

Bloomberg Regulatory Solutions

March 2016

Bloomberg
FOR ENTERPRISE



BLOOMBERG REGULATORY TEAM INITIATIVES RAAP<GO>

Bloomberg's Regulatory Team

- Bloomberg Enterprise Regulatory Solutions response to the ever changing regulatory landscape
- Tasked with working with clients, regulators and industry associations to develop solutions to meet regulatory needs

Solutions Currently in Production

- Regulatory Transparency Fields
- Fair Value Hierarchy Leveling (FVHL) Tool
- Simplified Supervisory Formula Approach (SSFA) Calculator
- High Quality Liquid Assets (HQLA)
- Central Bank Eligibility (CBE)
- Liquidity Assessment Tool (LQA)
- Covered Funds
- Solvency II

Solutions Currently in Development

- Affiliated Transactions
- Margin Period of Risk (MPR) – Basel III
- Collateral Tagging
- Look through
- Form PF

Solutions under Research

- IFRS 9 - SPPI
- RENTD – Volcker Rule
- Investor Protection
- FRTB
- MiFID II

BLOOMBERG REGULATORY THEMES

Introduction to Regulatory Themes

- Each of Bloomberg's Enterprise Regulatory Solutions make up components of our overall portfolio of products. Our strategy is to create products which directly address or cut across the key regulatory themes facing market participants today.

Regulatory Themes

Trading

- Covered Funds Identification
- Collateral Tagging
- Volcker RENTD

Risk & Capital Management

- Liquidity Assessment
- High Quality Liquid Assets
- Central Bank Eligibility
- Fundamental Review of the Trading Book
- Simplified Supervisory Formula Approach

Regulatory & Accounting Reporting

- Regulatory Transparency Fields
- Fair Value Levelling Tool
- Solvency II
- IFRS 9 – SPPI
- Form PF

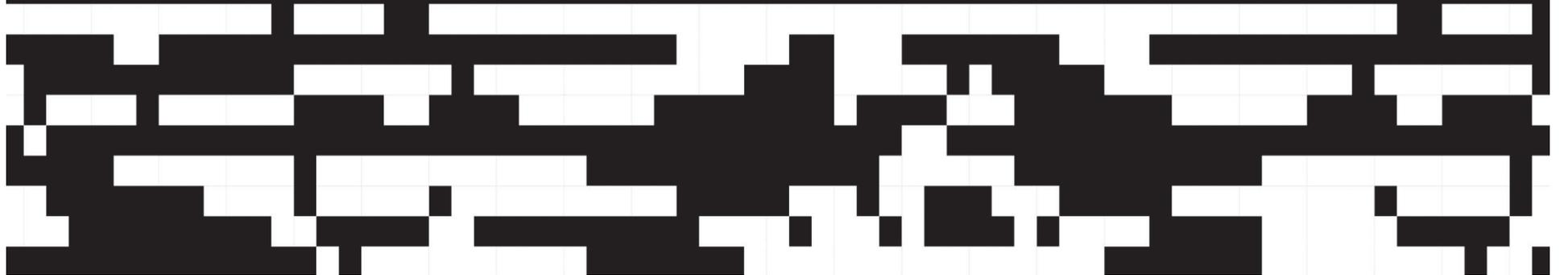
Compliance

- MiFID II
- Look Through Technology
- Affiliated Transaction Identification
- Investor Protection

* The above themes contain products in development & research phases as of Feb 2016

SOLUTIONS IN PRODUCTION

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FAIR VALUE LEVELING AND ACCOUNTING DISCLOSURE

ASC820 and IFRS 13

- Reporting entities subject to IFRS or US GAAP have the obligation to understand and to disclose the pricing methodologies that drive the valuations used for their portfolios.
- Regulation explicitly requires a market-based price where available rather than an entity-specific price.
- It further refines the 'three level' valuation hierarchy originally specified in FAS 157, placing an emphasis on observability and valuation techniques.

Regulatory Transparency Fields

- Assist clients in responding to the accounting requirements set forth by ASC 820 and IFRS 13.
- Provides an objective, consistent and defensible data solution for many of the regulatory and accounting issues facing our clients today, such as accounting disclosure and valuation control, by exposing the underlying market data used in the Bloomberg Valuation Service (BVAL) pricing models.

Fair Value Hierarchy Leveling Tool

- Allows clients to customize and store their own rules to determine fair value leveling results, either 1, 2 or 3, at a certain point in time, while aligning with BVAL's high quality, independent price.
- Saves considerable effort by allowing fair value leveling decisions to be made consistently and defensibly using the same customized rules over time.

FAIR VALUE HIERARCHY LEVELING TOOL

11<Go> to Save, <Menu> to Return

1) Actions ▾ 2) Audit Reports ▾ 3) Overrides ▾ Fair Value Hierarchy Leveling

Version Bloomberg Gen Edit Mode Evaluate Security <Security to evaluate>

Level 1 Rules for 'US Government'

Field	Op	Value
BRAM Price Percent Observab ...	=	100
OR		
BRAM Yield Percent Observ...	=	100
OR		
AND		
BRAM Direct Observation P...	=	100
OR		
AND		
BRAM Executable Direct Ob...	<=	1
OR		
BRAM Indicative Direct Obs...	<=	1
OR		
AND		
BRAM Executable Direct Ob...	>=	
OR		
BRAM Indicative Direct Obs...	>=	

Level 2 Rules for 'US Government'

Field	Op	Value
BRAM Price Percent Observab ...	>=	90
OR		
BRAM Yield Percent Observ...	>=	90
OR		
AND		
BRAM Observation Compara...	<=	2
OR		
AND		

Level 1 Rule Preview

(BRAM Price Percent Observable=100 or BRAM Yield Percent Observable=100) and BRAM Direct Observation Percentage=100 and (BRAM Executable Direct Observation WAvg Age<=1 or BRAM Indicative Direct Observation WAvg Age<=1) and (BRAM Executable Direct Observation WAvg Age>=1 or BRAM Indicative Direct Observation WAvg Age>=1)

Level 1 Security falls

Field Picker

Search <Filter Fields>

Fields by Category	Description
BRAM Exec Indirect Observation Wtd Std Dev	Percentage of the BVAL Price derived from direct and indirect market observations on the target security.
Indirect Observations Indicative	
BRAM Indirect Observation Indicative Percentage	
BRAM Indicative Indirect Observation Weight	
BRAM Indicative Indirect Observation WAvg Age	
BRAM Indicative Indirect Observation Wtd Std Dev	
BRAM Indirect Observation Score	
BRAM Indirect Observation Weighted Count	
BRAM Indirect Observation WAvg Age	
BRAM Indirect Observation Weighted Std Dev	
BVAL Convertible Implied OAS	
BRAM BVAL Average Not Rated Sim Percent	
BRAM Market Method Percent	
BRAM Income Method Percent	

1) Select Close

SIMPLIFIED SUPERVISORY FORMULA APPROACH (SSFA)

Brief SSFA Calculator Overview

- The Simplified Supervisory Formula Approach (SSFA) is a tool that calculates the risk weights required on private label securitized exposures in compliance with U.S. Basel III requirements.
- Consistent with the requirements of the Dodd-Frank Act, the “Final Rules” under U.S. Basel III eliminate the ratings-based methods currently utilized under Basel II and replaces them with a measure of the combination of the collateral performance and structural integrity of private label securitizations to calculate the appropriate risk-weighting.
- Please note that SSFA only addresses the U.S. Basel III requirements for the risk weighting on private label structured products.

Implementation¹

- Effective from January 1, 2015, **all** US banking organizations regardless of the size of their assets have to adopt the SSFA to calculate the risk-weighting and the capital adequacy ratio. Currently only US banking organizations with more than \$50 billion in total assets are required to use SSFA. Foreign banking organizations (FBOs) with U.S. non-branch assets of \$50 billion or more will be required to adopt the SSFA as effective from July 1, 2016.

