Covered (Mortgage) Bonds

Concept, Practice,
Issues for Emerging Markets

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The world of Covered Bonds..

- Where can mortgage bonds be found?
  - Europe: Euro-zone, Eastern Europe, Nordic countries
  - Latin America: Chile, Peru, Colombia,
  - United States: First issuance in 2006
  - Canada: First issuance in 2007
- How old are the markets?
  - Old instrument in a few countries (Ger, DK, FR (200+ years) and Chile (30+ years)
  - …a recent innovation in many others
- Laws protect names
  - Germany: “Öffentliche Pfandbriefe” and “Hypotheken-Pfandbriefe”
  - Denmark: “Realkreditobligationer”
  - France “obligations foncières”
  - Chile: “Letras Hypoticarias”

Source: FitchRatings.

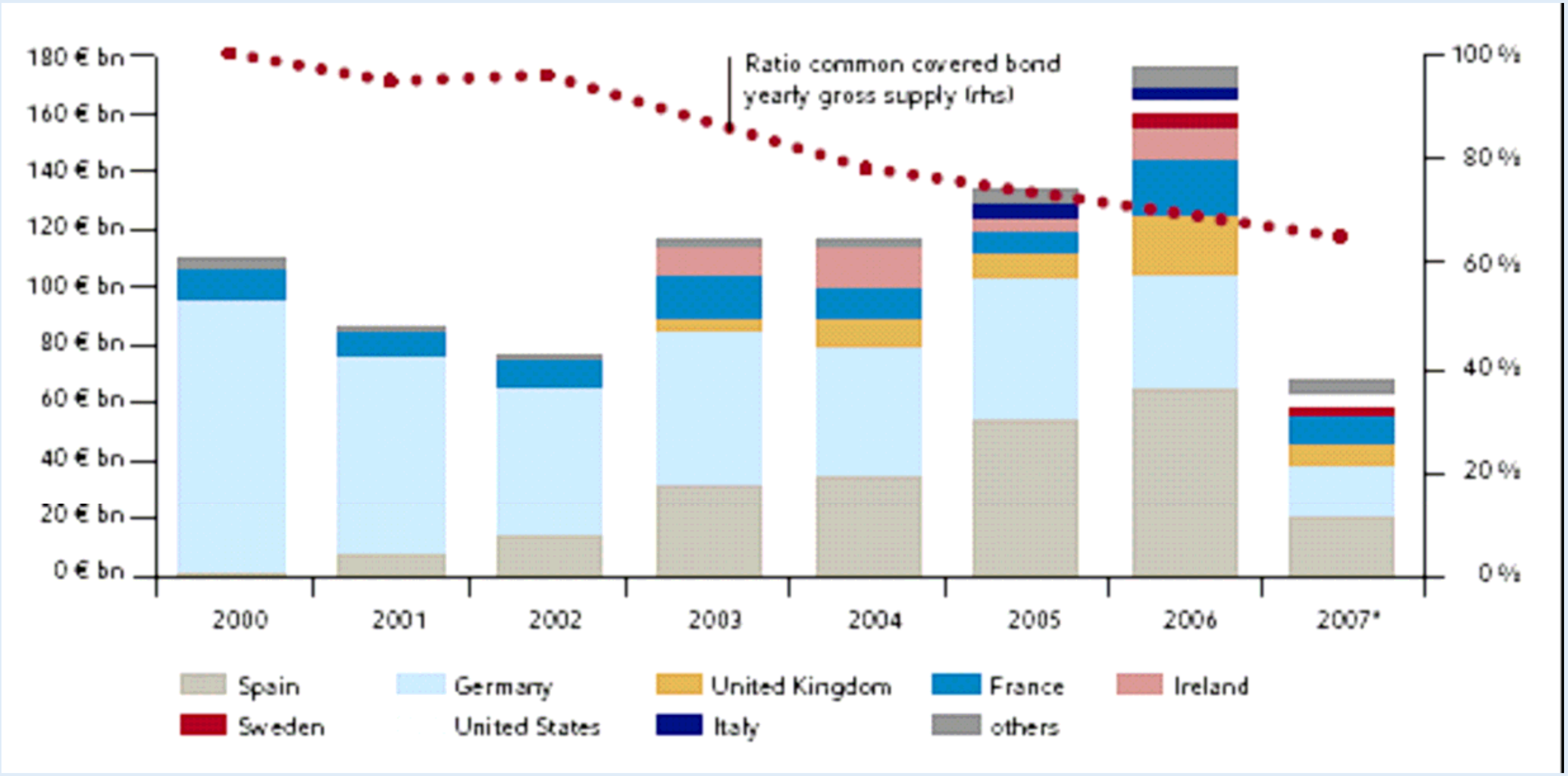
.. is expanding..

New bank issuers in Europe and beyond

Source: Dresdner Kleinwort Benson.

..and expanding

New issuances of Jumbo covered bonds in billion Euros



Jumbo covered bonds: > 1 billion Euro

Source: Merrill Lynch.

Structure of the presentation

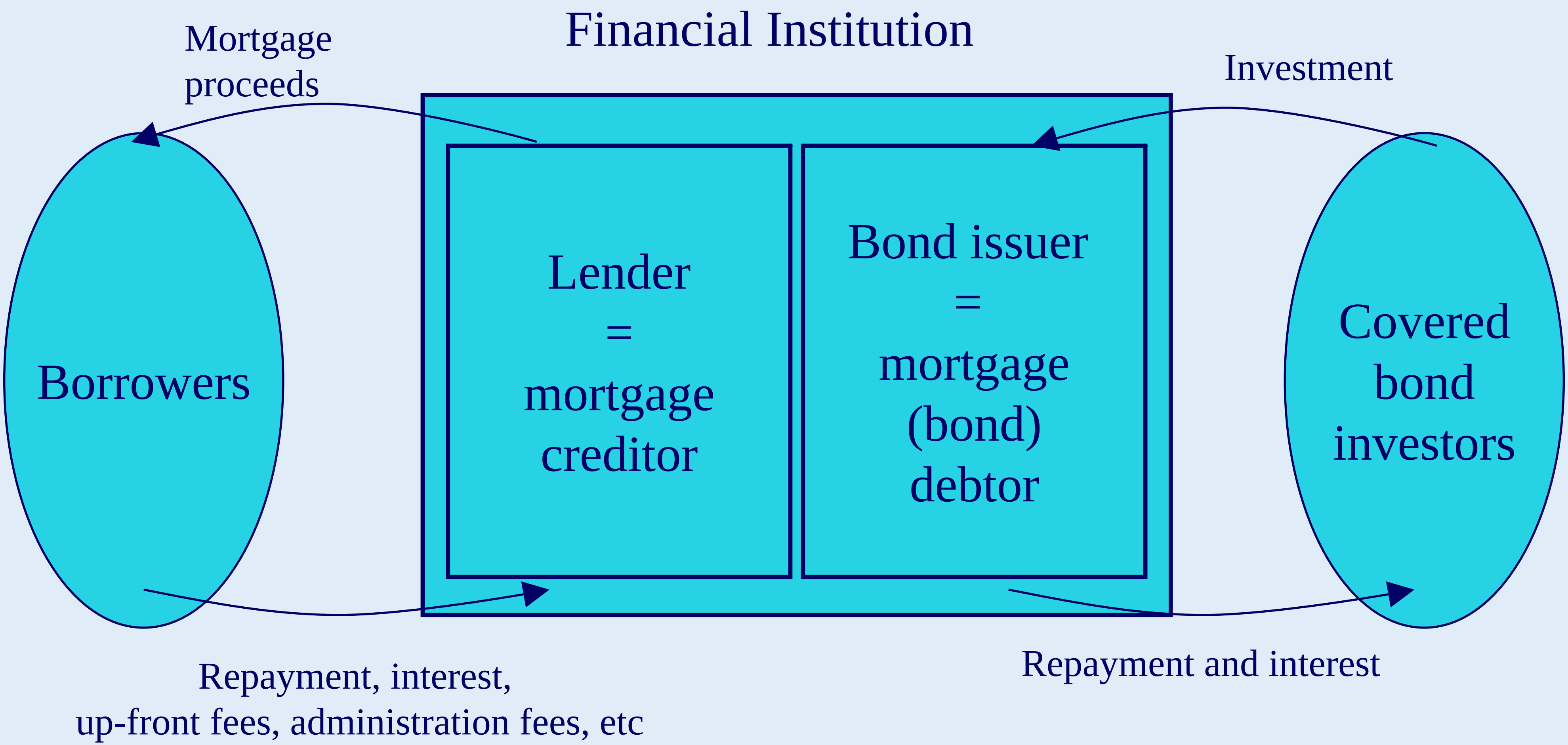
I. What is a covered bond? – basic types and structures

