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EUROPE AND CENTRAL ASIA  
HOUSING FINANCE CRISIS PREVENTION  
AND RESOLUTION

*A REVIEW OF POLICY OPTIONS*

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MARCH 2013



**European & Central Asia Vice-Presidency**  
**Finance & Private Sector Development Vice-Presidency**

**The World Bank**

## Abbreviations and Acronyms

AHML	Agency for Home Mortgage Lending (Russia)
AMF	Azerbaijan Mortgage Fund (Azerbaijan)
APRC	Annual Percentage Rate of Charge
ARM	Adjustable Rate Mortgage
BIS	Bank for International Settlements
CBIC	Covered Bond Investor Council
CDO	Collateralized Debt Obligation
CEE	Central and Eastern Europe
CHF	Swiss Franc
CIS	Commonwealth of Independent States
CPI	Consumer Price Index
CRD	Capital Requirements Directive (EU Directives 2006/48 and 2006/49)
DTI (PTI)	Debt to Income (Payment to Income) – periodic mortgage payment to the borrower income
ECA	Europe and Central Asia
ECB	European Central Bank
ECBC	European Covered Bond Council
EMF	European Mortgage Federation
EMU	Economic and Monetary Union
ESF	European Securitization Forum
EU	European Union
EUR	Euro
FHL	12 Federal Home Loan Banks
FHLMC	Federal Home Loan Mortgage Corporation, Freddie Mac
FNMA	Federal National Mortgage Association, Fannie Mae
FRM	Fixed Rate Mortgage
FSB	Financial Stability Board

FX	Foreign Currency
FYRM	Former Yugoslav Republic of Macedonia
GDP	Gross Domestic Product
GSE	Government Sponsored Enterprises
HOA	Homeowners' Association, in a condominium or cooperative ownership context
HPA	House Price Appreciation
IAS	International Accounting Standard
IFRS	International Financial Reporting Standards
IMF	International Monetary Fund
IOSCO	International Organization of Securities Commissions
KMC	Kazakhstan Mortgage Company (Kazakhstan)
KYC	Know Your Customer principle
Libor	London interbank offered rate
LTV	Loan To Value – ratio of mortgage loan principal amount to the value of the real estate collateral
MCB	Mortgage Covered Bond
MFI	Monetary Financial Institution
MSA	Metropolitan Statistical Area
NMC	National Mortgage Company (Armenia)
NPL	Non-Performing Loan
OC	Over-Collateralization
OECD	Organization for Economic Co-operation and Development
p.a.	Per annum, annualized
REE	Residential Energy Efficiency
REIT	Real Estate Investment Trust
RHS	Right Hand Scale
RMBS	Residential Mortgage Backed Securities
ROA	Return on Assets

ROE	Return on Equity
RUR	Russian Ruble
SIFMA	Securities Industry and Financial Markets Association
SIV	Structured Investment Vehicle
SMI	State Mortgage Institution (Ukraine)
SPV	Special Purpose Vehicle
SSHF	Small-Scale Housing Finance
UCITS	Undertakings of Collective Investment in Transferable Securities (EU Directive 2009/65)
USD, US\$	US dollar
WB	World Bank
Yoy	Year-on-year

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# Foreword

This Paper is prepared by the World Bank for the regulators and other mortgage market stakeholders in the countries of the Eastern Europe and Central Asia region (ECA) as a means to inform the reader of the common available policy options to address the negative effects of the current financial crisis on the housing finance markets. The presented alternatives are intended to mitigate the crisis aftershocks as well as prepare the markets for the inevitable next cyclical events.

As stressed in the Paper, a robust system of real estate and housing finance market information gathering and analysis is the first priority for many countries and should be the necessary precondition for any further policy or regulatory action.

The policy options that the reader will find inside are effectively a combination of the best traditional mortgage practices and the current policy dialogue which was significantly influenced by the acute crisis events of 2007-2008. Furthermore, a prudent regulator or policy setter will undoubtedly require appropriate adaptation of such universal practices to the legal, regulatory and marketplace specifics of her jurisdiction.

The Paper is intended to spur the thought and dialogue, as well as catalyze practical actions by the regional and national stakeholders. The World Bank, as always, stands ready to support such endeavors.

Financial and Private Sector Vice Presidency

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All errors, omissions and other inaccuracies are the authors'.

# 1 Summary

This Paper offers a number of mortgage crisis prevention and management policy options for the financial sector authorities in ECA countries. These options are presented in the context of the ongoing financial and economic volatility in many European jurisdictions and the impact it has on the housing finance industry and households.

In view of the current global economic and financial uncertainties, the interconnectedness of the mortgage market stability and development has become apparent and increasingly important. In part the increased visibility of this sector, which has always enjoyed public and policy attention, is related to the dual nature of the challenges - deteriorating economic conditions of the borrowers are coupled with the institutional and systemic challenges of the marketplace.

ECA market stakeholders have attempted to mitigate the effects of the acute phase of the crisis in 2008 to preserve the quality of loan portfolios, maintain institutional stability and continue to provide households with mortgage finance solutions. Notable developments have occurred in virtually all aspects of housing finance market operations. Although key ECA markets seem to have substantially recovered from the initial phase of the current economic crisis in lending volumes and have also adjusted ALM practices, material threats to institutional and systemic stability remain. Regulators and policy makers have a number of options to counter the existing challenges as well as to strengthen the fundamentals of the mortgage markets.

In particular, the ECA authorities are encouraged to adopt a proactive forward looking approach in their policy measure deliberations. This Paper provides a toolkit of such measures that, in addition to being potential instruments in managing the aftereffects of the negative effects of the early phase of the crisis (elevated NPLs and high leverage of some banks) are mostly geared towards increasing markets' resiliency and stability through robust developmental agenda.

*As a high priority recommendation, in every ECA jurisdiction mortgage sector stakeholders would benefit from enhanced awareness of the housing market evolutions by either improving existing real estate indices and market surveillance mechanisms, or establishing them.* This strongly advised policy action should be indeed the first to be considered in a given country – without having robust monitoring and evaluation capability it is risky, ineffective and inefficient to plan, implement and evaluate policy or regulatory interventions.

*Armed with such market knowledge, the ECA regulators are advised to consider establishing a robust mortgage specific macro prudential framework as one of the most important forward-looking mechanisms for improving the resiliency of the mortgage systems.* The ongoing policy dialogue as well as the experience of certain countries provides ample evidence of the better practices in this area, including dynamic provisioning, asset price cyclicity management, etc.

*Another area of the suggested immediate attention from the ECA mortgage industry stakeholders is the current stock of legacy mortgages.* As one of the most visible effects of the ongoing financial crisis, many ECA countries have large portfolios of highly risky mortgage loans; even if the headline NPL figures in some countries remain relatively subdued – below 5% - the material institutional and systemic dangers of this stock of loans merit aggressive proactive consideration by the policymakers and the industry.

*The pre-crisis exuberant mortgage lending amply demonstrated significant deficiencies in fundamental risk management practices in mortgage origination, servicing and special servicing.* Global legal and

regulatory developments provide rich examples of the better practices and the ECA regulators, together with the industry are encouraged to adopt such with appropriate localization.

*As the crisis laid bare significant challenges in having sustainable access to long term funding for mortgage finance, the question of local currency liquidity is critical.* The measures to restart private RMBS markets, as well as to enhance and modernize national or regional liquidity mechanisms merit serious attention. Securitization in particular can be an appropriate mechanism for such funding, as well as for banking sector deleveraging, subject to certain best practices and regulatory attention.

*The current macroeconomic situation in ECA places significant financial stress on the borrowers – with flat incomes, high unemployment and uncertain prospects; the options available to the policymaker in regards to responsible lending, consumer protection and fair (yet efficient) loan servicing are important in maintaining institutional and systemic stability.* This aspect of anti-crisis policy response should be aimed at both new and existing borrowers; although the macro scale of the housing finance sector in ECA is small compared to many OECD countries, the household-level impact of the inefficiencies of the mortgage industry or of the mortgage delinquency is dramatic.

The rest of the Paper is structured as follows. After an overview of ECA mortgage market characteristics, key elements of the post-2008 performance are discussed in details – NPL and funding mechanisms evolution. After that, a number of policy options that can be utilized in a crisis management and counter-cyclical context are suggested.

Specifically, the following measures are presented broadly in the order of suggested implementation:

1. Establishing a housing market observatory;
2. Improving systemic risk monitoring and macro prudential framework;
3. Establishing dynamic provisioning;
4. Strengthening responsible mortgage lending framework and practices;
5. Enhancing consumer protection framework;
6. Strengthening mortgage loan delinquency management;
7. Establishing an asset management company (*Bad bank*)
8. Restarting private mortgage securitization with RMBS Label;
9. Setting up a multi-national regional mortgage liquidity mechanism;

Several country-specific examples of policy measures are provided at the end and cover Australia, South Korea, Russia, and Serbia, Ukraine, UK and US.

Annexes contain detailed information of certain aspects of housing finance market operations- Mortgage Covered Bonds, RMBS, liquidity facilities, and global policy examples of dealing with real estate bubble.

The World Bank Group has ample recent experience in all of the above topics; since the beginning of the crisis our experts have been engaged in work with the topics listed above in Argentina, Armenia, the Baltics, Belarus, Brazil, Egypt, India, Jordan, Kazakhstan, Mexico, Mongolia, Morocco, Nigeria, Poland, Romania, Russia, Saudi Arabia, Spain, Serbia, Tanzania, and WAEMU, to name a few examples.

The World Bank Group stands ready to consult with the ECA mortgage market stakeholders on the appropriate country-specific course of action.

## 2 Introduction

The objective of this Paper, besides offering insight in the regional and global development and stability issues, is to initiate a dialog with housing finance market stakeholders on the course of action appropriate for their jurisdictions. The policy options presented in the Paper are practical and implementable and should frame discussions between public and private housing finance market participants. The expectation is that relevant mortgage market stakeholders – primarily the regulators – would consider this Paper both in their deliberations on the current state of their markets as well as framing the policy and regulatory dialogue.

This Paper does not purport to academically analyze the causes of the ongoing global economic turmoil or its effects on the housing finance markets in ECA region. Instead, it offers observations of the recent ECA market developments and presents a menu of policy actions that should be considered by the mortgage regulators to address the current challenges and to better prepare for next cyclical events.

The scope of the Paper is on the mortgage finance in ECA region. Some of the policy measures discussed herein deal with the real estate market evolution - notably the market observatories – as the real estate market evolutions are intricately linked with the cyclicity of the mortgage credit (and with the broad business cycles) and this linkage should be analyzed and considered by the mortgage market stakeholders.

While much of the current global mortgage-related legal and regulatory dialogue has roots in the spectacular failures of the US and EU financial markets, not all of the deficiencies of the more developed countries have relevance to ECA jurisdictions. In part this is due to relatively lower stage of market development and thus absence of overly complex products and instruments and in part – to smaller absolute and relative volume of mortgage finance in the economy. However, the policy options discussed in this Paper are relevant to almost all ECA countries, as their implementation allows for sustainable market development and builds future cyclical resilience.

It should be noted that the policy options discussed in the Paper are a) interconnected and b) need to be tailored to the specific country circumstances. Thus, the initial step that may be advisable to any particular country is to conduct a robust assessment of the current situation on the mortgage markets with a particular focus on the quality and quantity of the market information. After such assessment a roadmap for implementing appropriate strengthening may be devised.

### **What is a Mortgage Crisis?**

While the origins of the 2007 financial crisis are in the US mortgage and financial sectors, its repercussions have been felt throughout ECA region. It has exposed distinct vulnerabilities in local mortgage and housing markets with impact nature and severity dependent on the structure of each country's financial and mortgage systems.

The words “mortgage crisis” are used throughout this Paper and merit clarification of their meaning. In the absence of an official definition, unlike, for example, “recession”<sup>1</sup>, this Paper focuses on the sudden

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<sup>1</sup> In a 1975 *New York Times* article, economic statistician Julius Shiskin suggested several rules of thumb for defining a recession, one of which was "two down consecutive quarters of GDP". Some economists prefer a definition of a 1.5% rise in unemployment within 12 months. In the US, the Business Cycle Dating Committee of the National Bureau of Economic Research (NBER) defines an economic recession as: "a significant decline in economic activity spread across the economy, lasting more than a few months, normally visible in real GDP, real income, employment, industrial production, and wholesale-retail sales." [en.wikipedia.org/wiki/Recession](http://en.wikipedia.org/wiki/Recession)

and significant negative events in ECA housing finance markets in 2008/2009 and the persistent effects of those events which are characterized by the following:

- *A significant and rapid decline in mortgage lending volumes.* ECA average portfolio growth weighted by the size of the individual markets market dropped by 20% in 2008 and further 30% in 2009;
- *Closure of mortgage capital market funding channel.* Virtually all cross-border covered bond and RMBS issuance from ECA countries stopped in 2009;
- *A significant and rapid growth of mortgage portfolio delinquencies* – to 2-13% in 2009 from normal rate of less than 1 %; currently elevated NPLs are a notable feature of many ECA countries notwithstanding recovered origination volumes in key markets.

Importantly, the magnitude of the above events varies significantly by country – Turkey, Russia and Poland, for example, have so far maintained positive portfolio growth rates and avoided double-digit delinquency figures; while Hungary or Ukraine have failed to achieve portfolio growth since 2009<sup>2</sup>. Moreover, many ECA jurisdictions so far have fared better than some of their EU neighbors, for example Ireland, Spain and Greece all have double digit mortgage delinquencies and negative portfolio growth<sup>3</sup>.

Furthermore, significant disruption in lending volumes and portfolio performance, coupled with elimination of the capital market funding channel has led to institutional and systemic pressures, resulting in some cases – both in EU and in ECA countries - in corporate failures.

In several ECA countries, e.g. Hungary, Ukraine and Serbia, local currency exchange rate volatility, likely caused by the broad macroeconomic situation, has significantly contributed to the housing finance market decline, as a large share of the mortgage portfolio was denominated in foreign currency, particularly CHF and EUR.

### **Why did the crisis happen?**

As there is an abundant body of academic literature discussing the genesis and timeline of the financial crisis, detailed investigation of the causes for ECA mortgage-related negative events is beyond the scope of this Paper. Arguably, there was a combination of exogenous and endogenous factors that led to the symptoms of the ECA mortgage crisis described earlier. Specific reasons for the crisis, as well as the severity differ by country. Broadly, the crisis laid bare some of the structural weaknesses in ECA mortgage markets, most of which would count one or more of the risks below as key reasons why their mortgage systems suffered during the crisis.

- *Cyclical macroeconomic downturn in major global economies.* This was especially relevant in the ECA economies with high current account deficit, which needed a significant amount of foreign capital inflows. In ECA the cycle evidenced in lower commodity and other export prices, which led to local currency volatility and higher unemployment in some countries, e.g. Serbia,

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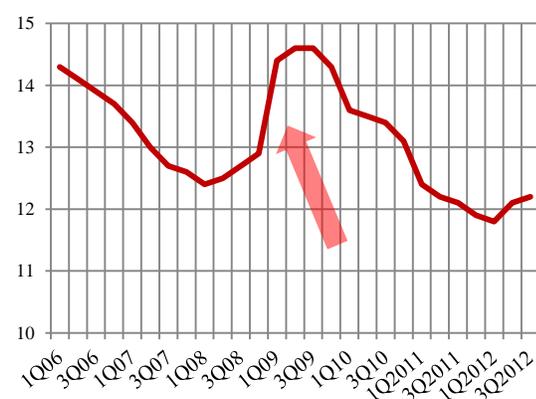
<sup>2</sup> Note that in most cases regional or other averages are calculated by weighing relative markets' size to present a more accurate picture

<sup>3</sup> See page 14 on detailed discussion of NPL

Russia, and Ukraine. The effects of the currency risk were evident in countries with a large share of foreign-based lenders and FX loan products, e.g. Serbia, Ukraine, Hungary, and Croatia<sup>4</sup>.

- *Real estate market cycle with 20-50% negative HPA.* Rapid and significant decline in real estate prices, coupled with high or uncertain mortgage LTV's resulted in increased losses for the lenders in case of borrower default and in reduced willingness of the borrowers to repay the loans as their equity has been reduced or eliminated.
- *Global and regional macroeconomic slowdown brought significantly higher lending interest rates.* Lack of long term funding coupled with liquidity pressures on lenders and resultant shortening of loan tenors, reduced mortgage affordability for the borrowers who themselves experienced employment and income uncertainty.

Figure 1. Russia - RUR mortgage interest rates dynamics 2006-2012 [% p.a.]



For example, Figure 1 illustrates the dynamics of average mortgage interest rates in Russia, weighted by origination volume, during 2006-2012. Note sharp spike in the rates during the first quarter of 2009.

As an illustration of the effect of quickly and significantly rising rates [3Q2008-2Q2009], consider that for a Russian household in order to qualify for a hypothetical mortgage loan in 2009, the interest rate increase from 12% to 15% together with loan term reduction from 20 years to 15 years, ceteris paribus, meant a 20% increase in required monthly income.

Source – AHML

- *Poorly conceived and executed mortgage products and practices.* Portfolios of risky and asymmetrical mortgage products produced significant credit risks when the borrowers, faced with rapid and significant increase in monthly payments, could not service their debt, e.g. in Hungary, Serbia, Ukraine. Note that in some markets the risks layered one on top of the other, i.e. an FX loan with lender-discretionary margin underwritten with poor income verification and with low quality LTV assessment.
- *Poorly conceived business models, in particular reliance on short term capital market funding mechanisms.* Closure of the global and European capital market mortgage funding channels put pressures on mortgage lenders' business models and liquidity, e.g. in Kazakhstan, Russia.

Ultimately, while similarities exist, every ECA country is advised to assess and analyze specific causes of the past negative market events. In fact, such assessment would be a necessary first step in gaining understanding of the evolutions of the housing and mortgage markets and subsequently designing appropriate policy action roadmap.

<sup>4</sup> For example, in certain lenders in Serbia delinquencies in CHF-denominated mortgage loan portfolios reach rates of 19%. On average FX portfolios have twice the NPL rates compared to local currency ones. Note that although FX portfolios in most countries tend to have significantly higher delinquency rates, e.g. Serbia, Russia, Hungary, currency of the loan is not a sole determinant of the portfolio performance. Prevailing lending practices, mortgage products, borrower income currency, as well as macroeconomic circumstances all affect NPL – for example in Poland FX portfolios perform twice as good as LC ones.

## Is the crisis over?

At this time (Early 2013) the acute phase of the negative events seems to have passed, i.e. key ECA markets have returned to positive portfolio growth and the NPL curves have flattened, albeit at significantly higher levels than before. At the same time, capital market funding channel remains severely constrained and cross-border issuance of mortgage-backed instruments have not resumed since 2009.

### Why do NPL ratios fall?

Interestingly, in case the NPL ratio fall in the future, it will raise an important question as to \*exactly why\* the delinquencies decline?

Is it because of focused and determined lender activities in loan modification and workout - grounded on improved household financial circumstances and real estate price stabilization and growth?

Or will it be a purely arithmetical effect of increased originations and growing mortgage portfolios?

Some countries have seemingly addressed the 2008-2009 events better than others, e.g. Russia, Armenia, Turkey have returned to positive portfolio growth rates, to stable (albeit higher than usual) NPL rates as well as continue to attract local currency capital market funding, e.g. AHML has been continuously issuing Agency Paper and RMBS since 2006.

On the other hand, countries like Hungary, Serbia, Kazakhstan and Ukraine are still experiencing negative portfolio growth and extreme (over 10%) mortgage NPLs. Absence of local currency mortgage

funding mechanisms exacerbates the challenges.

Additionally, psychological effects of the recent events – with households, lenders, regulators and investors – are evident in reduced propensity to take risks, be it to take out a long term mortgage loan or to invest in mortgage backed securities. At the same time lenders in some countries, driven by myopic incentives to maximize short term profits, have been returning to the same practices that exacerbated effects of the mortgage crisis on their portfolios, e.g. high LTV loans, relaxed borrower and property underwriting, ARM, etc. This tendency provides motivation for the authorities to tighten policy and regulation. Furthermore, the present market volatility due to the sovereign debt crisis in the Euro-zone may yet lead to a second phase of decline for the ECA mortgage markets.

Ultimately, the very high levels of mortgage delinquencies remain a significant challenge for the institutional and systemic development and stability in the housing finance markets – and also the most visible effect of the acute events of 2008/2009. Particular problems arise in the presence of consistently high and long-term, i.e. 90 days or more, delinquencies in countries where origination volumes have returned to pre-crisis levels.

## 3 Broad Policy Recommendations

There is no such thing as a perfectly balanced mortgage system; every jurisdiction has specific strengths, deficiencies and challenges. As the ongoing crisis amply demonstrated, even the previously proud showcase markets in US and the EU had significant unbalances in law, regulation, and practice along the full spectrum of the mortgage system value chain from origination to capital market funding.

The objective of this Section is to provide guidance to the regulators on the sequence and interconnectedness of the policy response, particularly in the context of the specific areas of the mortgage system that each address. The main thrust is forward-looking, i.e. the focus is primarily on increasing resilience of the mortgage markets, although managing with the portfolios of high risk loans is also addressed.

The authorities in ECA countries are encouraged to consider the various policy measures available to them in terms of their applicability to their countries. Appropriate localization of such policy measures is possible only after a thorough review and analysis of specific market deficiencies that may have caused particularly acute negative events. Not all of the measures are appropriate for every jurisdiction or for the ECA region as a whole – although improved market awareness and strengthened prudential oversight may be welcome in most countries. Only by taking a combination of appropriate steps a jurisdiction can be in a position to strengthen its housing finance markets.

### 3.1 Framework

At the initial stages the authorities are encouraged to develop a forward-looking vision of the key features of the regulatory and customary framework that they wish to develop in their countries. The listing below outlines the policy framework and main topics authorities might want to consider when formulating mortgage market development and stability agenda.

