FUNDING THE MORTGAGE PORTFOLIO

MORTGAGE COVERED BONDS IN CENTRAL EUROPE

African Union of Housing Finance Institutions
International Union of Housing Finance Institutions
Cape Town

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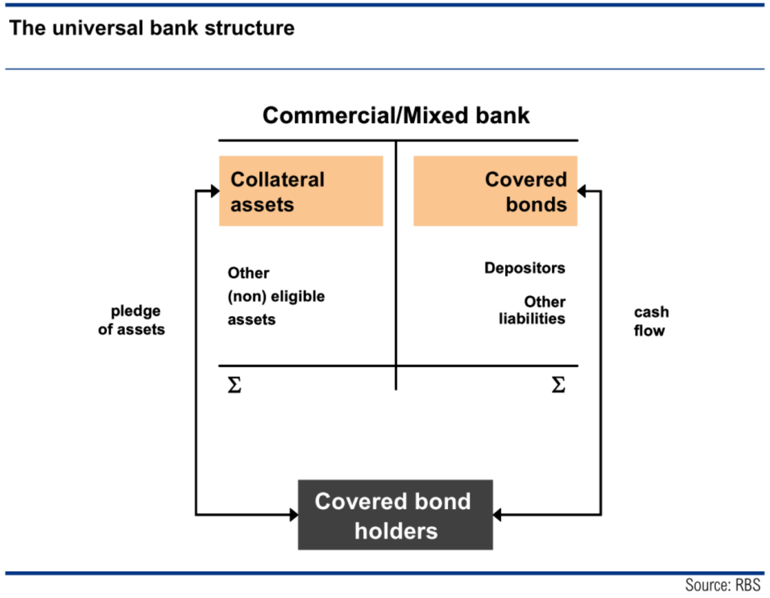
MORTGAGE COVERED BONDS
FINANCIAL FEATURES

Stylized Covered Bond Issuance Scheme, Single Universal Bank



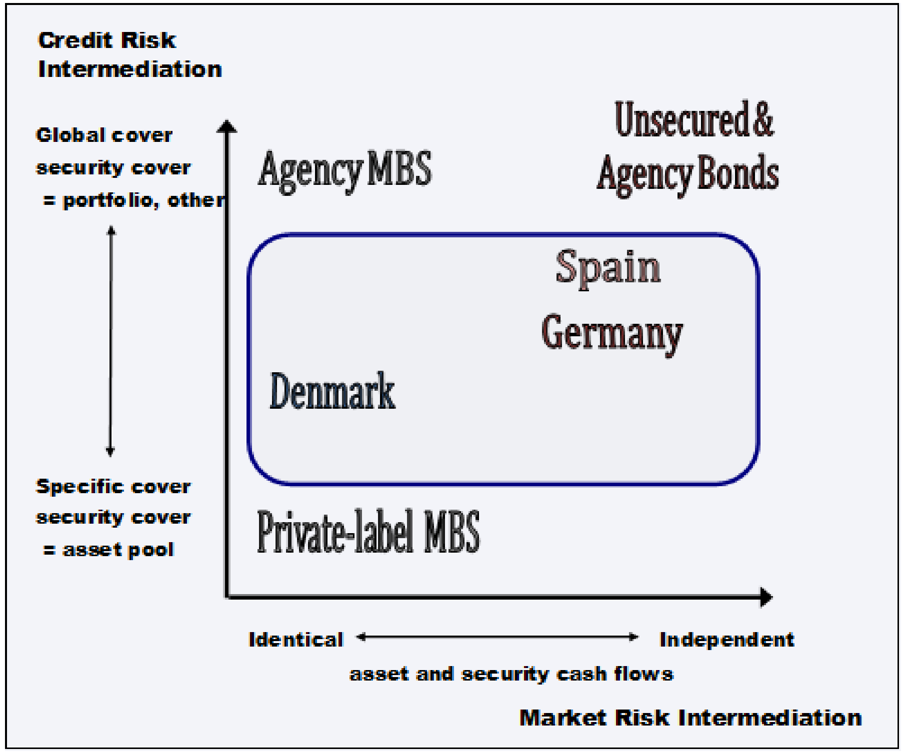
Source: RBS

- On balance sheet (dual guarantee of bank credit and mortgages, bankruptcy segregation), almost no structuring, substitution of loans→credit risk intermediation,
- Usually bullet, fixed rate bonds (non-amortizing, no prepayments) → market risk intermediation,
- Permanent ('shelf') issuance program (no individual deals, one prospectus for several bonds issued, simple cover pool monitor instead of depositories, trustees)→low cost,
- In many jurisdictions, mix of commercial and residential collateral → maximizes liquidity for single issuance.

