treasury 2011).

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21 Senator Franken, *Restore Integrity to Credit Rating Amendment* http://franken.senate.gov

22 Conservatorship involved the government taking over Fannie Mae and Freddie Mac and appointing the regulator, the Federal Housing Finance Agency, as conservator. As defined by the FHFA "The purpose of appointing the Conservator is to preserve and conserve the Company's assets and property and to put the Company in a sound and solvent condition. The goals of the conservatorship are to help restore confidence in the Company, enhance its capacity to fulfill its mission, and mitigate the systemic risk that has contributed directly to the instability in the current market. The FHFA, as Conservator, may take all actions necessary and appropriate to (1) put the Company in a sound and solvent condition and (2) carry on the Company's business and preserve and conserve the assets and property of the Company". See www.fhfa.gov

- Option #1: Privatized housing finance system with limited FHA/VA/USDA role for targeted assistance;
- Option #2: Private markets + government guarantor of last resort. The guarantee would be priced out of the market during normal times;
- Option#3: Broad-based private mortgage guarantees with explicit, priced government reinsurance of MBS issued by private, regulated mortgage guarantors. The government reinsurance would kick in only if private guarantors fail. In effect the government guarantees most mortgages with private capital taking first loss.

More recently, bills have been introduced in the House and Senate to reform the GSEs. In the Senate, Mark Warner (D-Va.) and Bob Corker (R-Tenn.) have introduced a bill that would:

- Create a Federal Mortgage Insurance Corporation, ("FMIC") based on the Federal Deposit Insurance Corporation, that would collect insurance premiums and provide a government guarantee backstop only after a certain amount of private capital is exhausted incentivizing companies securitizing mortgages to manage risk more carefully;
- Wind down Fannie Mae and Freddie Mac within five years, and transfer all resources of the Federal Housing Finance Agency to the new FMIC as soon as it's established;
- Levy a small fee on every loan securitized by the FMIC for a Mortgage Access Fund to support affordable housing programs.

The housing and mortgage industries have thrown cautious support to the Corker-Warner bill. Affordable housing groups believe it does not do enough for affordable housing.

In the House, Representative Hensarling (R-Tex.) has offered the PATH Act, which moves more aggressively toward privatization of the mortgage market. It would:

- Wind down Fannie and Freddie within five years;
- Centralize all government housing finance operations within a Federal Housing Administration, independent of the Dept. of Housing and Urban Development.
- Establish limits for federally insured mortgages, including a minimum down payment of 5 percent except in the case of first-time home buyers 3.5 percent,

and caps on the price of the insured home depending on the area median income. It also prohibits borrowers from getting another FHA mortgage for seven years after they go into foreclosure;

- Set up a National Mortgage Market Utility as a nonprofit platform that develops standards for servicing, pooling, and securitizing residential mortgage loans, as well as serves as a repository for mortgage data;
- Provide for the creation of a legislative and regulatory framework for covered bonds;
- Repeal the provision of Dodd-Frank that requires securitizers to maintain an interest in the credit risk of asset-backed securities, which was designed to incentivize viable underwriting rather than mortgage origination volume.

The PATH Act is viewed as a more private sector measure than the Corker-Warner bill, and opinions are polarized. (Zandi 2013). Defenders of the GSEs point to the need for reform to do the following (Min 2010):

- Keep housing finance affordable as they fear rates will rise significantly without the guarantee and liquidity provided by the GSE;
- Keep the 30 year fixed rate mortgage pointing to the necessity of removing credit risk in order to induce investors to take the interest rate and prepayment risk;
- Supply sufficient funds to the $10 trillion residential mortgage market which is too large to be funded by the banking system;
- Ensure market stability by maintaining a constant presence which they believe private capital will not do;
- Maintain the TBA market which allows lenders to hedge loan commitment risk.

Critics of the GSEs make the following points (Lea and Sanders 2012, Jaffee 2012]):

- The private sector is capable of providing sufficient mortgage credit at market prices – international experience supports this assumption;
- The 30 year fixed rate mortgage would continue to exist but with a smaller market share due to higher rates without a guarantee. Jumbo fixed rate mortgages were originated prior to the crisis and currently;
- Securitization can be done by the private market; the private label securities market thrived for more than a decade before it was undermined by poor

quality collateral and can be revived with appropriate regulation and transparency;

- The taxpayer should not be on the hook to support companies; if guarantees are to be offered they should be on the security not the issuer;
- The government has other tools to stabilize the market for example through Fed purchases of mortgage securities or extension of Ginnie Mae guarantees; and
- It is very difficult to keep politics out of housing finance if the government is providing taxpayer guarantees.

Many commentators are sanguine about the prospects for passage of meaningful reform of the GSEs. As noted by Ellen Seidman , a senior fellow at the Urban Institute and former financial regulator, "You've got an ideological right that wants no government guarantee at all, except grudgingly through the Federal Housing Administration," she says. "And you have sort of everybody else wanting some sort of guarantee." (DePillis 2013). The reality is that reform of entities with over $5 trillion in assets and guarantees that fund 70 percent of the mortgage market is complex and controversial. For many the status quo is preferable to an unknown future without the GSEs and their guarantees.

While commentators and legislators debate the future of the GSEs, their conservator, the FHFA, has taken steps to reduce their presence in the market (FHFA 2012). They have imposed higher guarantee fees (more than doubled since crisis) to restore profitability and reduce the spread between GSE and non-GSE funded mortgages. FHFA has started a project to consolidate the GSE securitization platforms to create greater standardization and liquidity in GSE securities.

The FHFA has also pursued large put backs of defective loans and filed lawsuits against sellers of mortgage-backed securities to the GSEs before the crisis.[23] While such actions can rebuild the capital of the GSEs it is also having a chilling effect on the mortgage market. Fear of having to repurchase loans sold to the GSEs has led originators to be ultra conservative in their underwriting and documentation increasing cost and reducing accessibility of borrowers.

Government Housing Policy: Despite the difficulties created by the meltdown of the mortgage market, the federal and state governments remain committed to a strong

23 http://www.ft.com/intl/cms/s/0/c8cd9abc-39ad-11e3-a3a4-00144feab7de.html#axzz2ia1vbrZN

homeownership policy. The mortgage interest tax deduction (MID) remains in place despite the fact that its reduction is part of every budgetary reform proposal. The MID is quite generous by international standards allowing full deductibility on loans up to $1 million at the borrower's federal and state marginal tax rate on both primary and secondary homes.

Despite their role in the crisis, the GSEs are still subject to housing goals. The goals have been modified and scaled back somewhat but enterprise performance is still tracked annually. The goals for 2012-2014 are shown in Box 1 including the market percentages of each category. [24]

Box 1: GSE Housing Goals

Goal Category	Benchmark Level	Market Level
Low income home purchase	23%	26.6%
Very low income home purchase	7%	7.7%
Low income area home purchase	20%	20.5%
Low income refinance	20%	22.3%

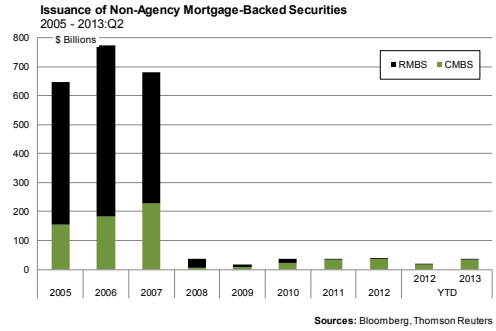
Source: FHFA

The government mortgage insurance programs, FHA and VA, remain a major influence in the mortgage market as the provider of low downpayment mortgages. FHA's market share has been around 20 percent since the onset of the crisis. Despite its financial difficulties, the FHA continues to insure mortgages with loan-to-value ratios as high as 96.5 percent. The VA (Veteran's Administration) insures mortgages up to 100 percent LTV. The average LTV on new FHA endorsements is 96 percent for purchase transactions and 86-88 percent for refinanced loans each year since 2009 (HUD 2013). In 2013 42 percent of FHA insured loans were to borrowers with FICO scores less than 680.

[24] (1) **A low-income (LI) home purchase (HP) goal,** for families purchasing homes with incomes no greater than 80 percent of Area Median Income (AMI);(2) A **very low-income (VLI) home purchase goal**, for families purchasing homes with incomes no greater than 50 percent of AMI;(3) A **low-income areas (LIA) home purchase subgoal**, for families purchasing homes in (a) low-income census tracts, with median income no greater than 80 percent of AMI, and (b) high-minority tracts, with minority population of at least 30 percent **and** tract median income less than 100 percent of AMI **if** borrower income does not exceed 100 percent of AMI. The goals are not exclusive.

Securitization: Private label mortgage securities (PLS) have been issued without guarantees since the 1980s. They reached a peak of $2.9 trillion outstanding in 2007. The market peaked in Spring 2007, with more than 11.5 million mortgage loans backing private RMBS, accounting for more than one-fifth of total mortgage debt outstanding (Zandi 2013). The outstanding balance of non-agency securities has fallen to $1.2 trillion due to a virtual cessation of new issuance and defaults, amortization and prepayments affecting existing issues (Figure 16). PLS funded jumbo prime loans as well sub-prime and Alt A loans.

Figure 16: Non-agency Securitization Issuance



Source: Moody's 2013

According to Moodys (Zandi 2013), of the nearly 15 million loans that were originated and put into PLS from 2004 to 2006, more than 4 million have defaulted, and this story is still unfolding. Investors in private RMBS have lost $450 billion, or 20%, of the debt outstanding in 2007.

The market prospects for a revival of private label securitization appear bright. The loans being originated today are of pristine quality with high FICO scores, low LTV and full documentation. House price increases further reduce risk. Almost all loans are long term FRMs with no exotic features that could induce future default. Although the government still dominates the mortgage market, it is slowly pulling back on its support. As noted above the GSEs have more than doubled guarantee fees. Moody's estimates that private label securitized mortgages will become competitive with GSE eligible loans with another 20 basis point increase in fees. FHA premiums have been substantially increased – now at 175 basis points up front and 135 basis points annually – and are higher than private mortgage insurance premiums. Regulatory pressure on banks through Basel III treatment of Mortgage Servicing Rights and non-QM loans

reduces their appetite for on balance sheet finance.[25] The risk of put backs also dampens their appetite for mortgage loans leaving room for non-bank competitors.

While the economic climate for securitization has brightened there is significant legal and regulatory uncertainty that retards development. A major obstacle is the lack of clarity on QRM and the risk retention requirements of securitized mortgages. Three years after the passage of Dodd-Frank there are still no definitive guidelines. As pointed out by Whalen (2013), even if the regulators were to agree to a definition, the reality of the Dodd-Frank law is that the "skin-in-the- game," risk retention provisions arguably make it impossible for new, privately backed mortgage securities to qualify as "true sales" under US accounting rules. However with the lack of finality on risk retention, lawyers and accountants have not opined on what constitutes true sale. A lack of standardization hampers the market but standardization cannot be achieved until regulation is finalized.

As noted by the IMF, a positive influence future securitization behavior is FASB's elimination of the gain on sale accounting treatment that had added to the profitability of many securitizations. Formerly, U.S. Generally Accepted Accounting Principles (GAAP) permitted the securitizer to recognize the gain on sale at the initiation of the securitization. Securitizers would project the future cash flow of the underlying loans (regardless of the likelihood that it would be earned as in the case of various credit enhancement tranches) and account for it up front. Gain on sale treatment will no longer be allowed under U.S. GAAP for mortgage securitizations where control (i.e., risk) is not surrendered; instead, securitizers will have to recognize the income over time as payments are received, thereby eliminating the upfront profitability of these securitizations. This should enhance the transparency of income statements and provide incentives to originators to better assess risk exposures of securitizations.

Although risk retention may not be required for the majority of US mortgage loans (e.g., if there is no distinction between QM and QRM) the reality is that issuers have risk through the representations and warranties they provide upon sale. Through the "reps and warrants" sellers attest that they followed investor sale and servicing guidelines. If a loan goes into default and the seller servicer is found to have violated reps and warrants it can be required to repurchase the mortgages. Prior to the crisis the

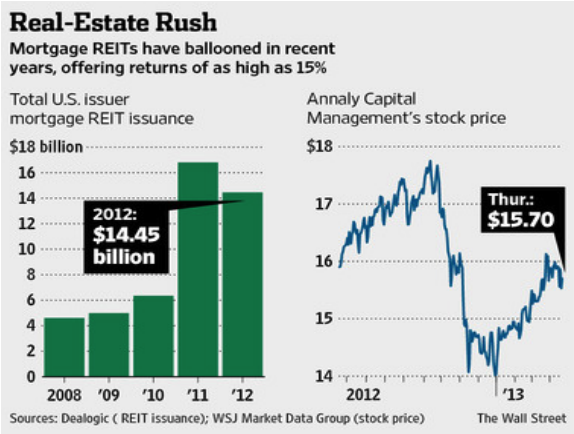
25 Mortgage servicing rights (MSR) are created when a lender sells a loan and retains the right to service (for a fee). MSRs are limited in Basel III to 10 percent of bank Tier 1 capital. Large lenders with significant MSR exposure have been selling MSRs in anticipation of this regulation.

repurchase risk was viewed as diminimus. Fannie Mae and Freddie Mac have issued repurchase requests for nearly $100 billion as of mid-2013 (Jones and Price 2013). The estimate covers provisions and expenses tied to repurchases, foreclosure errors and abuses, payments to reimburse investors for lost value on faulty mortgages, legal settlements and litigation expenses.

Leverage: There has been progress on rebuilding banking system progress on capital and write-downs of non-performing loans. The Capital Purchase Program (CPP) was successful in boosting recipient banks' regulatory capital ratios and stimulating bad loan write-offs (Montgomery and Takahashi 2012). But Fannie Mae and Freddie Mac have not been recapitalized as all of their profits flow to the US Treasury, repaying the government for its past support. Regulators and policy makers have not proposed concrete capital levels for the GSEs in the event they are retained in a corporate form. The FHA was de-capitalized by losses suffered during the crisis. The latest actuarial report shows that FHA has a negative net worth of $1.3 billion (the present value of future losses is greater than current capital) (HUD 2013). The FHA has announced steps to address its deficit including increased insurance premiums, tighter underwriting and restructuring of its troubled reverse mortgage program. Along with rising house prices the capital deficit has been substantially reduced.

Perhaps more importantly, the shadow banking system characterized by mis-matched funding and high leverage still exists – now in the form of mortgage REITs. A REIT (Real Estate Investment Trust) is a tax-advantaged corporation that invests in income producing real estate. The tax advantage is the exemption from corporate income tax if the REIT distributes 90 percent or more of its earnings as dividends to shareholders. A mortgage REIT invests in mortgage securities. Regulators have raised concerns about the rapid growth and financing policies of the mortgage REITs (WSJ April 2013, Figure 26).

Figure 17: Mortgage REITs



Source: Wall Street Journal

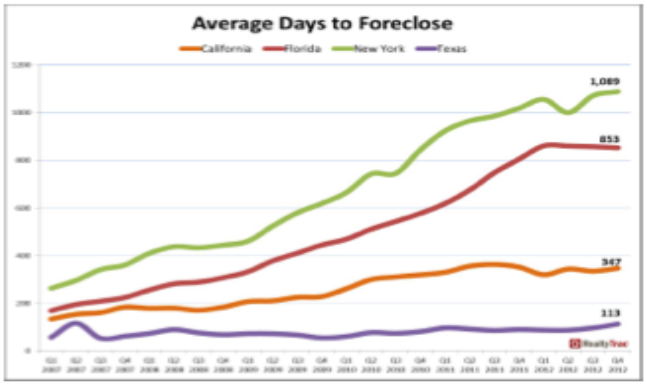
Mortgage REITs are virtually unregulated. They finance their mortgage securities through repo market (the same strategy pursued by the structured investment vehicles that failed in the crisis). The IMF (2013, p12) pointed to the risks inherent in mortgage REITs. The REITs have funding and liquidity risk based on their reliance on short-term secured financing. In addition they have refinancing and rollover risk resulting from the short debt maturities. Because the bulk of their earnings must be paid out to investors fro tax purposes, minimal cash flow can be retained for liquidity.

Foreclosure Prevention: The US has adopted a number of programs to reduce the incidence of mortgage foreclosure. These include loan modification (the largest program), foreclosure moratoria, refinance and laws passed to slow the foreclosure process. As noted earlier the volume of loans in foreclosure has fallen significantly since its peak in 2010. Government programs along with rising house prices and a slowly recovering economy are responsible for the decline. The government estimates that over 7 million households have received assistance (HUD 2013).

Although many households may have been saved from foreclosure (either temporarily or permanently) government actions may have undermined the effectiveness of collateral in housing lending. Various moratoria, settlements with lenders over abusive foreclosure practices and state and local legislation have considerably slowed the foreclosure process – in some cases to more than 2 years. In effect, borrowers can remain in their house without making mortgage and often property tax payments. This can incent borrowers to default and reduces the deterrent effect of foreclosure and repossession.

Delays in foreclosure have allowed households to remain in their house without making payments for several years undermining the effectiveness of foreclosure as a deterrent to default. This is particularly the case in states where foreclosure is a judicial process. As shown in Figure 18, the average days to foreclose in New York have risen to 1089 and in Florida 855 (RealtyTrac 2013). Many states in the US do not allow deficiency judgments. Research by Ghent and Kudlyak (2009) found that recourse decreases the probability of default on loans with negative equity.

Figure 18: Foreclosure Time Lags



Source: RealtyTrac 2013

Fraud: Mortgage fraud was a significant part of the US mortgage market in the 2004-2006 time period. According to Core Logic (2013) 2007 the industry faced nearly $100 million fraudulent loan originations from "shot-gunning" where fraudsters would simultaneously close multiple loan applications on the same property with different lenders. The incidence of fraud has declined significantly but remains a problem. Corelogic estimates that nearly $22 billion of mortgage originations between the second quarter of 2012 and second quarter of 2013 contained fraudulent information. Common sources of fraud include employer misrepresentation, identity theft and foreclosure prevention scams.

Conclusions: What Has Changed?

Although debate rages about the relative importance of each there were a number of factors underlying the mortgage meltdown of 2008-9. Low interest rates, a house price bubble, government housing policy, excessive leverage, agency problems causes by perverse incentives, risky products, lax underwriting and fraud just to name a few. Government policy in the US has sought to address these problems in the years following. Yet for all the debate, legislation and regulatory action remarkably little has changed in the US housing finance system. The reason is the numerous legislative and regulatory actions have focused on the symptoms of the crisis rather than the underlying causes.

The main focus of US housing finance policy has been to tighten underwriting and restrict product availability. The focal point of Dodd Frank is the Qualified Mortgage, an attempt to create a very safe mortgage that becomes the industry standard. Although Dodd Frank does not mandate this mortgage the incentives it creates for lenders virtually ensures it will become the dominant instrument. Creating a safe mortgage does not address the incentives and policies that led to the crisis. The US housing finance system remains one in which government policy is focused on expanding homeownership and stimulating the housing market and the industry is focused on maximizing volume and shifting risk.

Even the Dodd Frank attempt to reduce risk in the mortgage market was watered down in the name of retaining access to credit and supporting the housing market. The intent of Dodd Frank was to ensure that all market participants have "skin in the game" to align incentives throughout the mortgage value chain. For borrowers this means a meaningful downpayment. However, a downpayment requirement was dropped from the QM definition.

In defining QM without a downpayment requirement, the CFPB ignored the most important determinant of default – borrower equity. The risk retention elements of Dodd Frank were undermined as a result of heavy industry lobbying. The Realtors, homebuilders, mortgage bankers and housing groups all argued that imposing a downpayment requirement would reduce access to the mortgage market, in particular by moderate income and younger households, and derail the nascent housing market recovery. In addition they argued it would impose a costly burden on the industry that would be passed on to consumers.

Risk retention may also be dropped for the Qualified Residential Mortgage if its definition is the same as QM undermining the legislative intent to align incentives between issuers, originators and investors thereby encouraging better origination and servicing.

Low downpayment mortgages continue to be the hallmark of government housing finance policy. The FHA and VA insure mortgages up to 96.5 and 100 percent respectively. FHA's loan limits were increased during the crisis and remain as high as $729,750 in high cost areas, despite the fact that FHA's mission is to support homeownership for first time and moderate income buyers. Unless Congress acts, FHA loan limits are slated to be reduced in 2014. There have been calls in Congress and from industry lobby groups to retain the current high limits.[26]

Government-backed institutions have long dominated the US housing finance system. Since losing market share in the middle of the last decade, government backing of US home mortgages has risen to more than 90 percent. While most policy makers and politicians state that they want a substantial reduction in the government role, the powerful housing/mortgage lobby strongly resists changes to the status quo arguing that the housing market is too important to leave to the private sector and/or that any changes will endanger the housing recovery.

The GSE regulator has taken seriously its mandate to conserve assets and improve enterprise risk management. Increases in GSE guarantee fees have restored Fannie Mae and Freddie Mac to profitability and if continued may begin to reduce their market share. Critics argue that the fees are excessive considering current purchases are very low risk but the fact remains that the GSEs are still under-capitalized and pose a future risk to the taxpayer. The newly appointed Director of FHFA announced recently that GSE loan limits would not be reduced in 2014.

Advocates for a strong role for the government continuously point to the necessity to maintain the 30 year fixed rate mortgage and provide guarantees to ensure its survival. The Dodd-Frank Financial Reform legislation stipulates the characteristics of qualified mortgages, which are likely to become the standard instruments in the market going forward. The bill bans or restricts the use of pre-payment penalties, balloon payments, interest-only payments and other features commonly offered in the

26 http://www.sfgate.com/business/networth/article/Federal-loan-limits-may-drop-but-by-how-much-4803398.php

mortgage choice set. It requires ARM borrowers to be qualified at the highest rate in the first five years. By providing a safe harbor against consumer lawsuits the QM de facto becomes the mortgage of choice. A likely outcome of the bill is to perpetuate the use of the long-term fixed rate pre-payable mortgage (FRM) and solidify government secondary mortgage market support.

Many commentators have pointed to the role of housing goals in the crisis. Surprisingly (or perhaps not given the politics) these goals remain in place for the GSEs. The Corker-Warner GSE housing finance reform bill contains a provision for a fee charged by the new guarantee agency to fund and affordable housing program. The Senate Banking Committee recently held hearings on the need to include affordable housing in reform.[27]

The major areas of change have been in mortgage underwriting and product offering. The mortgage regulation pendulum has swung sharply in favor of restricting credit. Sub-prime and Alt A mortgages have almost disappeared and documentation requirements have become extraordinarily tight (i.e., the concept of compensating factors has disappeared – the documentation requirements and underwriting guidelines must be adhered to the letter). A major factor driving the tightening of credit has been the repurchase requirements of the GSEs. Lenders live in fear of having to repurchase loans and go to great efforts to ensure that they cannot be tripped up by technicalities.

The exotic affordability products of the last decade have disappeared. In part this is due to the fact that affordability has improved markedly due to low interest rates and falling house prices. With house prices on the rebound and interest rate inevitability on the rise it will be interesting to see if some of the affordability products offering lower start rates remerge.

While tightening of mortgage underwriting (and in particular full documentation) was merited the underlying incentives that contributed to the meltdown have in large part not been addressed. The US housing finance system is still a volume driven industry with brokers, lenders and other market participants incentivized to create and sell loans in order to survive. The collapse of the refinance market with rising interest rates will provide a test of the resiliencies of the changes. The decline in volume is putting pressure on lender credit departments to relax the

27 http://www.banking.senate.gov/public/index.cfm?FuseAction=Hearings.Hearing&Hearing_ID=79e9eed0-942a-4ea4-9cc5-c89e2a48bf3e

rules so mortgages can be originated. Non-bank lenders are offering subprime and limited documentation mortgages, albeit in miniscule quantities, but funding is available and spreads are wide providing the incentive to expand. The funding of such mortgages is still problematic as the GSEs are unlikely to relax their standards (though they too are under some pressure to do so) and banks are only putting high quality loans into portfolio. However, non-prime lending has reemerged. "What's developing is "old style" home-equity lending, where loan-to-value ratios are rarely larger than 75 percent and the actual funder of the loan keeps the paper in portfolio and services it." [28]

Despite all the problems in the US housing finance systems over the past 5 years remarkably little has changed. The political allure for supporting housing and homeownership remains strong and the incentives of lenders to maximize volume and market share continue to exist. As such, the seeds for a repeat of a mortgage crisis lie in the ground. Only time will tell whether they will sprout.

28 http://www.insidemortgagefinance.com/issues/imfpubs_ibcl/2013_5/news/New-Lenders-in-Not-Quite-Dead-Nonprime-Market-1000022237-1.html

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6. Housing policy in developing countries

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Article 6 Contents

1. Employer-provided housing applied to the Kibera-Soweto slum upgrading project in Nairobi[1].

Background

1. The widespread existence of slums in developing countries is not a new phenomenon in economic and social history. At the end of the 19th century in England where the industrial revolution started and at the beginning of the 20th century in continental Europe, housing and general living conditions of workers were unbearable. The living conditions of workers and their families gave rise to powerful political movements, including revolutions. The trade unions and the social-democratic political movement were the main driving force for the gradual improvement of the living conditions of workers and their families.

Employer-provided housing in Western Europe

2. A key policy-instrument for the betterment of living conditions was the provision of housing by the employers. It is important to understand that companies which provided housing did not do that out of charity, something which is nowadays known as "corporate social responsibility". The employers provided housing because they fully understood that healthy and well-rested workers were much more productive, motivated and loyal to the company. There was another aspect which made it profitable to provide housing to workers. The first phase of housing provision in the now developed countries of Europe was almost entirely rental housing. The companies constructed housing units usually on land nearby the factories and deducted relatively low rents from the salaries of their workers.

3. From an economic point of view, the buildings were investments of the companies since they constituted an asset in their balance sheet and were subject to

[1] The paper was initially presented at the Regional Conference on "The Principle of Sustainability: An Interdisciplinary View", Nairobi, 29 November 2006 to 2 December 2006

depreciation, i.e. costs, which reduced taxable income and actual taxes paid. Some governments provided increased fiscal incentives by allowing high rates of depreciation which made investment in housing even more attractive and profitable to companies.

4. In actual fact, it is not only the private sector and their employees who greatly benefit from employer-provided housing but also governments are gaining a lot from such an approach because they can address housing problems through very effective, indirect fiscal policies. Insofar, one can really speak of a triple win situation. This is the very successful experience in housing provision by employers as it has happened in the previous century.

5. At a later stage, companies provided low-interest, long-term housing loans so that their workers could buy or built their own houses. More often than not, they purchased those housing units of the company where they were already living as renters. This approach can be characterized as employer-assisted housing since the employer is not the owner of the housing unit.

6. In the 1960s governments in Western Europe invented a whole range of housing policies focusing on income tax relief for prospective home owners and subsidies for developers of social housing. These policies were very successful because no significant housing problem could be diagnosed in Western Europe since the mid 1970s. These policies were however only effective because they were accompanied by substantial increases in incomes.

Employer-assisted housing in the United States

7. The notion employer-assisted housing became really well-known in the United States (US) at the beginning of the 1990s. During that period of relatively high economic growth, some growth regions of the US experienced a shortage of labor because of either a general shortage of housing or exorbitant high housing costs. Employers decided to provide assistance to their employees in order to make housing more affordable.

This employer-assistance came in a variety of forms. First, prospective homeowners were helped with the down payments, closing costs or housing finance companies were

brought in as partners of the employer in order to reduce risks and bring down mortgage costs. Secondly, there was also considerable employer's support to rental housing in the form of covering deposits or granting a monthly fixed contribution to reduce the high rents.

8. The big success of employer-assisted housing programmes in the US culminated in the submission of a senate bill entitled "Housing America's Workforce Act 2005" sponsored by Senator Hillary Clinton. This bill provides incentives to increase private sector investment in housing solutions in the following way. The legislation offers a tax credit of 50 cents for every dollar that an employer provides to eligible employees, up to US$ 10,000.- or six percent of the employee's home purchase price (whichever is less) or up to US$ 2,000.- for rental assistance (per taxable year). In addition, to ensure that employees receive the full value of employers' contributions, the act defines housing assistance as a nontaxable benefit, similar to health, dental and life insurance. The Housing America's Workforce Act 2005 is endorsed by organizations such as The National Housing Conference, National League of Cities, National Association of Counties, National Association of Home Builders, National Association of Realtors and Mortgage Bankers Association.

Employer-provided/assisted housing in the context of slums

9. In view of the above, it has been documented that employer-provided/assisted housing (EPAH) has been applied successfully in the past and is a particularly relevant phenomenon in the housing market of the US since the early 1990s. The key questions here are: Can these effective methods and policy instruments of EPAH also be made to work in developing countries where slums are the predominant form of "housing"? Can EPAH make a significant contribution to housing the poor?

10. In the following, the possibilities and strong points of EPAH for its application in slum environments will be discussed, making particular reference to the Kibera-Soweto slum in Nairobi. The most immediate and serious problem of slum areas is the high density. There is simply no space to allow for the installation of infrastructure such

as roads, sewerage, water, schools, hospitals etc. The slum area needs therefore be decongested which means buildings and housing units need to be demolished and tenants relocated outside but nearby the slum. The structures to be demolished are in those areas where infrastructure needs to be brought in and it is important that the new open space is not occupied by new in streaming slum dwellers. There is also the issue of whether or not to compensate the structure owners who will loose their rental income after the demolitions.

11. In the case of the Kibera-Soweto a high rise (5 storey) decanting apartment building is being constructed which can be rented by those who have been moved out of the slum. It is important that the decanting building is nearby the original slum area so that tenants who earn their living in the slum are not deprived of their economic base

The principles and methods of EPAH apply to only those slum tenants who are privileged to have a regular employment with a fairly reputable company. Statistics from the Kibera-Soweto slum show that there about 20-30% of slum dwellers who have a regular job. If that amount of tenants can be moved out of the slum then it should be possible to create enough space for infrastructure even though some tenants might have to be shifted around within the core slum. Those slum dwellers who do not have the privilege of formal sector, regular employment need to organize themselves in cooperatives so that they can afford to purchase flats in the decanting building or upgrade their existing dwelling in case they are the structure owner.