- *Better Knowledge.* Awareness of the real estate and housing finance market dynamics is a critical and mandatory condition for any corrective or developmental action. Broad and detailed assessments are needed to provide a benchmark reference. Ongoing reporting and monitoring are crucial as a feedback loop mechanism and as an early warning tool. In the process of improving the quality of the market operations it is important to take policy or regulatory actions aimed at the causes of a particular deficiency and not the symptoms, e.g., prohibiting FX mortgage lending may be detrimental to market development if local currency funding sources are not existent.
- *High Quality.* In light of the US sub-prime mortgage debacle, investors and other market stakeholders have been viewing performance of mortgage assets with suspicion. It is critical to approach statute and practice of mortgage origination, servicing and funding with a rigorous attention to increasing actual and perceived asset quality. Critical quality components are mortgage system fundamentals of real estate appraisal, underwriting, disclosure, capital market structures, consumer protection, and transaction documentation standardization. Transparency and disclosure regimes are critical in conveying the quality to investors and regulators.
- *Balance and Symmetry.* It may be tempting to significantly tighten the regulatory and legal housing finance framework – ostensibly to prevent future negative events. However, in designing the mortgage market development roadmap authorities need to balance such tendencies with the need to allow for financial innovation and risk taking, as well as to conduct ex ante facto impact

assessment. Regulatory activity may be highly damaging, e.g. poorly conceived reporting or borrower protection requirements or hasty prohibitions on particular mortgage loan features. This in particular applies to subsidies and other forms of publicly funded housing finance activities.

## 3.2 Roadmap

Table below includes a stylized roadmap which may be useful for the policy makers in planning the strategic agenda in enhancing their national mortgage market stability and development. The rightmost column refers to the Sections of this Paper found below.

Stage	Key purpose	Section
<b>Real Estate Market Observatory</b>	Necessary initial step is to obtain knowledge on the housing and mortgage markets' evolutions. Data used to guide policy actions in nature, scope, and timing. Without ongoing monitoring policy interventions may be misguided.	5.1
<b>Systemic Risk and Macro Prudential Supervision</b>	Utilize the knowledge of housing and mortgage markets in designing and implementing macro and micro policy. Includes robust ex ante facto impact analysis, framework of leading indicators, continuous monitoring.	5.2
<b>Dynamic Provisioning</b>	An example of a specific counter-cyclical policy tool. Implementation is risky in absence of the complete, detailed and ongoing market data.	5.3
<b>Conduct a thorough analysis of legal, regulatory and market practices in mortgage origination, servicing, funding. Calibrate the next steps accordingly.</b>		
<b>Consumer Protection and Education</b>	Ensure that the <i>borrowing</i> framework is well designed and enforced. Properly designed and implemented framework leads to improved portfolio performance, may have counter-cyclical effect.	5.4
<b>Prudent Loan Level Lending</b>	Ensure that the global practices are followed in micro and macro context, as well as in line with the revised capital market funding channel requirements. Care must be taken to avoid stifling of competition and financial innovation.	5.5
<b>Special Servicing and Portfolio Management</b>	Ensure that the legal framework and practices match with best global examples; macro and micro policy perspectives, banking supervision implications. AMC [ <i>Bad Bank</i> ] approach may also be considered.	5.6
<b>Restarting Private Mortgage Securitization</b>	Ensure that the capital market funding framework includes global best practice and regulatory guidance; has implications for the origination and servicing practices as well as for macro stability objectives.	5.7
<b>Regional Funding Arrangements</b>	An example of a funding arrangement potentially suitable in ECA context. Besides mortgage market development objectives has clear national capital market implications.	5.8

## 4 ECA Mortgage Market Overview

<b>28 countries:</b> Albania, Armenia, Azerbaijan, Belarus, Bosnia and Herzegovina, Bulgaria, Croatia, Czech Republic, Estonia, FYRM, Georgia, Hungary, Kazakhstan, Kyrgyzstan, Latvia, Lithuania, Moldova, Montenegro, Poland, Romania, Russia, Serbia, Slovakia, Slovenia, Tajikistan, Turkey, Turkmenistan, Ukraine	
2012 Top 7 portfolios [EUR B]	Aggregate regional 2012 mortgage portfolio – EUR 275 B Poland 80, Russia 42, Czech Republic 38, Turkey 30, Hungary 10, Slovakia 15, Ukraine 13
Domestic mortgage lenders by total loan book	Russia 91%, Turkey 70%, Ukraine 45%, Hungary 30%, Poland 28%, Czech Republic 10%, Croatia 10%
Mortgage loans in total banking loan book [%]	Poland 32%, Croatia 21%, Estonia 13%, Turkey 13%, Armenia 11%, Czech Republic 9%, Kazakhstan 9%, Slovakia 9%, Russia 6%, Hungary 6%
<i>Source – respective Central Banks, ECB, World Bank calculations.</i>	

In ECA one observes a diverse variety of mortgage funding practices and products and, symmetrically, a wide spectrum of mortgage loan products:

- *Russia, Western CIS and Turkey* Mortgage loans are generally long term, fixed rate and in local currency. Major lenders include large domestic (Russia, Turkey, Belarus) and foreign (Ukraine) banks. Funding is primarily from deposits, although Russia and Ukraine have active, albeit small in volume RMBS and agency Paper (and thus whole loan sales) markets.
- *Central Asia and the Eastern CIS*<sup>5</sup> have relatively undeveloped mortgage markets, with Armenia, Kazakhstan and Azerbaijan contributing over 90% to the region's total portfolio outstanding. Mortgage loans are typically medium to long term, LC or FX and fixed rate. Major lenders include local banks; much of the funding is obtained by lenders via taxpayer-funded liquidity facilities.
- *Central and Eastern Europe and the Baltics*<sup>6</sup> (CEE) mortgage loans are typically FX, long term, index-adjustable rate. Lenders are using retail deposits and bullet bank mortgage covered bonds, albeit the latter on a smaller scale compared to older EU jurisdictions<sup>7</sup>. The substantial presence of foreign lenders has affected prevalent mortgage lending and funding products.

As seen on Figure 2 below, a particular feature of the ECA housing landscape is that while homeownership rates are very high – in some cases exceeding those of many OECD countries – actual mortgage penetration severely lags. In other words, very few, by global standards, households own their houses due to mortgages. This phenomenon can in large part be explained by large-scale housing privatization programs in ECA in early 1990's, where housing stock was converted from government to private ownership.

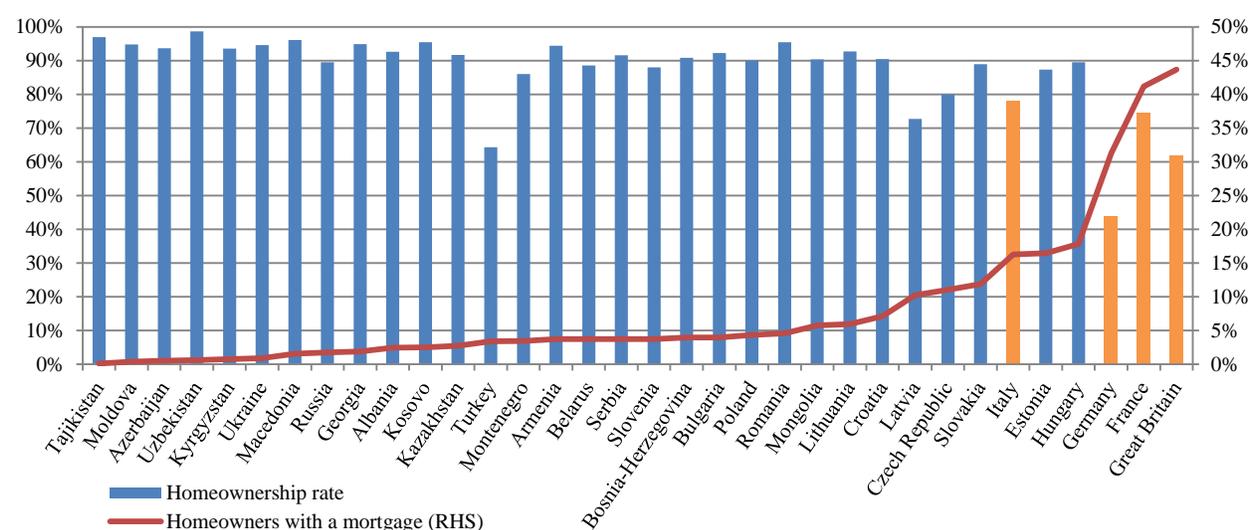
<sup>5</sup> This group includes Armenia, Azerbaijan, Georgia Kazakhstan, Kyrgyzstan, Tajikistan, Uzbekistan, and Turkmenistan.

<sup>6</sup> CEE group includes Bulgaria, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Romania, Slovakia, Slovenia (all EU members), Croatia, FYRM, Montenegro (EU candidates), with addition of Albania, Bosnia and Herzegovina, Moldova, Serbia.

<sup>7</sup> 2010 combined covered bond and RMBS volume outstanding, relative to total mortgage loan portfolio outstanding, for larger countries in the group, was between 40% in Hungary to 25-30% in Czech Republic and Slovakia. Compare to Spain, Denmark, Ireland or Sweden with 80%-100%+.

At the same time, due to a variety of factors, the number of mortgage borrowers – absolute and relative to the overall number of households (and thus to a large degree homeowners) is relatively small. In the situation where vast majority of ECA families are homeowners without a mortgage, the demand for housing finance is constrained by affordability as well as by new family formation and one’s desire to improve the living conditions.

Figure 2. 2010 ECA Homeownership and Mortgage Penetration Rates



Sources – LITS, WB calculations, RHS – Right Hand Scale

The important consequences of this situation may be:

- *The speed of mortgage penetration growth* may be closely related to the demographic and macroeconomic conditions leading to the increased demand for larger and better housing, and to the speed of ageing of the existing housing stock. In other words, the specificities of the housing and real estate markets affect the potential growth of the mortgage portfolio beyond mortgage related components of the housing affordability.
- *Absolute or comparative metrics of the ECA outstanding mortgage portfolio, e.g. “Mortgage Debt Outstanding per capita or relative to GDP”* may be misleading. In particular, assumptions about potential size of the mortgage lending market may be significantly overstated if based solely on the currently low levels on mortgage penetration and compared to certain OECD countries.
- Actual number of families (or share of the banking sector) affected by the negative events stemming from the global financial crisis are relatively small. This relatively *small macro scale* does not in any way diminish the severe and dramatic *micro (household) scale* of any mortgage related issues that an individual family may be facing.

## 4.1 Mortgage Delinquencies

A discussion of mortgage portfolio performance in terms of arrears should be qualified by the fact that the data on this critical aspect of housing finance are woefully lacking both in quality and volume except for a few jurisdictions. Key reasons for such data deficiencies are<sup>8</sup>:

- Lenders are not motivated to accurately and systematically report non-performing loans due to reputational and capital preservation reasons;
- Regulators do not typically require mortgage-specific periodic portfolio reporting; in case such reporting exists, it is not harmonized across jurisdictions; In EU and CEE pre-2009 official aggregate NPL data are generally not available;
- The definitions of loan delinquency stages vary across countries, e.g. not all markets follow the common classification of “30,60,90,180” which refers to the number of days a loan is in arrears;
- In some jurisdictions non-bank lenders play a significant role in housing finance, however, data from the banking supervisor may miss that sector;

### Mortgage NPL Impact

Portfolio performance analysis is an important aspect of a housing finance market assessment and understanding. An example of a very specific and business-critical application of proper delinquency analytics is portfolio pricing – either ad hoc or ongoing – which has material institutional and systemic implications. Significant policy actions also need to be undertaken based on the understanding of loan delinquency patterns. Behavior of non-performing loans in aggregate and individual lenders’ portfolios has the following implications:

- *Institutional capital allocation.* Simplistically, prudential regulations and accounting rules address the NPLs in capital adequacy charges based on loan type and performance and loan loss provisioning based on current and expected loan credit risk – both of which entail contra-equity entries that decrease lender’s capital. Provisioning rules may have a more serious impact on the capital allocation due to larger differences between charges to capital depending on the loan performance. Broadly, 1 non-performing loan requires, ceteris paribus, as much capital in provisioning as 50-100 performing loans.
- *System-wide stability and growth.* Significant capital constraints due to large share of NPL in lenders’ portfolios restrict further lending. Coupled with reduced ROE and ROA and limited ability to organically grow capital base, protracted periods of significant portfolio share of non-performing loans pose systemic, industry-wide development and stability challenges.
- *Institutional effectiveness.* Mortgage loan defaults are expensive for lenders as in most ECA jurisdictions foreclosure involves significant legal and time costs, as well as reputational risks. Severity of the losses is correlated with effective LTV at time of foreclosure, which itself is in large part a product of real estate market cycle – both in house prices and in liquidity.
- *Institutional Reputation.* Particularly in times of large-scale borrower delinquencies, certain lender servicing and special servicing actions may be seen as aggressive or lacking in consumer

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<sup>8</sup> For an excellent broad discussion of NPL situation in ECA see European Banking Coordination “Vienna” Initiative March 2012 Paper on NPLs in Central, Eastern and Southeastern Europe.

protection. In the countries where the mortgage portfolio are large, e.g. Poland, each 1% increase of NPLs translates into 15,000 families facing foreclosure, which may lead to negative public perception of a given lender, not to mention potential social policy actions.

Headline, average NPL numbers have limited utility and can only be used as a broad indication of a trend; policy actions based on such data may be misguided and at the very least too general. Instead, the following mortgage portfolio characteristics should be used to gain insight into the key determinants or drivers of performance<sup>9</sup>:

- *Vintage, i.e. by the year of loan origination* – portfolios are stratified by the year the loans have been extended. This segregation is important vis-à-vis real estate market cyclicity and rapidly growing emerging mortgage markets. Grouping is typically annual, but can be performed on a monthly or quarterly basis for a finer analysis<sup>10</sup>.
- *Product, i.e. by loan type* – if a lender extends loans of different characteristics portfolio is grouped by such products, e.g. ARM vs. FRM or LC vs. FX. This segregation is particularly valuable in case different products are explicitly or implicitly target certain borrower strata. Infamous examples of such grouping are US “prime” and “Alt-A” loan products which have dramatically different delinquency profiles.
- *Spatial, i.e. by location of the collateralized property* - portfolios are typically stratified by the location of the property, which is particularly important vis-à-vis real estate market cyclicity and borrower strata, e.g. rural vs. urban. Granularity of this stratification permits detailed analysis of portfolio performance “overlaid” with real estate market evolutions.
- *By loan terms and conditions* – this stratification allows for a detailed look into loan performance on the basis of such features as downpayment amount, interest rate, DTI, LTV, etc. Several factors, both individual and in a matrix context have been shown to be significantly correlated with lender credit risk in terms of willingness and capacity of the borrower to repay the loan.
- *By seasoning, or “age” of the loan* – loan delinquency and prepayment profile are age-dependent, i.e. they vary during the life of the loan. Thus grouping of the portfolio by the number of months elapsed since origination provides insights into current and potential future delinquency behavior<sup>11</sup>.

Lenders with significant portfolio data use the above and other variables in order to understand and, importantly, attempt to predict future portfolio performance. Unfortunately, in most ECA jurisdictions the regulators collect and analyze only minimal amount of mortgage-related data – thus making meaningful analysis as well as cross-country comparison virtually impossible.

Nevertheless, even aggregate mortgage arrears numbers provide initial broad insights into the housing finance market performance and in the severity of institutional liquidity and capital allocation pressures.

Practical implications of deficient NPL data are:

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<sup>9</sup> Lenders and analysts design and use sophisticated analytical and predictive models based on a large number of variables (and volume of data) and scenarios to understand portfolio performance; discussion of such methods is beyond the scope of this paper.

<sup>10</sup> In US mortgage market terminology such strata are sometimes called “cohorts”

<sup>11</sup> In US mortgage market terminology a loan is considered “seasoned” after 12 months. A frequently used rule of thumb is that mortgage defaults rise during first 3-5 years of loan life and plateau thereafter.

- Cross-country comparisons may not be precise and a detailed analysis of reporting and mortgage market specifics is required. For example, the definition of NPL may vary between jurisdictions.
- Measurement methodologies need to be understood. Deviations from standard calculation practices need to be taken into account when assessing a given housing finance market.
- Data coverage needs to be verified. Banking regulator may not have the information on the non-bank lenders' portfolio performance and, depending on prevailing products and practices, NPL numbers may differ significantly between those two groups of lenders.

**Figure 3. ECA Headline Mortgage NPL numbers [% of portfolio]**

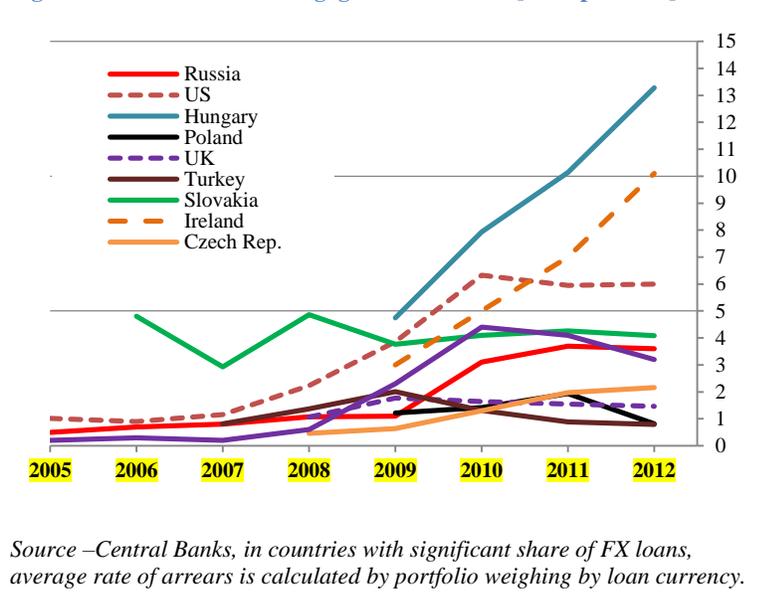


Figure 3 illustrates recent NPL performance in the largest ECA countries, compared with select international examples. This picture, as diverse as it appears, can only provide high-level insight into the situation in housing finance sector, as individual circumstances and in particular the causes of the portfolio performance can remain hidden if detailed stratification analysis is not possible.

Firstly, one notices a sharp and rapid increase in NPLs in 2008 and 2009, especially compared to the benchmark - US mortgage portfolio performance of 90 + days

delinquencies of less than 1%. Also, one notices “leveling off” of high delinquencies since 2010, even gradual downward trend, although most markets continue to have 2-4 % ratios. Of particular challenge such high levels are in countries with resumed loan origination activity, e.g. Russia, as they (levels) cannot be disregarded as a mere arithmetical phenomenon, i.e. reduced portfolios in the denominator lead to increased NPL ratio given increasing or stable delinquencies in the numerator.

It is important to note that delinquent loans are grouped in portfolios by the length of time they are in arrears, so that a given loan (unless returned to current status, paid off or foreclosed) can remain in delinquent status 30, 60, 90, 180 and more days, thus increasing the volume of NPLs. In particular, the situation where overall portfolios are increasing and NPLs are flat but high, may be a signal that borrowers have significant difficulties in resuming regular payments and that the borrowers cannot effectively work the loans out – dispose of them in an orderly and efficient fashion.

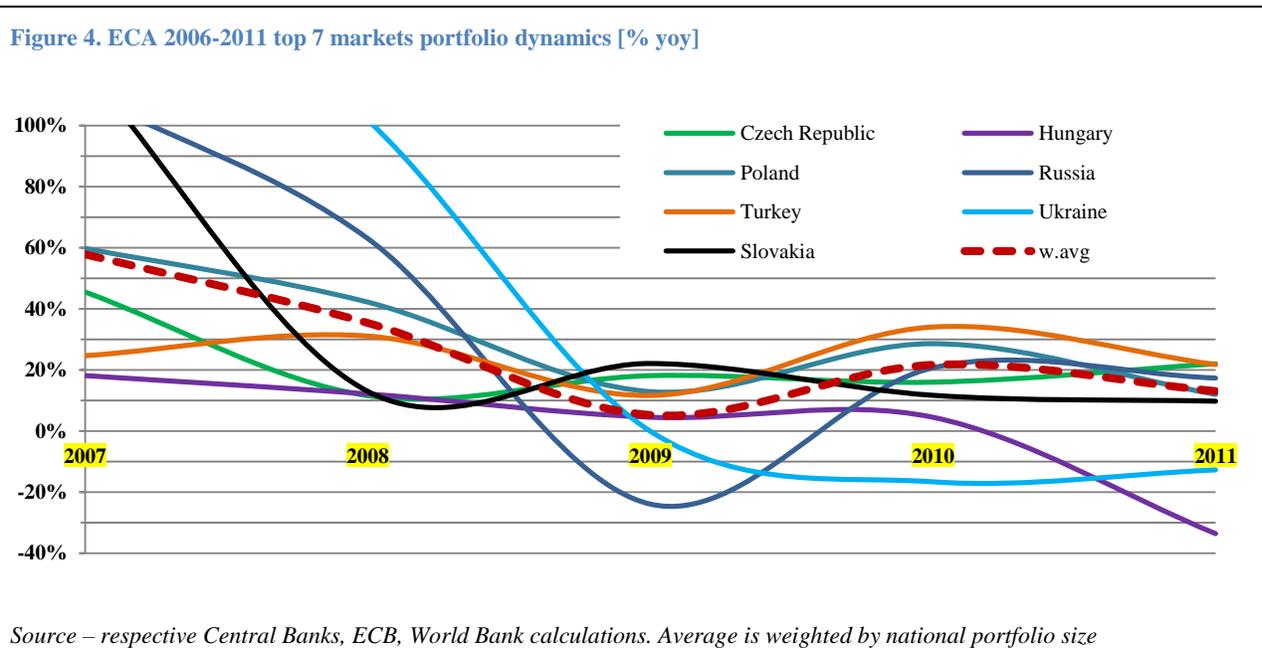
On a graph, in case where lenders maintain “normal” and efficient workout and servicing practices, the lines of NPL share and portfolio size (or rate of change) will be mirror-opposites, as the delinquency numbers would be driven primarily by overall portfolio size.

On the other hand, in case a market faces significant challenges in borrower capacity or willingness to pay, or lenders cannot effectively dispose of delinquent loans, those lines will not curve in opposite phases, as NPL ratios are caused not by arithmetic, but by market challenges.

Overall, while the dynamic of headline NPL portfolio performance is useful both in cross-country comparison and for illustrating broad trends of a certain jurisdiction, it is necessary to conduct a detailed analysis with a significant amount of additional data in order to understand the circumstances of a given housing finance market.