II. Why covered bonds? – issuer and investor motivations

III. Designing covered bonds - risk mitigation and management

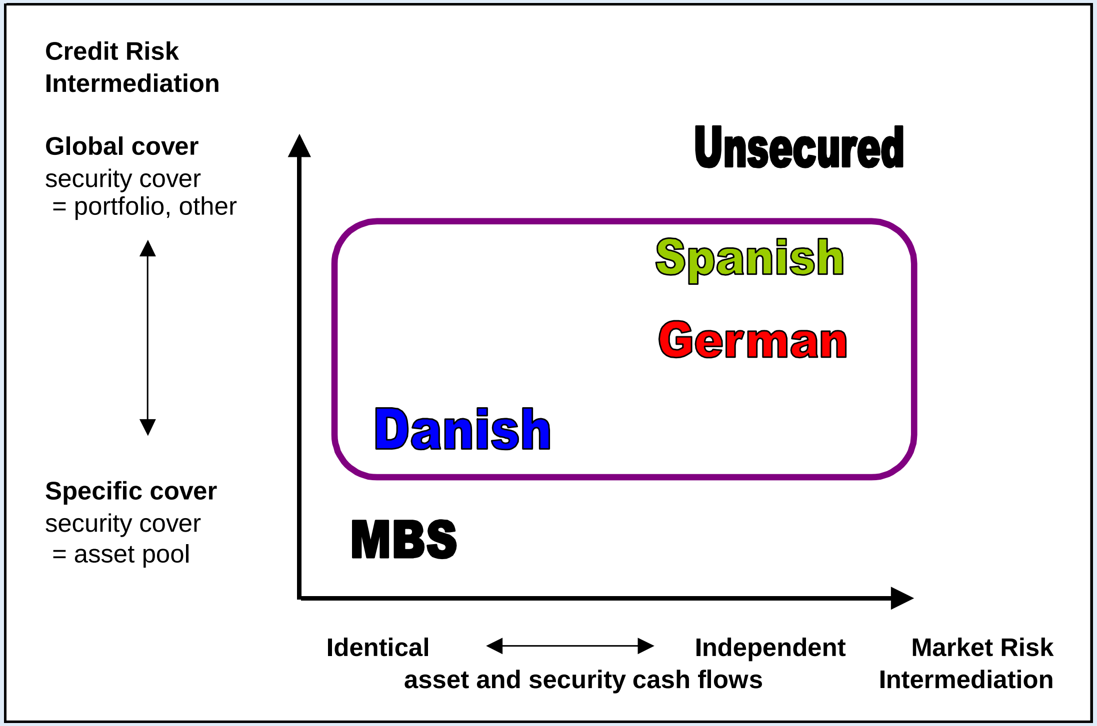
IV. Considerations for emerging markets

Basic mode of operation of a Covered Bond



Source: Ladekarl/World Bank.

Traditional European Covered Bond variants



- Covered bonds differ by
  - the specificity of the mortgage cover enhancing the bond;
  - the amount of market risk management by the issuer.
- German and Danish bonds backed by specific (revolving) cover pool;
- Spain without specific cover pool (overcollateralization).

- Danish covered bonds transfer market risk 1-1 to the capital market (quasi-MBS);
- German and Spanish covered bonds allow for risk intermediation (portfolio bond).

Source: Paul/Fehr, Finpolconsult.

Legal positive definition based on traditional variants

- Issuer type:
  - Issuer must be a registered credit institution;
- Legislation & Supervision
  - Recognized covered bonds will be regulated by law by a supervising agency, in particular with respect to bondholder protection;
- Asset Eligibility
  - Recognized covered bonds will be supported by an asset pool containing (among others) the proceeds of the issuance or eligible property of an equivalent value;
- Asset Coverage
  - The asset pool must have sufficient collateral to cover bondholder claims throughout the whole term of the recognized covered bond;
- Bankruptcy Privilege Granted to Investors
  - In the event of issuer's insolvency, holders of recognized covered bonds have a priority claim over the specified asset pool.

Source: EU UCITS Directive (CAD3 Directive)

CDOs and 'Structured' Covered Bonds have been pushing the limits

Collateralized Debt Obligations (CDO)

- Issuer usually an SPV without active management, not financial institution
- No formal financial supervision, except SEC (transparency only)
- Collateral not confined to minimum asset quality standards (subprime crisis)
- Derivatives of collateral admitted – e.g. wrap of BBB portions of second mortgages in CDO, CDO squared
- Asset/cash-flow coverage tests with varying quality.

-->CDOs are NOT Covered Bonds

Structured Covered Bonds

- Fulfill many, but often not all criteria of the national legal definition (e.g. collateral eligibility);
- Benefit from structural protection (e.g. third-party guarantees, greater overcollateralization) to further increase rating.

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Why choosing Covered Bonds?
Liquidity perspective

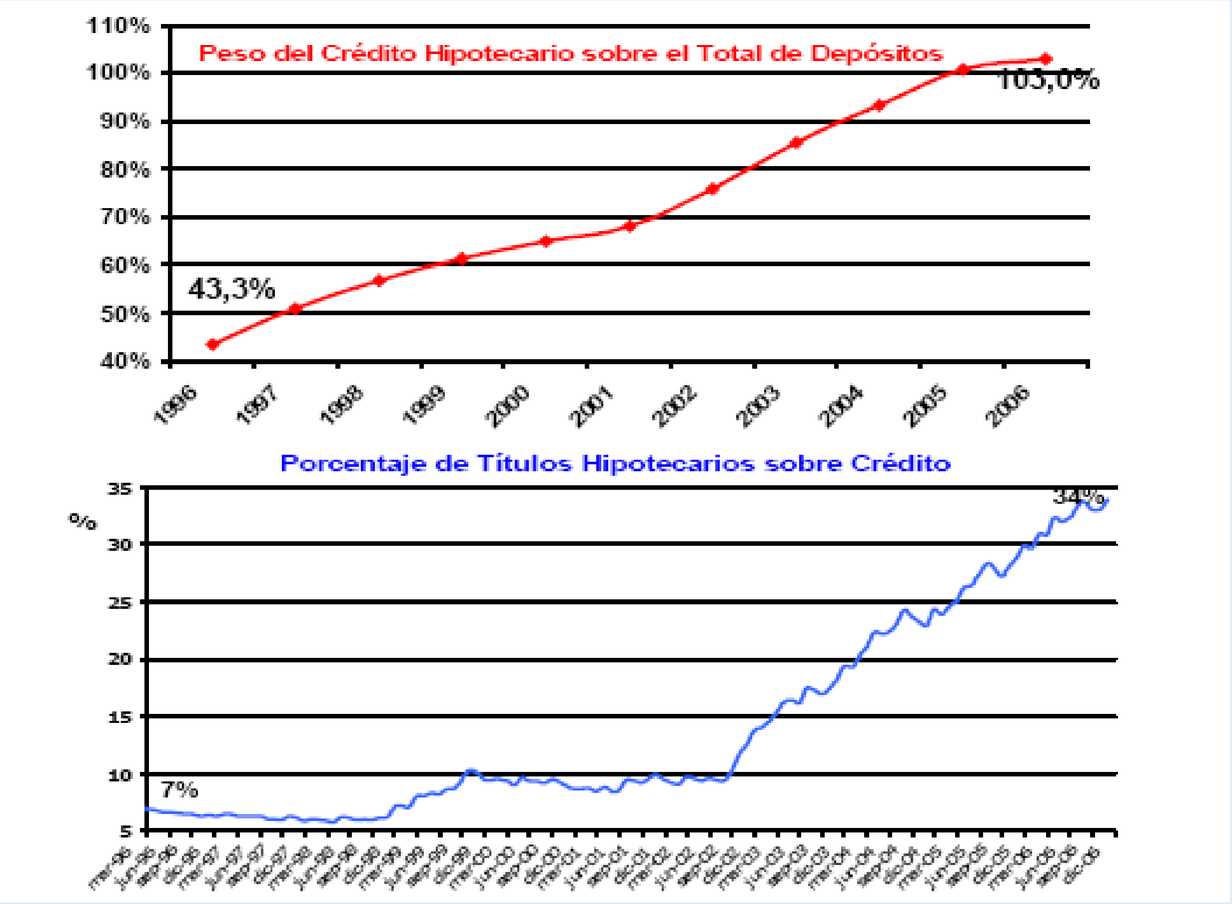
- Generate long-term source of funds (deposits are liquid, but callable);
- Tap liquid quasi-government bond market;
- Fund strongly growing portfolios;
- Use bank balance sheet as source for warehouse lines.

Spain mortgage loan/deposit ratio and share of Covered Bonds & MBS funding

Strongly growing market hit liquidity wall.

Spanish issuers swap fixed-rate bonds BACK to adjustable-rate loans!!

→Liquidity, not ALM/credit risk, motives dominating.

