

# Bond Market Development in Emerging East Asia

Types of Bonds, Credit Ratings,  
Functioning of a Bond Market

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- Types of Bonds
- Credit Ratings
- Functioning of a Bond Market

# Central Government Bonds

- Bonds issued by a country's national government to finance fiscal deficits and for the repayment or refinancing of the government's outstanding obligations.

## Treasury Bills

- Issued at a discount to par value, no coupon rate, mature at par value, and have maturities of less than 12 months.

Issue Date

*Par Value = USD1,000*

*Issue Price = USD700*

Maturity Date

*Principal Repayment = USD1,000*

# Central Government Bonds

## Treasury Bonds/Notes

- Issued at par value, pay coupon interest, and mature at par value, and have original maturities of more than one year.

### Issue Date

*Par Value = USD1,000*

*Issue Price = USD1,000*

*Coupon Rate = 5% per annum*

*Frequency : semi-annual*

### Coupon Payment Dates

*Coupon Payment = USD50 per annum; or USD25 per coupon payment date*

### Maturity Date






*Par Value = USD1,000*

*Issue Price = USD1,000*

# Retail Treasury Bonds

## Retail Treasury Bonds

- Treasury securities that primarily cater to retail investors with lower minimum investment
- Part of the national government's program to allow treasury securities to be available to the general public
- Coupon payment is paid quarterly

<p><b>Retail Treasury Bond</b> <b>Tranche 17</b> 10 year RTBs due 2023 Offer Period: July 30 - August 13, 2013 Issue Date: August 15, 2013 Minimum Investment: P5,000.00 and multiples of P5,000.00 thereafter</p> <p>Lead Issue Manager:  Issues Managers:     A Subsidiary of Security Bank</p>	<p>Issuer : Republic of the Philippines through the Bureau of the Treasury Issue Date : August 15, 2013 Maturity Date : 10-Year RTBs Due 2023 Public Offer Period : July 30 - August 13, 2013 Issue Price : At par (or 100%) Redemption Price : At par (or 100%) Interest Rate : 3.25% Interest Payments : Quarterly; Subject to 20% withholding tax except for tax-exempt institutions Form : Uncertificated; to be registered with the Registry of Scripless Securities (RoSS) of the BTR Denomination : Minimum denomination of P5,000, additional amounts in multiples of P5,000 Negotiability : Negotiable and transferrable Sinking Fund : The Republic of the Philippines will maintain a sinking fund with the BTR in order to accumulate the amounts necessary to pay the principal of the RTBs on Maturity Date.</p>
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Source: Bureau of the Treasury

# Treasury Inflation-Protected Securities

## Treasury Inflation Protected Securities

- Treasury securities that adjust for inflation. On each coupon payment date, the principal used for the computation of coupon payment is adjusted for inflation.

$$\begin{aligned}\text{Treasury Nominal Yield} &= \text{Real yield} + \text{Expected Inflation Rate} + \text{Inflation Risk Premium} \\ &= 3\% + 3.5\% + 0.5\%\end{aligned}$$

$$\begin{aligned}\text{TIPS} &= \text{Real Yield} + \text{Lagged Actual Inflation Rate} \\ &= 3.5\%\end{aligned}$$

*Par Value = USD1,000*

*Coupon Rate = 3.5% p.a.*

*Lagged Semi-Annual Inflation Rate = 1.5%*

*1<sup>st</sup> coupon payment day (6 months):*

$$\begin{aligned}\text{Adjusted Principal} &= \text{Par Value} \times (1 + \text{semi-annual inflation rate}) \\ &= \text{USD1,000} \times (1 + 1.5\%) \\ &= \text{USD1,015}\end{aligned}$$

$$\begin{aligned}\text{Adjusted Coupon} &= \text{USD1,015} \times (3.5\%/2) \\ &= \text{USD17.76} \text{ or a USD0.2625 adjustment}\end{aligned}$$

# Central Government Bonds

## Issuance

- Central government bonds are sold in the primary market through bond auctions, and are sold and traded in the secondary market through an exchange or via over-the-counter.

## Risks

- Normally considered free of credit risk since they are backed by the full faith and credit of the national government

# Central Government Bonds

## Benchmark Issues

- Most recently issued Treasury securities with comparable maturities. Yields of benchmark issues are used as a base interest rate for the pricing of non-government securities.

### PDEX Fixed Income (FI) Market Summary

PDST Reference Rates *(more)*

Tenor	DTM	PDST-R1 As of 11:15 AM	PDST-R2 As of 04:15 PM
1M	35	1.7437	1.7437
3M	91	1.3411	1.3407
6M	182	1.8320	1.8287
1Y	364	2.0690	1.5774
2Y	731	2.7937	2.3314
3Y	1096	2.9727	2.9713
4Y	1461	3.0907	3.0907
5Y	1827	2.8665	2.8634
7Y	2557	3.2603	2.9638
10Y	3653	3.8787	3.8753
20Y	7305	3.9366	3.9330
25Y	9132	-	-

Data as of 19 July 2016.

Source: Philippine Dealing and Exchange Corp.