## 4.2 Mortgage Portfolio Dynamics

Figure 4 below illustrates ECA portfolio growth rates volatility since the beginning of financial crisis in 2007, as well as resiliency, with portfolio outstanding weighted growth rate recovering to 24% in 2011 after 6% in 2009 and 38% in 2008 (max decline in 2009). Also note negative portfolio growth rate in Hungary and Ukraine with a sharp decline in 2009-2010.

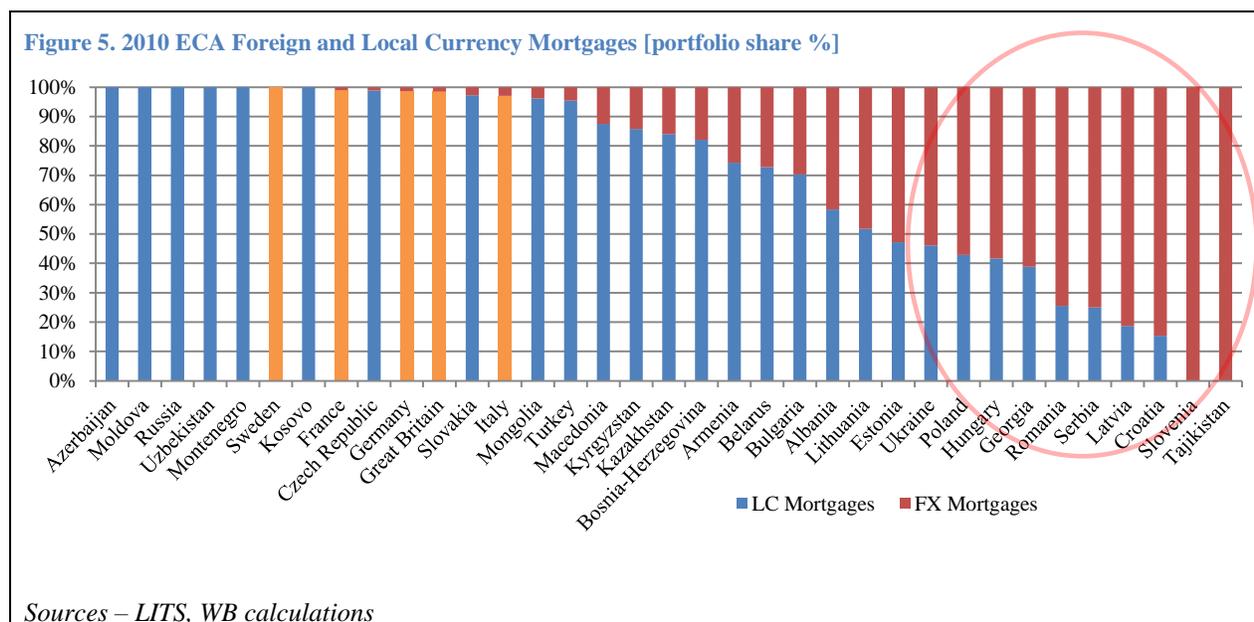


One of the traditional features of the ECA mortgage markets has been prevalence of the FX loans – during most of the 2000’s housing loans in some countries have been predominantly in CHF, USD or EUR, e.g. Hungary, Serbia, Ukraine, and Poland. During the 2007-2009 on the background of macroeconomic slowdown in ECA and currency depreciation, performance of portfolios of FX loans has deteriorated rapidly and dramatically. Moreover, the performance of FX mortgage portfolios was in many cases – Russia, Serbia – several times worse than that of the local currency loans.

However, one of the unintended positive consequences of such negative events, the share of FX originations in many countries has declined dramatically. In Russia and Poland for example, even in the absence of a specific regulatory action post 2008 originations are almost exclusively in local currency. In Ukraine, Serbia or Armenia there additionally were regulatory initiatives to prohibit or restrict FX mortgage lending.

It should be noted that the decline of FX mortgages can also be linked to the closure of the capital markets in Europe, which resulted in the absence of FX funding options for many countries, which have to rely almost exclusively on domestic deposits.

Figure 5 below illustrates the post-crisis state of the local and foreign currency mortgage portfolios. As seen, many ECA jurisdictions have almost completely shifted to local currency lending, including the largest markets of Russia, Poland, Czech Republic, and Turkey. At the same time, the challenges of securing adequate sources of funding in local currency and, subsequently, increasing the share of local currency lending are still acute for some major markets, such as Serbia, Hungary, Ukraine, Poland, etc.



### 4.3 Mortgage Funding

The funding structure in ECA is mainly characterized by: (i) the prevalence of deposits, (ii) the prevalence of foreign currency resources in the CEE, a direct consequence of the market share of subsidiaries of foreign banking groups; (iii) the importance, in this case, of credit lines by parent companies; (iv) the sporadic and limited use of capital market instruments: mainly securitization and agency bonds in a few countries, and covered bonds in 4 CEE countries.

This structure exposes financial systems to several risks that can become a stability concern once mortgage lending becomes a relatively significant part of banks' portfolios.

- *Liquidity risks* stemming from maturity mismatches and from the uncertain permanency of foreign parent banks' support – it can be either a comfort to local lenders in a stressed situation, or can also amplify such a crisis, or be a transmission vehicle of a crisis from the home to the host country;
- *Foreign exchange risks* – mainly borne by borrowers as dominance of foreign (EU) lenders in many Central Europe jurisdictions coupled with absence of local currency funding mechanisms lead to mortgage lending in foreign currency, mainly EUR and CHF.

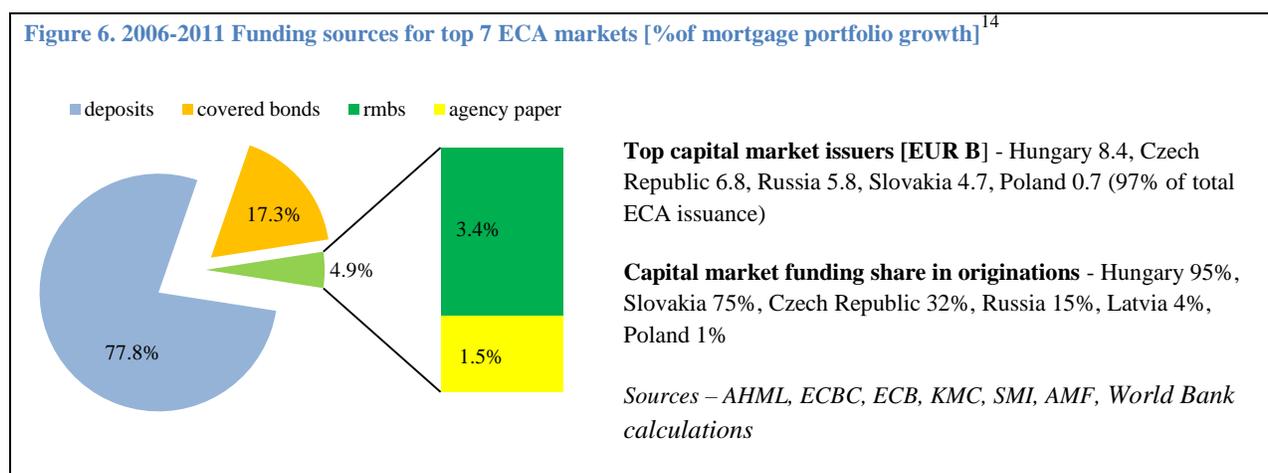
ECA capital market mortgage funding activities are highly concentrated with top 4 markets of Hungary, Czech Republic, Russia, Slovakia accounting for 96% of the regional issuance. Prevalent lenders are universal banks and have access to customer deposits, which present a convenient funding choice, particularly in light of underdeveloped capital markets and increased investor risk aversion since 2007.

Moreover, ECA average 8-10% share of mortgages in the overall banks' loans dilutes the effect of long tenors of mortgages on lenders' balance sheets, alleviating their search for symmetric liabilities. However, that in Poland for example, the share of mortgage in the aggregate banking sector loan book is a whopping 32%.

Figure 6 below illustrates different approaches for mortgage funding as a share of portfolio growth:

- Core deposits and parent funding – used throughout the region
- Mortgage covered bonds<sup>12</sup> - CEE, Russia, Ukraine
- RMBS, Agency Paper, whole loan sales<sup>13</sup> - Russia, Ukraine, Kazakhstan, Azerbaijan

Capital markets funding generally exhibits stronger linkage between respective asset and liability cash



flows, although in ECA such connection is muted by virtue of relatively large share of covered bonds:

- *Covered bonds* use dynamic asset cover pool as well as bullet amortization which is not symmetrical to typical mortgage loan repayment structure; thus there is a relaxed correlation between cover pool cash flows and those of the covered bond. Credit profile of the covered bonds is closely linked to that of the issuing bank.
- *RMBS* have static unmanaged cover pools and cash flows to investors are matched with varying degree of fidelity by cash flows from the cover pool of mortgage loans. RMBS issuance generally exhibits cash flow correlation between underlying mortgage pool and payments to investors. Credit profile of RMBS is closely linked to that of the structure and the underlying portfolio.
- *Agency Paper*, a corporate debt obligation of a firm with homogeneous assets (either mortgage loans or corporate loans to mortgage originators) also frequently exhibits strong correlation in bond payment characteristics to asset portfolio cash flows<sup>15</sup>.

<sup>12</sup> Capital market funding activity has virtually halted by in 2009, so above values are averages over 2006-2010 periods.

<sup>13</sup> Note that in markets with agency paper and RMBS there is frequently a whole loan market, i.e. rights on claims arising out of mortgage loans can be traded without creation of a new financial instrument. Such practices typically exist where mortgage market intermediary facilities purchase such rights in order to issue own debt instruments.

<sup>14</sup> Note that yearly or aggregate mortgage originations are not available for some of the markets, so as a proxy for origination volume portfolio outstanding change is used with an understanding that originations generally will exceed such portfolio change.

<sup>15</sup> RMBS and agency paper in ECA have structures with varying degree of fidelity between asset cash flows and capital market instrument cash flows; see discussion below on market liquidity facilities.

In capital market funding generally there also is a currency match between underlying assets and payments to investors. In countries with large volumes of loans in a particular currency and relatively high volume of capital market issuance (Czech Republic, Hungary, Croatia, Russia) issuers seek to place instruments denominated in prevailing currency of mortgage lending, although currency hinging instruments, where available, can also be used.

## Mortgage Covered Bonds

2006-2011 ECA Mortgage Covered Bonds transactions amounted to EUR 25B or 78% of total ECA capital market funding.

Mortgage Covered bonds (MCB) are a widespread debt instrument, with a 2012 EU outstanding volume of over EUR 2.7 Trillion, rivaling aggregate sovereign debt. European Central Bank (ECB) sees the CB model as an alternative to the US MBS model<sup>16</sup>.

CB issuers in Hungary, Poland, and Slovakia are typically specialized subsidiaries of universal banks:

*Hungary* - OTP Mortgage Bank, [Unicredit Jelzálogbank](#), [FHB Mortgage Bank](#)

*Poland* - [ING Bank Hipoteczny S.A.](#), [Pekao Bank Hipoteczny S.A.](#),

*Slovakia* - [L'udova Banka Volksbank](#), [CSOB](#), [UniCredit Bank](#), [OTP Banka Slovensko](#)

MCBs are typically issued under a specific legal and regulatory regime, established in ECA countries in early 2000's.

On the level of EU the special character of covered bonds was established in Article 52 (4) of the Directive 2009/65/EC in July 2009 (UCITS). Covered bonds that comply with Article 52 (4) UCITS directive are considered to have an attractive

risk profile, which justifies easing of prudential investment limits. Therefore, investment funds can invest up to 25% (instead of max. 5%) of their assets in covered bonds of a single issuer that meet the criteria of Article 52(4). Similar, the EU Directives on Life and Non-Life Insurance (Directives 92/96/ EEC and 92/49/EEC) allow insurance companies to invest up to 40% (instead of max. 5%) in UCITS compliant covered bonds of the same issuer.

Another element of MCB regulation at EU level is the Capital Requirements Directive (CRD). Under Basel II, covered bonds are not explicitly addressed, and therefore they will be treated like unsecured bank bonds for credit risk weighting calculations. However, the EU Commission has decided to establish a privileged treatment for covered bonds under the CRD, Annex VI, paragraphs 68 to 71. Moreover, covered bonds are eligible in repo transactions with the national central banks<sup>17</sup>.

Larger markets by portfolio outstanding as well as CB issuance, e.g. Czech Republic, Hungary and Slovakia, have seen substantial share of capital market funding placed in local currency which correlates with large share of local currency mortgage assets available for placement in CB cover pools and sufficient demand from domestic investors, e.g. pension funds and other asset managers. Additionally, issuers in Hungary and Czech Republic are motivated to use CBs by favorable tax treatment or by statutory peculiarities of housing subsidies<sup>18</sup>.

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<sup>16</sup> ECB, Financial Integration in Europe, April 2010

<sup>17</sup> For detailed discussion on Covered Bond legal, regulatory and market features see Annex III and also Annex V – on comparison between Covered Bonds and RMBS

<sup>18</sup> In both cases...the bonds benefit from high subsidies that encourage their use. In Czech Republic, the bond interest is tax exempt. In Hungary, only mortgage banks (funded by covered bonds) can provide loans that qualify for a government program of interest rate subsidies, and most of the bonds have been issued by the mortgage banking subsidiaries of...[OTP and FHB]... The FHB mortgage bank issues bonds backed by the mortgage loans it has originated, but also backed by mortgage liens it has

## RMBS and Agency Paper

*Mortgage market liquidity facilities* in 5 ECA countries employ a business model which includes issuing corporate (Agency Paper) and structured (RMBS) debt instruments to the capital markets and purchasing claims on rights arising out of residential mortgage loans either via whole loan sales or by extending corporate loans to mortgage originators. The latter practice aims to facilitate ALM to lenders by way of *providing liabilities*, whereas purchasing mortgage loans outright serves similar purpose by *removing assets*. Either way lenders' liquidity ratios are improved by improving term matching between assets and liabilities. A common terminological distinction between the two methods is that (i) securitization facilities purchase mortgage loans while (ii) liquidity facilities provide lenders with a corporate loan<sup>19</sup>.

<b>Mortgage market intermediary facilities typology</b>		
<b>Type / Features</b>	<b>Liquidity Facility</b>	<b>Securitization Facility</b>
<b>Counterparties</b>	Mortgage lenders – typically banks Loan Servicers – either banks or specialized companies	
<b>Assets</b>	Long term corporate loans to participating mortgage lenders	Individual mortgage loans purchased from the participating lenders
<b>Transaction with the participating lenders</b>	Extending of a long term corporate loan secured by mortgage loans on lenders' balance sheet	Loan purchase and sale transaction [can be with full, partial or no recourse and thus varying degrees of asset derecognition and risk removal]
<b>Effect on participating lenders' balance sheet</b>	Creation of a long term liabilities to reduce duration gap with long term mortgage assets	Full or partial removal of long term mortgage liabilities to reduce duration gap and capital pressure
<b>Capital market instruments</b>	Corporate bonds (aka Agency Paper), [with specific preferences in issuance, listing, capital charge, sovereign guarantee, etc.]	
		Mortgage Backed Securities [structured bonds backed by cash flows from a bankruptcy remote pool on the balance sheet of a special purpose company]

Note that in ECA there is also a practice of whole loan trading, i.e. rights arising out of mortgage loans can be traded without creation of a new financial instrument. Such practices typically exist where mortgage market intermediary facility, e.g. AHML in RU, KMC in KZ, purchase such rights to aggregate a sufficient pool of mortgages in order to issue debt instruments. Russian lenders use private and public market intermediary facilities and whole loan sales technique for over 30% of national mortgage originations.

*Agency Paper* are corporate debt instruments issued by a taxpayer funded mortgage market liquidity facility, i.e. a financial company established for the purposes of purchasing mortgage rights from lenders and then issuing corporate debt to the capital markets. 2006-2012 agency Paper issuance amounted to

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purchased from other commercial banks, which retain the loans and credit risk on their books. .. FHB acts as a centralized capital market funding source for other lenders that are not specialized or just have smaller portfolios (similar to a liquidity facility). (Loïc Chiquier, 2008)

<sup>19</sup> See inter alia the World Bank Policy Note (Olivier Hassler, 2007).

EUR 2.4B; counter-cyclically, issuance increased in 2009 in the context of difficulties of using other forms of capital market funding.

Typically Agency Ponds are expressly guaranteed by the sovereign in terms of timely and full payment of principal and interest, or just principal; such bonds may have also specific issuance, listing, trading or tax preferences. Additionally, due to the shareholder structure of such institutions, investors typically view such bonds as sovereign debt with a discount due to guarantee mechanics and lag; bond cash flows and mortgage cash flows may not be strongly matched and thus, the quality of the underlying issuer assets (mortgage rights) is seen as secondary in pricing.

<b>ECA Mortgage Market Intermediaries</b>
Armenia - <i>National Mortgage Company</i> (NMC, established 2010) is a public liquidity facility.
Azerbaijan <i>Mortgage Fund</i> (AMF, 2005) is a public liquidity facility with 2009-2011 corporate debt issuance of around EUR170MM.
Belarus – plans to establish a mortgage refinancing facility, business model and start of operations TBD.
<i>Kazakhstan Mortgage Company</i> (KMC, 2000) is a public securitization facility with 2002-2012 RMBS and corporate debt issuance of over EUR 500MM.
Russia - <i>Agency for Home Mortgage Lending</i> (AHML, 1997) is a public securitization facility with 2003-2012 RMBS and corporate debt issuance of over EUR 5.5B;
Ukraine - <i>State Mortgage Institution</i> (SMI, 2004) is a public securitization facility with 2006-2009 RMBS and corporate debt issuance of EUR 42MM. Currently limited operations.

As with other corporate bonds, there is no per-issue asset segregation except for investor disclosure purposes, i.e. there is comingling of institutions' assets' cash flows in accounting sense, although bond prospectuses may indicate that a particular volume of such assets is earmarked to supply cash flow for satisfaction of payments of a particular debt issue.

Market intermediaries establish strong contractual or corporate relationship with the primary mortgage lenders, which are typically regulated banking organizations, although loan servicing and special servicing may be performed by specialized non-banking companies. The format of such relationship may vary according to jurisdictional legal and business environment, although it is critical for the facility to secure predictable incoming flow of mortgages in order to be able to issue liquid capital

market instruments.

*ECA RMBS* are plain vanilla, typically structured with 3-4 tranches, with top ones frequently receiving sovereign rating and the bottom ones being unrated and retained by transaction sponsor. Issuance takes place via an SPV in domestic or foreign jurisdictions and can be nominated in local or foreign currency. RMBS traditionally do not receive credit enhancement in the form of explicit sovereign guarantee, although markets consider implicit shareholder support to be high. All of ECA public RMBS issuers are unregulated financial companies and did not receive any particular capital allocation or liquidity ratio benefits from SPV-type transactions. However, such institutions are audited and submit IFRS financial statements as well as statutory capital market disclosures. Universal banks, on the other hand, may receive<sup>20</sup> capital relief in the form of reduction of capital adequacy allocation and of loss provisions as they reduce their loan book by selling mortgage loans to an SPV.

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<sup>20</sup> Under RU GAAP, RMBS transactions qualify for de-consolidation in financial reporting; although rating agencies and auditors have issued opinions that under IFRS and applicable Russian securitization framework, domestic SPV issuance may not be able to qualify for de-consolidation and risk removal.

## 5 Policy Options

Since the onset of the current global financial crisis in 2007 and in particular in the context of significant negative events in the US mortgage market leading to global shutdown of private securitization, much regulatory and industry development activities have been aimed at “fixing” the many issues of the largest mortgage markets. Additionally, broad banking and financial regulatory measures in the background of the global crisis have a direct bearing on the housing finance activities, e.g. Basel III or Solvency II.

At the same time, some of the tools discussed below are “tried and true” textbook examples of best mortgage lending practices and their proper and efficient implementation in a given jurisdiction is not necessarily directly related to the effects of the ongoing economic downturn in EU and US. Most mortgage policy and practice textbooks cover these topics to a great extent<sup>21</sup> and the very departure from best global practices has to a significant extent exacerbated the effects of the financial crisis on ECA mortgage markets.

The distinction between measures aimed at preventing a crisis and managing one is quite useful in constructing a comprehensive housing finance policy. Specifically, it is important to note that certain measures are extraordinary, i.e. are implemented in case there is a significant and sudden negative event in the mortgage market – and may be wound down once the urgency passes. For example, various formats of “bad bank” or asset management mechanisms for defaulted or delinquent mortgage loans would not normally be used in a given country and are expected to have a defined lifecycle.

Similarly, emergency-style legislative mortgage loan servicing and special servicing measures, e.g. moratorium on foreclosure or en masse conversion of FX to LC mortgages are also effectively one-off measures aimed at relieving acute social, institutional or systemic pressure. Broadly, all emergency measures have to present a clear case of fiscal efficiencies, which is a rare global experience.

On the other hand, establishing a system for proper market information gathering and dissemination or strengthening micro and macro prudential oversight of the housing finance sector are steps that should be considered in any country developing a sustainable mortgage system.

There are of course more measures available to the authorities than the ones listed below. Among the more important ones which are not discussed in detail are the broad housing strategy and policy, particularly as they apply to the housing subsidies. Poorly conceived and implemented programs, e.g. of subsidizing the interest rate in the environment of ARM mortgages can in fact have a detrimental stability and developmental impact on the market, as well as involve significant and uncertain fiscal liabilities for the government.

Another factor in ECA mortgage systems is a likely expansion of the capital market intermediation and provision of long term funding for the mortgage lenders. In the years leading up to the crisis events of the 2009 much of the funding in many countries has been transferred by parent banks to their local branches or subsidiaries. This practice has abated in light of the EU financial turmoil. In many countries the deposits, inherently short term, constitute the prevailing funding mechanism for long term mortgages. Significant maturity gaps in these cases are a micro and a macro policy challenge for the regulators both in stability and development. In particular, absence of a robust capital market funding channel places addition pressure on the regulator in terms of prudent mortgage lending practices.

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<sup>21</sup> See, for example, seminal 2009 World Bank “Housing Finance Policy in Emerging Markets” by Chiquier and Lea.

To address the current challenges of the ECA markets, the focus of the discussed policy measures is forward-looking, i.e. they are intended for increasing the resilience of the system vis-à-vis future cyclical or structural events. However, as many countries have a large systemically significant stock of poorly underwritten and risky mortgages, a detailed discussion on special servicing and portfolio management is provided.