MORTGAGE COVERED BONDS
REGULATION FEATURES

- Eligible issuer, e.g. must be a credit institution (European Union), subject to special public supervision,
- Cover asset quality, esp. valuation of collateral, LTV limits, substitution rules,
- Asset coverage testing (nominal and stress-test based NPV coverage), leading to legal minimum overcollateralisation, rating agencies have additional requirements,
- Cover asset registration, to avoid rehypothecation (ideally public),
- Independent cover asset monitoring, on behalf of investors – especially relevant for dynamic pools, also cover pool reporting to investors,
- Details of dual recourse mechanism, bondholders must have a preferential claim on the ring-fenced assets in case of default. Alternatives: SPV or segregation ex-post right by law,
- Post-resolution and –insolvency treatment, covered bonds must not be accelerated against the will of investors. Alternatives: continuation, transfer. Bail-in is possible, investors can decide to continue. Investors have a residual claim against the issuer.

MORTGAGE COVERED BONDS
FINANCIAL FEATURES: RISK INTERMEDIATION



Source: Finpolconsult.
Chart idea by Paul /University of Bochum

Covered bond universe

- Germany/France
  - Asset and security cash flows differ,
  - The cover pool is dynamic and the coverage of bonds is not tied to specific assets.
- Denmark
  - Asset and security cash flows are identical,
  - The cover pool is static and the coverage of bonds is tied to specific assets.
- In CB there is always dual recourse, i.e. with issuer guarantee.

MBS universe

- As Denmark.
- A large part of the market is government guaranteed, the private label market in the past often relied on cover assets alone.

MORTGAGE COVERED BONDS
FINANCIAL FEATURES: MARKET RISK INTERMEDIATION

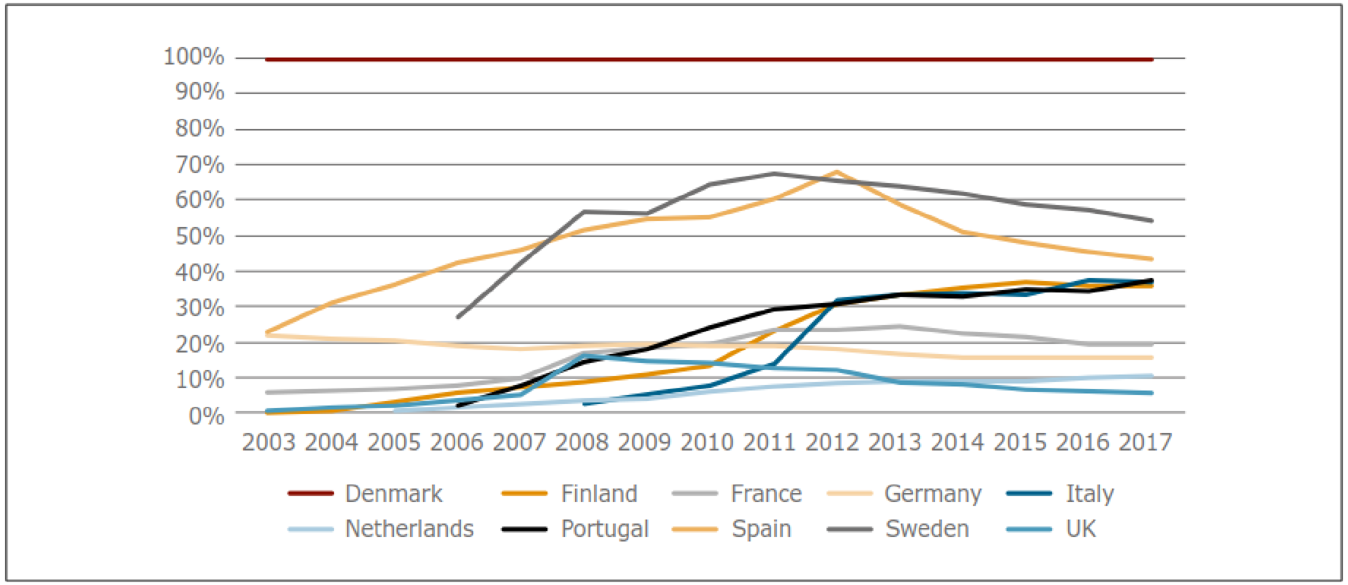
Mortgage Cash Flow	Bond type	Derivative type	Cases
Non-callable FRM	Fixed-rate bullet bond	None	Germany
ARM	Fixed-rate bullet bond	Interest rate swaps	Spain
ARM	Floating-rate bond Deposits	None	United Kingdom
ARM with initial fixed rate	Deposits	Interest rate swaps	United Kingdom
Callable FRM	Callable/soft bullet bond		United States
	Pass-through	None	Denmark
	Floating-rate bond	Swaption	Various
	Deposits	(Swaption)	France
Foreign Currency ARM	Floating-rate bond Deposits	Cross-currency swap	Hungary
Mortgage servicing strip (Interest only)		Swaption Interest-rate floor Principal-only security	United States