12. There will be other slums dwellers whose incomes are sufficient to enter the low-cost housing schemes outside the original slum area. The government can provide incentives to housing finance institutions, developers and private investors in order to generate sufficient supply of low income housing, both for homeownership and for rental housing.

Outlook

13. In light of the foregoing, it has become clear that any housing policy in developing countries with large slum populations must strategically involve the private sector. This is only possible through wise government legislation which provides an optimal mix of fiscal incentives so that the private sector can play its role well. The government is therefore not directly intervening in the market but plays the role of a facilitator. The driving force in the housing market is the private sector with its internal resources and its capacity to unlock financial resources through the housing finance institutions.

14. The Ministry of Housing of Kenya has prepared a draft Housing Bill 2006 which contains a paragraph on the above subject and has established a Housing Incentives and Financial Re-Engineering Committee which has the task of identifying a wide range fiscal incentives and procedural simplifications in order to engage the private sector to its full potential. In the past, the provision of low-income housing has not taken place at the scale required to deal with the fast-growing slums. The impact of individual projects, by its very nature, is almost neglible, being unable to cater for the huge demand of low-income housing. Similarly, governments ceased to be able to provide housing and are now being considered as facilitator. The necessary capital to cope with the scale of the low-income housing problem can only be raised by the private sector through financial institutions including the capital market. Targeted incentives by the government can bring about the movement of sufficient capital into the low-income housing market.

2. Brief Remarks on Housing Problems in Developing Countries

The prevalence and extent of slums in urban areas of many developing countries constitute the most serious housing problem in these countries. This phenomenon has of course also considerable health, social and political implications. "Housing" in slums is a separate market which is only loosly connected to the established official housing market.

The latter housing market in developing countries is characterized by a severe shortage of housing finance. This is particularly related to individual borrowers but developers are also affected. Accordingly, interest rates for housing finance are very high, i.e. reaching up to 30%. High income earners are able to finance their housing demand through other means and in some developing countries which have a large diaspora, remittances from these citizens abroad contribute a large flow of finance for domestic housing projects. Developers are focusing on the upper middle and high income groups, neglecting low to lower middle income housing almost entirely.

Housing policy in many developing countries is to a large extent not existing (or not effective) because housing policy is not a priority in national economic and social development. The reason for that is, that national economic government policy is driven by the strong demand for foreign exchange. This is resulting in export-led growth policies and strategies which treat domestic investment in housing as low priority. This export orientation dominates the general policy setting in many developing countries.

Other important determinants of the housing market in developing countries are general insecurity, legal ineffectiveness and inefficiency as well as political instability. The quality of construction is more often than not a problem which is difficult to be resolved because the afore-mentioned legal conditions in these

countries. The latter affects the whole legal contractual process of housing, including foreclosure. The construction sector typically operates below its potential capacity because of the afore-mentioned constraints.

Housing policy in developing countries must be embedded in an overall vision and mission of the country. The envisioning process which should involve all stakeholders and cover a period of 20-30 years will reveal the crucial importance of housing conditions for the overall economic, social and political advancement of a country. This approach has been adopted in Kenya some 6 years ago and the policies are outlined in the Government Report entitled "Housing Sector Incentives and Market Re-engineering Measures". The proposed incentives and measures were selectively implemented by the Government which resulted in remarkable increase of housing supply for the lower income segment. The relevant elements of this approach are captured in a power point presentation, but slum-related issues are not covered in the presentation.

Governments in developing countries must directly intervene and deal decisively with the slum problem by devising slum upgrading policies. It also must play a key role in the provision of suitable land and contribute to the financing of new buildings, including so-called decanting sites.

3. Why does housing receive so little attention in national development?

- Foreign exchange constraint
- Housing not embedded in national vision
- Dominance of export-led growth strategies

What are the key shortcomings of the housing sector in developing countries?

- Lack of sufficient finance/low savings rate
- Low and lower middle income segment of the market is not served/proliferation of slums
- Insecurity and inefficiency of the legal system
- Low quality of construction
- Political instability impairs long-term investment/Take the money and run attitude

Vision, Mission and Strategy for the country

- Multi-stakeholder Dialogue to develop vision, mission and strategy
- Alternative paradigm to overcome export-led growth orientation
- Housing conditions a key social pillar of vision
- Domestic investment in housing as engine of growth and employment
- See example Germany Agenda 2010 and Kenya Vision 2030
- Policy measures to deal with shortcomings of housing sector
- Incentives to:
  1. Guide the private sector to the low income segment
  2. Provide finance from the private sector
  3. Avoid direct intervention in the market

Revision of the legal system to ensure legal security and predictability

A range of possible incentives - examples from the Kenyan Report:

- Infrastructure Development Incentives

- Employers and Employee Incentives
- Savings Mobilization Incentives
- Housing Finance Mobilization Incentives
- Diaspora Market Mobilization Incentives
- Housing Development Process Incentives

Formation of multistakeholder group and experts to develop the specific set of incentives

Incentives specific to employer- provided housing

- Employers who construct for their workers get a higher depreciation rate for the building
- Employers direct support to rent, deposits, downpayments etc can be given tax credit
- Employers can also guarantee loans for employees
- Employers can help to organize cooperatives which provide land and saving schemes
- Housing assistance provided by employer is nontaxable benefit on the part of employee

Content of UN-Habitat Governing Council Resolution 21/7

- Focusing on the operative paragraphs:
- Calls upon Governments …. To encourage and catalyse private-sector participation in the provision of … affordable housing, particularly through incentives ….
- Requests the Executive Director, in consultation with Governments to promote the use of incentives and market measures as a sustainable partnership strategy for attracting private sector investment ….

Implications of Resolution 21/7

- Two schools of thought: UN Resolutions are international legal instruments or merely recommendations of UN Member States.
- Even if the latter approach is favoured, UN Resolutions are deliberate and explicit expressions/recommendations adopted by 194 Member States of the United Nations. Individual Member States are encouraged to implement UN resolutions but are not legally bound.

Concluding Remarks

- Foreign exchange constraint drives countries towards export-led growth policies
- Housing Finance in developing countries is most severe bottleneck for low income housing
- Incentives can help to generate finance from the private sector
- Housing in developing countries need to be part of an overall national vision, mission and strategy
- Extreme and widespread poverty in many developing countries causes extreme and (seemingly) irrational behaviour, including corruption.
- The above impairs development aspirations and progress of a country. The housing conditions and market are equally negatively affected and are an integral part of the overall development process.

7. Developments of Russian mortgage and housing markets

Andrey Tumanov, Evgeniya Zhelezova

Article 7 Contents

Abstract

The article is devoted to the role of the state in the housing market in Russia. The main role of the Government is to develop a sustainable and efficient housing market and to ensure the access of households to affordable decent housing. To achieve this goal by developing mortgage market the Government established in 1997 special agency - The Agency for Housing Mortgage Lending.

The main objective of the Agency is to implement governmental programs for providing affordable housing and ensuring improvement of housing conditions for the population in compliance with the priority national project Affordable and Comfortable Housing for Russian Citizens.

The goal of the Agency for Housing Mortgage Lending is to establish conditions so that all Russian citizens had equal opportunities for getting a mortgage loan, regardless of their social status, education, family composition, income, occupation, religion, place of residence or registration. A residential mortgage loan provided in accordance with AHML's standards is available for all categories of people, is good value for money and easy to arrange.

AHML pays particular attention to fostering the mortgage market in the regions where the level of per capita income is lower than the national average, and the housing and financial markets are underdeveloped.

The main goals, tasks, principles of activities will be outlined in the article. We will provide a brief history of mortgage lending sector in Russia and investigate the role of AHML in development of mortgage market.

In addition we will look at the connections between housing and mortgage markets outlining the effects of changes in legislation and the strategy of development of mortgage lending in Russia, including AHML Group Strategy.

Finally, we will describe the current approaches to construction of house price indexes and analyze its main drawbacks.

Housing sector before transition to market economy

For the whole time of the USSR's existence, the soviet state was implementing a centralized housing policy that included the following:

- State property prevailed in construction, housing stock and the management of utility facilities;
- Housing construction was mostly planned and financed from a single center;
- State apartments were distributed free of charge among the people who were considered in need of improving their living conditions (they were included in special waiting lists);
- It was not allowed to sell state housing but it was possible to exchange it (in most cases, with an illegal additional payment);
- People were allowed to build their own private houses only in rural areas and in towns with a population of less than 100 thousand;
- Cooperative housing construction was relatively well developed only in the largest cities, and there was a dedicated waiting list for people who wanted to join cooperative housing construction, as their living conditions did not exceed 5-7 sq. m per person;
- State banks seldom originated housing mortgages and only for cooperative and owner-built housing, provided the private savings amounted to 40% (the interest rate was 2% for individual construction under the credit facility, whereas it was 0.5% for housing construction cooperative companies compared to 3% per annum for deposits at the banks).

Housing finance system during the Soviet time was consistent with the housing policy pursued and consisted in centralized distribution of budget resources for the construction of state-owned housing, followed by free-of-charge distribution among the people in the waiting lists, who wanted to improve their living conditions. In 1987, the state capital investment into housing construction exceeded 80%, whereas the population invested 14.6% only (including the funds of private developers and members of housing construction cooperative companies).

When the market reforms started, the housing-related issue was still one of the most important for Russian families: in 1990, the average rate of housing per capita was 16.4 sq. m per person, which is 2-3 times lower than in Europe. At that time, the absence of market mechanisms for purchasing and building housing was a great impediment for the households wishing to improve their living conditions. According to experts, about 40% of the population had an obvious need to improve their living conditions but was no longer able to receive housing from the state1. With the first shift toward the market economy, a gap opened up between the households who could afford to buy housing on the market and those who had no chance in the short-term or long-term to resolve their housing issues on their own.

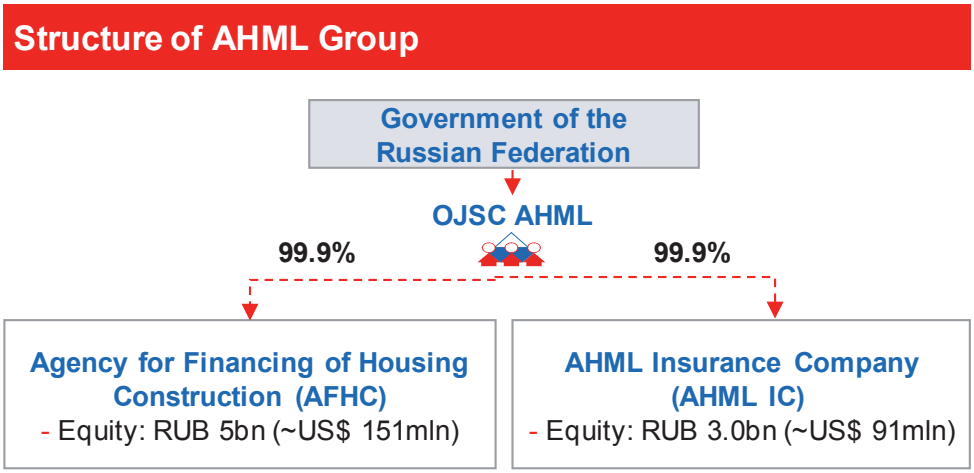
[1] Kosareva N., Pchelintsev O., Ronkin G. Towards Housing Reform: Analysis and Forecast, Voprosy Economiki, 1990. No. 8. p. 81. (Evaluation relates to the USSR as a whole).

AHML Role on housing market

Establishment of the Agency and development of a two-level refinancing system

In 1997 – 1998 the legal framework was established for organizing and financing the real estate market, laws were adopted enabling the development of mortgage financing (the Law on Mortgages (Pledging Immovable Property) adopted in 1998) and the state Agency for Housing Mortgage Lending (AHML) was established.

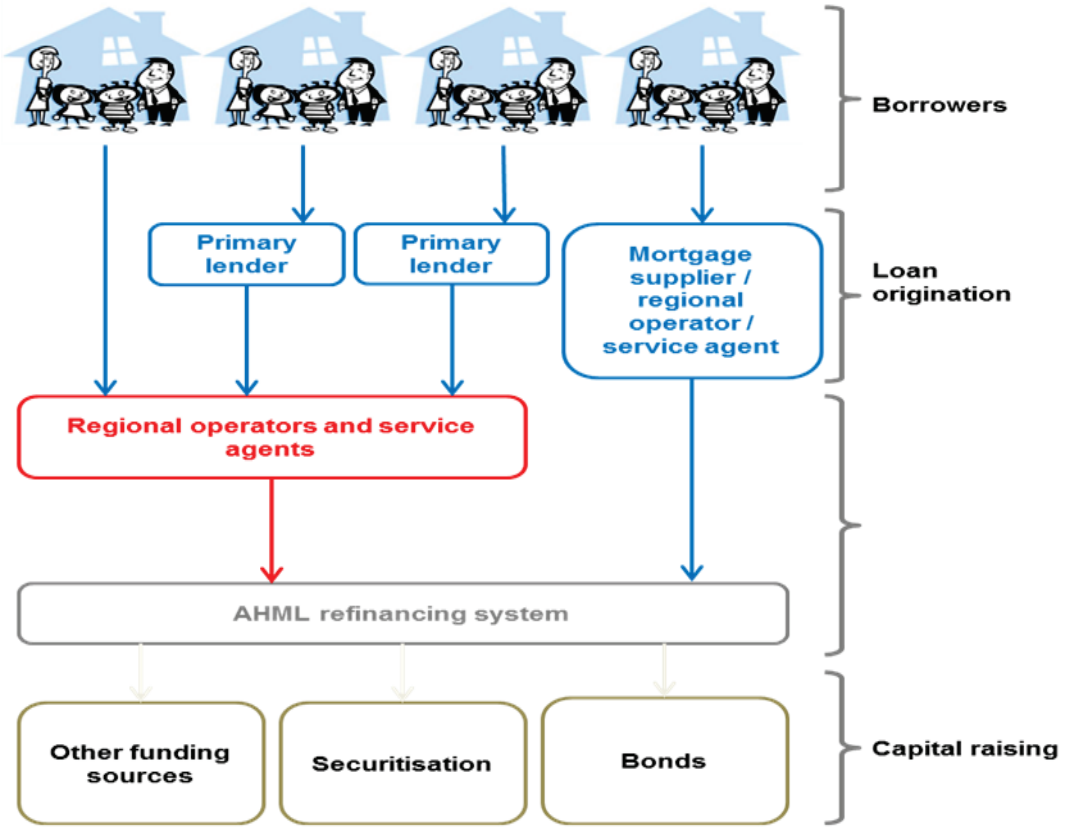
Fig. 1. Structure of AHML



The main objective of the Agency is to pursue the state policy to make housing more affordable for Russian population and provide equal mortgage opportunities for all Russian citizens. The Agency pays special attention to establishing a mortgage market in the regions where the housing and mortgage markets are least developed.

The Agency set up a system of two-level refinancing of mortgages, and the participants of such systems are primary lender banks, regional operators and service agents.

Fig. 2. Structure of system of two-level refinancing of mortgages



The 1998 crisis significantly slowed down the implementation of the state housing policy: new political decisions were not made and the reform that had been started was happening at a slower pace. The activity on the housing market became considerably lower and the construction of housing almost stopped. However, in 2000, the targets for housing mortgage development in Russia were documented in the Housing Mortgage Development Concept in Russia.

In 2002, AHML refinanced first mortgage loans, which was a meaningful signal for the market to brisk growth. In 2005, a new revision was approved for the Concept of the Unified Housing Mortgage Development System in Russia, and as of the end 2006, the total debt under credit loans amounted to 0.9% of GDP.

It is worth noting that though the housing mortgage lending market was based on the American two-level model (banks – Fannie Mae-type of a refinancing organization (AHML) – investors into mortgage-backed securities), the law provided for the parallel development of the European one-level model (banks issuing covered bonds from their

balance sheets). The laws also allowed setting up loan-and-savings societies (similar to German Bausparkasse, but excluding state subsidy since 2004). When the law on housing building and housing savings associations was adopted, the people started using that form of housing organizations, however, without the state subsidies to the savings, the funds in such associations depreciated very quickly due to high consumer and housing inflation.

Major achievements of the pre-crisis period and measures to support the system during the crisis

Against the background of the growing economy in general, the housing mortgage market demonstrated high growth rates. The market's dynamic development period was supported by the loan origination growth. Particularly, in 2005 the loan origination amounted to 56 bn roubles, whereas in 2007 it increased up to 557 bn roubles. The market developed competition, which resulted in lower interest rates on credits (from 14.9% as of the end of 2005 down to 12.6% at 2007 yearend), high-risk products offered (with low down payment, in exotic foreign currencies).

Deepening recession in international markets brought about deterioration of the economic situation in the Russian financial market in 2008. Average mortgage interest rates grew from 12.9% in 2009 to 14.3% in 2009 and the loan term reduced from 18 to 16.5 years respectively. The market of housing mortgage lending felt the full impact of liquidity shortages already in the second half of 2008. While in 2007 volumes of originated housing mortgage loans increased by 87 percent (y-o-y) to the level of 556 billion Rubles, the rate of growth in 2008 dropped: loans worth 633.8 billion Rubles were issued (14 percent more than in 2007). As the overall financial and economic situation in Russia deteriorated the delinquency rate on all loans extended to the population, including mortgage loans, grew up.

The crisis influenced not only mortgage, but housing market as well. In 2009, the number of transactions in the housing market declined by 13.3 percent y-o-y. Housing price trends underwent changes: not only real prices of housing started to drop in 2009, but nominal prices as well. The recession also affected the housing construction sector.

Anti-crisis housing policy became an integral part of the overall anti-crisis government package of measures in the banking and housing construction sectors. The necessary measures were taken both within the implementation of the anti-crisis package

of the Government of the Russian Federation during 2009 – 2010, and as part of the activities carried out by Government-sponsored organizations, including those in the housing sector (the Agency for Housing Mortgage Lending, Fund for the Promotion of the Housing and Utility Sector Reform, Russian Housing Development Foundation and Vnesheconombank). The main common idea behind the housing anti-crisis package was to support the development of the primary housing market and housing construction market. The measures included the following[2]:

- Additional contribution was made by the government to the authorized capital of the AHML in the amount of 60 billion Rubles for the purposes of refinancing mortgage loans and rescheduling mortgage loans for those borrowers who found themselves in a dire situation as a result of the crisis;
- Introduction of possibilities to purchase apartments using government funds at the stage of construction to provide housing to certain categories of Russian citizens within government housing provision program;
- Allocation of 250 million Rubles to support household demand for newly built housing by providing facilities to banks to issue mortgages at maximum 11 percent interest rates;
- Foundation of Agency for Restructuring of Housing Mortgage Loans– ARHML (a subsidiary of AHML) for the rescheduling of mortgage loans for those borrowers who either became unemployed or whose wages were cut down. Later the program of ARHML was extended to assist specific categories borrowers[3] who failed to restore their ability to pay; .

The ARHML's program included three stages in support. At support level I, a borrower was granted a stabilization loan to repay twelve monthly payments, past-due payments (if any), except for sanctions and penalties, as well as insurance payments. Support level II consisted in buying out from the lenders of mortgages of the borrowers, who were not able to recover in their financial solvency through the first stage of support

[2] For more details of anti-crisis measures, see Nadezhda Kosareva, Andrey Tumanov. Housing Market in Russia: Lessons of the Mortgage Crisis // Global Housing Markets: Crises, Policies, and Institutions. Ed. by Ashok Bardhan, Robert Edelstein, Cynthia Kroll. John Wiley and Sons, 2011

[3] Borrowers from the company towns (towns, where the larger part of the local population is in the employ of only one enterprise) or borrowers who fall into other most socially vulnerable categories of population for whom the mortgaged housing is their only housing.

or who required the current loan service payments to be rescheduled due to reduced or lost income. Support level III consisted in buying out from the lenders of a pledge and keeping the borrower's sole place to live in.

- Allowing to use the money from so-called "maternal subsidy"[4] towards improvement of housing conditions (including debt repayment under mortgage loans) immediately after childbirth and receipt of a relevant certificate;
- In order to strengthen the demand for mortgage loans and increase the affordability of mortgage loans, the maximum LTV on mortgage loans, which may be used to issue MBS, was increased from 70 percent to 80 percent;
- The Russian Housing Development Foundation was set up to promote housing construction, first of all, economy-class housing affordable to middle income households. The Foundation pursues the objective of involving federal land, which is either idle or inefficiently used, in business transactions, equipping it with physical infrastructure and allocating it through auctions for housing construction purposes.

Mortgage lending market today

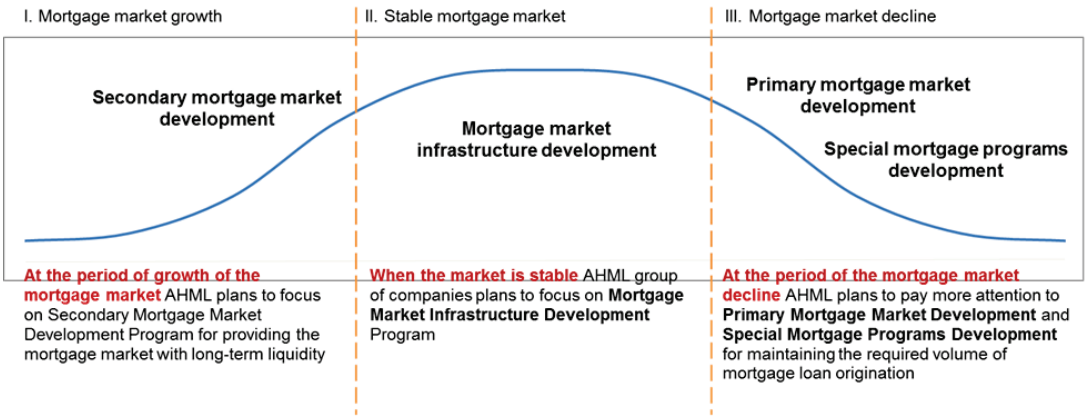
The key role of the Agency before the 2008 crisis was to develop the infrastructure of the mortgage lending market and help players build up extensive experience in mortgage lending. Starting from March 2004 through October 2013, the Agency trained a total of approximately 7,000 employees of partner organisations.

The Agency was actively involved in drafting amendments aimed to eliminate flaws in the mortgage lending legislation and ensure a balance of interests between lenders and borrowers; the amendments were introduced by 2009.

The Agency's counter-cyclical policy has been aimed at supporting the mortgage market during the economic slowdown and fostering competition among banks during the upturns.

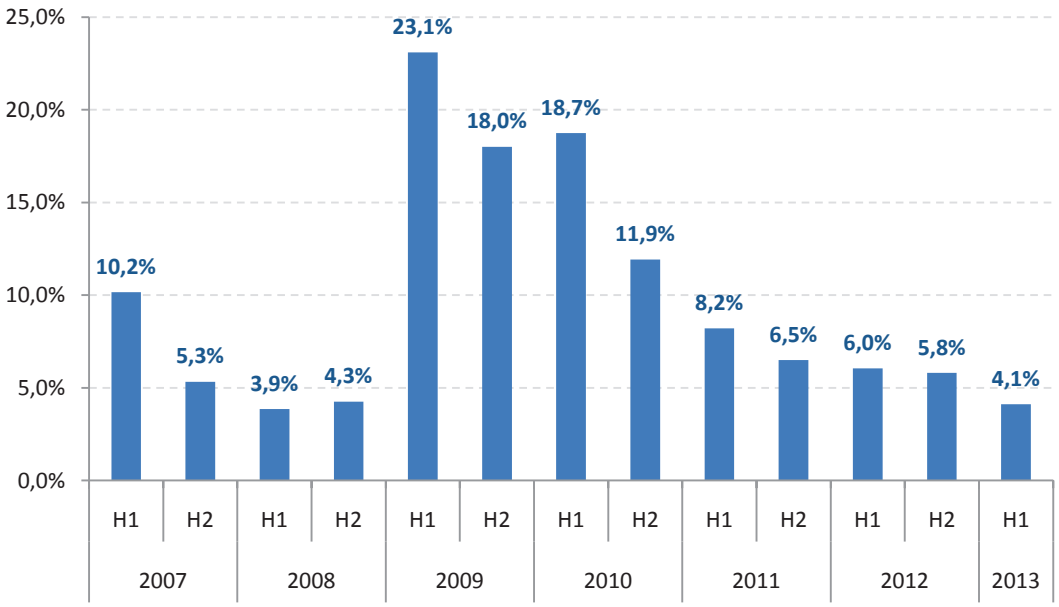
[4] Maternity capital – a one-off inflation-indexed sum of RUB 250,000 (as of 2009) paid by the state to mothers at the birth of their second or other subsequent child that could be put towards healthcare, education or improvement of housing conditions, but not earlier than three years after the birth of the child.

Fig. 3. AHML function in smoothing out cyclical fluctuations in the mortgage market



Focusing on conservative mortgage lending practices resulted in a decrease in the share of mortgages refinanced by the Agency on the back of the growing mortgage market.

Fig. 4. AHML mortgage market share, %



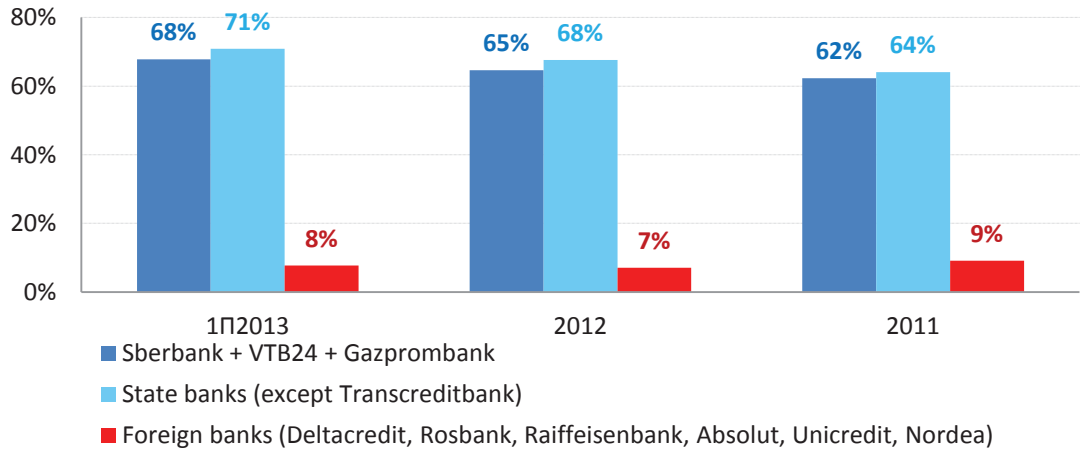
During 2010 – 2012 housing and mortgage sector were on recovery track. By the end of 2012 mortgage lending was fully recovered from the crisis: mortgage lending almost doubled compared to the maximum prior to the crisis (from 556 at 2007 yearend up to 1 032 bn roubles as of 01.01.2013). Past-due payments under the loans (90+ days) reduced

down to 2.52% compared to the maximum of 7.29% as of 01.06.2010[5]. The recovery rates in construction are slower, especially to the extent of lending by developers. Certain construction indicators still point to possible continuation of stagnation.

To a large degree, this was due to changes in the demand structure during the post-crisis period towards the most affordable economy-class housing. At the same time, mortgage lending started its active recovery after the crisis[6].

The positive trend in mortgage lending was fuelled by strong competition among market players, mainly through relaxation of their borrower requirements and loan terms and conditions. At least 500 banks issue mortgage loans, but the level of concentration remains high – three major players account for 68% of the loans; 71% were originated by the state banks.

Fig. 5. Shares of major banks in mortgage lending



Full recovery of the primary mortgage market after the 2008–2009 crisis and its ongoing accelerating growth prompted the Agency to review its priorities and to target less developed market segments, aiming to foster and standardise the secondary mortgage market, develop and improve the market infrastructure and create risk mitigation and redistribution mechanisms of the mortgage lending system.

[5] The statistics available is from 01.02.2010 only.
[6] For more detailed review of the mortgage lending and housing construction markets, see the analytical reports prepared by AHML (http://www.ahml.ru/en/financ/mmo-reports/)

The Agency retains its position at the primary mortgage market via the network of partner organisations with the footprint covering almost all regions of the Russian Federation.

Fig. 6. AHML footprint

- Regions covered by AHML's mortgage suppliers and mortgage maintenance agents
- Regions without AHML's mortgage suppliers (Chukotka Autonomous District)
- Regions with limited coverage of maintenance agents (Republics of: Chechnya, Dagestan, Ingushetiya, North Osetiya – Alaniya, Tiva, Karachaevo Cherkez Republic, Nenetzkii Autonomous Region

The network of AHML comprises over 337 partner organisations acting in various capacities (some organisations act in more than one capacity).