The table below list both preventative and resolution measures which are further discussed in this Paper. Note that the order of the measures follows the suggested order of implementation.

<b>Policy Options for Mortgage Crisis Prevention and Resolution</b>		
	<b>Policy Option</b>	<b>Purpose and Notes</b>
<b>Crisis Prevention and Market Resilience</b>	<i>Real Estate Market Observatories</i>	Establishment of a dedicated institution to provide regular, timely market data and information for use by market stakeholders to help in managing risks.
	<i>Systemic Risk and Macro Prudential Supervision</i>	Development of early warning indicators to be used by regulators/central banks looking at asset quality or lending standards.
	<i>Dynamic Provisioning</i>	Aim to use provisioning framework to reduce the pro-cyclicality of the banking sector.
	<i>Prudent Lending Framework and Practices</i>	Development of stronger loan underwriting criteria and also servicing standards.
	<i>Consumer Protection and Education</i>	Financial awareness, education and regulatory and customary framework of consumer protection
	<i>RMBS Label - Restarting Securitization Markets</i>	Improve quality, simplify products and re-align incentives in a post crisis environment
	<i>Regional Mortgage Liquidity Facility</i>	Provide a regional level funding solution to allow higher levels of liquidity and access to large investor base
<b>Resolution</b>	<i>Special Servicing Framework</i>	Design of loan modification and forbearance programs which balance fiscal capacity for support, with financial systems ability to absorb losses and borrowers' incentives
	<i>Asset Management Company (Bad Bank)</i>	Establishment of mechanisms to remove the delinquent assets from lenders' balance sheets into specialized institutions for further workouts and sale.

## 5.1 Real Estate Market Observatory

Real estate is an asset class prone to cycles and speculative volatility. When the exposure of the banking system to it is significant, the instability of the underlying real sector can jeopardize its stability. Authorities concerned with financial stability need to be able to assess the state, and monitor the development of real estate markets and in particular identify imbalances or overheating stages that can harm the lending institutions.

Understanding the dynamics of real estate markets in itself and its potential impact on the mortgage sector is however not enough. The extent to which real estate and mortgage markets are interrelated, which depends on the degrees of development of the mortgage market must be taken into account. The linkages between the real estate sector, the mortgage market, the stability of the financial sector and the real economy has exacerbated during last years.

**The first tools to be developed are price indices** – not all ECA countries, even large ones, have official indices.

Indices must be segmented to be useful – by location, types of property, price range. Their thoroughness can be hampered by the existence of unregistered transactions, price underreporting, and weaknesses in the market infrastructure, such as deficiencies in the industry or regulation of brokers or appraisers.

Gathering of information and incentivizing potential providers also frequently raise transparency and conflict or interest challenges. Periodic surveys beside systematic price collection can be a way to address some of these constraints.

*Market stakeholders should consider assessing and enhancing their understanding of the real estate price dynamics and its drivers.* Thus, the real estate index, if existing, should be enhanced with spatial and property-type stratification and be utilized to closely monitor lenders' portfolios as well as the market overall.

Furthermore, the nature of the prevailing sale and purchase transactions should be understood by the authorities (for example, examining whether there is a significant share of investment purchases).

*It is important to extend the market awareness and thus appropriate policy measures beyond mortgage finance* as such, although a large share of credit-based transactions suggests a particular focus on enforcement of prudent lending practices. Armed with full and accurate information, regulators would be in a position to monitor lenders' portfolios for signs of price hikes, LTV fluctuations and market segment concentrations which may distort the overall market.

Only after obtaining, analyzing and monitoring market data the regulators would be able to calibrate prudential requirements, such as capital charges, loan-loss provisions, and portfolio composition structure, in order to proactively discourage concentrated or aggressive lending<sup>22</sup>.

If mortgage lending is small real estate markets tend to have an autonomous dynamic from the mortgage lending market developments. Their development, especially in terms of prices, will reflect the investment of local wealth with little leverage, or external capital inflows. This is particularly relevant in ECA, where privatization of the bulk of the housing stock, low penetration of banking services and significant share of informal economic sectors contribute to relatively small mortgage markets.

Mortgage lending can drive real estate markets through the level of interest rates, LTV levels that reflect expectation of continuous price appreciation or a multiplier effect of capital gains on existing properties. Its impact on the market equilibrium will depend on the relationship between supply and demand, but by market segment.

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<sup>22</sup> Please see Systemic Risk and Macro Prudential Supervision Chapter for details on possible policy actions

*A clear identification of the factors driving market developments is crucial to make adequate policy decisions in terms of stability and access of underserved categories to housing finance.* For instance, a distinction must be made between high LTVs that are indicative of an “irrational exuberance” from high LTVs as a mechanism for the first time buyers to access home ownership.

Similarly, financial authorities must distinguish between excessive and unsustainable price increases or lending dynamics from rapid developments due to structural reasons; or, which is even more difficult, they should be able to assess at what point a healthy (structural) growth becomes excessive<sup>23</sup>. Information systems must be developed to help such diagnoses and policy decisions with adequate indicators and metrics.

Assessing the state of real estate markets implies much more than measuring the evolution of prices. Other important metrics from the supply side include the volume of transactions, new building activity, the stock of units for sale and the turnover in new housing developments, rental yields, among others. Segmentation is equally important for these indicators.

*Real estate appraisal becomes particularly critical in case where securitization or mortgage covered bonds are used for mortgage funding.* Mortgage lenders, investors and regulators in particular in setting LTVs standards and provisioning rules rely of the veracity of the collateral price information and thus on the quality of assessing such prices.

The accuracy and efficiency of valuations depend on the market information system, and increase in parallel with it. Still, it is necessary to organize the real estate valuation profession on sound principles even at an early stage, which includes the definition of licensing and expertise criteria as well as code of conducts that can ensure that this function is fulfilled on an arm length basis.

An information system on mortgage lending should ideally provide indications on new activity and loan portfolios, broken down between residential real estate and developer finance. Databases should include loan level information on all material terms and conditions, e.g. LTV, DTI, property location, year of origination, etc. to allow for precise analytical work.

The analysis of loans benefitting from mortgage default insurance or other form of credit guarantee is of high relevance for the pricing of risk; it must be developed and made available to the market. Mortgage data should be segmented in parallel to the structure of real estate market information.

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<sup>23</sup> Example of such a difficult diagnosis: Latvia, where the stock of outstanding mortgage loans grew by a yearly average of 79% between 1998 and 2008. In nascent markets, lending growth rates of 30-40% per year are not uncommon

## 5.2 Systemic Risk and Macro Prudential Supervision

Macro prudential considerations have come to the forefront of financial authorities' approach following the recent global financial crisis. Even countries where sound rules and practices for lending existed, such as Lithuania or Russia, were hit by a real estate related financial crisis. This demonstrates the systemic importance of micro factors and of multiple interconnections within and between financial systems that propagate risk and amplify market cycles. Interconnections stem in particular from correlations, herding behavior, presence of oligopolistic structures and the crucial role of confidence in the dynamic of financial markets.

Real estate lending is an area where the interaction between financial risk and property risks presents a complex set of challenges due to:

- *strong dependency on economic cyclicality* - a down phase will both increase loan delinquencies and decrease collateral property values and liquidity;
- *strong aggregate portfolio performance correlation*, including in mortgage borrower behavior, which limits spatial or other diversification;
- *high sensitivity of real estate investment to cyclical interest rates* with additional construction cycle lag;
- *complexity of the underlying principle of leveraging assets of fluctuating values for mortgage borrowing*;
- *insufficient amount and quality of data on real estate and mortgage markets performance*.

### **Risks Exacerbated by Ownership Structures in ECA Banking Sector**

Many ECA banks are subsidiaries of foreign groups. This "home-host" relationship can be a vulnerability risk factor for the liquidity of a local banking system due to:

*Amplification of domestic crises* as parents instruct subsidiaries to decrease or stop originations; this is particularly relevant for Central European markets as their economic performance deteriorates due to the EU crisis, reducing attractiveness of long term housing or real estate lending for foreign banks.

*Contagion channel for foreign liquidity crises*. Links can be direct as parent banks withdraw support to their subsidiaries as they themselves experience liquidity shortages; or indirect as a confidence crisis in the home country spreads to the host market triggers a deposit run.

Correlations both between the real economy and the mortgage market and within the mortgage portfolio and the financial sector, and systemic linkages may not be well understood by individual institutions. Firms acting in isolation almost always overestimate their ability to hedge or to close out exposures at short notice in a crisis.

In addition, real estate in general and housing in particular is an asset class particularly prone to price bubbles. This is because besides rendering services as a consumption good e.g. provide a shelter, real estate is a vehicle for investments aimed at safeguarding or increasing household wealth. This gives, at least in some market segment, a large role to expectations of

future values in the formation of today's prices, which become partially independent of fundamental market equilibrium conditions. This type of imbalance, reflected first in excessive appreciation, then sharp falls after the reversal of expectations must be distinguished from periodic cycles, which are also a characteristic of real estate markets. The former phenomenon, contrarily to the latter, represents a clear threat to the stability of financial sectors.

Interconnections and speculative investments not only exist within domestic markets, but also between them, especially in ECA context of significant cross penetration of labor and capital. Financial and real

estate markets are more and more linked together, for instance through global banking groups and international capital flows.

The importance of macro-prudential policy as a tool to approach and mitigate the instability of real estate finance has progressively been established. Recent crises have shown that important factors of instability are beyond its range of efficiency, even if there is a clear linkage between prices, interest rates and volume of credit. Speculative real estate investments often take place in countries with underdeveloped mortgage markets, for instance if there is rapidly increasing household capital allocation demand and few other investment opportunities.

...the Baltic States and Kazakhstan, where overall loans-to-deposit ratios are in the 200% range, are largely dependent on foreign capital to fund loan portfolios, especially the long term part of them. This led Estonia Financial Authorities to enter into a cooperation agreement with their Scandinavian counterparts in March 2012 given the weight of Nordic groups in the Estonian banking system. Wherever there are such strong cross-border ties, a systemic oversight needs to encompass the impact of external financial relations.

Caution should be exercised however to avoid to impose costly redundant obligations to financial institutions.

Using monetary tools to dampen market imbalances can have counter-productive effects, especially if the volume of external capital is significant relatively to the size of the economy. For instance, raising interest rates to curb price increases may stimulate capital inflows that fuel asset price increases, or induce a larger demand for FX mortgages<sup>24</sup>. Also, targeting asset prices with interest rates can unduly affect economic sectors that are healthy and overall economic growth.

Asset quality issues even limited to a few institutions can expand at a systemic level by generating a crisis of confidence among investors and within the banking system, leading to a liquidity crisis that monetary measures can help manage, but not prevent nor solve. Specific to mortgage finance, loan delinquencies may be of such a scale as to trigger a social stability policy response from the authorities, e.g. a moratorium on foreclosure or eviction. Such measures, while potentially preserving real estate prices and limiting negative social impact, may on the other hand put additional capital and cash flow pressures on lenders with institutional and systemic stability implications.

In these instances, a macro-prudential approach seems to be appropriate to develop countercyclical actions, smooth out or limit the amplification of imbalances and thus the need for costly pro-cyclical monetary measures, and overall enhance the resilience of the financial system to real estate related shocks. A growing number of policy makers have developed such frameworks, which were first experimented by South and East Asia countries after the real estate and financial crises of late 1990s.

*The first component of a macro-prudential framework should be an adequate capacity of regulator to monitor and analyze the state of the real estate and mortgage markets. Various data regarding market performance are important:*

- Current, accurate, and complete mortgage markets information overlaid with real estate market dynamics information of similar characteristics. This is a necessary but not sufficient requirement to addressing the issue.
- Level of mortgage finance penetration in real estate transactions, as well spatial and property type distribution of mortgage finance. Such information would guide the selection of appropriate regulatory instruments to address the issue.

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<sup>24</sup> Brzoza-Brzezina, M., T. Chmielewski, and J. Niedzwiedzinska, 2007, "Substitution between Domestic and Foreign Currency Loans in Central Europe: Do Central Banks Matter?" National Bank of Poland Working Paper. Quoted in BIS Papers No 64 : Property markets and financial Stability, March 2012

- Detailed profile of the real estate investor by source of funds, spatial and property preferences, etc. This would further refine guidance on the selection of appropriate regulatory instrument in addressing the issue.

A regulator should develop a set of indicators and ensure timely data availability as lags in recognizing stressed situations may lead to undesired pro-cyclical actions. It is important to establish the capacity to correctly interpret such framework of indicators, and diagnose unsustainable excesses or other developing risks factor<sup>25</sup>.

Secondly, tools in the arsenal of the authorities, if data support the view that real estate market is overheating, include:

- *Regulatory.* Applied if mortgage lending is determined to play a significant role in real estate transactions. Examples include increased capital charge, increased LTV and DTI requirements, provisions, loan portfolio allocation requirements, liquidity and interest rate risk limits, tight oversight through Pillar 2 of Basel II, etc.
- *Fiscal and Monetary.* Seeks to decrease the frequency of real estate transactions. Examples include reserve requirements, punitive taxation, and linking taxation with property holding period or to number of properties per owner.
- *Administrative.* Applied in case when particular transaction profiles are determined to be speculative. Examples include restrictions for foreign buyers, purchases for cash, flipping.

These measures must have enough flexibility to adjust to different contexts and trend reversals, and to avoid stop-and-go development patterns<sup>26</sup>.

A third dimension can be added to a macro-prudential policy in the case of open economies, especially of relatively small size: the connections with neighboring markets in case of a de facto or institutional regional integration, which should induce cooperation between national authorities when assessing the situation of banks. This is in particular relevant to ECA countries with significant presence of large EU banking groups, e.g. Poland, Ukraine, Serbia, etc., and may present significant regulatory “home-host” challenges.

<b>Policy Options to Deal with Real Estate Boom</b>				
	<b>Measures</b>	<b>Potential impact</b>	<b>Potential Side Effects</b>	<b>Practical Issues</b>
<i>Monetary</i>	Interest rates, reserve requirements	Potential to prevent booms, less so to stop one already in progress	Inflicts damage to economic activity and welfare	Identifying 'doomed' booms and reacting in time;  Constraints imposed by monetary regime
<i>Fiscal</i>	Transaction / capital gains taxes linked to real estate cycles  Property taxes charged	Automatically dampens the boom phase  (Could) limit HPA and volatility	Impairs already-slow price discovery process	Incentive to avoid by misreporting, barter, folding the tax into the mortgage amount

<sup>25</sup> The conditions for such information and analysis capacities are described on the section about market information and observatories.

<sup>26</sup> A pattern illustrated for instance in Ukraine where lending stopped in 2009

	on market value Abolition of mortgage interest deductibility	Reduces incentives for household leverage and HPA		Little room for cyclical implementation
<i>Regulatory</i>	Higher risk weights and dynamic provisioning on mortgage loans Limits on mortgage credit growth Limits on exposure to real estate sector Limits on loan-to-value and debt-to-income ratios	Increases cost of real estate borrowing while building buffer to cope with the downturn  (Could) limit household leverage and HPA  (Could) limit leverage and HPA as well as sensitivity of banks to certain shocks  (Could) limit household leverage and HPA while decreasing probability of default	Costs associated with potential credit rationing  Loss of benefits from financial deepening  Lender earnings management  Costs associated with limiting benefits from specialization	May get too complicated to enforce, especially in a cyclical context; effectiveness also limited when capital ratios are already high  Data requirements and calibration  Shifts lending to newcomers for whom exposure limits do not yet bind or outside the regulatory periphery
<i>Source: IMF.</i>				

### 5.3 Dynamic Provisioning<sup>27</sup>

One of the most destabilizing elements of the ongoing financial crisis has been the pro-cyclical amplification of financial shocks throughout the banking system, financial markets and the economy. The rationale behind mechanisms such as dynamic loan loss provisioning is to reduce the inherent pro-cyclicality of the banking sector. As broadly analyzed in the economic literature, the financial sector tends to amplify business-cycle fluctuations<sup>28</sup>, but there is significantly less consensus on how regulators and supervisors should react to this.

	Spain	Peru	Colombia
<b>Introduced</b>	2000	2008	2007/8
<b>Based on</b>	Credit	GDP	Discretion of supervisor
<b>Scope</b>	Institution specific	System based	System based
<b>Amount</b>	Depends on specific provisions, credit level, growth and riskiness of portfolio	Depends on riskiness of portfolio	Depends on riskiness of portfolio
<b>Threshold</b>	% of credit	% of GDP	No

The anti-cyclical nature of dynamic provisioning enables financial institutions to build up a buffer in good times that can be used in bad times. As a result, this could be an important prudential tool to smooth the impact of the NPLs on P&L, by forcing the financial institutions to recognize in advance a part of the credit cost of future delinquent assets.

However, there are some challenges in implementing this policy that must be considered and analyzed in detail:

- *Accounting*: Depending on the specific design of the mechanism, it could favor profit smoothing, which could be considered contrary to the “fair value” IFRS principle. Also, dynamic provisioning could also be interpreted as a way to cover incurred losses not yet individually identified on specific loans. Thus, it would be interpreted as a way to deliver information to investors on both, income and risks taken.
- *Tax treatment of provisions*: Provisions could be treated as tax deductible or considered deferred assets, which varies significantly among the countries which have implemented dynamic provisioning. In some cases, tax deductibility is limited up to a specific amount (or percentage) and only applied to a certain type of loans. In those cases in which provisions are considered non-deductible, they are accounted as deferred assets because they could become specific provisions in the future, and therefore deductible.
- *Data requirements for implementation*: Definition of the parameter to be used requires long-run expected loss estimation, for which historical data is needed to cover at least one complete business cycle. A credit register or private credit bureaus would significantly facilitate the required analysis.

<sup>27</sup> For detail analysis see Saurina, J. (2009): “Dynamic Provisioning”, Crisis Response Note number 7, FPD, The World Bank Group, July.

<sup>28</sup> “Financial instability hypothesis”, “Financial myopia in assigning probabilities to bad scenarios”, “Existence of herd behavior in the industry” or “Principal-agency problem between shareholders and managers” are often quoted as the main theories explaining the pro-cyclicality phenomena in the financial sector.

- *Crisis management incentives:* Depending on the implementation, dynamic provisioning could delay management and policy decisions during a crisis. The buffer created could be used as a useful cushion in mild recessions, softening the negative impact that a larger impact could have in the financial sector and real economy. However, since impairments do not have a direct impact on P&L, financial institutions could have the incentive to delay some strategic decisions and thus prolong the down cycle.

It must be noted that these policy instruments are not useful for taming the lending cycle, even if they could increase the cost of lending. It is just one instrument to cover the credit risk built up in the loans book, but other policies should be applied together to have a higher impact.

As an example, Basel III contemplates different measures to reducing procyclicality and promoting countercyclical buffers such as (1) the requirement to use long term horizons to estimate Probabilities of Default and Loss Given Default parameters; (2) promoting stronger provisioning practices through the use of expected losses approach rather than “incurred loss”; (3) stronger provisioning in the regulatory capital framework building up capital defenses in periods when credit has grown to excessive levels, with the introduction of the capital conservation buffer and the countercyclical buffer.

## 5.4 Consumer Protection and Education<sup>29</sup>

Mortgage borrower financial awareness and education as well as regulatory framework of consumer protection have been of significant importance before, during and in the aftermath of the ongoing financial crisis. Recent regulatory trend appears to be away from almost complete reliance on disclosure and focus on the quality of such disclosure as well as stronger statutory and legal codification and enforcement of practices.

... ensure that lenders provide borrowers with sufficient information to clearly understand the main elements which are taken into account in order to determine a borrower's repayment capacity, the main characteristics of the loan including the costs, and risks associated with the loan in order to enable borrowers to assess whether the loan is appropriate to their needs and financial circumstances.

It is important that customer information be clear, concise, reliable, comparable, easily accessible, timely, and comprehensive (i.e. the information should also take into account the effect of variation in interest rates and the combined effect of the loan and any other product linked to it). This information should be provided to borrowers without charge and effectively present the total cost of the mortgage during its lifetime, taking into account the loan terms.

Financial Stability Board *Mortgage Underwriting Principles (2012)*

In ECA several idiosyncratic elements of the housing finance markets – in practices and products – merit specific mention in this regard.

*FX mortgage loans* extended to consumers whose incomes denominated in currency which is different from that of the loan pose a material credit risk – both to consumer and to the lender. At the same time, in many ECA markets FX loans tend to carry lower interest rate compared to loans in local currency. In some markets the overall economy may be significantly “dollarized” or “euro-ised”, e.g. Ukraine, Serbia. Thus, the consumers, while having little regard for the future uncertainty in terms of FX risks, may opt for a “lower-cost” FX loan. In this context the importance of appropriate – full, in plain

language and mandatory – pre-contractual disclosure becomes critical.

*ARM loans, especially FX*, pose additional consumer protection challenge as estimation of future behavior of interest rates is subject to significant uncertainty. Frequently the very fact of rate unpredictability and the potential of a steep and rapid increase remains little understood by borrowers. The current ECA and EU practice of disclosing APRC to consumers on present depressed levels is likely misleading and risky both for the household in terms of future elevated loan servicing requirements and for the lenders in terms of increased credit and potentially legal risks<sup>30</sup>.

The widespread ECA practice of off-plan purchases of unfinished housing requires a particular attention to the potential conflict of interest and disclosure practices. Specifically, the frequent close relationship between developers, lenders, mortgage brokers and builders may prevent the borrower from obtaining unbiased full disclosure about the risks and costs of such purchases and associated lending products.

From the regulatory perspective, the EU Consumer Credit Directive 2008/48/EC and the future CARRP EU Directive provide a solid foundation from which to build appropriate consumer protection framework in a given country. Authorities are advised to note specific high risk practices, e.g. ARM FX loans, high

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<sup>29</sup> For detailed discussion see inter alia “*Good Practices on Financial Consumer Protection*” (World Bank 2012) as well as the “*Consumer Protection and Consumer Literacy: Lessons from Nine Country Studies*” (World Bank 2010) covering 9 ECA jurisdictions - Azerbaijan, Bulgaria, Croatia, the Czech Republic, Latvia, Lithuania, Romania, the Russian Federation and Slovakia.

<sup>30</sup> Note that the proposed CARRP EU Directive currently (Summer 2012) in discussion provides for a somewhat finer tuned APRC calculation – requiring usage of a long term interest rate average and a 20% devaluation assumption for FX loans.

bank fees and commissions, novelty of mortgage lending for the general public, etc. and design and implement appropriate safeguards<sup>31</sup>.