Bloomberg Coverage

- Bloomberg offers SSFA analytics on more than 50,000 structured products across US and International RMBS, CMBS and some consumer ABS. At this point in time, Bloomberg does not support Student Loan ABS, Credit Card ABS or CLO/CDO.

1. “Regulatory Capital Rules” : Timelines - http://www.fdic.gov/news/board/2013/2013-07-09_notice_dis_a_res.pdf

SSFA: RISK-WEIGHT FACTOR CALCULATION

ACE 06-SD1 A1B Mtge		99) Feedback		Simplified Supervisory Formula Approach	
CUSIP 004421XV0 4.6282(254)113					
Weighted Average Capital Requirement		7.72 (Kg)		Collateral Components	
1) 90+ Delinq % by Bal		35.15 (W)			
Category 1 Loans (%)		4.53			
Category 2 Loans (%)		60.32			
Weighted Average Risk Weighting		22.58 (Ka)		Structural Components	
Attachment Point		88.04 (A) l = 65.46			
Thickness		11.96			
Detachment Point		100.00 (D) u = 77.42			
Supervisory Calibration		0.5 (p) a = -8.86		Capital Requirements	
Capital Structure Requirement		1.60 (Kssfa)			
Securitization Risk Weight Factor		1.60 (SRWF)			
Mtge Collateral As Of Date 03/01/14					

SSFA calculates capital requirements for securitization exposures based on the risk-weights and performance of the underlying exposures and the relative position of the exposure in the capital structure. Bloomberg has access to collateral transparency data and analytics leading to clear advantages with our SSFA solution in terms of quality and coverage.

This solution also enables efficiency gains for clients by saving time and money by automating the process of calculating a complex risk weighting formula consistently.

The calculations and formulas used in SSFA are taken directly from the Federal Register documentation¹.

¹ http://www.fdic.gov/news/board/2013/2013-07-09_notice_dis_a_res.pdf Page 96/260

BASEL III: LIQUIDITY COVERAGE RATIO (LCR)

What is the International Framework for Liquidity Risk Measurement¹?

- As a response to the 2008 financial crises the G20 launched an overhaul of banking regulation, known as Basel III. In addition to changes in capital requirements and the introduction of a leverage ratio, Basel III introduces new liquidity requirements: the **Net Stable Funding Ratio (NSFR)** and the **Liquidity Coverage Ratio (LCR)**.

What is the purpose of the LCR²?

- The LCR promotes the short-term resilience of the liquidity risk profile of banks by ensuring banks have an adequate stock of unencumbered High-Quality Liquid Assets (HQLA) that can be converted easily and immediately in private markets into cash with limited loss of value to meet their liquidity needs for a 30 calendar day liquidity stress scenario.

LCR Calculation = (HQLAs / Total Net Cash Outflows 30-Day Stress Period) >= 100%

- LCR was introduced on 1 January 2015 in most jurisdictions³ with a gradual phase of the minimum requirements.

Bloomberg's HQLA Solution

- Robust data set consisting of new HQLA fields and existing reference data defines the universe of HQLA eligible securities (we cover both fixed income and equities).
- Sophisticated rules engine employed to determine the applicable level of HQLA eligibility.
- New HQLA specific fields provide relevant and valuable data points intended to assist clients in making an informed determination of HQLA eligibility.

1. "Basel III: International framework for liquidity risk measurement, standards and monitoring" - <http://www.bis.org/publ/bcbs188.pdf>
2. "Basel III: The Liquidity Coverage Ratio and liquidity risk monitoring tools", Part 1, Sections I and II - <http://www.bis.org/publ/bcbs238.htm>
3. Japan LCR reporting starts on 1 Apr 2015

HQLA: BLOOMBERG'S COMPREHENSIVE SOLUTION

- Provides data fields to assist our clients with LCR reporting and HQLA identification
- The offering consists of 3 modules:

HQLA Classification	Liquid & Readily Marketable	Central Bank Eligibility
<ul style="list-style-type: none"> • 18 HQLA specific fields that help determine US, EU, CA, JP, AU and Basel III HQLA eligibility and FR2052a/C72 asset category • Includes 30 day stress period price metrics, OECD classifications, and risk weighting • 31 Security Master, Derived, Pricing and Credit Risk Fields 	<ul style="list-style-type: none"> • 6 fields that help determine liquid and readily marketable securities • Weighted count of market participants based on executable and indicative quotes • Weighted age of quotes 	<ul style="list-style-type: none"> • 3 new Bulk Central Banks Eligibility Fields • Covering 10 Central Banks • Providing haircuts at the respective discount window facilities
<p>Asset coverage Equities, GSAC*, Mortgage Pools, Structured and Consumer ABS, US Municipals</p>	<p>Asset coverage GSAC*, Mortgage Pools (TBA), Structured and Consumer ABS (TBA), US Municipals (TBA)</p>	<p>Asset coverage Equities, GSAC*, Mortgage Pools, Structured and Consumer ABS, US Municipals</p>

* GSAC = Governments, Supra-Nationals, Agencies, Corporates

HQLA: COVERAGE

Applicable Jurisdictions	Fields	Equity	GSAC	Pools	ABS	Munis
Americas	US HQLA US Eligible Asset Class Designation	✓	✓	✓	✓	✓
	HQLA FR2052A Eligible Asset Class Designation	✓	✓	✓	✓	✓
	HQLA Canada Eligible Asset Class Designation	✓	✓	✓	✓	✓
EMEA	HQLA EU Eligible Asset Class Designation	✓	✓	✓	✓	✓
Asia	HQLA Japan Eligible Asset Class Designation	✓	✓	✓	✓	✓
	HQLA Australia Eligible Asset Class Designation	✓	✓	✓	✓	✓
All	HQLA Basel III Eligible Asset Class Designation	✓	✓	✓	✓	✓
	HQLA Major Index Flag	✓	N/A	N/A	N/A	N/A
	HQLA 30-day Price Drop Fields (3)	✓	✓	✓	✓	✓
	Current OECD Member Country	✓	✓	✓	✓	✓
	Current OECD Country of Risk Classification	✓	✓	✓	✓	✓
All	Liquid and Readily Marketable Fields (6)	-	✓	-	-	-
All	Explicit Central Bank Eligibility	N/A	✓	✓	✓	✓
	Implicit Central Bank Eligibility	N/A	✓	✓	✓	✓
	Eligible Central Bank Haircuts	N/A	✓	✓	✓	✓

