

The 3rd ASEAN Fixed Income Summit



Mortgage Securitization In Korea

September 2016

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Key Success Factors



1. KHFC Overview

KHFC Introduction



Policy Arm of the Korean Government

Korea Housing Finance Corporation

- Government-controlled entity established under the KHFC Act (Mar. 2004)
- Policy mandate to promote the welfare of people in Korea by facilitating the long-term, stable supply of housing finance (KHFC Act)

KHFC's Major Business



Mortgage

Fixed-Rate Mortgage Loans Origination

- Supply of long-term mortgage loans designed by the KHFC to allow customers to safely repay the principal and interest of their loan over a period of ten to thirty years

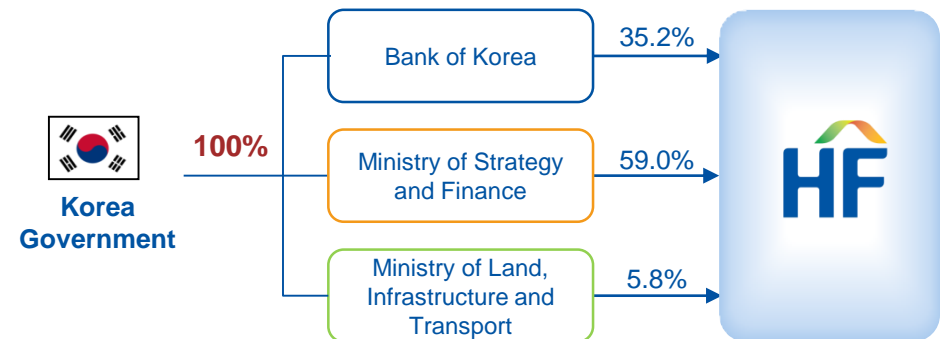


Securitization

Securitization

- Securitization of mortgage loans which it purchases from Korean mortgage lenders in order to facilitate the supply of housing finance on a long-term and stable basis

Ownership Structure (as of June 30, 2016)



Ongoing Government Capital Injection

Authorized Capital Increase through Revision of KHFC Act in March 2016

KRW2 trn

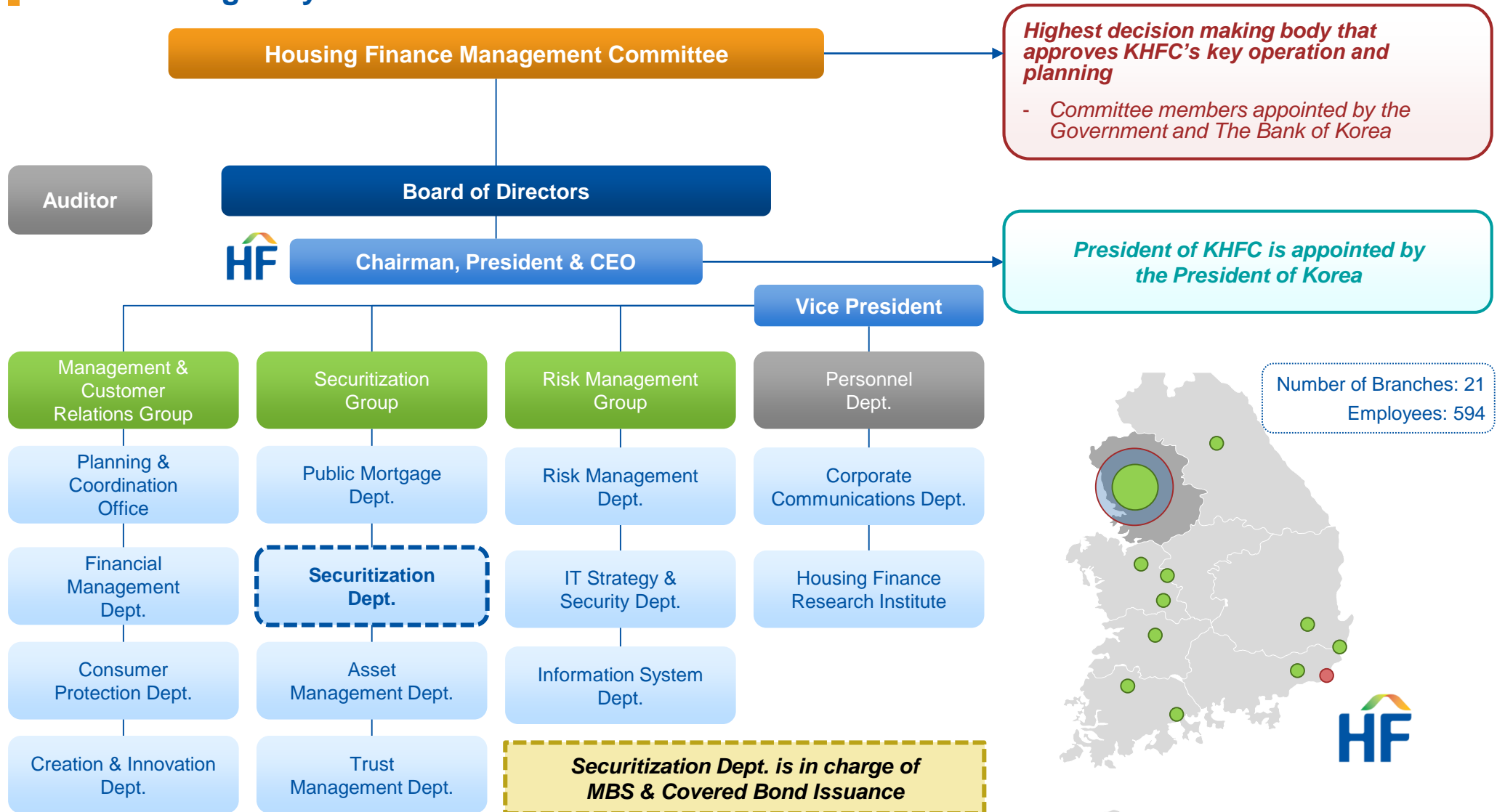
KRW5 trn

| Date of Capital Injection | | Institution | Amount (KRW Bn) |
|---------------------------|-----------------|------------------|-----------------|
| 2004 | Mar / Jun | BOK, MoSF, MOLIT | 376.6 |
| 2007 | Jun | MoSF | 50.0 |
| 2008 | Jan / Dec | MoSF, MOLIT | 250.0 |
| 2009 | Jan / May | MoSF | 400.0 |
| 2012 | July | BOK | 135.0 |
| 2013 | Mar / Jun | MoSF | 220.0 |
| 2015 | Jun / Aug / Dec | BOK, MoSF | 400.0 |
| Total | | | 1,831.6 |