# Central Government Bonds

## On-the-run vs Off-the-run

- On-the-run are the most recently issued and most liquid of any given maturity.
- In general, on-the-run have lower yields (higher price) than off-the-run:
  - ✓ High demand vs limited supply of securities
  - ✓ Short-term trading of newly auctioned securities

# Central Government Bonds

	Treasury Securities	Inflation-Linked	Retail Bonds
<b>PRC</b>	✓	x	x
<b>Hong Kong, China</b>	✓/ Only a small portion of total bonds.	✓	x
<b>Indonesia</b>	✓	x	✓
<b>Rep. of Korea</b>	✓	✓	x
<b>Japan</b>	✓	✓	x
<b>Malaysia</b>	✓	x	x
<b>Philippines</b>	✓	x	✓
<b>Singapore</b>	✓/ Only a small portion of total bonds.	x	✓
<b>Thailand</b>	✓	✓	✓
<b>Viet Nam</b>	✓	x	x

# Central Bank Bonds

- The issuance of central bank bonds is one of the tools of monetary policy used by central banks/monetary authorities primarily to manage excess liquidity in the market.

Market	Central Bank Bonds
People's Republic of China	✓/ But only a negligible share to total bonds as the PBOC has been using other tools to manage liquidity.
Hong Kong, China	Exchange Fund Bills (EFBs) - tenors of 91-, 182-, and 364-days Exchange Fund Notes (EFNs) – effective January 2015, HKMA ceased new issuance of EFNs with tenors of 3 years and above; issuance of 2-year EFNs continues.
Indonesia	Sertifikat Bank Indonesia (SBI) – 9-months, 1-year Bank Indonesia also issues foreign-currency denominated SBIs.
Japan	✗
Republic of Korea	Monetary Stabilization Bonds (MSB) - discount and coupon instruments with various tenors ranging from 14 days to 2 years
Malaysia	Bank Negara Malaysia Monetary Notes (BNMN) – tenors of 91-, 182-, 364-days and 1- to 3-years. Sukuk BNM Issues (SBNMI) –tenors of 1- to 2- years
Philippines	✗
Singapore	Monetary Authority of Singapore (MAS) bills – tenors of 4-, 12-, and 24-week
Thailand	Bank of Thailand issues bills and bonds; Discount Bonds – <15-days, 3-months, 6-months, and 1-year; Bonds – 2- and 3- years
Viet Nam	State Bank of Viet Nam (SBV) bills – tenors of 28-, 90-, 91-, 366-, and 385- bills

# Municipal Bonds

## Purpose

- Reduce the reliance of local government units on national government for the funding of their development projects
- Proceeds from short-term municipal bonds are used to cover seasonal and temporary fund shortages
- Proceeds from long-term municipal bonds are used for financing of infrastructure projects.

## Types

- Tax backed Debt are issued by local governments and are secured by some form of tax revenue.
- Revenue bonds are used to finance a certain project (infrastructure), and servicing of debt will be sourced from revenues of the project.

# Municipal Bonds

## Risks

- Changes in economic and social trends that may affect the source of tax revenues
- Revenue bonds are 'non-recourse'

## Municipal Bonds in ASEAN+3

- Among the ASEAN+3 markets ex-Japan, only the People's Republic of China, Republic of Korea, Philippines, and Viet Nam have municipal bonds.

# State-owned Enterprise (SOE) Bonds

- Bonds issued by government-owned entities.
- These bonds may either have a direct, implied, or no government guarantee.

	Select SOE Bond Issuers
PRC	China Development Bank, Agricultural Development Bank of China, Export-Import Bank of China
Hong Kong, China	Hong Kong Mortgage Corp., Hong Kong Airport Authority, Mass Transit Railway Corp.
Indonesia	Perusahaan Listrik Negara, Indonesia Eximbank, Bank Tabungan Negara
Rep. of Korea	Korea Development Bank, National Housing, Seoul Metro
Malaysia	Cagamas Berhad, Khazanah Nasional Berhad, Syarikat Prasarana Negara Berhad
Philippines	National Food Authority, Power Sector Assets and Liabilities Management Corporation, National Power Corporation
Singapore	Housing and Development Board, Public Utilities Board
Thailand	Bank for Agriculture and Agricultural Cooperatives, Government Housing Bank, Export-Import Bank of Thailand
Viet Nam	Vietnam Development Bank, Vietnam Bank for Social Policies, Vietnam National Coal, Bank for Investment & Development of Vietnam

# Corporate Debt Securities

## Types

- Corporate Bonds

- Issued to the public through investment banks that fully underwrite the amount to be raised.

- Medium-term Notes

- Securities offered continuously to investors by an agent of the issuer, with maturities ranging from 9 months to up to 30 years.