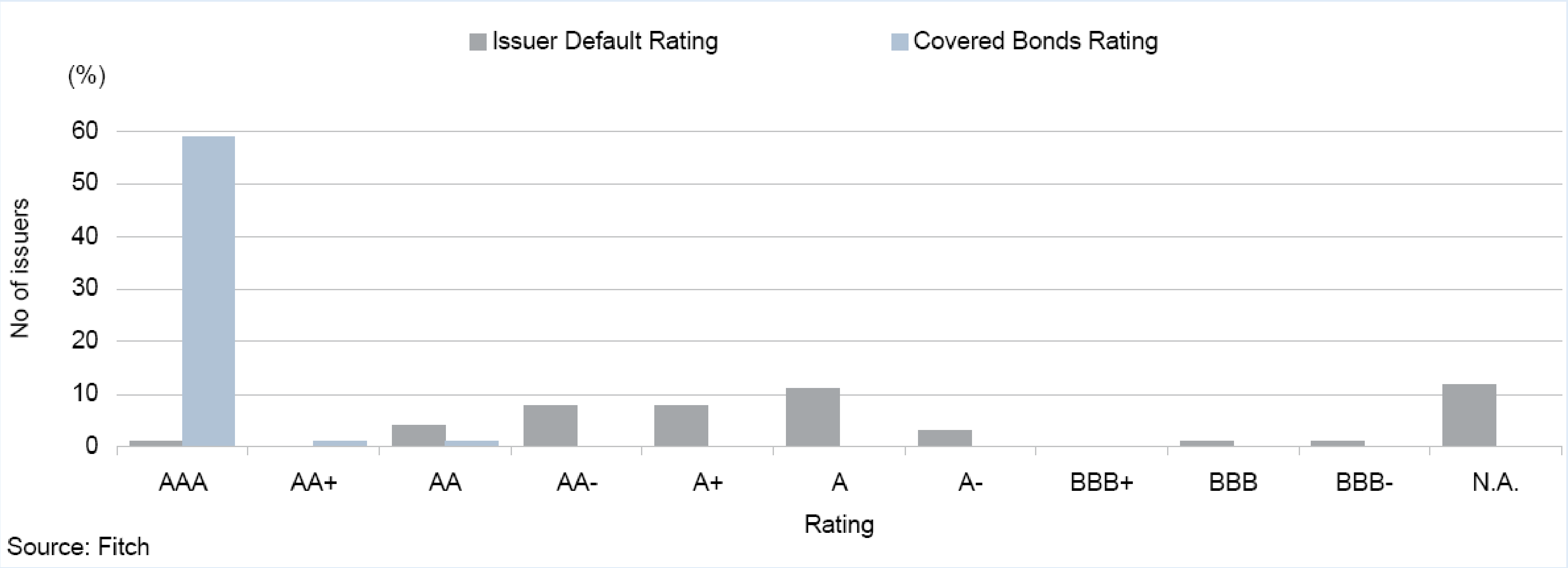


Source: Bank of Spain, AHE.

Why choosing covered bonds?
Credit risk perspective

- Pierce corporate unsecured issuer rating ceiling,
- Mobilize mortgage assets on balance sheet for credit enhancement,
- Avoid public or third-party private guarantees.

European issuer and Covered Bond ratings



Source: FitchRatings.

Why choosing covered bonds?
Interest rate risk perspective

- Match funds to reduce economic (and possibly regulatory) risk capital,
- Pass-through some or all interest rate risks to capital market investors,
- Deal with idiosyncratic interest rate risk (prepayments).

Covered Bonds as ALM tool in Europe

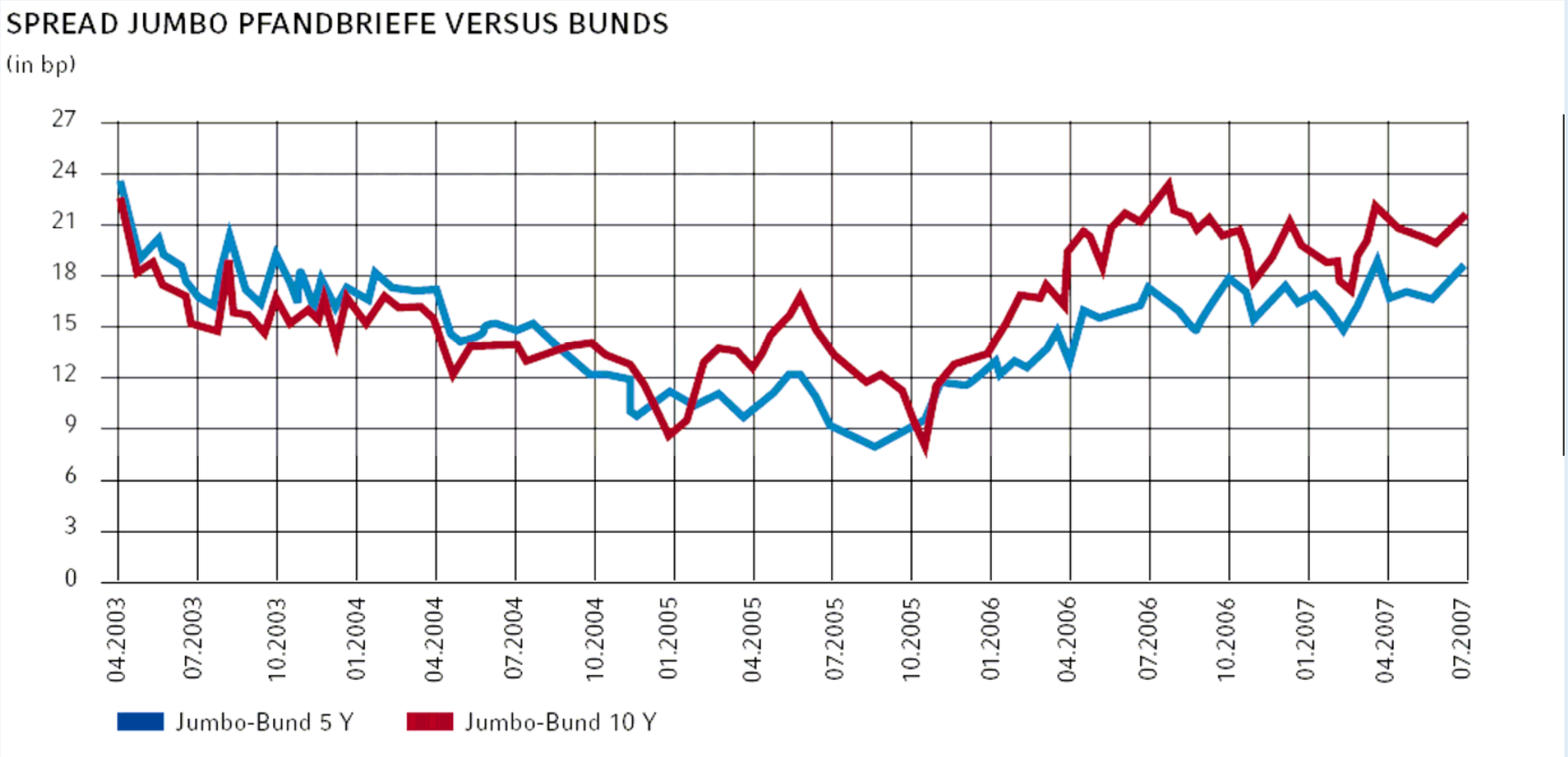
	WA residual maturity	
Pools	**Assets**	**Liabilities**
Total	9.4	5.1
PS	6.9	5.0
MO	11.8	5.2
Total, Germany	5.6	4.6
PS, Germany	6.0	4.7
MO, Germany	4.1	4.2
Total, ex. Germany	14.2	5.7
PS, ex. Germany	12.1	6.6
MO, ex. Germany	14.6	5.6