KHFC Introduction



Close Oversight By the Government



Mortgage Origination



Mortgage Origination

- KHFC provides long-term, fixed rate installment mortgage loan products in order to support the Government's initiative to control household debt by increasing fixed rate mortgage loans in the housing market
- **KHFC Mortgage Loan Types**

1 Bogeumjari Loans

- Interest rate set by:
KHFC

2 Conforming Loans

- Interest rate set by:
Participating Institutions

Conforming loans are a product introduced by KHFC in partnership with participating lenders in March 2012 for the purpose of further promoting the origination of long-term fixed rate mortgage products

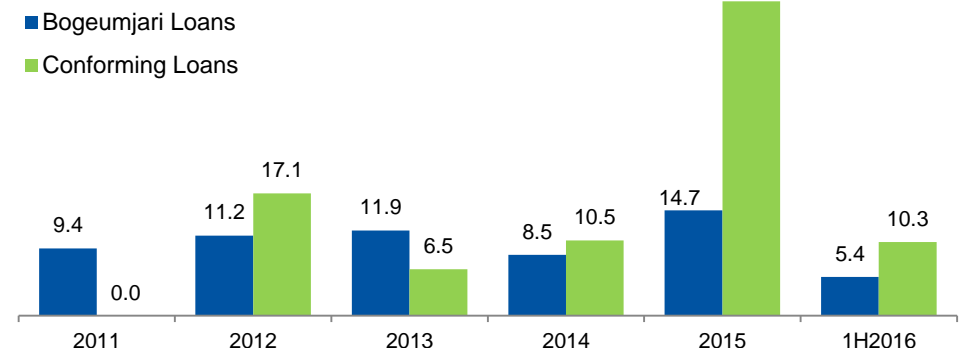
- ✓ KHFC purchases KHFC Mortgage Loans that participating banks have originated in strict compliance with KHFC underwriting policies
- ✓ KHFC can require originating institutions to repurchase loans that violate the agreed underwriting policies

Mortgage Loan Comparison

| | KHFC Mortgage Loans Incl. Bogeumjari/ Conforming Loans | Commercial Banks Mortgage Loans |
|-----------------------------|--|--|
| Purpose | • Fulfill policy target | • Commercially driven |
| Borrower Eligibility | • Income proof required | • No restriction |
| Maximum LTV | • 70% | • 70% |
| Loan Limit | • KRW 500 mm | • No restriction |
| Collateral | • Max. price of KRW 900 mm | • No restriction |
| Interest Rate | • Fixed | • Mostly Floating |

Historical Supply of Loans

(Unit: KRW trn)

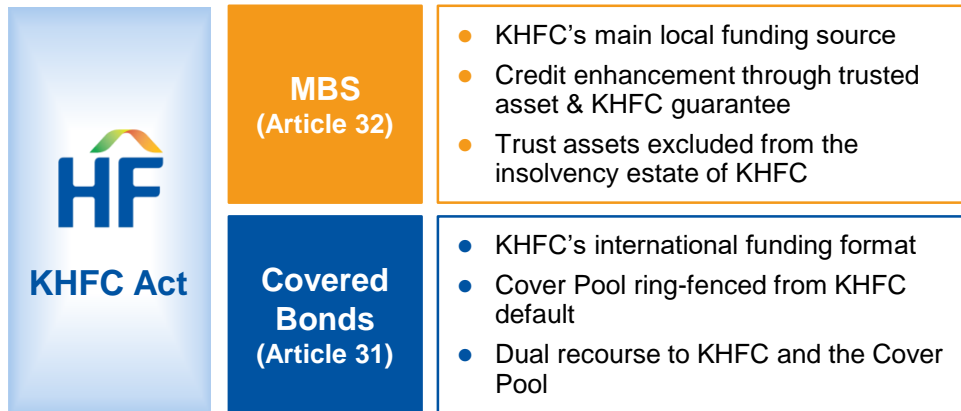


Securitization (Mortgage Funding)



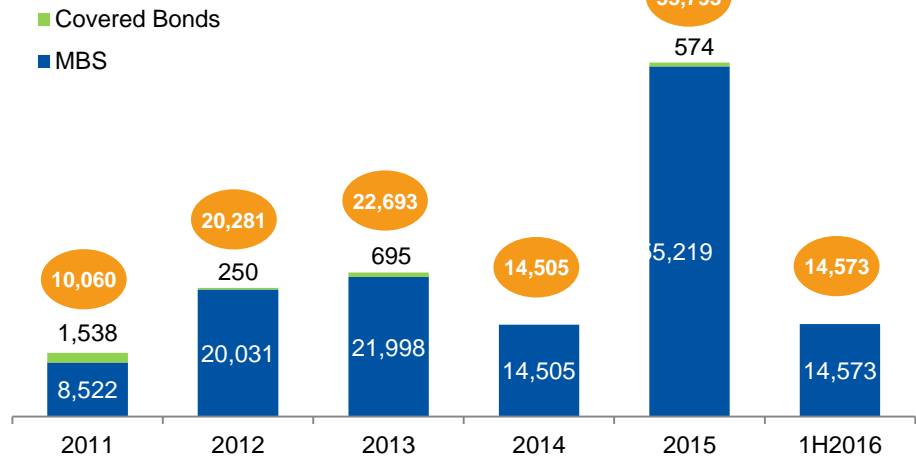
Securitization

- The KHFC Act enables KHFC to issue two types of mortgage-backed instruments to fund its mortgage business



Issuance Volume

(Unit: KRW bn)



Member of European Covered Bond Council

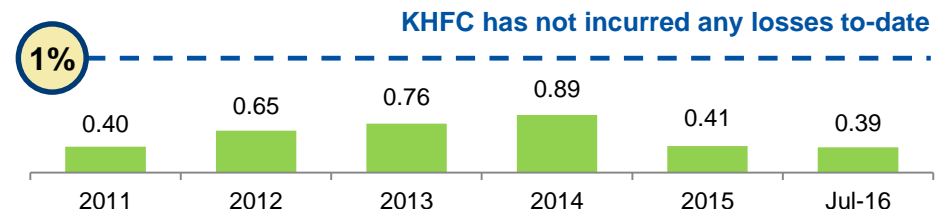


KHFC Mortgage Loan Performance

(Unit: %)