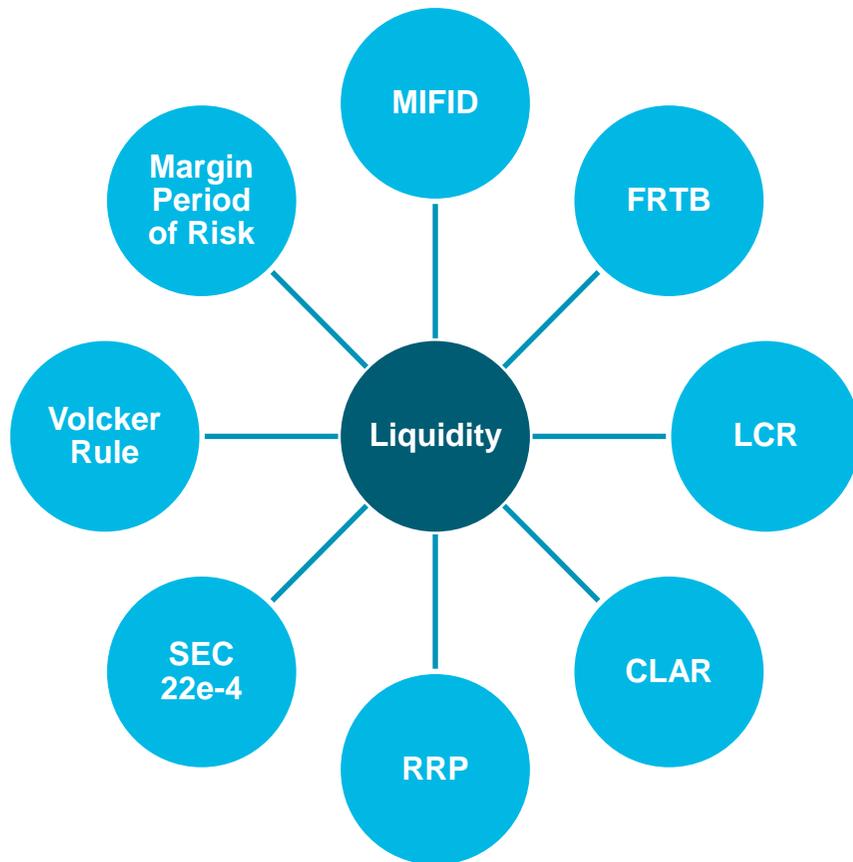
CENTRAL BANK ELIGIBILITY

- Bloomberg has developed logic to identify selected Central Banks' discount windows for which a security is eligible, and the corresponding haircuts
- Central Banks provide explicit lists of eligible securities and/or implicit guidance of eligible securities as shown below

Covered Central Bank		Explicit	Implicit	Haircut
1	United States Federal Reserve (FRB)		✓	✓
2	European Central Bank (ECB)	✓		✓
3	Bank of England (BOE)	✓	✓	✓
4	Swiss National Bank (SNB)	✓		
5	Riksbank (RIKS)	✓		✓
6	Bank of Canada (BOC)		✓	✓
7	Bank of Japan (BOJ)		✓	✓
8	Bank of Korea (BOK)		✓	✓
9	Hong Kong Monetary Authority (HKMA)		✓	✓
10	Reserve Bank of Australia (RBA)	✓	✓	✓

LIQUIDITY ASSESSMENT TOOL (LQA)

Liquidity has become omnipresent in regulatory requirements: liquidity is now an input as well as an output of many regulatory requirements.



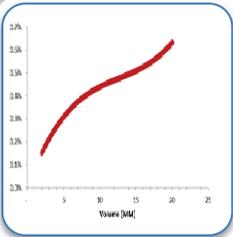
LCR requires “liquid and readily marketable” determination in addition to HQLA classification

SEC Liquidity Risk Management Program requires relative liquidity classification by time to liquidation bucketing

Firms need a holistic approach to liquidity, using a methodology across jurisdictions, regulations and asset classes to produce consistent and reproducible outcomes across the firm

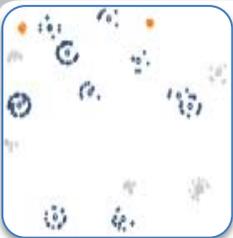
LQA MODEL OVERVIEW

The overall model is based on three components:



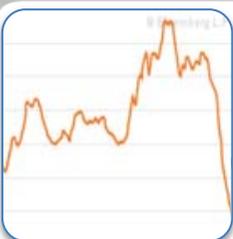
Market Impact model

- We estimate price shift from a fair value given a specific volume
- Calibration can be extended to *every asset class*



Machine Learning Engine

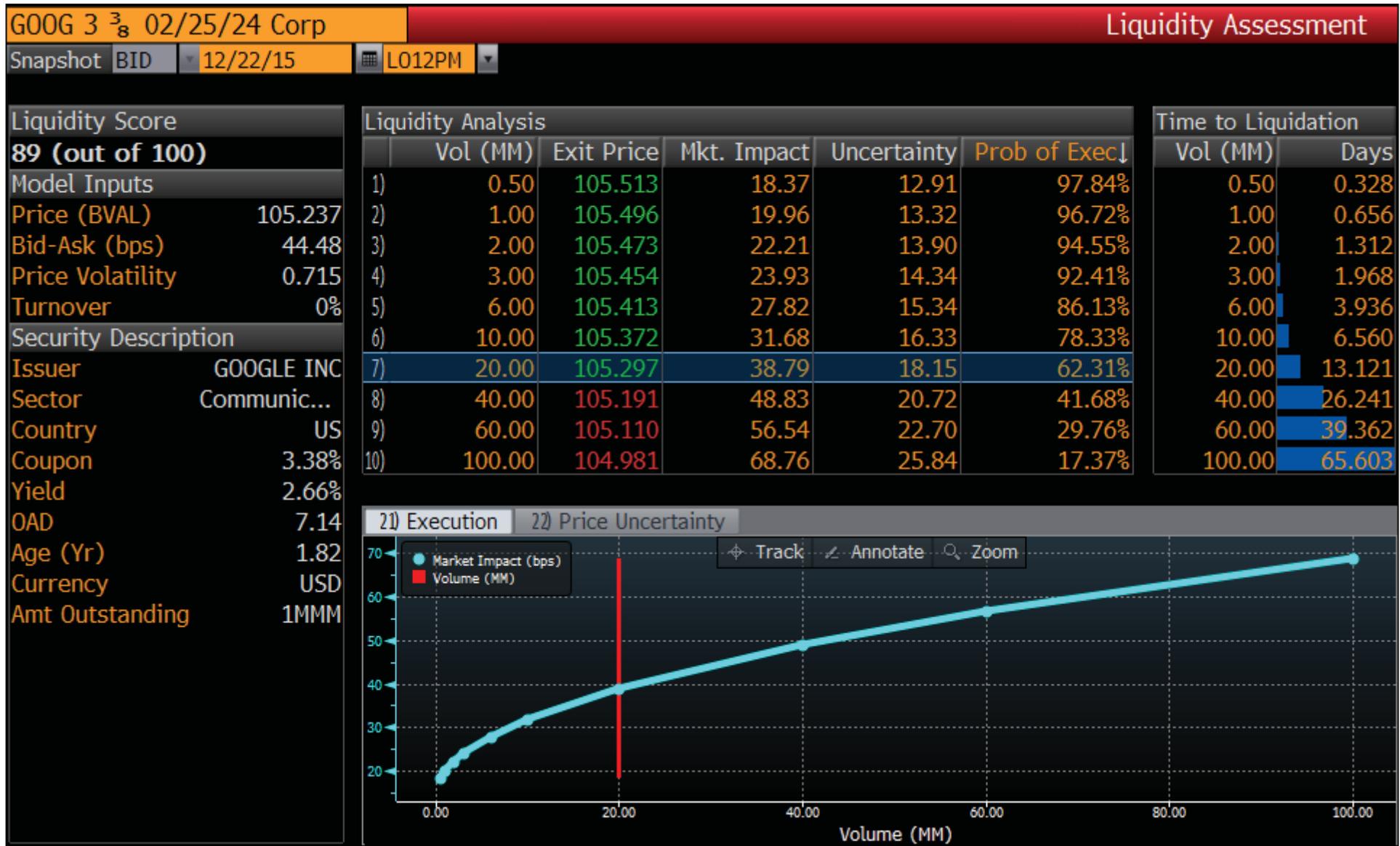
- Problem : A lack of trade data gives < 100% coverage
- Solution : Cluster Analysis is used to identify comparable assets