Fig. 7. Structure of AHML network

AHML's partners are Russian companies, which meet AHML's criteria for partners accreditation, such as:

- Relevant experience in the mortgage market
- Availability of certificates, confirming relevant expertise of the staff
- Absence of tax claims or claims from other regulatory bodies (i.e. Central Bank, Federal Service for Financial Markets etc), no material court proceedings (ongoing or filed in the past 12 months)
- Ability to meet technical and organisational standards of AHML

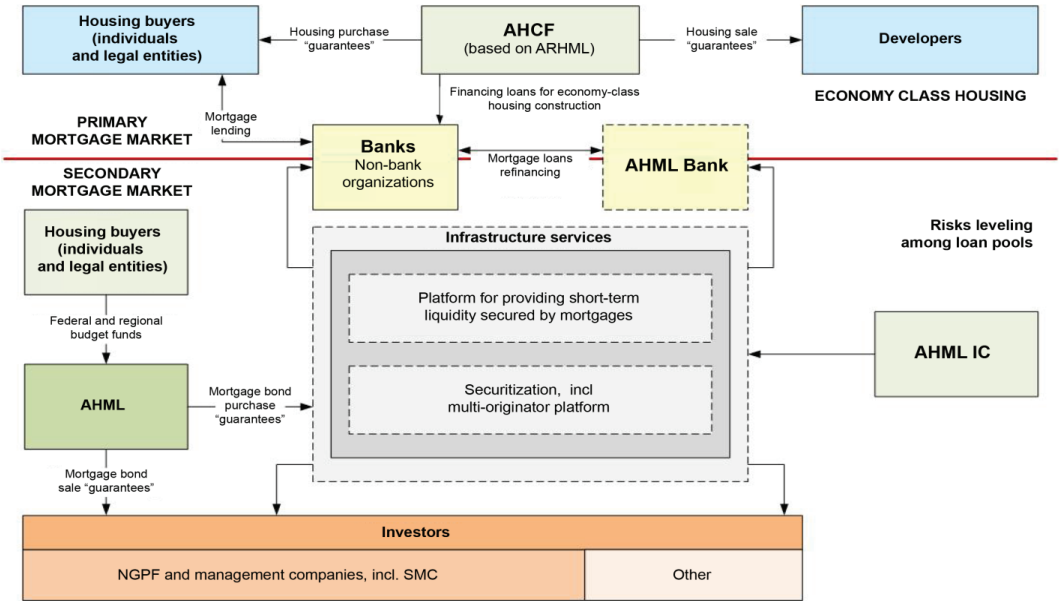
Sophisticated 6-grade ranking system is applied to mortgage certificate suppliers of AHML. The system is aimed at increasing the motivation and loyalty of partners as well as at mitigating risks.

Outlook

As part of its new strategy (adopted in 2013) the Agency intends to create an environment supporting sustainable qualitative growth in the market, particularly its economy-class segment, through a set of measures below:

- Establishing mechanisms of liquidity provision to market players and release of capital;
- Expanding infrastructure services aimed at improved competition and reduced bank margins;
- Establishing financing mechanisms promoting economy-class housing supply;
- Introducing an effective mortgage insurance tool to make mortgage insurance more affordable and redistribute risks;
- Developing mortgage standards for investors to be able to classify mortgage loans by quality.

Fig.8. Major Development Directions: 2014 - 2018



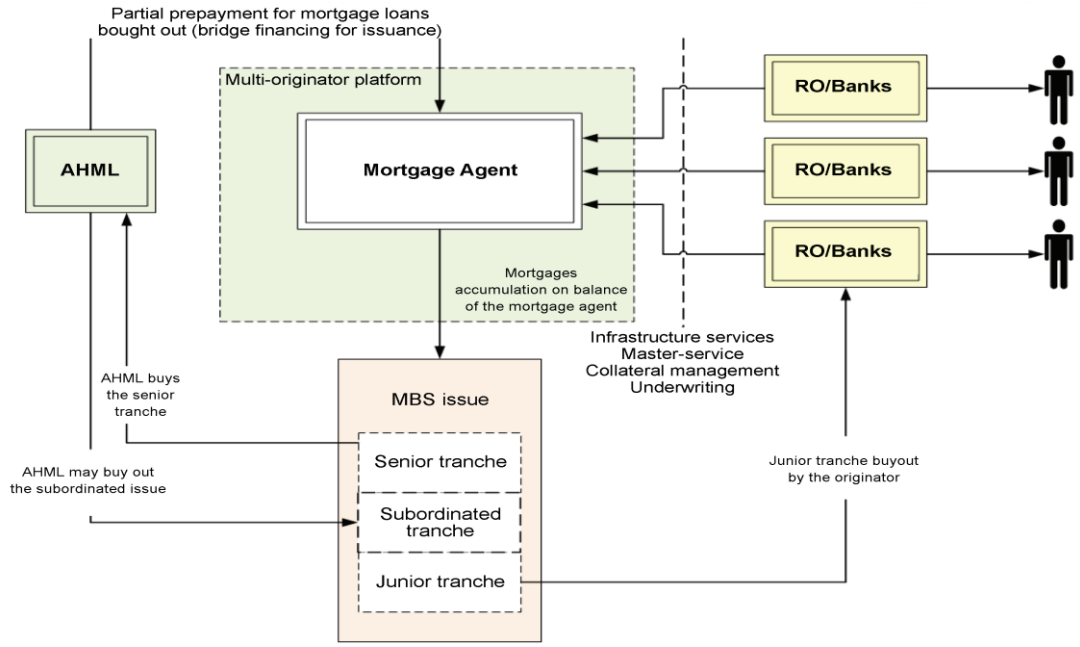
To give momentum to the secondary mortgage market and increase the issuance of mortgage-backed securities issues, AHML will focus on promoting mortgage asset securitisation.

Under the three Programs for Purchasing Mortgage-Backed Bonds developed by the Agency, AHML purchases senior mortgage-backed bonds from market players and enables them to pre-agree the volume and parameters of the mortgage bonds to be purchased by AHML when issued. In December 2012, the first contracting terms were announced with a total value of RUB 20bn for purchase during 2014. In July 2013, the Agency decided to purchase the mezzanine tranches of mortgage-backed securities.

AHML also provides bridge financing (special-purpose loans) to market players to build mortgage pools and complete securitisation deals, and guarantees for third-party mortgage-backed securities.

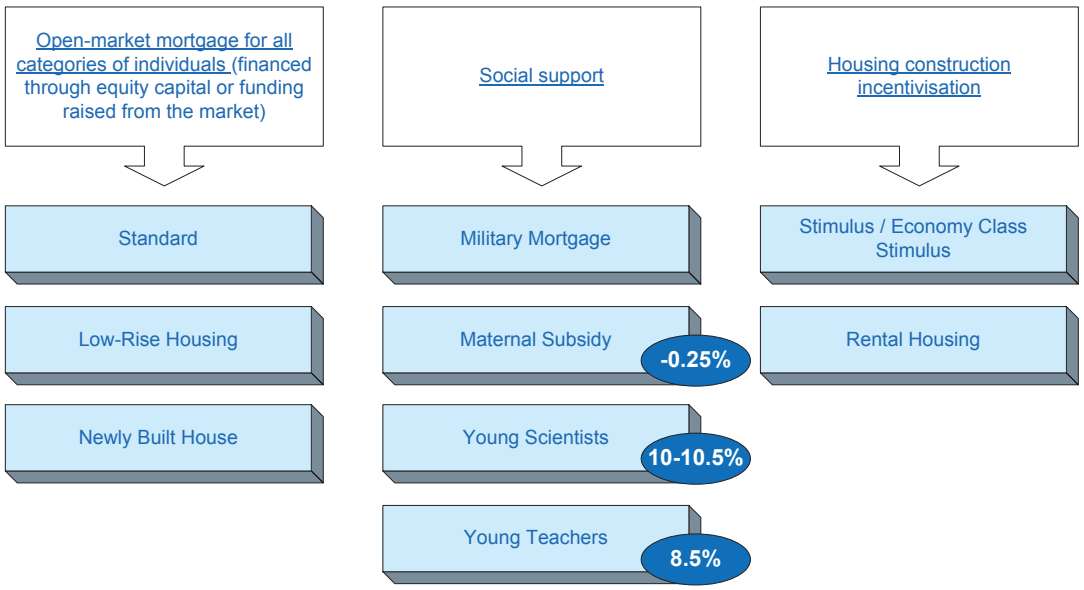
AHML is going to provide infrastructure services to secure regular issues based on the multi-originator platform to regional small and medium-size banks unable to generate a mortgage pool sufficient for securitisation within a short period. This will reduce the price and timing of securitisation deals.

Fig. 9. Multi-originator platform



To facilitate the government housing programs to provide affordable housing for specific groups of population, AHML, beside standard loan products, develops special mortgage lending offers with interest rates far below the market average.

Fig. 10. Structure of AHML mortgage programs



To implement the Russian Government's resolutions seeking to improve living conditions of young teachers, the Agency launched *Mortgage Loans for Young Teachers*, a social program financed by the Agency. The program based on the Agency's standard loan refinancing operations features issuance of mortgage loans with an annual interest rate of 8.25% and is primarily targeted at young teachers eligible to government support coming as subsidies to compensate a portion of their mortgage expenses.

The *Military Mortgage* program targets servicemen participating in the Mortgage Savings System developed to provide the military with housing. The lending terms of the program enable servicemen to buy housing in the primary or secondary market with minimum own funds requirements.

The Maternal Subsidy product takes account of the state benefits in the form of maternity (family) capital certificates to offer a higher loan amount under the same borrower requirements and grant an additional 0.25 pp discount to the interest rate.

For young scientists – researchers of Russian academies of sciences and universities AHML offers *Young Scientists*, a special product with a low interest rate (10%+), special payment schedule with due regard to the young specialist's future income growth, possibility to take account of the benefits available at the origination stage and potential decrease of the monthly payment if a child is born (for a period of up to 1.5 years).

To promote housing construction the Agency (acting through its subsidiary, the Agency for Financing of Housing Construction) pursues housing construction lending programs for developers and corporate entities (the *Stimulus* Program), including housing to be further rent out (the *Rental Housing* Program).

Relations between housing and mortgage markets

Government impact on the supply-demand balance in the housing market in the2000s: Housing bubble or not?

In order to solve the problem caused by the imbalance between the supply and the demand[7] and to form the affordable housing market, at the end of 2004 a package of laws known as the "package of federal laws aimed to develop the affordable housing market" which defined the new direction of the housing policy was adopted.

Since 2005, the housing policy provided for measures aiming to making it more affordable for individuals to purchase housing and to expand the opportunities for low-income households unable to buy housing to improve their living conditions by receiving social housing. In this situation, the direct financial participation by the state was intended in the form of support for establishing certain market institutes at the initial stage (for instance, the secondary market for mortgage loans) and by providing grants for certain categories of households (employees of organizations funded from budgets of various levels, young families, military servicemen and others) in order to make housing and mortgage loans more affordable. Free housing was provided by the state only to low-income households in need of better living conditions.

It was planned to stimulate the solvent market demand from the public, first of all, by developing mortgage financing and creating the pre-requisites for reducing interest rates on the mortgage lending market, making loans more affordable and developing other forms of personal finance (participation in shared-equity construction, housing savings programs etc.). The supply side of the housing market was supposed to be incentivised by creating the favourable conditions for expanding housing construction and brining engineering infrastructure to land plots.

On the whole, upon adoption of the laws on affordable housing market development, the state policy was more successful as related to demand stimulation

[7] In the beginning of 2000s, only households with high income could afford to buy housing on the market, to a large extent, due to the absence of adequate supply of new high-quality housing (the problem that has yet to be solved). Such situation was conducive to the continuous growth of housing prices. During the period from 1997 to 2005, the real housing prices grew by 40% while the real income grew by 70% during the same time.
In the middle of 2000s, data received through sociological surveys confirmed that 61% of Russian households were experiencing difficulties with housing and were to some extent dissatisfied with their living conditions. Also, one of each four households, according to them, had housing that was in a bad or very bad condition. The total housing volume that the people of Russia needed in 2004 was estimated to reach 1,570 million sq. m (46% of housing stock).

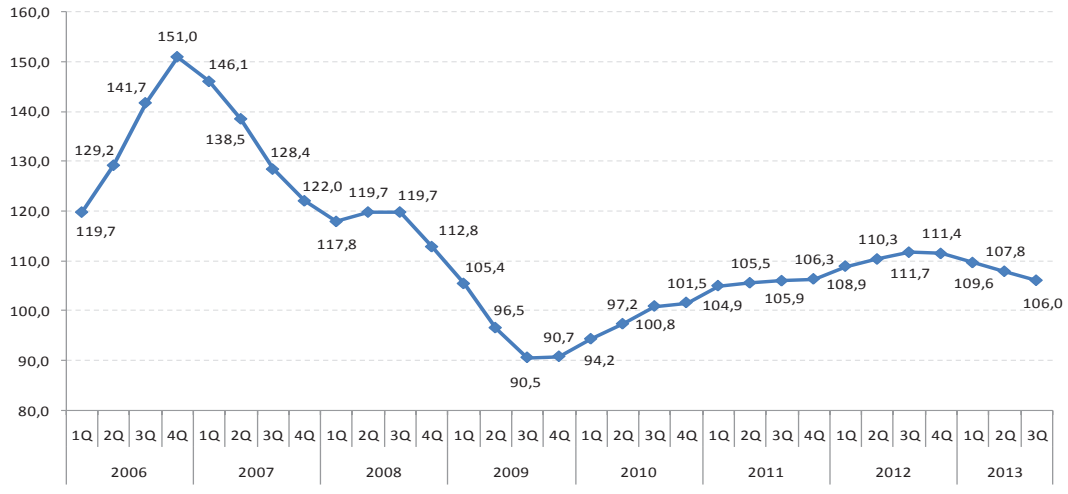
compared to housing supply. During the period from 2004 until 2008, the mortgage lending amounts grew by 35.5 times (from RUB 18.5 billion to 655.8 billion), household income – by 2.3 times while the housing construction grew by 1.6 times. This resulted in housing prices growing 21.7% faster compared to household income.

Fig. 11. New Federal housing policy in 2000s

PROBLEMS	SOLUTIONS
Low effective demand for housing	Development of residential mortgage lending and other forms of promoting effective housing demand, changes in taxation policy
High interest rate on mortgages	Enhancement of lenders' liens, establishment of new institutions (mortgage risk insurance, credit bureaus), stimulating higher credit quality and lower required rate of mortgage securities yields, changes in taxation policy
Inadequate supply of housing, low rate of housing production	Creation of better conditions for housing construction growth, enhancement of competitive land allocation procedures and land development, changes in fiscal and taxation policy
High transaction costs on the housing and mortgage markets	Abandonment of obligation for notary certification of mortgage contract, enhancement of title and cadastre registration systems
Inadequate security of rights of homeowners and individual investors of housing construction projects	Strengthening rights of bona fide purchasers of real estate, establishment of a system of state compensations for affected owners of housing, regulation of cost-sharing models of multifamily and other residential property construction

Rapid and sustainable growth of housing prices in Russia over ten years before the crisis generated, just like in most other countries, discussions about the nature of this situation: whether it is a "bubble" or not. Sure enough, over 2001 – 2008, real housing prices in Russia increased 2.5 times. Moreover, they were on the rise both during periods of economic decline, and during economic growth periods. Only in 2009 they started to come down against the backcloth of the global economic meltdown.

Fig. 12. Changes in real house prices (indices)



According to the definition of the term "bubble"[8] the growth of housing prices is not a direct indicator of a bubble. As a rule, experts refer to factors ensuing from the investment model devised by Poterba in 1984 and its later modifications, or from the model of asset pricing adapted to housing (such housing demand factors as real disposable income, growth of real GDP, inflation rate, real interest rates, unemployment rate, the size of the housing stock, population growth rate, and housing supply factors, such as cost of housing construction, availability of land plots and town planning legislation).

As it is clear from the surveys[9], the housing price growth in Russia in the 2000s was mainly driven by high public need for residential housing that transformed into effective demand due to personal income growth and broader mortgage lending on the back of low elasticity of new housing supply[10].

The other driver for demand for housing, which is often considered as important element of housing bubble – investment reason, was not very strong in Russia, although also existed, especially in the largest Russian cities.

On the other hand, as K. Styrin and O. Zamulin[11] pointed out, public anticipations formed on an adaptive rather than on a reasonable basis have largely contributed to the bubble in the Russian housing market. Therefore, housing prices going up create extra demand that relies upon price growth anticipations. And vice versa, when housing prices decline, the demand shrinks more than it could reasonably be expected after the fundamental analysis, since people put off buying their own housing in the hope for a still further price drop.

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[8] "If the reason the price is high today is only because investors believe that the selling price will be high tomorrow—when "fundamental" factors do not seem to justify such a price—then a bubble exists" - Stiglitz, J. E. "Symposium on Bubbles" Journal of Economic Perspectives 4, no. 2 (spring), 1990, p. 13-18

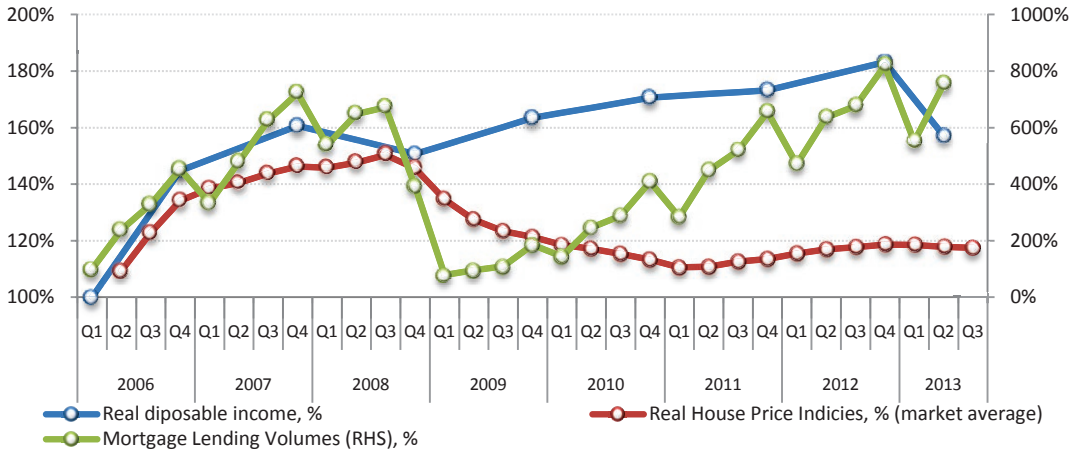
[9] Nadezhda Kosareva, Andrey Tumanov. Housing Market in Russia: Lessons of the Mortgage Crisis // Global Housing Markets: Crises, Policies, and Institutions. Ed. by Ashok Bardhan, Robert Edelstein, Cynthia Kroll. John Wiley and Sons, 2011;
Stepanyan, Vahram, Tigran Poghosyan, and Aidyn Bibolov. House Price Determinants in Selected Countries of the Former Soviet Union, IMF Working Paper WP/10/104, 2010;
Model of Market Equilibrium in Regional Housing Markets in Russia. Research Paper. Trade Marketing Research. Moscow, September 2009, www.grouptmr.com/publications/index.html

[10] Volumes of housing construction in Russia are poorly correlated with housing demand. Low housing supply elasticity ensues from high administrative barriers impeding the process of implementation of investment-construction projects and difficulties facing those who want to have an access to land plots for housing construction purposes. (see for example, Doing Business rankings, www.doingbusiness.com)

[11] Styrin K. and O. Zamulin. *Estimating Price Rigidities in the Russian Real Estate Markets*, NES+CEFIR working paper, 2003.

The financial crisis has virtually halted the growth of household incomes (real disposable incomes grew by 2.9 percent in 2008 and only by 1.9 percent in 2009 y-o-y) and cut down mortgage loans supply by banks (in 2009 banks made four times fewer mortgage loans than in 2008). The immediate consequence was a housing demand contraction (number of transactions in the housing market in 2009 decreased by 13.3 percent against the level of 2008), and, accordingly, a price drop.

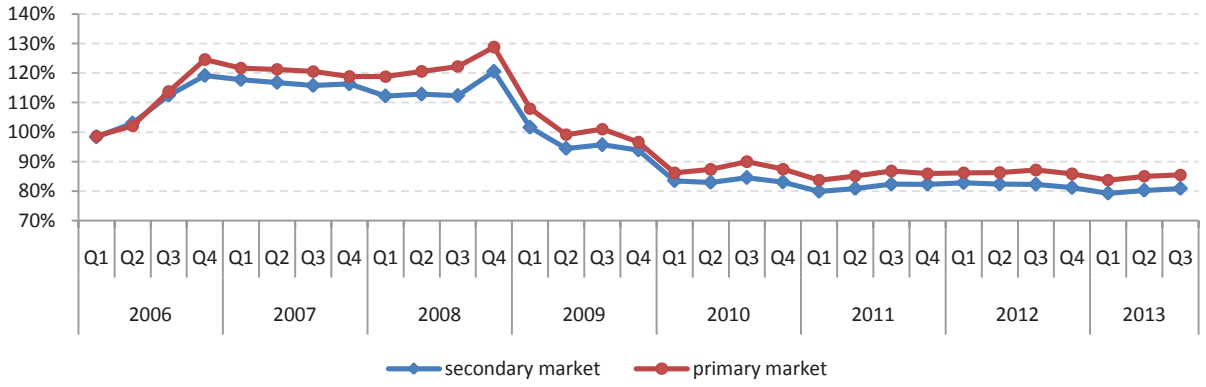
Fig. 13. Changes in house prices, real house hold income and mortgage origination



As mentioned above, the mortgage lending market fully recovered after the crisis by the end of 2012. Housing prices also regained their pre-crisis level (see Fig. 12). Besides, investment demand in the market has been partially back, since given the financial market volatility investment in housing appeared to be one of the few reliable long-term financial instruments. That is confirmed by the housing prices continuing their upward trend ahead of the inflation rate and higher consumer confidence that the trend is here to stay.

Noteworthy, starting from 2010, changes in housing prices has been in line with changes in personal income. That has not, however, made housing less affordable – the affordability index in the primary and secondary markets has not seen much change since early 2010.

Fig. 14. Housing Affordability Index in 2006 – 2013 (2005 = 100%)



The index is calculated as the ratio of the housing market price index (primary market / secondary market) and the real personal disposable income. A decrease in the index is evidence that housing affordability is growing.

Source: Federal State Statistics Service, AHML analysis

The market situation implies that personal income is being absorbed by housing prices since the supply of new comfortable housing is limited and lacks elasticity (moreover, almost a half of the commissioned projects are owner-built housing or individual housing).

Therefore, the data in the article by N.Kosareva, A.Tumanov[12] drive to a conclusion that the Russian housing market has not shown any principal signs of a bubble, and the price changes have been basically affected by the main factors described in the table below.

Fig. 15. Main factors, affecting housing prices in Russia

demand factors	**supply factors**
• pressing household needs in improving housing conditions	low price elasticity of housing supply resulting from high administrative barriers in the construction sector,
• stable growth of real household incomes	limited access to land plots for construction purposes, including low supply of land plots equipped with necessary physical infrastructure

[12] Nadezhda Kosareva, Andrey Tumanov. Housing Market in Russia: Lessons of the Mortgage Crisis // Global Housing Markets: Crises, Policies, and Institutions. Ed. by Ashok Bardhan, Robert Edelstein, Cynthia Kroll. John Wiley and Sons, 2011

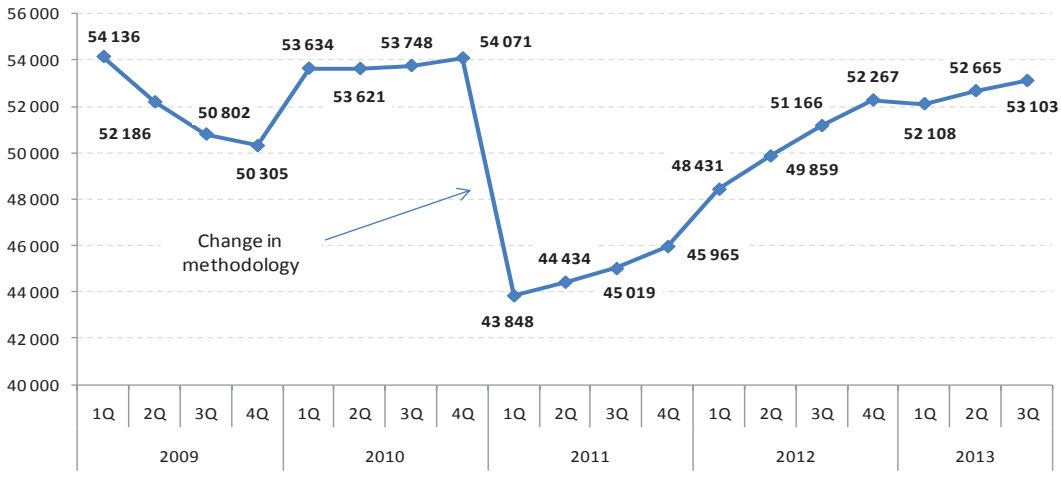
• enhanced affordability of mortgage loans	absence of real competition between developers
• lack of alternative investment options that could guarantee stable positive yield	

Availability and quality of house price data

The key assumption of the above analysis is that the housing price data adequately reflects the actual market situation. In reality, however, the price change indicators in the housing market have their limitations and their choice is extremely narrow.

The most long-term available data series is the one updated by the Federal State Statistic Service on a quarterly basis. It is broken down by Russian regions, primary and secondary housing markets, apartments of low, medium (standard) and improved quality and elite apartments, and is available quarterly from 2000 and annually from 1996. The data available tracks both the average price per square metre based on the actual price of transactions for the quarter, and the change in housing prices within groups of properties of similar quality and other characteristics (the housing market price indices). The data is published 25 business days after the end of the respective period.

Fig. 16. Average housing prices, RUR per sq. m.



Although this index is most widely used (as it is derived on the basis of the most transparent methodology as compared to all other metrics provided by Russian regions), it also has a number of limitations:

- Data is collected only by entire region and is not available by city/town.
- Data is sourced from selected legal entities and sole entrepreneurs operating in the real estate market (sampling), and the Federal State Statistic Service does not disclose information about the number of the data providers and their geographic distribution. According to the Federal State Statistic Service, in 2008, the housing market prices were monitored across 291 Russian cities (i. e. in 26.5% of all Russian cities as of 1 January, 2009), and data on prices in the primary housing market was provided by 741 organisations (i. e. by 2.5 organisations per city on average) and in the secondary housing market – by 981 organisations (i. e. by 3.4 organisations per city).
- With its limited coverage, the survey of the Federal State Statistic Service spans only the largest and the most economically developed cities in a given region.
- In early 2011, the methodology used for the average housing price index calculation was unexpectedly changed (with such change not covered in any formal sources) resulting in a drop of the weighted average market price indices both in the primary and the secondary housing markets. According to the Federal State Statistic Service, the drop was caused by introduction of a new weighting system used to aggregate regional data sets and based on the total area of the sold properties instead of the size of urban population (for the secondary housing market) and the data on the new properties brought to the market (for the primary housing market). The methodology change resulted in increased volatility of the aggregate indices and raised requirements to the quality of sample data representation.

Another source of information about the housing prices is the Unified State Register of Rights to Real Estate and Transactions Therewith, which contains data on all rights to residential and non-residential properties registered in the Federal Service for State Registration, Cadastral Records and Cartography. In 2012, the Federal Service for State Registration, Cadastral Records and Cartography launched a special website providing

access to data on the registered real estate transactions, including contract prices, key apartment parameters and location (accurate to within a street). The website also enables a user to generate summary data reports on the number of transactions and average prices by a separate regional unit (city, village, etc.) over a specific period.

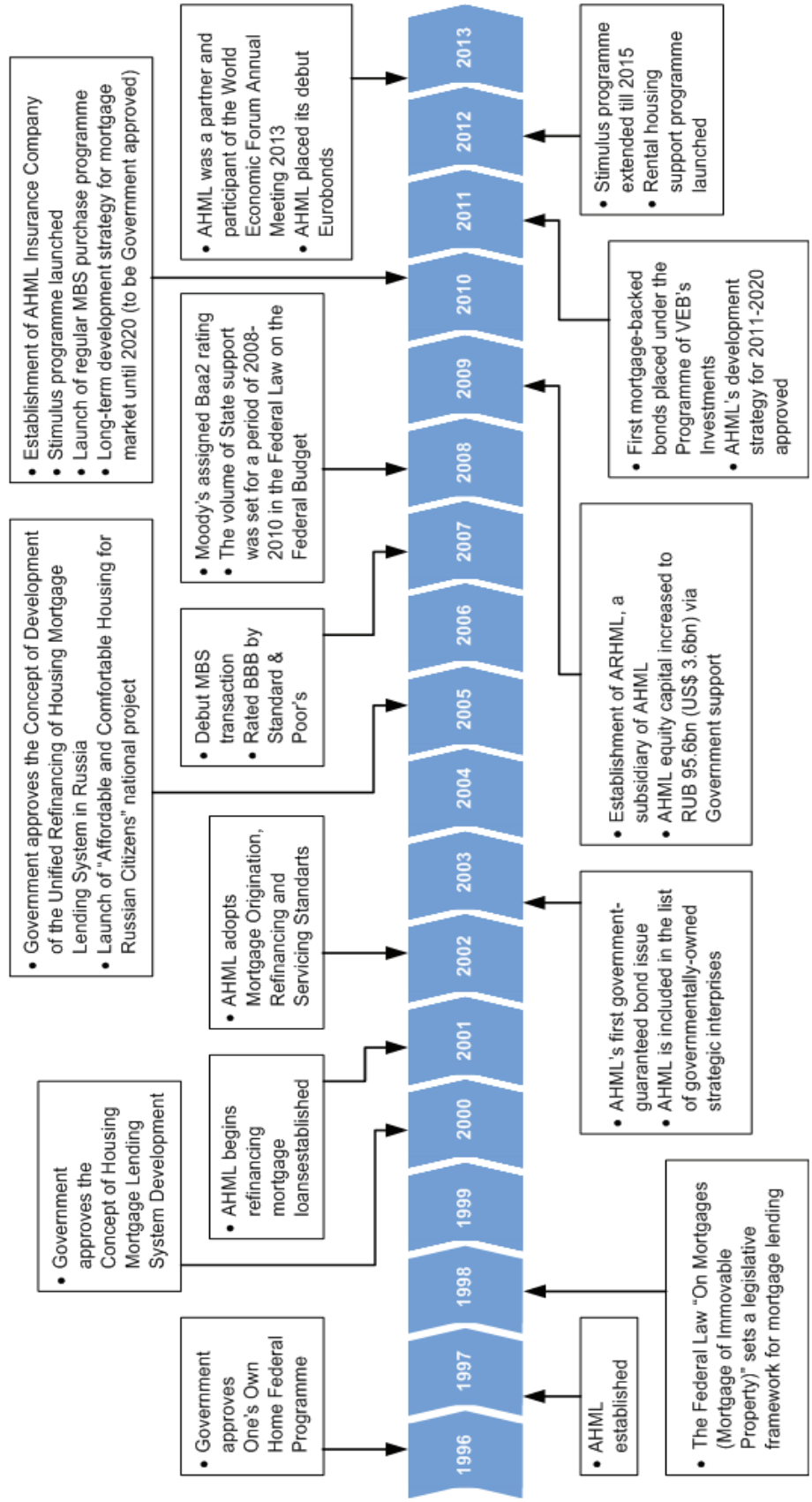
Currently, the Federal Service for State Registration, Cadastral Records and Cartography does not calculate any price change indices. Another concern is that the Service's website operates in the test mode and provides inadequate data on transaction prices[13]. It also enables only limited generation of summary reports (covering no more than 1000 cases), and therefore cannot be relied on by the user to carry out an analysis or build a price change index.