■ MBS⁽¹⁾

KHFC effectively manages delinquency rates below 1%



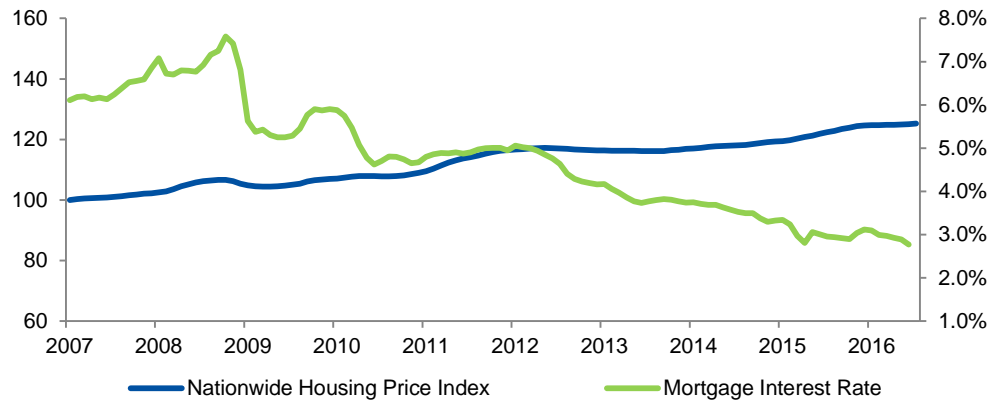


2. Housing Finance Market

Housing Finance Market (cont'd)

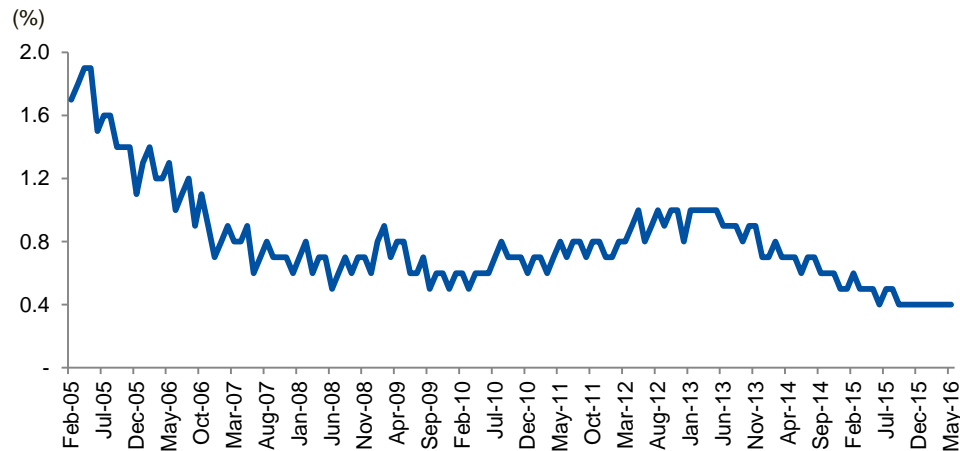


Housing Price Index and Mortgage Rate



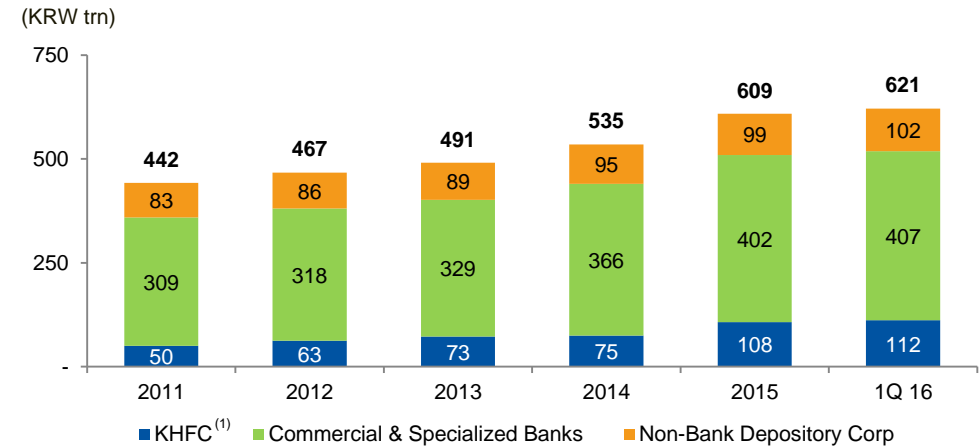
Note 1: Housing Price Index Indexed to Jan. 2005=100
Source: Kookmin Bank Database, KOSIS

Bank Loan Delinquency Ratio



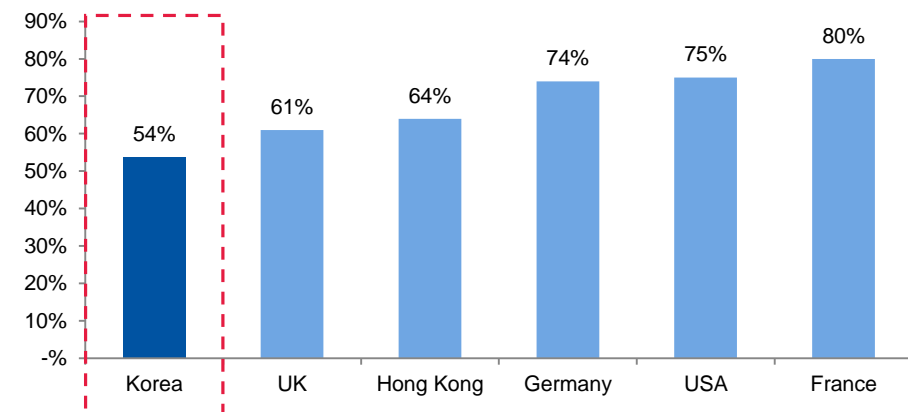
Source: Bloomberg.

Mortgage Loans Outstanding



Note 1: Includes mortgage loan by KHFC and Korea Housing & Urban Guarantee Corporation
Source: BOK.

Average Loan-to-Value (LTV) Ratio



Note 1: Data for Korea as of Dec-15; data for remaining countries as of May-14
Source: KDI.