FRM – fixed-rate mortgage
ARM – adjustable rate mortgage

- <u>Bullet bonds </u>better match with <u>non-callable mortgage loans</u> (prepayment indemnities)
- <u>Pass-throughs </u>and callable bonds better match with <u>callable loans</u>
- How sophisticated is market risk regulation in your jurisdiction?
  For which bond class are there investors?

MORTGAGE COVERED BONDS
BANK REGULATIONS DETERMINE EXTENT OF USE OF INSTRUMENT

> FIGURE 2: MORTGAGE BACKED COVERED BONDS AS % OF RESIDENTIAL MORTGAGE LOANS



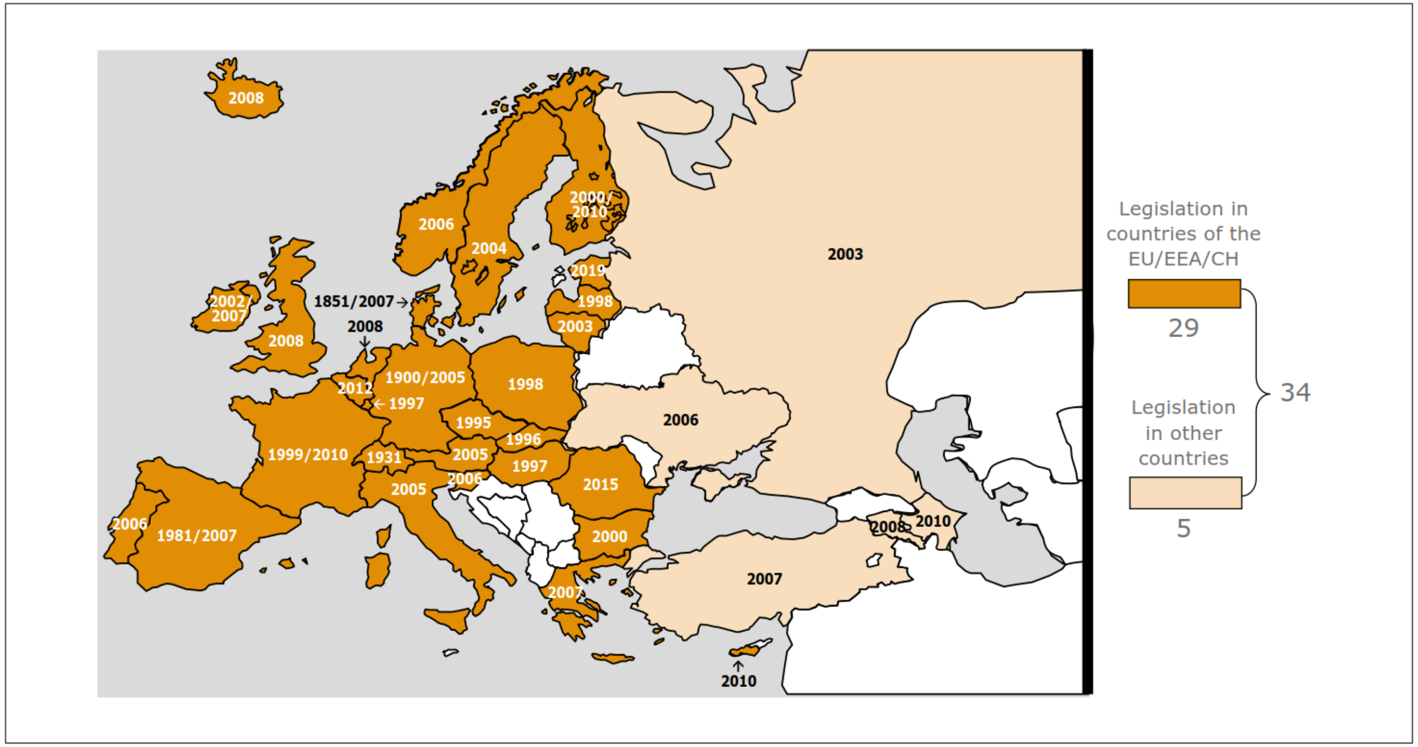
Source: ECBC

<u>Credit risk</u>:
- Asset encumbrance limits may reduce issuance volume, esp. when IFI lending is present.

<u>Market risk</u>:
- There are no Basel III Pillar I capital charges for asset-liability mismatch or liquidity risk,
- Pillar II approaches are too crude (NSFR) or rarely used (interest rate risk on the banking book, IRRBB),
- Nevertheless, many banks aim at matching their assets and liabilities to reduce economic capital and liquidity risk, esp. in local currency.

MORTGAGE COVERED BONDS