Data on real estate for sale, usually in the secondary market, is yet another source of information about the housing prices. Such data is collected by real estate firms, with the largest of them also calculating the average asking price. But these calculations are based on those firms' own methodologies which are not disclosed and use their own databases with unknown quality of data representation. The Russian Guild of Realtors is now taking steps to ensure consistency of the calculation methodologies as part of its real estate analyst certification program. However, such data is not aggregated country-wide, and it needs local realtors to get access to the local real estate market information. Since frequency of data publication and applicable time windows vary by the company, such data can hardly be used for comparative analysis. Another concern is that the asking price often differs from the transaction price as in the falling market properties can sell with a considerable discount and in the growing market – with a premium to the asking price.

[13] Thus, according to the Federal Service for State Registration, Cadastral Records and Cartography, the average price of housing in Moscow in 2012 varied from RUB 0.08 to 40 m per square meter. Whereas low housing prices can be somehow explained by a desire to pay less in taxes, high prices of properties in non-privileged locations in the Moscow suburbs give rise a lot of questions.

Appendix

Historical Milestones



8. Covered Bond Models in Europe – legal conflict between secured bonds and deposits regarding insolvency remoteness and bail-in

Otmar M. Stöcker

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Article 8 Contents

Introduction

Since the mid-90s and especially since 2007, there has been a tremendous revival of “Covered Bonds” in Europe, partly fostered by the financial crisis, because Covered Bonds proved to be a reliable funding source during the financial crisis.

Long-term Covered bonds are complementary instruments to shorter-term deposits. Covered Bonds stabilize bank funding. Covered Bonds are not the main drivers of Asset Encumbrance, but are the Asset Encumbrance related instruments, which are the most transparent, because of the transparency provisions of many national Covered Bond laws.

The Covered Bond models in Europe are very different from each other. In order to analyse their main legal structures, there is a need to classify them. Furthermore, CB definitions and criteria in all EU legislation should be harmonized.

1. Asset Encumbrance

Since the financial crisis an intense political discussion came up on how to make sure that tax payers do not need to rescue banks. One more concern was, whether the national deposit insurance systems would be sufficient to guarantee deposits in a real bank insolvency case – and a few cases showed that very likely they are not, if a large bank or even several ones should become insolvent.

The questions then discussed were about how many assets would be part of an insolvency estate and how many assets would be encumbered (pledged) in favor of special creditors. This then has been called “Asset Encumbrance”.

National supervisory authorities, ECB and EBA first focused on Asset Encumbrance regarding Covered Bonds, because it was easy to get the volume numbers of their underlying cover assets – they are published regularly on the basis of most Covered Bond laws.

But soon it turned out that other sources of Asset Encumbrance are of much more importance for many banks: collateral for Central bank funding, for Repos and for Derivatives.

Statistical evidence of supervision authorities showed that Covered Bonds are not the main drivers of Asset Encumbrance. Furthermore, it was stated that Covered Bond related Asset Encumbrance is transparent, because volumes of CBs and cover pools are regularly published by issuers.

There is no EU-law limit for Covered Bond volumes compared to their balance sheet. Nevertheless, a few countries set national limits for the Covered Bond volume:

Australia and Belgium (8 % of total assets of the issuer), Canada (4 % of total assets), Greece (20 % of total unencumbered assets), Italy (limits based on capitalisation of the issuer), Netherlands (ratio between Covered Bonds and total assets must be “healthy”), New Zealand (10 % of assets).

2. Covered Bonds vs. deposits

At the end of 2012, the volume of outstanding Covered Bonds totalled 2,8 trillion Euro.[1]

There is a huge variety of real estate finance systems in Europe due to different cultural, legal[2] and economic fundamentals. The differences are related to the owner occupation rate in housing compared to the rental sector, interest rate structures (fixed vs. variable), prepayment conditions and callability and mortgage collateral enforcement procedures.[3] The role of Covered Bonds as funding instruments for housing mortgages in Europe therefore differs, too, from country to country.

Initially, Covered Bonds were invented for agriculture finance and then step by step developed to include housing finance, commercial real estate, ships, aircrafts and public sector loans – all long lasting, high quality assets. Issuers were mostly specialized institutions, which fully or largely relied on capital market funding via Covered Bonds. A conflict between Covered Bonds and deposits was rarely seen. This changed, when deposit funding increased and retail banking dominated more and more housing finance. Today, deposits are by far the largest funding source of housing loans in Europe. The fluctuation of deposit volumes is the main reason that since the 90s more and more credit institutions use Covered Bonds as an additional instrument to diversify their funding bases. The consequence is that the legal conflict between Covered Bonds and deposits in a crisis situation of the Covered Bond issuer becomes more and more significant.[4]

Although Covered Bonds do not dominate the funding of housing loans any more in many countries, their framework nevertheless can positively influence market development. In countries like Germany, the strict mortgage lending value criteria,

1 ECBC Covered Bond Fact Book 2013, p. 544.

2 See *Stöcker/Stürner*, Flexibility, Security and Efficiency of Security Rights over Real Property in Europe, Berlin 2010.

3 In private housing finance non-recourse loans are not a common practice in Continental Europe.

4 This conflict was addressed several times in the Central European Covered Bond Conferences. See the programs of the conferences number 12 and 14 in the years 2008 and 2010 on http://www.pfandbrief.de/cms/_internet.nsf/tindex/de_19.htm.

the low LTV for cover pool eligibility[5] and long term fixed interest rates in real estate loans funded via Pfandbriefe have been stabilizing factors for real estate markets.

Often it is emphasized that Covered Bonds offer a safe haven for investors. But this is not an automatic effect of having Covered Bond legislation. Furthermore, in this respect there should be a more realistic view. It is often said that investors "never" lost money with Covered Bonds. This is not accurate. There were insolvencies and therefore also losses in the 19th century; furthermore, insolvency procedures in those times were only partially prevented by large payment stays.[6] Bad experiences from these times were the reasons for the long struggle to create Covered Bond legislation in Germany: the Mortgage Bank Act, which came in force in 1900 and which focused a lot on prudent real estate valuation procedures.

Last, but not least, the economic role of Covered Bonds for investors is tremendous. Reliable and deep Covered Bond markets offer secure and liquid assets to investors and instruments for liquidity management of banks. Therefore, a large share of Covered Bonds is held by credit institutions today.

How these above mentioned roles of Covered Bonds will be affected by upcoming EU-provisions will be seen in the near future. Basel III resp. EU-CRD IV: Liquidity provisions could encourage banks to use Covered Bonds, capital requirements and leverage ratios may make them think otherwise. EU-Solvency II: Future EU-rules for insurance companies might lead to new strategies regarding investments in real estate, mortgage finance, Covered Bonds and senior unsecured bank bonds.

The priority given to Covered Bonds in a crisis situation of their issuer often raises doubts, if this leads to an unfair treatment of any unsecured creditor. This is even more disputed regarding deposits – and here including the legal position of the institution guaranteeing deposits.[7]

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5 60 % of mortgage lending value only.

6 Such measures on payment stays since 1807 because of the Napoleonic Wars are described in *Schiereck/Rauch*, Pfandbrief-Design – Anpassungen in Zeiten der Schlesischen Landschaft, Immobilien & Finanzierung 2011, p. 91 - 93.

7 Also see Kiff/Surt/Jobst, Covered Bonds and Asset Encumbrance, in: ECBC, Covered Bond Fact Book 2011, pp. 79.

Notwithstanding that the priority is a fundamental principle of any Covered Bond system and a bond not having it should not be called covered, there are techniques which can contribute to reduce this priority to a fair level:

a) The Covered Bond issuer can be structured – legally or by business structure – in a way that the (more or less) only funding source is Covered Bonds so that a conflict between them and unsecured funding (especially not specifically secured bonds or deposits) cannot arise. This can be seen with the Covered Bond models 1 and 5 and partially model 2.

b) The volume of Covered Bonds of an issuer may be directly limited in relation to its balance sheet. With this, indirectly the volume of encumbered assets will be limited, too. Another possibility is to limit the volume of encumbered assets in relation to all assets on the balance sheet.

But these solutions risk hindering the efficient use of Covered Bonds and discourage banks from investing much energy in this product.

c) Strict eligibility criteria for cover assets automatically limit the volume of Covered Bonds of the respective issuer. These criteria may regard the classes of assets and their quality, including LTVs. The stricter the criteria, the more secure the Covered Bonds are, the less volume can be produced - leaving more assets for the unsecured creditors.

Regarding asset classes it should be clear that long term funding instruments have more stability, if their underlying assets have a similar lifetime like themselves. Therefore, the cover assets of long term Covered Bonds should consist of long lasting assets making maturity matching easier to be achieved.

d) The core of the legal conflict between Covered Bonds and unsecured creditors lies in over-collateralization (OC). Similar to off-balance securitization, there is no chance to get a prime rating for Covered Bonds, if there is not a remarkable OC in place.

Even the most strict eligibility criteria for cover assets are not sufficient for rating agencies. But the level of OC can be kept low, if the eligibility criteria and the asset

liability management measures are strict – leaving more un-encumbered assets for the unsecured creditors.

To limit the OC directly by law is discussed sometimes, but would hamper efforts to get a top rating or even exclude this possibility totally.

Furthermore, the political legal priority regarding OC can be partially reduced, if the insolvency estate (and with it the unsecured creditors) is granted an explicit right to demand that a totally excessive part of the OC should be transferred from the cover pool to the insolvency estate.[8]

[8] Therefore the German Pfandbrief Act regulates in § 30 (4) that cover assets, which "will obviously never be necessary" for the Pfandbriefe (German Covered Bonds), will have to be given to the insolvency estate. Here, the burden of proof is on the side of the insolvency administrator.

3. EU-law definitions on Covered Bonds

There is no single legal definition of Covered Bonds in EU law in the sense that the law would say what Covered Bonds are and what is not allowed to be called a Covered Bond. However, there are several provisions on risk weighting[9] (now Art. 129 CRR) and investments, which are all based on Art. 52 IV UCITS-directive[10], where regarding insolvency segregation it is only said that the specially treated bond, the Covered Bond, must get a preferential treatment in the case of insolvency of the issuer insofar as the cover assets would be used on a priority basis for the reimbursement of the bond's principal and the payment of the accrued interest. This leaves it fully to the national legislator or supervision authority whether and what to specify in detail regarding Covered Bonds, which is done with many differences all over Europe.

The Covered Bond industry does not have a clear common understanding as to what should or should not be considered a Covered Bond, and so accepts nearly any kind of legal bond structure as part of the Covered Bond family.[11]

Looking at these differences, it is obvious that there is no European Covered Bond model, but a huge variety across the financial sector. By contrast, the question has to be asked what "covered" bond means. At first view, many concentrate on the quality of the cover assets. But this approach tells only half the story, if there remain doubts that the cover assets could maybe become part of the issuer's insolvency estate without a clear priority in favor of the Covered Bond holders.

In general, there is no "perfect" Covered Bond model or system. All the models have advantages and disadvantages. It is important to find out, what these are and to make up one's mind about one's priorities, and which are best served by the different models and regulations. There are different views on whether only housing mortgages should be allowed as cover assets or whether commercial mortgages should be eligible, too – or whether an even wider range of asset classes should be

[9] The EU-CRR-regulation on risk weighting of Covered Bonds is explained in *Engelhard/Eichert/Kemmish*, Regulatory issues.

[10] Before 1st of July 2011, this was Art. 22 IV UCITS-directive with the same wording like the new number Art. 52.

[11] See the far reaching "essential features of Covered Bonds", published in ECBC, European Covered Bond Fact Book 2009, pp. 96. Furthermore see www.coveredbondlabel.com.

eligible. Prudent mortgage lending value with a low LTV may limit the volume of cover assets tremendously, making it difficult to provide large over-collateralization on one hand and making it less necessary on the other hand to reduce the conflict between Covered Bonds and senior unsecured debt – and vice-versa. Rules regarding asset liability management (ALM) and the role of cover pool monitors and supervision authorities may be seen in different ways. Last, but not least, various views exist on the question of how detailed Covered Bond legislation should be in regulating all issues involved. These items may be discussed and disagreed upon, and nevertheless an agreement may be achieved that all these products belong to the Covered Bond family.

Meanwhile, a discussion started on whether and how to harmonize Covered Bond law in Europe. This issue was discussed in the 17th Central European Covered Bond Conference[12], which was taking place in Copenhagen on 24/25 October 2013.[13]

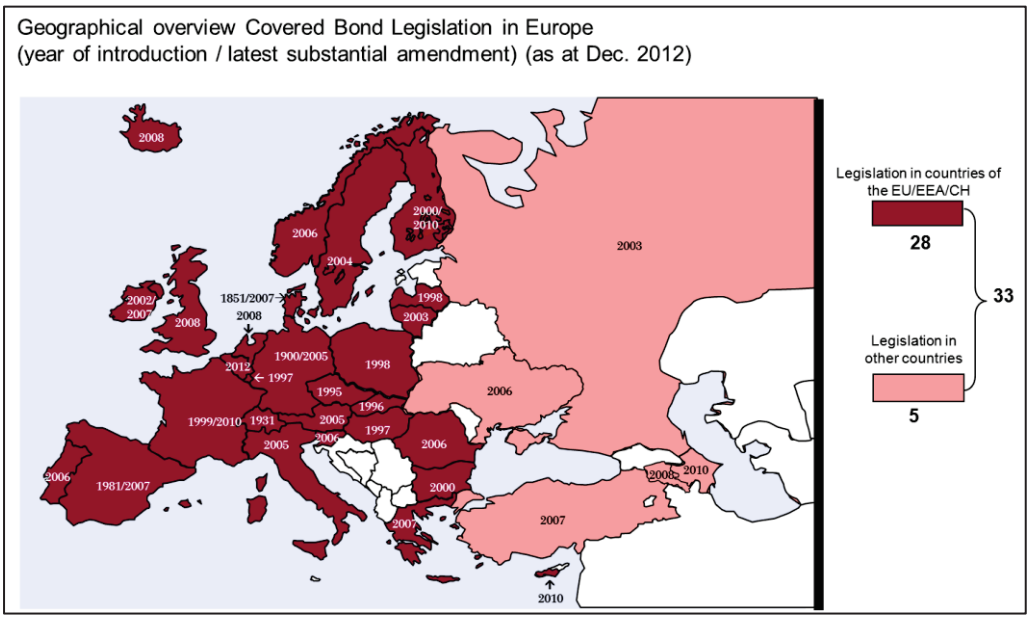
Prudent and tailor-made harmonization of a certain number of core principles could protect Covered Bonds from future harmful developments and strengthen the solidity of the product while safeguarding the high level of security of Covered Bonds for investors. Such an approach should materialize as minimum harmonization at an appropriate level where the historically rooted diversity of Covered Bond systems can be safeguarded. Full harmonization of Covered Bonds on the basis of the lowest common denominator must be prevented in order to avoid the dilution of the products' strengths. The added value of a regulatory approach towards a more harmonized framework for Covered Bonds should be explored in the following areas: asset classes, special public supervision, transparency and bankruptcy remoteness.

[12] See the vdp website with the conference program and presentations: http://www.pfandbrief.de/cms/_internet.nsf/tindex/de_19.htm.

[13] A short summary of the discussion on harmonisation was published in The Covered Bond Report, Nov-Dec 2013, pp. 35.

4. Legal structure of Covered Bonds in Europe[14]

Since 1995 most European countries have introduced new laws on Covered Bonds or fundamentally amended the existing ones. Keeping in mind that Covered Bonds have a long history of more than 230 years, it is surprising that many countries have only begun to develop this capital market instrument so late.[15] Nowadays there are 33 European countries, where legislation on Covered Bonds exists.



Outside of Europe, in several countries work has been or is being done to introduce Covered Bonds, notably in Australia, Canada, Japan, New Zeeland, Singapore, South Korea and the USA.

There is no uniform European Covered Bond model, but there are several Covered Bond models in Europe. Nearly all of them have undergone (sometimes fundamental) changes during the last 15 years.

[14] This article classifies Covered Bonds in 5 models, which were published in *Stöcker*, Housing Finance International, Winter 2011, pp. 32-40. (This was published in Polish translation in: Rynek Finansowania Nieruchomości, marczec 2012, str. 40-51.) A more detailed classification was published by *Lassen*, Housing Finance International, December 2005, pp. 3.

[15] About the reasons in the ninetees see *Stöcker,* Renaissance of Covered Bonds in Europe, Housing Finance International June 2001, p. 30 – 36.

They differ both in historical development and existing legal structure. In some countries, the practical use even looks different from the concept, which is regulated by statutory (parliamentary) law. Many differences can be found regarding eligible cover assets and special public supervision.

Here, the focus is on the legal structure only, which is decisive for the classification of the Covered Bond models. The main differences in these models are due to historical developments, different economic and legal frameworks and specific priorities within political decision making and banks' strategies.

Covered Bond Model 1

The Covered Bond issuer is a completely specialized funding institution, this means that on its balance sheet there are only cover assets and Covered Bonds. This model exists particularly in France (obligations foncières) and Ireland – and in practice in Finland and Sweden, too.[16]

a) Characteristics

The origination and the servicing of the eligible assets and the management of the Covered Bond issuing institution is done by the parent bank. This means that the activities of the Covered Bond issuer are largely outsourced to its parent bank. Therefore the issuer has no or almost no staff.

The funding institution has no other function than to legally hold the eligible assets and to be a debtor of the Covered Bonds. The issuer has the legal status of a credit institution. The issuance of Covered Bonds is governed by a special legal framework.

b) Fundamental issues

In this model, the insolvency segregation of the Covered Bond issuer from the parent bank is fundamental. This means that ring fencing of the cover assets within

[16] Sweden has this model for many years, already. In 2004 a legislation was created following in its draft law the special bank principle, looking like Model 1, but then in the end changed to Model 3. Nevertheless several issuers kept their structure in practice – Model 1. So far only 2 issuers were merged with their parent banks, therefore now being Model 3. Similar it looks in Finland, where the special bank principle was abolished a few years ago in Covered Bond legislation.

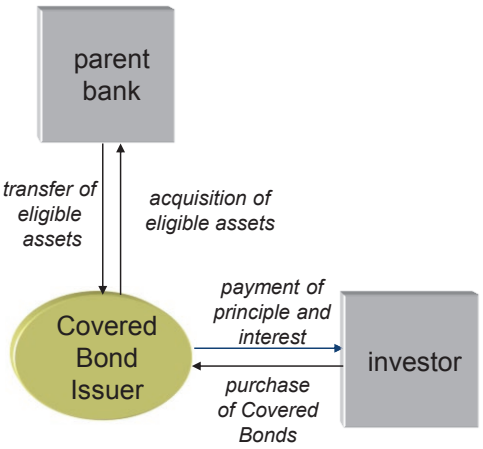
the Covered Bond issuer is less (or even not at all) important, since the issuer has only the cover assets and Covered Bonds on his balance sheet. This ring fencing is at the core of every Covered Bond model, because it delivers the main security of the Covered Bonds.

Nevertheless, the question arises whether the issuer would be capable of acting despite of the parent bank's insolvency. The extensive outsourcing could cause trouble for the Covered Bond issuing subsidiary, which then would have a real challenge to ensure a timely payment on the Covered Bonds, if the Covered Bonds had a hard bullet structure.

Furthermore, it is important to analyze how much of the cover pool consists of claims against the mother bank or other group members, especially as regards derivatives and cash management.

Last, but not least, it must be considered how the assets are transferred from the parent bank to the Covered Bond issuer. Some countries (such as France) use techniques that allow a cost-efficient transfer of assets via specific legislation, which prevents the burden of registration of the mortgage assignment in the land register, but which then has the disadvantage that this technique is only applicable to assets subject to domestic law.

Model 1 **Covered Bond issuer is completely specialised funding institute**



Model 2

The Covered Bond issuer is a specialized credit institution by law. This traditional Covered Bond model was the concept in Germany until 2005 and still exists for example in Hungary, Luxemburg, Norway, Poland and partially in Denmark.[17]

a) Characteristics

Here the issuer originates, services and funds eligible business. The loan origination is restricted by law to a very limited number of assets (usually mortgages and public-sector loans). Other assets than eligible ones are limited in volume.

The issuer has the legal status of a credit institution and is fully equipped with staff. The issuance is governed by a special legal framework.

b) Fundamental issues

In this model the fundamental issue is the insolvency segregation of the cover assets within the bank. If there is an insolvency procedure on the issuer, it must be very clear that the cover assets will be ring-fenced or encumbered so that they will be reserved to secure the Covered Bonds.

Historically, over many years this was achieved via pledge structures.[18] It was only in 1900 that the German Mortgage Bank Act regulated an insolvency priority for Pfandbrief holders.[19] But this meant that Covered Bonds and cover assets would have been part of the insolvency estate and the insolvency procedure. Luckily, there has been no insolvency procedure over a German Pfandbrief issuer since 1900. In 1998 this insolvency privilege was changed into a legal segregation[20],

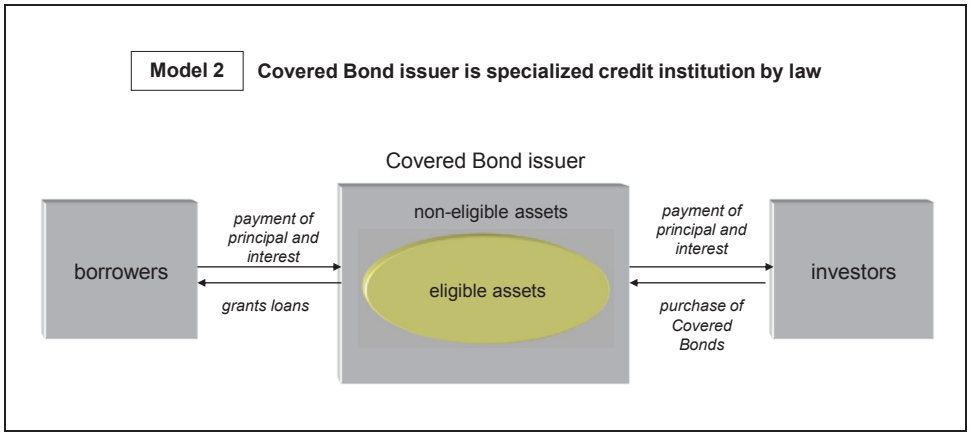
[17] In all those countries, now and then there are discussions, whether and how to switch to model 3. Denmark already did this step via a legislation allowing model 3, parallel to the traditional one of model 2. In Luxemburg, legislation work was started to abolish the special bank principle and to switch to Model 3, but then rejected because of Asset Encumbrance concerns.

[18] The lack of a clear legal basis of an insolvency privilege of Pfandbrief holders (called the "Pfandbrieffrage") was the reason that the board members of most German mortgage banks met in 1876 for the first time. This in the end led to the creation of the Mortgage Bank Act and furthermore to the founding of the predecessor of the vdp. See Verband privater Hypothekenbanken, 75 Jahre Verbandsgeschichte deutscher Hypothekenbanken, Frankfurt a.M. 1978, p. 13.

[19] The long-lasting discussions, the background and the reasons of this legal development is analysed by *Keding*, Finanzmarktsteuerung durch Kreditsicherungsrecht.

[20] With this amendment, for the first time a Covered Bond legislation regulated clearly that the Covered Bonds would not accelerate despite the insolvency of the issuer. The other European Covered Bond Laws followed step by step.

enlarged with a lot of details in 2004 (and 2010) – a lot of them were adopted likewise by other countries in the following years.



Model 3

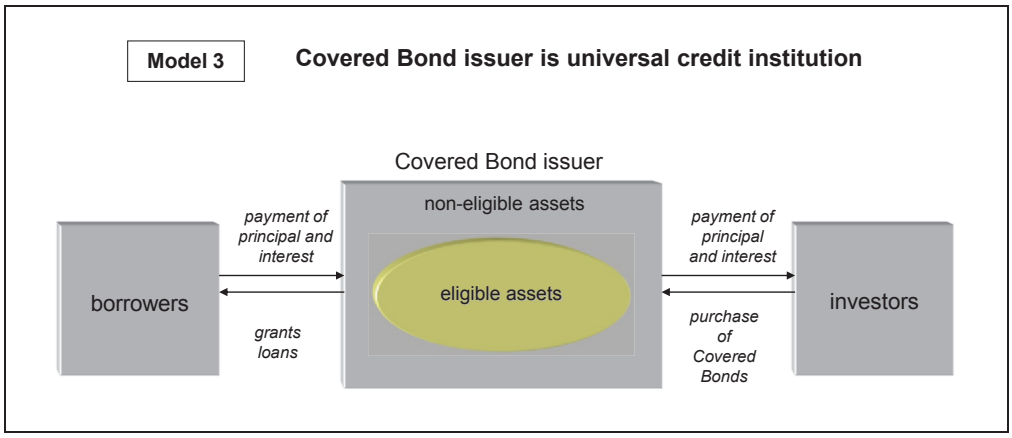
The Covered Bond issuer is a universal credit institution, either with a qualified Covered Bond license (e.g. Austria, Denmark, Finland, Germany since mid 2005, Iceland, Latvia, Slovenia, Sweden) or without the need of a qualified license (e.g. Bulgaria, Czech Republic, Greece, Lithuania, Portugal, Spain, Slovakia).

a) Characteristics

The issuer originates, services and funds eligible and non-eligible business, eligibility criteria apply to cover assets and the Covered Bond issuance is governed by a special legal framework.

b) Fundamental issues

The core of this model is the insolvency segregation of cover assets from the insolvency estate of the same legal entity, the credit institution - even to a higher extent than in model 2.



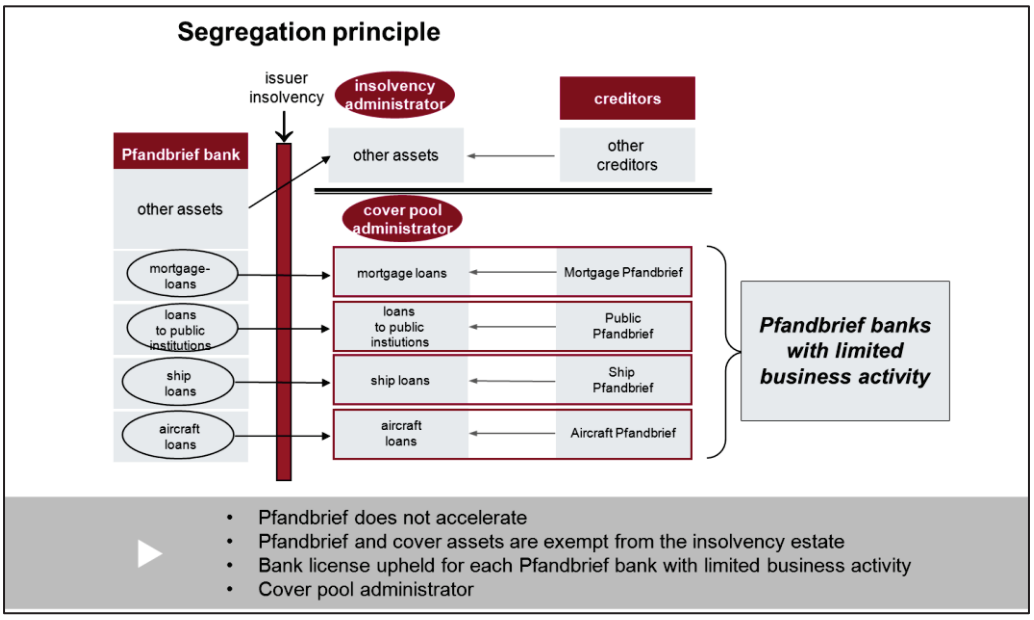
This can be shown on the German example. The detailed regulations enacted in 2004 were regarded as being a new milestone in the development of Covered Bond legislation. On this basis, even the special bank principle, that had been effective for such a long time, could be abolished, switching Germany from model 2 to model 3.

But this was not the end of the legislative story. The financial crisis (especially since September 2008) encouraged many market participants to ask more and more questions regarding a theoretical insolvency situation. Therefore, further clarifications were introduced in Germany in 2010 to achieve a clear understanding in the Pfandbrief Act on the legal nature of cover pools in the event of a Pfandbrief bank's insolvency and on the access of a cover pool administrator[21] to liquid funds during difficult times. The cover pool was given the status of a non-insolvent part of the insolvent Pfandbrief bank – with the rest of the bank as the insolvency estate. Thus, the cover pool administrator would be able to act as head of a bank in respect of transactions with the Deutsche Bundesbank; he would also be entitled to issue Pfandbriefe. More precisely, § 2 IV PfandBG stipulates that the banking license will be maintained with respect to the cover pools and the liabilities covered there from until the Pfandbrief liabilities have been fulfilled in their entirety and on time. A revised version of § 30 PfandBG addressing the ring-fencing of the cover assets from the insolvency estate confirms this new approach by introducing the

[21] According to §§ 30 – 36a Pfandbrief Act the cover pool administrator would be appointed by court in order to manage the cover pool and to ensure the timely payment of the Pfandbriefe. He must be a different person than the insolvency administrator.

new heading 'segregation principle'[22] and by referring to the cover assets as 'insolvency-free estates'[23]. Consistently, the amended PfandBG incorporates the term 'Pfandbrief bank with limited business activities'[24].