Government-led Policies to Improve Loan Quality

FSC initiatives for “qualitative” mortgage loan improvements by encouraging amortizing and fixed rate mortgage loans

| Target Ratio of Fixed Rate and Amortizing Loans | | | | |
|---|------------|--------|------|-------|
| Type | March 2016 | Target | | |
| | | 2015 | 2016 | 2017 |
| Fixed Rate | 36.8% | 35% | 40% | 42.5% |
| Amortizing | 39.5% | 35% | 45% | 50% |

- ✓ FSC has upward-revised target guidelines on fixed rate & amortization loan proportions in May 2016
- ✓ Increase proportions of fixed-rate and amortizing loans provide protection for borrowers against potential rise in interest rates and repayment burden associated with such risk

Contributes to Korea's Stronger Fundamental

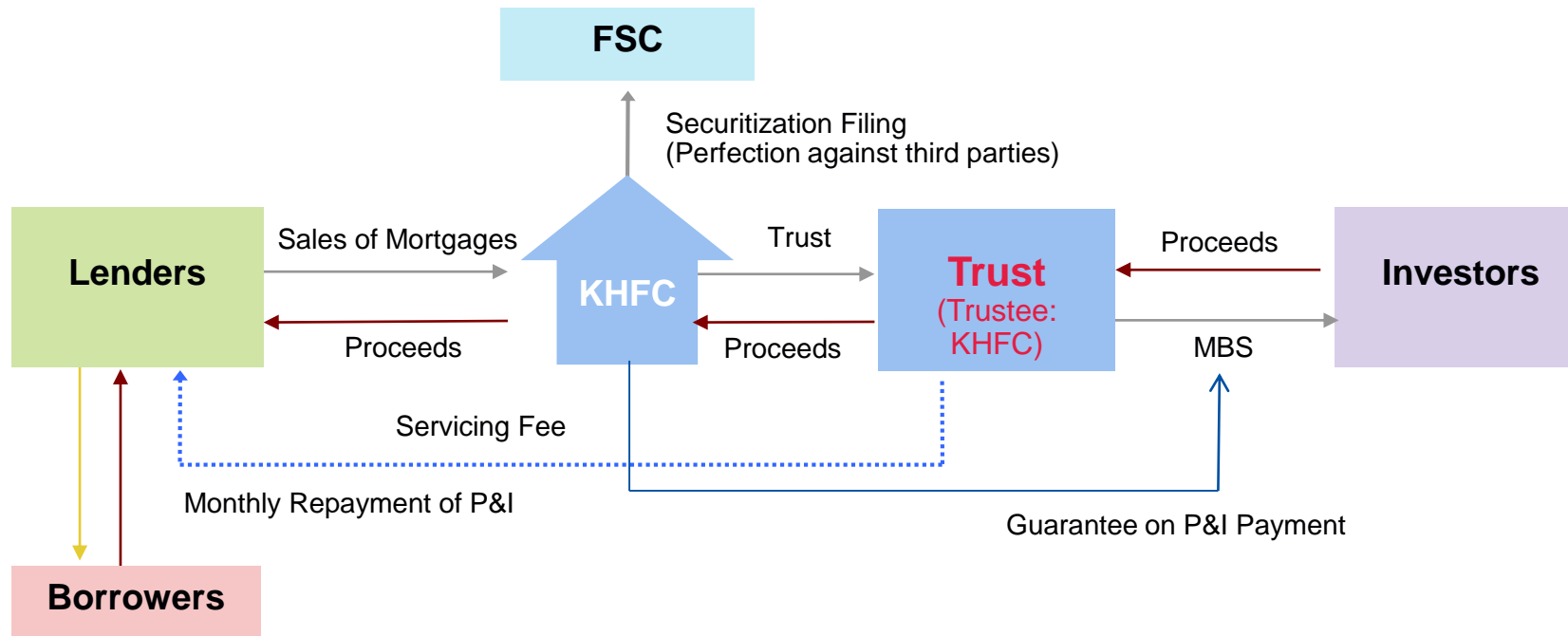
- S&P upgraded Korea's **sovereign rating to AA from AA-** in August 2016
- The government's efforts to shift weight to fixed rate mortgage loans was noted as one of contributors
 - Initiatives have alleviated perceived risks related to increasing household debt

Strengthens KHFC's Business Growth

- Government's policies to increase proportion of fixed rate and amortizing mortgage loans translate into bigger role played by KHFC
- KHFC to continue to carry its policy mandate to act as a major vehicle for providing long-term and stable housing finance
- Promotes MBS & covered bond issuance to support supply of mortgage loans



3. MBS(Mortgage Backed Securities)



| | |
|-----------------|--|
| Issuance Amount | <ul style="list-style-type: none"> KRW 1~1.5 trillion per issuance(USD 0.9~1.4bn) |
| Issuer | <ul style="list-style-type: none"> HF's Internal Trust - No setup cost(Special treatment by government) |
| Guarantee | <ul style="list-style-type: none"> HF provides 100% Guarantee on MBS P&I payment (Ultimate principal payment guarantee on maturity date) |
| Servicer | <ul style="list-style-type: none"> Participating Lenders or KHFC |



| | |
|---------------------------|--|
| Underlying Assets | <ul style="list-style-type: none"> ▪ Mortgages originated by participating lenders under mortgage securitization commitment program - loan pricing with par value |
| Pipeline Risk | <ul style="list-style-type: none"> ▪ Hedged by derivatives products such as KTB futures and IRS - Try to shorten pipeline period |
| Issuance Structure | <ul style="list-style-type: none"> ▪ Pay-through type ▪ Eight tranches with different maturity dates (1,2,3,5,7,10,15,20years) ▪ Non callable 1, 2, 3 yr tranches (supported by 5 & 7 yr Fast-pay Tranches) <ul style="list-style-type: none"> - Sequentially Partially Callable tranches (on a quarterly basis) - Prepayment risk to investors ▪ Sub. tranche for receipt of residual value (held by HF) |
| MBS Coupon | <ul style="list-style-type: none"> ▪ Fixed-rate Coupon (Quarterly payment) |
| Issuance Procedure | <ul style="list-style-type: none"> ▪ AAA Credit rating, Deposited in KSD, Public Offering, Listed in KRX as bond ▪ Exemption from FSS issuance registration |



| Type | Maturity | Amount (in billions) | Coupon ¹⁾ (Fixed) | Base ²⁾ Rate | Spread | Call Option ³⁾ | |
|--------------------|----------|-------------------------|---------------------------------|----------------------------|--------|----------------------------|---------------|
| Senior | 1 yr | 207 | 1.298% | 1.258% | 4bps | - | |
| | 2 yrs | 360 | 1.313% | 1.243% | 7bps | - | |
| | 3 yrs | 290 | 1.346% | 1.226% | 12bps | - | |
| | 5 yrs | 660 | 1.597% | 1.247% | 35bps | Sequential Partial Call | from 3 months |
| | 7 yrs | 140 | 1.627% | | 38bps | | from 2 yrs |
| | 10 yrs | 90 | 1.614% | 1.394% | 22bps | | from 3 yrs |
| | 15 yrs | 30 | 1.624% | | 23bps | | from 4 yrs |
| | 20 yrs | 10 | 1.634% | | 24bps | | from 5 yrs |
| | Total | 1,787 | 1.542% | | 29bps | | |
| Sub. ⁴⁾ | 21yrs | 2.3 | 12.986% | | | | |

