Malaysian Bond Market: Valuation and Information Infrastructure

11 Aug 2017, Yangon, Myanmar
By Shah Zain, Chief Business Officer
Agenda

1. Malaysian Bond Market Overview
2. Bond Pricing Agency Concepts & Regulations in Malaysia
3. About Bond Pricing Agency Malaysia (BPAM)
4. BPAM Bond Pricing Methodology
Malaysian Bond Market Overview: Development

- Historical lookback at the development of the Malaysian bond market

### 1970s
- Malaysian Government 1st bond issuance
- Financial Market Association Malaysia Established

### 1980s
- Private Sector heavily reliant on Banking sector
- Initial PDS Issuance guideline introduced by Bank Negara Malaysia (BNM)
- Securities Commission Malaysia (SC) Established

### 1990s
- After the Asian Financial Crisis - Corporate Bond Market evolved as alternative source of funding
- Local Rating Agency established
  - RAM & MARC
- Bond Market Infrastructure established
  - FAST/RENTAS/BIDS

### 2000-2010
- 1st foreign issuer issue MYR bond - ADB
- SC became the single regulator for Corporate Bond Market & released Capital Market Masterplan
- Bond Pricing Agency guideline issued
- Guideline on Mandatory usage of BPA prices by unit trusts entity issued
- Largest Sukuk Market & Largest bond market in ASEAN
- Electronic Trading Platform (ETP) set up
- Guideline of Islamic Securities and Asset Back Securities issued
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Malaysian Bond Market Overview: Participants

- A large number of entities are involved in the market.

- **Investment and Commercial Banks**
- **Rating Agencies** (RAM and MARC)
- **Regulators** (SC, BNM, Bursa Malaysia, MOF)
- **Market Agencies** (Cagamas, Danajamin)
- **Trustees and Custodians**
- **Market Intermediaries** (Interdealer Brokers)
- **Issuers** (Corporates, Government)
- **Investors** (Asset Managers, Mutual Funds, Pension Funds etc)
- **Bond Pricing Agency**

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Malaysian Bond Market Overview: Regulators

- **Bank Negara Malaysia**
  - Manage public debt and MGS issuance
  - Own and operate FAST and RENTAS
  - Regulate involvement of financial institutions in bond market

- **Securities Commission**
  - Sole approving authority for corporate bond issuance
  - Regulates primary and secondary bond market activities
  - Supervises market intermediaries such as rating agencies, bond pricing agency, and trustees

- **Bursa Malaysia**
  - Frontline regulator of the Malaysian capital market
  - Maintain Trading & Reporting System for OTC deals – Electronic Trading Platform (ETP)

- **Ministry of Finance**
  - Co-ordinate developmental efforts of Government agencies (under the National Bond Market Committee)
  - Grant tax incentives – stamp duty exemption for primary and secondary market transactions, withholding tax for non-residents, real property gains tax for asset-backed securities etc
Electronic platforms are the foundation of the market

**Bank Negara Malaysia**

*Primary Market*
- Fully Automated System for Tendering (FAST)
  - Creation of primary issuance: debt securities, repo & money market
  - Rating information
  - Daily yield curves for government bonds & BNM papers; weekly for corporate bonds
  - MGS indicative prices
  - Auction calendar & results

**Bursa Malaysia**

*Secondary Market*
- Electronic Trading Platform (ETP)
  - OTC deal reporting
  - Information dissemination

**Bank Negara Malaysia**

*Settlement*
- Real Time Electronic Transfer of Funds and Securities System (RENTAS)
  - Depository & registrar for scripless securities
  - Interbank funds transfer
  - Domestic and international securities settlement based on DvP basis

Source: Securities Commission
Seamless flow from issuance to settlement is vital

**Pre Issue & Maintenance**
- Issuers
  - Trustee
  - Advisor
  - Syariah Advisor (For Sukuk Issuance)
  - Rating Agency
  - Guarantor
- Underwriter/ Facility Agent
  - Lead Arranger
  - Co-Arranger

**Primary Market**
- FAST (Fully Automated System for Tendering) @ BNM
  - Underwriter/ Facility Agent
    - Lead Arranger
    - Co-Arranger
  - Primary Subscriber
    - Tender Panel Members
    - Principal Dealers (PD)