LEGISLATION ADOPTED THROUGHOUT ALMOST ALL OF EUROPE

> Figure 1: Covered bond legislation in Europe (as of April 2019)



Source: German mortgage bank association

CENTRAL EUROPE COVERED BOND INTRODUCTION
PRIMARY MARKET, ISSUER ACCESS AND REGULATIONS

Primary market

- Economy and income growth: 3-4% real
- Eligible asset growth
  - HU: FC lending/crisis subdued growth,
  - CZ and SLK: always strong LC lending – Contract Savings for Housing!
- Interest rates: LC rate decompression has stopped FC lending boom, increased need for matched LC funding.

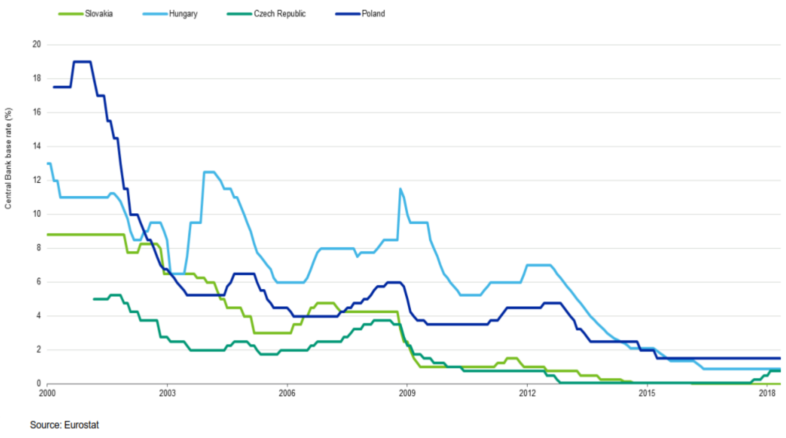
Issuer access

- Specialized bank issuers (PL, HU), after law reform in Poland improved access,
- Universal bank (CZ, SLK), number of issuers contained by licensing,
- Some initial subsidies (CZ, HU, SLK), now reduced.

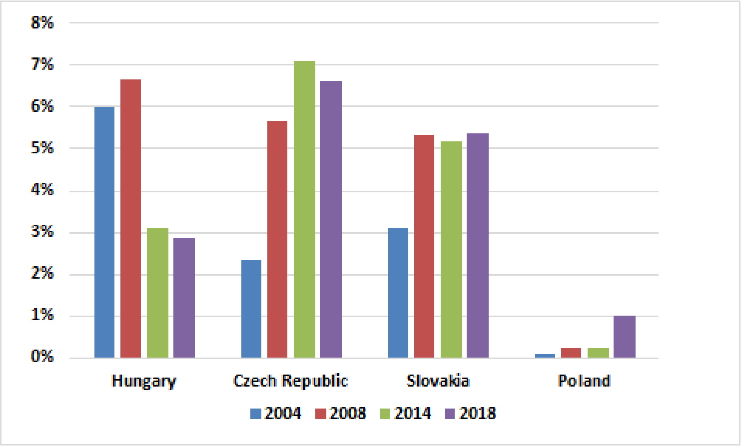
Regulatory

- Active use of macroprudential policies post crisis 2008. Focus on DTI/LTV, maturity limits and promotion of fixed rate lending,
- Hungary: Mortgage Funding Adequacy Ratio, portfolio refinancing share with long-term securities must be 20%; since 2012.