Thus, the amendments of 2010 ensure that the cover pool administrator acts on behalf of a solvent Pfandbrief bank that is in possession of a license to engage in banking business in general and in Pfandbrief business more specifically, even if the bank itself is insolvent and the general banking license withdrawn. Hence, the Pfandbrief bank with limited business activities is treated as a solvent bank in order to comply with the counterparty eligibility criteria for central bank open market operation with the objective to satisfy its liquidity needs.[25] Whether and how this could be affected by the Single Supervisory Mechanism (SSM) is an issue, which now is discussed.



This short update shows that it is not realistic to assume that a "perfect" solution could be created within a short time. Many pros and cons have to be taken into consideration. More than 200 years were needed in Germany to develop the necessary ideas and to regulate in detail by parliamentary law the insolvency

22 Trennungsprinzip bei Insolvenz der Pfandbriefbank

23 Insolvenzfreie Vermögen

24 Pfandbriefbank mit beschränkter Geschäftstätigkeit

25 For more details see *Stöcker*, 2010 Amendment of the Pfandbrief Act, vdp, The Pfandbrief 2010/2011, pp. 20.

protection of Pfandbriefe. The more and more detailed questions asked by investors, analysts and rating agencies are pushing legislation forward.

Model 4

The Covered Bond issuer is using a Special Purpose Vehicle (SPV) to achieve insolvency segregation of the cover assets. This structure is used for example in Italy, Netherlands and UK.

a) Characteristics

The Covered Bond issuer is a credit institution and originates, services and funds eligible and non-eligible business. Eligibility criteria apply to the cover assets and the issuance is governed by a special legal framework.

The cover assets are transferred (or sometimes pledged) to a legally separated entity, which is a SPV without the legal status of a credit institution. This SPV guarantees the payment of the principal and interest of the Covered Bonds.

b) Fundamental issues

The core of the legal structure of model 4 is the use of a SPV, which holds the cover assets. This is similar to securitization techniques; but different to them is that the issuer of the bonds is not the SPV, but the credit institution directly.[26]

If the insolvency segregation transfer technique to the SPV is not governed in detail by a special legal framework[27], but based on general law only[28], investors have to make up their mind, whether this "transfer"[29] is fully valid and would survive the insolvency of the issuer.[30] Therefore, investors will have to rely on ratings, study the

[26] The issuer must be a credit institution in order to comply with Art. 52 IV EU-UCITS-Directive and other EU-provisions. The other way round – the SPV issues the bonds, which are guaranteed by the credit institution – is not sufficient herefore.

[27] In Italy, the statutory transfer regulations, which were created for securitization purposes once, are also applicable for the transfer of cover assets to the SPV for Italian Covered Bonds.

[28] In the Netherlands and UK, Covered Bond law only says that such a transfer has to be done, but the transfer techniques are contractual ones.

[29] This might be a full assignment, a pledge or a trust structure.

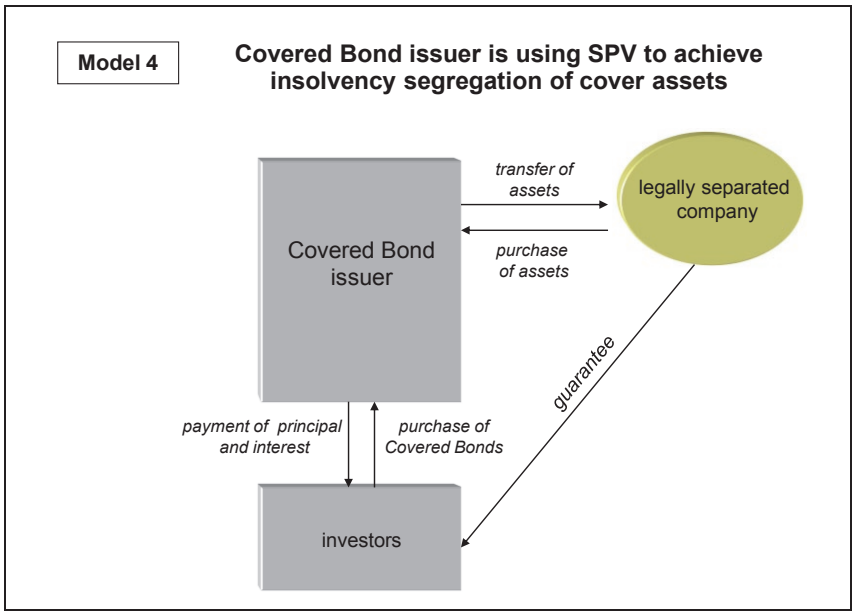
[30] One issue here is, whether it is clear enough that the cover assets would not be part of the insolvency estate of the Covered Bond issuer; another issue, whether the "transfer" (true sale) would not be re-qualified of being a secured loan only, which would have a negative impact on the insolvency segregation.

documentation[31] or ask to what extend the relevant national supervision authority checks this documentation. If banking supervision authority takes this role in order to compensate the lack of detailed statutory provisions on insolvency segregation, it would be interesting to know more about the qualification and number of staff dealing with these complex surveys.

Furthermore, investors may require that the legal opinions confirming the validity of the contracts should be published. If the overall legal structure is transparent to the public, it makes it accessible to serious and neutral analysis by both market participants and academics. The more detailed the statutory provisions are and the more easily accessible to the public they are, the more likely it is that somebody raises concerns of deficiencies, which then will be noticed by investors. If legal provisions are low level in this respect, legal documentation huge, legal opinions not published – then investors have to take on much more work - or just hope that all contract work was done well.

An issue, which came up recently, is the so-called dual recourse as a special issue in model 4. Dutch lawyers confirmed that the SPV (on behalf of the Covered Bond holders) would get the full quota during an insolvency procedure of the issuer (equally to the unsecured creditors), if the maturities of their Covered Bonds are longer than the payments during the insolvency procedure. This would mean a huge over-collateralisation for the Covered Bonds and vice versa an issue of Asset Encumbrance of the issuer. It seems that market participants so far are not yet aware of this legal issue.

[31] In this respect, the workload for investors is similar to the one in securitization.



Model 5 – Pooling models[32]

Originator and Covered Bond issuers are different legal entities. Pooling models on Covered Bonds exist in legislation and/or in practical use in several countries, especially in Austria, Denmark, France, Germany, Hungary, Spain and Switzerland.

Some of them have very large market shares, others do not (yet) have big economic importance. The economic importance on a national level of pooling models depends on the possibility of the originating bank issuing Covered Bonds themselves directly. This is shown clearly by a comparison between Austria, where the pooling model was not used for new issues during the last 30 years, and Switzerland, where the both pooling institutes are the only bodies allowed to issue Covered Bonds.

a) Characteristics

The Covered Bond issuer in most cases is a credit institution cooperating with several or even many originators, who keep on servicing the cover assets. Eligibility

[32] For more details about Covered Bond pooling models in Europe see *Stöcker*, Pooling models in Europe, in: ECBC, European Covered Bond Fact Book 2008, pp. 40.

criteria apply to the cover assets and the issuance is governed by a special legal framework.

Covered Bond pooling models may be regulated fully as such or consist of a combination of a Covered Bond model and contractual cooperation with partner banks.

b) Fundamental issues

The sourcing of cover pool assets from other banks requires both sound cooperation to ensure high quality assets[33] and a clear legal mechanism to transfer the assets to the Covered Bond issuer.

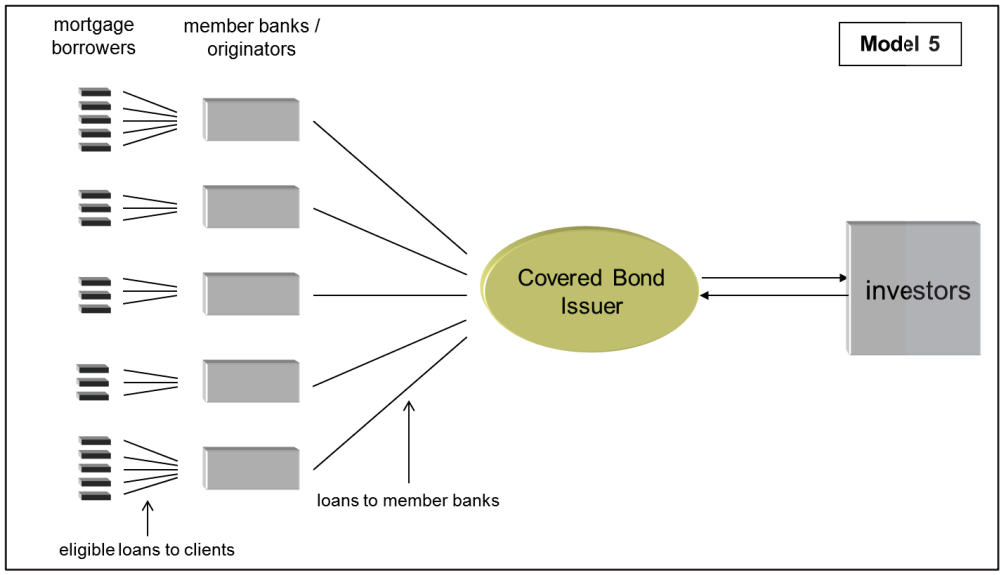
It is interesting to see that pooling models in Europe differ, largely regarding the transfer techniques: full legal transfer from the beginning (Denmark, Hungary), automatic legal transfer in the case of insolvency of the originator (France), legal pledge with trust status in insolvency (Switzerland), insolvency-proof claim against insolvent estate (Germany). All these structures are based on assets, which are transferred somehow and sometime from the originator to the issuer of Covered Bonds. Only the Spanish pooling models use Covered Bonds as assets for the issue of ABS according to securitization techniques.[34]

When discussing cover asset quality and asset liability management, it is important to note that in some countries there are two different cover assets: (1) The prior cover assets are the funding loans of the Covered Bond issuer to the member banks. (2) The collateral of these funding loans are the mortgage loans of the member banks to their clients – which again consist of loans and mortgage collateral.

[33] In pooling models usually there are two kinds of assets: the funding loans of the partner banks and their loans to the clients, which are used to secure the funding loans. This has to be taken into account when issues regarding asset quality and asset liability management are analysed and discussed.

[34] Furthermore, it can even be questioned, whether the Spanish version should be called a Covered Bond pooling model, because the relevant issued bond legally is not a Covered Bond (due to the lack of not being issued by a credit institution, but a SPV), but an ABS based on Covered Bonds. This has been disputed sometimes, but is regularly confirmed by Spanish lawyers. See *Stöcker*, Pooling models in Europe, p. 45.

Other import issues are the risk weighting of the cover assets for capital requirements and the accounting of them. This is complex where the transfer is not completed at the beginning, but postponed to a later stress or insolvency scenario.



5. Bail-in

The work on the Bank Recovery and Resolution Directive (BRRD) meanwhile ended with the decision that Covered Bonds would be exempt from the bail-in tool in general, however there is a special bail-in tool for Covered Bonds if it should turn out that their cover pool is not sufficient. Therefore, future discussions on Covered Bond models and legislation will have to focus a lot on what legal consequences would arise if the cover pool is insufficient.

So far, it was often discussed, whether an excessive OC would have to be transferred from the cover pool to the general bank insolvency estate.

Not a lot emphasis was laid so far on the other situation, that the cover pool is not sufficient – and how to calculate this. The bail-in competence of the institution[35], which is responsible to arrange the winding-down of the issuer, will lead to the necessity to decide, how to calculate the sufficiency of the cover pool and whether and how to use the bail-in instrument for Covered Bonds. All that will foster the very fundamental discussion, whether it is better for the Covered Bond, if the national Covered Bond law fully regulates this situation and solves it with pass-through structures (now discussed in Poland) or special insolvency procedures (like in the German Pfandbrief Act), or whether to keep flexibility and uncertainty.

[35] This is regulated in the Single Resolution Mechanism (SRM).

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9. 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

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Article 9 Contents

This article is based a study performed for the EBRD during the first half of 2012 covering Hungary, Poland, Croatia, Serbia, Romania and Turkey. It is an expanded version of its executive summary. The study ('EBRD study') was commissioned to identify sources of mortgage portfolio risk and related broader systemic risk in the CEE region as the well as explore the reasons for the low use of mortgage covered bonds to manage risks.[1] The author in addition builds on 20 years of experience in transition country housing and mortgage market and regulation analysis.

The First Mortgage Market Crisis In Transition: Risky Products, Lax Underwriting

After some inertia during the early 1990s, transition countries swiftly built up market-based housing finance systems until ca. 2010. Developing housing finance had been an important public policy goal in order to revive construction activity, which had collapsed in the 1990s from their high pre-transition levels. Despite the significant stock built in socialist times, additional construction was needed to catch up with housing consumption levels in Western economies, to replace obsolete stock, to upgrade and modernize the remaining stock and to respond to migration into new job centres.

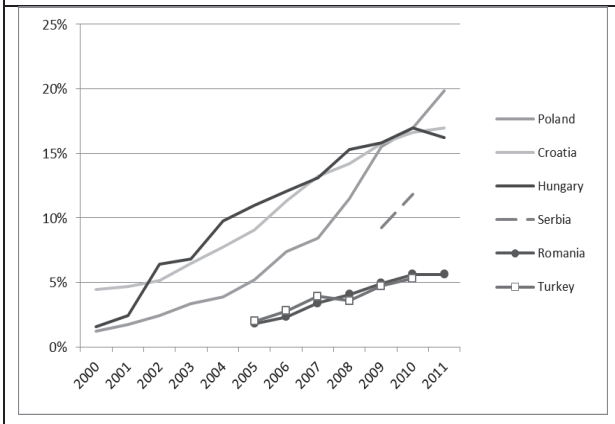
Yet, only in the isolated case, rental housing construction was revived, in small volumes, e.g. in Poland in 1994 with the 'TBS' rent-to-own schemes. Without such a corporate/communal lending portfolio, housing finance in the region developed almost exclusively as 'retail' lending to households essentially by private and frequently foreign banks. A secondary goal of its introduction exacerbating its retail character was to lique-

[1] Dübel (2012b). Download: http://finpolconsult.de/mediapool/16/169624/data/Housing_Finance/CEE/CEE_Mortgage_Regulation_EBRD_Oct_12.pdf

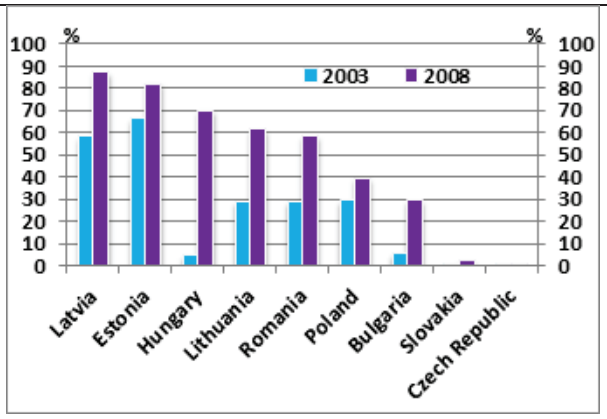
fy capital locked in the existing housing stock. Much of the publicly owned apartment sector had been privatized around 1990 to tenants for free and lending against this collateral was implicitly, and at times even explicitly, seen as an income substitute.[2]

Figure 1 Housing Loan Growth, Interest Rates in the Case Countries

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



Foreign Currency (FC) Lending Shares 2008 vs 2003



Source: national central banks, Finpolconsult computations. Notes: RHS - real interest rate computed by subtracting average of inflation rates 2009-2011 from nominal rates.

After a strong growth period, since ca 2010 the retail version of housing finance in the region has entered a critical phase. From a broader stability perspective, compared to Western severe crisis cases there is rather little reason for concern: housing debt-to-GDP levels in the region are still moderate (15-20% of GDP, as compared to e.g. in the US around 80%). These values per se pose no systemic risk to CEE financial systems. Despite stagnating or declining house prices, portfolio performance has in most countries been reasonable – between 2% and 4%[3], as is to be expected in an emerging market con-

2 For a review of the rental housing sector in transition, see Dübel, Brzeski and Hamilton (2006).

3 At the time of writing of the EBRD study in early 2012.

text where lending has focused on owner-occupied housing for what are typically higher-income borrowers.

Yet, there are important characteristics of mortgage lending in the region that have already seriously impaired portfolio performance, have contributed to system crisis in some countries, and more generally pose questions regarding the sustainability of the lending growth of the 2000s in the region as a whole:

- First, lending with a few exceptions, e.g. the Czech Republic and Slovakia (see RHS of Figure 1), has been primarily in foreign currency (FC). Using foreign currencies as the basis for lending is not sheer speculation; in the region it serves valid purposes:

  First, FC lending addresses the so-called Tilt effect of fast real amortizations of housing loans in the presence of high *nominal* interest rates due to a high inflation component.[4]

  Secondly, it taps more liquid foreign capital markets and thus borrowers benefit from lower *real* interest rates (see Figure 8 in the annex for data).

  Yet, FC lending also gives foreign banks a convenient entry vehicle to compete against local banks with limited access to FC funding, and this on a non-risk-adjusted basis from a consumer protection perspective. Also, the other side of the coin of the deeper liquidity in FC lending is the risk of funding overhang, which translates into risk of excessive credit growth: the comparison between Poland (moderate FC share rising only from 2006 onwards) and Hungary (high FC share

[4] In the presence of moderate or high inflation, the loan-to-value ratio of a housing financing drops faster from the initial level chosen at underwriting than in the presence of low inflation. Households have to shoulder an excessive real debt burden, as the loan must be amortized fast in real terms. This is a problem specific to long-term lending. It leads to remarkable coexistence of long-term loans in foreign (e.g. housing) and short-term loans (e.g. auto loans, credit cards or overdrafts) in local currency in the region. See also Figure 3 below for visualization.

since 2004) in Figure 1 and Figure 9 below shows the significant differences in growth dynamics of a foreign vs. a local currency-dominated housing loan portfolio.

- Secondly, despite the emerging character of markets and lending focus on higher-income borrowers, the growth in the region was already partly driven by questionable underwriting standards and product innovation. In particular, home equity lending and lending for rental investments by consumers that took decades to develop in Western Europe grew rapidly in the CEE region, and also subsequently saw the highest default rates (see upper LHS of Figure 2 for Hungary data). This fast forward product innovation can be seen as a side effect of excess liquidity and the associated weakening in bank governance. It has not just been a feature of FC dominated markets – Hungary (home equity) and Latvia (rental investment) being the extreme cases, but also can be traced in local currency (LC) markets with strong liquidity growth, esp. the Czech Republic.[5]

Given earlier and parallel events in the United States and Western European countries, the cumulating sector risks and beginning realizations around 2010 caught the attention of foreign financiers: it affected the funding ability of both domestic and foreign banks in foreign currency, and it reduced the willingness of foreign bank owners to deploy sufficient capital for growth to the region.

The most publicly featured, even though not the most extreme, risk realization was seen in the Hungarian market where the risk-layering effect of simultaneous interest rate and

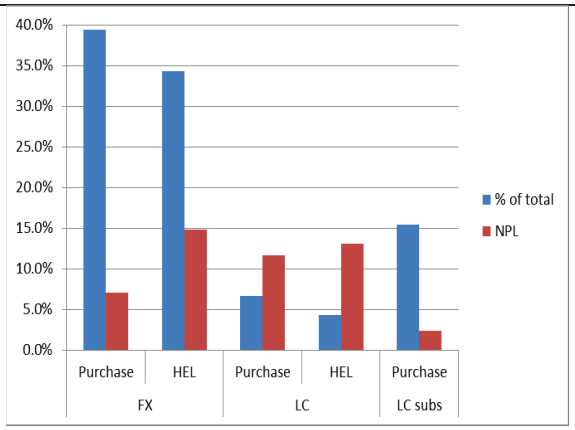
[5] For a review of the sources of LC liquidity growth in the Czech Republic, see Dübel (2003). In 2004, the 'American mortgage' was introduced, and in 2005, mortgages for the elderly. See Dübel et. al. (2006), chapter on the Czech Republic.

devaluation shocks in Swiss Franc lending had a severe impact on both household debt service burdens and debt levels. The resulting surge in default rates came through both classical default motives: cash flow (debt service) risk and balance sheet (over-indebtedness/lock-in) risk. The lower LHS of Figure 2 shows the correlation of default rates in Hungary with the initial FC exchange rate level by vintage, a proxy for balance sheet risk given the subsequent dynamics of exchange rates. Also, interest rates in Swiss Franc in Hungary could be unilaterally reviewed by the lender, i.e. was not tied to an interbank index, which increased cash flow risk. Within the sample of the EBRD study, Swiss Franc lending-related problems in the same constellation arose also in Croatia and Serbia.[6]

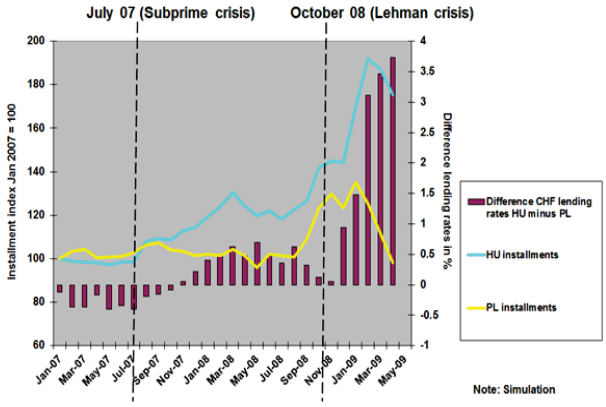
[6] Mortgage portfolios in Eastern European countries were hit by US-Dollar appreciation (Ukraine, Russia), Romania by the appreciation of the Euro.

Figure 2 Housing Loan Performance by Product Type, Cash Flow vs. Balance Sheet (Lock-In) Motives

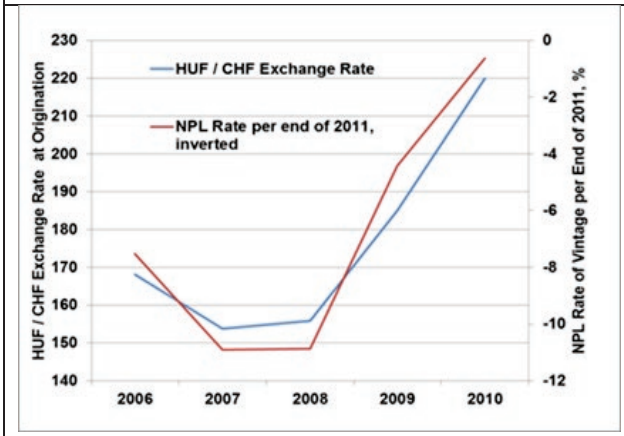
Hungary – Non-Performing Loan Ratios by Product Type



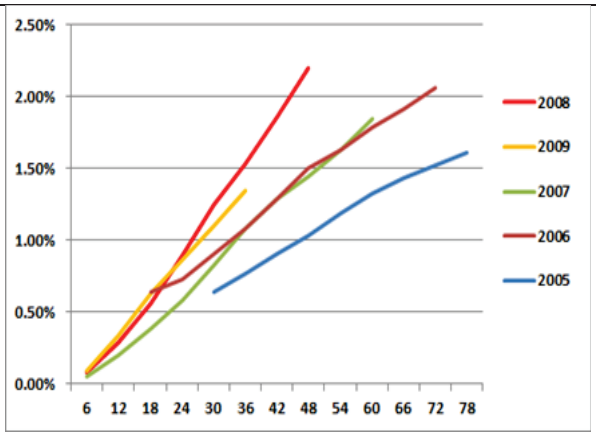
Poland vs. Hungary – Different Scales of Cash Flow Shock after CHF Devaluation Resulting from Product Design



Hungary – Non-Performing Loan Ratios by Vintage (end of 2011)



Poland – Non-Performing Loan Ratios by Vintage (end of 2012)



Source: upper LHS - MNB, other – national central banks, Finpolconsult computations. Notes: upper RHS – simulation based on CHF lending rates as recorded by central banks, no amortization; lower LHS and RHS – each vintage is associated with given share of FC loans in new originations and a prevailing house price level, hence is characterized by a specific lock-in risk. For Hungary and Poland FC origination share indication, see Figure 9 below.

In Poland, in contrast to the above cases, cash flow risk as a motive of default was mitigated since Swiss Franc loans had been indexed to the interbank rate, which declined after the Swiss National Bank started to reign into the appreciation to protect the Swiss export industry. The upper RHS of Figure 2 shows that Polish the debt service shock in

response to the devaluation, resulting to this 'hedging' of its individual determinants, was far lower than the one in Hungary. In Hungary, similar in Croatia and Serbia, the banks used their review options for Swiss Franc lending to pass through higher funding cost and rates did go *up*, not down. Despite relative calm in the cash flow risk dimension, for Poland as the lower RHS of Figure 2 suggests we also find considerable balance sheet driven defaults in a vintage comparison: those lending years characterized by the highest Swiss Franc market shares (see Figure 9) and at the same time highest house price levels upon underwriting, 2008 and 2009, were most likely to experience balance sheet stress and are characterized by the highest default rates. In contrast, earlier vintages are protected by either a lower FC lending share (2006, 2007), meaning smaller adverse debt dynamics in local currency, or by being underwritten at significantly lower house price levels (2005), meaning a higher house price appreciation potential.

As per EBRD study closing date of mid-2012, sizeable portions of the FC portfolio in the region were already in or close to a negative equity situation, e.g. Hungary (56% of FC loans over 90% loan-to-value (LTV) ratio, Central Bank), Poland (32% of Swiss Franc loans with over 100% LTV, Central Bank; some 300,000 loans according to the Polish Financial Services Authority), Serbia ('close to 100%' for Swiss Franc loans, 10-15% for Euro loans; interviews). In Romania, the Euro depreciation in particular of the first half of 2012 in combination with excessive valuations during the house price boom also gave rise to many loans in negative equity. While the Swiss Franc devaluation risk has been contained through the peg to the Euro of 2011, the general situation has likely further deteriorated as regional currencies have come under additional pressure also vs. the Euro and the US-Dollar. Thus, even where FC interest rates have declined again, partly resulting from consumer protection intervention to be discussed below, pressure remains high from a balance sheet perspective to restructure the portfolios.

The recognition of the heightened risk levels since ca 2010 brought mortgage portfolio growth in most countries to a halt, in some cases portfolio size as a percentage of GDP continued growing through devaluation effects. Home equity products and the most problematic foreign currency product tied to the Swiss Franc have since lost in relevance, and underwriting standards have been generally raised.

The Struggle Over The FC Lending Legacy Led To Many Inconsistent Primary Market Interventions

The current credit deflation or stagnation trend has largely been driven by supply factors. Many lenders experienced funding shortages in the currencies used for mortgage lending: even foreign lenders, such as Austrian banks, withdrew rather quickly from the idiosyncratic Swiss Franc market when hedging became increasingly expensive and domestic regulators stepped up scrutiny. In the meantime, credit protection costs in Euro had increased, too. More importantly, the increasing economic uncertainty in the region and capital needs at home prompted lenders to not fully replace capital lost through write-offs at the local level and sometimes withdraw from markets altogether.

On the demand side, next to the weakening economic situation in large parts of the region, the local regulatory response has been a key factor. Unfortunately much of it has been inconsistent and some potentially damaging to supply in the long-term.

When designing primary market regulations, the CEE region is still largely left on its own – either formally for countries that are non-EU-members, or economically, given that EU consumer protection rules adopted so far have been focused on enhancing transparency, rather than on materially reducing risk for consumers. For example, the EU CARRP Directive[7] regulating mortgage credit only modestly tightens underwriting standards and has almost no impact on product design. Even the ECB/ESRB guidance on FC loans is not truly restrictive to the design, but rather rations these types of loans to high-income borrowers or those with matching currency income.

7 'CARRP': Credit Agreements Related to Residential Property

With such limited external guidance, it is perhaps not surprising that in three of the six countries reviewed by the EBRD study ex-post interventions into product design were recorded. I.e. governments altered the terms of credit contracts that had already been closed and whose cash flow as a consequence was altered ex-post. This is the case with the interest rate adjustment regulations passed in Romania and Serbia and the Swiss Franc debt restructuring exercise in Hungary. For example, lenders in Serbia were forced by the central bank in 2011 to re-index FC loans with reviewable interest rates to an interbank rate with fixed spreads back to the first payment.

Whether or not these interventions have helped borrowers to avoid default, or have rather randomly distributed benefits among the borrower population or between borrowers and banks, and even between banks, must be subject future evaluation. There are a number of worrisome signs. The Hungarian Home Protection Action Plan of 2011 permitted borrowers to prepay Swiss Franc loans at a favourable exchange rate into Forint loans. However, affordability of Forint loans at the time of implementation was so low that only the best customers of the banks by mid-2012 had been able to exercise the option. In Serbia, the above mentioned spread had to be calibrated such that in combination with the historic interbank rate it resulted in the same first payment as initially agreed under the reviewable rate contract. This intervention led to different payments of mortgagors of Swiss Franc loans even when owning apartments in the same newly constructed building, depending on which bank was their counterparty. Some banks in Serbia had offered initial discounts to borrowers and now were forced to accept permanent losses on their loans, while neighbouring banks that had underwritten fully indexed were not hit at all. These cases, if anything, highlight the difficulty of brush ex-post intervention into products, as opposed to means-tested portfolio restructuring strategies (i.e. focusing on the individual ability-to-pay). They also highlight the importance of rational ex-ante product design.

Regarding new lending, the new FC loan regulations in the region are heavily biased towards rationing of eligible borrowers. The mechanisms are tight loan-to-value and income limits as well as income stress tests. Hungary pushes the LTV limit for Euro (!) loans down to 60%, for example, and Poland requires a severe income stress test for FC borrowers in which FC shock and interest rate shock are cumulative (as opposed to the empirical reality of the crisis shown in the upper RHS of Figure 2). There are several fundamental problems with this approach, at least if taken in isolation: tight LTV limits may still not be sufficient to protect borrowers against negative equity risk in a potentially extreme devaluation scenario while – without the higher LTV alternative being sufficiently developed – they severely impair borrowing ability. In Poland, earlier income stress testing regulations attempting to push incomes of FC borrowers significantly higher can be shown to have not worked well during the strong house price appreciation period of 2006 and 2007.[8] As also U.S. experiences have shown, pressure on banks to arbitrage income or LTV requirements through inflated income statements or appraisals in such phases will be high.