**Secondary Market**
- Investors
  - Wholesale Secondary Market
    - Money Brokers
    - PD, Non PD
  - ETP (Electronic Trading Platform)
    - Centralized DB @ Bursa Malaysia
    - Instrument Info, Prices, Historical Data
  - RENTAS (Payment & Depository) @ BNM
    - Paying Agent
    - Authorized Depository Inst (Own Acc, Client)
    - Central Depository BNM

Source: Securities Commission
Malaysian Bond Market Overview: Outstanding

Outstanding amount as at June 2017 was MYR 1252 billion (USD 291 Bil)

1. Breakdown by Bond Class

- Corporates: 32%
- Quasi-Gov't: 15%
- Government: 53%

2. Outstanding Amount by Principal and Class (RM Bil)

- Government: 371 RM Bil
- Quasi-Gov't: 18 RM Bil
- Corporates: 169 RM Bil

3. Outstanding Amount for Credit Class (RM Bil)

- BBB: 8.2 RM Bil
- A: 16.5 RM Bil
- AA: 176.7 RM Bil
- AAA: 114.9 RM Bil
- Quasi-Gov't: 186.7 RM Bil

Source: BPAM
Sukuk is now dominating the MYR bond market at 56% of the total outstanding.
Trading trend during period 2005 to June 2017

1. Most trades were done for the Sovereigns
   - BNM 41%
   - Government 48%
   - Quasi-Gov't 2%
   - Corporates 9%
   Source: BPAM

2. Most trades were done on Conventional bonds
   - Bond 65%
   - Sukuk 35%

3. Trading Trend based on Rating Class (RM Bil)
   - Govt Bonds
   - Govt Sukuk
   - AAA
   - AA
   - Quasi-Gov't
   - A

The most liquid Corporate bond is class AA
Source: BPAM
Since 2013, trading activities dwindled as investors shied away from the local bond market amid global liquidity tightening initiated by the US Fed and plunge in global oil price. Malaysia's foreign reserves dipped below USD100Bil & USDMYR weakened to a 17-year low at 4.397.

USDMYR further depreciated to 4.486 with record high foreign outflow.

Malaysian Bond Market Overview: Trading

Source: BPAM
As of 30 June 2017, the index consisted of 1201 bonds with a total market capitalization of MYR 1039 billion (approx USD 241)

- Eurozone Sovereign Debt Crisis (Sept 2011)
- Steady recovery in 2010 3 consecutive OPR hikes from 2.00% to 2.75% by BNM (June 2010)
- US Subprime Financial Crisis (Jan 2009)
- Malaysia Government imposed windfall tax for IPP (July 2008)
- Malaysia foreign reserves dipped below USD100 Bil and USD/MYR weakened to 17-year low (3Q 2015)
- US QE3 tapering begins (4Q 2013)
- Plunge in global oil price (4Q 2014)
- High foreign outflow. MGS yield spike (4Q 2016)

Source: BPAM
Agenda

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Development of Bond Pricing Agency in Malaysia

Why Bond Pricing Agency?

Problems Encountered

**Lack of Compliance**
Despite the huge growth of the primary market, the development of the secondary market and valuation practices were lagging

**Protection of Public Money**
There was a direct threat to investors as a result of inconsistent valuations of Mutual Funds

**Low trading in Corporate Bonds**
Meant that consistent and verifiable valuation of bond books became a problem.

Bank and broker quotes were found to be unreliable

**Moral Hazards**
Initial Practice - the Arranging bank/Underwriter are providing end of day prices

Therefore in Year 2006, the Securities Commission initiated the Bond Pricing Agency initiative to provide independent evaluated bond prices

For a developing market like Malaysia, it was deemed that regulator push was necessary to guide towards best practices, rather than leaving it to free market forces
A bond pricing agency (BPA) is a market neutral entity whose role is to provide fair valuations on bonds and sukuk, complying with laws and guidelines issued by Securities Commission of Malaysia.

**Revitalises the Secondary Market for Bonds**
- BPA valuations may revitalize the bond market by facilitating price discovery for secondary market trading.
- The availability of reliable mark-to-market prices can provide alternatives to traditional hold-to-maturity strategies.

**Facilitates Price Discovery for Primary Market**
- From an origination and underwriting perspective, primary level pricing becomes challenging especially for lower credits.
- Reliable fair value data on previously issued corporate bonds can promote new issues by functioning as benchmarks for primary level price discovery.

**Promotes New Product Development**
- The BPA can help the evolution of the bond market by acting as a centre of R&D in financial engineering and fixed income analytics.
- The output of this R&D process will help in the development of new products and structures thus benefitting both the primary and secondary markets.