Interest Rate Decompression Trend, Local Currency



Covered Bond Outstanding % of GDP



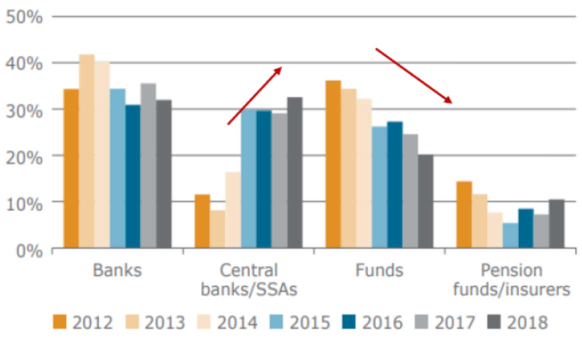
Sources: Eurostat, ECBC

CENTRAL EUROPE COVERED BOND INTRODUCTION
INVESTOR DEMAND

Global investor demand

- Central bank purchase programs
- Banks for highly liquid CB programs (LCR level 1>500 mln, Level 2 a > 250 mln)

ECBC Global Investor Structure

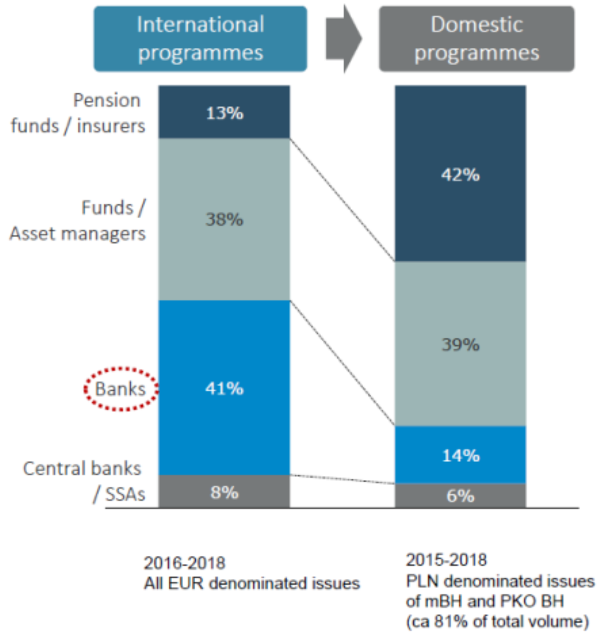


Central Europe investor demand

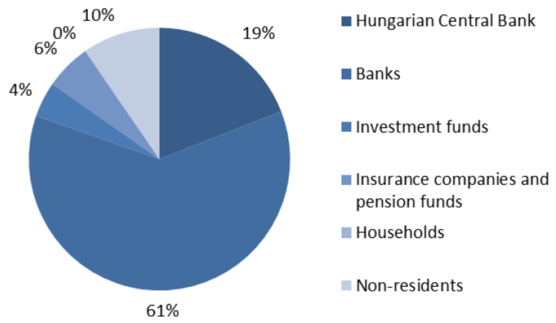
- Limited role of central banks
- Some IFI investment (EBRD)
- Strong role of funds and pension funds/insurers in LC issues
- Banks are using CBds as access tool to FX via repo

Source: Hungarian Banking Association, Central European Covered Bond Conference 2018

