



Basel Committee on Banking Supervision
Bank of International Settlements
Centralbahnplatz 2
4051 Basel
Switzerland

June 2018

Re: Revision to the minimum capital requirements for market risk, March 2018

Dear Sirs,

Thomson Reuters welcomes the opportunity to comment on the Basel Committee's Consultative Document: Revisions to the minimum capital requirements for market risk, published March 2018. Our response focuses on the RFET (Risk Factor Eligibility Test) assessment and is divided into two parts: Section 1 provides recommendations on the supervisory framework for vendors providing data pooling solutions and section 2 reviews the impact of different elements of the RFET calibration.

Thomson Reuters' Financial and Risk division delivers news, information and risk management solutions to the global financial community. The business generated \$6.1 billion revenue in 2017 primarily through the provision of data, desktops and trading propositions. Thomson Reuters' Elektron Data Platform delivers data from 500+ exchanges and third party contributors with 5.5 million updates per second for more than 60 million instruments. Thomson Reuters' Eikon is our flagship desktop product. In addition, we operate regulated trading platforms through our MTF licence in Europe and our SEF licence in the US. We are currently working with a group of banks and market infrastructure providers to explore the provision of "real" observation data via an industry solution.

We believe it is critical that a globally consistent and clearly defined supervisory framework is introduced for vendors providing data pooling solutions. This framework must take into account the existing transparency landscape as well as FRTB's policy objectives.

Today, the industry-wide availability of "real" observation data is restricted to a relatively small number of either exchange traded instruments or those subject to regulatory transparency requirements (e.g. MiFID II, FINRA TRACE, etc.). For a significant proportion of markets, "real" observation data is unavailable to most financial institutions. This absence of transparency risks RFET requirements distorting the efficient functioning of capital markets in two ways:

1. In many markets, banks risk incorrectly classifying risk factors as non-modellable due to limited data availability (but sufficient trading activity)



2. Smaller IMA banks are disadvantaged vs. larger IMA banks, as in non-transparent markets they have fewer observations captured within their internal systems

Data pooling solutions are essential to ensure industry-wide access to “real” observations and mitigate the potential distortionary impacts of the RFET requirements. Thomson Reuters recommend the BCBS clarify the following in order for RFET to achieve its policy objectives:

- Given existing transparency regulations allow deferred publication, banks must be provided with sufficient time to collect and consolidate “real” observations prior to conducting and reporting on the RFET
- Vendors of data pooling solutions must not be mandated to publish price or volume information as this would directly conflict with existing transparency regulations
- Permitting banks to use committed quotes published by their own institution facilitates the use of quote data and ensures a fair RFET assessment
- Since banks face constraints on their ability to assess the validity of data provided by vendors of pooling solutions, the BCBS should define a clear compliance framework by which vendors of data pooling solutions provide evidence of trades and committed quote to supervisors

Thomson Reuters note that a bank’s ability to pass RFET is impacted both by the market liquidity and the chosen RFET calibration. Using FINRA TRACE data our analysis demonstrates that BCBS Consultative Document Annex B Alternative 2 maturity buckets are a key contributor to the low level of modellability, particularly at maturities less than one year. A review of DFA SDR FX options data illustrates how many of the BCBS Consultative Document Annex B Alternative 2 strike buckets are likely to have very low levels of modellability. We believe this issue can be partially addressed by reducing the number of strike buckets. Finally, we also demonstrate that the requirement for a minimum number of observations per year for the RFET is rarely the sole binding constraint that causes risk factors to become classified as NMRF. This indicates the minimum number of observations per year threshold is inappropriately calibrated in the context of the requirement for no more than a one month gap between 2 consecutive observations.

We would be happy to discuss our findings and recommendations in more detail with members of the Committee at any time, and hope our feedback is helpful.