From the institutional perspective, establishment and effective operation of a financial services Ombudsman is broadly advised, although recent UK experience suggests that such practices, particularly in the quality of resolutions and decisions, may need to be strengthened. Full understanding of the financial sector industry of the many benefits of proper consumer protection generally assists in setting up an effective and efficient Ombudsman scheme.

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<sup>31</sup> For example, Serbian National Bank, in addition to implementing the EU Directive, adopted a number of specific regulations, relevant for the market, such as prohibition of ARM loans with variable margin and a requirement to offer a LC loan.

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## 5.5 Prudent Loan Level Lending Framework and Practices

One of the major lessons from the ongoing financial crisis, ignited in part by the systemic failures of the US sub-prime mortgage market, is that ill-conceived mortgage products and weak underwriting and servicing can affect entire financial systems even if such practices may be initially limited to specific institutions.

### Hungary

#### Consumer Credit Act 162/2009 and Decree 361/2009

In 12/2009 Hungarian adopted the Consumer Credit Act 162/2009 to bring the legal framework in line with the EU Consumer Credit Directive 2008/48/EC.

The scope of the Act is similar to that of the Directive in that it applies to credit agreements concluded with consumers, including mortgages. Like the Directive, the Act introduces rules of two kinds, (i) regulate financial institutions' obligations to provide information before a loan agreement is signed, or (ii) provide for certain consumer rights after signing...

In connection with the Act and on the basis of the authorization therein, the government adopted Decree 361/2009 which defines the general requirements on prudent retail lending and sets a maximum threshold for loans provided to consumers. An assessment of consumer creditworthiness must be based on the consumer's income position and its credit limit should be defined on that basis. The credit limit constitutes the basis for defining the maximum monthly installment. The principles of creditworthiness (e.g., the terms on which the consumer's other loans should be taken into account) must be laid down by the financial institutions in an internal regulation.

The decree sets a maximum amount for two types of loan: mortgages and loans for purchasing vehicles. Within these two types, the maximum amount varies according to the basis of the currency... *Source – International Law Office www.iloinfo.com.*

In the broad trend of revising and strengthening the basics of housing finance – mortgage loans per se – increased attention to underwriting practices has been evident among market stakeholders and regulators. The need to define and implement adequate underwriting standards is of particular importance in the ECA region where funding constraints or incomplete mortgage market infrastructure may conflict with the soundness of lending.

The market-wide consequences of poorly conceived and implemented origination policies and practices, out of proportion with the micro level of the triggering factors, are costly in terms of systemic stability and institutional bailout. Additionally, they halt the deepening of housing finance and demonstrate the importance of sound and prudent lending standards for the sustainability of market development.

Since 2007, recommendations and regulatory adjustments related to strengthening of mortgage lending framework have been issued in many countries, including the US, EU<sup>32</sup>, the UK<sup>33</sup>, Hungary<sup>34</sup> and Poland<sup>35</sup>, as well as internationally, e.g. by FSB and BIS. They provide an updated

foundation for healthy policies, which however needs to be customized to the specificities and development level of each national market.

Some the most critical principles are listed below:

*Assessing borrower' ability to repay is the primary consideration when lending for housing.* Elements of this include:

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<sup>32</sup> EU Consumer Credit Directive 2008/48/EC

<sup>33</sup> Mortgage Market Review: Responsible Lending (FSA, 2010) Mortgages: Conduct of Business (FSA, 2007), Handbook for Mortgage and Home Reversion Brokers (FSA, 2008)

<sup>34</sup> Consumer Credit Act 162/2009 and Decree 361/2009 (12/2009)

<sup>35</sup> Financial Supervision Authority (KNF) *Rekomendacja T* (2010) imposed on banks strict requirements to adjust total debt obligations of individuals to their income. For example, loan payments cannot exceed 50% of client's net income (65% in case of clients with net income above average level). To further reduce risks resulting from fx-loans, another regulation is expected soon. *Rekomendacja S III* makes FX loans less attractive to customers and will limit the maximum size of loan for customers with lower income.

- gaining accurate knowledge of the borrower income – both volume and type;
- taking all the existing borrower obligations into account;
- in the case of ARM or FX mortgages - assessing the future repayment capacity based on conservative assumptions and periodic stress tests. Understandably, enforcement of forward-looking positive covenants e.g. related to minimum DTI levels, raises challenging loan servicing issues and should be best approached by lenders on individual basis vis-à-vis specific borrower circumstances.

#### **Debt-to-Income**

A debt-to-income ratio (DTI) is the percentage of a consumer's monthly gross income that goes toward paying certain obligations, including debts, certain taxes, fees, and insurance premiums, etc. Two types of DTI are frequently used and are expressed using the notation x/y (for example, 28/36).

*The front-end DTI* is the percentage of gross monthly income that goes toward housing costs, which for renters is the rent amount and for homeowners is PITI (mortgage principal and interest, related insurance premiums, property taxes, and homeowners' association dues).

*The back-end DTI* is the percentage of monthly gross income that goes toward paying all recurring debt payments, including those covered by the first DTI, and other debts such as credit card payments, car loan payments, student loan payments, child support payments, alimony payments, and legal judgments. Select global examples of DTI limits are:

US - Conventional financing limits are typically 28/36; FNMA limits are 35-45; FHA limits are currently 31/43, MGIC limits are 43% (all vary by product and in relation to LTV and credit score), Regulation Z – 43. DTI limits up to 55 were common for nonconforming loans in the 2000s

RU – AHML limits are 45%

In many ECA jurisdictions front end DTI of 40-60 are common. The affordability standard in the U.K. is between 20 and 25% of the borrower's income should pay the mortgage payment.

*Source – FHA, World Bank, FSA.*

In ECA verification of income is particularly critical as many mortgage applicants have either unofficial (“grey”) income or one from sources other than salary. Loan officers in lenders thus have to possess specific market knowledge and skills to be in a position to verify quality and volume of such income sources - in case lender policies allow for inclusion of such sources for borrower underwriting purposes. Clearly, veracity of information is paramount; in many jurisdictions “borrower income self-certification” products and practices have been outlawed.

Additionally, for high risk products, e.g. FX or ARM, periodic income monitoring and verification is advised, although such procedures may be challenging and costly to implement.

In order to ensure the sustainable development of housing finance the affordability principle should not be understood as an exclusion factor, making housing finance only accessible to middle and upper class. It is a major policy goal to extend this financial service to lower income, or non-salaried households. However, to be sustainable such expansion must be based on robust risk management practices and policies given the risk profile of the target population strata.

Two specific principles are of relevance in this respect:

- **Verification of income.** Assessing the capacity to repay is a straightforward task for salaried applicants who can produce income tax returns, in some cases matched by employer declaration. However, in order to expand access to housing finance to underserved categories, it is critical that lenders have the ability to assess the accuracy of other income sources. This requires specific and in-depth knowledge of small business operations, the availability of sectoral surveys, or the availability of reliable credit history, frequently via past savings schemes.
- **Net surplus methodology.** In some jurisdictions an alternative DTI calculation method is used, in particular to in the context of lower income applicants. Lenders ascertain the level of non-

discretionary, inelastic living expenses, and insulate this component of a family budget when calculating repayment charges on a “net surplus” basis. Thus, a basket of mandatory expenses is subtracted from the family’s income and the result is measured against mortgage loan repayment. The availability of well-grounded and updated standards is a condition of prudent lending to riskier categories, and hence of sustainable market deepening.

As one of the mechanisms of protection against price cycles particularly from price bubbles the LTVs should be set at levels that do not reflect the extrapolation of an appreciation trend in the future, and reflect realistic assumptions of recovery rates. Some jurisdictions have established regulatory “hard” limits, an approach that depends on the specificities of a particular market. Furthermore, advanced markets have employed matrix mechanisms to link LTV and DTI (and possibly other factors) to avoid risk layering.

Supporting infrastructure for prudent origination must rely on:

- The availability of credit registers, including both negative and positive information and utilization of information from the bureau during underwriting and servicing processes;
- Reliable, standardized and independent appraisal capacities to ensure the accuracy of LTV values – including typically on-site appraisal at loan origination and periodic desk-top portfolio reviews;
- Credible and time-predictable foreclosure process;
- Availability and utilization of appropriate insurance products and mechanisms, including coverage for lender credit risk, property hazards and borrower health.

... ensure that lenders consider more conservative underwriting criteria to compensate for situations where the underlying risks are higher.

For example, more conservative underwriting standards (e.g. LTV ratios or servicing requirements) could be considered where:

... there are considerable risks that an asset price bubble is building up in the property market as a whole or in specific segments or geographical areas;

... the loan is in a market segment that, compared with other mortgage loans in that jurisdiction, tends to perform worse than average in a property downturn (depending on the jurisdiction, examples of such a market segment might include luxury apartments, buy-to-let investors, second homes, cash-out refinancers, etc.)...

... Jurisdictions may want to impose absolute minimum levels of particular dimensions of mortgage underwriting standards below which no mortgage would be deemed acceptable, irrespective of the settings across the other dimensions.

Financial Stability Board *Mortgage Underwriting Principles (2012)*

Particular attention should be exercised by regulators and supervisors to risk layering or adding several risk factors within the same transaction, which is one of the most damaging practices associated with the US sub-prime market.

Broadly, lenders should establish a certain normalized “prime” level of risks associated with their mortgage portfolio – both in terms of borrower profile and loan terms and conditions. Variations of the products should strive to maintain a symmetrical approach to modifying such level, e.g. when a riskier borrower strata is targeted, loan features should offset such increased risk, and not simply, as the common practice, add more credit risk by increased interest rate.

Compensatory measures may include modified underwriting criteria, enhanced loan servicing, avoidance of FX, hybrid and ARM features, requirement for additional or modified insurance

coverage, etc. Examples of such asymmetric combinations include:

- ARM loans to borrowers with irregular incomes or in combination with high LTV and DTI;

- gimmicks used to make debt affordable to lower income borrowers but that often have a delayed, time bomb impact of their solvency such as bullet repayments, repayment profile involving negative amortization or initial teasers rates;
- FX loans in combination with high LTV and DTI.

In many countries, credit enhancement instruments are used to transfer part of the credit risk from the originator balance sheet, thus facilitating lending to households with a higher than average risk profile. There are two main approaches:

- first loss coverage of high LTV loans, with the goal to allow first time purchasers with little downpayment to borrow;
- Guarantee schemes, generally backed by governments, targeting households below certain income levels.

Careful consideration must be given to the robustness and effectiveness of risk transfer mechanisms. In several countries – e.g. USA, Australia, and Mexico - the effects of the financial and economic crisis or modified prudential requirements have led to the disappearance of credit enhancers. Regulators need to assess the strength of the providers of credit enhancement before taking it into account, in particular in the prudential framework for mortgage lending.

The conditions for implementing new rules or guidelines set up by regulators are of utmost importance for their success. The impact of reforms should be first tested and their implications for both lenders and borrowers assessed. Cost benefits analyses are important to avoid imposing excessively costly regulation that would have the perverse consequence to repress lending. Also, reforms affect unequally targeted institutions, and these differences must be taken into account if they may harm the functioning of the market. Furthermore, it is important that disclosure of origination practices be required from lenders by supervisors, who should also ensure their dissemination among investors to enhance market discipline.

In addition, regulators must make sure that enough resources will be available to monitor the implementation of these new standards, a component of any significant reform that is critical for the effective prevention of future crises.

## 5.6 Special Servicing and Portfolio Management

Before the significant negative events of 2008-2009, there have been material lapses in the risk management policies and practices related to mortgage lending in many ECA countries, in part due to availability of funds from the parent EU banking groups or retail deposits as well as overall boom in the mid-2000s and the banks' race to the market share as well as to the bottom of the quality. This situation is particularly acute in such countries as Ukraine, Poland, Serbia, and Hungary, Kazakhstan. In the context of large mortgage portfolios with risky characteristics of high LTV, FX, tracker ARMs, unknown DTI – overlaid with declining property prices and rising unemployment - the market stakeholders are advised to consider robust and aggressive portfolio management activities.

Additionally, the authorities and the banks together should consider proactive, forward looking approach

### Stylized Special Servicing Process

*Watchlist* – a preventative measure of portfolio risk management to identify loans which are at risk of becoming delinquent (although currently performing) due to a variety of borrower or property characteristics, e.g. collateralized by homes located in a mono-industry or otherwise economically depressed towns; with high current actual LTV, etc.

*Workout* – a process of dealing with the actually delinquent loans, which involves direct at times intense interaction with the borrower with the objective to bring the loan back to current status. Broadly, there are three possible workout outcomes:

- Resumption of the payments without altering the loan terms and conditions;
- Modification of the loan terms and conditions so that the payments are made more affordable to the borrower who resumes servicing the loans;
- Foreclosure, i.e. termination of the loan and sale of the property, which actually can take many forms, including voluntary sale by the borrower.

to dealing with delinquent mortgage loans (both stock and future originations) up to and including foreclosure and borrower eviction. The special servicing policies and practices need to be addressed from the market stability and further development perspectives.

The important balance to strike is between predictability of the special servicing process – both under normal, as well as emergency circumstances - and the strength of the collateralization of the real estate which is the cornerstone of mortgage lending.

This balance has both institutional and macro policy implications, as at stress times the impact of the imprudent foreclosure actions by a number of individual institutions both quickly spread among the industry and also impact the housing markets on MSA scale. Note the examples of Atlanta, GA when in 2010 over 66% of the housing supply was in

foreclosed properties put for sale by the lenders or of the robo-signing scandal in the US among virtually all major mortgage lenders and servicers<sup>36</sup>.

Traditional pre-crisis loan servicing and special servicing paradigm included speedy and efficient foreclosure and eviction concepts – in a situation where the loan workout proves challenging either due to unwillingness of the borrower to cooperate or his inability to service the loan further. In ECA jurisdictions the degree of legal, procedural and judicial protection of the creditor rights to foreclose on the property and evict the borrower was used as a measure of the development of the mortgage enabling environment and of the market overall.

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<sup>36</sup> See for example [www.housingwire.com/news/2010/10/08/robo-signer-effect-housing-market-reaching-critical-mass](http://www.housingwire.com/news/2010/10/08/robo-signer-effect-housing-market-reaching-critical-mass) and [business.time.com/2010/10/19/will-bankers-go-to-jail-for-foreclosure-gate/?xid=rss-topstories](http://business.time.com/2010/10/19/will-bankers-go-to-jail-for-foreclosure-gate/?xid=rss-topstories) and [http://en.wikipedia.org/wiki/2010\\_United\\_States\\_foreclosure\\_crisis](http://en.wikipedia.org/wiki/2010_United_States_foreclosure_crisis)

The experience of the US, particularly in California, Florida and Nevada, where large scale foreclosures in 2010 have significantly depressed the real estate markets, is illuminating the asymmetry between myopic lender interests (coupled with a weak regulatory environment and deed of trust legal collateralization mechanisms) and market stability objectives, even on a MSAs scale. Additionally, massive foreclosure fraud was uncovered by the US authorities as the estimated 84% of the 2009-2010 California foreclosures, according to some studies, had one or more clear violations of the law.<sup>37</sup>

Such cases present a supervisory and a policy challenge – both at the time of market unraveling as well as on a forward looking basis as the stakeholders lack guidance from the regulator in terms of possible policy response in case of a significant increase in borrower delinquencies.

The authorities are encouraged to consider policy options in a comprehensive context:

- *Emergency Special Servicing Situation*

A cyclical negative event in the real estate market coupled with high unemployment and thus elevated mortgage delinquencies and defaults, has posed a challenging question to ECA lenders and regulators. The essence of the dilemma is simple – should the borrower protection considerations prevent the lenders from foreclosing on residential properties as provided for in the mortgage contracts, even on a massive scale? Should the social cohesion and fairness (as unemployed borrowers simply have no means to service the loans through no fault of their own) considerations affect judicial and policy actions? And, in the context of significant negative HPA, would such large scale foreclosures and evictions be efficient and serve to minimize the losses to the lenders – and thus be rational from their point of view?

In several ECA countries the authorities took a strong stance on the issue above – and implemented moratoriums on mortgage loan foreclosure and eviction, e.g. Lithuania, Russia, and Hungary. In other countries, notably US and UK loan modification measures have also been implemented in addition to regulatory or industry-driven moratoriums, e.g. Fannie Mae broadened forbearance borrower eligibility criteria to unemployed, thus allowing workout to proceed instead on foreclosure.

Any drastic and sudden measures, such as imposing either a full or partial (limited to non-judicial as in Russia) foreclosure prohibition may be appropriate for the acute phases of economic and mortgage market crisis and should be candidates for lifting as soon as feasible. In particular, extended periods of relaxed payment discipline could cause long term portfolio performance issues for the lenders – even when the income and HPA situation has returned to trend levels.

Furthermore, authorities should consider targeted, specific requirements for lender-initiated default proceedings – for example based on the currency of the loan - and thus limit the potentially “triple” negative impact of lower employment, currency devaluation and depressed HPA on the borrowers.

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<sup>37</sup> See 2012 “Foreclosure in California: Crisis of Compliance” report by the Office of the Assessor-Recorder, SF, CA. Broadly, alleged foreclosure fraud in the US in 2008-2011 has been widespread and resulted in a number of settlements by the industry, e.g. 2013 settlement between the OCC and the Federal Reserve on one side and the Bank of America, Wells Fargo, JP Morgan Chase, Citigroup, MetLife Bank, PNC Financial Services and Sovereign on the other side - affecting 3.8 Million homeowners who may receive up to USD125,000 for cases of wrongful foreclosure. Another settlement of USD 25 Billion between the regulator and a group of 5 banks was related to largely same allegations.

In any case, foreclosure moratorium and similar emergency measures should have clearly defined terms and conditions as regards to timing, potentially location and loan type (e.g. available to owner-occupied homes only) and similar features to increase transparency and predictability for the market and public at large.

- *Forward Looking Policy Measures*

Broadly, lender policies and practices, appropriately supported or guided by regulation, should focus on bona fide attempts to keep the borrower, i.e. a robust proactive watchlist practices coupled with multi-stage modification programs. The former is very important, as allows both parties – the lender and the borrower – to address potential difficulties under less psychological and financial stress compared to the actual delinquency and thus have a better chance of arriving to a solution.

Better practices in effective and long term loan modification include:

- In cases of payment holidays or deferrals - maintenance of at least (some) interest payment throughout the borrower difficulties – to encourage payment discipline and habit and avoid capitalization of unpaid interest and thus increasing the loan principal;
- Modifying banking loan loss provisioning regulation to allow for certain types (or temporarily) of loan modifications not to trigger severe negative categorization of the loan and thus provisioning of 100% (or more) capital.
- Conversion of the loan to a less risky and more prudent mortgage product – for example from FX to LC or from ARM to FRM. This, of course, requires suitable interest rate and LC funding to be available to the lenders and should not lead to an absolute increase in the periodic mortgage payment – a challenge in a widespread economic slowdown in ECA. However, regulatory requirements to, for example, lengthen the ARM reset terms, may in part serve the same purpose. A significant ex-ante impact analysis should be done, as well as measures should be taken to ensure gradual availability of LC funding sources,
- Avoidance - in appearance or substance – of the measures that would lead to the mortgage portfolios being nationalized, as borrowers may fall under the impression, frequently justified, that the State would not foreclose and evict in cases of defaults.

From the policy and regulatory perspective, it is possible to incentivize the lenders to pursue robust watchlist and modification practices by certain capital allocation and provisioning measures, consumer protection and disclosure requirements, aggressive compliance measures. It is critical for the regulator to maintain detailed and complete HPA awareness as well – overlaid with the aggregate mortgage portfolio evolutions to be in a position to assess the situation and react with targeted policy measures as appropriate.

- *Macro watchlist policies*

As mentioned before, several ECA countries have a significant stock of 2007-2010 vintage mortgages which likely were underwritten to poor risk management practices and policies. Even if the significant NPLs have not materialized in some such countries, e.g. Poland or Russia the regulators are well advised to proactively approach the issue of the risks of such portfolios and not to wait until the industry will show very high and unsustainable delinquencies as is the case in for example Kazakhstan, Ukraine.

A possible approach would be to scale the micro portfolio management practices to the macro, country level and codify some of the better techniques into policy. For example:

1. *Ex ante facto impact analysis.* The regulator should request appropriately stratified mortgage portfolio data from all of the significant lenders [80 percent of the aggregate portfolio] with a particular focus on the lenders with the largest relative exposures to the sector. The grouping should clearly show parts of the portfolio with high potential risks, especially in the layering of risk factors, e.g. FX, LTV in excess of 80%, properties located in economically depressed areas or in MSAs with significant HPA declines, borrowers from the industry sectors that have experienced significant unemployment increases, etc. Additionally, lenders should be consulted on their risk management and analytical observations as regards to credit risk drivers.
2. *Policy or regulatory measure selection.* Depending on the findings of the previous step – volumes, locations, number of lenders affected, etc. – the regulator and the lender community should jointly design appropriate loan modification action plan. This plan should include standardized modification programs and the required regulatory amendments – likely temporary. For example, in the current environment of low interest rates, the lenders may be encouraged to extend the ARM reset periods from one month to several years or to implement smoothed mechanisms or the interest rate calculation. The regulator may provide for appropriately beneficial treatment of thusly modified loans in terms of capital charges or liquidity ratios.
3. *Implementation.* The selected procedures need to be made public with appropriate consumer awareness campaign; frequently regulator’s participation in such activities raises the perceived level of trustworthiness in the eyes of the public and thus may increase effectiveness.

## 5.7 Asset Management Companies (AMC)

Many countries are still looking for solutions to manage the existence of a significant amount of legacy assets, mostly mortgages and real estate loans and assets. In some economies the exposure to the real estate and mortgage sector was based on investments in mortgage-backed securities and other structured products with underlying real estate exposure; in others, the exposure was directly to mortgages and developers' loans. The different channel of exposure plays an important role in the variety of policy management decisions to be adopted. What are the key factors to be considered in the creation of an AMC?

Underlying the different policy options available to manage the situation, there is a common understanding that economies with a significant real estate bubble need to recognize prospective high losses on developer and mortgage loans. In those countries with "market value toxic assets", the impact is immediate and transparent, but in those cases with a high loan portfolio exposure (accounted at "book value"), the recognition of a substantial price decline requires more time and therefore in many cases the creation of special vehicles to manage it.