Investor Structure in Polish Covered Bonds, FX vs LC



Investor Structure in Hungarian Covered Bonds



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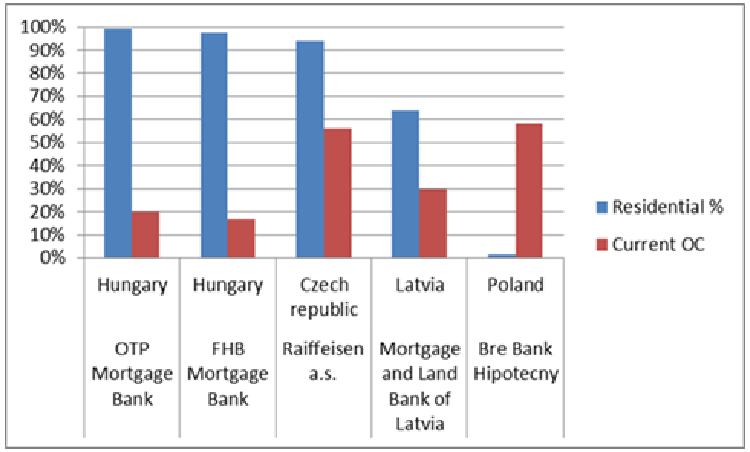
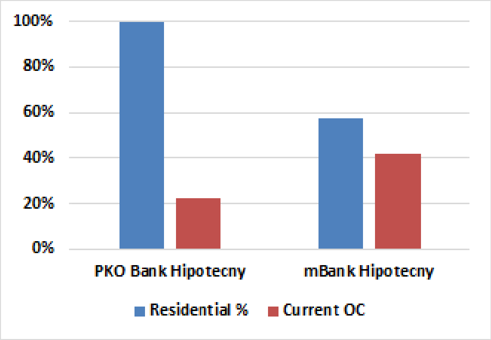
CENTRAL EUROPE COVERED BOND INTRODUCTION
STRUCTURAL FEATURES OF COVERED BOND PROGRAMS

CEE Covered Mortgage Bond Program Characteristics





Sources: FitchRatings, company websites.

Overcollateralization levels

- Higher credit risk lead to compensatory high levels of overcollateralization (OC), e.g. commercial real estate.

Issuer

- Special banks enjoy lower OC levels (Hungary, e.g. compared to Czech).
- Czech rep reintroduced licensing to limit issuers.

Rating levels

- Typically in the BBB territory, with 1-3 notches uplift over IDR,
- Systemic support, legal system, collateral quality key drivers, rating limited by sovereign ceiling.

Currencies, cost of swaps

- FX, X-currency swaps by third parties too expensive, as cover cannot post margin →currency matching.
- No rating uplift for mother bank-written swaps.

GEORGIA COVERED BOND INTRODUCTION
RATIONALE FOR COVERED BONDS

Distorted local currency funding mechanism

- Overreliance on central bank mortgage portfolio repo (weekly, i.e. liquidity risk),
- Loans are priced over central bank repo rate (credit risk, dangerously limits CB policy options).

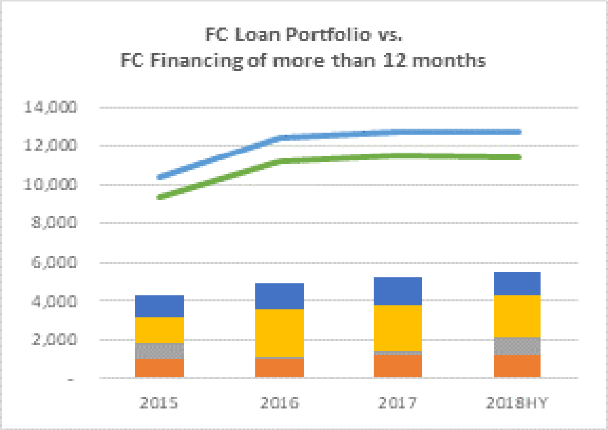
Issuer perspective

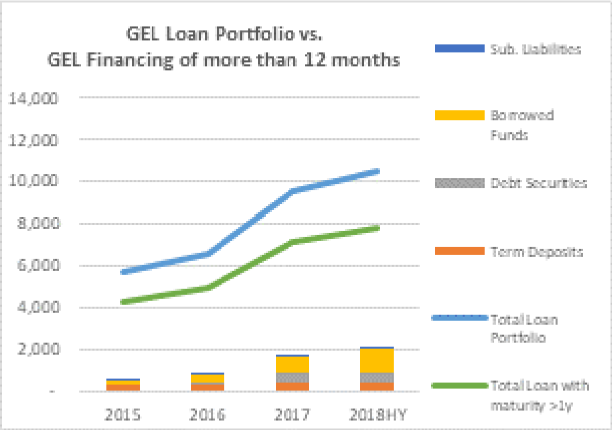
- Central bank preannounced transition from portfolio to securities (covered bond) repo,
- Central bank increases asset encumbrance space for covered bonds, helps tapping investors,
- Liquidity risk is reduced (e.g. change of definition by central bank for portfolio repo),
- Long term funding gap is reduced,
- Over time, transition to fixed-to-term mortgages will reduce credit risk.