Rich Market Data + Sophisticated Analytics

- Reactive to market conditions
- Leverage multiple sources of transaction data

LQA: TERMINAL FUNCTION LQA<GO>



MODEL INPUTS AND OUTPUTS

INPUTS	OUTPUTS
<p>CLIENT INPUTS¹:</p> <ul style="list-style-type: none"> • Security Identifiers • V = Simulated Volume (Quantity to sell) • I_{Max} = User Accepted Market Impact <p>BLOOMBERG INPUT ASSUMPTIONS ²:</p> <ul style="list-style-type: none"> • P = Reference (fair value) Price • S = Bid/Ask Spread • σ = Price Volatility over period ΔT (i.e. 2 months for Corp) • F2 = Turn over in period ΔT (i.e. 2 months for Corp) • F3 = Average daily volume* • N = Average daily number of trades * • R = Participation Rate * • Fixed Days to Liquidate * • Confidence * <p>ASSET CLASS SPECIFIC BLOOMBERG INPUTS</p> <ul style="list-style-type: none"> • Fixed Income : Duration (D),. Coupon (C), AMT (M), etc. • Equity : Quantitative and Fundamental information • Other asset classes will have own unique inputs <p>OTHER MODEL INPUTS</p> <ul style="list-style-type: none"> • News Sentiment Index • Accessibility Index (holder type) • Other specific features for different asset classes I.e., Central Bank Eligibility 	<p>LIQUIDITY ASSESSMENT (LQA)</p> <ul style="list-style-type: none"> • Φ = Probability of Selling volume (V) at Price (P) or better • I_V = Market Impact selling custom volume (V) • V_{MAX} = Given max Market Impact (I_{max}), max Volume can be sold • T = Given max Market Impact (I_{max}), days to liquidate custom volume (V) • L = Liquidity Score • Γ = Cluster Quality Index • Θ = Cluster Migration Rate <p>PRUDENT VALUATION (PRUVAL)</p> <ul style="list-style-type: none"> • P_{MPU} = Market Prudent Price • ΔCC_{AVA} = Close Out cost AVA • ΔMPU_{AVA} = Market Price Uncertainty AVA • ΔCP_{AVA} = Concentrated position AVA • ΔC_{AVA} = Combined AVA <p>UNDER DEVELOPMENT</p> <ul style="list-style-type: none"> • MARGIN PERIOD OF RISK (MPR) • SEC Rule 22e-4 • HQLA : Active and sizable market • Volcker : RENTD

¹ BBG will use default values when client chooses not to supply overrides

² Can be overridden by client for stress-testing

* Override capability being developed for certain asset classes

RECOVERY AND RESOLUTION PLAN

What is the Recovery and Resolution Plan

- Since the financial crisis, there has been much focus from legislative and regulatory authorities on reducing risk of bank failure and bank bailouts
- One of the key requirements of the new regulation is that of preparing and implementing a so-called “Living Will / Recovery and Resolution Plan”, the deadline for which was by the end of 2012

What is the challenge?

- Recovery and Resolution plans can be complex and wide ranging, as they need to perform analysis that estimates the impact of the potential actions the institution would take under each scenario as well as the consequences to capital, funding and liquidity; to the various affected business lines, legal entities and material branches and by jurisdiction
- The Plan should also include survival strategies and measures for those businesses/functions which, if disrupted, would threaten stability of the financial system. In particular, financial firms are required to demonstrate that they have a good understanding of funding sources and liquidity risk, and how these are affected by stress
- In addition, there are extensive information requirements associated with the plan, which may be difficult for firms to meet from an information gathering and format/presentation perspective

Bloomberg Proposed RRP Solution

- The **Bloomberg Liquidity Assessment Solution (LQA)** provides clients with an innovative, quantitative and most importantly consistent methodology for estimating liquidity of securities. This is based on providing the estimated market impact and time to liquidation for a particular holding size at the security level or alternatively aggregated at the portfolio level
- Both the input and output data can be customized by the client, in addition to parameters relating to the underlying methodology. This functionality enable the firms to develop a wide-ranging trigger framework with early warning indicators. This could also improve the firm’s ability to provide a forward-looking view of stress before and after management actions

MARGIN PERIOD OF RISK

Requirements

- This is a requirement in the Counterparty Credit Risk calculation (new in Basel III). With respect to a netting set subject to a collateral agreement, this refers to:
 - The time period from the most recent exchange of collateral with a counterparty until the next required exchange of collateral.
 - The period of time required to sell and realize the proceeds of the least liquid collateral that can be delivered under the terms of the collateral agreement.
 - Where applicable, the period of time required to re-hedge the resulting market risk, upon the default of the counterparty.

Bloomberg Solution

- The **Bloomberg Liquidity Assessment Solution (LQA)** provides clients with the practical data required to calculate Margin period of Risk.

In practice the operationalization of MPOR boils down to quantify the following two questions for relevant positions:

- Calculate the Market Impact (\$) to Sell a Volume of X millions (e.g. \$50mn) in Y days (e.g. 2d, 20d) with Z% of confidence (e.g. 90%)?
- Calculate the Volume that can be traded with a Market Impact smaller than X percent of price (e.g. 2%) in Y days (e.g. 2d, 20d) with Z% of confidence (e.g. 90%)?

ISIN	QUESTION 1			Final MI in \$
	X : Vol (in MM)	Y : days	Z : confidence	
ES031229xxxx	50	20	90%	0.78
ES031229xxxx	50	20	90%	0.70

ISIN	QUESTION 2			Output Vol
	MI : X * BA	Y : days	Z : confidence	
ES031229xxxx	0.80%	2	90%	5,651,352
ES031229xxxx	0.60%	2	90%	3,690,350

Assumptions to calculate MPOR

For this case study we are basically using a linear assumption wrt. time:

1. Selling 50mn in 20 days is equivalent to selling 2,5 mm. per day
2. Knowing the volume we can trade on one day can be linearly scaled to n days

VOLCKER RULE: COVERED FUNDS

What is a covered fund?

- Under the Volcker rule, a banking entity is prohibited from owning or sponsoring a “covered fund” which includes:
 - hedge and private equity funds that rely on Section 3(c)(1) or Section 3(c)(7) exemptions from Investment Company Act
 - similar funds defined as “commodity pools” and foreign funds that would meet the definition of hedge or private equity fund

Bloomberg Covered Funds solution

- Bloomberg’s Covered Fund Tool has coverage of Securitizations (including Non-Agency RMBS, CMBS, Consumer ABS, and CDOs), Collateralized Loan Obligations, Covered Bonds and Foreign Listed Securities.
- For all above product types a dedicated Bloomberg terminal screen is developed which displays key information most relevant to Front Office personal for Pre-Trade screening. In addition, a Daily File is distributed including additional fields most relevant to Back Office personal for the purposes of monitoring compliance and risk reporting.

COVERED FUNDS: TERMINAL SCREEN VCF<GO>

3-BLOOMBERG

MEMO PRINT BVMN BVCE FLBK QRC MBVQI AUDT BVST BV18 B386 P386 BEEC TENB ONBB VIEW PATH CPH TAPD ADSKL BJM GRID COVER BVDT-1 bvd-2

TEUCRIUM S... Equity VCF Related Functions Menu Message ☆ ↻ 📄 ⚙️ ?

<HELP> for explanation, <MENU> for similar functions.

SOYB US Equity Volcker Covered Funds

Listed Securities Info.

COVERED FUNDS INFORMATION

Decision Logic Result ⓘ	Not a Covered Fund Own. Int.
Volcker Rule Institutional Stock Exchange	Y
Volcker Rule Designated Market	Y
Last Traded Price	18.78
Currency	USD
UCITS Qualified	N
Primary Exchange Name	NYSE Arca
Primary Exchange Code	UP
Country	US

The value displayed in the Decision Logic Result above is refreshed once per day between 4am & 5am Eastern Time (US & Canada). The values displayed in all other fields are updated in real time throughout the business day.

Hit the <HELP> key for more information on the definitions of these fields.

Bloomberg FOR ENTERPRISE **STILL STRUGGLING WITH COVERED FUND IDENTIFICATION? BLOOMBERG CAN HELP. CONTACT US TO FIND OUT HOW.** **RAAP** VGO

SOLVENCY II

Background

- Solvency II is an EU Directive designed to regulate the capital of insurance companies and reduce the risk of insolvency.
- Solvency II aims to introduce a harmonized regulatory regime for the insurance market. The regulation impacts capital calculations, governance and reporting, creating obligations for insurers that operate in the EU, as well as their asset managers and custodians.