- Commercial Papers

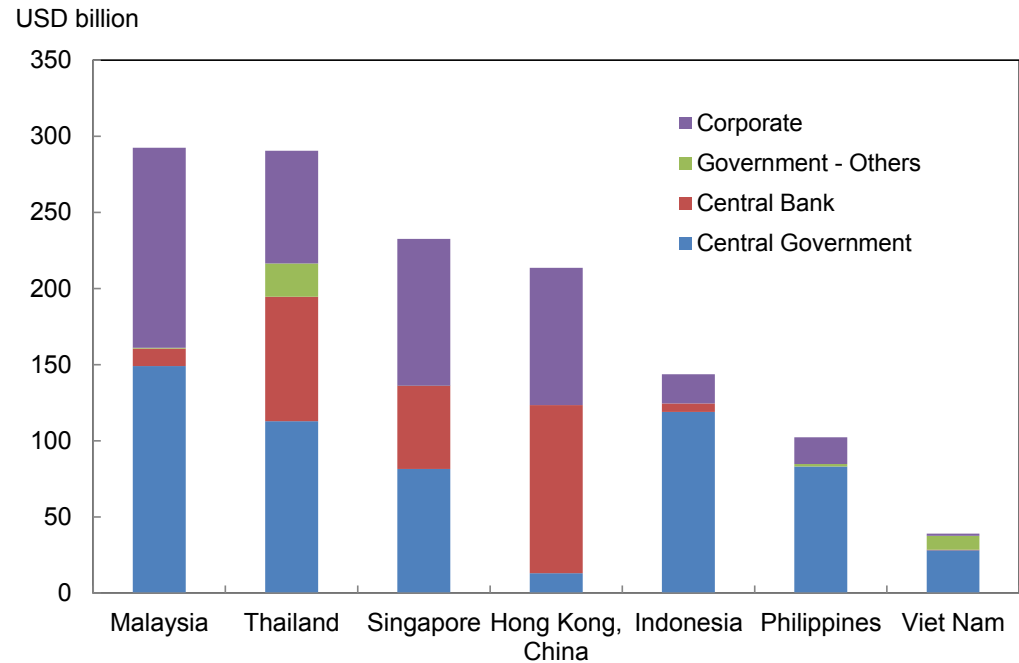
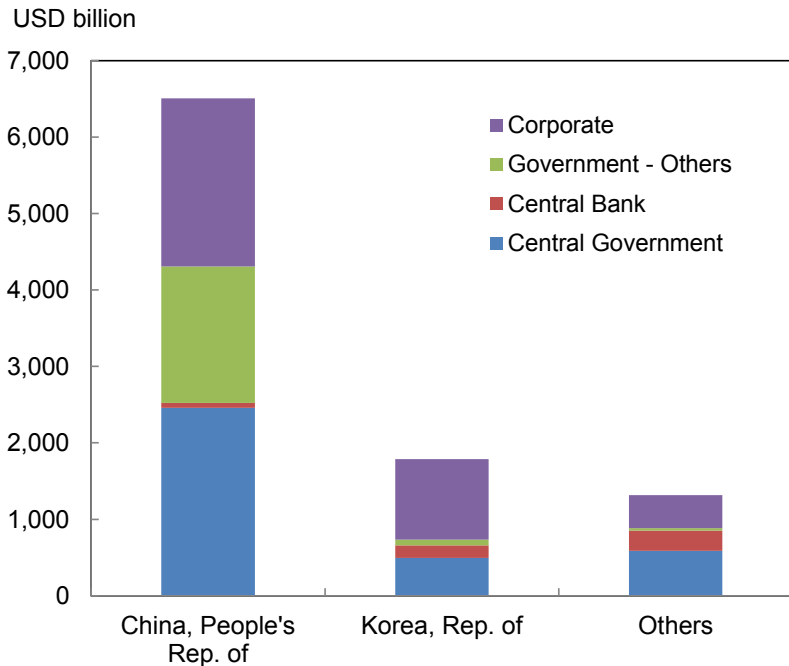
- Short-term unsecured promissory notes used to meet short-term obligations of the issuer, with maturities to up to 270 days.
- Issued as part of a continuous rolling program or 'roll-over'

- Bank Obligations

- Negotiable Certificate of Deposits
- Tier 2 Notes

# Outstanding LCY Bonds

## Outstanding LCY Bonds in Emerging East Asia



Note: Data as of end-March 2016.

Source: *AsianBondsOnline*.



# Asset-backed Securities

**Asset-backed securities (ABS)** are securities backed by a pool of mortgages, loans or receivables.

## Rationale

- Allows capital constrained corporations and financial institutions to raise funds
- Lowers risk by separating the assets from the credit profile of the originator, allowing the SPV to issue bonds with a better credit profile