Source: FitchRatings. Notes: PS – public sector, MO – mortgage

Why choosing covered bonds? Pricing/investor perspective

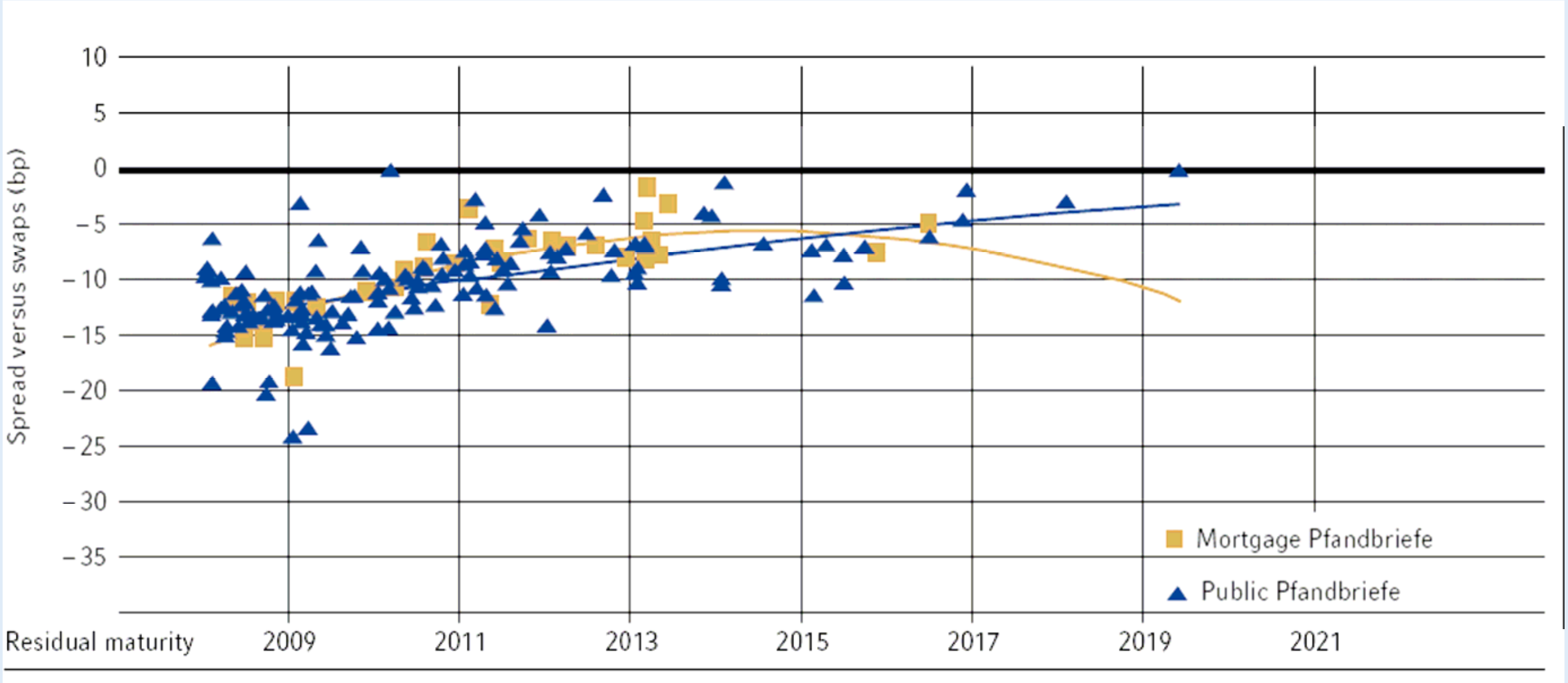
- Closeness to government bonds creates funding cost advantages;
- Trading instruments as Covered Bonds usually price over the entire yield curve;
- Capital requirement and investment regulation advantages as designated safe investment (EU UCITS 20% instead of 10%, CAD);
- Market making arrangements in the case of Jumbo loans provide liquidity.

Pricing performance – Bund spreads



Source: WestLB.

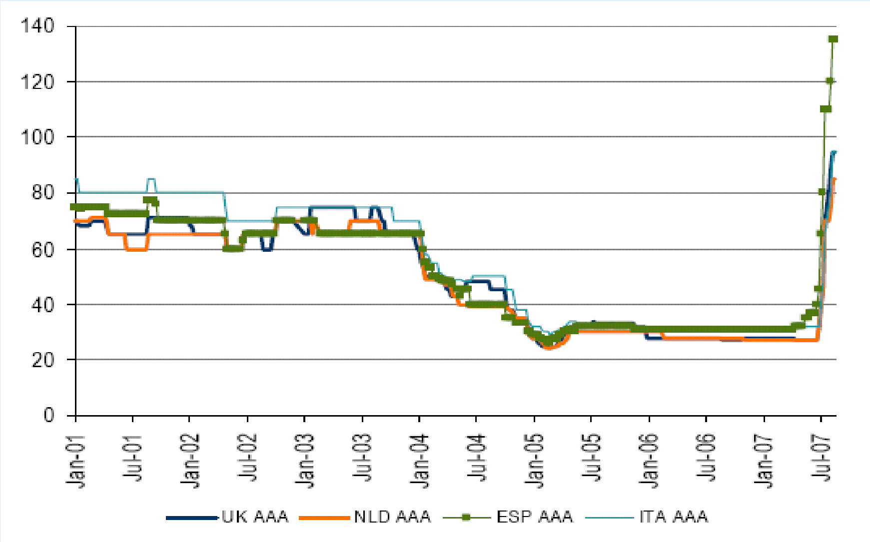
Pricing performance – small counterparty variation



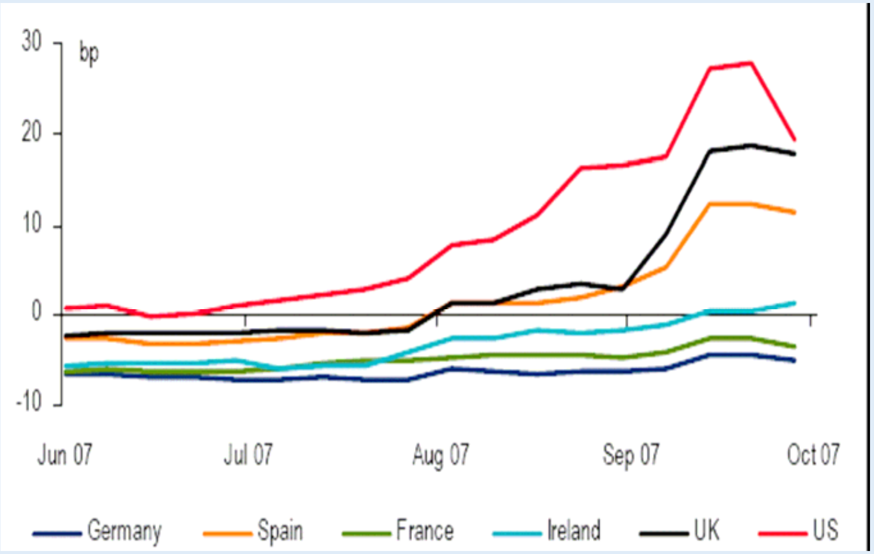
Source: Royal Bank of Scotland, per July 07.

Shock resistance during crisis

AAA RMBS Spreads 2001 - 2007



Covered bond spreads 2007

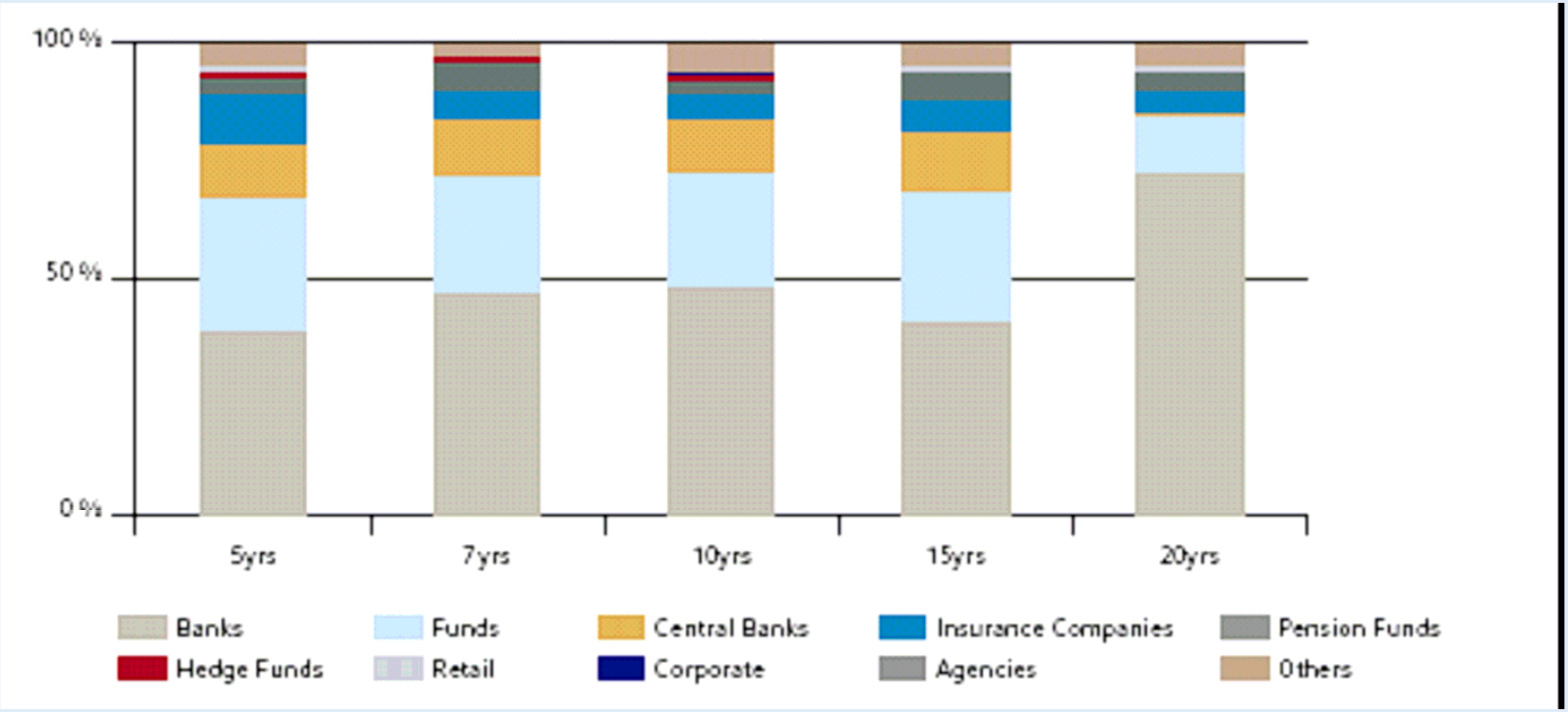


Smaller scale compared to AAA RMBS, related to corporate credit protection layer and collateral mix. Still problems with market-making.