The challenge

- One of the most demanding aspects of Solvency II is the Transparency and Disclosure requirement, also known as Pillar III reporting.
- Pillar III requires quarterly or annual reporting of risk and capital adequacy details.
- To prepare these reports in-house, firms must invest in large-scale programs to develop proprietary algorithms and related technology—a costly approach that is further complicated by Solvency II onerous data requirements and tight deadlines for compliance.

Bloomberg Solution

- The Bloomberg Solvency II Solution combines high-quality reference data with proven expertise in Solvency II taxonomy, giving insurers a faster, easier and more cost-effective solution for complying with Pillar III reporting requirements.
- In addition, Bloomberg monitors changes to reporting requirements, carrying out extensive due diligence to ensure that our product continues to deliver the most accurate and comprehensive Solvency II reporting solutions.

BLOOMBERG SOLVENCY II SOLUTION

BLOOMBERG'S SOLVENCY II REPORTING PACKAGE

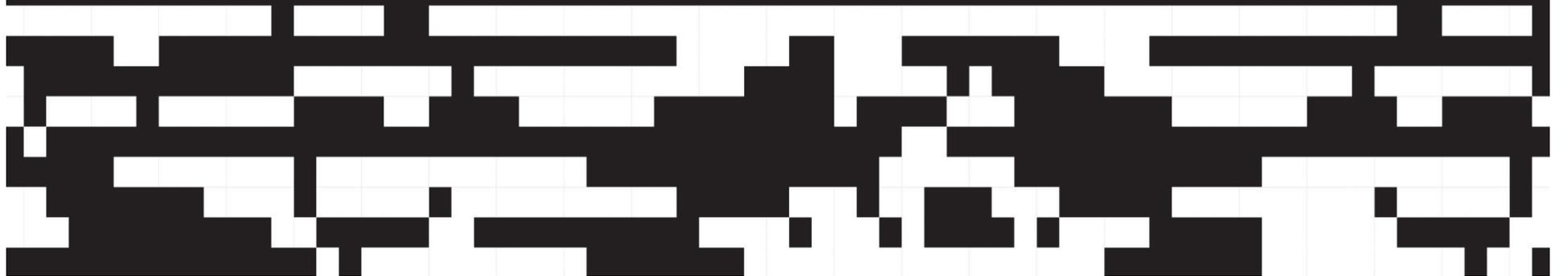
- Bloomberg's Solvency II package covers the full suite of Pillar III reporting requirements. We provide approximately 130 data fields that are mapped to the European Insurance and Occupational Pensions Authority's (EIOPA) Quantitative Reporting Templates (QRT) for insurers. The solution maps these fields to the Asset Managers' Tripartite template so that insurers' asset managers can also provide data for Pillar III reporting.
- Bloomberg's Solvency II Reporting package comprises comprehensive and granular reporting data, and field transparency to provide additional assurance.

Key features include:

- Detailed guidance on how Bloomberg fields align to the Asset Managers' Tripartite template, and EIOPA's QRTs.
- Comprehensive coverage of EIOPA's Complementary Identification Codes (CIC) across all asset classes and maintenance of codes in line with EIOPA changes.
- Comprehensive coverage of entity-level European Statistical Classification of Economic Activities (NACE) Codes and Legal Entity Identifiers (LEI).

SOLUTIONS IN DEVELOPMENT

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Affiliated Transactions: Introduction

Background

- Affiliate Transaction related regulations were originally established over 10 years ago. However, there has recently been a renewed focus on these regulations based on a new push to protect depository institutions, and increase transparency with regards to intercompany transactions and legal entity management.
- Regulation W, Section 23A and 23B of the Federal Reserve Act and Rule 10f-3 under the Investment Company Act of 1940 impose restrictions on transactions between affiliates, which are defined as covered transactions under the regulations.
- These regulations are expected to reduce the transactional risks between an institution and its affiliates.

Industry Considerations

- Given the obligations of these various regulations, it has been challenging for institutions to meet their requirements for a number of reasons. Banks need to:
 - Initially identify their entire affiliate network
 - Identify affiliate transactions by silo across the organization
 - Identify transactions covered by the various statutes
 - Incorporate the quantitative limitations with a single affiliate and combined across all affiliates
 - Meet the requirements of transacting at arm's length with an affiliate
- Lacking an independent and easily assessable reference point to benchmark against, most institutions have had to embark on a manual and labor intensive compliance process to gather all this information on a periodic basis

What can Bloomberg offer for Reg W and 10(f)-3?

Reg W/23B and 10(f)-3

- **REG W/23B**
Restricts/excludes certain types of asset purchases such as
 - *Purchases of a security or other assets from a covered affiliates as a fiduciary*
 - *Purchases of a security underwritten by an affiliate*
- **10(f)-3**
It provides “Exemption for the acquisition of securities during the existence of an underwriting or selling syndicate” that otherwise would violate section 10(f) if, among other things, following types of security is included:
 - (i) *Part of an issue registered under the Securities Act of 1933 that is being offered to the public;*
 - (ii) *Part of an issue of government securities*
 - (iii) *Eligible Municipal Securities;*
 - (iv) *Securities sold in an Eligible Foreign Offering; or*
 - (v) *Securities sold in an Eligible Rule 144A Offerings*



Solutions

- Bloomberg's global data team updates new issues for fixed income, equities, municipals and mortgages with underwriting and fiduciary information.
- We can leverage this data and provide all the transactions in a machine readable format.
- Bloomberg's Affiliated Transaction solution provides the full list of securities which exist within the Bloomberg databases along with key related fields.

COLLATERAL TAGGING

What is Collateral Tagging

- Risk mitigation and capital adequacy in the financial system has been one of the primary objectives of the global regulators, following the 2008 financial crisis, with a focus on reducing risk of failure and bank bailouts.
- As a result of the crisis, regulators across the globe began imposing margin and collateral requirements on OTC Derivative transactions, and have mandated the development of standards that set out the levels and types of collateral as well as segregation arrangements required to ensure timely and accurate separation of such collateral.
- US and Europe have been at the forefront of this initiative with the finalisation of initial and variation margin requirements (finalised in December 2015 and expected in early summer 2016)

What is the challenge?

- Maintenance of multiple rules based on the **different national regulatory frameworks** the client operates under, i.e. Europe, US, Japan, etc.
- Margin and collateral frameworks have **evolved significantly in the past few years with an expectation this will continue into the future** as various regulators (re)align their thinking which will require continued maintenance and monitoring.
- Existing regulations highlights **the need for a level of standardized interpretation to produce an accurate and consistent classifications of collateral.**

Bloomberg Proposed Collateral Tagging Solution

- The **Bloomberg Collateral Tagging Solution** will provide clients with an efficient channel to determine collateral eligibility for non centrally cleared OTC derivatives **across various global regimes.**
- It provides the market place with a **consistent methodology** for collateral valuation and estimation eliminating some guess work from the Firm's capital management
- Flexible infrastructure that leverages Bloomberg's extensive data coverage to **provide up to date and precise tagging of securities** (~3mln)

Bloomberg Proposed Regimes in Focus

- | | |
|-----------------|----------------|
| • United States | • Singapore |
| • Europe | • Canada |
| • Japan | • Australia |
| • Switzerland | • Taiwan |
| • Hong Kong | • South Africa |

LOOK THROUGH

What is look through?

- Financial institutions have the regulatory obligation to perform a 'look through' in investments in funds for compliance and risk purposes.
- Under the Solvency II regulation for example (in force as of 1 January 2016) insurance companies must perform a look through in determining their Pillar 1 minimum Solvency Capital Requirement (SCR) for different asset risks (e.g. spread risk).
- Capital and liquidity regulations require banks to perform look through to the ultimate underlying of investment funds to determine their credit and market risk exposure.

What is the challenge?