**Improves the Soundness of Financial Institutions**
- Reliable fair valuations will assist in financial institutions' compliance to international accounting standards (IAS, IFRS, MFRS) and BIS capital requirements.
- Effectiveness of risk management will be further enhanced as the valuation process will be consistent and not arbitrary.
Various frameworks exist for regulated bond pricing entities

- Malaysia
  - Bond Pricing Agency Malaysia (BPAM)

- Indonesia
  - Indonesia Bond Pricing Agency (IBPA)

- Korea
  - Korea Asset Pricing
  - KIS Pricing
  - NICE Pricing Services
  - FN Pricing

- Thailand
  - Thai Bond Market Association (Thai BMA)

- Philippines
  - Philippine Dealing & Exchange Corp (PDEEx)

- China
  - China Central Depository & Clearing (CCDC)

- Japan
  - Japan Securities Dealer Association (JSDA)

BPA framework
Self-Regulated Organisation (SRO)
In development
Valuation providers (no direct regulation)
Bond Pricing Agency Concept: Regulations

- Stringent requirements for accreditation as a BPA

**Methodology and Process**
- Audited

**Pricing performance**
- Using all publicly available information

**Expertise**
- Fit and proper persons

**System**
- Adequate security and backup

**Minimum paid up capital**
- RM 10 million

**Shareholders**
- No controlling party

**Professional indemnity insurance**
- RM 10 million

- BPA guidelines issued in Year 2006 by the Securities Commission Malaysia
- BPA set-up based on Korean model
- Currently one (1) registered BPA in Malaysia
- Privately funded independent entity
### Bond Pricing Agency Concept: Guidelines

- **Mandatory guidelines to use BPA prices**

<table>
<thead>
<tr>
<th>Unit Trust Funds</th>
<th>Exchange Traded Funds</th>
<th>Private Retirement Schemes</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>3 January 2007:</strong></td>
<td></td>
<td></td>
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<td>“Unit Trust Funds investing in Unlisted bonds denominated in Ringgit Malaysia shall value bond portfolios using prices quoted by a Bond Pricing Agency (BPA) registered with the SC.”</td>
<td><strong>11 June 2009:</strong></td>
<td></td>
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<td>(Schedule B: Valuation, SC-1 of the Guidelines on Unit Trust Funds)</td>
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BPAM in 13 Years

- Bondweb Malaysia Established
- Appointed as 1st BPA
- Bondweb Website launched
- Bond Pricing Commercially Deployed
- 2004
  - SC issued Mandatory Guidelines: Use of BPA prices on Mutual Funds
  - Bondweb Website launched
  - Bond Pricing Commercially Deployed
  - SC issued Mandatory Guidelines: Use of BPA prices on Mutual Funds
- 2005
  - BPAM Bond Index & MFRS support pack deployed
  - E-BPAM platform launched
  - Co-brand Bond Index with Thomson Reuters
  - Partnership with IDC
  - Nominated as ABMF member
- 2006
  - BIR and iBPAM deployed
  - Tri-partite collaboration with IBPA & ThaiBMA
  - BPAM Almanac & BTT deployed
  - BPAM’S 10th anniversary & BPAM Bond Market Awards
  - BPAM Report Services deployed
  - Collaboration with KAP
  - Partnership with FactSet
  - BPAM data on ABO
- 2007
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- 2015
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  - E-BPAM platform launched
  - Co-brand Bond Index with Thomson Reuters
  - Partnership with IDC
  - Nominated as ABMF member
- 2016
  - BPAM Bond Index & MFRS support pack deployed
  - E-BPAM platform launched
  - Co-brand Bond Index with Thomson Reuters
  - Partnership with IDC
  - Nominated as ABMF member
## Our Innovations

### Evaluated Prices
- Rated Bond Pricing
- Unrated Bond Pricing
- Short Term Instrument Pricing

### Reference Data
- Terms and Conditions
- Trade Data
- Yield Curves
- New Issuance
- Rating
- Market Statistics

### Benchmark
- Thomson Reuters BPAM Bond Index
- Thomson Reuters BPAM Liquid Index
- Customised Index

### Analytics
- BPAM Market Implied Ratings
- BPAM Transparency tools
- Portfolio Management
- Technical Analysis
- Bond Calculator

### Reports
- BPAM Default & rating Transitions
- Reference Pricing Service (for Issuer)
- Bond Tracker
Our Clients Demographic as at December 2016