The creation of the so-called "Bad Banks" or "Asset Management Companies (AMC)" were first implemented on a limited basis in the 80s and 90s but its use increased significantly since the beginning of the financial crisis in 2007-08, particularly in Western Europe. The AMC approach was envisaged as a way of cleaning up balance sheets, allowing financial institutions to get rid of problematic assets and thereby continuing with their lending activities.

Although there have been many different schemes –depending on the size, the legal framework, the assets scope, or the capital and funding structure, and there are no two similar cases in the world, the initiatives undertaken can be summarized in two types.

- Solutions in which the "unhealthy" financial institution is internally split into a "good" and a "bad" financial institution, setting up a new division/segment within a fully functional operational financial group;
- Creation of a separate legal entity, normally with the support of the State, into which troubled financial institution/s transfers non-core assets (REO, performing or non-performing loans)<sup>38</sup>.

First, in both cases the segregation allows the remaining "good financial institution" to refocus on its core activities. Second, even in those cases where the AMC is a separate legal entity, it is common to have servicing agreements with the original institution. State support for the creation of an AMC is a common feature, although its degree and nature differs significantly depending on the legal and regulatory framework, the systemic impact and the financial health and policy objective in each country.

Beyond those common factors, AMC structures differ significantly as a result of different combinations of the following aspects that must be analyzed and defined<sup>39</sup>, e.g. number of contributing institutions,

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<sup>38</sup> An analytical theory of different bad bank schemes –an outright sale of toxic assets to a state-owned bad bank and a repurchase agreement between the bad bank and the initial bank- can be found in Hauck-Neyer-Vieten (2011). They conclude that although both schemes can reestablish stability and avoid a credit crunch, an outright sale will be less costly to taxpayers than a repurchase agreement only if the transfer payment is sufficiently low.

<sup>39</sup> More detail on international experiences and the Spanish case can be found in Garcia Mora, A. and Martin, E. (2012): "Bad banks: International experiences and the Spanish case", Spanish Economic and Financial Outlook, Vol. 1 No. 3, September.

mandatory/voluntary transfer of assets, scope, volume and pricing of assets to be transferred, legal framework, capital and funding sources of the AMC, etc.

#### **Pricing asset transfers**

One of the most critical aspects in the financial design of an Asset Management Company (AMC) is the price at which assets are transferred from the financial institutions to the AMC. The financial viability of the AMC requires valuations at least similar to the market conditions these assets would have to face when sold.

However, here arises a controversial situation, since the lower the transfer value, the higher the impairment losses that would have to be recognized by original financial institutions and therefore the greater the recapitalization needs.

A long-term economic value for those assets to be transferred is usually defined as the fair value. In Ireland and Spain it supposed the recognition of a haircut between 40 and 60% of the original book value, depending on the type of asset.

*Pricing methodology underlying asset transfers merits further analysis and consideration.* Important considerations are book vs. market value and haircuts applied. Normally, when assets are transferred to a bad bank, these are likely to have deteriorated significantly in value and potential buyers are few in number.

As a result accurately estimating the value of assets remains challenging, and in some cases (e.g. Ireland or Spain), a theoretical long-term economic value has been defined, instead of applying directly book value (very far from reality) or market value (inexistent). Finding the right valuation is important for maintaining market credibility and ensuring the

financial stability of the new vehicle.

The authorities are encouraged to consider AMC as a last resort measures, as global experience shows that achieving fiscal efficiency and improvement in lenders' practices is challenging. Furthermore, in the absence of a deep liquidity for the assets [or derivatives] in a given market the initial fairness and long term sustainability of a given AMC may be questionable.

In ECA context this is particularly true for real estate assets as such, e.g. REO homes, and for mortgage loans. In the absence of a functioning whole loan transfer legal and institutional framework – and the liquid market for these assets – AMC may be doubly hit with very expensive initial transfer of assets to its balance sheet and long term challenges in both working them out and ultimately selling them to the market.

An additional consideration should be given to long term incentives for the lenders to participate in the operations of the AMC – at least in the process of working out the assets. This mechanism may take the form of a delayed payment or similar types of “skin in the game” techniques which are presumed to limit the incentive of the lender to “offload and forget” the assets.

Ultimately, a private sector solution – which minimizes the exposure of taxpayers to the problems of the private banks – is encouraged to be considered by the ECA authorities [if AMC at all is being discussed in a given country]; spending fiscal resources to bail out private banks may not be a sustainable or defensible approach.

International examples of “Bad Bank” structures						
Bank name	Country	Separate entity?	Total assets	Ownership	Asset type	Transfer valuation basis
SAREB	Spain	Yes	EUR64B	49% Govt. 51% Private	Mortgages, RE loans and RE assets*	Haircut range 30%-80%, depending on asset type
Erste Abwicklungsanstalt	Germany	Yes	EUR50.8B	Majority State of NRW	Risk exposures and non-strategic portfolio of WestLB	Book value
FMS Wertmanagement	Germany	Yes	EUR212.5B	Gov.	NPL and non-strategic assets of Hypo RE	Book value
NAMA	Ireland	Yes	EUR30.7B	49% Gov.; 51% Private	Non-core assets of 5 FIs, mostly secured by properties	LT economic value. Avg. haircut 57%
KA Finanz	Austria	Yes	EUR 14.9B	Gov.	Non-core assets	No transfer
Amcon	Nigeria	Yes	NA	Gov.	NPL from 22 banks. Different sectors	Loans secured by shares = shares value  Loans secured other collateral = market value  Unsecured loans = 5% of principal
SNB	Switzerland	Yes	11.8	Swiss Natl. Bank	Illiquid assets from UBS (US RE securities)	Market value (30/09/08)
Royal Park Investments	Belgium	Yes	9.1	Gov. (44%), Ageas (45%), BNP (12%)	ABS from Fortis (mainly RE)	(43% haircut on face value)
RBS	UK	No	104.7	Majority UK Gov.	Non-core assets	No transfer
Citigroup	USA	No	269.2	Publicly listed	Non-core assets	No transfer

Source: Fitch Ratings (2012)

## 5.8 RMBS Label and Restarting Private Mortgage Securitization

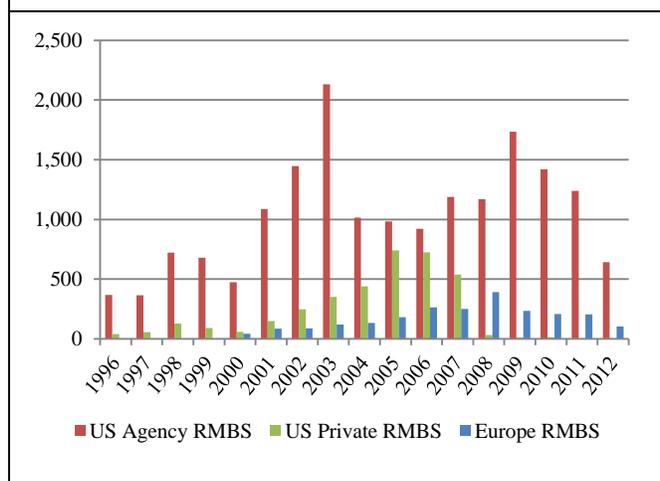
Since 2007 the global private mortgage securitization markets have been closed due to lack of investor interest in the asset class. Although origination volumes have dropped in light of the global financial crisis, high unemployment and economic slowdown, without RMBS lenders have fewer options in obtaining long term capital market funding. In ECA this is relevant for countries where RMBS issuance was taking place before the crisis - Russia, Kazakhstan and Ukraine. Although in Russia securitization has been continuing, in other countries it has ceased. As a consequence, borrowers are faced with inefficient mortgage product features and high pricing.

Residential Mortgage Backed Securities (RMBS) are structured debt instruments that transfer cash flows from a pool of mortgage loans to capital market investors who purchase tranches of such securities. RMBS are created via a series of transactions which move the mortgages from the balance sheet of the originator to a balance sheet of another company (Special Purpose Vehicle - trust or a corporation with a narrowly defined corporate charter), which does the primary placement of RMBS.

RMBS have been widely used in US and other countries, such as Spain, UK, The Netherlands, Belgium, Italy, Australia, France, and Japan. Relative to mortgage lending volumes, the share of funding provided by RMBS varies by country, but commonly is between 10% and 60% in larger markets. In 2009 nearly 19% of the outstanding US book of real estate and consumer credit loans worth USD 18 trillion was

funded by private label securitization. In Eastern Europe, RMBS have been used in Russia (ongoing), Kazakhstan and Ukraine (pre-2008).

**Figure 9. US & Europe RMBS issuance 1996-2011 [EUR B]**



Source: SIFMA, WB calculations, Europe RMBS figures derived from aggregate securitization volume

Figure 9 illustrates RMBS issuance dynamics in US and Europe before the acute phase of the financial crisis. The global growth of securitized products peaked in most mature jurisdictions in 2007 before declining rapidly due to a lack of liquidity in secondary markets and a decline in primary issuance. Note clear countercyclicality in US public issuance activities since 2003.

In the context of emerging economies with young mortgage markets, the above benefits for lenders and investors were particularly pronounced. Mortgage lenders typically lack

balance sheet or capital strength to carry significant duration gaps created by increased mortgage loan portfolios. This in particular affected jurisdictions with a large number of smaller regionally dispersed lenders, e.g. Mexico, Russia, and Kazakhstan.

Additionally, “plain vanilla” RMBS were viewed as a relatively simple and safe mechanism to introduce a low risk asset class to local institutional investors which lacked diversification in private fixed income instruments. International investors were also interested in the arbitrage between performance of “cherry picked” mortgage loans in the collateral pools and perceived high legal, country or transactional risks which skewed RMBS yield/risk performance vis-à-vis other debt instruments. In the background of

underdeveloped local securitization legislative and statutory framework, cross border RMBS transactions provided lenders with clear capital, accounting and balance sheet benefits.

<b>RMBS Benefits for Originators and Investors</b>	
<b>Originators</b>	<b>Investors</b>
<b>Funding diversification.</b> RMBS provided a stable and low cost source of financing and allowed greater access to the credit markets. It reduces lenders' reliance on retail deposits and issuance of unsecured commercial and term debt. It allows smaller, un- or low rated institutions to access the capital markets based on the credit quality of the mortgages they originate - to access financing at rates appropriate for 'AAA' rated firms.	High credit quality instrument (for senior tranches), portfolio diversification, and attractive yields relative to instruments of comparable credit quality.
<b>Risk transfer.</b> RMBS transforms illiquid mortgages that otherwise would be held in a bank's portfolio, into marketable securities. Issuance of RMBS is one means of transferring credit, liquidity, interest rate, prepayment and market risk associated with that collateral to investors. Ability to achieve balance sheet asset derecognition varies by jurisdiction; e.g., it was easier to achieve under US or other local GAAPs than under IFRS.	RMBS investors could avoid exceeding concentration limits, both regulatory and internal limits on exposures to a single name.
<b>Revenue generation.</b> RMBS have been a means for generating revenues, e.g. origination fees, underwriting and structuring fees, selling RMBS credit and liquidity enhancements. Issuers also created revenue streams through credit arbitrage - positive spread differential between longer-term assets and shorter RMBS bonds.	RMBS also facilitated portfolio risk management as holding securitized assets may have had a low correlation with other portfolio components, e.g. equities and corporate bonds.
<b>Regulatory capital and financial reporting.</b> Removal of long term mortgages from balance sheet improved financial ratios, such as the LCR or ROA, and reduced balance sheet duration gap and exposure to capital provisioning and reserves in case of mortgage portfolio performance deterioration.	RMBS risk-adjusted return was typically higher relative to a similarly rated sovereign debt, which allowed investors to achieve higher returns per rating.
<i>Source – IMF, WB</i>	

A number of countries have also enacted specific legal and regulatory RMBS frameworks with a view to establish a high quality instrument suitable for institutional long term investors, such as pension funds and insurers.

<b>Key drivers for 2008 private RMBS stoppage</b>
Misaligned incentives of transaction parties, weak regulatory oversight of structures and actors;
Weak underwriting practices, absence of market-based quality control mechanisms or standardization;
Exceedingly complex structures, transaction documentation and investor disclosure;
Deficiencies in rating agency methodology and governance;
Cyclical mispricing of risk, including unreasonable portfolio performance expectations for high risk products;
Sudden and significant deterioration of credit quality of sub-prime mortgage loan portfolios

RMBS, particularly in developed markets with large volume of complex products, were affected by misaligned incentives or conflicts of interest. These refer to situations where some participants in the securitization chain have incentives to engage in behavior which is not in the interests of others. Certain market idiosyncrasies may have facilitated such misalignment, e.g. the evolution of the originate-to-distribute model, the involvement of a relatively large number of parties in transactions, complex yet opaque investor disclosure and transaction documentation, and not easily deducible “risk path” between loan originators and investors.

Issuer and lender compensation programs, which emphasized volume and growth, overshadowed concerns about the quality of underlying mortgages. Investors, regulators, as well as rating agencies came to rely heavily on the representations and warranties made by originators. Investors chose to respond to growing product complexity by relying heavily on

credit ratings rather than conducting appropriate due diligence. Additionally, lenders had incentives to choose riskier assets in constructing asset pools.

On the investor side, portfolio managers and hedge funds were incentivized to maximize short-term gains and yields without considering long-term risk. Investors failed to assess the RMBS risks adequately in part due to the information asymmetry which tended to favor the supply side and in part due to own institutional capacity constraints.

Main themes of post crisis global initiatives to re-start the RMBS markets

- Re-align incentives of transaction parties, e.g. originator risk retention, rating agency governance improvements, reduced reliance on credit ratings;
- Improve quality, knowledge and monitoring of the mortgage assets, e.g. loan level disclosure, “qualified mortgage loans”, strengthened auditing and due diligence;
- Simplify and standardize RMBS structures, e.g. improved transaction documentation, uniform definitions of key terms, etc.

<b>Select post crisis securitization policy and regulatory initiatives</b>	
Risk retention and alignment of incentives	<p>In EU The article 122(a) of the Capital Requirements Directive (CRD II) includes a minimum risk retention rate ... which shall not be less than 5% of the total issuance. Similar risk retention requirements will be included in forthcoming Directive 2009/138/EC known as Solvency II.</p> <p>In the US Section 941 of the Dodd-Frank Wall Street Reform and Consumer Protection Act (the Dodd-Frank Act) requires a securitizer to retain at least 5 % of the credit risk.... The “safe harbor” provisions of the FDIC Securitization Rule impose a 5 % credit risk retention requirement for bank-sponsored RMBS. Pools consisting of high quality Qualifying Residential Mortgages may be excluded from such requirements.</p>
Transparency and disclosure	<p>2009 IOSCO guidance on increasing transparency of risk verification and assurance practices and improving asset pool performance information available to investors on an initial and ongoing basis.</p> <p>In the EU new disclosure requirements (2010 CRD amendments) require that prospective investors have readily available access to all materially relevant data on securitization structures. The ECB and the Bank of England have launched initiatives to implement new disclosure requirements in the context of collateral eligibility frameworks. The first EU loan-by-loan RMBS template was published by the ECB in 2010.</p> <p>In the US, the Dodd-Frank Act has provisions relating to disclosure for ABS issuers. In 2010 SEC proposed revisions to the “Regulation AB”, which included new requirements to increase the transparency and standardization in the private ABS market.</p> <p>In Japan, the supervisory guidelines for securities companies were revised in order to ensure the traceability of underlying assets of securitized products in April 2008.</p>
Credit agency governance and regulation	<p>In Japan in line with IOSCO’s revised code of conduct (2008) rating agencies are required to publish information that may be deemed valuable in an assessment by a third party of the appropriateness of the credit rating ...</p> <p>In the US and Europe, rating agencies will be subject to increased disclosure requirements, to increase transparency in connection with structured finance ratings.</p>
Banking regulation	<p>Basel III includes elements that will significantly affect the incentives for banks to securitize loans and invest in RMBS, in part via significantly increased RMBS risk weights. To address the lack of investor due diligence and to deter them from relying solely on external credit ratings, the Basel framework requires banks to meet specific operational criteria in order to use the risk weights specified in the Basel II securitization framework. Solvency II will also establish new capital requirements for the insurance sector with increased risk-sensitivity and make investment in RMBS potentially less attractive to insurers.</p>

## Creation of a Label

In ECA RMBS are present in Russia, Ukraine and Kazakhstan. Post 2008 most of the private issuance stopped and the remaining placements have been in Russia from the Agency for Home Mortgage Lending (AHML). Notwithstanding limited presence of this instrument, RMBS can play an important role in mortgage industry's spectrum of long term wholesale funding.

While all of the above discussion is relevant for emerging markets, the initial step that market stakeholders could undertake is to thoroughly assess the deficiencies in the existing RMBS framework. The overall goal of such assessment would be to identify areas of securitization policies and practices that may require changes along the lines discussed above.

### Private RMBS Restart Agenda

1. A thorough market assessment, as not all global practices and issues may apply.
2. Achieve high quality in Asset, Instrument and Market.
3. Convey quality with transparency, disclosure and standardization.
4. Introduce a Label to reflect the holistic nature of the changes and to further elevate the RMBS quality.

### What is RMBS Label Quality?

Mortgage Asset Quality, i.e. the degree of standardization of transaction documentation, terminology, underwriting and servicing practices, foreclosure regime and, importantly, availability of loan level analytical data.

RMBS Instrument Quality, i.e. trustee quality and functionality, transaction documents in terms of predictability and transparency, initial and ongoing investor disclosure, the servicer regime, including the framework and rules for services substitution.

Market Operations Quality, i.e. quality and transparency of the primary and secondary trading, e.g. price formation, transparency of market movements, incentives for issuance participants, including rating agencies, investment regime for RMBS vis-à-vis other instruments.

An important aspect of RMBS re-start is creation of the "Label", i.e. a high quality framework of securitization. Establishing a RMBS Label is a complex initiative with elements in virtually all aspects of mortgage securitization. The Label brand name recognition and value should be such that its potential loss would be a deterrent to any issuers from being lax on origination, servicing and provision of transparency. It is also important that introducing a Label allows for simultaneous (i) strengthening of existing statute or law, e.g. timely deliverance of information, as well as (ii) promotion of improvements before they are codified, e.g. trade transparency, loan servicing pooling and quality of service agreements.

RMBS certified to carry the Label can be considered for certain regulatory preferences, particularly in terms of investor portfolio management and capital allocation. Investor confidence in RMBS has severely diminished and a re-start would require increasing actual and perceived quality of the instrument. Given that RMBS instrument performance relies on the performance of the underlying assets, the quality of the mortgage loans and availability of information about such quality are paramount.

Specific better practices include:

- *Eligible mortgage loans should be of high, consistent and verifiable quality.* Collateral quality shall be based on auditable information and process; it should be perceived as high by investors and rating agencies. The quality of the mortgage pool shall be credibly and transparently assessed and certified before issuance as part of enhancing quality of the pre-issuance process. Investors shall be able to perform, should they so wish, certain verifications. Pre-issuance audits shall pertain to the conformity of loan files - in terms of data and loan quality – to the representations

made by transaction sponsor. Current, complete and accurate data on the mortgage loans is vital and should be on loan level and updated at least monthly. Loan level trustee reports during the life of Label RMBS instrument and data on the pool performance should be available from origination of individual mortgage loans.

- *Legally or statutorily established limits on LTV and DTI.* Additionally to actual numeric limits, the quality of assessing the ratios is very important and raises the issues of real estate appraisal industry, income verification and overall underwriting policies and practices. Standardized terminology is critical, as RMBS transactions may involve multiple loan originators, i.e. all market stakeholders should have a common understanding of key performance and analytical notation, such as delinquency, LTV, servicer.
- *Label RMBS structures can be standard and plain vanilla,* possibly 3 tier – senior, mezzanine and equity. This facilitates external credit enhancement mechanisms and allows for straightforward risk retention by the originators, caters to different types of investors and eases analytical modeling and pricing. External Label RMBS credit enhancement features, e.g. guarantees, liquidity registers, etc., should be transparent and standardized so that investors have the ability to evaluate their impact on the credit quality of the transaction. Legal agreements used in Label RMBS transactions should be standardized and created using “a by reference” model, i.e. pooling and servicing agreements, whole loan sales agreements, servicing and special servicing documentation, etc.
- *Investors and market participants should have unhindered and free access to accurate, timely and complete RMBS performance information.* This includes loan level at securitization static pool data, periodic loan level disclosure, and investor reports with relevant information.

RMBS transactions have the impact on the financial markets and on mortgage funding only in case there is sufficient volume of primary and secondary trading. Market infrastructure should support transparent price formation and absence of collusion at issuance.

Additional market operational quality features worth considering are:

- Back up servicer shall be provided for in the transaction documentation including scope of its services and remuneration.
- While market making in relation to Label RMBS may be impractical for all tranches, “benchmark/reference tranches” of particularly high quality would benefit from it.
- Statutory portfolio allocations of key institutional investors should be de-linked from ratings per se, instead include quality and instrument type guidance.
- Particularly relevant to mortgages, whole loan sale and purchase transactions should be subject to a neutral legal and regulatory framework, particularly in such aspects as taxation regime, rights re-registration process, servicing transfer, as well as disclosure and transparency. In this regard, SPV establishment and operations play an important role, as economic and financial efficiency of whole loan transfers to such companies as part of a securitization transaction critically affect the Label securities.

## 5.9 Regional Funding Arrangements

Many ECA countries face challenges in sustainable growth of their mortgage markets – due in part to sub-optimal characteristics - pricing and duration - of available funding. For some countries, development of local capital market mortgage funding framework may be impractical given the nature of the legal and regulatory environment, availability and interests of domestic investors, as well as current and projected volumes of lending and, subsequently, RMBS or covered bond issuance. Should countries seek cooperative arrangements for capital market mortgage funding?

The funding structure in ECA is mainly characterized by: (i) the prevalence of deposits, (ii) the prevalence of foreign currency resources in the CEE, a direct consequence of the market share of subsidiaries of foreign banking groups; (iii) the importance, in this case, of credit lines by parent companies; (iv) the sporadic and limited use of capital market instruments: mainly securitization and agency bonds in a few countries, and covered bonds in 4 CEE countries. It must be stressed among this later group that in Hungary, the development of covered bonds was largely linked to generous tax relieves or direct subsidies, a non-sustainable factor that has subsided; and in Poland, covered bonds are mainly used for commercial real estate, which is the primary activities of the specialized lenders authorized to issue this instrument.