Investor perspective

- Pension reform expected to add demand, (possibly Contract Savings for Housing)
- Bank carry trade/repo,
- Foreign investor product name recognition,
- Liquidity aspect requires centralized issuance.

High Long-term Funding Gaps in Local Currency



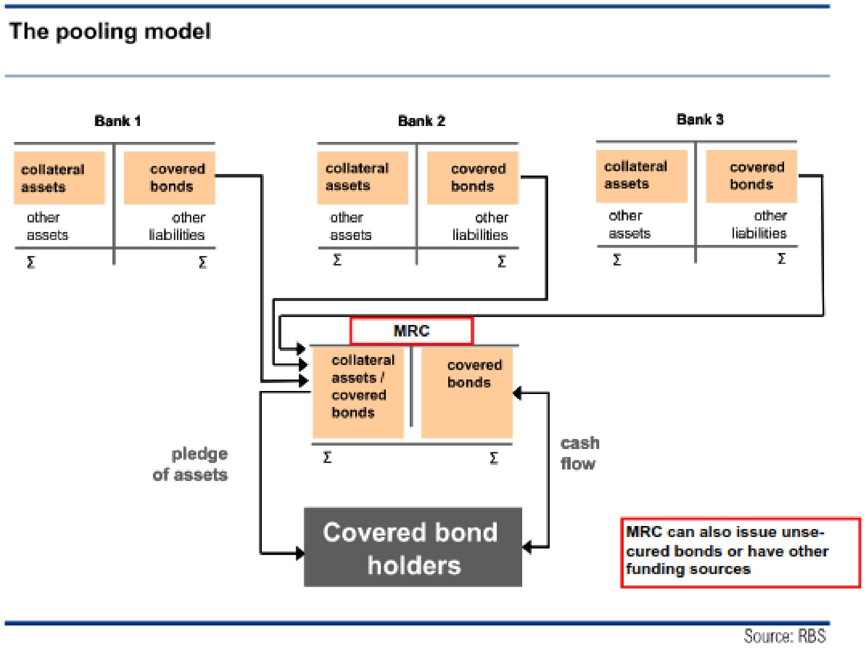


Source: National Bank of Georgia

GEORGIA COVERED BOND INTRODUCTION
GEORGIA – CENTRALIZED COVERED BOND ISSUER

Swiss Pfandbriefzentrale model

- Member-owned by financial institutions
- Shareholding adjusted by lending volume
- FI ring-fence cover assets, which by law can be segregated in case of insolvency
- Lending 'on demand' of bank treasurers up to available cover assets minus OC
- Bullet loans funded by bullet bonds issued on tap, no loan guarantee



Georgia specifics

- Initial repo-ing of bonds with central bank, either directly (bank) or via banks that purchase bonds (corporate)
- Separation of shareholding and voting rights due to dominance of 2 large banks

GEORGIA COVERED BOND INTRODUCTION

CENTRALIZED COVERED BOND ISSUERS – REGULATORY ISSUES

Issues

- Basel III has 'forgotten' wholesale mortgage lending, ex gaps,
- Non-Basel countries, such as Switzerland set their own standards,
- In emerging markets, excessive capital requirements for banks buying corporate bonds over sovereign bonds, guarantees?

		Banks as Issuers	MRC	Banks as Investors	Total Capital MRC Channel	Total Capital Deposits Only
Swiss legislation						
	Risk-Weights	**Basel 35%**	**Leverage Ratio***	**Basel 10%**		
Requirement by law	Capital level	2.8%	1.96%	0.8%	5.6%	2.8%
Paid-in	Capital level	2.8%	0.50%	0.8%	4.1%	2.8%
Basel regulations						
	Risk-Weights	**Basel 35%**	**Basel 10%**	**Basel 10%**		
Optimum scenario	Capital level	2.8%	0.80%	0.8%	4.4%	2.8%
CRH France			**20%**	**50%**		
Typical EM scenario	Capital level	2.8%	1.60%	4.0%	8.4%	2.8%

* 2 percent of bonds issued