Yours faithfully,

John Mason
Global Head of Regulatory & Market Structure Strategic Response & Propositions



Section 1: Supervisory framework for vendors providing data pooling solutions

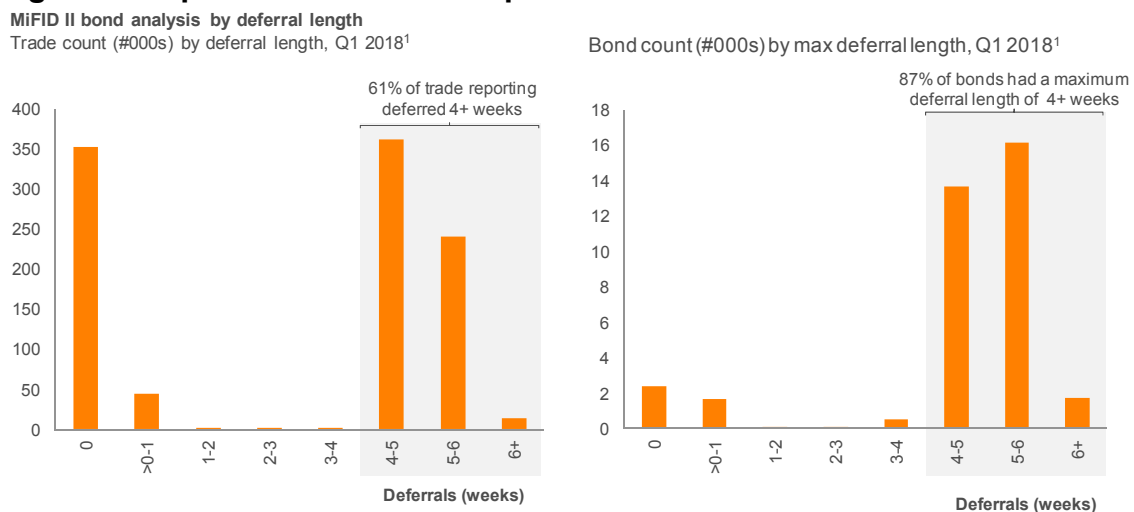
Recommendation 1: Banks must be provided with sufficient time to collect and consolidate “real” observations prior to conducting and reporting on the RFET

Currently the vast majority of transparency in capital markets that is consistent with FRTB’s definition of “real” observations is associated with regulatory obligations. These regulations typically have an objective to increase the level of transparency in such a way that doesn’t harm the efficiency of less liquid markets that may not tolerate high levels of transparency. This often involves use of waivers, masking and deferrals for large trades or those in less liquid instruments.

MiFID II / MiFIR is a new capital markets regulation that from January 2018 requires trading venues and market participants within the EU to publish pre- and post-trade transparency on equities, bonds and derivatives (as well as other products). The regime permits trades in less liquid instruments and large sizes to be deferred by more than 4-weeks. Analogous regulatory transparency initiatives already exist in the US through DFA SDRs and FINRA TRACE.

Thomson Reuters have conducted analysis of bond trades executed during Q1 2018 and published by the Tradeweb APA, Tradeweb trading venue and Trax APA (see Figure 1). During this period over 1MM trades were executed covering 36K bonds. Only 7% of these bonds were subject to reporting on the same day as trade execution and 87% of the bonds were subject to a maximum deferral length of 4 weeks or longer. Thomson Reuters found that deferred publication was even more prevalent in derivatives markets where for example 95% of IR swaps were subject to a maximum deferral length of 4 weeks or longer.

Figure 1: Impact of MiFID II trade publication



1. Analysis covers bond trades executed between 1-Jan 2018 to 31-March 2018, for the reporting period 1-Jan 2018 to 30-April 2018; excludes VWAP trade reports
Source: Tradeweb APA, Trax APA, Tradeweb MTF, Thomson Reuters analysis



If regulators fail to provide banks with sufficient time to collect and process “real” observations, banks will be unable to use deferred data as part of their RFET assessment. This has the following implications:

1. The prevalence of NMRFs risks being materially higher in the industry than intended by the policy objective, since major transparency initiatives are excluded from supporting the RFET assessment
2. There is not a level playing field as smaller IMA banks typically have fewer “real” observations from internal systems than larger banks, and hence are more dependent on public data

Thomson Reuters recommend that banks are permitted at least 2 months to collect data prior to conducting the RFET assessment.

Recommendation 2: Data pooling solutions must not be mandated to publish price or volume information

Thomson Reuters welcome the BCBS proposal (included within the Consultative Document) that banks are permitted to use “real” observations from vendors provided observation dates and identifiers are communicated.