* 1) Quarterly payable (Sub. Tranche : lump-sum payment on principal payment date by simple method)

2) Govn't Bond Yield with the same maturity (5yr Yield → 5, 7yr tranches, 10yr Yield → 10,15, 20yr tranches)

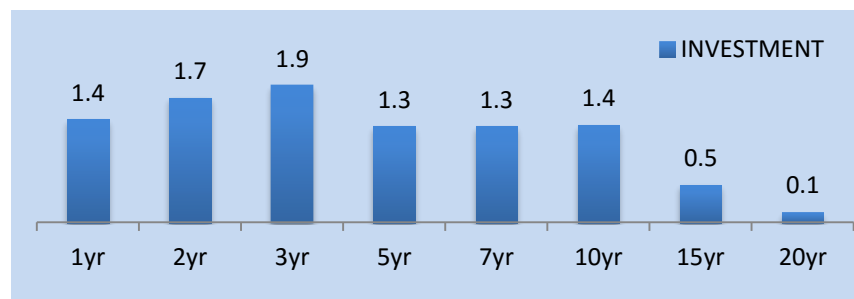
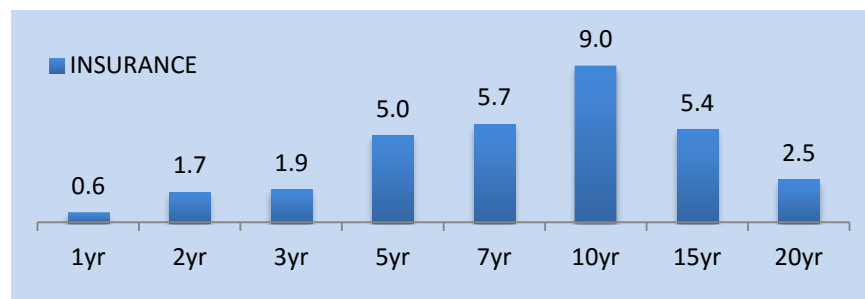
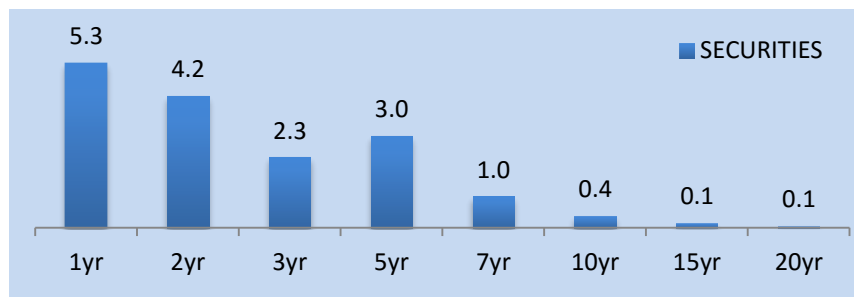
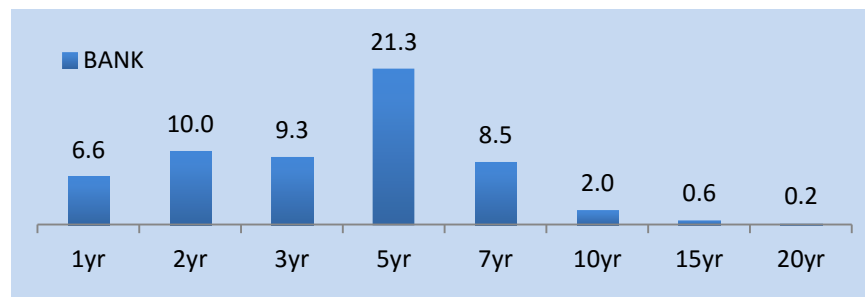
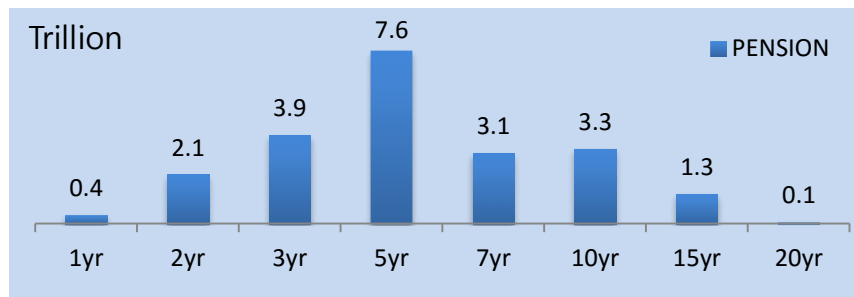
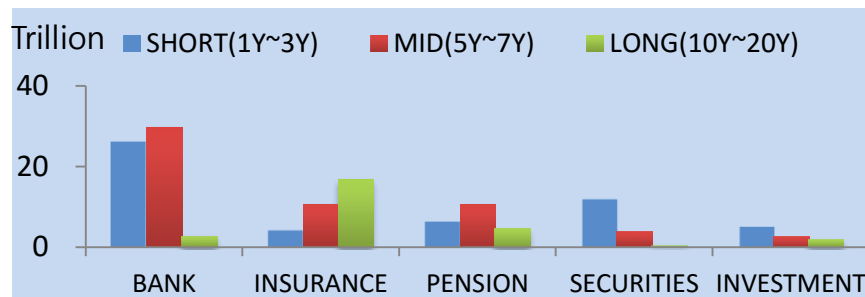
3) Exercise amount : multiple of 1% of issuance amount of each Tranche

4) Subordinated Tranche represents the right to get residual value, if any, and is held by HF.