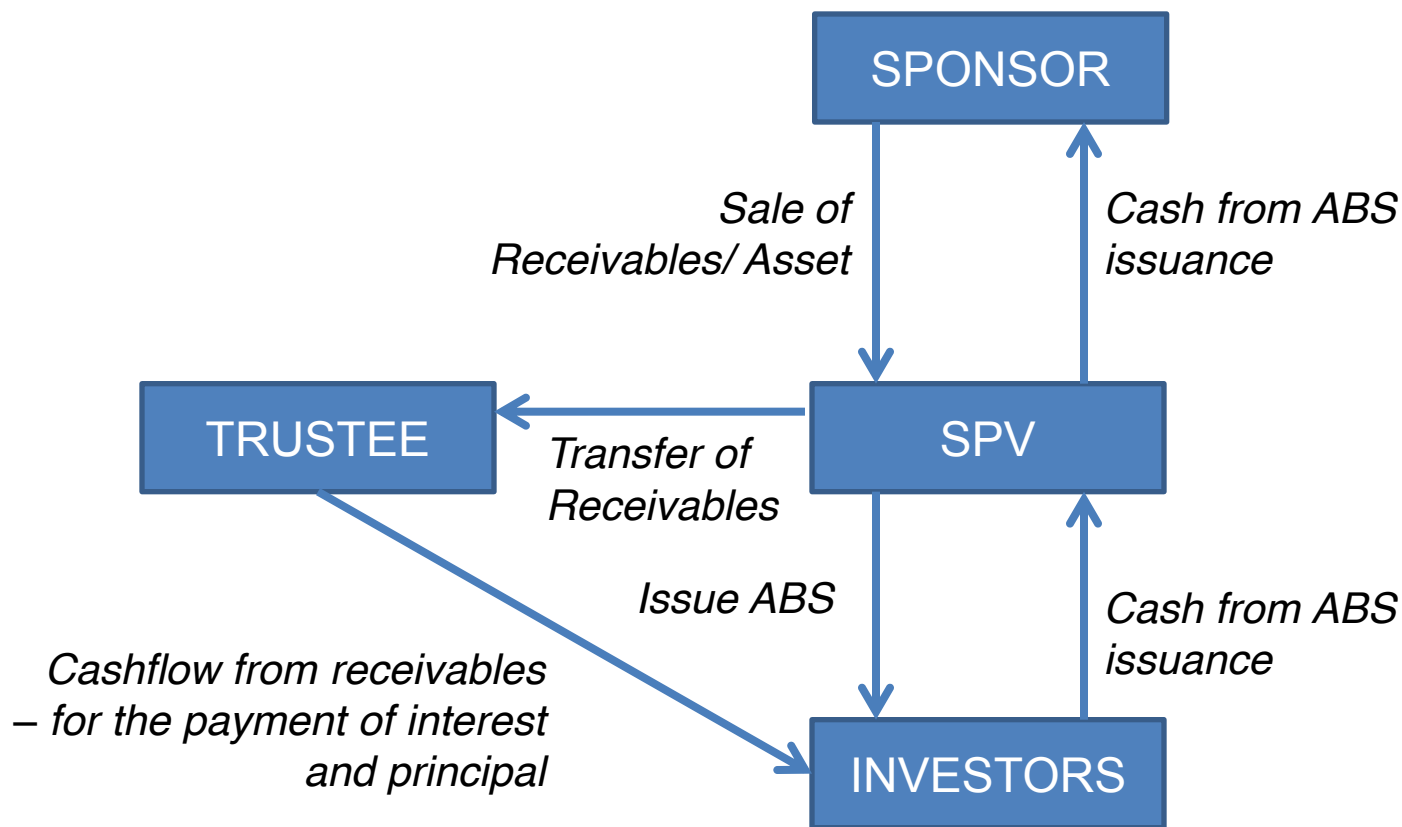
## Types of ABS

- 1) Mortgage
- 2) Credit Card Receivables
- 3) Auto Loan
- 4) SME Loan

# Securitization

## What is Securitization?

- Process of structuring an illiquid asset into a new security that can be traded and sold to the market.



# Asset Securitization Market in ASEAN+3

Outstanding Size of Asset Securitization Market in ASEAN+3 & Selected Comparator Countries (in USD million)	
China, People's Rep. of	2,831
Japan	175,719
Korea, Rep. of	133,376
ASEAN-4	6,301
of which:	
Indonesia	216
Malaysia	4,102
Philippines	1,348
Thailand	636

Source: ASEAN+3 Research Group 2013-2014

# Infrastructure Bonds

- Backed by cashflows to be generated from an infrastructure project
- Debt securities issued by both government and private entities for the primary purpose of financing infrastructure projects
- Typically issued via a special purpose vehicle and through a project financing transaction.
- Infrastructure bonds can have tax incentives, credit enhancements, and guarantees.