- Banks: 25%
- Insurance: 26%
- Asset Management/Mutual Funds: 30%
- Statutory Bodies: 7%
- Corporates: 5%
- Regulators: 2%
- Trustees: 2%
- Foreign Clients: 3%

Our data is used across all users from front, middle and back office ie. Treasury, Risk Management, Fund Operations, Finance, Compliance, Research etc

Academia such as university and research houses are also users of BPAM.
### Our Commitments

<table>
<thead>
<tr>
<th>Market standard &amp; reference for MYR bonds</th>
<th>On-going enhancement and development of new products to meet evolving needs</th>
<th>Strict compliance, corporate governance &amp; internal controls</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strong track record on quality and relevance to market trades with on-going monitoring</td>
<td>Active role in building cross-border relationships with ASEAN countries in line with ABMF WG-IP</td>
<td>Assisting new developing markets in building their bond information and valuation infrastructure</td>
</tr>
</tbody>
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Defining fair valuation

**Fair Valuation:**
the act of *using recent arm’s length market transactions* and *relative comparison* with peers and benchmarks in deriving an instrument’s *estimated* current price.

- **Not the Definitive Market Price**
  - Mark-to-market using fair valuation approach does not set the definitive market price

- **An Accounting Device**
  - An accounting device to capture market value
  - Act as a reference only

- **Is Not a Predictive Valuation Model**
  - Is not a pro-active model to pre-empt prices
  - Is a passive reactive model to market conditions

- **Works Under Regulatory Guidelines**
  - Evaluated and approved by regulators
  - MFRS on valuation technique
Introduction

Problem
Less than 1% are traded, where are the prices for the remaining 99%?

The Need
Daily valuation of bond portfolios for Net Asset Value (NAV) calculation and portfolio valuation.

Legacy Methods
Quotes from brokers, banks, or from internally generated models – unstructured, inconsistent, bias?

The Solution
✓ The BPA evaluates bonds that are not traded on any given day, based on the market prices.
✓ The BPA needs to employ reliable database and evaluation methodology. This methodology MUST be transparent and consistent.
✓ Mark-to-Market (MtM) is an act of providing a price that is market relevant and may be done via fair valuation or taking the market price.
## Bond Pricing in Malaysia

### Comparison to other pricing sources available

<table>
<thead>
<tr>
<th>Features</th>
<th>Brokers Interbank Quotes</th>
<th>Brokers/Banks Indicative Quotes</th>
<th>BPAM’s Evaluated Pricing</th>
</tr>
</thead>
<tbody>
<tr>
<td>Only a handful of bonds are quoted</td>
<td>Accessible only to interbank market</td>
<td>Not all bonds are quoted</td>
<td>Provide quotes for ALL bonds irrespective of market conditions</td>
</tr>
<tr>
<td>Corporate bond quotes are rare</td>
<td>None or few quotes in bear market conditions</td>
<td>Quotes may be very thin in bear market conditions</td>
<td>Totally independent with no risk of biasness</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Prices may include certain biasness</td>
<td>Availability of pricing specialists to address client queries / feedbacks</td>
</tr>
<tr>
<td>Origin of quotes</td>
<td>Available quotes are provided by market makers</td>
<td>No transparent methodology provided</td>
<td>Transparent and well established methodology</td>
</tr>
<tr>
<td>Timeliness</td>
<td>As and when available</td>
<td>End of day</td>
<td>End of day</td>
</tr>
<tr>
<td>Pros/Cons</td>
<td>No economic incentive</td>
<td>Moral Hazard / Conflict of Interest</td>
<td>Economic incentive</td>
</tr>
<tr>
<td></td>
<td>Lack of Skill Set</td>
<td></td>
<td>Specialised skills</td>
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<tr>
<td></td>
<td>Arbitrary and inconsistent</td>
<td></td>
<td>Strictly Independent</td>
</tr>
</tbody>
</table>
All bond market stakeholders need a source of valuation