*This structure exposes financial systems to several risks that can become a stability concern once mortgage lending becomes a relatively significant part of banks' portfolios.*

- Liquidity risks stemming from maturity mismatches and from the uncertain permanency of foreign parent banks' support – it can be either a comfort to local lenders in a stressed situation, or can also amplify such a crisis, or be a transmission vehicle of a crisis from the home to the host country;
- Foreign exchange risks – mainly borne by borrowers as dominance of foreign (EU) lenders in many Central Europe jurisdictions coupled with absence of local currency funding mechanisms lead to mortgage lending in foreign currency, mainly EUR and CHF.
- Interest rate risks borne by the borrowers as adjustable rate mortgages are prevalent in most countries. In countries with developed secondary markets fixed rate mortgages are present to a large extent and lender interest rate risk is transferred to investors via RMBS or agency paper.

The need throughout the region to increase the use of capital market funding, and do so in the currencies of borrowers' incomes, is highly advised for financial stability, as well as market development purposes.

In some cases, improving the regulatory framework can enhance the use of a particular capital market funding instrument – this especially applies to covered bonds. Securitization in general needs a significant overhaul to restore global investors' confidence and improve the functioning of markets – a chapter of this Paper is dedicated to it.

But often, the inability to mobilize enough resources from the local capital market reflects not the deficiencies in the legal and regulatory environment, but rather the constraints linked to the size of the economy or of the institutional investor universe. In such cases, development of cooperative structures at

the regional level to help finance local markets more efficiently may make sense, and the feasibility of the concept is worth exploring<sup>40</sup>.

*Such regional liquidity structures have two main functions:* providing mortgage originators with long term resources mobilized on bond markets; and offering short term support to help mortgage lenders to go through temporary liquidity shortfalls, an important tool for managing crises.

While business models and operational details of such facilities may vary, key elements would consist of purchasing rights on mortgage loans originated in individual participating countries – to a centralized facility – and issuance by such facility of a capital market instrument. Issuance may take several common formats, such as plain corporate debt (“agency paper”), RMBS or mortgage covered bond. Alternatively, in a simple “liquidity” version, such facility would extend long term corporate loans to participating mortgage lenders, thus alleviating their liquidity ratios, maturity mismatch and mitigating interest rate risks.

**The benefits of a regional liquidity facility:**

Increasing the scale of capital market issuance would lower transaction costs and enhance primary and secondary trading liquidity of bonds, thus reducing illiquidity premiums;

Partnerships between several institutions, possibly with support of some form by participating governments, would elevate the credit quality of bonds relative to debt of individual lenders;

Setting standards for loans and lenders to be eligible to a regional mechanism would promote the soundness of mortgage lending, indirectly contributing to the prevention of market excess or disequilibrium;

Providing the lenders with otherwise unavailable funding diversification and, subsequently, the households with more mortgage product options.

Note that to achieve compliance of covered bonds with the EU framework – UCITs and Insurance Directives, Capital Requirement Directive (under revision), and ECB repo-ability criteria (for EU assets) – the issuer would have to be a credit institution (a bank), which would dictate certain elements of the regional facility design and operations.

Such regional facilities may be broadly viewed as “expanded” national liquidity arrangements, which are common globally and in ECA, e.g. in Armenia, Azerbaijan, Kazakhstan, Russia, Ukraine. In fact, presence of national facilities in participating markets may facilitate creation of a regional entity, as local mortgage lenders would have certain experience in

interacting with a liquidity provider and elements of capital market framework are likely in place.

Of particular importance for appropriate business model and design of a regional liquidity facility is a clear understanding of lender needs and constraints in participating jurisdictions. Thus, for example, markets with a relatively large number of smaller and less capitalized lenders might benefit from whole loan sales, balance sheet reducing transactions; while larger banks with significant capital strength might prefer simpler lending arrangements.

As with any capital market funding activity, the mechanics of mortgage loan servicing is critical and its complexity increases with inclusion of multiple, potentially materially disparate markets with specific servicing and special servicing practices and legal environment. Additionally, in less developed mortgage jurisdictions provision of backup servicers may be challenging.

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<sup>40</sup> The idea has already been envisioned, for instance by the BIS– see Philip Turner ‘s presentation “ Currency mismatches and liquidity risk: diagnosis and reform” in the EGRD Workshop on “ Local Currency lending and capital market development in emerging Europe and Central Asia”, December 2009

<b>Key risks and challenges for regional liquidity arrangements</b>	
<b>FX risks</b>	in terms of exchange rate fluctuations between currencies of mortgage and bond payments and in terms of cross-border transferability of and convertibility of borrower payments.
<b>Cross border transferability</b>	both initially when the facility purchases rights arising out of mortgage loans from lenders – and periodically when the borrower payments are transferred to master servicer;
<b>Analytics and disclosure</b>	relevant local regulations may vary thus making appropriate loan level reporting on the aggregate pool of mortgages costly or otherwise challenging;
<b>Mortgage instruments</b>	Differences in definitions of mortgage (or broadly, real estate collateralized) retail lending, e.g. between mortgages proper and “deed of trust” constructs, which may make pooling such disparate assets challenging or costly;
<b>Real estate laws</b>	Idiosyncrasies in national real estate ownership laws, e.g. a prohibition on foreign ownership of a residential property may complicate foreclosure and eviction process for the centralized facility;
<b>Whole loan sales</b>	Legal environment of mortgage whole loan transactions, i.e. how efficient it is to trade rights on individual mortgage loans. Note that some ECA jurisdictions have created legal and financial instruments to increase whole loan liquidity, e.g. <i>zakladnaya</i> in Russia and a similar in purpose yet differently implemented legally <i>zastavnaya</i> in Ukraine and <i>CCI</i> in Brazil.

*To be successful*, this type of mechanism may have to be established between markets that have similar degrees of development and already linkages or common characteristics. Alternatively, one large and relatively well-developed jurisdiction may act as an “anchor” or a “hub” for a number of smaller and less developed markets that can be thought of as “spokes”.

One of the most useful common characteristic would be for the small markets to share a monetary linkage or to belong to a de facto quasi monetary zone – the case for countries closely tied to the EUR or the RUR zone, thus reducing the foreign exchange risk.

Currency differences would not be an absolute roadblock. Regional facilities could have a specific window for each national currency within its scope of action, and issue debt in congruent denominations. The objective to lure foreign investors to invest in these local currencies, and supplement the deficient volumes of institutional savings domestically, would be of the essence of these structures. In case of active cross-border trade with significant volumes, certain banks may have natural currency swaps due to their participation in trade finance.

As is the case generally for capital market funding channels for mortgage lending, superior instrument and issuer credit strength, as well as key market conditions - e.g. liquidity, issuance regularity - would be instrumental. Ultimately, achieving those may be considered as the main goal of centralizing or “regionalizing” such channels.

All these conditions and challenges would have to be assessed in depth and complemented in comprehensive projects addressing policy, regulatory, tax and market issues.

## 6 Annex 1 - Country Cases

Housing finance systems differ considerably across countries, and to some extent the different policy responses to a crisis reflect such diversity. This section examines the varied policy responses in several countries during a crisis and the impact of such responses.

The countries selected include the United States where the recent crisis in part had its origins, United Kingdom as a major economy with a developed housing financial system, Australia where the impact of crisis was less severe, and Korea which represents an example of Asian housing markets.

Additional examples from Russia, Serbia and Ukraine illustrate particular challenges that the markets faced in the last 5 years and key measures that the regulators and other stakeholders implemented.

### 6.1 United States

In the United States, are examined the federal responses to the mortgage crisis during the Great Depression of the 1930s and the federal responses to the recent crisis. Although, the historical perspective can provide insights about alternative policies it should be noted that unlike the recent crisis, the main cause of the mortgage loan distress during the 1930s was the sharply contracting economy and falling home price level.

During the Great Depression of 1930s, hundreds of thousands of homeowners defaulted on mortgages, and thousands of mortgage lending institutions failed. In response to these calamities, the federal government intervened in the housing finance system. The Federal Home Loan Bank System was created to provide a source of loans for mortgage lenders, and the Home Owners' Loan Corporation (HOLC), to purchase delinquent loans from their originators. The HOLC purchased some one million loans, which it refinanced as long-term, fixed-rate, amortizing loans payable in monthly installments. However, the HOLC refused many loans on the grounds that the borrower lacked the income to make loan payments. Arguably, the HOLC was highly successful, however, the lessons somewhat limited because of rather different conditions<sup>41</sup>. In addition, there were many actions, programs, enactment of new legislation to provide relief to mortgage and housing markets.

During the recent crisis the housing values have declined at a rate not seen since the Great Depression, and the crisis has affected other countries around the world. The U.S. government response included support to communities facing financial problems as a result of the crisis and addressed gaps in the regulatory, supervisory, and consumer protection frameworks.

In order to support the housing market and assist those with mortgage payment problems it expanded the scope of Community Reinvestment Act regulation and introduced programs to promote sustainable loan modifications. To improve the regulatory and supervisory aspects issued tighter real estate evaluation and appraisal guidelines, enhanced disclosures for home mortgage transactions, and adopted policies to support prudent commercial real estate loan workouts. Finally, an independent Consumer Financial Protection Bureau was created to better protect the consumer facing complex risks. From a general macroeconomic perspective, the Federal Reserve provided support to the markets by purchasing unprecedented amounts of agency mortgage backed securities to reduce the cost and increase the

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<sup>41</sup>David C. Wheelock, "The Federal Response to Home Mortgage Distress: Lessons from the Great Depression" Federal Reserve Bank of St. Louis Review, May/June 2008.

availability of mortgage credit, further, injected capital and placed Fannie Mae and Freddie Mac in conservatorship<sup>42</sup>.

These policies helped avert a deeper economic collapse and a more severe housing crisis. However, the housing market remains fragile and will take years to fully recover. An elevated unemployment rate, lower household wealth, and higher credit standards are constraining demand for housing. Also, the large inventory of unsold homes, will take an extended period to work through the system<sup>43</sup>. As a result of both supply and demand factors home prices still remain weak although there are signs of recovery.

## 6.2 United Kingdom

In response to the recent crisis, the UK government and Bank of England put in place a range of policies to increase new lending, and to assist those borrowers in payment difficulties to avoid foreclosure. The government policy responses included various measures to assist homeowners facing mortgage arrears and potential repossession (foreclosure in US) of their property. The mortgage rescue scheme was a rent-back alternative offered to defaulting homeowners, under which the banks with local authorities could arrange for a property to be bought outright and rented back to the former owner. The homeowner mortgage support scheme enabled eligible borrowers to defer up to 70% of their mortgage interest for up to two years. The income support for mortgage interest offered temporary government assistance to meet the interest on their mortgage payments to those who become unemployed.

Indirect policy support included the government's temporary exemption on stamp duty for purchases of properties and the agreement reached between the government and several failing banks to expand mortgage lending and greater leniency in foreclosures as a condition of the bank rescue (Northern Rock, Royal Bank of Scotland, and Lloyds TSB)<sup>44</sup>.

Furthermore, policies directed at increasing new lending included general macroeconomic policies such as the drastic reduction in base rates, and large-scale quantitative easing by the Bank of England.

In addition, the UK government responded with a package of measures to tighten mortgage regulation and to enhance consumer protection in the mortgage market. The Financial Service Authority was given regulatory responsibility for the residential mortgage market, transferring some responsibilities from the office of fair trading<sup>45</sup>.

These measures had their impact in housing markets which appears to have bottomed out, the UK has seen a lower number of foreclosures, and there is a slow improvement in housing market activity.

## 6.3 Australia

Australia illustrates an example of a rather conservatively managed and regulated housing finance system with more restrictive mortgage financing conditions than the United States. Australia did not experience the expansive mortgage lending activity that took place in the U.S. and had a much smaller drop on home prices during the crisis. Moreover, Australia was adversely affected by the worldwide financial crisis and the credit crunch as the contagion spread to housing finance systems throughout the world.

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<sup>42</sup>International Monetary Fund, "Global Financial Stability Report." Chapter 3, "Housing Finance and Financial Stability - Back to Basics?" 2011.

<sup>43</sup>US Treasury Department "Reforming America's Housing Finance Market" A Report to Congress. 2011.

<sup>44</sup>Janine Aron and John Muellbauer, "Modeling and Forecasting UK Mortgage Arrears and Possessions." 2010.

<sup>45</sup>Michael Lea, "Alternative Forms of Mortgage Finance: What Can We Learn From Other Countries?" Harvard, April, 2010.

One of the first government acts as an immediate response to the financial crisis was to stabilize the banking system by offering 100 % deposit insurance. The country had no deposit insurance until September 2008. Moreover, the great majority of mortgages had been adjustable rate, with very short adjustment terms. Australia's quick acceptance of deposit insurance, and the decisive public sector response made it possible to divert the worst of the impact and avoid a potential banking disaster<sup>46</sup>.

On the positive side, the country entered the crisis with a budget surplus which was directed into stimulating the economy. The fiscal response to the crisis used investment in housing as part of a major fiscal stimulus package. The First Home Owners Boost was introduced in late 2008 to help first home buyers and it proved to be a very effective stimulus for new entrants into the market. The Nation Building Economic Stimulus plan introduced in early 2009 included a substantial investment on construction of new social housing and renovation of existing social housing<sup>47</sup>. In response to the stimulus and policy measures, house prices in Australia began to rise again by 2009.

The conservative mortgage lending practices, enforcement of rather restrictive regulations prior to the crisis coupled with the early decisive government interventions and quick targeted responses helped in the recovery of the housing markets.

## **6.4 South Korea**

The Asian housing finance markets have a different profile from that of the United States and United Kingdom. Korea is an interesting case because it is a developed country with a rather micromanaged housing sector. The analysis focus on the government response to the Asian financial crisis of 1997, which brought major changes for policy reform in housing finance markets, and briefly covers the government response to the recent crisis which was less severe.

In late 1997, Korea was hit by a currency-banking crisis which caused a near collapse of housing prices in 1998. Although, issues related to mortgage lending were not a cause of the crisis the impact of the crisis in housing finance markets was severe and home prices plummeted. The government's policy response was swift and various emergency measures were introduced to revitalize the housing market. These measures were effective in raising home prices, the housing market recovered rather quickly and by 1998-99 its price level was comparable with that prior to the financial crisis.

Among the measures, deregulation of the housing finance markets was a major change while the Korea Housing Bank, the government-owned monopolistic housing finance institution was privatized. The liberalization of the residential mortgage lending resulted in a sharp increase in lending volume. In few years, the ratio of mortgage debt outstanding to gross domestic product increased three to four times from prior the crisis. The Korea Mortgage Corporation was established in 1999, the secondary mortgage market was created by allowing for wholesale funding through the issuance of mortgage-backed securities. Furthermore, the housing finance system was transformed to a market-based system, with the share of commercial banks and other private-sector lenders exceeding 90 % in recent years<sup>48</sup>. In addition, many regulations were amended or nullified, such as abolition of the price controls on new apartments, abolition of restrictions on foreign ownership of land and real estate among others.

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<sup>46</sup>Ashok Bardhan, Robert Edelstein, Cynthia Kroll, "A Comparative Context for U.S. Housing Policy: Housing Markets and the Financial Crisis in Europe, Asia, and Beyond." Prepared for the Bipartisan Policy Center, April 2012.

<sup>47</sup>Laurence Murphy, "The global financial crisis and the Australian and New Zealand housing markets." *Journal of Housing and the Built Environment*, 2011.

<sup>48</sup>Kim Kyung-Hwan and Cho Man, "Housing Policy, Mortgage Markets, and Housing Outcomes in Korea." Volume 26, Publication of Korea Economic Institute and Korea Institute for International Economic Policy. 2010.

During the recent crisis, the effect in home prices was less severe after the painful experience of the 1997 crisis. The government policy response was to support the housing finance markets through fiscal measures such as favorable tax treatment and easier credit but did not engage in major housing markets reforms as in the prior crisis.

## 6.5 Russia

### Post crisis lessons

- Virtual elimination of FX lending post-acute phase of the financial crisis effects.
- Significant variance in portfolio performance between FX and local currency loans.
- Countercyclical and support role of the mortgage securitization facility.
- Improved macroeconomic situation facilitated origination growth in 2010 - 2012.

The negative effects of the global financial crisis on the Russian mortgage market were felt in 2007 by closure of global markets for private mortgaged backed finance products. Lenders began experiencing shortage of long term funding, particularly smaller private mortgage originators reliant on cross-border,

Figure 10. Portfolio and origination dynamics 2005-2012

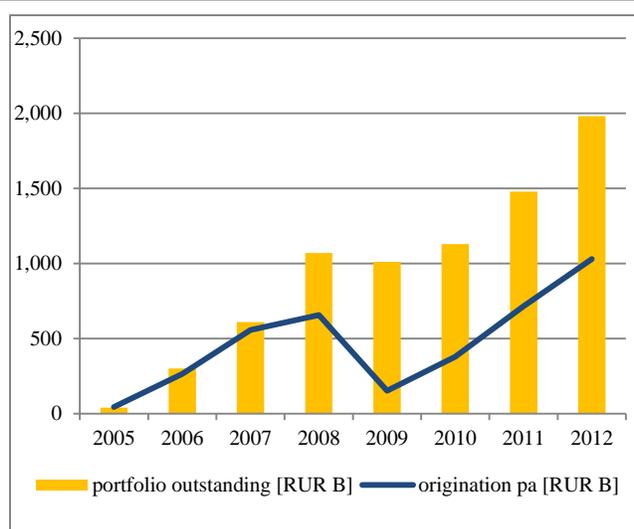
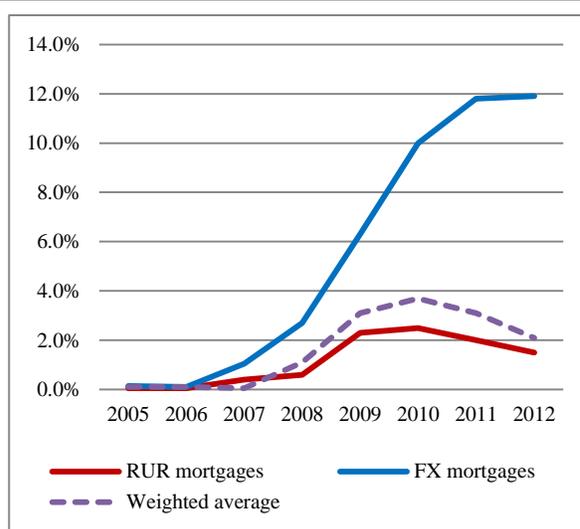


Figure 11. NPL dynamics 2005-2012



Sources – AHML, Central Bank, WB Calculations, LC – local currency, FX – foreign currency, NPL – 90+ days delinquency

FX denominated debt issuance or on long term loans from IFIs.

Figure 10 illustrates evolution of the market – rapid origination growth until 2008 followed by a sharp decline in 2009. The recovery took 2 years, with 2011 originations exceeding 2008 levels. Aggressive origination and underwriting practices on the background of continuing positive HPA throughout 2008 were prevalent and manifested themselves in decreased LTV ratios down to zero for some lenders, relaxed borrower eligibility and growing average loan amounts.

Early 2009 brought a 30% RUR devaluation, 10-30% negative HPA, a 15% interest rates hike, absence of long term funding and a halt in borrower demand in part due to significantly tightened underwriting and in part – to unemployment spike and negative consumer outlook. 2009 originations declined by 75% yoy, the overall market shrunk by 6%. Market share of top 5 actors increased from 50% to 70% between 2008 and 2011.

Figure 11 illustrates mortgage portfolio performance with a breakdown by loan currency. Overall mortgage delinquencies shot up from US-prime levels of less than 1% to almost 3% in 2009, with FX loans NPLs exceeding 12% or almost 6 times higher than for RUR loans. Note absence of FX lending since 2009. An additional driver for post-crisis increase of delinquencies may be the fact that certain regions of the country experienced rapid and significant macroeconomic decline with the resultant high unemployment and negative HPA – the so-called “mono cities” phenomenon similar to the infamous case of Flint, MI.

The Russian market securitization intermediary (Agency for Home Mortgage Loans, AHML) performed a countercyclical role in increase of whole loan purchases as well as continuing RMBS and agency Paper issuance in 2008-2010. Private mortgage backed debt issuance resumed in 2010 and 2011.

While during 2009-2010 prevailing mortgage loan terms and conditions as well as underwriting criteria have been significantly tightened by lenders, in 2011 practices have become more “relaxed”, e.g. LTV and DTI ratios seem to be rising to ~80% and 50%, respectively. While the scale of such liberalization has not yet approached practices of 2008, the trend however is worrisome. Additionally, there is no data on mortgage portfolio specific stress testing performed either by individual lenders or under the supervisory process of the Central Bank.