- Performing a look through is a complex exercise as funds can invest in multiple other funds (fund of funds) in more than one layer of reinvestments, funds can be synthetic in nature creating potentially counterparty risk.
- For financial companies, even if the data can be obtained with sufficient granularity and quality, the amount of data can grow exponentially with fund of funds in play, creating significant challenges in terms of control of data and data management in general.

Bloomberg Proposed Look Through Solution

- The solution will determine, after multiple look troughs until the ultimate underlying security is identified, a bulk field that contains the constituents of the ultimate underlying's of the fund and the reference data of those holdings.
- The Bloomberg solution will provide extensive coverage for fund look through with timely and extensive reference data.

FORM PF

What is FORM PF

- Amendment of Investment Advisers Act of 1940, requiring that the FSOC to collect data that enables it to better monitor systemic risks in the U.S. financial markets.
- Mandate allowing for the Securities Exchange Commission (SEC) and Commodity Futures Trading Commission (CFTC) to use information on FORM PF for investor protection, examination, and investigation purposes.

What is the challenge?

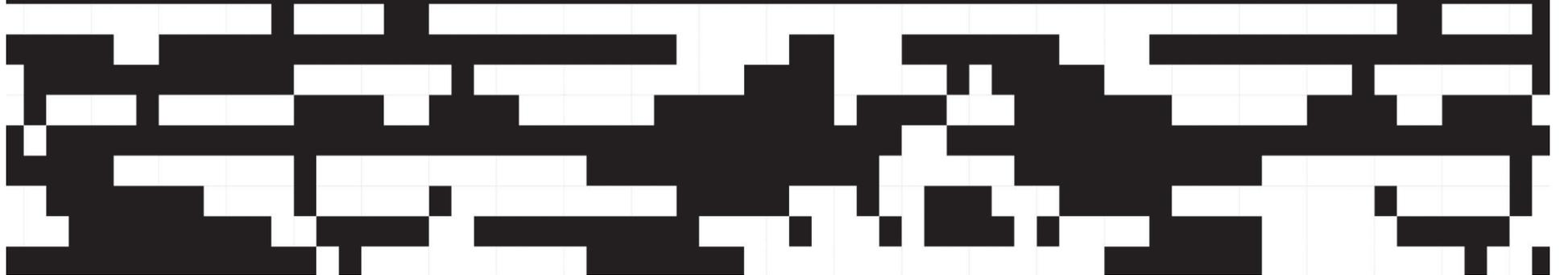
- With its litany of questions spread over more than 50 pages, Form PF is proving to be a formidable undertaking for investment advisers. Depending on the size and type of private fund, data required can include:
 - A fund's gross and net asset values;
 - Aggregate value of derivative positions;
 - Percentage of fund ownerships;
 - Gross and net performance information;
 - Financing information (including secured and unsecured borrowing);
 - Valuation and methodology, and liquidity of holdings; and
 - Portfolio company information.

Bloomberg Proposed Form PF Solution

- Bloomberg's data-centric approach and proven expertise allow firms to efficiently update Form PF documentation to meet filing deadlines in a cost-effective manner.
- Our solution will provide specific data fields that make it easier for firms to report information regarding:
 - Trading and clearing mechanisms;
 - Percentage of the reporting fund's net asset value;
 - Turnover by asset class;
 - Aggregated hedge fund exposures;
 - Turnover value of advised hedge funds; and
 - Geographical breakdown of investments.

SOLUTIONS UNDER RESEARCH

Bloomberg
FOR ENTERPRISE



VOLCKER RULE: RENTD

The Requirement

- Volcker Rule Regulatory Compliance program must be in place by July 2015
- Justification of Market Making & Underwriting desks' activities must be demonstrable. RENTD requires evidence that the positions of a desk taking the market making exemption are tied to customer activity.
- OCC estimates almost 90% of compliance costs of Volcker associated with RENTD

The Problem

- **Market data may not be readily available** within a Bank to assess the liquidity of a trading desks portfolio (e.g. BVAL market observations & Holdings)
- **Liquidity, Maturity and Depth of a particular market is difficult to estimate** and quantify consistently at portfolio level
- Several approaches in the market merely center on bid-ask spread

The Solution

- Our solution will offer **unique analytics to enhance the information and data used in RENTD calculations**
- Using the tool to calculate Liquidity, Maturity & Depth of the market will **improve accuracy and consistency of RENTD & Customer Demand estimates**
- **Inputs and outputs can be tailored** for ANY of your market making or underwriting trading desks
- Scoring methodologies to measure liquidity, maturity and depth of the market, along with a RENTD Calculation Formula are available for compliance purposes

VOLCKER RULE: RENTD

Analyzing Market Information

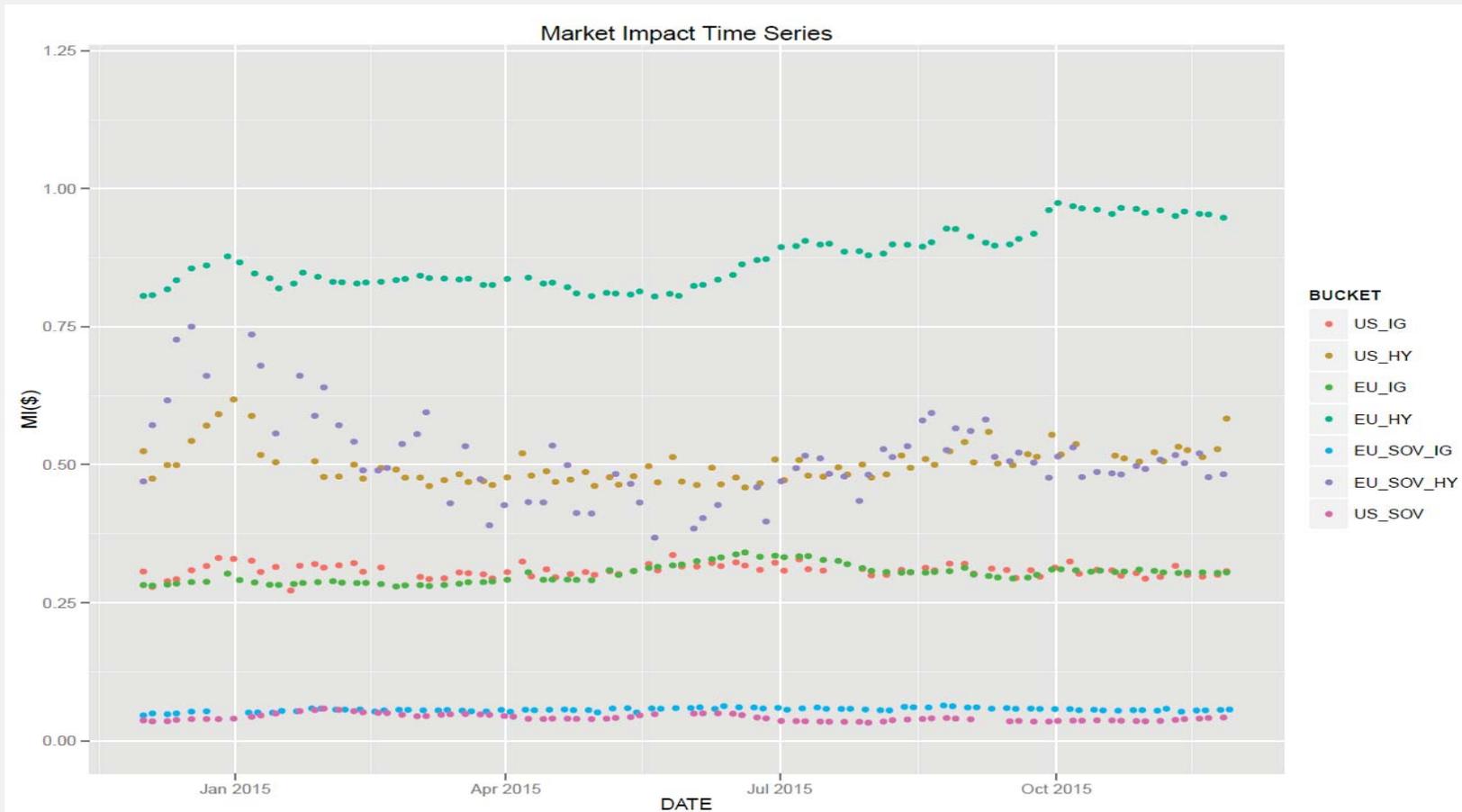
- One proposal is to provide Bloomberg clients with specific indices focused on relevant RENTD market information.
- These indices can be used by Bloomberg clients as inputs / factors within their RENTD limit calculations to document and evidence the linkages between the institutions market making limits and the liquidity, maturity and depth of the market.
- Currently, the tool is capable of aggregating and referencing data for the following indices:

Asset Class	Macro Class	Micro Class
Fixed Income	Corporates	High Yield Asia
		High Yield Europe
		High Yield North America
		Investment Grade Asia
		Investment Grade Switzerland
		Investment Grade Europe
		Investment Grade Great Britain
		Investment Grade United States
		Investment Grade Scandinavia
		Governments
	High Grade Europe	
	Low Grade Europe	
	United States and Canada	
	Other	
	Convertibles	Converts
	Agencies	Africa
		America others
		High Grade Asia and Oceania
		Low Grade Asia
		High Grade Europe
		Low Grade Europe and Russia
		United States and Canada

VOLCKER RULE: RENTD

Example – Market Impact by Sector

The Market Impact model estimates price shifts based on a specified volume for a product and important data point for a desk's inventory level consideration



Assumptions

- Weighted average market Impact of each bucket are aggregated by amount outstanding
- Simulated volume for the market impact of each bonds are 10 year duration equivalent

IFRS 9: SPPI TESTING

New accounting classification and measurement standard

- On July 24, 2014 the IASB issued IFRS 9, Financial Instruments¹, replacing IAS 39 'Financial Instruments: Recognition and Measurement' accounting standard.
- IFRS 9 consist of three main themes: I) Classification and Measurement, II) Impairment and III) Hedge accounting for financial instruments.
- IFRS 9 is effective for annual periods beginning on or after 1 January 2018 with early adoption permitted.

The challenge: classification of assets at amortized cost

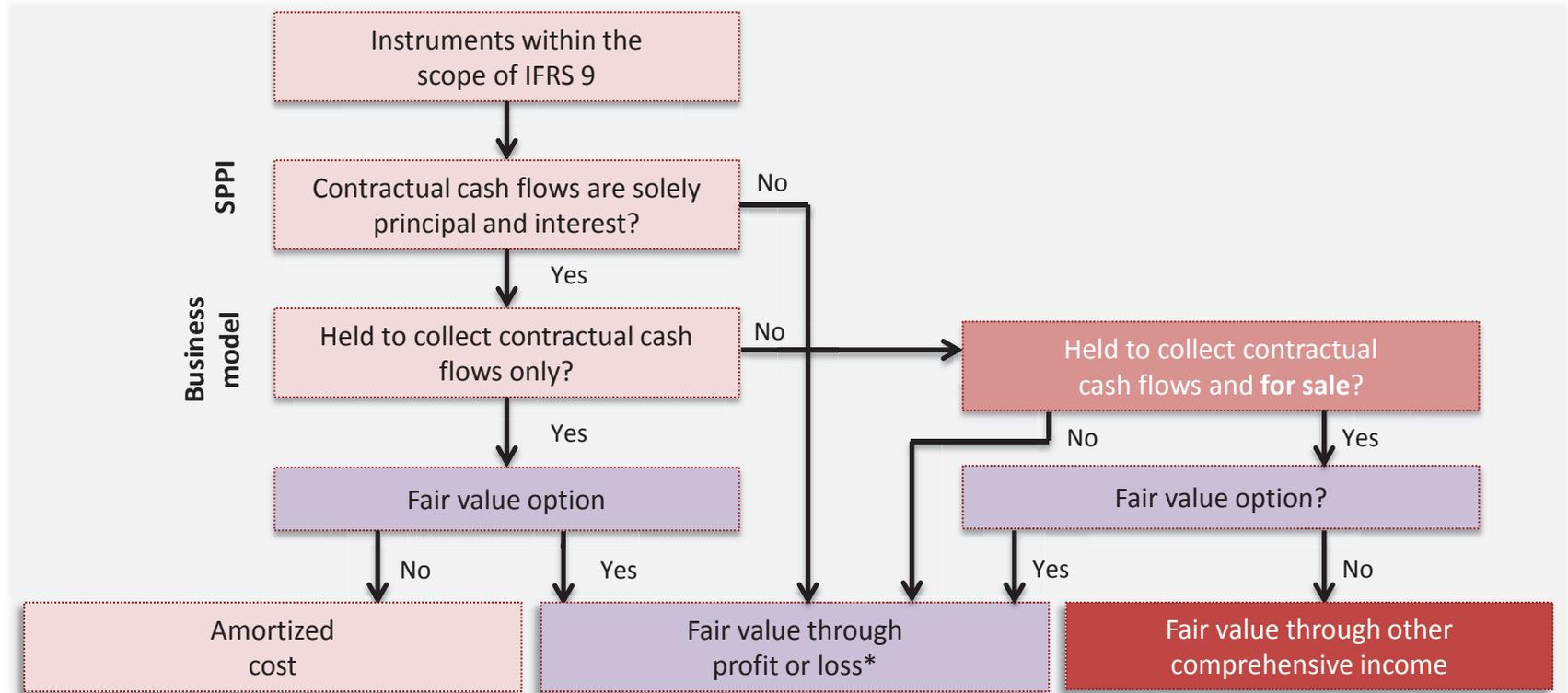
- A financial asset is measured at amortized cost if both of the following criteria are met:
- The asset is held to collect its contractual cash flows: the entity's business model is for managing the financial assets.
- The asset's contractual cash flows represent 'solely payments of principal and interest ("SPPI")'.

Bloomberg Solution

- Bloomberg will utilize all available data in its global securities database to identify SPPI features and return the result for each unique security.
- Two new fields will assist clients to determine if a security passes the SPPI test Bloomberg will take into consideration the following significant security features in SPPI testing.

IFRS 9: CLASSIFICATION & MEASUREMENT APPROACH¹

Steps for determining the classification and measurement of financial assets



* Presentation option for equity investment is to present fair value change in OCI

1. <http://www.ifrs.org/current-projects/iasb-projects/financial-instruments-a-replacement-of-ias-39-financial-instruments-recognition/documents/ifrs-9-project-summary-july-2014.pdf>

BLOOMBERG IFRS9 SPPI SOLUTION

Two new fields will assist clients to determine **if a security passes the SPPI Test**:

1. **IFRS 9 - SPPI Test** : This field will return “Pass”, “Fail”, or “Further Review Required” on a security level
2. **IFRS 9 - SPPI Attribute** : This field will return SPPI attribute to better explain the reason why it passes/fails or further review required.

Bloomberg SPPI Rules Engine

- Coupon type
- Calculation Type
- Index
- Coupon Frequency
- Redemption Type
- Currency
- Re-fix Frequency
- Reset Frequency
- Redemption price
- And many others...



- Provide more features on SPPI Test Result
- This attribute can help clients to check why the security passes / fails the SPPI Test or need further review required

**Generate SPPI Test Result –
Pass, Fail, Further Review Required**

Return SPPI Attribute

FUNDAMENTAL REVIEW OF THE TRADING BOOK (FRTB)

Background

- FRTB, a Basel regulation that impacts all sell-side banks globally with a trading book, aims to tackle a number of structural flaws in the market risk framework not addressed by the Basel 2.5 revisions.
- It seeks to better align the capital outcomes and consistent application of the standardised and internal model approaches to market risk across banks and jurisdictions.
- The regulation is more risk sensitive than the prior market risk rules, thereby impacting more functions within the bank across market risk, valuation, product control and regulatory teams covering capital and stress calculations, governance, reporting and other obligations.