- Sell Side
- Buy Side
- Regulators
- Issuers
- Other Stakeholders

- FINANCIAL REPORTING
- DECISION MAKING
- RISK MANAGEMENT
- COMPLIANCE REQUIREMENTS

- MARKET SURVEILLANCE
- MARKET INDICATOR

- PRICE DISCOVERY FOR NEW ISSUER

- ACEDEMIA, RESEARCH, MEDIA
BPAM Pricing Methodology

- The pricing approach and process was developed through several stages

<table>
<thead>
<tr>
<th>Theoretical Study / Research</th>
<th>Practical Preparation</th>
<th>Testing and Tuning</th>
<th>Deployment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Study Market Structure</td>
<td>Data Model development</td>
<td>Marked to Model phase</td>
<td>Feedback process test</td>
</tr>
<tr>
<td>Select Approach</td>
<td>Algorithm programming</td>
<td>Back testing</td>
<td>Pricing performance test (QC)</td>
</tr>
<tr>
<td>Identify Bond Structures</td>
<td>Supply Chain Management</td>
<td>Results study</td>
<td>Ongoing review and enhancements</td>
</tr>
<tr>
<td>Determine Financial Engineering Specs</td>
<td>Market Needs Analysis</td>
<td>Algorithm tuning and optimisation</td>
<td>Final Marked to Market Process</td>
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</table>
Four common market practices are used in conducting bond pricing.

BPAM employs the hybrid approach

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<td>Individual Quotation</td>
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<td>Individual Bond</td>
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<td>Approach</td>
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An Overview

Bond Price = f(Benchmark rates + Credit Spread)

- Derivation of benchmark rates
- Primary issuance yield
- Credit risk analysis
- Liquidity risk (from historical trade / quote data)
- Structural risk (terms and conditions of the bond)

Measuring the market price of risk

Risk assessment

Segmentation cube

Individual Bonds

Individual bond valuation
A daily process is conducted to price all bonds.

BPAM uses the prices of observed trades & quotations in the market to derive the prices of non-traded bonds, taking into account the differences between different issuers and structures. EVERY bond has its own individual spread relative to its risk status.
BPAM Pricing Methodology

- Bonds are segmented and ranked according to credit quality, tenure and structure

<table>
<thead>
<tr>
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<th>Daily Process</th>
</tr>
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<tbody>
<tr>
<td>Define Matrix</td>
<td>Populate Info Into Segments</td>
</tr>
<tr>
<td>Segment Classes</td>
<td>Build Yield Curves</td>
</tr>
<tr>
<td></td>
<td>Assign Individual Spread</td>
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<td></td>
<td>Price All Bonds</td>
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**Macro Segmentation**
- Credit Rating / Issuer Type
- Industry
- Product Structure Characteristics
- Time to Maturity

**Micro Segmentation**

**Evaluating Risk at Individual Bond Level**

- Ranking bonds based on
  - Market perception (derived from trades / quotes / primary issuance yields)
  - Application of credit analysis

**BPAM Pricing Methodology**
BPAM Pricing Methodology

- Data is extracted and mapped to the proper segments

### Background Study
- Define Matrix
- Segment Classes
- Populate Info Into Segments

### Daily Process
- Build Yield Curves
- Assign Individual Spread
- Price All Bonds

### Official Sources
- Term Sheet
- Trading Platform
- BNM Bond Website
- Ratings

### Market Network
- Term Sheet Validation
- Broker Quotes
- Pricing Convention
- Swap Yields

### BPAM Internal Process
- Term Sheet Enhancement
- Model Selection
- Trade Data Enhancement

### Data Population
- Macro Segment
- Micro Segment
BPAM Pricing Methodology

Data filtering will identify currently non-representative market level trades and quotes

**Background Study**

- Define Matrix Segment Classes
- Populate Info Into Segments
- Build Yield Curves
- Assign Individual Spread
- Price All Bonds

**Daily Process**

- Daily Process
- Background Study
- Define Matrix Segment Classes
- Populate Info Into Segments
- Build Yield Curves
- Assign Individual Spread
- Price All Bonds

**Outliers from normal trade band**

- Erroneous trade detail
- Out of credit rule
- Liquidity rule
- Out of quote rule
- Significant divergence from market interest rate trend

**Filtration Rules**

- Erroneous trade detail
- Out of credit rule
- Liquidity rule
- Out of quote rule
- Significant divergence from market interest rate trend

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BPAM Pricing Methodology

Constructing yield curves

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**Government Curves**

**Gather Required Info**
- **Market Info**
  - Post-trade info from ETP
  - Pre-trade info from money brokers

**First Filtering**
- **Exclude Unusual Trades**
  - Odd Lots
  - Off Market
  - Outliers

**Generation of YTM Curve**
- **Generate YTM Curve**
  - Mark curve to benchmark trades and quotes

**Generation of Spot Yield Curve**
- **Obtain Zero Rate From YTM Rate**
  - Zero curve is not directly observable from the market, hence *bootstrap*