# Infrastructure Bonds

**Infrastructure Assets** are considered to generate stable cashflows due to the following characteristics:

- Monopoly structure
- Low demand elasticity since most are public goods

**Infrastructure Bonds** also have low correlation to other asset classes.

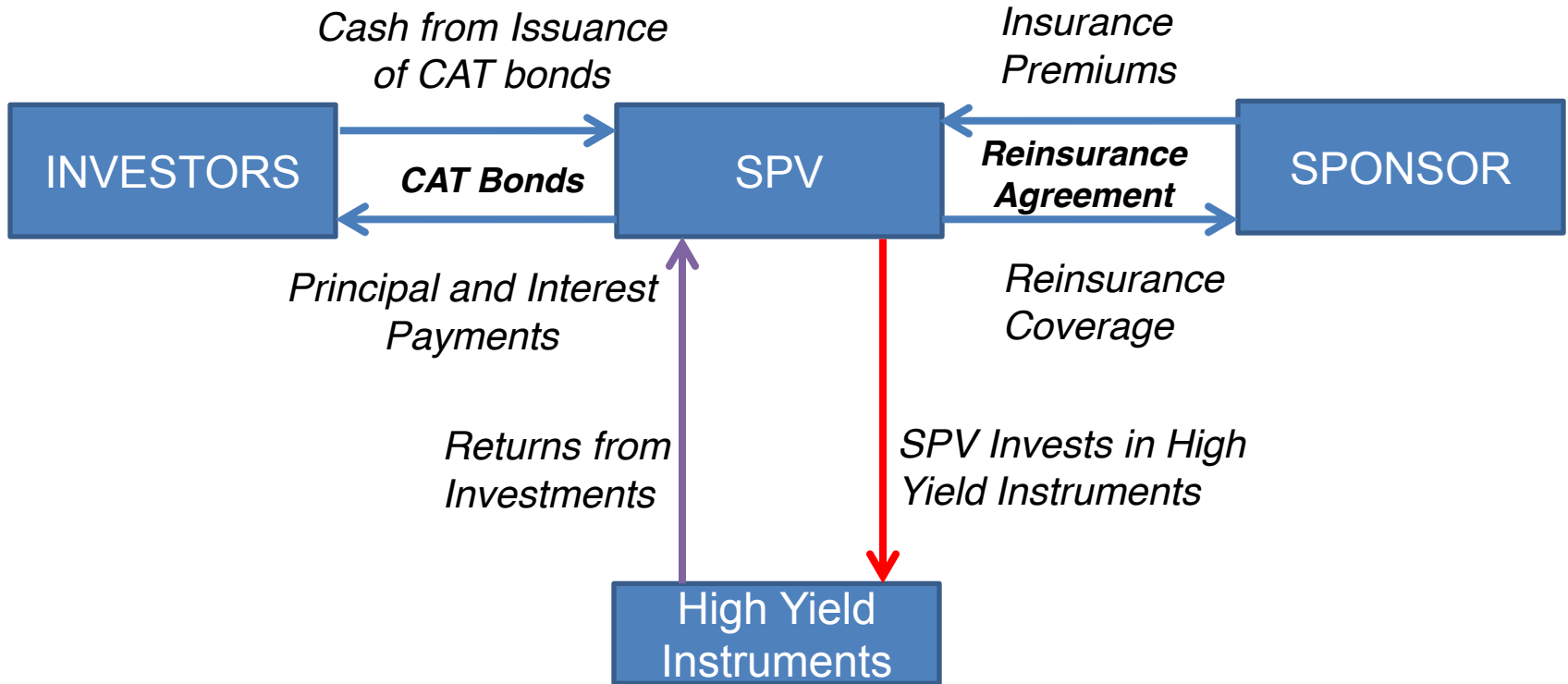
## Risks

- Political and sovereign risk including changes in tax laws, utility prices
- Reneging of government from the project

# Catastrophe Bonds

- High-yield securities issued by insurance and reinsurance companies via an SPV to transfer risks and losses in the event of a catastrophe
- Inherently risky and have maturities of 5 years or less
- Periodic interest payments
- Principal is foregone when a pre-defined trigger event occurs

# Catastrophe Bonds



# Catastrophe Bonds

## Trigger Mechanisms

- Indemnity – bond is triggered by actual losses
- Modeled Loss – bond is triggered based on losses generated by using actual parameters of catastrophe in the model
- Industry Loss Index – bond is triggered by actual industry loss
- Parametric – bond is triggered by actual parameters of catastrophe



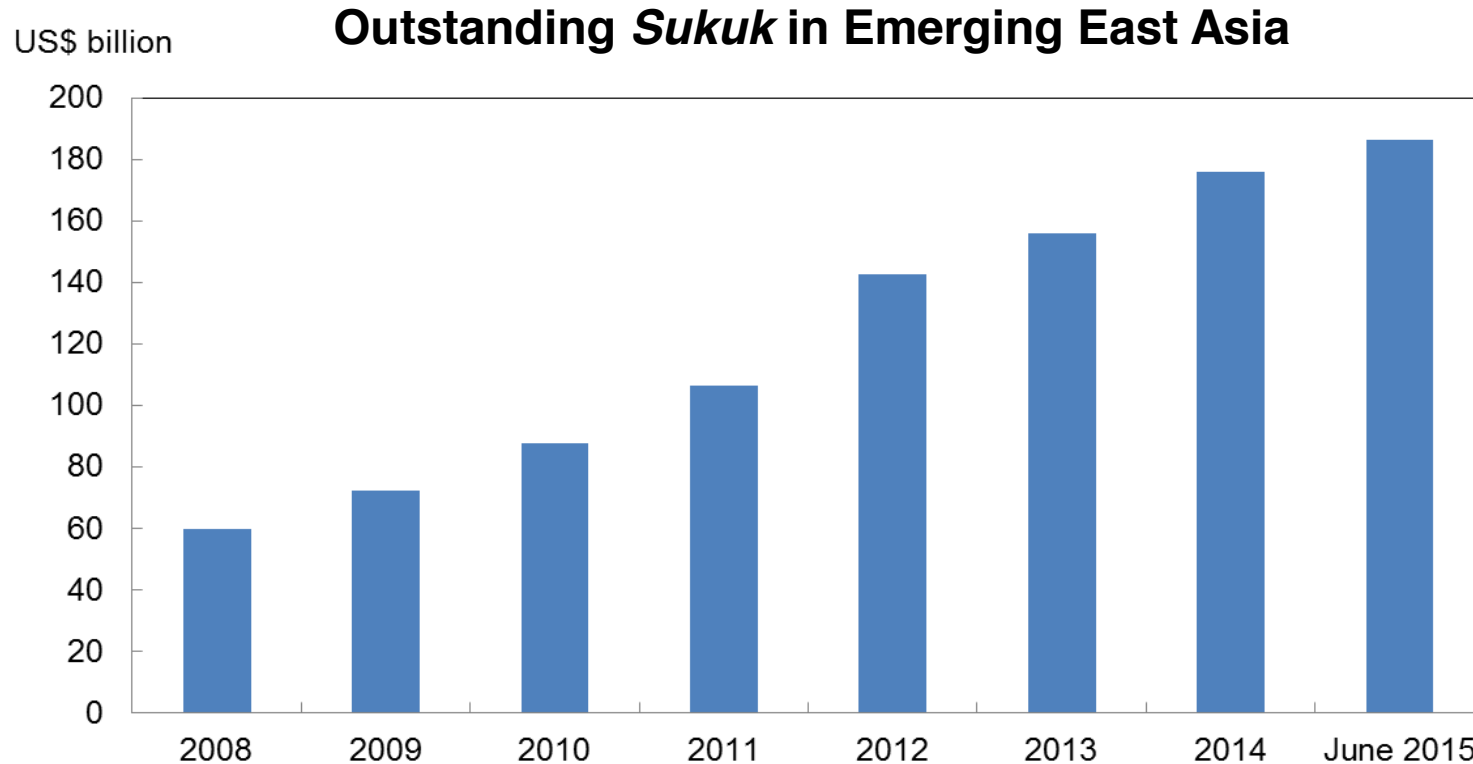
# Islamic Bonds or *Sukuk*

- Investment certificates representing a claim on an existing or well-defined asset, deemed to be compliant with Islamic financing principles and religious principles of *shari'ah*.
- Different from conventional bonds which represent claims on cash flows.

