

ToTV or not ToTV – That is the question.

By Darren Dennison, 26th November 2021.

In this opinion piece with the MiFID II reviews well underway in both the EU and the UK with proposals imminent, I'll revisit transaction reporting and transparency reporting. Particularly I'll look at the eligibility of an instrument driving that reporting – based on a concept known as ToTV.

I will make a case for the following:

- ARMs are not in a position to determine what is eligible for transaction reporting.
- APAs are not in a position to determine what is eligible for transparency reporting.
- Investment firms are not in a position to determine what is eligible for either transaction reporting or transparency reporting.
- Systematic Internalisers are not in a position to determine what is eligible for either transaction reporting or transparency reporting.
- Retrospective reviews of reports made directly by a firm or generated by a third party on that firm's behalf are required.

I will explore how a reasonable approach to ToTV determination might look for a firm given the problems that will be uncovered as we explore the above points.

ToTV, or Traded on a Trading Venue, is a concept which defines which instruments are in-scope for many provisions of MiFID II. On the surface, it's simple to understand – “is this instrument traded on a trading venue”, if it is, then the instrument is in scope for reporting.

For the purposes of this article, we'll look at transaction reporting and transparency (pre and post trade) reporting. I'll generally use the term “reporting” to refer to all these reporting types. Where the word “eligibility” or “validate” are used, they refer to if an instrument is in-scope or out-of-scope for reporting, not any other drivers of eligibility.

A firm that has a good understanding of ToTV and has adequate systems to determine ToTV status of instruments has an important component of a robust and accurate eligibility testing regime in place. A firm without it is likely doing any or all of the following: under reporting, over reporting or has no means of validating reports made on its behalf by a third party such as an ARM or APA .

As mentioned earlier, on the surface ToTV is a simple enough concept. Surely diligent investment firms with skilled staff that have expended significant resources on building the capabilities to correctly report and having had four years since go live of MiFID II to iron out any problems have nothing to worry about other than perhaps some minor tweaks in response to the soon to be published MiFIR review proposals.

Based on historical examples, it's quite possible (probable even) that firms today are not taking reasonable steps to validate their reporting. In 2019 in the United Kingdom, two of the final casualties of the original 2007 vintage MiFID transaction reporting regime – both big names – were fined £34m and £27m (plus the costs of correcting the errors through back reporting which will possibly have run to magnitudes more than the fine and reputational damage). These firms had

likely spent millions on their systems and support, millions more on their legal and compliance and yet, with a decade to get things right, had not managed to do so. Their fines were for incorrect transaction reporting, including over reporting – IE, they'd reported for instruments that were not ToTV. They had been unable to set up adequate systems and controls, integrated with the rest of their business which ensured they were reporting everything they should and nothing more. They did not have an effective means of ToTV determination.

I can conclude that there are likely firms today – not nearly as well-resourced as the firms above – which are not taking reasonable steps to verify the completeness, accuracy and timeliness of reports driven by the ToTV concept. Then there's Brexit and two regimes – the FCA in the UK and ESMA across the EU 27 – with slightly different ideas of what is and is not ToTV. We also have the upcoming MiFIR reviews in both the EU and UK which may complicate matters further. How many firms have reviewed and improved their reporting processes regularly since putting something in place for MiFID II go live nearly four years ago? How many have done so effectively?

In the UK, we have yet to see any fines around MiFID II transaction reporting (much less transparency reporting), but it's surely only a matter of time. We might reasonably expect regulators in the UK and across the EU to pick up the ball soon if they were serious when promising a shift in focus to enforcement in various industry forums back in 2019 before the double distractions of the Brexit end game and Covid hit.

What can firms be doing today to improve their reporting (I'll cover firms using a third party such as an ARM or APA later on).

Within the context of determining if an order/indication of interest or actual transaction falls in scope of reporting due to the instruments involved, a firm could integrate a means of determining ToTV status of any given instrument into their reporting workflows. Ideally automated.