The challenge

- One of the most demanding aspects of FRTB is the requirement to demonstrate the eligibility of trading activities for the internal models-based approach. Firms have to prove that there are adequate “real” trades for any given position (24 observations in any calendar year with no more than one month between any two observations) in order to be allowed to use the relevant prices as inputs into the approved capital models.
- Firms do not have sufficient “real” trade data (either individually or as a consortium of firms) to be able to demonstrate that all their trading book positions feeding internal models trade sufficiently frequently. Failure to demonstrate trading activity would involve additional capital charges.

Bloomberg Solution

- Bloomberg is currently hosting various working groups with banks, regulators and consultants to better understand the information that firms require, in what format and for which product types.
- Our proposed solution will be to provide firms with a definitive flag (where possible) for any given security that states whether it is modellable or not. This flag will be backed up by actual trade data and executable quotes obtained from various sources, including trades flowing through Bloomberg’s various trading platforms and external contributed data.
- We are also looking to provide further transparency into the FRTB classifications by providing a view point on trade date for each observation, and possible aggregated & anonymous volume and price information.

MiFID II: TRANSPARENCY AND REPORTING REQUIREMENTS

Background

- MiFID II sets new objectives and regulations for the EU financial markets by establishing a harmonised regulatory framework and consist of 5 main areas: Market Transparency, Investor Protection, Market Structure, Organisational Requirements and Product Intervention.
- The (extended) implementation deadline for MiFID II is January 2018.

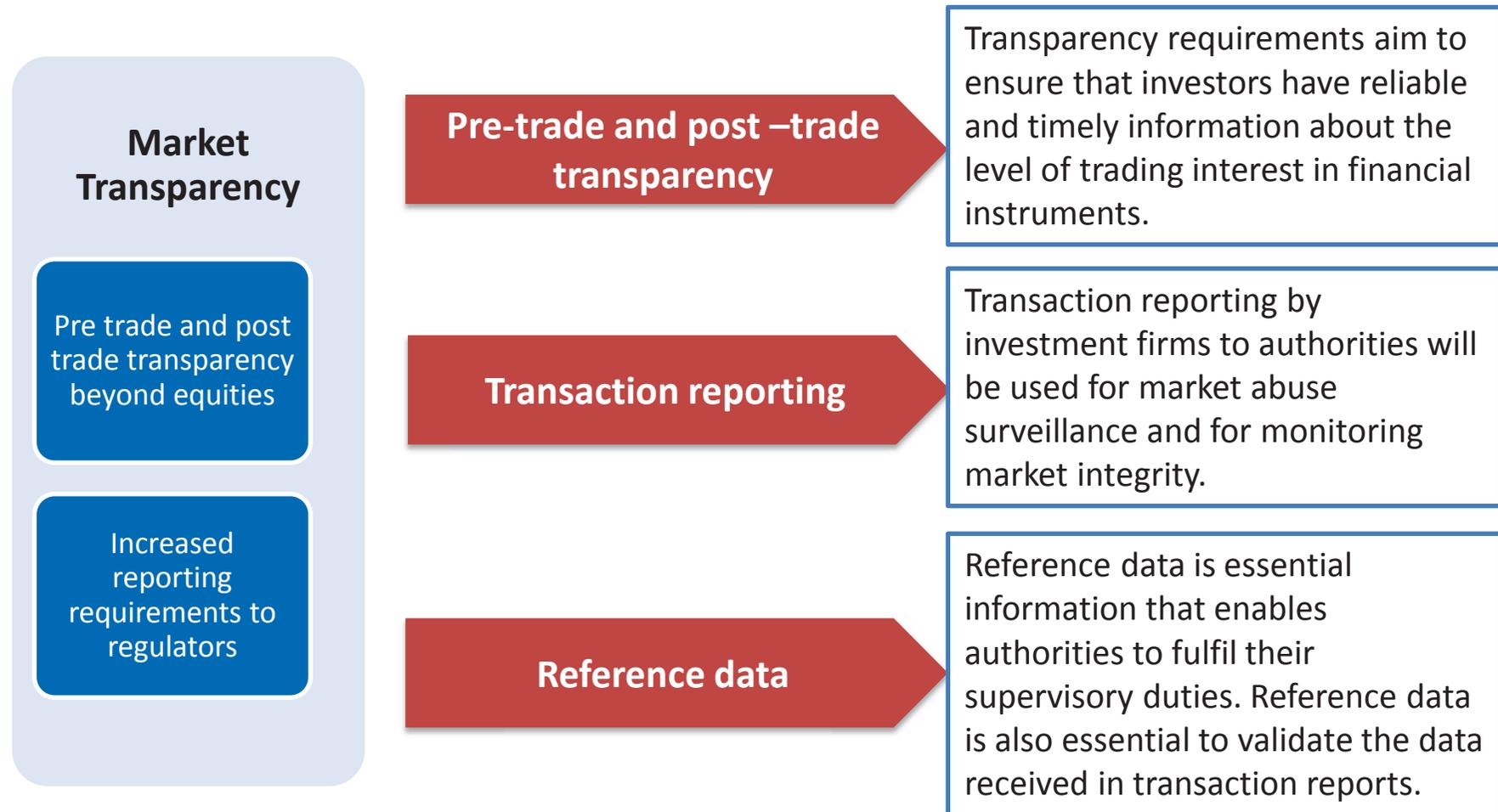
The challenge

- Pre and post trade transparency requirements close to real time (+15m) and transaction reporting (81 fields) requirements (T+1) covering all liquid markets and asset classes including non-equity.
- The updated directive applies to a broader range of financial industry players providing investment services including: Investment Banks, Portfolio Managers, Brokers, Market Makers, Trading Venues (MTFs, OTFs, RMs, SI).

Bloomberg Solutions

- Deliver reference data for pre and post transparency, including MiFID II liquidity thresholds (LIS and SSTI) and data for transaction reporting
- Automated transaction reporting: This data will allow Bloomberg clients to drive systematic compliance processes (e.g. Internal Trade Reporting systems) and personnel driven procedures (e.g. pre-trade disclosure requirements) in an efficient manner based on an individual securities data fields.

MiFID II: TRANSPARENCY AND REPORTING REQUIREMENTS



INVESTOR PROTECTION: MiFID II, PRIIPs & SSPs

Background

- Regulators around the globe have a renewed focus on protecting retail investors from investing in securities where the structures & risks associated with these instruments may not be fully understood by the end investor.
- To protect these investors, regulatory bodies have put in place numerous obligations on financial firms to ensure these protects are either not offered to certain types of investors, or if they are, appropriate disclosures are made to investors.

The challenge Investor Protection

- In today's complex regulatory environment, financial institutions who sell and offer securities to different types of investors must keep up with multiple regulatory regimes & geographical requirements to ensure they are fulfilling mandatory disclosure and suitability requirements.
- Selling complex products (or equivalents) to retail investors without proper advice and an appropriateness test can lead to financial fines by the regulator.
- Identifying complex products (or equivalents) requires a significant level of due diligence and creates an ongoing operational burden.

Bloomberg Solution

- The investor protection data package will enable clients to identify complex financial securities that are subject to additional appropriateness due diligence tests, or restrictions across regulatory regimes.
- Bloomberg will determine the classification of securities into complex or non-complex (or equivalent definition under other regulations) based on the final Guidelines from EU (ESMA, EBA and EIOPA) and US (SEC) regulatory bodies.
- The Bloomberg investor protection solution will provide clients with data points which provide classifications in each regime for individual instruments, which will limit the need for an institution to conduct manual assessments of instruments in their portfolios against multiple regulatory requirements.

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