## Some Forbidden Activities

- Unjust enrichment (*riba*) or the payment of interest
- Gambling or speculation (*masir*)
- Corruption (*rishwah*)

# Islamic Bonds/ *Sukuk*



Notes:

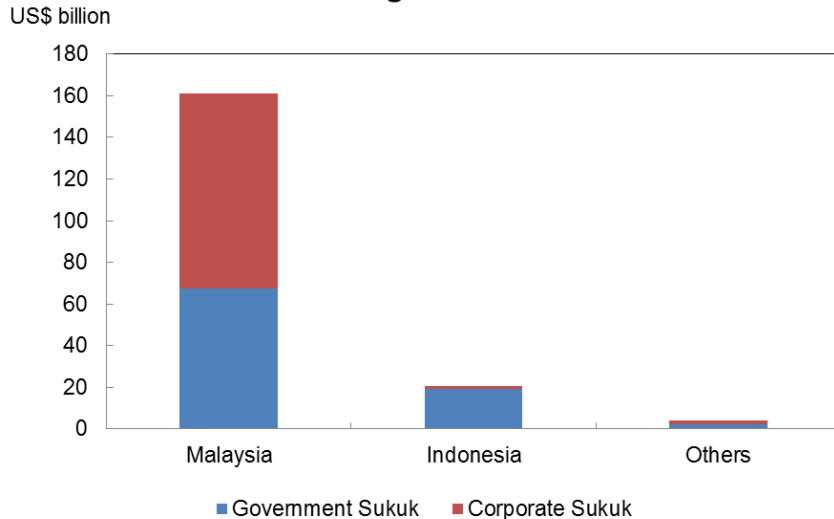
1. Emerging East Asia's *sukuk* market comprises Brunei Darussalam; Hong Kong, China; Indonesia; Malaysia; and Singapore.
2. Data includes local currency and foreign currency *sukuk*.
3. Local currency and foreign currency values were converted based on 30 June 2015 currency exchange rates and do not include currency effects.

Sources: Autoriti Monetari Brunei Darussalam, Bank Indonesia, Bank Negara Malaysia Fully Automated System for Issuing/Tendering (FAST), Directorate General of Budget Financing and Risk Management Ministry of Finance, Otoritas Jasa Keuangan, and Bloomberg LP.

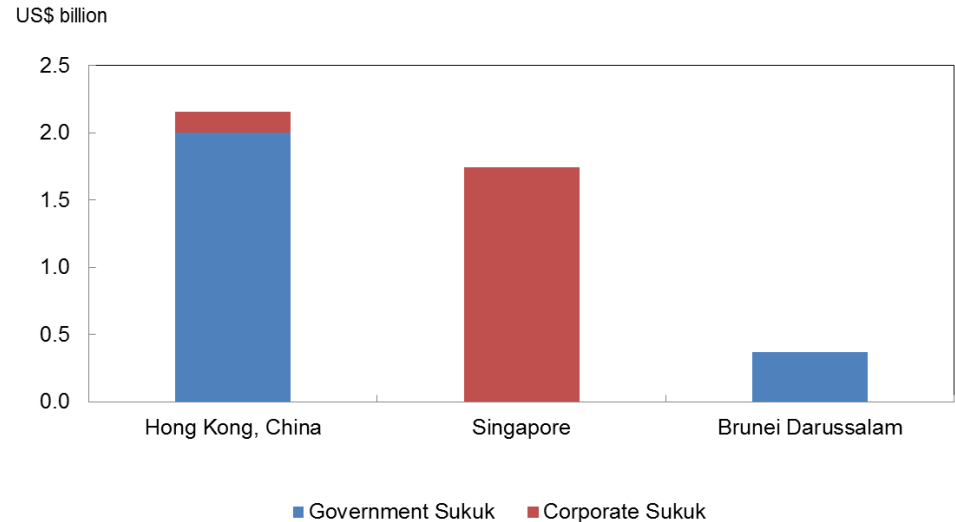
# Islamic Bonds/ *Sukuk*

## Breakdown of *Sukuk* Outstanding per Market

### Outstanding Size of *Sukuk*



### Outstanding Size of *Sukuk*



Note: Data as of end-June 2015

Source: *AsianBondsOnline*.

- Credit Ratings

# Credit Ratings

- A credit rating agency's assessment of the creditworthiness of a bond issuer (***Issuer Rating***) or the assessment of default risk of a certain bond issuance (***Issue Rating***) at a certain point in time.
- The credit rating is also continuously reviewed and revised (if applicable) depending on changes in factors that may affect the risk profile of the issuer/issuance.
- Bonds are generally classified as either *Investment Grade* or *Below Investment Grade*.
- **Global Credit Rating Agencies:** *Moody's Investors Service, S&P Global Ratings, and Fitch Ratings*

# Credit Ratings

## **Foreign Currency/Local Currency Ratings**

- Credit rating agencies also assign different ratings on a bond issuer's local currency and foreign currency obligations

## **Credit Ratings and Bond Pricing**

- Credit ratings also provide a basis for the pricing of a certain bond issuance.
- High credit rating would mean a lower risk of default thus offering lower yield
- Low credit rating would mean a higher risk of default. Lower-rated bonds generally have higher yields.