A firm's "roll your own" solution would likely include the Financial Instruments Reference Data System (FIRDS) at its heart. Prior to Brexit, there was only ESMA FIRDS which covered the EU 28 but since Jan 2021, there is now an FCA FIRDS also – when FIRDS is mentioned in this article, it refers to FIRDS in general unless otherwise noted. Both ESMA and the FCA produce gargantuan files containing tens of millions of instrument records each week. One part of each instrument record shows the firm that admitted this instrument to trading – trading venues and SIs send this data to FIRDS. This data set, along with a list of trading venues, could be used to determine ToTV status for an instrument where a firm has the ISINs of an instrument of interest and the ISINs of all underlyings. We'll call this the "in-house solution".

Alternately, for transaction reporting, a firm could engage the services of an ARM and simply fire every transaction at that ARM and trust the ARM to determine ToTV for each instrument. Similarly, where a firm is obliged to publish pre and/or post trade reports, that firm could send all trades or orders/indications of interest to an APA and let them do the ToTV eligibility checking. This is likely the approach which many firms lacking enormous IT departments follow. We'll call this the "outsourced reporting solution".

There are problems with both approaches – the same technical limitations pertaining to the in-house solution, ultimately also impact the outsourced reporting solution. But before looking at what those problems are, it's worth noting that where a firm outsources their reporting to a third party, that the firm retains the ultimate responsibility for those reports, or as ESMA puts it in Article 26(7) of MiFIR – which is concerned with Transaction Reporting – in a section on reporting via an ARM: *"Investment firms must nevertheless take reasonable steps to verify the completeness, accuracy and*

timeliness of the transaction reports which were submitted on their behalf". It is doubtful that ESMA or the FCA would regard "well, we fired all the data at the ARM or APA and left it to them" as taking reasonable steps to verify the completeness, accuracy and timeliness of any reports generated. A logical interpretation sees firms expected to in some way validate what those ARMs or APAs are doing to a "reasonable" degree. Reading a daily report from the ARM or APA saying "we did these right but found some problems with these" is also unlikely to be regarded as validation – such daily status reports sent to firms by ARMS/APAs are a reflection on errors found within the data provided by the firm submitting that data, not so much on if the ARM or APA is correctly determining if an instrument is in scope for the reports which it submits or publishes on behalf of a firm. It is a given that to the best of their ability, an ARM or an APA is doing what it establish the ToTV status of instruments. But that does not free the firm submitting the data with the responsibility to *take reasonable steps to verify the completeness, accuracy and timeliness* of what is generated.

Ultimately then, a firm needs to be able to determine independently of an ARM or APA if a financial instrument is in scope for reporting or not. With such a capability, a manual process of spot-checking data generated by ARMS or APAs can be undertaken as part of a firm's compliance efforts, giving confidence that these third parties are reporting all that is reportable and nothing else. If the capability is somehow integrated into a firm's reporting workflows, it could be automated and every single transaction, order, etc could be retrospectively checked to see if what was or wasn't reported by a third party was correctly identified as in scope or not. As will be seen, it is inevitable that even ARMs and APAs will get this wrong from time to time – it is therefore vital that a firm can independently check this and take appropriate steps where problems are identified. A firm that cannot do so, cannot be said to be verifying "the completeness, accuracy and timeliness" of data generated on their behalf – and if they are not able to do this, what else is that firm doing that they are not in control of and lack visibility on?

Having established that a firm needs to be able to determine ToTV, whether or not that firm uses an ARM or APA, we are left with one approach – the "in-house solution".

I suggested earlier that FIRDS would likely form the backbone of any approach to determine ToTV. The reason for this is that any MiFID II Trading Venue is obliged to submit instrument reference data on instruments admitted to trading on that venue and the regulators then collate and publish that data. The data is complete (or is if every Trading Venue is doing what it's meant to) and the data is published frequently. There are likely other data sets that could be used for ToTV checking, but it is hard to see how any commercial offering not based on FIRDS could rival the FIRDS dataset where the obligation for all trading venues to submit the relevant data and for the regulators to publish the data is baked into the regulations. FIRDS will therefore form the backbone of any ToTV checking solution that is worthwhile – though almost certainly augmented with other data to offset some of the problems which we'll now look at.

