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CS Submissions
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Submission to consultation on Reassessing the Case for Central Clearing of Bonds and Repos in Australia

Background

I am a Professor of Finance at the University of Melbourne. I have been an active researcher in the field of market structure for over twenty years. My research has been published in leading academic finance journals. I have served as an economic consultant and advisor to many exchanges and regulators worldwide.

I limit my submission to addressing questions 7 and 8 of the consultation which relate to transparency and its impact on efficiency, price discovery and liquidity. These questions fit squarely within my core area of research expertise.

What is transparency?

In secondary markets, transparency refers to the ability of market participants to observe information about the trading process (O'Hara, 1995). There are two components: pre-trade and post-trade transparency:

- ***Pre-trade transparency*** refers to information revealed before a trade takes place. This may include:
  - best bid and ask order/quote prices;
  - best bid and ask order/quote sizes;
  - information about the depth of the order book;
  - venue/mechanism; and
  - participant information.
- ***Post-trade transparency*** refers to information revealed after a trade occurs. This may include:

- trade prices;
- trade volumes;
- trading venue/mechanism;
- participant identity; and
- the speed with which this information is revealed.

Transparency is central to the fairness, efficiency, price discovery and liquidity of a market. The level of transparency impacts the types of participants that operate in a market, and the nature of their trading strategies (Madhavan, 2000).

Generally, products traded in over-the-counter (OTC)markets like bonds and repos have much lower levels of transparency than exchange-traded markets for equities derivatives. However, this is a market design choice – OTC markets can be made more transparent.

The Australian bond and repo markets have extremely low levels of transparency. Most trading occurs OTC through dealers. Trading is bilateral and is usually arranged via phone, email or Bloomberg chat. There are also several electronic platforms that stream indicative or executable prices. These platforms generally only trade in small size in government and semi-government bonds.[1] There is no public source of transaction-level data about the bond and repo markets in Australia. Parties that are large and active in these markets, particularly dealers, have an information advantage with respect to recent and historic repo and bond prices.

Why is transparency important in bond markets?

Bond markets are distinct from equity markets in several significant ways, which underscores the importance of transparency in this setting:

- ***Diverse product set***: Bond markets feature more heterogeneous products than equities. Issuers often have multiple tranches of bonds, each with varying maturities and interest rates. This diversity adds complexity to the market.
- ***Buy-and-hold investors***: Bond investors are typically long-term, buy-and-hold participants. This behaviour contrasts with the more frequent trading seen in equities, resulting in lower liquidity for bonds. As a result, bonds are generally less liquid than stocks.
- ***Concentration of trading***: Trading activity in bond markets is often concentrated in a subset of available bonds. This means that while some bonds are actively traded, others might see very little activity.

Transparency plays a critical role in addressing these challenges by:

- ***Building confidence:*** Transparent markets help investors trust that bond prices reflect fair and accurate information. When investors can see clear and reliable data, they are more likely to participate actively.
- ***Enhancing efficiency*****:** Access to information helps ensure that bond prices adjust accurately to new information, making the market more efficient. This, in turn, facilitates better price discovery.
- ***Boosting liquidity*****:** With greater transparency, market participants can more easily evaluate and compare bonds, which can increase trading volumes and improve overall market liquidity.

[1] See ASIC Report 742: Conduct risk in wholesale fixed income markets for further details.

In summary, transparency is not just a regulatory ideal but a practical necessity in the bond market. It helps ensure that investors have the information they need to make informed decisions, thereby enhancing market fairness, efficiency, and liquidity.

What have other jurisdictions done?

United States (US): The US began to bring transparency to its corporate bond market in July 2002 through the Trade Reporting and Compliance Engine (TRACE). Initially, it applied only to investment grade bonds with a face value of USD 1 billion or more. It was expanded to two cover all corporate bonds by October 2004 in two subsequent tranches. Since March 2010, the TRACE program has been expanded several times, and now includes U.S. agency debentures, asset-backed securities (ABS), and mortgage-backed securities (MBS). TRACE was extended to US Treasuries in 2017.