# Determinants of Credit Ratings

## **Sovereign Bonds**

- Per capita income
- GDP growth
- Inflation
- Fiscal balance
- External balance
- External debt
- Economic development
- Default history

## **Corporate Bonds**

- Financial statement analysis (liquidity, solvency, etc.)
- Management
- Industry analysis
- Regulatory environment
- Parent company support agreements
- Special event risk
- Collateral
- Covenants

# Credit Ratings

## *Long-term Issue Ratings*

### INVESTMENT GRADE

	Moody's	S&P Global Ratings	Fitch
<b>Highest Grade/ Best Quality</b>	Aaa	AAA	AAA
<b>High Grade/High Quality</b>	Aa1, Aa2, Aa3	AA+, AA, AA-	AA+, AA, AA-
<b>Upper Medium Grade</b>	A1, A2, A3	A+, A, A-	A+, A, A-
<b>Medium Grade</b>	Baa1, Baa2, Baa3	BBB+, BBB, BBB-	BBB+, BBB, BBB-

### BELOW INVESTMENT GRADE

	Moody's	S&P Global Ratings	Fitch
<b>Speculative Grade</b>	Ba1, Ba2, Ba3 B1, B2, B3	BB+, BB, BB- B+, B, B-	BB+, BB, BB- B+, B, B-
<b>Highly Speculative Grade</b>	Caa1, Caa2, Caa3 Ca	CCC+, CCC, CCC- CC C	CCC CC CC
<b>Default</b>	C	D	D

Source: Moody's Investors Service, S&P Global Ratings, Fitch Ratings



# Credit Ratings

## *Rating Watch/Outlook*

MOODY'S	STANDARD & POOR'S	FITCH	RATING DESCRIPTION
<b>POS</b>	Positive	Positive	Review for possible rating upgrade
<b>NEG</b>	Negative	Negative	Review for possible rating downgrade
<b>STA</b>	Stable	Stable	
<b>DEV</b>	Developing	Evolving	

# Credit Ratings

## LOCAL CREDIT RATING AGENCIES

People's Republic of China	Da Gong Global Credit Rating Co., Ltd Shanghai Far East Credit Rating Co., Ltd
Indonesia	PEFINDO Credit Rating Indonesia PT ICRA Indonesia
Republic of Korea	Korea Investors Service, Inc. Korea Ratings Corporation National Information and Credit Evaluation, Inc.
Japan	Japan Credit Rating Agency, Ltd.
Malaysia	Malaysian Rating Corporation Berhad Rating Agency Malaysia Berhad
Philippines	Philippine Rating Services Corporation Credit Rating and Investors Services Philippines Inc.
Singapore	DP Information Group
Thailand	Thai Ratings & Information Services Co. Ltd.

# Credit Ratings

	Fitch	S&P	Moody's
People's Rep. of China	A+, stable	AA-, negative	Aa3, negative
Hong Kong, China	AA+, stable	AAA, negative	Aa1, negative
Indonesia	BBB-, stable	BB+, positive	Baa3, stable
Japan	A, stable	A+, stable	A1, stable
Rep. of Korea	Aa-, stable	AA-, stable	Aa2, stable
Malaysia	A-, stable	A-, stable	A3, stable
Philippines	BBB-, positive	BBB, stable	Baa2, stable
Singapore	AAA, stable	AAA, stable	Aaa, stable
Thailand	BBB+, stable	BBB+, stable	Baa1, stable
Viet Nam	BB-, stable	BB-, stable	B1, stable

Data as of 15 July 2016

- **Functioning of a Bond Market**

# Market Participants in Primary Market

## **Issuers**

- Institutions that want to raise funds from the market via debt financing. This can include governments, municipalities, corporations, etc.

## **Investors**

- Individuals and/or institutions that provide the funds to the bond issuers.

## **Intermediaries**

- These are market players that link issuers and investors. Involved in the selling of bonds in the primary market and in the trading of bonds in the secondary market. These include banks, investment banks, traders, custodians, trustees, etc.

# Bond Issuances in Primary Market

## Government Bonds via Auction

Offer Size: USD20 billion

- Regular Auction/Multiple Price Method

	BID		AWARD	
	Yield	Amount	Yield	Amount
<b>Bank A</b>	3.8115%	10	3.8115%	10
<b>Bank B</b>	3.8215%	5	3.8215%	5
<b>Bank C</b>	3.8315%	15	3.8315%	5
<b>Bank D</b>	3.8415%	12		0

# Bond Issuances in Primary Market

## Government Bonds via Auction

Offer Size: PHP20 billion

- Regular Auction/Single Price Method

	BID		AWARD	
	Yield	Amount	Yield	Amount
<b>Bank A</b>	3.8115%	10	3.8315%	10
<b>Bank B</b>	3.8215%	5	3.8315%	5
<b>Bank C</b>	3.8315%	15	3.8315%	5
<b>Bank D</b>	3.8415%	12		0

- Ad Hoc Auction Method

- Tap Method

# Bond Issuances in Primary Market

## Other Bonds via Public Issuance

- Registration - The bond issuer engages a team of intermediaries to prepare the registration statement and all other required documents for the registration of the bonds to the relevant regulatory entity, generally the securities commission.
- Sale/Marketing to Public - Simultaneously, the bond issuer also engages a syndicate of underwriters for the marketing of the bonds, and in advising the issuer on the terms of the bond offer including the pricing and the timing
- Listing - Upon approval of the registration and the end of the offer period, the bonds are to be listed in a platform exchange.