※ Issuance date : Aug.5, 2016



➤ Short-term: Securities/Investment, Mid-term: Banks/Pension, Long-term: Insurance



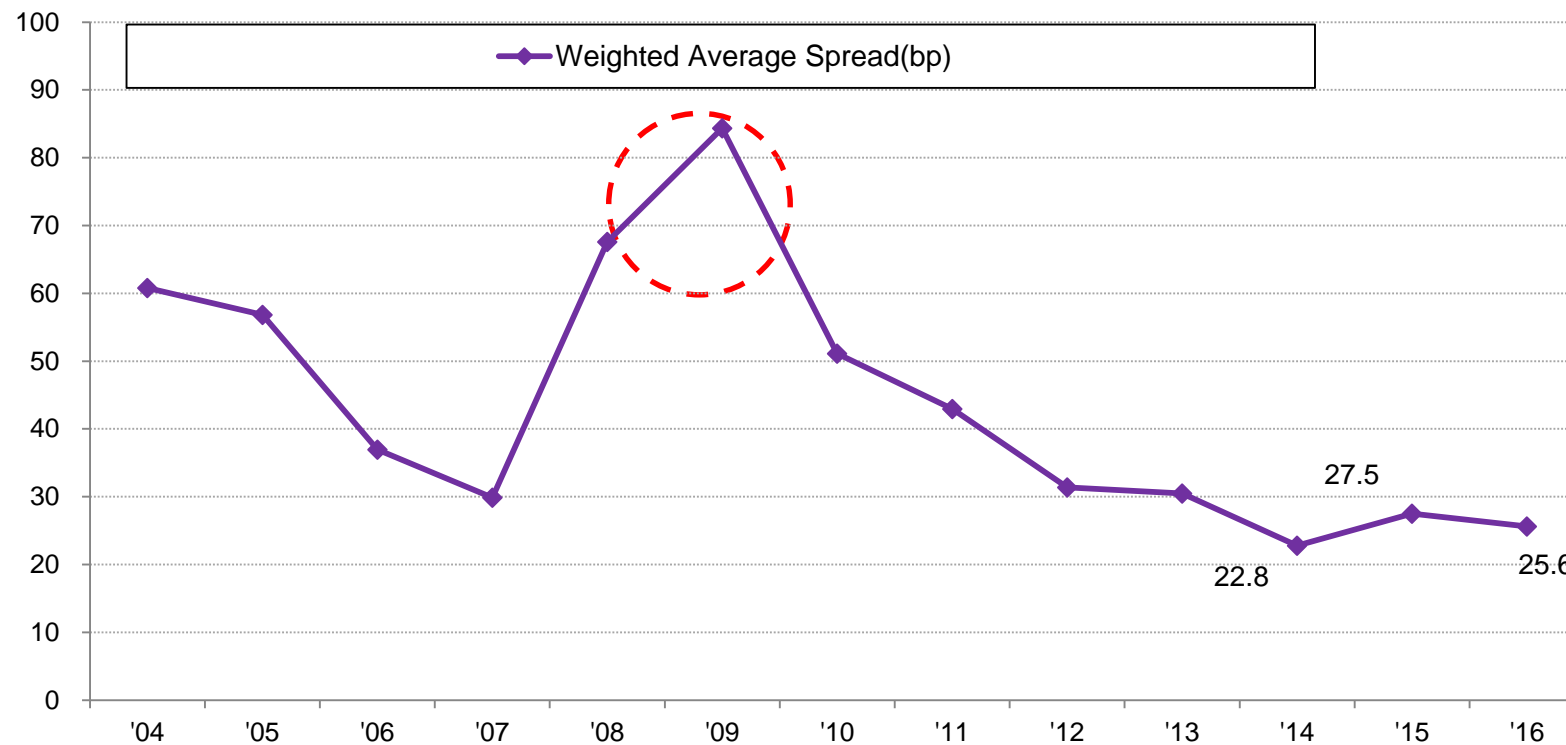


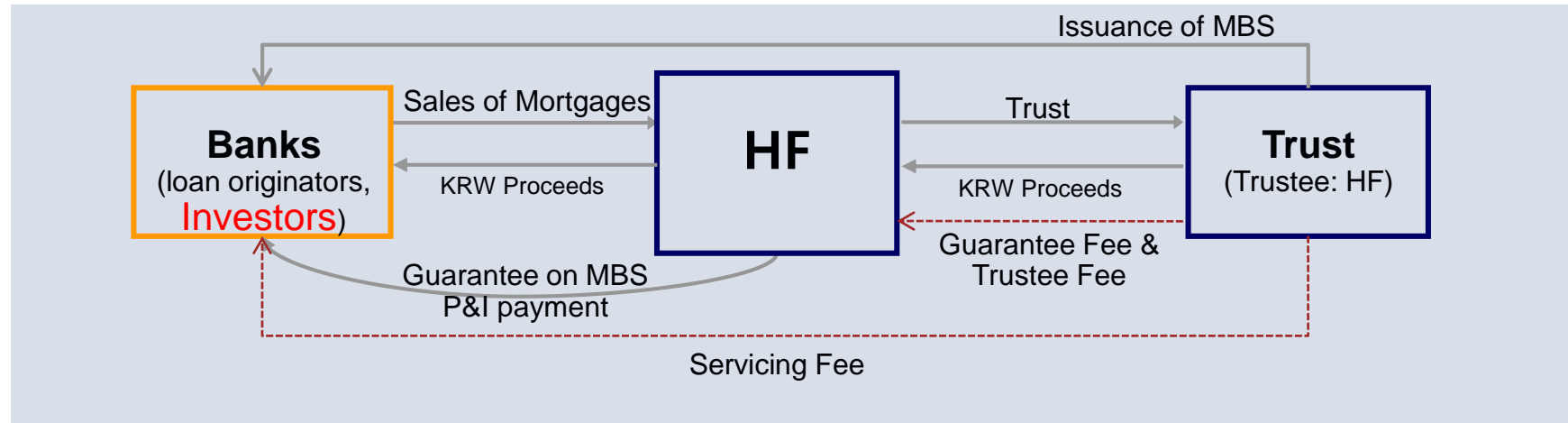
| | Regulatory Support | Title Transfer | Operational Support |
|------------------------|---|--|---|
| Standard Rules | <ul style="list-style-type: none"> Perfection against obligors can be achieved through written notification to obligors at transfer Issuer should submit prospectus 5 days before issuance for disclosure | <ul style="list-style-type: none"> Mortgage can be acquired after title transfer registration is completed with fee Collateral security claims can be fixed by written notification to the obligor | <ul style="list-style-type: none"> Asset Backed Securities aren't eligible for BOK's Repurchase Agreement Asset Backed Securities aren't regarded as high quality liquid Asset in LCR |
| Preferential Treatment | <ul style="list-style-type: none"> Perfection against obligors can be achieved if obligor consent is obtained prior to mortgage loan transfer KHFC 's MBS is exempted the duty of handing in prospectus | <ul style="list-style-type: none"> Mortgage can be acquired after the Securitization Plan is filed Collateral security claims can be fixed if prior consent at loan agreement | <ul style="list-style-type: none"> KHFC MBS is eligible for RP transaction of BOK KHFC's MBS is regarded as high quality liquid asset in LCR |
| Effect | <ul style="list-style-type: none"> Save the period for securitization process by four weeks | <ul style="list-style-type: none"> Save 60bps of upfront costs Save the period for securitization by three weeks | <ul style="list-style-type: none"> Can contribute to promoting secondary Market for MBS |



Since 2009, it has been going down constantly.