Most importantly, the rationing approach in essence aims at protecting lenders rather than consumers. The alternative would be a risk taking by lenders on behalf of consumers through 'detoxifying' the product set. The essential options here for the FC lending segment are negative amortization limits, i.e. mandatory exchange rate caps, on a higher LTV FC product, an approximation of the amortization profile of the FC loan through 'price-level adjusted' mortgages in LC, and a first and second mortgage split with the first mortgage in low LTV foreign currency and the second mortgage in local currency.

[8] Calibration of the stress tests is always a problem, too. The 2012 Polish regulations demand draconically the cumulation of a 30% devaluation shock with a 400bp interest rate increase. In contrast, as we have seen, Polish FC loans are mostly indexed to interbank rates which even tend to drop when the foreign currency appreciates.

For the two latter options, see the discussion in the subsequent section. Negative amortization has been limited in U.S. federal legislation for decades at 120% of the initial loan amount; alternative levels or dynamics of ceiling could be worked out in the individual case in transition countries, depending on the local house price and wage inflation context. Given that borrowers anywhere in the case countries, except for irrelevant Turkey where FC lending remains prohibited, already today can convert their FC loans into local currency and thus create considerable currency mismatch risk for lenders, the resistance against demanding a limit to exchange rate risk by regulators looks implausible.

An important supporting regulation could be amortization rules that address the 'current' LTV risk – i.e. negative equity risk - directly through demanding the investment of parts of the interest rate advantage of FC loans into higher amortization. Under the typical French mortgage product used in Europe, with a level payment and low initial amortization, such a regulator demand will impair initial affordability less than the above measures. Poland is demanding a maximum amortization period for FC loans of 25 years - assuming a (fixed) interest rate of 4% this would imply 2.5% initial amortization, which raises initial instalments close to the local currency levels in Polish Zloty. Generally, the faster loan amortization the higher could be the initial LTV that can be accepted. Yet, because of the risk of a devaluation shock, an amortization rule can only support, not replace, a negative amortization limit.

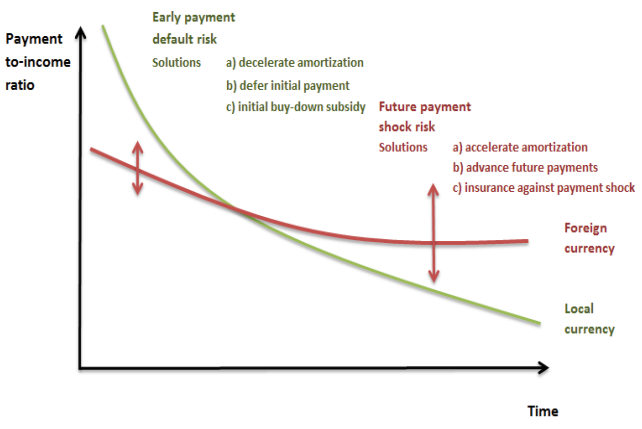
Generally, the risks of foreign currency lending in the six-case sample has been regulated in vastly diverging fashions – not at all in Croatia (most recently there has been court action on Swiss Franc loans borrowing from the Serbian solution) via rationing in Hungary (loan-to-value and payment-to-income limits) to an outright ban in Turkey (related to the 2001 macro crisis). A common denominator is perhaps the push against more exotic currencies like Japanese Yen and Swiss Franc, which leaves the Euro and the US-Dollar as the dominant foreign currencies in use today. For an overview of the empirical findings – per mid-2012, see Table 1 in the annex.

Local Currency Loan Products Need A Comprehensive Development Strategy

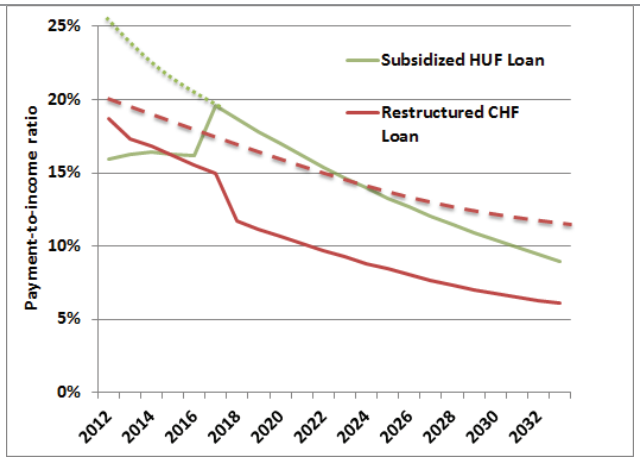
Almost across the board, FC loan product regulations in the case countries have been imposed *before* sufficiently affordable local currency products were available (Serbia, Romania, Hungary – in Turkey FC products are banned since 2001). The unintended consequence of a very prompt reaction by regulators could be rising early payment default risk. This arises if borrowers are forced to pay far higher initial debt service in local currencies. The LHS of Figure 3 stylizes the payment-to-income profiles of local vs. foreign currency loans over time. As long as nominal interest rates are high, achieving greater initial affordability will demand either an initial burden reduction through subsidies or shifting the initial burden to later phases of debt service through deferring payments or lowering amortization. Let us review these options in the following.

Figure 3 The Tilt Effect Associated with Local Currency Mortgage Loans and Solutions

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

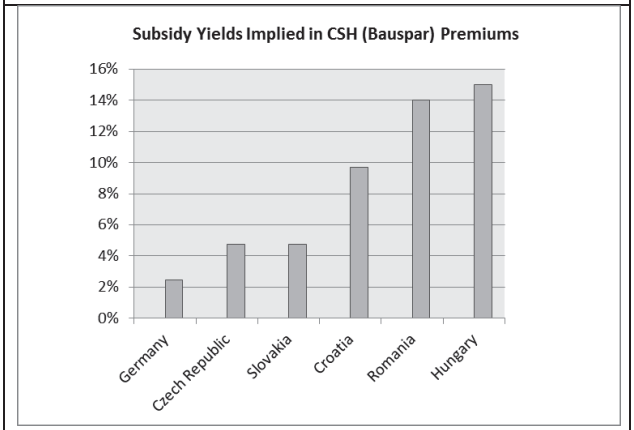


Sources: LHS - author's simulation, RHS – author's representation. Notes: LHS – vertical arrows denote potential dislocation of payment-to-income profile when exchange rate depreciates (upward) or appreciates (downward). RHS - stylized simulation, dotted lines indicate unsubsidized payment-to-income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

Experiences in the region with mortgage subsidies are mixed at best. Given partly high past and current subsidy volumes, there could be scope for reorganizing these to support local currency retail lending. For instance, with the government-supported restructuring option offered for Swiss Franc loans originated during 2004-2008 under the Home Mortgage Action Plan, a companion option to the above mentioned conversion option into Forint, Hungary as per 2012 was ready to massively subsidize the second large mortgage portfolio within a decade. The first subsidy program had drastically reduced interest rates on Forint loans during 1999-2003 under the so-called Széchenyi Plan. Forint rates at the time were *for the entire life of the loan* reduced from ca 14% to 5%, in some cases 3%. Spending only a fraction of the subsidies of the past on a Forint loan buy-down programme focusing - only on the first few years of loan life, as portrayed in the RHS of Figure 3 above – could substantially improve subsidy efficiency measured as Forint mortgage demand stimulated relative to fiscal cost. By 2012, a likely insufficient interest buy-down programme for Forint lending had been set up along these lines.

Figure 4 Contract Savings for Housing (CSH) Subsidies

Subsidy yields in Germany and different transition countries per 2011 legislations



Source: national CSH legislation, Consultant computation. Note: subsidy yield is defined as excess yield from state premiums under the assumption of the locally applicable minimum holding period.

In comparison, the restructuring solution for Swiss Franc loans shown also in RHS of Figure 3 seems to be wasting future ability-to-pay potential of households.[9]

Subsidizing savings through contract savings for housing (CSH, also 'Bausparen') schemes, which generate small second mortgage loans in local currency, is an alternative policy that could fill the capital gap left by tighter LTV regulations on (first mortgage) FC lending. CSH programs have been established in half of the case countries (Romania, Croatia, Hungary). They had no chance to take off during the unrestricted foreign currency lending boom years. With stricter FC LTV rules in place, the Hungarian CSH system has grown strongly recently. For legal reasons, however, the product still cannot be used as a second mortgage topping up first mortgage FC lending and thus mitigating the LTV rationing problem described before.

In Croatia and Romania these legal issues are present, too, and moreover strict FC LTV rules are either absent or easy to circumvent. In Croatia, first mortgage lenders interviewed by the author tend to see CSH as subsidized competition and refuse to cooperate on a potential integration. Romania offers through the Prima Casa program still 95% FC lending, under certain conditions, which can be easily arbitraged. This reduces

[9] The Forint buy-down is also necessary to support the any conversion program at preferential exchange rates in order to avoid mistargeting.

the co-financing potential of the existing CSH savings program. A more generic problem with CSH has been widely differing, and partly excessive, subsidy policies (see Figure 4) resulting from ad-hoc lobbyism. In Romania, also the co-existence of subsidized CSH and similarly subsidized mortgage insurance appears to be inconsistent.[10]

Figure 5 Czech Republic – Local Currency Mortgage Lending Subsidy Policy Around 2000

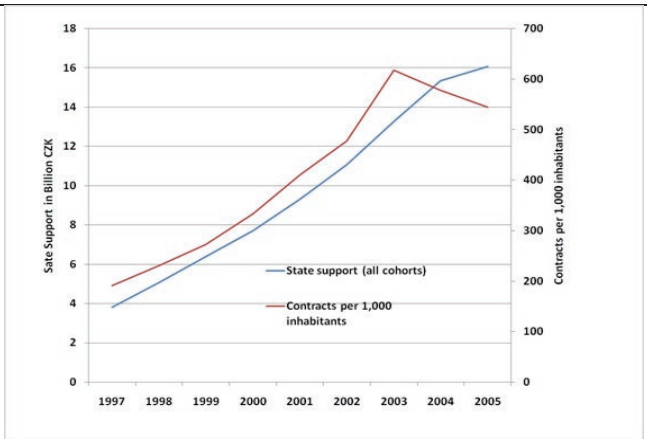
Parameters of the Successful Interest Rate Buy-down Program

Interest Rate Buy-Down Program in the Czech Republic

In % p.a.	1995	1996	1997	1998	1999	2000	2001	2002	2003
Market rate	n.a.	11.4	12.9	14.2	10.3	8.8	7.9	6.8	5.5
Rate buy-down	n.a.	4.0	4.0	4.0	4.0	4.0	2.0	1.0	0.0
Ex-post rate	n.a.	7.4	8.9	10.2	6.3	4.8	5.9	5.8	5.5

- Interest rate buy-down program
  - Subsidy formula: s(t) = r(t-1)-r norm, r = market rate, r norm = 7%
  - Subsidy cap: max (s(t)) = 4%, upward rounding of s(t) to higher integer

CSH State Budget Subsidies and Market Penetration



Source: LHS - presentation given by the author to a OECD housing policy workshop organized in 2004. RHS – presentation given by the author to an IFC workshop in Moscow in 2006.

Historically, supporting subsidies for CSH have also been used as a complement to a loan buy-down program. The model for buy-down programs in the region is the one implemented in the Czech Republic in the 1990s (see the LHS of Figure 5 for historic program parameters). Its success can only be fully understood when considering the high levels of CSH subsidies provided in the 1990s and early 2000s that stimulated a veritable boom in term deposits. This in turn induced very low mortgage rates in the

10 Romania and Serbia run high-LTV mortgage insurance and public loan systems, which in principle can replace contract savings. Yet, these programs support solely FC lending. In addition, insurance programs carry the risk of adding to borrower leverage and create a large contingent fiscal liability. They should probably be refocused on LC lending, where permissible LTV limits are higher, and so is early payment default risk.

Czech Koruna market,[11] and in the event the Czech Republic was able to avoid FC lending altogether. Whether a subsidy policy on this scale – see the RHS of Figure 5 - should be repeated anywhere else is questionable: statistically, by 2000 every second inhabitant in the country owned a CSH contract, and when deposit rates collapsed to 1% by the mid-2000s, CSH deposit rates remained at double digit levels and fiscal cost ballooned. However, the conclusion may be drawn that moderately stimulating the term deposit market via CSH in combination with a buy-down program can be an effective strategy in stimulating LC mortgage lending. It is in this context finally worth noting that Poland has experimented with Zloty loan buy-down programs for years, which either due to fiscal concern or market interest rates declining below the target rate were never implemented.

Considering the regulatory strategies adopted in the six-country sample, permitting shifting payments on LC products to the future seems already to be an option in most of them. Underwriting regulations are far more lax now on LC lending than on FC lending, with payment-to-income ratios permitted often up to 50% (see Table 2 in the annex). In this context, interest-only phases or introductory rate arrangements in local currency could be abused to further stimulate debt take-up. This could mean additional credit risk via future payment shock if remaining unregulated, which is the case in most of the reviewed countries (see Table 2 in the annex).

It might be worthwhile therefore at least for those countries with - as a rule of thumb - inflation rates in excess of 5% and nominal interest rates in excess of 10% for extended

[11] See Duebel (2003). The key mechanics is the requirement to invest CSH deposits that are not invested in CSH loans into housing-related assets. This provision stimulated the development of the Czech covered bond market, which in turn ensured that by the mid-2000s the country had one of the lowest funding cost levels for mortgage lending in Europe.

time periods to consider 'inflation-proof' local currency loan products. The price-level adjusted mortgage (PLAM) product negatively amortizes the inflation rate into the outstanding of the loan while determining debt service through the application of the real interest rate over the inflated outstanding. Latin American countries like Chile or Colombia with moderate inflation levels and little prospect of joining a broader currency union have used the PLAM instrument for decades as the preferable alternative to FC lending. The difference between both instruments, put simply, is that the PLAM narrows the negative amortization driver down to the official inflation rate. FC lending in contrast means negative amortization risk resulting from drivers behind exchange rate devaluations well beyond purchasing power, including inter alia volatile capital flows and speculative attacks. PLAM lending is under most empirical scenarios less risky than FC lending and could hence permit higher LTVs upon underwriting. In order to illustrate the Hungarian case, the annex provides for a simulation example with the historical exchange rate and inflation data for loans originated in 2007. Still, as experiences in some markets have shown – a prominent example is the Icelandic portfolio originated before the financial crisis – PLAMs carry potentially significant mismatch risk between inflation and wages and/or house prices and should be sufficiently conservatively regulated.

The regulatory design initiatives for local currency products in the region currently do not include such an option, even though Hungary and Poland have historic experiences with variants. Local currency product design in the region is – as in the case of their FC product counterparts - essentially limited to adjustable-rate loans. Under the typically large interest rate volatility in the local currency this means that they are subject to even higher re-pricing risk on interest rate conditions than foreign currency loans, which could severely hit borrowers. While a verbal preference among regulators for fixed-rate lending is heard as a routine statement, there is hardly any evidence of lending in local

currency beyond fixing periods of one year. An exception is the Czech Republic where the typical fixing period is five years.

Clearly, nominal fixed-rate lending over a horizon material for interest rate risk protection requires material support for lenders, from refinancing options to consumer protection regulation. The latter is a particular reason for concern: almost all countries feature strong interventions severely capping (Romania) or removing (Croatia, Serbia) prepayment indemnities that turn fixed-rate lending through the implicit requirement to price the prepayment option expensive, and thus in comparison with adjustable-rate lending in local currency create interest rate differentials that may leave borrowers no choice. The political reason for the curbs of prepayment indemnity is clearly high nominal interest rate levels; in the Czech Republic, in contrast, full yield maintenance indemnities are permitted as interest rates are significantly lower, thus lowering the opportunity costs for households from not prepaying. Yet, still at elevated rate levels somewhere between 5 and 10% in the remainder of the region, permitting indemnities should be feasible to allow fixing periods in the range of 1-3 years, which should allow banks in return to issue fixed-rate deposits or bonds for refinancing. Regulators could reduce some of the remaining cost differential to adjustable-rate loans through lower capital requirements, given the absence of re-pricing risk at least for the rate fixing period.

After the negative experiences with unilateral upward interest rate reviews by lenders discussed before, adjustable-rate products by regulation in the case countries now as a default have to be tied to interbank rates. Lender cost-of-funds indices as the alternative are frequently rejected by regulators as easy to manipulate (Serbia, Romania, Hungary at the time of writing of the EBRD study was still undecided). Yet, interbank indices in local currency are known to face serious credibility issues. The most serious is that there is usually no loan demand by banks which typically are over-liquid in local currency.

Thus local currency interbank indices are vulnerable to manipulation as the quotes collected are essentially reflecting only ask prices of banks without underlying loan transactions.

A particularly problematic regulatory demand is in addition to require fixing the spreads over the underlying indices for the entire life of the loan (Serbia, Romania). This type of profit regulation may severely raise lender solvency risk when refinancing costs for him increase above the interbank index. There are stark lessons from Euro crisis experiences in Ireland or Spain in that regard. In these countries the refinancing of interbank index-based products with low fixed spreads today depends on the low-cost options provided by the European Central Bank. The alternative - within the adjustable-rate lending product framework and assuming fixed-rate loans are not feasible - would be to permit re-adjustment of spreads in certain time intervals, e.g. every 3 years. Finally, an option still is to use an easily verifiable proxy for industry funding cost as a basis for the reference index, e.g. deposit rates.

The Supporting Infrastructure For Mortgage Lending Remains Insufficient

Beyond mortgage regulation and subsidies, almost 25 years into the transition the fiscal, design and implementation capacities of housing policy remain limited in the region. This means that lower credit households – in particular the young that move into cities with very limited supply of rental units - are pushed towards the retail mortgage market. The continued lack of capacity 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 at least stock repair and modernization of rental units, which would require reform of rent control laws, could cater to the needs of young and mobile households.

Poland is the only country in the sample that has partly succeeded in rebuilding a non-profit rental housing sector (TBS system), although the country has not up-scaled it yet from direct national budget funding. Croatia harbours plans for a revitalization of pre-transition rental housing programs. There are efforts in Romania to rehabilitate the old block of flats which could support the rental market.

Challenged by rising default rates, the foreclosure and consumer insolvency regimes are currently tested for the first time in the region, and across the board need improvement (Hungary, Serbia, Croatia, Poland). As in Western Europe (e.g. Ireland), the risk of distortive foreclosure moratoria decreed by the state in the region is high. It is highest where both the default caseload is elevated and rules that permit the discharge of residual debt after a foreclosure are absent or highly restrictive . Hungary in this context has limited permissible foreclosures to a low quarterly number.

Discharge rules would require the borrower to service that debt only for a number of years, after which relief is granted. This would strike a balance between preserving a penalty for defaulting and avoiding the eternal debt tower of large volumes of residual

debt, which is particularly relevant for young households. Drastic reductions of discharge periods have been implemented in Western Europe (e.g. Ireland, from 12 years to 3 years). Reducing them 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 lender underwriting decisions remains deficient, specifically regarding the availability of house price data (no national standardized index concepts in the case countries, except Turkey) and existence of rental market surveys (all cases). Rental survey data are direly needed in order to begin departing from the open market valuation method that is currently dominating underwriting. This method, which essentially just records inflation, is increasing the risk of excessive credit growth (all cases). This 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 the relevant benchmark in the new construction case.

More Mortgage Securities Issuance Is Needed For Both Greater Risk Transfer And Mitigation

More than twenty years into the transition process progresses in both market development and regulatory environment of mortgage securities remain incomplete. The delay promises continued high interest rate and liquidity risk for mortgage lenders, in both foreign and local currency dimensions. The situation also makes continued reliance of the primary markets on risky lending products more likely.

To develop the issuing incentives of banks, regulators in the region will need to use the appropriate metrics for risk calibration. They should, as a first step, shelve the idea of bringing the Loan-to-Deposit Ratio (LDR) permanently down to 100%, which implies purely deposit-funded mortgage finance systems.

To be clear, imposing a conservative LDR can be part of an effective short-term strategy to radically cut back on excessive domestic credit. But in order to avoid structural damage, the strategy should focus on the source and maturity of funding, in particular short-term foreign capital inflow, not the instrument. Figure 10 in the annex looks at four countries that experienced housing booms on the back of considerable foreign capital imports. It shows that mortgage securities had an impact on capital supply generation (Spain, U.S.), but their presence was not a necessary condition since surges in interbank funding (Hungary) or unsecured bank bonds (Ireland) have led to the same results. In other words, the goal should be to bring down excess foreign liquidity transmitted through any channel, and here in particular those with the highest liquidity risk (e.g. short-term bonds or deposits, interbank or intra-group funding).

A 100% LDR goal will finally be entirely undesirable when there is risk for eliminating the space for long-term bank bonds targeted at developing the *domestic* capital market:

- First, regulators cannot simply assume that deposits will be more stable than bond funding. That this is not necessarily the case is amply demonstrated in the CEE region by capital flight and bank run experiences, e.g. 2011 in Hungary. In particular covered bonds tend to have a dedicated domestic investor base that is unlikely to run (i.e. reject roll-overs).
- Secondly, regulators must reduce the risk of long-term mortgage assets being funded by short-term deposits, which is incentivized by the LDR concept. While regional central banks classify a substantial portion of deposits as term or 'time' (see upper LHS of Figure 6 below), truly long-term deposits with maturity of 1 year and more are extremely rare in the region.[12] We discussed above the exception of CSH contracts with maturity of between 2 and 5 years; where laws exist, these can fill some, but not all, of the void.
- Thirdly, a strong reliance on the LDR keeps promoting the use of adjustable-rate mortgages that match the re-pricing profile of deposits, i.e. induce lenders to move on the mortgage yield curve from the long to the short end. This short-term interest rate risk minimization policy for banks does not only deprive borrowers from interest rate risk protection. It also creates greater pass-through of monetary policy signals, thus tends to intensify credit boom-bust and maximize long-term credit risk for banks.

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[12] 1 year is the cutting point for the Basel III net stable funding ratio (NSFR). In order to enhance eligibility of deposits for the NSFR, roll-over assumptions for deposits have recently been generously expanded. This concession by regulators to the banking industry can easily impair the usefulness of the metric, especially in a transition country context.

An appropriate set of regulations trying to promote mortgage funding stability would start from a modified version of the Net Stable Funding Ratio (NSFR). Among the six countries reviewed only Hungary applies the NSFR concept to the foreign currency portfolio, where the key liquidity risk for lenders lies ('foreign funding adequacy ratio', FFAR). The NSFR, which under Basel III rules is limited to one year and focusing on the overall liquidity situation of the bank, must also be complemented by long-term matching tests to appropriately monitor the liquidity and interest rate risks of mortgage portfolios. Matching tests can be static, such as duration gap analysis, or dynamic, e.g. stressed asset and liability cash flow on a net present value basis. The result of such testing will be additional stimulus for lenders to issue either bonds or long-term deposits to improve matching. They are the standard in covered bond regulations in the region (Hungary, Poland, Romania, Turkey), and could be easily extrapolated to the entire mortgage portfolio level.

A particular problem also for mortgage funding is legislation severely capping or outlawing prepayment indemnities. This primary market regulation issues discussed before will result in high variation of durations of fixed-rate mortgages depending on the interest rate scenario and borrower behaviour. Particularly problematic for lender solvency is so-called negative maturity transformation risk, i.e. the risk that funding maturities are longer than asset maturities, when the latter are shortened through prepayments. The potential losses arising in a declining interest rate scenario where lenders service debt interest expense is not covered by asset interest revenue could easily compromise the validity of proposing matched long-term deposit or bond funding.

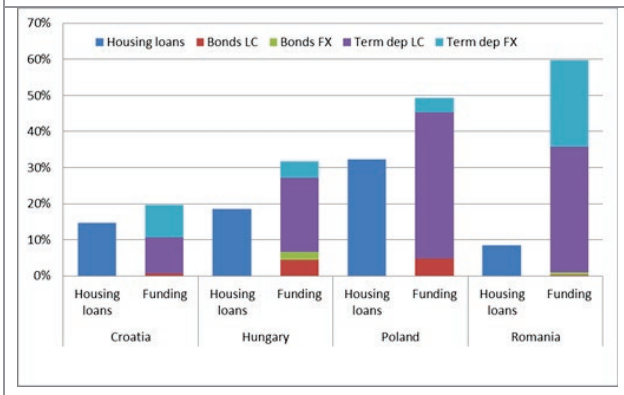
Lenders generally ought to assess duration risks properly and in particular do appropriate loan portfolio duration modelling. If truly interested in developing fixed-rate mortgages, regulators should then consider reintroducing indemnities – see discussion

above, even though small indemnities may also be an issue when protecting index tracker spread[13]. Where protecting asset cash flow is impossible they should draw the consequence and try to enforce appropriate optionality in mortgage funding instruments. Examples are pass-through bonds, in which investors bear the prepayment risk, or callable or soft bullet bond instruments, which provide the lender with additional duration risk management options. It should be warned though that the investor base for such instruments, in particular in local currency, is very thin, and thus attempts to stabilize asset cash flow will be preferable. The fundamental alternative is staying with the high-risk short-term adjustable rate product set. In this case, issuing bonds could at least mitigate some of the liquidity risk of the product.

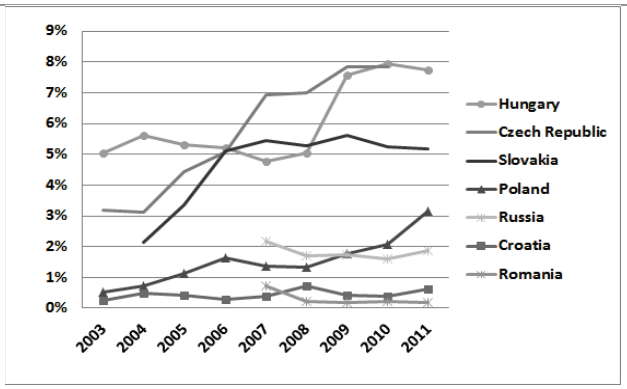
13 An example would be Spain which permits a 0.5% prepayment indemnity on Euribor loans.

Figure 6 Funding Structures of Housing Loans, Bank Bond and Covered Bond Market Development Status

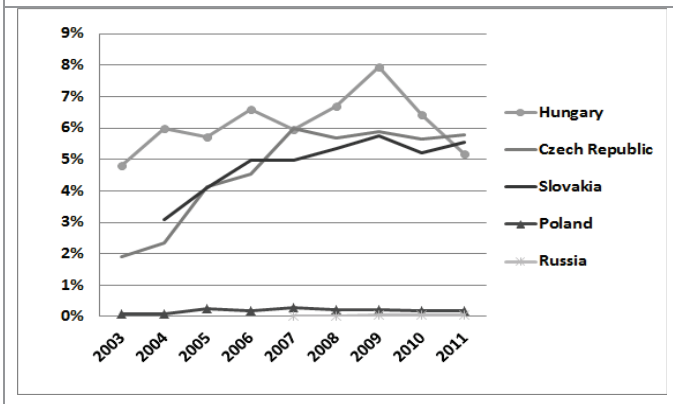
Housing loans and 'long-term' bank funding sources, % of total assets in banking system



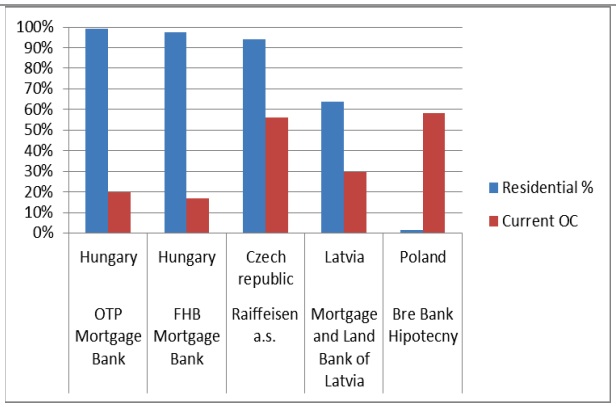
All bank bonds outstanding , % of GDP



Covered bonds outstanding, % of GDP



CEE Covered Mortgage Bond Program Characteristics, 2011



Sources: upper and lower LHS - national central banks; upper RHS – European Covered Bond Council; lower RHS – Moodys; Finpolconsult computations.
Notes: upper LHS – 'LC bonds' in the case of Croatia and Poland include an undetermined portion of FC bonds. Lower RHS - 'OC' - overcollateralization

The upper RHS of Figure 6 provides an overview over the status of covered bond markets in the region. In Hungary, the Czech Republic and Slovakia the markets have taken off; in Poland and Russia they remain very small. Market growth came to a halt in Hungary due to the FC lending boom, which mainly used interbank credit and swap as well as intragroup funding vehicles. During the crisis then issuers tried to compensate for the collapse of the interbank market. Both Hungary and Poland share the same type of regulation, demanding special banks as issuers, with very different results: the reason for

this outcome are two public special bank creations (FHB, OTP) which together with subsidies almost nationalize the Hungarian market. Poland compensates for the inactive covered bond market with an active unsecured bank bond market (see lower LHS of Figure 6). The Czech and Slovak covered bond markets were partly driven through the recycling of subsidized CSH term deposits, and have also reached a certain saturation point. Czech covered bonds feature a significantly higher share of commercial real estate than Hungarian, where the cover pool is almost entirely residential real estate.

Within the sample, Croatia and Serbia are discouraging foreign currency bank bond issuance through implicit taxation via reserve requirements. Protecting a small economy from excessive capital inflow is a valid goal in itself; however, developing long-term funding sources for a foreign currency portfolio, given the issues with local currency lending, is the one that deserves priority. This could speak in favour of focusing taxation on short-term foreign capital inflow in its various forms.