Source: Merrill Lynch

Who are the investors?

2006/2007YTD estimated investor structure in Jumbo covered bonds



Source: Merrill Lynch.

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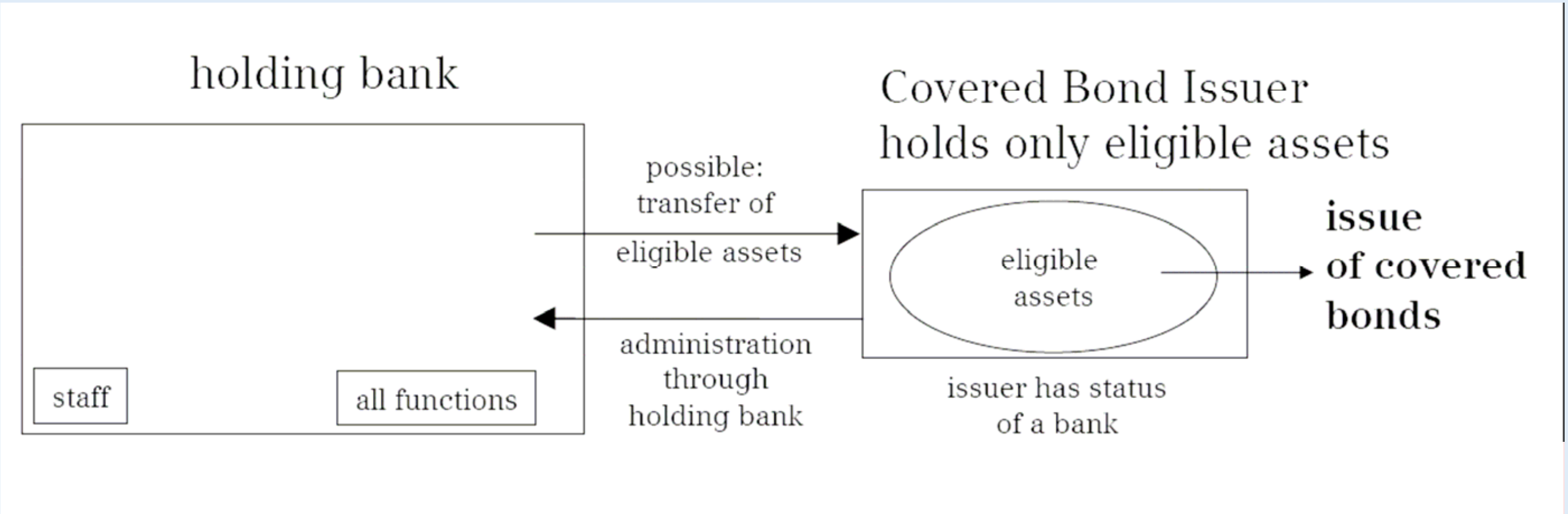
Issuers – questions

- Who is the issuer?
  - Bank only, bank and finance companies
- Does the issuer
  - Hold cover assets on his balance sheet?
  - Transfer assets to an SPV/SPC guaranteeing/issuing the covered bonds?
- Issuer characteristics
  - Required to be a specialist (e.g. special bank), or performing special functions?
  - Only specific knowledge about issuance process?
- Issuer supervision
  - Special supervision or general supervision (or no supervision)?
  - Bank or capital markets supervisor?

Solution I – Specialized funding vehicle with bank status

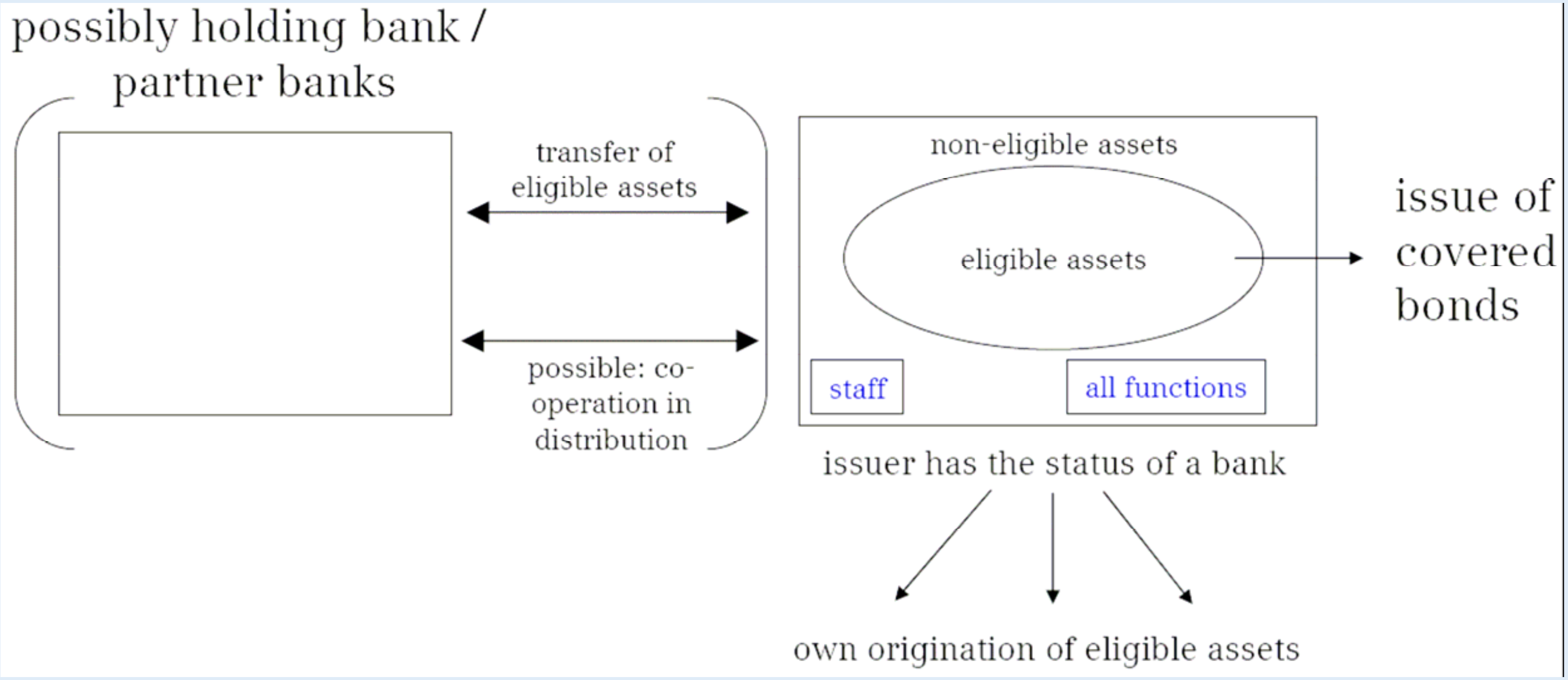
- France, Finland, Norway, Sweden



Source: Verband deutscher Pfandbriefbanken

Solution II – Specialized banks without/with non-eligible business

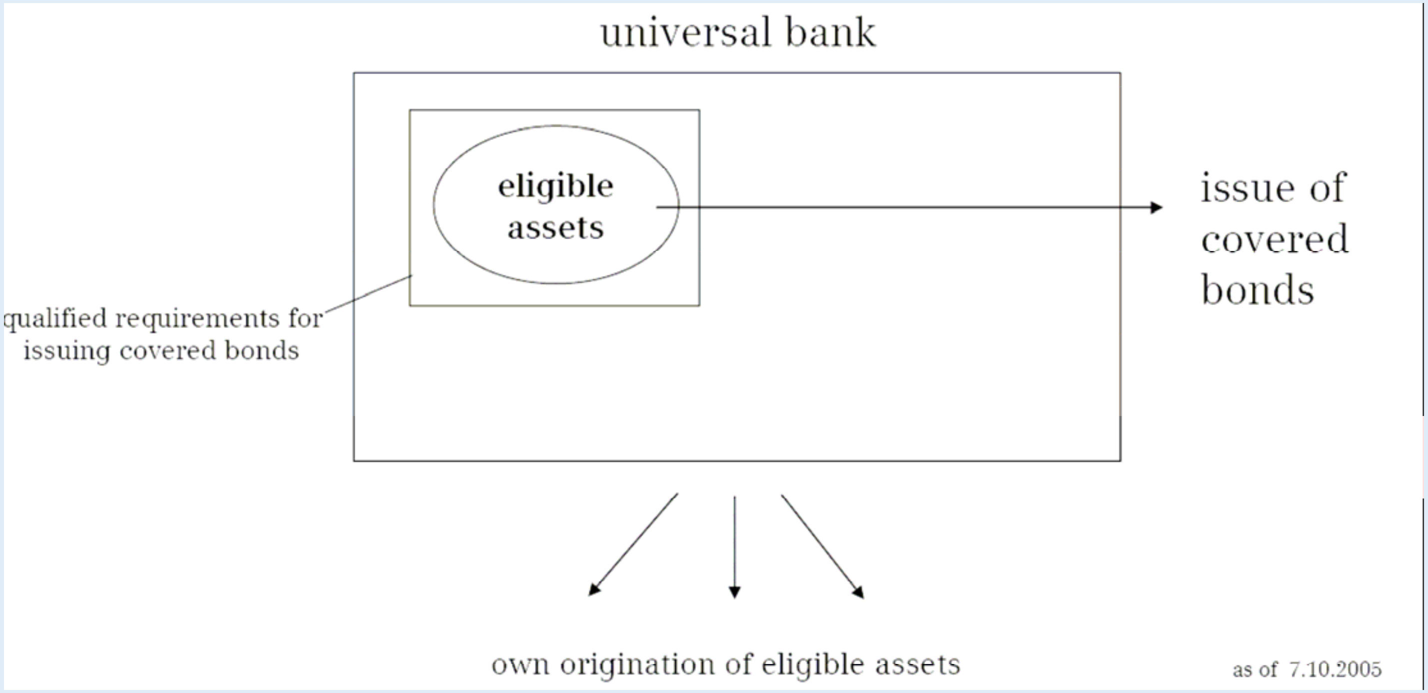
- Austria (mortgage banks), Denmark, Hungary, Ireland, Poland