- ▶ In 2015, it went up a little due to mortgage refinancing program(31 trillion KRW MBS, USD30bn) driven by government.
- * Mortgage refinancing program: Floating-rate borrowers switch their existing mortgage to favorable long-term fixed rate amortizing loans without any penalty





Advantages of the Transaction

- **Better capital adequacy**
 - Due to lower risk weight on MBS compared to mortgage loans(0% vs. 35%)
- **Higher profitability**
 - No provision cost(Regulator requires banks to set aside 1% of mortgage loans as provision)
- **Improved liquidity**
 - MBS by KHFC recognized as liquid asset



| | |
|--------------------|--|
| Underlying Assets | <ul style="list-style-type: none"> ▪ Mortgage loans originated by participating lenders (loan purchase guidelines between banks and KHFC) |
| Issuance Structure | <ul style="list-style-type: none"> ▪ Single tranche with 30 or 35 maturity ▪ Pass-through(Monthly mandatory call toward cash) ▪ Clean-up call after 7 years |
| MBS Coupon | <ul style="list-style-type: none"> ▪ Weighted Avg. rate of underlying assets – Ongoing fees |
| Guarantee | <ul style="list-style-type: none"> ▪ 100% guarantee on P&I by HF |
| Issuer | <ul style="list-style-type: none"> ▪ Trust (Trustee: HF) |
| Issuance Procedure | <ul style="list-style-type: none"> ▪ AAA Credit Rating, Deposited in KSD, Public Offering, Listed in KRX as bond ▪ Exemption from FSS issuance registration |
| Servicer | <ul style="list-style-type: none"> ▪ Lender (Seller) |



4. Covered Bond



Korea Housing Finance Corp

- Executed 15 July 2010
- 144A / Reg S
- USD 500mn notes with 5.5-year maturity and 4.125% coupon

International Awards



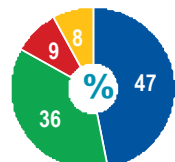
2010
Best Deal Korea
Best Securitisation Deal
Asia Pacific
KHFC Covered Bonds



Korea Housing Finance Corp

- Executed 25 July 2011
- 144A / Reg S
- USD 500mn notes with 5.5-year maturity and 3.500% coupon

Distribution by Investor Type



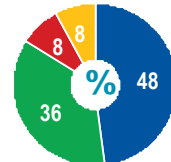
■ Fund Managers
■ Banks
■ Insurance
■ Others



Korea Housing Finance Corp

- Executed 7 March 2013
- 144A / Reg S
- USD500 mn notes with 5.5-year maturity and 1.625% coupon

Distribution by Investor Type



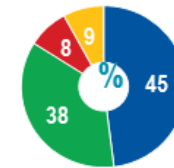
■ Funds
■ Banks
■ Central Banks
■ Others



Korea Housing Finance Corp

- Executed 19 November 2015
- 144A / Reg S
- USD500 mn notes with 5-year maturity and 2.5% coupon

Distribution by Investor Type

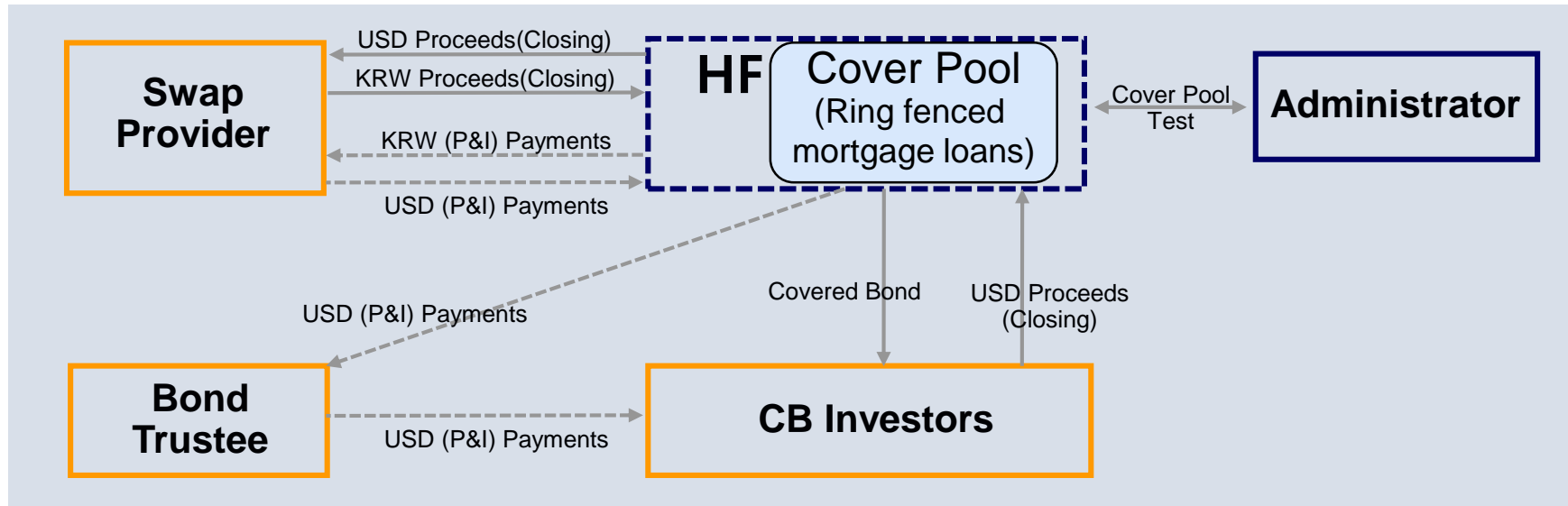


■ Funds
■ Banks
■ Central Banks
■ Others

Purpose of Covered Bond

- **Funding diversification** since 2008 global financial crisis.
- Providing Benchmark rate for other private Korean issuers
- Improvement of securitization expertise through networking with global players