The RFET assessment means banks are only permitted to use Expected Shortfall calculations where there are a sufficient number and frequency of “real” observations. This protects against the scenario where historical time series data flatlines and Expected Shortfall underestimates the level of market risk in illiquid markets. Importantly, neither price nor volume data is required for this assessment and Thomson Reuters understand that banks are permitted to use different data for the RFET assessment and Expected Shortfall calculations.

Requiring “real” observations from data pooling solutions to include trade attributes beyond date and identifier risks turning FRTB into one of the largest transparency initiatives, which is likely to be detrimental for the efficient function of opaque markets. If data pooling solutions publish price and volume attributes to banks, financial institutions will use this information not only for NMRF compliance but also for their broader trading activity (e.g. liquidity assessment, price formation, etc.). Under this scenario FRTB would become a transparency initiative and would conflict with the existing transparency regimes (such as MiFID II, TRACE, etc.) because these regulations introduce waivers, deferrals and masking of trade details for illiquid markets. There are no allowances for waivers, deferrals and masking of trade details under FRTB. Introducing transparency into illiquid markets can lead to a withdrawal of liquidity provision.

Thomson Reuters encourage the BCBS to explicitly clarify that data pooling solutions should not be required to convey any price, volume or counterparty information to users of such services.

Recommendation 3: Banks should be permitted to use committed quotes published by their own organizations



Thomson Reuters welcome the BCBS proposal (included within the Consultative Document) that banks are permitted to use “a price obtained from a committed quote made by (i) the bank itself”.

Exclusion of a bank’s own quotes could significantly reduce the provision and adoption of committed quote data in the RFET assessment. This could lead to excess NMRFs as well as the perverse outcome where a large market maker has access to fewer “real” observations than its smaller peers. Exclusion of a bank’s own quotes significantly increases the costs of data pooling solutions as each client needs to have a bespoke product; plus the cost of handling and matching entity data is expensive. Exclusion of a bank’s own quotes reduces data available to banks for RFET.

Thomson Reuters encourage the BCBS to adopt their current proposal (included in the March 2018 Consultative Document) relating to use of banks own quotes.

Recommendation 4: The BCBS should define a clear compliance framework by which data pooling solutions provide evidence of trades and committed quote to supervisors

Thomson Reuters encourage the BCBS to provide further clarity on the supervisory obligations for vendors that provide data pooling solutions. Failure to provide sufficient clarity risks reducing “real” observation availability and data quality. In addition, insufficient coordination at BCBS level could lead to each jurisdiction defining their own obligations for vendors providing data pooling solutions. This raises the possibility supervisory obligations becoming unduly onerous and conflicts could arise. This burden could also increase the cost of pooled data and discourage its provision.

The highly confidential nature of trade and committed quote data puts limits on the extent to which vendors can provide evidence to banks upon request. This in turn limits the extent to which banks are able to accurately assess the quality of data provided by vendors. Without a suitable regulatory framework for data vendors banks may be encouraged to use sources of insufficient quality.

Thomson Reuters recommend the BCBS adopt a supervisory approach that focuses on vendors providing data pooling solutions to conduct an audit as the primary means of assessing data quality. We believe that this mitigates the need for vendors to provide data to supervisors upon request in all but truly exceptional circumstances.

Thomson Reuters proposes the audit should be characterised by a 3 pillar approach: Security, Availability and Processing Integrity.

1. Security



Vendors must demonstrate evidence that the data pooling solution implements security policies that:

- Protect against unauthorised access from content providers, banks and vendor internal personnel as well as other third parties
- Ensure that data submitted from content providers are kept secure during transmission, storage and processing phases and mechanisms are in place to avoid that data is lost or improperly altered

2. Availability

Provision of evidence that data pooling solutions are available for operation and use as committed to their customers

- Implement controls that ensure processing capacity and usage are maintained, monitored and evaluated to manage capacity demand and to enable the implementation of additional capacity to meet availability commitments to customers
- Implement controls that ensure proper back-up processes and recovery infrastructures are designed, implemented and maintained

3. Processing Integrity

Provision of evidence that data pooling solutions implement processes and business rules which are complete, accurate, timely and authorized to deliver compliant observation data to customers

- Data validity: Observation data sourced from content providers must be valid, i.e. “real” trades and / or committed quotes
- Data quality: Controls should be in place to ensure that observation data delivered to customers is accurate, with particular regard to processing trade events and removal of duplicates
- Data traceability: It must be possible to trace observation data delivered to customers back to the relevant stages of processing and sourcing

Section 2: Review of RFET calibration

Thomson Reuters have replicated the RFET assessment on samples of public and proprietary data in order to better understand the implementation challenges.