Source: Verband deutscher Pfandbriefbanken

Solution III – Universal bank with/without qualified covered bond license

- Qualified license: Austria (public banks), Germany, Russia, Latvia, Slovenia, Slovakia
- Without qualified license: Bulgaria, Czech republic, Lithuania, Spain



Source: Verband deutscher Pfandbriefbanken

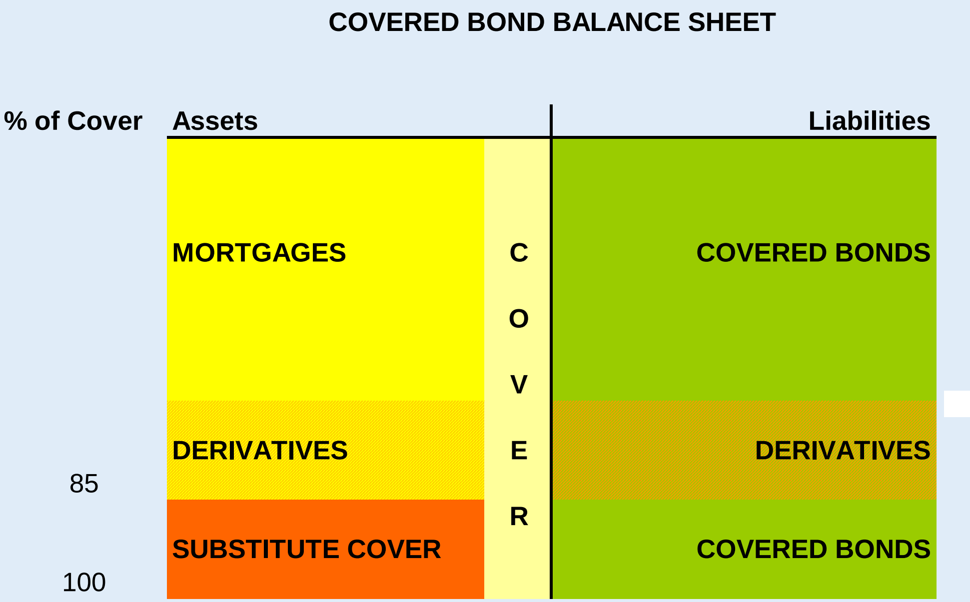
Credit risk – asset quality criteria

- Questions:
  - Which types of assets – residential only, or including commercial?
  - Which minimum quality – collateral (mortgage) ex, first lien?
  - Minimum disclosure over asset composition & quality?
  - Types of substitute cover, inclusion of derivatives?
- Solutions:
  - Covered bonds in Europe generally mix asset classes (small domestic markets),
  - Mortgage collateral required; tight limits on land/unfinished; first lien generally required,
  - Disclosure standards are increased, influenced by the MBS market,
  - Derivatives generally included, if serving direct risk management purpose.

Credit risk – bankruptcy remoteness & integrity of the asset pool

- Questions:
  - Can bondholder claims be satisfied from the assets without interference from the bankruptcy process of an issuer?
  - Can mortgage assets be segregated (ring-fenced) to create a direct legal link to the bond?
  - Do bonds have to be accelerated in the case of issuer bankruptcy?
- Solutions:
  - Bankruptcy remoteness de jure - special bank, special purpose vehicle,
  - Alternative: detailed regulation governing asset segregation,
  - Acceleration in most emerging mkts, non-acceleration focus of modern laws (new German act).

Credit risk – cover pool structuring



- Basic alternatives:
  - Structured covered bonds (UK)
  - Danish 1-1 system (80% total LTV)

Cover pool includes

- Registered mortgage assets
  - First lien up to x% (60%-80%) LTV position,
  - High asset quality (e.g. authorized housing).
- Registered derivatives
  - E.g. interest rate swap;
  - Net claims of counterparties to the cover pool are pari passu liabilities!
- Substitute cover
  - Cash or liquid bonds, max ca 10-15%,
  - Prepayment proceeds part of substitute cover.

Cover Monitor

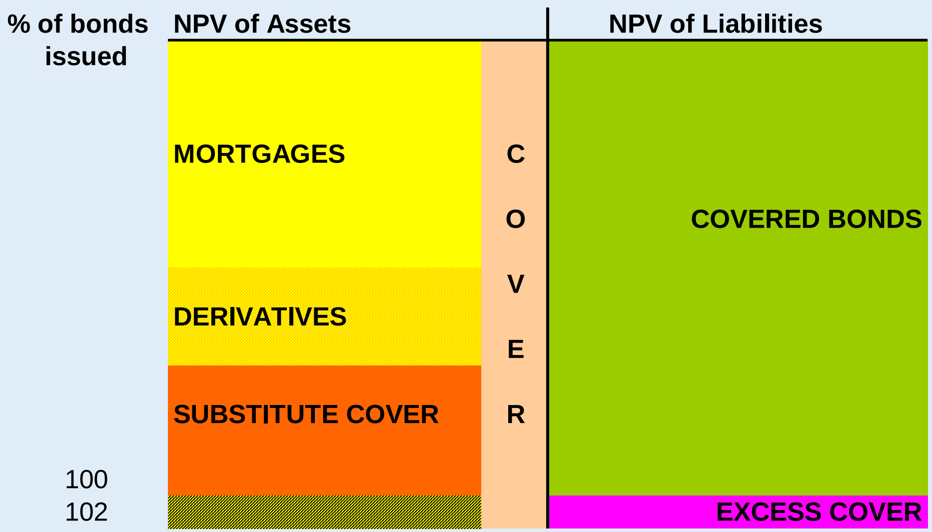
- Questions:
  - Qualifications? Functions? Liability?
- Solutions:
  - Bank or capital markets regulators, qualified experts, auditing companies,
  - Function 1 - Trusteeship: compliance with law, authorize asset additions & removals, assure documentation (simultaneous access to bank files), reporting to regulator & issuer, whistle-blowing to regulator;
  - Function 2 - Full cover audit: every 1-2 years,
  - Either public law or private law liability; professional liability insurance in latter case. Splits of functions exist – e.g. full audit public, trusteeship private – to reduce costs.

Interest rate risk management

Questions:

- Static or dynamic matching requirements?
- Rules on maturity transformation risk/mismatch?
- What is the appropriate response to the presence of prepayment risk?
- Is a specialized and sophisticated asset-liability management structure necessary?

Static and dynamic matching tests



- Static matching tests
  - Value of assets > (1+x%)*value of liabilities (Nominal Cover Matching).
  - Weighted average yield on assets>liabilities (Yield Matching)
  - Interest received > interest paid (Revenue Matching)
- Dynamic matching tests
  - Net present value of assets > (1+x%)*net present value of liabilities. (Net Present Value Matching).
  - Duration gap limit (difference in duration of assets & liabilities > Y [e.g.- 3 months])
- X = excess cover ratio (see graph)

- Ideally apply both types of tests.
- Only dynamic tests allow for proper risk detection in volatile interest rate context!