**Validation of Result**
- **Loop Back Test**
  - Calibrate YTM / Zero curve to ensure evaluated yields are market relevant

**Corporate Curves**

**Data Population into Segment**
- **Market Info**
  - Post-trade info from ETP
  - Pre-trade info from money brokers

**First Filtering**
- **Exclude Unusual Trades**
  - Odd Lots
  - Off Market
  - Outliers

**Credit Spread Curve Generation**
- **Credit Curve**
  - Derive from trades in segment
  - Risk free yield from the MGS curve

**Validation of Result**
- **Credit Spread Rule**
  - Spread along maturity bucket
  - Spread by the size of risk
Assign individual spread reflecting the bond’s appropriate risk obtained from ranking model

**BPAM Pricing Methodology**

**Background Study**
- Define Matrix Segment Classes
- Populate Info Into Segments
- Build Yield Curves
- Assign Individual Spread
- Price All Bonds

**Daily Process**

1. Risk free interest rate curve
2. Credit class curves

**Bond Price**

\[
\text{Bond Price} = f \left( \text{Risk Free Interest Rate}, \text{Risk Spread} \right)
\]

**Risk Spread**

\[
\text{Risk Spread} = f \left( \text{Credit}, \text{Individual} \right)
\]
Apply relative pricing to illiquid bonds

**Background Study**
- Define Matrix
- Segment Classes
- Populate Info Into Segments

**Daily Process**
- Build Yield Curves
- Assign Individual Spread
- Price All Bonds

**Pricing for un-traded or rarely traded bonds**
- Obtain a base spread from the past real transaction
- Track the change of spread over time
- Estimate the spread of the bond relative to changes in the yield curves and other peer group

**Evaluated Yield**
**New Transaction / Relative Pricing Based On Internal Credit Assessment**

- **Base yield curve (AAA)**
- **Spread of specific bond**
- **Real Transaction**

- **Evaluation Date**
- **Term to Maturity**
Feedback process

In monitoring pricing performance, BPAM provides feedback channels to encourage interaction with market participants. Key issues are announced to pricing customers and through the website.

- **Public Announcements**
  - BPAM shares the pricing process and models with clients
  - BPAM publishes its findings and studies (available through Web)
  - Outcome of pricing disagreement resolution is shared with all customers

- **Market and Client Feedbacks**
  - Clients can raise pricing queries at any time through any channel

### Feedback Process
- **Official verbal, web and written channels**
- **Market interaction**
BPAM Pricing Methodology

Snapshot of BPAM’s hybrid approach

- Benchmark curves
- New issues
- Accurate terms & conditions
- YTM matrix/curve pricing
- Credit risk analysis
- Relative pricing
- Live dealing quotes
- Accurate trade data via ETP
- Rating updates
- Financial mathematics
- Market interaction
- Client feedback process

BPAM’s Approach
There are many different structures available for issuance

### Bond Structures

- Discount Bond
- Convertible Discount Bond
- Callable Discount Bond
- Callable Convertible Discount Bond
- Bullet Bond
- Callable Bullet Bond
- Fixed Rate Bond
- Fixed Rate ABS
- Fixed Rate MBS
- Bond with Warrants
- Convertible Bond
- Exchangeable Bond
- Callable Bond
- Callable ABS
- Callable MBS
- Callable Convertible Bond
- Callable Exchangeable Bond
- Amortising Bond
- Fixed Rate Amortising ABS Bond
- Callable Amortising Bond
- Stepping FRB
- Convertible Stepping Bond
- Exchangeable Stepping Bond

### Callable Structures

- Callable Stepping Bond
- Callable Convertible Stepping Bond
- Stepping Amortising Bond
- Floating Rate Note
- Floating Rate ABS
- Floating Rate MBS
- Floating Convertible Bond
- Floating Exchangeable Bond
- Floating Callable Bond
- Floating Callable ABS
- Floating Callable MBS
- Floating Callable Convertible Bond
- Floating Callable Exchangeable Bond
- Floating Amortising Note
- Stepping FRN

### Islamic Concepts

- Bai Bil Taqsit
- Bai Bithaman Ajil
- Bai Dayn
- Bai Inah
- Bai Tawarruq
- Bil Istithmar
- Ijarah
- Istisna
- Istithmar
- Mudharabah
- Murabahah
- Musyarakah
- Qardhul Hasan
- Tawarruq
- Wakalah

### As of June 2017:

- Total active stocks in the market: 2834
- Total stocks price by BPAM: 2744
THANK YOU