In that regard, the interbank and intragroup financing situation in foreign currency in a region facing economic stress and deleveraging remains volatile. Potentially, these rather unstable sources of funding could be replaced by covered bonds or mortgage-backed securities (MBS). This motive played a role for instance when Italian banks aggressively issued mortgage bonds in Slovakia and Hungary in 2009 in order to repatriate intragroup financing, or when Hungarian issuers at the same time started issuing Swiss Franc covered bonds. Potential issuers are closely watching the strength of the interbank arrangements to determine issuance needs, or the need to develop or reform their covered bond law to lay the foundations (at the time of the EBRD study in mid-2012, there were positive signals from interviews in Croatia, Romania regarding interest in covered bonds, as opposed to more mixed views in Hungary). That said, by and large the more important financing constraint reported by potential issuers for the EBRD

study in mid-2012 was capital allocation, given the accelerated Basel III capital requirement schedule.

Insufficient liquidity of covered bonds is an important cost driving factor compared to interbank funding. The pooling of residential and commercial mortgages is the standard in the region (except Hungary), which compromises risk transparency. Pooling of local and foreign currency mortgages in the cover is desired by many potential issuers (e.g. Romania), but materially complicated by tightening requirements for swap counterparties. The efforts to establish centralized issuers, still dominating smaller Western European markets (Switzerland, Denmark), that mitigate the liquidity issues have been unsuccessful so far in Poland while the future of the Hungarian arrangement with competing issuers looks uncertain. 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 due to constraints in home country legislation. Improving the economics of special banks, e.g. through enabling loan sales from universal banks to mortgage banks, remains the policy priority in Poland.

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 demand for special banks as covered bond issuers 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 (Romania) that also underlies the European bank resolution reforms conflicts with high levels of overcollateralization supporting covered bonds by rating agency demand. The U.S. Federal Deposit Insurance Corporation on

several occasions ran into difficulty in resolving banks because of conflicts over overcollateralization. This renders the imposition of issuance limits to covered bonds when issued by universal banks more likely, which in turn could severely discourage specialized mortgage lending business models. A comprehensive legislative approach would need to address the consistency of the broader bank resolution or insolvency framework as well as try to limit overcollateralization or improve its management in the process.

Covered bond laws in the region also historically have adopted a conservative credit risk management profile (low LTV, no foreign collaterals), 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. The latter is present in the Danish mortgage bond system, which combines the pass-through features of MBS with the dual credit enhancement standard of the covered bond (bank balance sheet/signature and mortgage cover).

MBS markets in the region remain undeveloped, with at the time of the EBRD study laws shelved (Croatia, Serbia), in need of revision (Romania), or inactive (Turkey). A 'gold standard' mimicking covered bond asset quality requirement could help. The most realistic option for market development would be taking the existing mortgage insurance programs (Romania, Serbia) and building an MBS bond insurance programme on that basis. The model for this is the U.S. low-income mortgage market segment funded by MBS. It benefits from dual insurance – loan insurance by the Federal Housing Association and bond insurance by the public insurer Ginnie Mae. Such depth of government insurance intervention should be reserved to the low-income market, however.

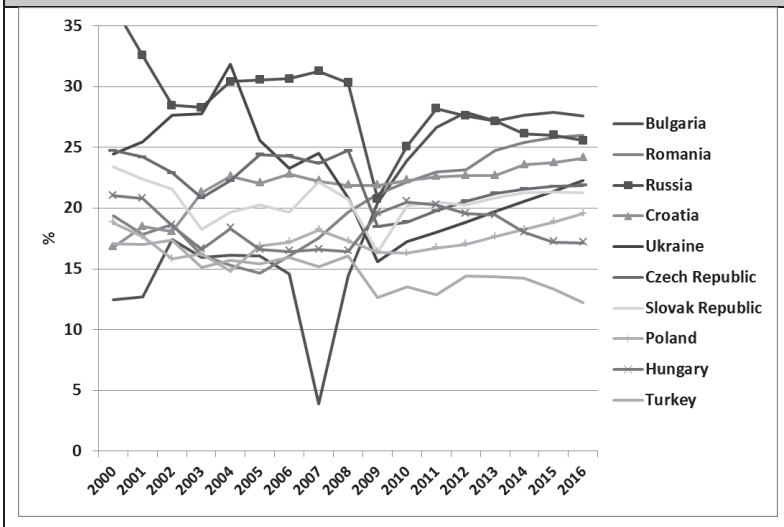
The Domestic Long-term Investor Base For Mortgage Securities Should Be Strengthened

Despite the need to enhance funding stability and reduce the dependency on foreign funding, the domestic mortgage securities investor base in the region is at risk of stagnating or even shrinking.

Local investor demand for local currency duration via mortgage securities in principle is high (e.g. Serbia), given the often 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 in sample countries (Hungary, Croatia). This matches a historical pattern of countries with large government debt, where mortgage securities investments were disfavoured by regulations. This explains for instance the low relevance of covered bonds in Italy.

More disturbingly, portfolio performance benchmarks enforced on institutional investors actively discriminate against diversification into corporate risk as well as duration risk. That institutions are put into the position to manage duration risk is essential for producing a meaningful division of labour with

Figure 7 National Savings Ratios, 2000 – 2010 and Forecast



Source: IMF, World Economic Outlook September 2011

banks. This is particularly the case when consumer protection rules create considerable prepayment risk, and thus institutions should absorb the duration risk.

Foreign investor demand for long-term covered bonds should be welcome, within the constraints imposed by the need to retain a healthy current account position. It meets certain barriers. European institutions are constrained by home country regulations (investment grade limitation, cross-border limits outside the EU). Yield and in particular macro strategy investor demand, e.g. from private equity funds, is constrained by low liquidity, which impairs exit options. Banks as purchasers rely strongly on the ability to repo covered bonds. This is essentially limited to the Eurozone member Slovakia, which also saw strong issuance activity in 2011. A regional dialogue should be sought to address the regulatory barriers for European investors, possibly under the Vienna II initiative of the EBRD, and to reduce information and analysis cost associated with small issuers from small markets.

Conclusion

After more than a decade of boom and first signs of market crisis, CEE countries should comprehensively reassess their mortgage finance systems. The regulatory and policy discussion should be sequenced: first primary, then – on the basis of sustainable asset cash flows - secondary market development.

The interventions of regulators seen in the area of primary market regulation together with the lack of fiscal support to alter the risk environment fundamentally require adjustments in the funding and risk management strategy of banks. Many already have come into difficulty and withdrawn. This is true for all reviewed country cases, and in particular Croatia, Serbia, Hungary and to a lesser extent Romania.

Particularly problematic for lenders ex-post interventions into mortgage product design and pricing mechanics, which have been popular in the Swiss Franc loan portfolio. Such interventions, however, are the results of insufficient attention being given to design and pricing ex-ante. Regulators rather than performing this task prefer rationing via steep demands on borrower incomes and equity, which appears unsustainable. In the isolated events of design interventions, these also tend to go overboard: if regulation demands a lifelong fixing of the spread of a mortgage loan over an interbank index – as is the case in Romania and Serbia – the mortgage lender could be getting fast into a solvency-threatening situation.

When trying to push borrowers out of foreign currency products, regulators and fiscal policy makers should sit down and design a comprehensive support strategy for the local currency alternative. Markets with no chance of access to the Euro and moderate to high inflation levels should aim at introducing inflation-proof local currency instruments. The others may want to consider supporting standard local currency products through buy-downs or contract savings for housing programs.

Both primary market regulation and fiscal support are still mainly a national task, to which a dialogue among regulators and between regulators and international organizations such as the EBRD could contribute international best practice review. The European mortgage directive CARRP 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 on the basis of the EBRD study 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 and if necessary designing inflation proof products. For foreign currency products, the development of material protection mechanisms (e.g. negative amortization caps) should be a priority. 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 generation).
- 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 more advanced and the covered bond market is not taking off, and the on-going covered bond reform discussion in Romania. For EU members, including Western Europeans, covered bond laws should be reviewed to make them consistent with the emerging EU bank resolution and deposit insurance framework.

Going forward, in order to address the serious shortage of rental housing, broader efforts in building housing policy capacity at both national and local levels are needed. To this end, public investment and borrowing capacity in the region should be strengthened, e.g. in co-operation with international development banks. Policymakers both in the region and their supporter at the EU and international level should understand that a sufficiently diversified and healthy housing sector is a central pillar for both financial sector stability and economic prosperity.

Annex

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2. Synopsis of Primary Market Regulations Issues

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.						

Table 2 Supporting Regulations and Subsidies for Local Currency Mortgage Lending

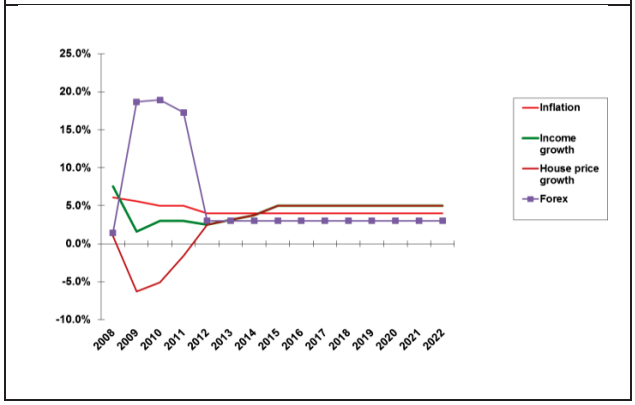
		Croatia	Hungary	Poland	Romania	Serbia	Turkey
2011 LC % (housing)		0%	Ca 80%	62%	Lower than 20%	0%	100%
Main impediments for LC lending		Property market and banking system euroized. High real rates.	Property market euroized. High real rates. High inflation level (Tilt).	Property market euroized.	Property 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). PTI 30-50% (by income, vs. 23-38% for EUR); min income for FX.	No LTV limits. Higher PTI (50%). Severe FX stress test.	LTV 85% (vs. 75% EUR). Public 95% LTV LC pgm. Severe FX stress test.	No LC LTV limit. Public 95% LTV for LC. (FX 80%). Higher PTI (by 20% points).	Not applicable.
	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.							

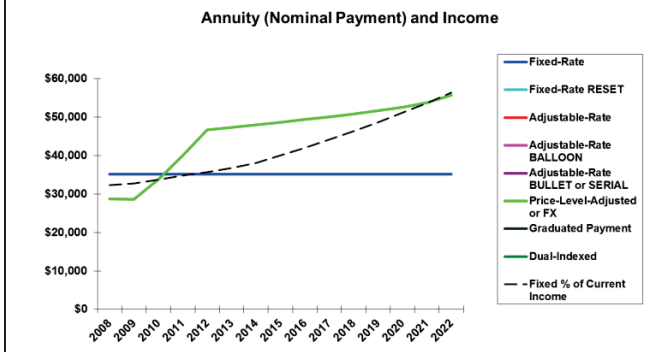
3. Product Design Simulation: Foreign Currency Mortgages vs. Price-level Adjusted Mortgages

Case: Hungary, Swiss Franc loans underwritten in 2007 vs. price-level adjusted mortgage (outstanding balance adjusted by inflation rate

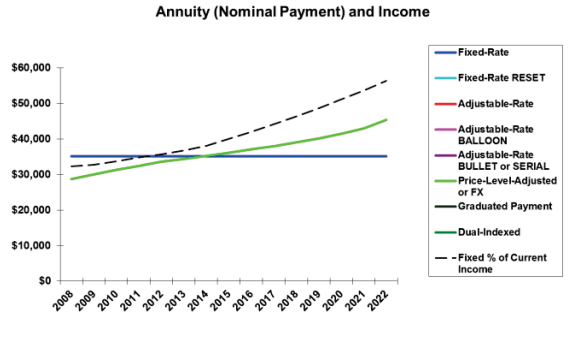
Simulation Inputs

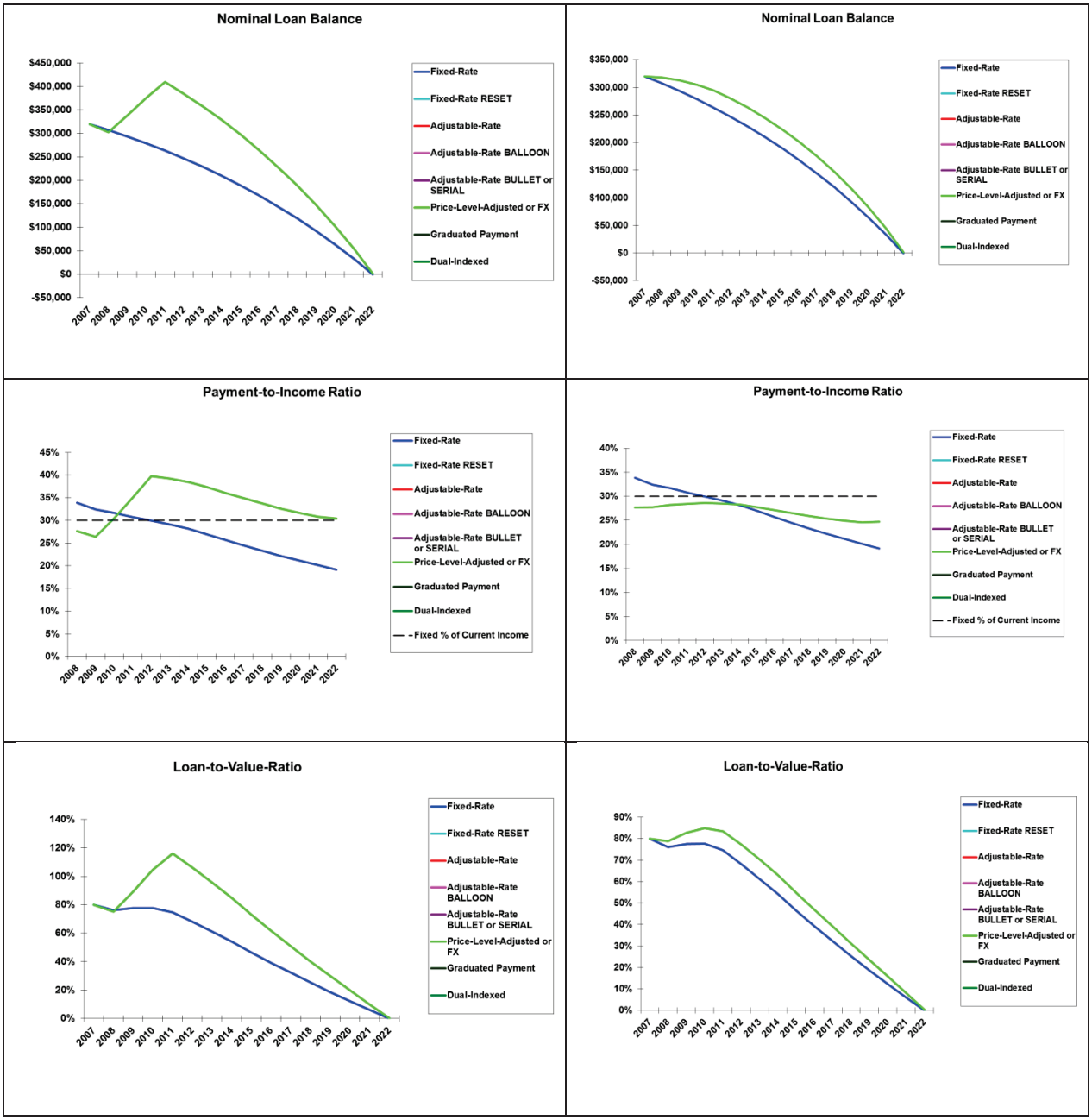


Foreign Currency Mortgage (actual)



Price-level Adjusted Mortgage (alternative)



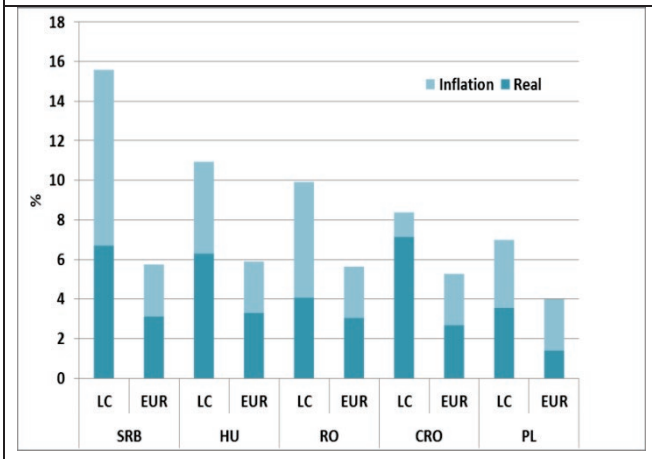


Source: Author's simulation provided for the Wharton School/University of Pennsylvania International Housing Finance Course, June 2012

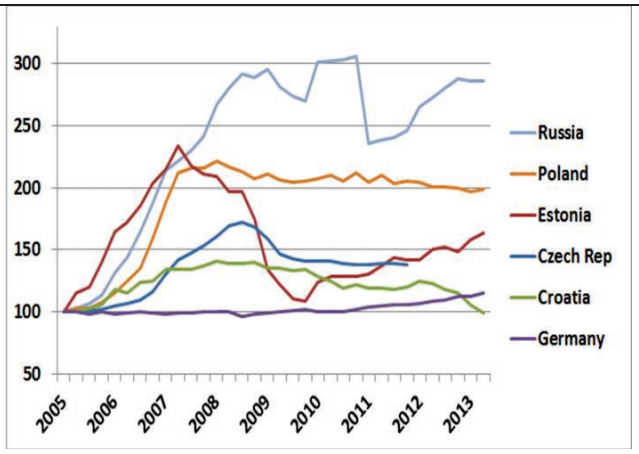
4. Additional Data

Figure 8 Housing Loan Pricing Conditions, House Price Developments

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



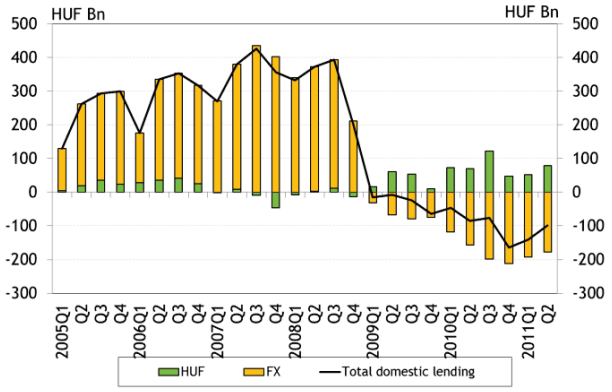
House Prices (existing or all flats), Q I 2005 = 100



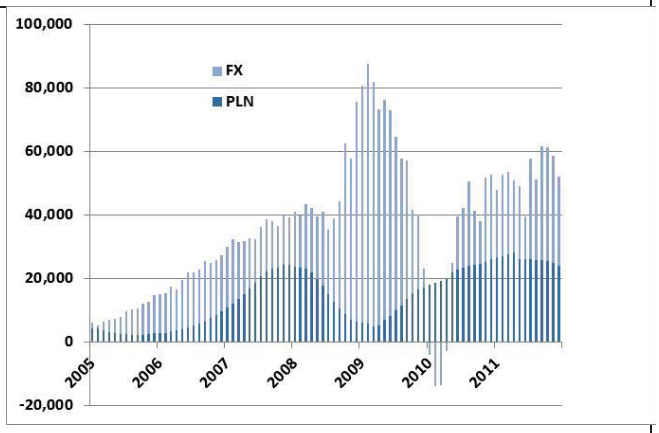
Source: national central banks, BIS, Finpolconsult computations. Notes: LHS - real interest rate computed by subtracting average of inflation rates 2009-2011 from nominal rates.

Figure 9 Changes in Outstanding Loans to Households by Currency

Hungary (billion HUF, quarter on quarter)



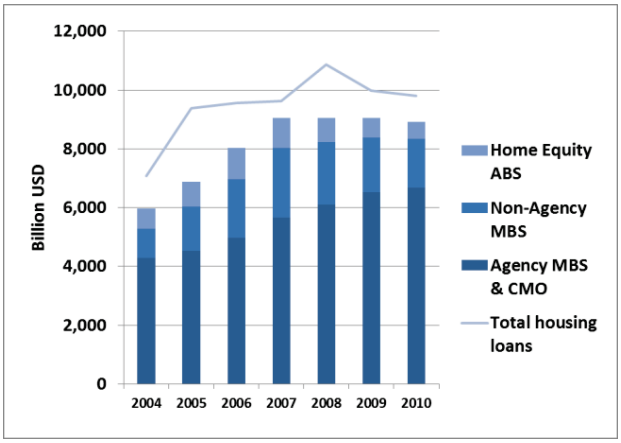
Poland (thousand PLN, month on month)



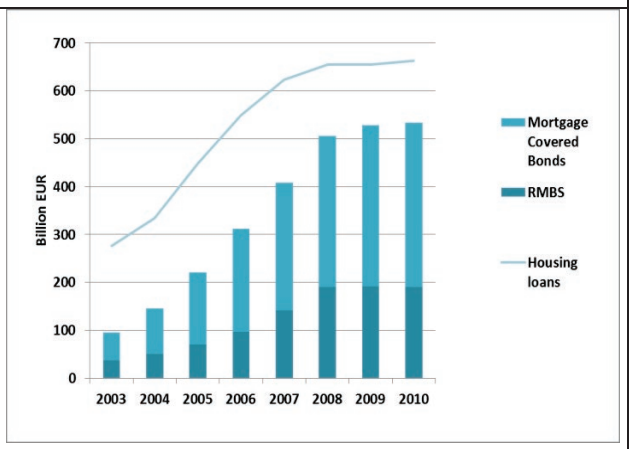
Source: national central banks, Finpolconsult computations. Notes: direct data on new lending currency composition not available.

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

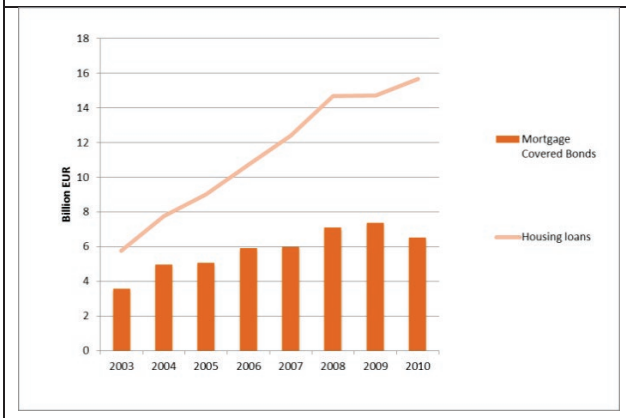
U.S. Mortgage-related Securities Outstanding, 2004 - 2011



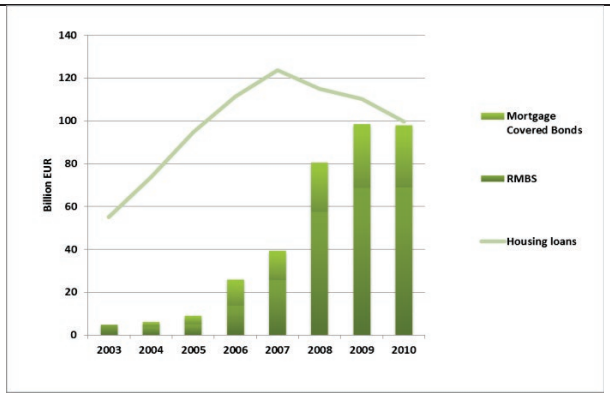
Spain Mortgage-related Securities and Housing Loan Outstanding, 2003 - 2010



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. First published in Dübel (2012a).
Notes: the assessment is highly approximative as disaggregated funding analysis of the national housing loan portfolio is generally unavailable.

10. Activating the covered bonds market in Poland – the need for regulatory improvements

Agnieszka Tułodziecka, Agnieszka Nierodka

dr Agnieszka Tułodziecka – President, Polish Mortgage Credit Foundation
Agnieszka Nierodka – Economist, Polish Mortgage Credit Foundation

Article 10 Contents

Abstract:

The institutional framework for the functioning of covered bonds (list zastawny - L.Z.) in Poland was established already in 1997 and first issues took place in 2000; by 2013, L.Z. accounted for a few percent of property market funding, mostly with respect to commercial property. The latest liquidity limits introduced by the requirements of Basel III and of the Capital Requirements Directive / Regulation (CRD / CRR4) will persuade banks to show greater interest in long-term funding instruments to some extent, but in order to improve the L.Z. system in Poland more comprehensively, further changes to the legal environment are necessary so as to achieve significantly better ratings compared to unsecured bonds. The adjustment of the mortgage banking business model that assumes a synergy between the credit policy and the policy for funding mortgage portfolios with L.Z. within groups will also be of essential importance.

The direction of systemic solutions represented by the Polish L.Z. and the quality of the collateral provided by safe assets are commensurate with the expectations of investors who tend to be wary following the sub-prime crisis. The key issue will be to achieve a larger issuance scale as well as to ensure market liquidity. The authors of this analysis express their opinion on success factors in the Polish market environment.

Keywords: covered bond, mortgage, portfolio funding, liquidity

JEL code: G12, G21, K23

1. Legal framework for *list zastawny* issuance in Poland.

Foundations for the development of the Polish L.Z. market were laid in 1997 when the Act on Covered Bonds and Mortgage Banks (ACBMB) was adopted. In this manner, after more than fifty years, legal grounds for issuing L.Z. and the operation of mortgage banks were restored in Poland.[1]

Pursuant to the Act, the only entities authorised to issue L.Z. are mortgage banks incorporated as joint stock companies. In order to minimise the risk associated with their operations, the list of activities which mortgage banks are authorised to engage in has been limited to only include low-risk activities. The basic activity of mortgage banks consists of granting loans secured by mortgages and issuing L.Z. on this basis as well as of granting loans to public entities set forth in the Act and issuing public L.Z. on this basis. Moreover, pursuant to Article 15 of the ACBMB, a mortgage bank may, within a specified scope, engage in the following additional activities: (i) accept time deposits; (ii) take out loans; (iii) issue bonds; (iv) safekeep securities; (v) purchase and take up shares in other entities whose legal form ensures that the liability of the mortgage bank is limited to the amount of assets invested; (vi) maintain bank accounts used for the servicing of investment projects carried out using loans granted by the mortgage bank; (vii) provide consulting and advisory services related to the property market, including with respect to the determination of the mortgage lending value of property.

The ACBMB imposes a number of rules that limit the risk associated with mortgage bank operations, possibly even at the expense of achieving higher profits. The Act also contains a number of provisions that ensure the security of the L.Z. itself, which include in particular making the possibility of issuing such securities conditional on meeting statutory conditions and subjecting such activities to strict

[1] Before World War II, L.Z. were issued under the Regulation of the President of the Republic of Poland of 17 March 1928 on Banking Law (Journal of Laws [Dz. U.] No. 34/1928 item 321). The long-term loan (used by issuers of L.Z.) was abolished in 1948 (cf. Decree of 25 October 1948 on the principles and procedures of abolition of some types of long-term loans, Journal of Laws [Dz. U.] No. 52/1948 item 411 and Decree of 25 October 1948 on the banking reform, Journal of Laws [Dz. U.] of 1951 item 412).

supervision. These provisions concern: ensuring solvency, which is essentially guaranteed by the principle limiting the total amount of L.Z. outstanding (Article 17 of the Act) and the principle of congruence between interest costs and income, and additionally the principle of ongoing cover for L.Z. (Article 18 of the Act) and the limit on refinancing with L.Z. (Article 14 of the Act).

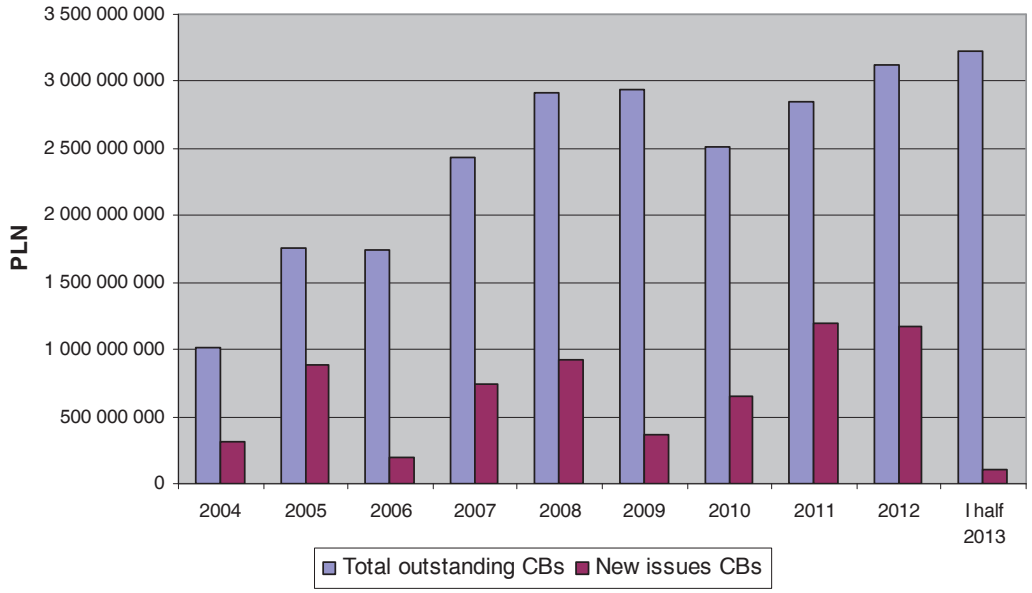
Summing up, the rules governing the operation of mortgage banks in Poland make the cost of their activities relatively high, but at the same time such activities are highly secure. This, however, does nothing to change the fact that, despite good regulations and a high level of safety provided by L.Z., the market for L.Z. in Poland has not developed significantly during the last 13 years.

2. Development of the *list zastawny* market in Poland

The first post-war issue of L.Z. took place in 2000, but in fact the market only began to operate in a meaningful way from 2005 onwards. Initially, only L.Z. were present on the market; from 2008 onwards, the issuance of public L.Z. commenced as well. L.Z. were issued by three specialised banks: BRE Bank Hipoteczny, Pekao Bank Hipoteczny and Śląski Bank Hipoteczny/ ING Bank Hipoteczny (the last one operated until October 2011).