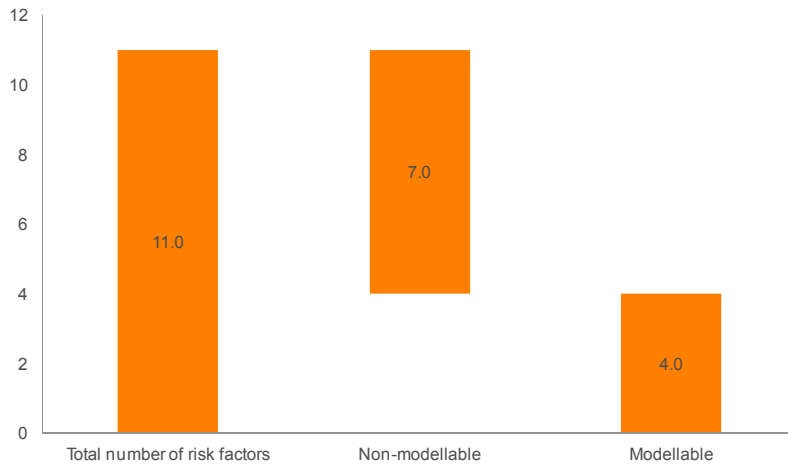
Recommendation 5: If the BCBS leverage a predefined bucketing methodology for maturity, they should use less granular buckets in order that they don't materially contribute to non-modellability

Thanks to FINRA TRACE the US corporate bond market is highly transparent. Thomson Reuters analyzed 13MM corporate bond trades across 25K instruments published during 2017. These bonds were mapped to risk factors based on the BCBS Consultative Document Annex B Alternative 2 maturity buckets as well as currency and issuer name.



Figure 2: RFET assessment on US Corporate bonds

US Corporate bonds: RFET assessment
Number of risk factors (#000s), 2017



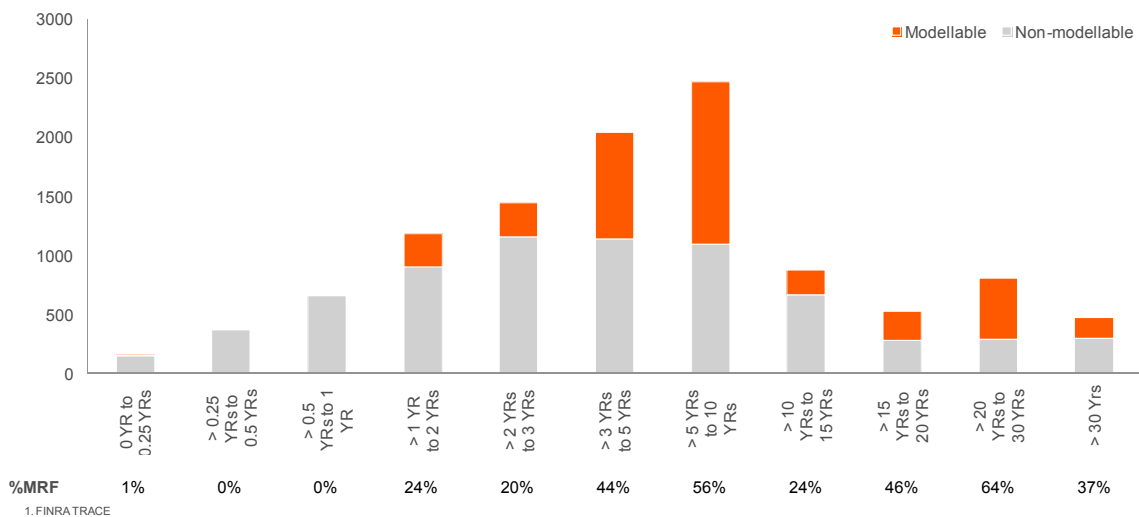
- Thomson Reuters conducted RFET assessment on a sample of data from FINRA TRACE
 - 13MM trades covering 25K bonds
 - 1-Jan to 31-Dec 2017
- Prior to conducting RFET, Thomson Reuters bucketed instruments into risk factors
 - Instruments were grouped into maturity buckets defined as 'Alternative 2' in the BCBS Consultative Document published in March 2018
 - Instruments with the same issuing entity were grouped together
 - Instruments of the same currency were grouped together (but almost all of them are USD)