There are likely two use cases for a system to check ToTV status – to determine if something that potentially needs to be reported now is in fact eligible, and to check if something previously reported was correctly identified as eligible (and if anything not reported should have been reported).

For a firm to perform retrospective checks on previously generated reports to see if the instruments in them were correctly deemed eligible to be reported or not – either by the firm or a third party engaged by the firm – as part of compliance reasonable effort to validate the report "completeness, accuracy and timeliness", I believe a FIRDS based solution is up to the task. This is a box that can be ticked with confidence.

Now let's consider something more urgent – firms that need to determine ToTV status ahead of reporting. MiFID II Transaction reports are meant to be submitted no later than T+1. For Post Trade transparency, the requirement can be as little as five minutes (earlier if technically possible). Yet only trades involving in-scope instruments are to be considered, with fines under the original MiFID I regime for over reporting of transactions. A firm with a transparency reporting obligation therefore needs to be able to determine ToTV status no later than five minutes after a trade occurs – and those with transaction reporting obligations, within a day. If FIRDS is the only data source that is likely to be complete (due to the legal requirements of submitting, collating and publishing the data which means that if every actor performs to their legal obligations that the FIRDS data IS complete), then is it up to this challenge?

The short answer is that FIRDS cannot be relied on to 100% determine ToTV status for transaction reports at the time the report is due to be submitted to the regulator – much less for the near real time requirements of Transparency Report publication. Let us consider an instrument which has never before traded on a MiFID II trading venue. On a particular day it is first admitted to trading or is traded on a trading venue at 18:01 CET. That Trading Venue must report the reference data for this instrument to FIRDS. A trading venue is required to submit reference data for such instruments to FIRDS daily – but it cannot contain those instruments that were first admitted to trading or first traded after 18:00 GMT. Our instrument that has just traded on a trading venue for the first time at 18:01 has just missed the boat and must now be reported the following day. Overnight, the regulator (ESMA in the EU, FCA in UK) collate all these reports and publish them, usually in the early hours of the following day – 5am is typical of ESMA, 8am is typical of the FCA. Taking the worst case FCA for our example above, if the trade occurred on a Monday at 18:01, the instrument reference data would be submitted on Tuesday and it would be published in FCA FIRDS at around 8am on Wednesday morning – 38 hours after the instrument became ToTV. Any non-trading venue preparing their T+1 transaction report cannot therefore be certain that FIRDS on T+1 contains the complete dataset of ToTV instruments, and a firm that needs to publish transparency reports is faced with an even greater requirement for up-to-date ToTV data than that provided solely by FIRDS. Ultimately, there needs to be a real time data source of every trade occurring on every trading venue across the regime of interest – something a consolidated tape would go some way towards. This could then be monitored in real time and instruments not in the latest FIRDS could be added to the list of ToTV instruments as they are seen.

As is widely known, one of the great omissions of the envisaged MiFID II reporting regime, is a MiFID II consolidated tape. None so far exists either in the UK or EU. We can discount ARMs as a source of the missing data as they may not see trading venue transactions from their customers until T+1 – too late to help a firm that must transparency report. A firm needs real time data to be sure that something executed at 13:00 and which must be post trade reported no later than 13:05pm did not become ToTV at 12:59 or before.

There is commercial real time data available covering *some* of the data set (at significant cost - one APA quoted this author £50,000 per month for such data), which could be used to augment FIRDS. But is it reasonable to expect a firm to outlay so much for one additional data source (and how up to date is the data of the APA if customers don't need to submit trade data for transparency for 5 minutes after the event minus the time the APA needs to publish). According to regulator published registers there are 5 APAs in the UK and 15 in the EU. That's 20 APAs – taking the 50,000 GBP example as typical, that's £1,000,000 (roughly €1.2m at present) every month. To a number of firms with a reporting obligation, that's a significant amount. Even were it possible financially, or reasonable, this solution would still fall short. The post trade reporting obligation can be minutes –