Currently, two issuers are active on the Polish market: BRE BH accounts for about 70% of the market, while Pekao BH services the remaining 30%. As at end June 2013, total liabilities incurred by mortgage banks arising from the issuance of L.Z. exceeded PLN 3.22 billion, of which L.Z. accounted for ca. PLN 2,766 million and public L.Z. for ca. PLN 455 million.[2]

Figure 1. Covered bonds in Poland



source: Polish Mortgage Credit Foundation

[2] Data on L.Z. issuance (in annual terms) are published on the website of the Polish Mortgage Credit Foundation (Fundacja na rzecz Kredytu Hipotecznego): http://fundacja1.home.pl/ehipoteka/pol/Statystyki/Listy-zastawne

On the market, issues denominated in Polish zloty prevail, which amount to ca. PLN 100–250 million each[3] (the still poor development of the L.Z. system in Poland is reflected by the fact that no Jumbo issues[4] have been conducted so far, which is a major shortcoming of this market, especially for institutional investors). Maturities of Polish L.Z. range from 3 to 7 years; there was a noticeable reduction in those periods when the financial crisis struck with full force (2008–2009), but now – in better economic climate and given increased confidence in the interbank market – most L.Z. are issued for 6 or 7 years and investors hold them until maturity (there is virtually no secondary market in Polish L.Z.).

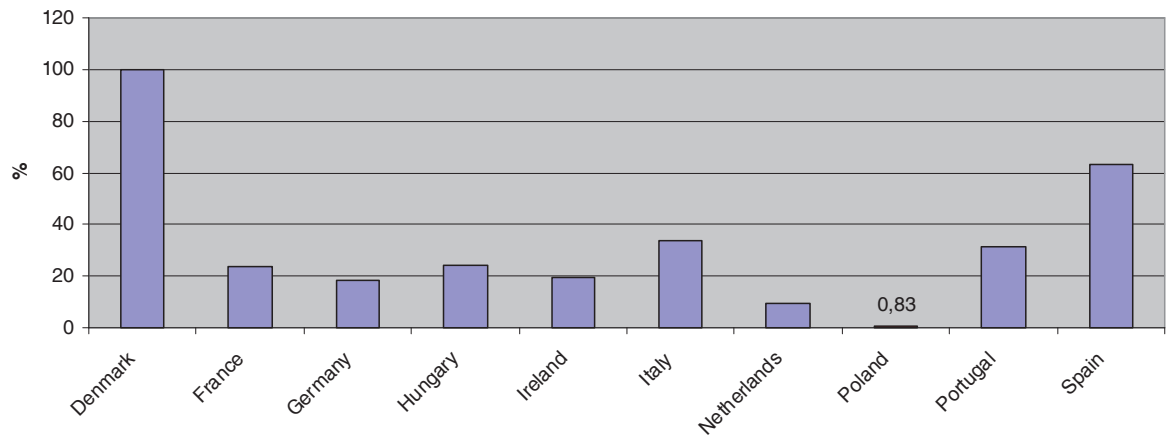
It should be stressed that, in contrast to European trends where about 70% of covered bonds issued are fixed-rate securities, Polish L.Z. are generally floating-rate ones (although in July 2013, BRE BH issued 7-year L.Z. denominated in EUR with a fixed interest rate). This composition of L.Z. corresponds to the characteristics of the Polish mortgage loan portfolio in which variable-rate loans clearly dominate. It should also be pointed out that while the reference rate for mortgage loans denominated in PLN is the WIBOR 1M or 3M, in the case of L.Z. the reference rate is WIBOR 6M, which adversely affects yields in the case of sudden changes in the interbank market (increases in spreads between rates).

[3] All data on L.Z. issuance characteristics are based on the figures provided by mortgage banks to the Polish Mortgage Credit Foundation.
[4] An issue of the order of EUR 500 to 1,000 million.

3. Share of *list zastawny* in portfolio funding

Despite the clear development of the market, which has taken place in recent years, the funding of mortgage portfolios with L.Z. is not yet sufficiently well developed in Poland. Less than 1% of the residential loan portfolio is currently refinanced through L.Z., while e.g. in Hungary this ratio has exceeded 20%, and in the Czech Republic it is higher than 40% (cf. Figure 2). **The average share of covered bonds in funding of European residential markets is about 25%**, which indicates the still-present potential for the development of this instrument in Poland.

Figure 2. Share of covered bonds in residential loans' funding (2012)

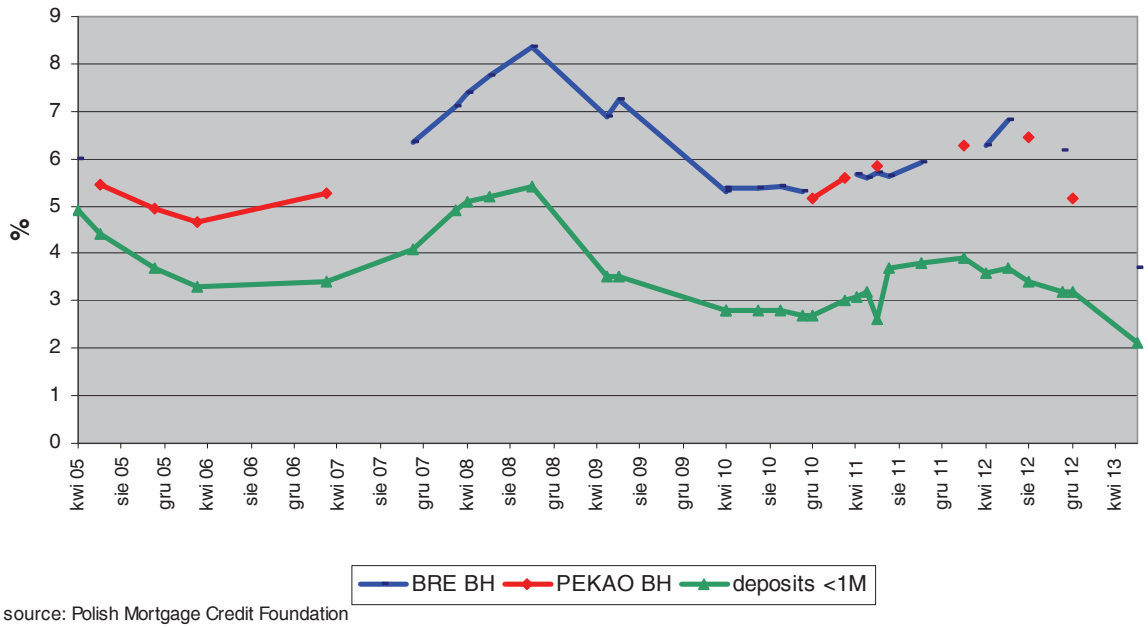


source: Polish Mortgage Credit Foundation

The low share of L.Z. in mortgage portfolio funding in Poland results from economic considerations as well as the absence of systemic incentives that could mitigate the high (compared to deposits) price of capital raised through the issuance of L.Z. One should also point to the strict credit standards applied by mortgage banks and the excess liquidity observed until recently in the sector,

which discouraged the use of L.Z. Having easy access to cheap deposits and subordinated loans from their parent companies, banks had no incentive whatsoever to use long-term funding instruments (cf. Figure 3). At the same time, the conditions in which mortgage banks operated meant that their loan offerings could not really compete against those of universal banks, which was, among other things, due to the specialised banks' inability to take retail deposits, more stringent credit limit conditions, the requirement to use mortgage lending appraisals when estimating the value of collateral, etc. While subject to the above limitations on their own business, mortgage banks could not cooperate effectively with universal banks by issuing L.Z. on the basis of the loans granted by universal banks, since this was prevented by problems with the transfer of mortgage claims and the fact that this business model was absent from corporate strategies.

Chart 3. Interest rates of the mortgage L.Z. vs. deposits (<1M)



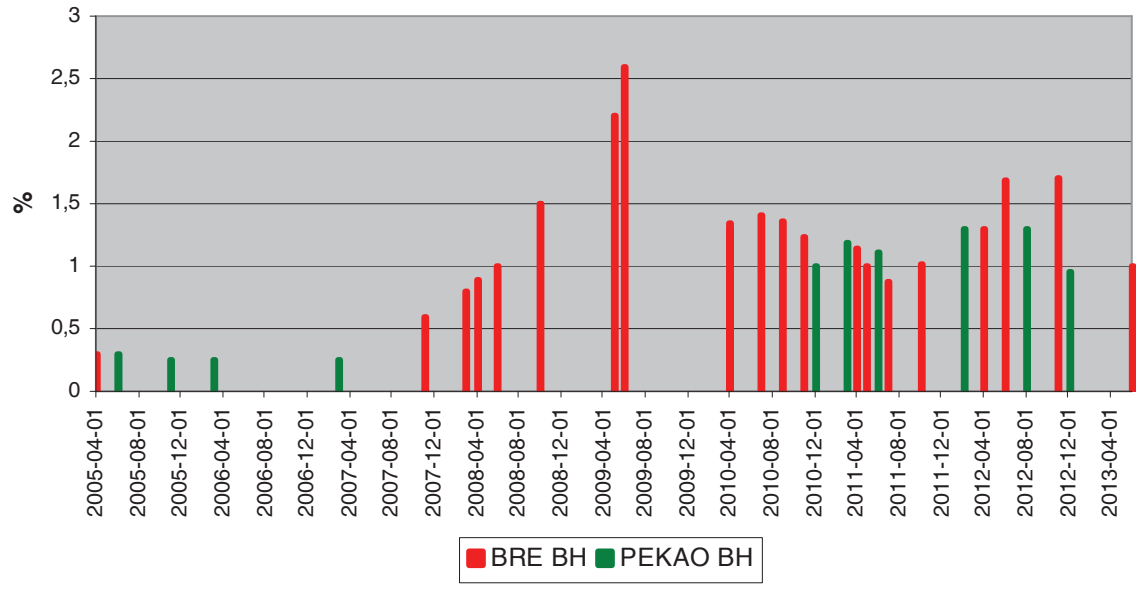
source: Polish Mortgage Credit Foundation

Another factor which impacted the competitiveness of the mortgage banks' offering was the fact that pursuant to Article 18, para. 2 of the ACBMB, the

mortgage bank's income from interest on its mortgage-secured claims cannot be lower than the cost arising from the interest on outstanding L.Z., and these limits must be supervised by the trustee and reported to the Polish Financial Supervision Authority. Given the fact that in order to attract demand for Polish L.Z., issuers had to offer relatively high margins, the need to balance the mortgage bank's cost and income related to the issuance of L.Z. made the mortgage loans offered by such banks even more expensive. This has been yet another factor limiting their activities and contributing to the relatively small scale of L.Z. issuance.

It is worth emphasising that the aforementioned problem was exacerbated especially at the peak of the financial crisis and during the credit crunch when L.Z. margins over and above the reference rate jumped from less than 100 bp to levels as high as 260 bp (cf. Figure 4).

Chart 4. Mortgage L.Z. margins (above the reference rate)



source: Polish Mortgage Credit Foundation

Considerable regulatory restrictions and the high price of money raised through L.Z. issuance have so far effectively discouraged banks from showing greater

interest in this instrument. The main advantage of funding long-term mortgage loans with L.Z., i.e. matching the term structure of the bank's assets and liabilities, was not essential in an era of cheap money from deposits. However, this situation changed sharply as a result of the financial crisis, which led to the introduction of new liquidity standards.

4. *List zastawny* as a response to the liquidity needs of the banking sector

In 2010, in parallel to the work conducted by the Basel Committee, the European Commission presented proposed amendments to the Capital Requirements Directives (CRD) 2008/48 and 2008/49 whose purpose was to eliminate major irregularities in the operation of the financial system that had been identified during the recent financial crisis. Taking into account the liquidity crisis that occurred in 2008 and 2009, the EC suggested, *inter alia*, that new liquidity measures be introduced: the short-term Liquidity Coverage Requirement (LCR) and the long-term Net Stable Funding Requirement (NSFR). The standards proposed differed slightly from the limits in force in Poland pursuant to the requirements of Polish Financial Supervisory Authority Resolution No. 386/2008, since while the Polish **short-term** liquidity ratio requires that the bank's liquidity reserves (primary and supplementary reserves) cover the funds that have been considered unstable by the bank, and in determining this level, the institution uses its own analyses approved by the supervisory authority, in the case of the LCR the level of funds that may be considered non-liquid in a stress scenario is a fixed value.

With respect to the **long-term** liquidity measure, Polish regulations require that the following limits are observed:

- the coverage ratio of non-liquid assets with own funds – calculated as the ratio of the bank's own funds less the total value of capital requirements arising from market risk, settlement/delivery risk and counterparty risk to non-liquid assets;
- the coverage ratio of non-liquid assets and limited liquidity assets with own funds and stable external funds – calculated as the ratio of the Bank's total own funds less the total value of capital requirements related to market risk, settlement/delivery risk and counterparty risk plus stable external funds to total non-liquid assets and limited liquidity assets

– must amount to at least 1.

On the other hand, the NSFR standard proposed by the EC is intended to ensure stable funding for an institution for one year under a shock scenario involving limited access to market funding. Under the NSFR, liquidity depends on asset maturity – different asset groups must be covered by stable funds to differing extents. As opposed to draft European requirements, Polish standards do not impose a direct obligation to balance assets and liabilities with maturities > 1 year.

The problem of the Polish financial sector is a structural liquidity mismatch resulting from the funding strategies employed by banks. As at the end of March 2013, 61% of banks active in the market pursued a funding strategy based on deposits, 11% chose a strategy based on foreign funding and 28% employed a mixed strategy.[5] At the same time, there has been a clear increase in the share of the local deposit base in the banks' funding structure. Therefore, despite the fact that the Polish banking sector meets domestic short-term (M1 and M2) and long-term (M4) liquidity requirements, only ca. 76–85% of the original NSFR standard level would be reached in Poland.[6]

In order to supply long-term funding capital, the share of long-term debt securities in the funding of Polish banks will have to be increased – currently it is ca. 2% of their total assets (compared to ca. 14% in the euro zone). It should also be stressed that since 2011, the growth in mortgage loans in Poland has slowed down, which has partly been the result of softening demand and a decrease in the availability of housing loans, but on the other hand this phenomenon improves the match between the assets and liabilities of the banking sector. If there is an increase in demand for housing loans while stricter liquidity standards are in force,

[5] *Raport o stabilności systemu finansowego* [Financial Stability Report], Narodowy Bank Polski, July 2013, p. 72.
[6] *Stanowisko NBP do dokumentu konsultacyjnego Komisji Europejskiej „Possible further changes to Capital Requirements Directive*" [NBP position on the European Commission "Possible further changes to Capital Requirements Directive" consultation document], p. 3, http://www.nbp.pl/home.aspx?f=/systemfinansowy/mou/konsultacje.html

it will be necessary to provide banks with additional long-term capital. L.Z.[7] are precisely the kind of instrument that meets the liquidity and long maturity criteria in this context (they are considered liquid assets pursuant to Article 416, para. 2 CRR).

It should be noted here that the final text of the Capital Requirements Regulation (CRR) slightly relaxed the original requirements concerning the provision of long-term liquidity. The current version of the CRR includes strict regulations on liquidity coverage under gravely stressed conditions over a period of thirty days (Article 412 CRR),[8] and with respect to ensuring so-called stable funding, only the following requirement has been introduced so far: "Institutions shall ensure that long term obligations are adequately met with a diversity of stable funding instruments under both normal and stressed conditions" (Article 413 CRR).

By 31 December 2015, the EBA shall report to the EC "whether and how it would be appropriate to ensure that institutions use stable sources of funding, including an assessment of the impact on the business and risk profile of institutions established in the Union or on financial markets or the economy and bank lending, with a particular focus on … pass through financing models, including match funded mortgage lending" (Article 510 CRR). By 31 December 2016, the Commission shall in turn submit a legislative proposal to the European Parliament and the Council on how to ensure that institutions use stable sources of funding. This, however, does not change the fact that the introduction of regulations on liquidity stability is inevitable, and after their introduction the demand for long-term funding instruments will increase, so it is necessary to take action now in order to stimulate this demand.

[7] Bonds within the meaning of Article 52, para. 4 of the UCITS Directive. Polish instruments meet the requirements of the UCITS Directive.
[8] This requirement is to be in force as of 1 January 2015, and institutions are expected to achieve at least 60% of the target level in 2015. The threshold will be raised by 10 percentage points each year until it reaches 100% in 2018.

5. Stimulating demand for Polish *list zastawny* – the need to improve perception of rating agencies

Polish L.Z. ratings are assigned by the Fitch (BRE BH and Pekao BH issues) and Moody's (BRE BH issues) rating agencies. Each agency stresses slightly different aspects of L.Z. issuance, which is reflected in their final ratings of individual issues.

The rating methodology followed by **Moody's** involves two stages. First, the value of expected loss is estimated, taking into account primarily the standing of the issuer but also the value of the cover pool in the event of the bank's bankruptcy. The main factors that may affect the value of the cover pool include: (i) the quality of the collateral included in the pool; (ii) funding risk in the event of the issuer's default (Moody's requires that cash flows from the assets backing the issue be sufficient to satisfy the investors' claims over 5 years; moreover, it is usually assumed that funding risk concerns 50% of assets in the cover pool); (iii) interest rate / foreign exchange risk to which the cover pool is exposed – the following factors are primarily taken into account: the volatility of interest rates / exchange rates, the size of the asset pool exposed to the aforementioned risks, the average duration of asset exposure to the aforementioned risks (in the case of the issuer's default, this is assumed to equal 5 years).

All of the aforementioned factors are subject to a stress test conducted under the assumption of the issuer's default. The credit quality of the cover pool is measured by determining the collateral score value, which reflects the degree of deterioration in the credit quality of assets in the cover pool in the event of the issuer's default (the higher the quality of the cover pool, the lower the collateral score).

The second stage of Moody's determination of the L.Z. rating involves determining the Timely Payment Indicator, i.e. the probability that the investor will receive payments in the event the issuer of L.Z. is declared bankrupt. TPIs range from "very high" to "very improbable".

The rating methodology used by **Fitch** involves three stages and focuses on the probability of default (PD), while also attaching considerable importance to the period following the issuer's default. In this context, a default is defined by the agency as the moment when payments under the covered bonds are not made in whole or in part.

The first step of determining the rating is the measurement of the D-Factor (Discontinuity Factor), which expresses, on a scale from 0 to 100, the likelihood of an interruption in payments under a covered bond issue in the event of the issuer's bankruptcy. The D-Factor is 0 in the optimum situation, i.e. "perfect continuity of payments", and 100 for a "concomitant default of the issuer and its L.Z.". Further, during the cash flow modelling stage, the agency examines cash flows in conjunction with the quality of backing assets and their ability to sustain payments under L.Z. (also taking the level of overcollateralisation into account). The last stage of the rating process is the determination of recovery rates, i.e. the evaluation of the maximum rating based on PD analysis. At this point, Fitch also takes into account the expected recovery rate; on this basis, the rating may be raised by two to three notches above the grade resulting from the PD calculation.

In general, it should be stressed that in the assessment of L.Z., three issues are considered: the rating of the instrument itself, issuer rating and the rating of the country in question. As a rule, the rating of the financial instrument cannot be higher than the rating of the relevant financial institution, but the quality and safety of L.Z. are reflected by the fact that the rating assigned to L.Z. may exceed the issuer's rating by one notch. However, the rating of L.Z. (just as that of the issuer) continues to be capped by the sovereign rating level (in the case of Poland: A/A2).

The maximum rating of Polish L.Z. issues is AAA (LC, Fitch) / Aa3 (LC, Moody's). Given the maximum rating level available, improving the regulatory environment could raise their rating (in local currency) by six (Fitch) or two (Moody's) notches. This should in turn reduce the cost of loan funding by at least 50–60 basis points.

6. Changes in legal infrastructure – the key for high *list zastawny* rating

It must be admitted that the legal solutions regarding protection of Polish L.Z. in case of issuer's insolvency remain to some extend a grey zone. Many questions, which are asked by investors, analysts and rating agencies cannot be clearly answered on a sufficient level by law. That is why improvements to the legal regulations are recommended. Both timely payment and over-indebtedness issues must be taken into account, when looking for solutions. Any over-indebtedness of the cover pool would mean that – according to the actual legislation – the risk of losses on cover assets concentrated on L.Z. with the longest maturities (time subordination) cannot be avoided. That problem must be definitely addressed by a new regulation. Timely payment of hard-bullet L.Z., after a mortgage bank insolvency (which according to the current insolvency law is the rule) cannot be guaranteed if the case of liquidity mismatch occurs. That is why convinced recommendation assumes introducing soft – bullet structure and conditional pass through mechanism into the law. After the implementation of the new Covered Bonds legislation in Belgium, the banks issued new Covered Bonds: (i) Belfius Bank was the first issuer in November 2012, issuing EUR 1,25 bn of 5-year bonds at MS+45 bps (Rating AAA S&P and AAA Fitch); (ii) KBC followed in December 2012 with a 5-year bond at MS+30 bps (Rating Aaa Moodys and AAA Fitch); (iii) BNP Fortis is planning to issue in similar type as well. Those good ratings prove that soft-bullet structures are highly esteemed by rating agencies.

Therefore, the Strategic Group for Mortgage Banks and Listy Zastawne (the Mortgage Credit Foundation, the Polish mortgage banks their mother banks and bank applying for the mortgage bank licence) recommends to make insolvency proceedings rules concerning mortgage banks after declaring bankruptcy more precise and flexible. In particular the following recommendations and solutions have been addressed to the regulator.

I. Statutory overcollaterisation and liquidity buffer

A statutory overcollateralization (OC) of min. 10% should be introduced in the Mortgage Banks and Cover Bonds Act (art 18). That would apply to all kind of covered bonds (L.Z.), be calculated on nominal basis regarding the capital amount of outstanding L.Z. Additionally the new law should implement a rule under which part of the OC would be composed of liquid assets (e.g. central bank eligible bonds), in order to ensure preparation of liquidity buffer. It is assumed that value of this liquid assets (liquidity buffer) would ensure full and timely payment of the interest on the L.Z. due in the upcoming 12 months. The liquid assets for this calculation would be measured at their market value.

Simultaneously, provisions in the insolvency law will statute that in the first year of insolvency, liquidity buffer will be immediately used to ensure timely payment of interests (while maturities of L.Z. principal are postponed automatically by statutory law 1 year further). That solution is to answer the negative assumption of rating agencies, that it is very unlikely that a timely payment of L.Z. could be ensured, if a Polish mortgage bank goes insolvent[9].

II. Solution skipping commingling and set off risk

Polish insolvency law already clearly express the bankruptcy privilege for the owners of L.Z. (Art. 442 insolvency law[10]) as well as creation of separate mass. Still for the full transparency it is recommended to regulate expressis verbis that any cash flow on cover assets belongs automatically to a cover pool after insolvency of a mortgage bank (following the new Belgium CB law). The wording of the key Art. 442 of Insolvency Law would additionally clearly state: "If bankruptcy of a mortgage bank is declared, the claims, rights and means,... recorded in the L.Z. cover register, as well as the receivables of the bank on account of repayment of

[9] see: *Continuity Analysis of the Polish Covered Bonds Framework*, Fitch Ratings, raport dated 12.2.2013: „The D-Cap of 0 is driven by the full discontinuity risk assessment of the liquidity gap…".

[10] The Law on Bankruptcy and Reorganization of 28 February 2003, Journal of Laws of 2003, No 60, item 535, as amended.

these claims or receivables in connection with capitalisation of the mortgage collateral or other collaterals included in the register, shall constitute a separate bankruptcy estate, which shall serve in the first place to satisfy the claims of mortgage bond creditors...".

III. **Solution skipping the risk of timely subordination list zastawny (with the longest maturity), liquidity gap and default of list zastawny in the insolvency situation**.

This goal is recommended to be achieved by creation of a statutory soft-bullet-structure in case of a mortgage bank insolvency, conditional pass-through payments, as well as detailed regulated scenario for insolvency procedure with clear competences and precise legal tools for action including over-indebtedness and liquidity tests. It should be regulated that since the opening of the insolvency procedure of a mortgage bank, the following process will be followed:

I. Maturities of all L.Z. principal are postponed automatically by statutory law 1 year further. During this period all interest payments are executed pursuant to the terms and conditions of the L.Z. from the mandatory liquidity buffer (part of OC). Period of maturity postponing will be rewarded by initial or different interest if announced in the issuance conditions.

II. As a next step, 2 tests shall be ordered by insolvency administrator (conducted by professional auditor): the over-indebtedness and liquidity tests which results will determine the next steps. Results of these tests shall be validated by responsible authority. In particular:

    a) tests' formulas will be previously defined by FSA,

    b) tests shall be performed at the moment ensuring acceptance of the further way of proceedings within a year following the mortgage bank bankruptcy declaration and repeated: liquidity test – monthly, over-indebtedness test – semi-annually

III. Based on the two tests results, the following „bottom line" procedure should be commenced automatically (by statutory law):

a) if the over-indebtedness test is failed – all L.Z. are due to pay, but rights of all L.Z. holders become equal, division of sources proceeds on a pari-passu basis (time-subordination problem do not occurs),

b) if the over-indebtedness test is passed, then:

- if the liquidity test is passed as well – all payments are executed according to L.Z. terms and conditions („original schedule"),
- if the liquidity test is failed:
  - all principal payments of L.Z. are postponed till the longest cover pool asset maturity plus 3 yrs (bullet principal payment) – „extension";
  - pass-through structure is applied;
  - the possibility of early repayment of L.Z. according to L.Z. terms and conditions (pari-passu) is in place (mandatory cash-sweep of the cover pool proceeds above semi-annual interest and costs of the cover pool administration);

The above procedure may be discontinued upon bondholders meeting decision, however in the limited scope - it should be regulated that insolvency administrator may arrange L.Z. holders meetings in order to decide (decisions should be taken by the qualified majority, eg. 2/3 of the total debt amount) on: on a possible change of the schedule of payments from the mortgage bonds, on a consent to their partial redemption, the manner of interest calculation or a consent to the sale in whole of the fund covered by the mortgage bonds covered register, stating the acceptable value discount, if there occur the prerequisites, referred especially to the situation where the over-indebtedness test is not passed.

At the same time the possibility that a single L.Z. holder can arrange acceleration (immediate redemption under the Bonds Act) of all L.Z. or all of the

same series, if any payment on his L.Z. is not done timely (cross default clause) should be excluded. Terms and conditions should exclude the acceleration option. The final order and way how to distribute the sources form the separate insolvency mass could be as followed:

The following shall be satisfied from the separate bankruptcy estate in the order given below:

1. The costs of management by the insolvency administrator of the separate estate, including the remuneration of the insolvency administrator and the cost of conducting two tests
2. Interest (coupons) on mortgage bonds during the first 12 months from bankruptcy declaration, from funds recorded in the mortgage bonds cover register on account of the liquidity buffer).
3. In the period following the lapse of 12 months from bankruptcy declaration, the interest (coupons) on mortgage bonds and receivables of mortgage bondholders at their nominal value, on their due dates in accordance with the issue conditions, (plus postponement of the schedule by 12 months) if the two tests were passed .
4. In case, when over-indebtedness test is passed, the liquidity test failed) first of all the interest (coupons) on the mortgage bonds shall be satisfied (in accordance with the issue conditions, (-postponement of the schedule by 12 months); if the excessive cover test and liquidity test calculations show a surplus of financial receipt on account of receivables due to assets included in the mortgage bonds cover register over the sum of the planned payments, equal at least to the sum of the interest due calculated for the next 6 months (cash sweep) – also the receivables of the mortgage bondholders shall be satisfied according to their nominal value (capital), subject to the principle of inclusion of all the mortgage bondholders, (regardless of the due date of their receivables) in one satisfaction category, pro rata, and the distribution of funds to satisfy the nominal value of the mortgage bonds as

soon as the funds included in the aforesaid surplus calculation are received. (pass through and pari passu; no "subordination" risk).

5. Also in the case of liquidation /selling the whole separate insolvency mass, satisfaction of the mortgage bondholders on interest and capital, shall take place in one satisfaction category, pro rata, and the distribution of funds to satisfy the nominal value of the mortgage bonds as soon as the funds included in the aforesaid surplus calculation are received. (pass through and pari passu; no "subordination" risk).

By introducing into the law the changes mentioned above, it will be achieved, that the following risk concerns will be covered: timely payment of L.Z. after their issuer goes insolvent will be guaranteed (using liquidity buffer), long-term cover assets mismatch with shorter maturities of L.Z. as well as problem in getting additional liquidity from central bank or through fire sales will be covered, e.g. conditional pass-through structure. Key solution and legal response is based, as mentioned above, on introducing ongoing management of coverage sources and equal treatment of all L.Z. holders among their common satisfaction category, following precise rules and transparency of tested liquidity and capital coverage.

With the legal amendments, hopefully the rating of L.Z. will be not anymore so closely linked to the rating of the mortgage bank – and thus closely to the rating of the mother bank and will reach another few notches to get access to the cheaper funding sources form Polish and international capital markets. That is the prerequisite of strong development of LZ market – also for using LZ as a funding tool for the mortgage portfolio in the strategy of banking capital groups.

To fulfil the above recommendations, it is additionally required to make transfer of mortgage pools to the L.Z. issuer more efficient. Very recommended solution would be to get an electronical support for registration into perpetual books. Package of legal improvements in that matter (which was addressed to the regulator) contains of right of applying for change of mortgagee in a perpetual

book via electronic channels. Considering the fact, that the perpetual books in Poland have already been electronised, and the reform allowing the notaries to make application on-line is under way, hopefully it is just a next step to enable that the package of applications to disclose mortgage bank as a new mortgagee of transferred mortgage pool – would be conducted electronically.

Above legal changes and new strategies of banking groups could finally change the share of Polish L.Z. on the market. Assuming that the current growth of residential lending will be maintained, 20% of the new mortgage production will be funded with L.Z., and starting from 2014, three banking groups (BRE Bank S.A., Pekao Bank S.A. and PKOBP S.A.) will issue L.Z. - the new issuances of Polish *list zastawny* could amount to 4 billion zlotys per year. That could uplift the share of L.Z. in residential market funding to estimated 10% (from around 1% - see figure 2) and greatly improve the perception of the Polish *list zastawny* – from both investors' and rating agencies' point of view.

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