# Bond Trading in Secondary Market

## Exchange Traded vs OTC-Traded

- Centralized Market – An exchange provides a centralized market where all trades are done; OTC market is decentralized where trades are conducted among market participants
- Regulatory Monitoring/Counterparty Risk – An exchange is considered more regulated and lessens counterparty risk
- Price Transparency – Quotes and trades done via an exchange can be accessed by market participants

# Bond Trading in Secondary Market

## Market Participants

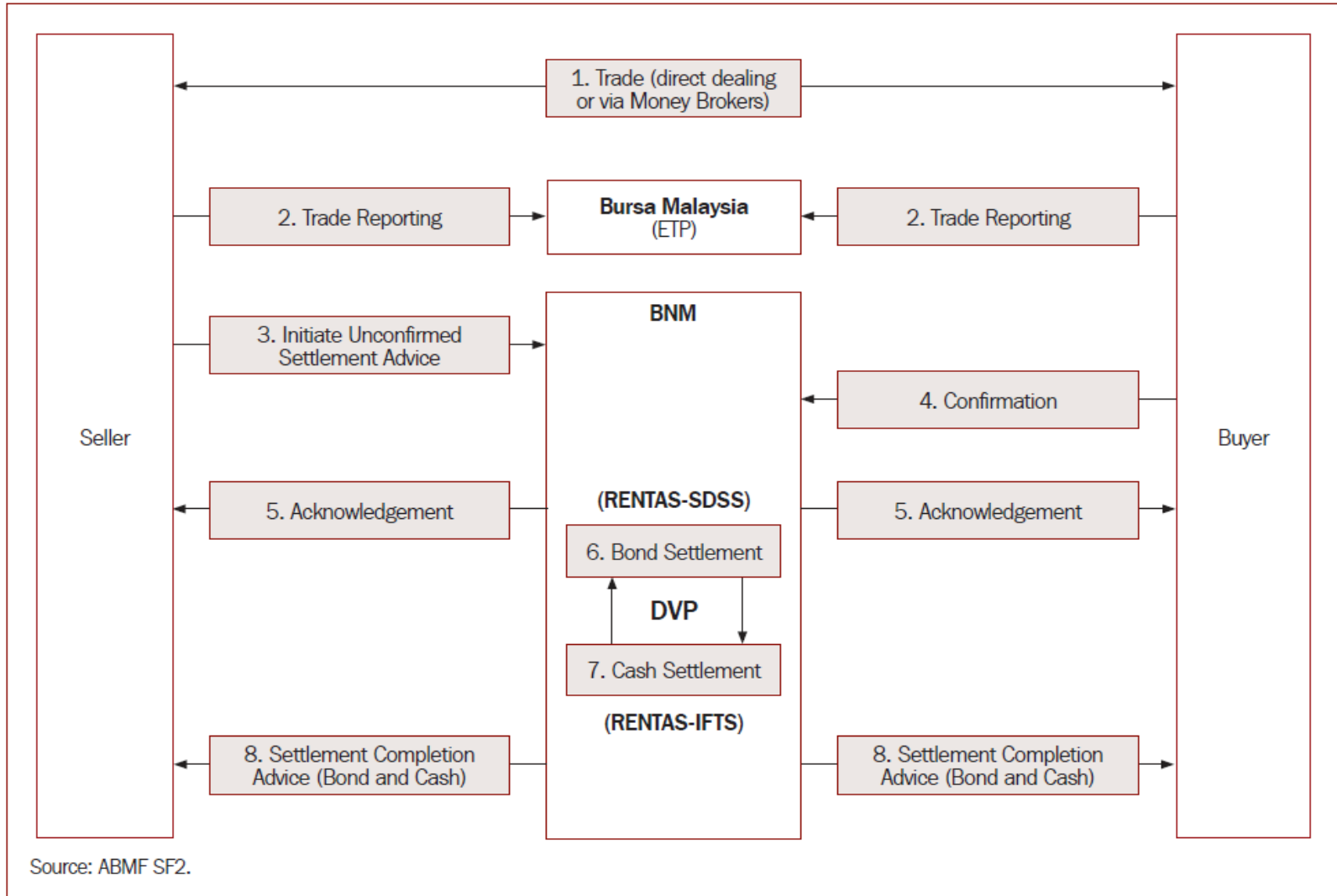
- Front Office – tasked with executing bond trades; includes dealers and brokers
- Back Office – processing of trades including settlement, clearing of funds, and accounting
- Custodian – tasked with safekeeping of bonds
- Transfer Agent – act as record keeper of the bond investors of a company

# Bond Trading in Secondary Market

## EXCHANGE PLATFORMS FOR BOND TRADING

People's Republic of China	National Association of Financial Market Institutional Investors (NAFMII)
Hong Kong, China	HKMA, Central Money Market Unit
Indonesia	Indonesia Stock Exchange (IDX) Indonesian Central Counterparty Indonesian Central Securities Depository
Republic of Korea	Korea Financial Investment Association (KOFIA) Korea Exchange (KRX)
Malaysia	Bursa Malaysia Financial Market Association of Malaysia
Philippines	PDS Group (Philippine Dealing and Exchange)
Singapore	Singapore Exchange (SGX)
Thailand	Thai Bond Market Association (ThaiBMA)
Viet Nam	Vietnam Bond Market Association (VBMA)

**Figure 2. MAL Bond Transaction Flow for Domestic Trades OTC Market/DVP**



Source: ABMF Volume 2 Part 3 : Bond Market Infrastructure Diagrams, Domestic Bond Transaction Flows, and Cross-border Bond Transaction Flows