this means the APA may not be aware of something that has become ToTV until the trading venue concerned transmits the trade details to the APA up to five minutes after it occurred – assuming the trading venue was a customer of the APA and not one of the other 19. Another firm wondering if they have a post trade reporting obligation and using FIRDS augmented with a complete APA data source potentially has data 5 minutes out of date. And that’s not considering deferrals which mean the trade data may not appear at all until a long time has elapsed since the trade. Also there are 298 trading venues across the EU and a further 53 in the UK (the UK number was 304 before compressing the numbers by aggregating for example, 5 OTFs operated by the same firm as a single trading venue) which are not required to use an APA to publish transparency reports. So there’s another potential 351 real time data sources required – and the data won’t be free. Then there’s a monster technical challenge of obtaining this data in near real time – from potentially around 400 different data sources – using different technical media and protocols and with some of those firms having no machine-readable electronic means of streaming the data at all.

Conclusion: A complete and accurate means of determining ToTV either in the UK or the EU is not technically possible, nor would it be affordable if it were. This also applies to APAs and ARMs who only see the data of their customers subject to the delays noted above which render it out of date to one degree or another, and the data they have managed to procure from other sources – these sources themselves similarly suffering from the limitations above. It is likely that no single provider has the ability to check ToTV in near real across all MiFID II asset classes sufficient for the transparency regime laid out in MiFID II. So how can an APA 100% accurately evaluate ToTV status in time to report – Is there really an APA with complete real time trading data from every Trading Venue in the UK and/or EU that doesn’t suffer from latency of some form? Even if there was a means of being aware in near real time of every trade on every trading venue covered by the FCA or ESMA regulatory regimes, what of instruments where admission to trading or a request for admission to trading has occurred on a trading venue, but the instrument has not yet traded? These won’t show in trade feeds. Therefore, Transparency Reports, even when tasked to an APA, will sometimes not be published as the APA does not believe the instrument to be ToTV at the moment of checking instrument eligibility when in fact it is. This will apply to a lesser degree to an ARM and transaction reports. The capability is certainly beyond any MiFID II Investment Firm or Systematic Internaliser.

What we can do though is retrospectively check eligibility as part of a compliance effort to inform management and take corrective action where the problems above have shown to be manifest. FIRDS has a delay of up to 38 hours in practice. Therefore, a firm can check any report to see if the instrument made it eligible for reporting or not using FIRDS after this time has elapsed and the reference data covering the time of the report event is made available. A firm can check trades submitted to ARMS and APAS and check if they have transaction / transparency reported all the trades that are ToTV and if they have reported any that are not. Similar checks should likely be done by firms self-reporting transactions and transparency. It is not unreasonable to expect the regulator to view this as the minimum a firm should do to meet the regulatory obligation to “take reasonable steps to verify the completeness, accuracy and timeliness” of reports the firm itself makes or has tasked a third party to generate.

Beyond that, how bad would it be if a firm used a FIRDS based system of ToTV determination at the time of making a report? Assuming the 7 days leading up to 18th November 2021 are typical, in those days, FCA FIRDS has gained roughly 460000 new records and ESMA FIRDS 300000. For simplicity’s sake, assuming these new instruments appear evenly spaced through a week, this is 65k new records for FCA FIRDS daily and 43k for ESMA. So in our 38 hour time period for the FCA to publish

FIRDS data we might miss 103k records – for ESMA the number is 63k. Assuming the worst case that all these are unique instrument records, have no underlyings, that all are submitted by trading venues and have never been submitted by another trading venue making all these records brand new ToTV instruments that we were previously unaware of, on any given day, this represents 0.59% of the FCA FIRDS dataset and 0.94% of the ESMA dataset. However, if we want to use FIRDS as the basis of a ToTV validation for something that occurred yesterday, or a month ago, or 3 years ago we need historical FIRDS data in order to be able to establish if something was ToTV on any given date. Using this total dataset of all FIRDS data both live and historical, the ratio of potentially ToTV records we might miss due to the latency in publishing the data to FIRDS on a daily basis becomes 0.12% for the FCA and 0.08% of the dataset for ESMA. Of course, the above numbers represent a fairly crude and simplified analysis and different asset classes will be impacted more than others and could form part of an interesting study – it is not the purpose of this article to do so, merely to suggest that even using FIRDS alone for ToTV determination at the time of reporting isn't a complete disaster – even for transparency, and far less so for the more relaxed timelines of transaction reporting. We can reasonably expect an ARM or APA will as a minimum augment the FIRDS data with data submitted by its clients in the course of reporting for them, thus reducing the knowledge gap between what was published in FIRDS and instruments that have since become ToTV – and will likely also obtain trade data from other sources to further complete the dataset. And then indeed, an ARM or APA will use this data to report – it's the best that can be done. But as I have shown, there will still be gaps where the data an APA or ARM holds does not contain some newly become ToTV instrument.