Source: FINRA TRACE, Thomson Reuters analysis

We identified that 36% of these risk factors would pass the RFET assessment (see Figure 2). Further investigation demonstrates that the granular maturity buckets at the short end of the curve are a key contributor to low risk factor modellability (see Figure 3).

Figure 3: RFET assessment on US Corporate bonds by maturity

US Corporate bonds¹: RFET by remaining maturity bucket
Number of risk factors (#), 2017



Over time the remaining maturity of each bond decreases, which causes them to migrate between the maturity buckets. The short maturity buckets cause bonds to migrate between risk factors frequently, meaning that an individual risk factor only has observations for a short period of time (and hence is unable to pass the requirement for monthly observations). Very few entities issue sufficient bonds to offset the impact of this migration process.



Figure 4 illustrates the migration of bonds between risk factors for 2 American Express Co issues. Each bond has sufficient observations to pass the test, but fails RFET when allocated to the risk factor since over time it switches maturity buckets. Although this impact is most obvious for the short end of the curve it contributes to non-modellability at all maturities.

Figure 4: Bonds switch between ‘Alternative 2’ maturity buckets

American Express Co: Impact of Alternative 2 maturity buckets
 Observation count (#)¹, 2017

Issuance/ remaining maturity	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	RFET
19/03/2018	20	19	23	19	22	22	20	23	20	21	21	20	✓
0 YR to 0.25 YRs												10	✗
> 0.25 YRs to 0.5 YRs									12	21	21	10	✗
> 0.5 YRs to 1 YR			12	19	22	22	20	23	8				✗
> 1 YR to 2 YRs	20	19	11										✗
22/05/2018	20	19	23	19	22	22	20	23	20	21	21	20	✓
> 0.25 YRs to 0.5 YRs											9	20	✗
> 0.5 YRs to 1 YR					8	22	20	23	20	21	12		✗
> 1 YR to 2 YRs	20	19	23	19	14								✗

1. Single observation per day used
 Source: FINRA TRACE, Thomson Reuters analysis

Recommendation 6: If the BCBS leverage a predefined bucketing methodology for moneyness of a volatility smile or surface, they should use less granular buckets in order that they don’t materially contribute to non-modellability

Under the Dodd-Frank Act passed in the United States, the Commodity Futures Trading Commission (CFTC) regulates Swap Data Repositories (SDRs) which centrally collect and maintain records of OTC derivatives. Thomson Reuters analyzed 570K vanilla FX option trades executed during 2017 across 45 currency pairs where USD is one of the currencies involved in the trade. The observed FX option trades were mapped to risk factors based on the currency pair, as well as the BCBS Consultative Document Annex B Alternative 2 time to expiry and strike buckets.

We identified that 22% of these risk factors would pass the RFET assessment (see Table 1). The low proportion of modellable risk factors is in part driven by the large number of granular strike and expiry buckets. Those buckets away from ATM and at longer maturities have a very small proportion of modellable risk factors.



Table 1: Extent of modellability in USD-linked vanilla FX Options
Proportion of risk factors in each bucket that were modellable (%), 2017