TRACE provides post-trade transparency in these markets in real-time. The data are disseminated publicly by the Financial Industry Regulatory Authority (FINRA).[2] The data provide transaction-level information including the price, the date and time of execution, transaction size and the yield. There is a carve-out that allows the size of the trade to be concealed for trades larger than USD 5 million. In addition, there is a regulatory version of TRACE which is made available to academics with a 6-month delay. These data include additional fields including a buy/sell indicator, an indicator of whether the counterparties are dealers or customers and the full volume of each transaction, including those over USD 5 million.

Canada*:* Canada modelled its Market Trade Reporting System (MTRS 2.0) after TRACE. It is operated by the Investment Industry Regulatory Organization of Canada (IIROC) the Canadian equivalent of FINRA. It was initially introduced in 2016 for retail/institutional trades in liquid corporate bonds by Government Securities Distributors and has subsequently been expanded to include all corporate bond trades, government debt securities by IIROC dealer members and corporate and government securities by schedule I, II, III banks. It also has a carve-out for reporting volumes for large trades which vary by product. Unlike the US, the uncapped volumes never get reported.

United Kingdom/Europe: The introduction of Markets in Financial Instruments Directive II (MiFID II) in 2018 brought post-trade transparency to liquid bonds. However, this is a relatively small sub-set of the fixed-income market. Unlike the US and Canada, this reporting was decentralised with market participants being required to report to Approved Publication Arrangements (APAs) with oversight from the European Securities Market Authority (ESMA). APAs then sell these data on a "reasonable commercial basis." Both the UK and European Union (EU) regulators are in the process of establishing a more comprehensive Consolidated Tapes for both fixed-income and equities securities. The current proposals are for post-trade tapes in fixed-income markets.

What does the academic literature tell us about the value of transparency in bond markets?

Given the early adoption of post-trade transparency in the US fixed income markets and the easy access to these data, the US market has been the focus of most academic research on the impact of transparency on market quality. Research has considered the impact it has had on secondary market liquidity and transaction costs, dealer concentration and profitability, and pricing efficiency in the primary market.

[2] FINRA is a self-regulatory organisation that overseas broker-dealers and registered securities representatives in the US.

Liquidity and transaction costs: Three studies written shortly after the initial roll-out of TRACE provide compelling evidence of the benefits of transparency on liquidity and transaction costs:

- Using a sample of institutional trades in corporate bonds, before and after initiation of TRACE Bessembinder, Maxwell and Venkataraman (2006) show that execution costs fell by five to eight basis points, or 40–60% of pre-TRACE trading cost estimates, for bonds eligible for TRACE reporting. They also find evidence of a liquidity externality with bonds not eligible for TRACE reporting exhibiting a 20% reduction in trading costs.
- Using a complete record of U.S. OTC secondary trades in corporate bonds between January 2003 and January 2005, Edwards, Harris and Piwowar (2007) show that bond trading costs are lower when prices are transparent, and that prices fall when TRACE starts publicly disseminating prices to the market. They also show that transaction costs decrease with trade size and bond rating and are lower for bonds more recently issued and closer to maturity.
- Goldstein, Hotchkiss and Sirri (2007), study the introduction of TRACE on the liquidity of BBB corporate bonds. The sample is more constrained than Bessembinder et al. (2006) and Edwards et al. (2007) considering 4,888 bonds with an original issue size between USD 10 million and USD 1 billion over the period July 2002 to February 2004. They found that increased transparency had a neutral effect on trading volume. For all but the largest trade sizes and the most thinly traded bonds they show that, transparency reduces bid-ask spreads. They argue this result is due to the ability of investors to negotiate better terms of trade with dealers once they have access to bond-pricing data.

Taken together these studies provide compelling evidence of the benefits of post-trade transparency for secondary market liquidity and transaction costs. More recent studies by Jacobsen and Venkataraman (2018) and Asquith, Covert and Pathak (2019) show that US investors have benefited from lower transaction costs due to TRACE.

***Dealer concentration and profitability*:** Bessembinder, Maxwell and Venkataraman (2006) also find that trading activity is less concentrated with large dealers post TRACE. They also show that the large dealer cost advantage, previously documented by Schultz (2001), reduces after the introduction of TRACE. Calculating a concentration ratio, which is the sum of the market share for the largest 12 dealers, they show that concentration falls from 56% to 45% from pre- to post-TRACE for eligible bonds Again there is a spillover to non-TRACE bonds. They argue that this decline in concentration is consistent with the market becoming more competitive after the introduction of TRACE.