For ToTV determination before submitting or posting reports, there are some noted problems above to consider – and for all but the largest firms, this should probably be left to ARMs and APAs that hopefully have the resources to have taken the identified steps to limit the issues.

FIRDS can be used by the compliance function of a firm to determine ToTV status with confidence for retrospectively validating reports published by a firm or on behalf of a firm and could be considered as a minimum for meeting the obligations to validate such reports.

That covers the underpinning data that can be used for ToTV determination and some of the problems in doing so and possible solutions.

Moving on to other factors which any ToTV capability should address. Let's start by considering the splitting of the MiFID II regime into UK MiFID II and the original MiFID II as there are differences in how ToTV is determined in each regime. The ESMA approach is the simplest – the ToTV concept is the same for Transparency and Transaction reporting and covers EU Trading Venues (but historically, UK trading venues also). The FCA approach differs for Transparency and Transaction Reporting – transparency reporting in the UK considers only UK MiFID II Trading Venues, whereas transaction reporting remains the original ESMA scope – ESMA MiFID II trading venues and FCA regulated Trading Venues. Any ToTV check needs to be able to cope with FCA v ESMA and Transparency v Transaction Report.

Another factor is historical checks which were skimmed over previously. For FIRDS, online versions can be found covering currently traded instruments on both ESMA and FCA web pages for those respective regimes. These web pages do not allow for querying a complete set of "historical" instrument data – instruments expired/matured/no longer listed. Yet firms are *required* to validate reports they have made and those made by third parties on their behalf – as an instrument could have expired/matured/delisted since the report was made, firms need historical data to be able to validate retrospectively. This rules out the ESMA and FCA websites, which in any case are not much use for automated checking of eligibility. For machine readable access, the FIRDS data files published

for each day can be obtained from the FCA and ESMA for their respective regimes. It is also possible to obtain historical data files – though the author has not recently tried to obtain FIRDS data from ESMA from 2017 or FCA files from early Jan 2021 when the two FIRDS went live so cannot confirm the data that can be downloaded today is the complete data or if it only goes back so far. An FCA regulated firm required to backreport transactions from a number of years ago when the UK was part of the EU may require a tool with access not only to the UK FIRDS data, but also to the ESMA FIRDS data to determine ToTV status of the instrument in that particular report on that particular day.

Let's have a peek at the ESMA MiFIR review underway and what the final proposals may look like and how this might impact any ToTV solution.

The ToTV concept is likely to change, bringing more instruments into scope. Notably adding those instruments traded on Systematic Internalisers but not Trading Venues. This probably simplifies ToTV determination as when checking the FIRDS records to see where something has been traded, it is no longer necessary to establish if the firm was a Trading Venue or an SI. It will however incur an extra Instrument Reference Data reporting overhead for Systematic Internalisers. It will also increase scaling requirements for existing FIRDS based ToTV solutions as the number of records contained within balloon.

In Summary, it is recommended that a firm adopt the capability to determine ToTV status – ie, the ability to determine the scope of instruments that are covered by transaction and transparency reporting obligations. Even where a firm relies on an ARM or APA, a firm needs to be in control of and have visibility on the validity of reports generated on its behalf. It requires some means of validating these reports. Some firms have FIRDS based solutions today, others should consider building them or buying them.

Darren Dennison is a Director of Oktris Limited, and formerly led the MiFID II transformation programme for an Interdealer Brokerage and Trading Venue in the City of London. Prior to that he worked in various senior roles across financial institutions on the continent and has over 20 years of experience in the financial sector.