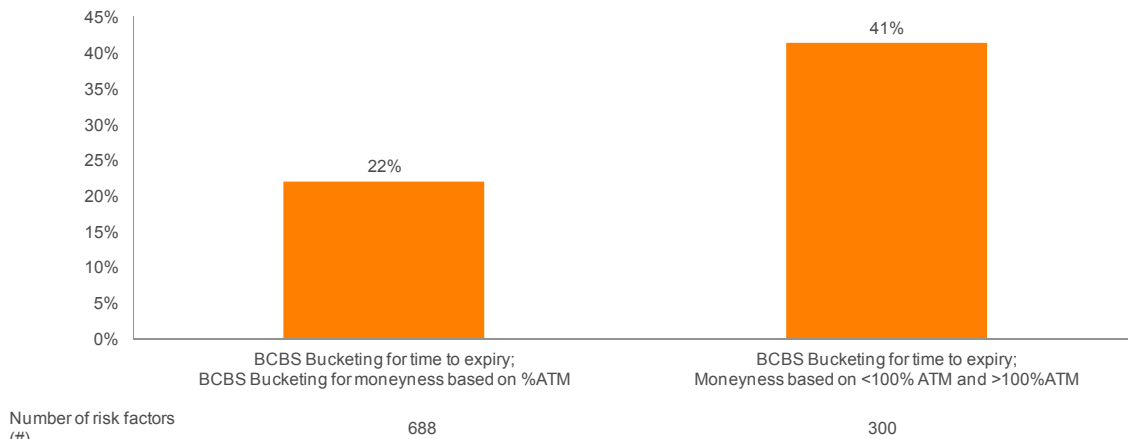
Time to Expiry	Strike Buckets (% of ATM)								TOTAL
	<50%	50%-75%	75%-90%	90%-100%	100%-110%	110%-125%	125%-150%	>150%	
<6M	7%	0%	10%	73%	77%	15%	0%	11%	36%
6M-1Y	0%	0%	4%	50%	50%	32%	6%	6%	27%
1Y-3Y	0%	0%	5%	19%	25%	19%	0%	0%	13%
3Y-5Y	0%	0%	20%	0%	6%	8%	0%	0%	4%
5Y-10Y	0%	0%	17%	0%	0%	13%	0%	0%	5%
>10Y	0%	0%	0%	0%	0%	0%	0%	0%	0%
TOTAL	4%	0%	8%	40%	43%	19%	2%	6%	22%

Analysis covers trades executed between 1-Jan 2017 and 31-Dec 2017 for USD currency pairs; Modellable = 24 or more observations, with no greater than 22 working days gap. Using prescribed BCBS Alternative 2 buckets.
Source: DTCC, CME & Bloomberg SDRs, Thomson Reuters analysis

Given the high degree of non-modellability away from the ATM we ran the analysis again but with only two strike buckets (<100% ATM and >100% ATM). Under the revised approach the proportion of modellable risk factors increased from 22% to 41% (see Figure 5).

Figure 5: RFET assessment on USD-linked FX Options

SDR: Vanilla FX options modellability for USD-linked currency pairs
Modellability (%), 2017^{1,2,3}



1. Analysis covers trades executed between 1-Jan 2017 and 31-Dec 2017 for USD currency pairs; 2. Modellable = 24 or more observations, with no greater than 22 working days gap 3. Using prescribed BCBS Alternative 2 Buckets
Source: DTCC, CME & Bloomberg SDRs, Thomson Reuters analysis

Recommendation 7: If BCBS want both RFET tests to be material they should revise either the requirement for 24 observations per year or relax the maximum time period between any two consecutive observations

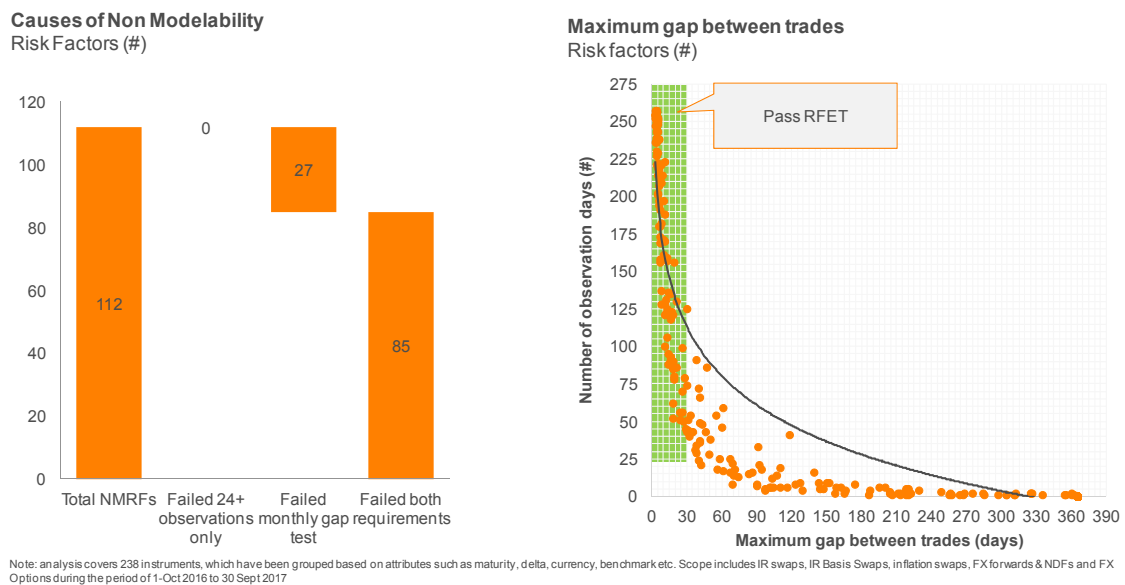
Thomson Reuters conducted analysis based on a small sample of proprietary derivatives data covering Oct 2016 to Sept 2017 (see Figure 6). Here instruments