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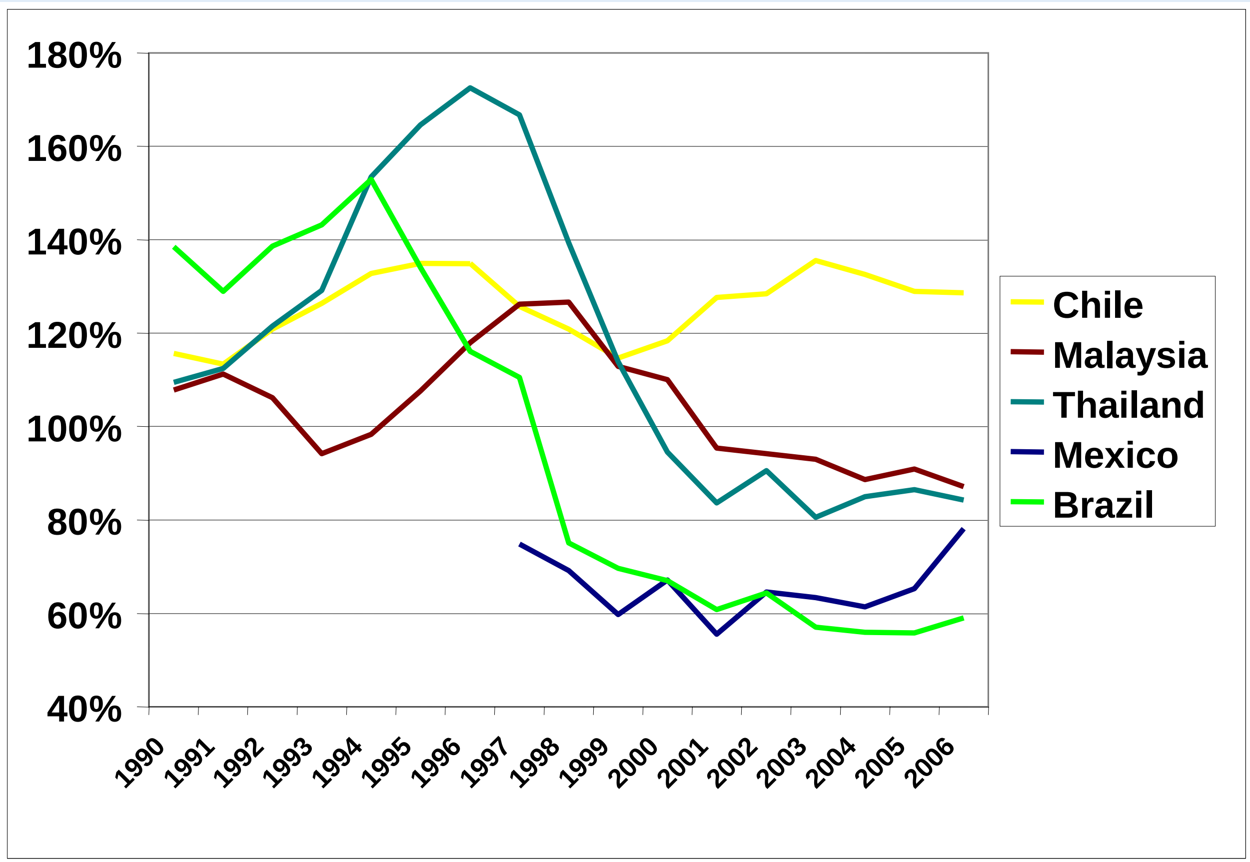
Liquidity needs: ratio of private sector loans to liquid liabilities in selected emerging markets



Chile with mortgage bond system

Mexico starting to develop

- Hypotecaria Total project

- Covered bond law

Brazil need in the near future.

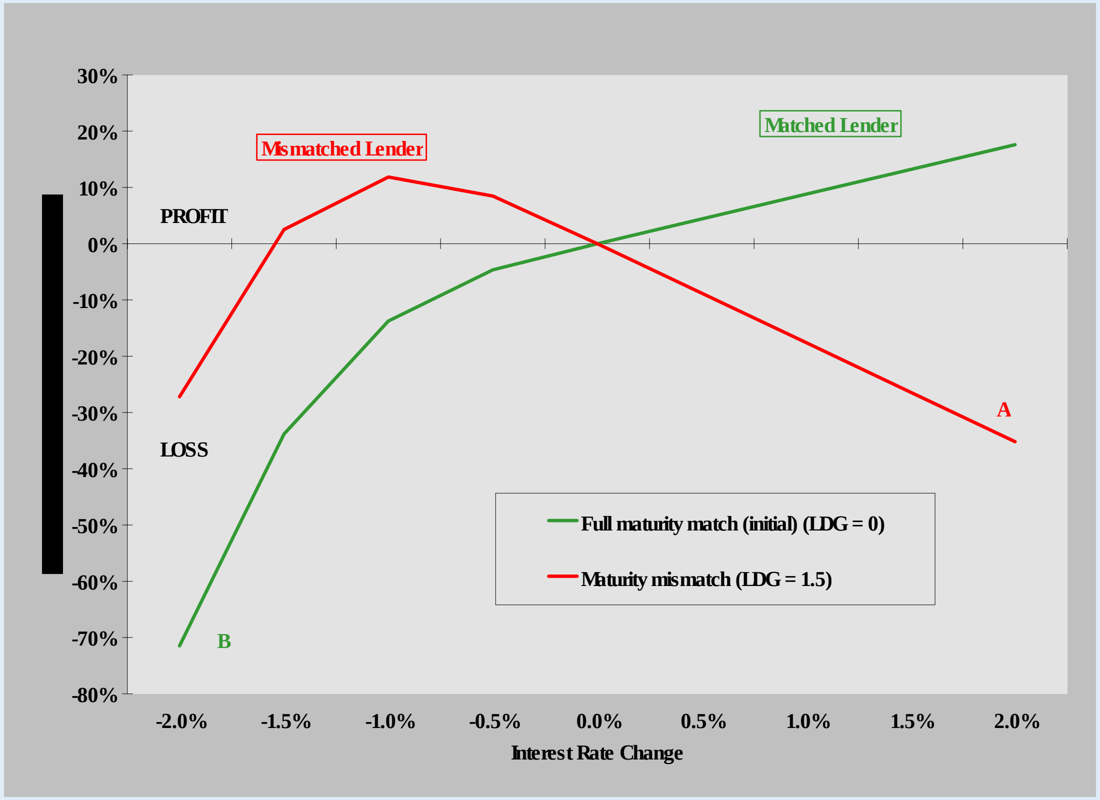
Source: IMF, Finpolconsult

Institutional conditions for Covered Bond issuers

- Initial limitation to regulated financial institutions, with suitable risk mitigation and management systems in place;
- Legal minimimum conditions:
  - Top legal quality of collateral (finished, licensed, land registry recorded; executable);
  - On-balance asset segregation or true sale to SPV possible;
  - Clear rules on receivership of bankrupt institutions, bond indenture, bond acceleration.
    - Bonds need not necessarily to be non-accelerating.
- Collateral / refinancing register helps to prevent fraud.
- Moderate-cost but high-quality cover monitors.
- Supervisors need to agree on structure and processes – e.g. bank vs. securities regulator (ideally bank regulator).
- Appropriate investor regulations.

Market risk issues – esp. watch prepayment risk

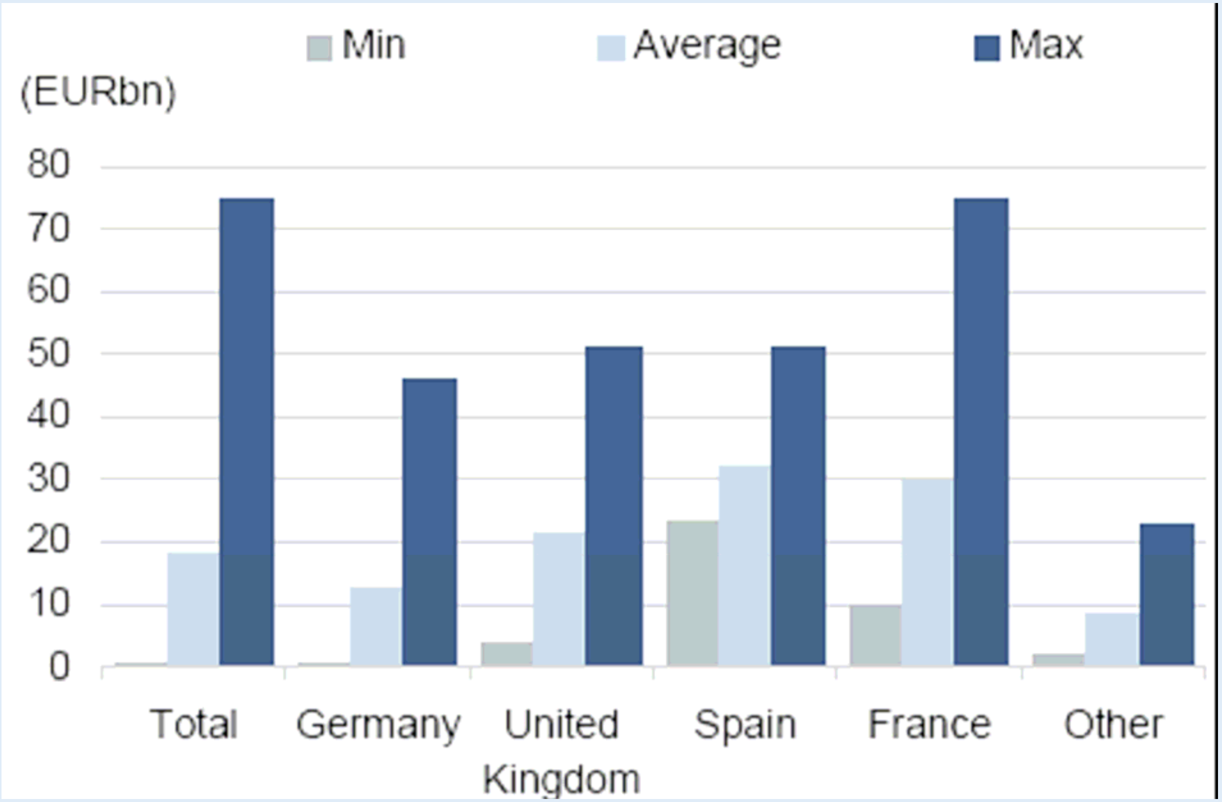
- E.g. Brazilian law prohibits prepayment indemnities.
- With prepayments, the duration of assets shortens.
- If duration of bonds is not adjusted → negative transformation risk:
  - French covered bonds disappeared in the 1980s in an interest rate risk situation similar to Brazil's **(B)**.
  - Lenders often react by funding with short-term liabilities and running mismatch **(A)**.
  - **Alternative: pass-through of interest rate risk (Denmark).**



Rules designed to limit maturity transformation risk – example Turkish covered bond law (07)

- Issuers are held to assess the prepayment risk content of their portfolios and estimate the expected duration of assets,
- Issuers must not incur negative maturity transformation risk ex-ante,
  - maximum allowable negative duration gap is 3 months,
- Dynamic testing, static stress tests (problems with dynamic)
  - facilitates the detection of negative maturity transformation risks and mispricing,
- The banking regulator may apply all other applicable risk management limits
  - – esp. on positive maturity transformation – independently from the covered bond regulations.