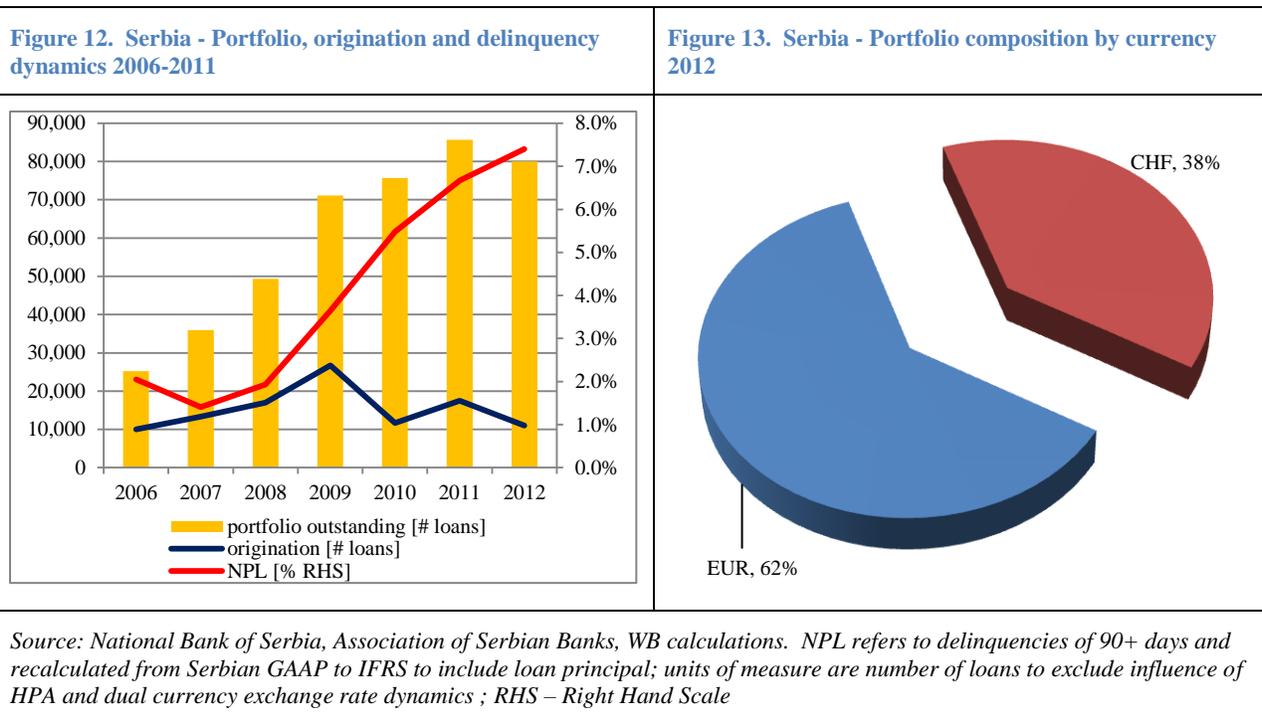
During the acute phase of effects of the financial crisis in 2009, Government of Russia introduced a number of mortgage-specific measures to preserve and stabilize market infrastructure:

- Moratorium on judicial foreclosure
- Prohibition on extra-judicial foreclosure
- Clarification of foreclosure regime in case of *de minimus* residual loan principal
- Prohibition for lenders to restrict borrower prepayment or to discretionary alter interest rates
- Establishment of a specialized mortgage loan restructuring facility. As at early 2012 approximately 50,000 loans (~ 3% of portfolio) have been restructured.
- Additional fiscal resources were used during 2008-2009 to increase AHML capital position to allow for increased market liquidity support.

## 6.6 Serbia

### Post crisis lessons

- Poor portfolio performance due to FX loans, economic slowdown, local currency devaluation.
- Absence of local currency long term funding sources and mechanisms may lead to further institutional and systemic stability risks;
- Significant EU banking presence may further exacerbate funding and systemic risks.
- 100% of portfolio in FX loans which may lead to further lender stability challenges.



The Serbian mortgage market is small with mortgage portfolio outstanding of approximately EUR 3 Billion or 86,000 loans. Foreign lenders - primarily Italian, Austrian, and Greek - dominate the market, which has not yet fully recovered from a decline in 2010. Market participants report a 30% negative 2010 HPA.

NPLs stand at 7.4 % of portfolio, although lenders with large CHF mortgage portfolio report 19% delinquency ratio. On average CHF portfolios have double the NPL rates compared to CHF portfolio.

Note that FX portfolio performance seems to correlate with the relative currency depreciation, as RSD declined more to CHF than to EUR. Also, relatively high delinquencies in boom 2006-2007 years may be indicative of deficiencies in mortgage origination and servicing. Note that a rapid increase is occurring in the context of a slowly growing portfolio, which is a particularly worrying sign. For context, early 2012

delinquency of the US portfolio is 9.8%, Ireland – 9.2%, Ukraine – 8.7%, Russia – 3.1%, Australia – 1.4%.

Persistent market deficiencies are:

- predominance of FX mortgage lending (EUR and CHF);
- the absence of capital market funding channels to provide long term domestic finance;
- gaps in the mortgage legal and regulatory framework, e.g., in security perfection mechanisms, in mortgage rights registration, in real estate appraisal, in judiciary practices and foreclosure process, in lacking of securitization or covered bond framework.

The above challenges present the following near and medium terms risks:

- Mortgage portfolio performance may deteriorate further, with continuing volatile economic situation in EU and in Serbia, high unemployment (24% at end 2011) and predominance of FX and adjustable rate mortgage loans being the likely drivers of delinquencies. This, in term, may pose institutional and systemic stability risks for the banking sector.
- Legal and regulatory deficiencies worsen the lender credit risks in market downturn, and also prevent sustainable market growth in positive macroeconomic situation.

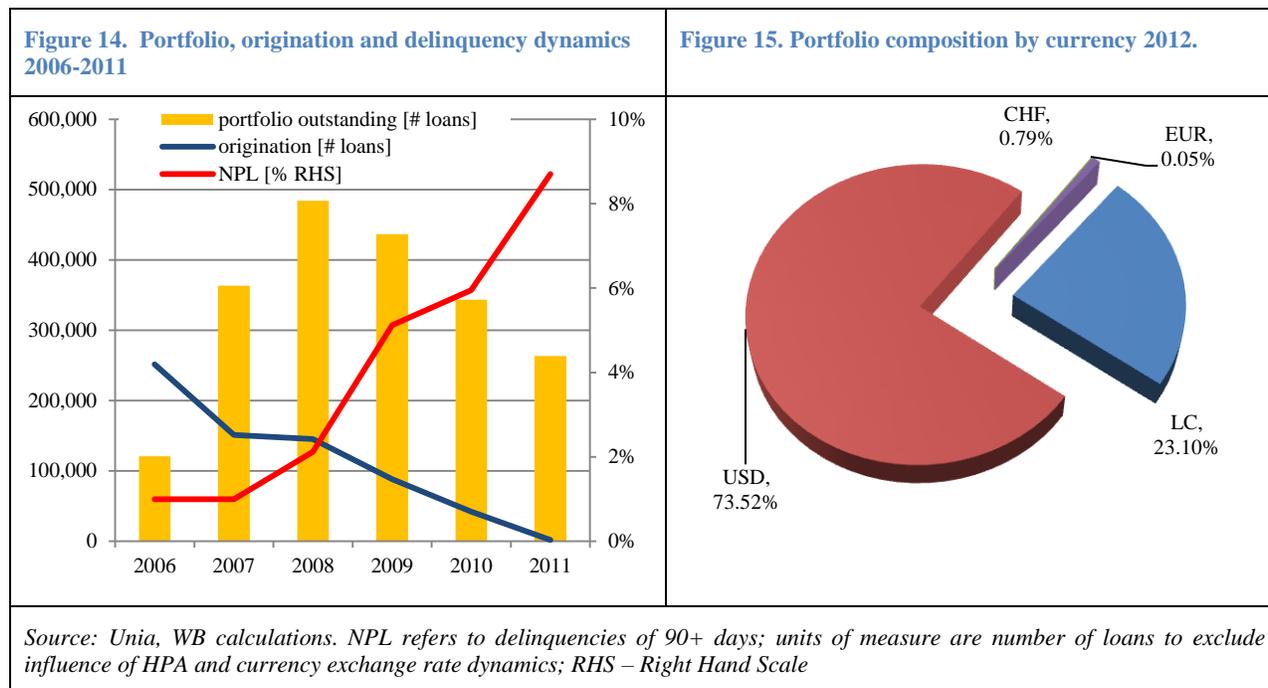
Since 2007 Government of Serbia introduced a number of mortgage-specific measures in an attempt to stabilize the market.

- Prohibition on CHF mortgage lending and mandatory offer of a RSD loan from the lender to the borrower as part of mortgage origination;
- Enhanced consumer disclosure regime in line with EU Directive on Credit;
- Legally established limits of maximum prepayment fee charged to the borrower;
- Prohibition of lender discretionary margin variability for adjustable rate mortgages
- Establishment of the Center for Consumer Protection, as well as a Center of Mediation.

## 6.7 Ukraine

### Post crisis lessons

- Virtual stoppage of mortgage lending in view of local currency funding constraints, prohibition of FX lending and economy slowdown



- Poor portfolio performance due to FX loans, economic slowdown, local currency devaluation
- ¾ of portfolio in FX loans and minimal originations may lead to further lender stability challenges.
- Mortgage market liquidity provider largely irrelevant in market support role
- Significant EU banking presence may further exacerbate funding and systemic risks.

Figure 14 illustrates evolution of the market with rapid growth until 2007 followed by a sharp decline. The recovery never took place, with NPL levels rising to almost 9% on the background of drastically reduced originations, 2008 currency devaluation of 40% to EUR and USD, 33% negative 2009 HPA, and 2011 portfolio shrinkage of 47%. According to the information from banks, as of January 1, 2012, approximately 30% of mortgage loans have been restructured. For context, early 2012 delinquency of the US portfolio is 9.8%, Ireland – 9.2%, Serbia – 6.7%, Russia – 3.1%, Australia – 1.4%.

Figure 15 illustrates mortgage portfolio breakdown by loan currency. Although FX mortgage lending was outlawed in 2011, large existing portfolio of USD loans coupled with minimal volumes of originations points to persistent FX risks.

Mortgage market is significantly concentrated, with top 5 lenders controlling over 55%. Notably 40% share belongs to local subsidiaries of Raiffeisen Bank, BNP Paribas and Unicredit. The Ukrainian market

securitization intermediary (State Mortgage Institution, SMI, est. 2004) issued RMBS and agency Paper in 2006-2009 with total original amount of approximately UAH 350MM. Currently SMI portfolio amounts to UAH 750MM or 1% of 2012 national portfolio. Private RMBS or covered bond issuance activity was limited to a handful of transactions in 2006 - 2007. On the background of prohibited FX lending in 2011 and absence of long term local currency funding sources, current median mortgage interest rate exceeds 20% pa.

Since 2008 Government of Ukraine introduced a number of mortgage-specific measures in an attempt to stabilize the market.

- Prohibition on FX mortgage lending (2011)
- 2009-2010 moratorium on foreclosure under certain conditions
- Creation of a favorable taxation regime for mortgage borrowers

## Annex 2 - Select Global Experience with Real Estate Market Overheating

In addition to mortgage credit availability, utilization of residential real estate for investment purposes may lead to excessive and rapid positive House Price Appreciation (HPA) growth which, as the historical evidence suggests is cyclically followed by a significant decline in HPA. In case such activity is performed with mortgage financing, negative effects in a down cycle are amplified by lender portfolio performance issues leading to institutional capital and liquidity issues. Furthermore, the more steep the upward curve of the cycle is, the shorter is the rational investor's purchase and sale transaction horizon, which auto-amplifies the effects.

Below we present several tables with global policy measures that have been taken to either combat or prevent a real estate asset bubbles and a brief look at impact of such measures in select countries.

<b>Select global examples of real estate bubble policy measures</b>		
<b>Country Situation</b>	<b>Measures taken</b>	<b>Outcome and Impact</b>
<p><b>Bulgaria</b></p> <p>Like in many other countries in the region, credit, especially to households and in the form of mortgages, grew rapidly following the transition and at the prospects of EU membership.</p> <p>A credit boom was accompanied by a house price boom in early 2000s.</p>	<p>In the first stage, moral suasion was tried through public statements and meeting with 'aggressive' banks.</p> <p>Through 2004 and 2005, loan classification and provisioning requirements were tightened and stringent rules on capital adequacy were adopted (in particular, restriction on conditions under which current profits can be counted in the capital base).</p> <p>Differential risk weights were introduced: mortgages with LTV exceeding 70% would be risk-weighted at 50% and, if this is violated, the risk-weight on the loan would be 100%.</p> <p>Tighter reserve requirements were implemented in 2004 by reducing the share of vault cash in eligible assets and broadening the liability base to deposits and securities with longer maturity and repos.</p> <p>Marginal reserve requirements for banks exceeding the average credit growth rate came into effect in February 2005 aimed at cutting rapid credit growth.</p>	<p>Credit growth decelerated somewhat but it was only in late 2008, with the global financial crisis, that it came to a significant halt. Similarly, house price appreciation remained strong, recording 42% from 2005 to 2008.</p> <p>On the positive side, capital adequacy ratios had reached adequate levels by 2006 and credit risk in the corporate sector seemed to be contained, sparing the banking system from a full-blown systemic crisis.</p> <p>Yet, risks in the household sector had actually increased and foreign borrowing by banks to fund these loans created significant vulnerabilities.</p>
<p><b>Korea</b></p> <p>In the aftermath of the Asian crisis, expansive policies to stimulate the economy created a credit boom (in particular, credit cards), the bust of which came in 2003 and left policymakers with a desire for tougher</p>	<p>LTV limits were introduced in 2002; these were complemented with DTI limits in August 2005.</p> <p>FSS lowered LTV limits in speculative areas twice in June and October 2003, first to 50% and then to 40% down from 60%, but provided certain exceptions.</p> <p>In 2006, these exceptions were abolished for loans extended by banks and the LTV reduction was expanded to loans made by non-bank intermediaries</p>	<p>Overall, both LTV and DTI appear to be effective but the impact does not seem to last long and be rather small with year-on-year credit growth rate decreasing by 0.7 percentage points (against an average growth rate of 12%) and HPA declining by 0.3 percentage points (against an average rate of 4%) during the month following the tightening.</p>

<p>regulation.</p> <p>Real house prices increased by 26% from 2001Q1 to 2003Q3.</p> <p>After stalling in 2004, prices appreciation resumed in 2005 and recorded an increase of 14% between 2005Q1 and 2007Q1.</p>	<p>bringing the ratio from 60-70% to 50% while DTI limits in speculative areas were reduced to 40%.</p> <p>In July 2009, FSS lowered LTV limits in non-speculative areas as well. It also tightened DTI limits twice in February 2007 and again in September 2009.</p>	<p>LTV limits seem to have a slightly larger effect but DTI limits may be better-targeted as the dynamics in non-speculative areas are affected less.</p> <p>At their current level of 40% and 50-60% in speculative and non-speculative areas, respectively, LTVs are already very low, limiting room for further reductions, were boom dynamics to return.</p> <p>DTI tightening last year may have been too strong, demonstrating the difficulty of calibrating these tools.</p> <p>The fear that the market has "softened too much" led to relaxation of the rule and adoption of several other measures (e.g. exemption from income verification evidence for low-income borrowers, waiver period of two years on transactions taxes for owners of multiple properties) in August 2010.</p>
<p><b>Malaysia (1990s)</b></p> <p>After increasing at 3% per year in 1993-94, house prices accelerated to an annual growth rate of 13% in 1995-96.</p>	<p>The reserve requirement was increased from 8.5 to 11.5% in 1994, and then again to 13.5% in 1996. LTV limit of 60% was introduced in 1995.</p> <p>In April 1997, exposure to property lending in a bank's portfolio was restricted to be below 20%. In addition, purchases by foreigners were restricted.</p>	<p>The measures were credited for their contribution to the slowdown in property prices and lending to the real estate sector.</p> <p>They did not, however, prevent the systemic banking crisis following the bust.</p>
<p><b>Malaysia (2000s)</b></p> <p>The boom-bust in the 1990s left the market with a significant supply hangover, in particular at the high-end condo segment.</p> <p>There have also been considerable additions to supply at the lower-end as a consequence of mass building of housing units by government agencies. The residential mortgage growth gained speed starting in 2001 with HPA increase of 4% in 2004.</p> <p>Concerns about rapidly rising household indebtedness were exacerbated by the reports about lax lending standards and the desire to preemptively stop another possible era of exuberance and overbuilding.</p>	<p>In 2005, risk weight on non-performing residential mortgage loans was increased from 50 to 100%. Following the global financial crisis, policy priorities changed and a stimulus package, that included a tax relief on housing loan interest for three years and deferred loan repayments for one year for homeowners, was announced in March 2009.</p> <p>However, during the summer, capital gains tax was reinstated on properties sold within five years of acquisition (the 5% tax was abolished in April 2007); in January 2010, the price floor for foreign buyers was hiked to twice the previous level; in November 2010, a new LTV limit of 70% was introduced for third residential property purchases.</p>	<p>The spike in prices that happened at the end of 2009 has already shown signs of subsiding and lending for construction and other real estate activities slowed down somewhat.</p>
<p><b>Singapore</b></p> <p>Land supply is closely regulated through the</p>	<p>Particular loan types (e.g. interest absorption scheme and interest-only housing loans) were abolished and assistance to property developers implemented as</p>	<p>Sales of all property types started to decline in the second quarter of 2010 and dropped by 16% in the</p>

<p>Government Land Sales (GLS) program and a large portion of the housing market is controlled by the government (similar to Hong Kong SAR). Housing &amp; Development Board (HDB) has authority over public housing, which has developed side-by-side with the much smaller private housing segment. (Public housing has been mostly 'privatized' by allowing 99-year leases on dwellings being traded at open market prices.)</p> <p>Residential Property Act limits foreign ownership of landed homes, further segmenting the market by forcing a submarket specializing on expatriates. Real estate cycles have been strong, with the most recent one involving an increase of 45% in real house prices from 2004Q2 to 2008Q1.</p> <p>During the global financial crisis, prices declined 4%, but they rebounded sharply recording an increase of 36% since 2009Q2.</p>	<p>part of the stimulus package were discontinued in September 2009.</p> <p>In February 2010, a seller's stamp duty on all residential land and properties sold within one year was introduced while LTV was reduced from 90 to 80%.</p> <p>Other measures followed in August 2010, including extension of holding period for stamp duty to three years, further reduction of LTV to 70% for second and subsequent mortgages, extending housing grants to lower-income households for purchase of new flats, increasing the supply of properties and shortening the completion time of build-to-order flats, lengthening the minimum occupancy period for non-subsidized flats from 3 to 5 years, and banning concurrent ownership of HDB flats and private residential properties.</p> <p>In October 2010, new curbs on foreign ownership of landed homes were unveiled, raising the penalties on breach of the Residential Property Act.</p> <p>Most recently, in January 2011, Seller's Stamp Duty was raised and the holding period for its imposition was increased from 3 to 4 years while LTV limit was lowered again, to 60% for individuals with one or more outstanding housing loans at the time of the new purchase and to 50% for purchasers that are not natural individuals.</p>	<p>third quarter.</p> <p>Apartment and condominium (non landed properties) price appreciation also slowed down considerably. However, price appreciation for single-family houses (landed properties) continues to accelerate.</p> <p>This may be an indication of the speculative forces, reinforcing the suspicions of the authorities, who are not expected to give up and actually intensify their efforts to cool down the real estate markets.</p>
<p><b>Thailand (early 2000s)</b></p> <p>Burnt by the bad memories of the land price bubble prior to the Asian crisis, the authorities were cautious watching credit growth, and prices in some segments of housing markets, reaches double-digit annual growth rates again in 2003.</p>	<p>A maximum LTV limit of 70 percent for high-end real estate (i.e. condominiums, lands, and residences valued at or more than 10 million baht) was introduced in 2003. At the same time, tighter eligibility requirements for mortgage loans were announced.</p>	<p>House prices moderated, and so did credit growth. Actually, housing markets entered a downturn starting around 2006.</p>
<p><b>Thailand (late 2000s)</b></p> <p>House prices have been declining since 2006, with the speed of decline accelerating in 2008.</p> <p>Yet, in 2010Q2, prices spiked posting a 10 percent quarter-on-quarter increase and commercial bank loans grew strongly over the summer.</p>	<p>In 2009, the LTV rule was relaxed by increasing the limit from 70 to 80% but risk weights for loans with LTV over 80% were set at 75% against the 35% for loans with LTV below 80%, with the aim to support real estate market activity while maintaining sound risk management practices in the banking system.</p> <p>In November 2010, at the first sign of revival in housing markets and credit growth regaining strength, the tide was reversed: the LTV rule will be extended to dwellings valued less than 10 million baht with LTV set at 90% for condominiums, effective 2011, and at 95% for low-rise housing units, effective 2012.</p>	<p>It is too soon to see the effectiveness of the measures taken, but, in 2010Q3, house prices declined again while bank credit growth remained robust.</p>
<p><i>Source - IMF</i></p>		

<b>Stylized Facts on Policy Responses to Real Estate Booms: Stocktaking</b>			
<b>Measure</b>	<b>To address ...</b>	<b>Used in ...</b>	<b>Impact?</b>
Monetary tightening	Rapid credit growth and/or real estate boom	Croatia, Iceland, Latvia, Ukraine; Australia, Israel, Korea, Sweden	Not always effective, capital flows and currency switching risk are major limitations
Flexible and consistent FX policy	Rapid credit growth	Poland, Romania	FX-denominated credit growth slowed down in Poland but not in Romania
Fiscal tightening or removal of incentives for debt financing (e.g. mortgage interest tax relief)	Rapid credit growth and/or real estate boom	Estonia, Netherlands, Poland, United Kingdom; Lithuania, Spain	Limited effect on house prices, slightly more on household leverage
Additional/higher transaction taxes to limit speculative activity	Real estate boom	China, Hong Kong SAR, Singapore	Some effect on transaction activity, but not long lasting
Higher/differentiated capital requirements or risk weights by loan type	Rapid credit growth and/or real estate boom	Bulgaria, Croatia, India, Poland, Norway	Not always effective, some side-effects of shifting the risk elsewhere in the system
Dynamic provisioning	Resilience to cyclical downturn/bust	China, Colombia, India, Spain, Uruguay, Bolivia, Peru	Dependent on when in cycle were implemented, limited data so far
Tightening eligibility requirements, e.g. limits on loan-to-value ratios	Real estate boom	China, Hong Kong SAR, Korea, Malaysia, Singapore; Sweden	Short-lived effect on prices and mortgage activity
Tighter/differentiated loan classification and provisioning requirements	Rapid credit growth and/or real estate boom	Bulgaria, Croatia, Greece, Israel, Ukraine	Limited effect
<i>Source - IMF</i>			

## References and Bibliography

**Chiquier, L., & Lea, M.,** (editors) Housing Finance Policy in Emerging Markets, World Bank, June 2009

**Chiquier, L., Hassler, O., & Lea, M.,** Mortgage Securities in Emerging Markets, World Bank Policy Research Working Paper 3370, August 2004

**Haidar, J.,** How efficiently is Capital Created? Evidence from Property Registration Reform in Egypt, SmartLessons in Advisory Services, IFC, November 2007

**Hassler, O., & Walley, S.,** Mortgage Liquidity Facilities, Housing Finance International, Vol. XXII No. 2 December 2007.

**International Securities Consultancy (ISC),** Recommendations on Securitisation legislation and policy changes, International Finance Corporation (IFC), Efficient Securities Market Institutional Development (ESMID), February 2009.

**Safavian, M.,** Financing Homes – Comparing Regulation in 42 Countries, World Bank, 2008

**World Bank,** Doing Business 2011, [www.doingbusiness.org](http://www.doingbusiness.org)