Covered Bond Transaction Structure

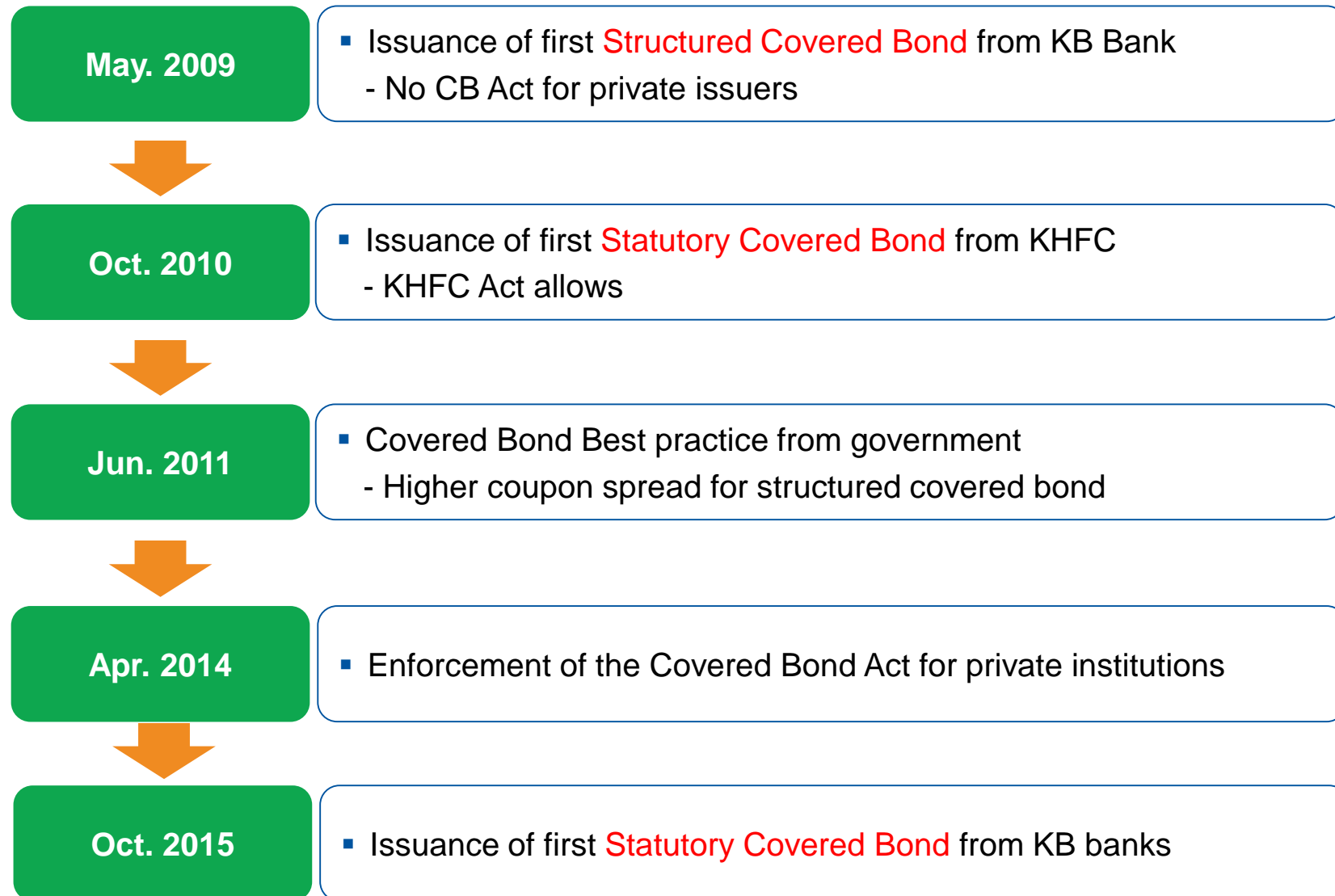


Transaction Structure

- **HF issues Covered Bond.**
- CB holders have **priority claims on ring fenced asset as collateral (Dual recourse credit protection)**
- HF enters into Swap Arrangement for **hedging interest & FX risks.**



| | |
|-----------------------------------|---|
| Issuer | <ul style="list-style-type: none"> ▪ KHFC(MBS: KHFC trust) |
| Cover Pool (Underlying Assets) | <ul style="list-style-type: none"> ▪ Dynamic pool of mortgage loans originated by participating banks <ul style="list-style-type: none"> - MBS: Static pool(No substitution) ▪ Cover Pool will not be a part of HF's bankruptcy estate |
| Credit Rating | <ul style="list-style-type: none"> ▪ Aa1(KHFC: Aa2, Moody's) <ul style="list-style-type: none"> - well diversified mortgage loans |
| Credit Enhancement | <ul style="list-style-type: none"> ▪ Minimum of 6% Overcollateralization ▪ On each monthly calculation date, HF will ensure that the Cover Pool is sufficient to support the outstanding amount of the Covered Bond (ACT) |
| Coupon | <ul style="list-style-type: none"> ▪ Fixed-rate |
| Funding Cost | <ul style="list-style-type: none"> ▪ Cross Currency Swap price is critical for final funding cost |





3. Key Success Factors

Key Success Factors



KOREA HOUSING FINANCE CORPORATION

**Government's
Housing Finance Arm
established under
the KHFC Act**

Issuer Rating(international)

| MOODY'S | FitchRatings |
|------------|--------------|
| Aa2 | AA- |

Issuer Rating(local)

| 한신정 | 한기평 | 한신평 |
|------------|------------|------------|
| AAA | AAA | AAA |

Strong Government Support

- Same credit rating with Korean Government
 - Compensation of losses by the Government (Article 51)
 - Mandatory Authorized Capital only from the Government (Article 5)
- Lower funding cost
 - BoK RP transaction eligible

Excellent Securitization Expertise

- New securitization products and system
 - Cross-border Covered Bond
 - Mortgage-MBS Swap
 - Mortgage Refinancing program
 - Dynamic Hedging Strategy

High Quality Mortgage

- Strict eligibility criteria
 - LTV & DTI restriction
- Loan by loan audit at inclusion and annual pool audit
- Ongoing supervision of mortgage portfolio by KHFC



THANK YOU