were allocated to risk factors based on buckets applied to criteria such as maturity, currency, product, benchmark and delta.

In all cases failing the RFET was never due to only having insufficient observations, as the monthly gap was the binding constraint. This implies that whilst the requirement for 24 observations per year is a theoretical constraint, the boundary of no more than one month between each observation is the binding constraint since it is consistently more conservative.

Figure 6: Causes of Non-modelability (proprietary data)

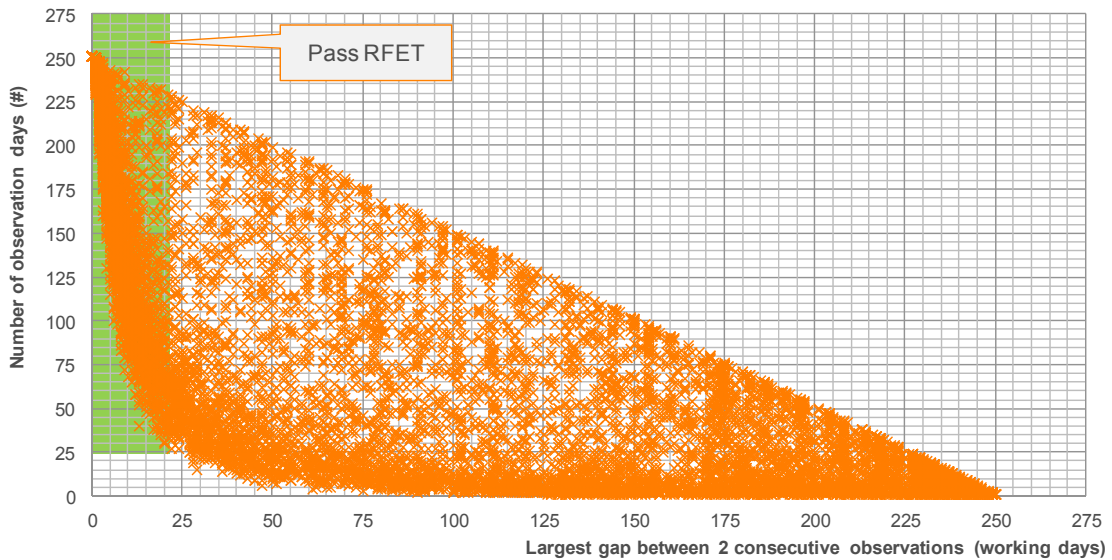


Thomson Reuters concluded similar findings when replicating the analysis on the US Corporate bond data from FINRA TRACE (see Figure 7) using the same risk factor to instrument mapping mentioned above.

Figure 7: Causes of Non-modelability (FINRA TRACE)



US Corp bonds: Obs day count vs. largest gap between consecutive obs
Risk Factors (#)



Source: FINRA TRACE; Thomson Reuters analysis;

Clearly these findings are specific to the bucketing methodology, underlying dataset and in-scope products. However, Thomson Reuters believe that these themes are likely to be consistent with a wide variety of bucketing methodologies, datasets and products. If the BCBS want the requirement for a minimum number of observations per year to be a material constraint, the RFET assessment needs to be recalibrated:

- If the minimum number of observations per year remains unchanged at 24, the maximum time period between any two consecutive observations needs to be increased
- If the maximum time period between any two consecutive observations remains fixed at one month the minimum number of observations per year should be increased