Cover pool size constraints



Typical EU cover pool size now

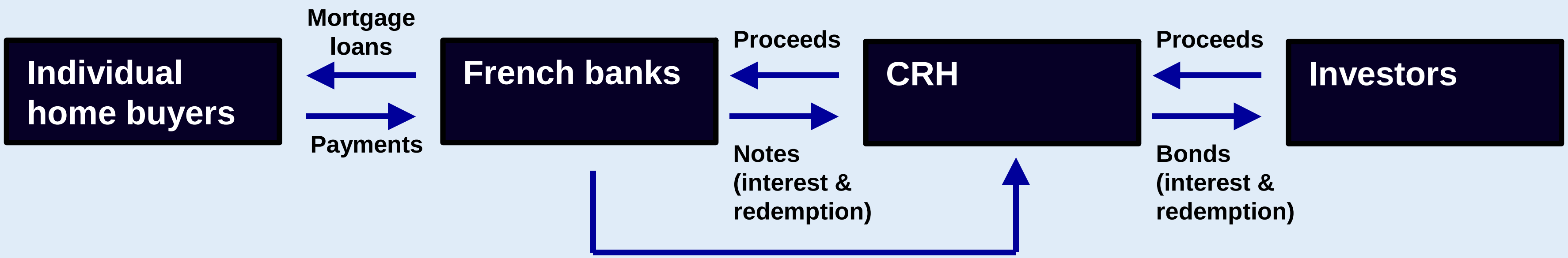
E 20 billion.

Jumbo markets with greater liquidity, pricing stability.

There are limits to collateral pooling.

Source: FitchRatings.

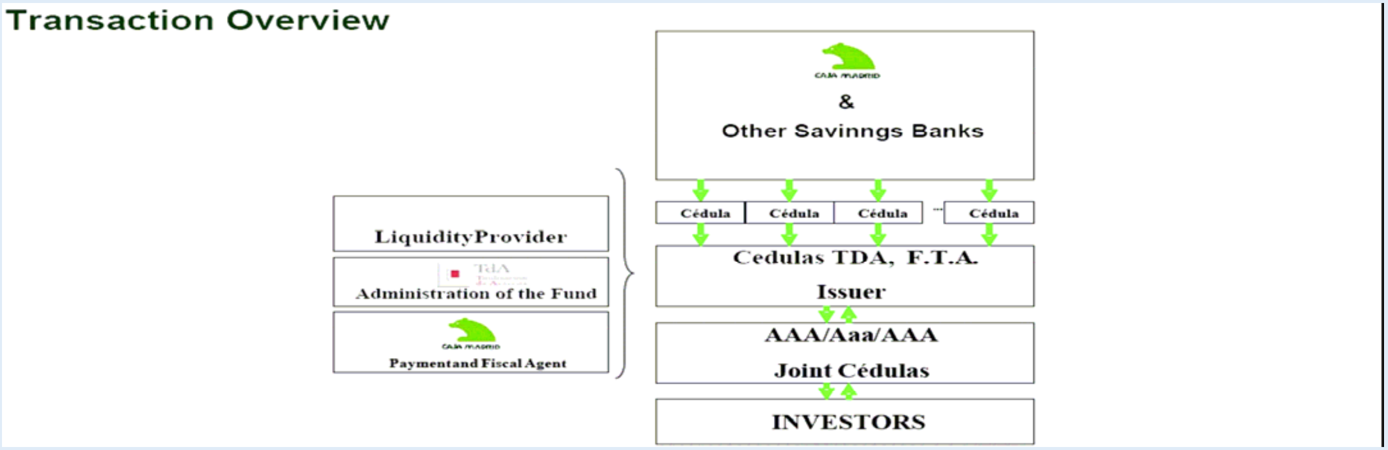
Aggregation options for smaller lenders - Covered Bond liquidity facility



- Earliest models go back to 1920/30s: Swiss Pfandbriefzentralen, FHLB in the U.S.
- Caisse de Refinancement Hypotecaire; founded 1984 after mortgage market crisis
- Largest French covered bond issuer, E 16.5 billion (2004)
- Owned by depositary groups in France, Credit Agricole-Credit Lyonais and Credit Mutuel (both mutuals) largest.
- Eligibility criteria for loans as covered bonds; credit risk remains on balance of the originator, partial cash-flow pass-through.

Source: Caisse de Refinancement Hypotecaire

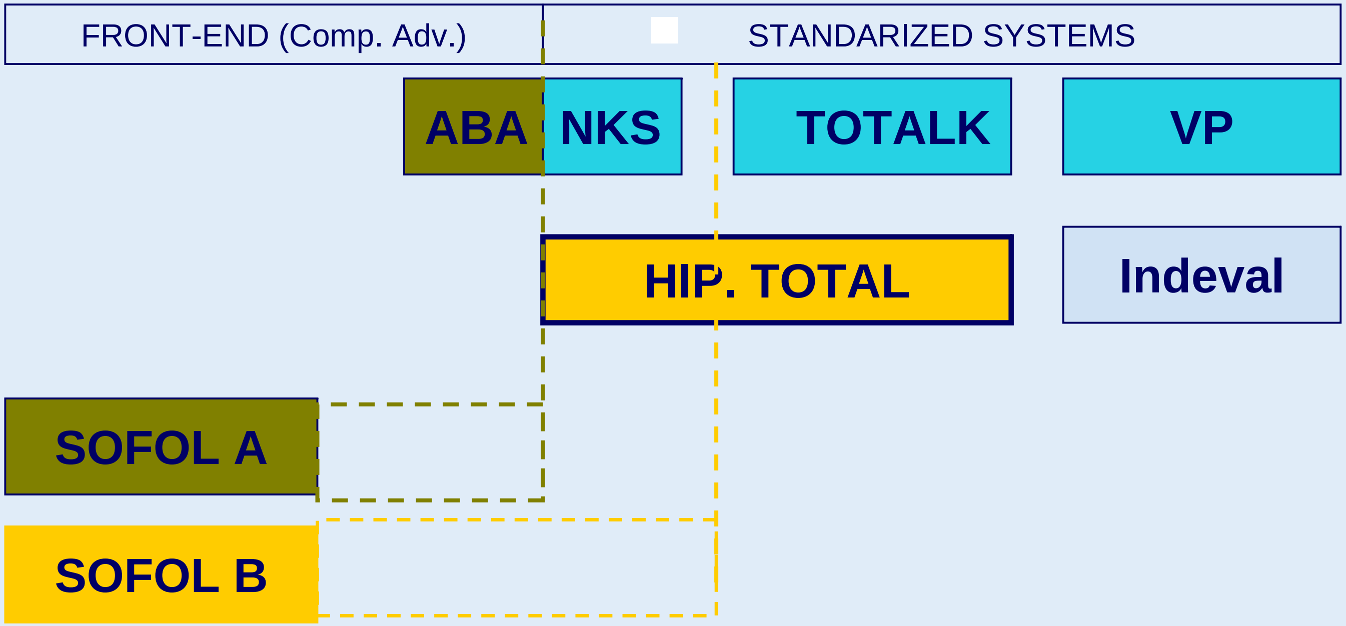
Centralized Issuance
– Spanish Covered Bond Conduit



- Ahorro y Titulizacion (Spain, Madrid); joint issuer of Spanish savings banks (Cajas)
- Cedulas TDA, F.T.A. is a special purpbose fund under Spanish law with limited liability
- Sole purpose of the Fund is to acquire Cedulas Hypotecarias from savings banks as collateral for the issuance of joint Cedulas.

Mexico: Hipotecaria Total Covered Bond issuer with front-end option and Danish technology

-- Local lenders (SOFOLs) choose among participation options.
-- SHF (Gov of Mex) initial credit risk support.
-- HIPOTECARIA TOTAL incorporates the business models of Totalkredit (centralized issuer) and VP (IT), issues pass-throughs (prepayable FRM loans).



Source: Soros Fund Management.

END

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