Lewis and Schwert (2021) use data newly available data with anonymized dealer identifiers to examine informational frictions, search costs and the economics of market making. They show that following the introduction of TRACE, dealers trade with more counterparties, which they argue is consistent with reductions in search costs due to improved confidence about quoted prices due to their public dissemination. They argue that the expansion of the dealer network likely contributes to the lower execution costs observed in the earlier studies.

The authors also find that following the introduction of TRACE dealers earn approximately 24% less profit. However, dealers are not necessarily worse off because the risk of market-making has reduced proportionately. The covariance between profits on an individual bond position and the overall portfolio is significantly reduced by TRACE. They argue this is consistent with lower search costs and the broader dealer network allowing dealers to better share risk. TRACE is also found to reduce adverse selection risk for dealers when trading with informed customers. Dealers are able to adjust prices more quickly when trades are published therefore reducing the predictive relation between order imbalance and subsequent returns. Overall, the authors conclude that the net

effect of TRACE on dealer welfare is ambiguous because the reduced profit is offset by reduced portfolio risk and adverse selection costs.

Primary market pricing and costs: Brugler, Comerton-Forde and Martin (2021) exploit the staggered introduction of TRACE in corporate bonds to demonstrate a causal link between secondary market transparency and primary market pricing. They show that for a typical corporate bond issue, the introduction of TRACE is associated with a 14 basis point (bp) reduction in yield spread compared to the sample mean of 144 bps. This represents a 1.1% increase in the bond price. They also document that TRACE reduced underpricing and explicit fees charged by intermediaries in new issues, although these results had lower statistical significance.

The authors explore the reasons for the improvements in pricing and hypothesise it could be related to improvements in transaction costs and/or improvements in information asymmetry. They provide evidence in favour of the benefits arising from the mitigation of information asymmetry in the issuing process. Improvements in issuing yields are largest in bonds with higher levels of information asymmetry, namely smaller and less credit-worthy bonds. Higher information asymmetry bonds exhibit smaller reductions in trading activity, so liquidity can not explain these results. They also show that when a larger fraction of trades in comparable bonds are post-trade transparent, new issue pricing improves more.

Prior to TRACE, larger and more active dealers and investors observed more information about the trading process than smaller less active participants. As a result, they were better able to price bonds. After the introduction of TRACE all market participants observe the same information about the trading process and therefore have greater confidence in the pricing process.

Two other papers also provide evidence of the benefits of TRACE for the issuing process. Goldstein, Hotchkiss and Nikolova (2021) show that transparency is associated with a reduction in underpricing and new issue price dispersion. Field, Mkrtchyan, and Wang (2022) show that TRACE allows firms to expand capital expenditures and acquisition activities.

***Overall takeaway*:** The overall takeaway from the academic literature is that post-trade transparency can significantly enhance the quality of both secondary and primary markets for bonds. It enhances secondary market liquidity and reduces trading costs. It reduces dealer concentration and profitability, but also reduces dealer risk therefore having an ambiguous effect on dealer welfare. Finally, it enhances the pricing process and reduces costs in primary markets, benefiting both issuers and investors.

Recommendations relating to post-trade transparency

The academic literature provides compelling evidence that post-trade transparency significantly improves both secondary and primary bond markets. Based on these findings, it is recommended that CFR implement a post-trade transparency framework. This framework should:

- ***Centralise and standardise data collection***: Ensure that data is consistently collected and made available to all interested parties at a reasonable cost.
- ***Consider carve-outs***: Evaluate the impact of excluding large trades from public reporting and how this might affect market dynamics.
- ***Staggered roll-out***: Implement the transparency framework gradually across different types of bonds and repos, as was done in the U.S., to facilitate impact analysis and adjustment.

Further consultation on the design of the transparency framework is essential to tailor it to Australia's specific needs and ensure effective implementation.

Should pre-trade transparency be considered?

While post-trade transparency has been implemented in the U.S. and Canada for nearly two decades, neither country has yet introduced pre-trade transparency regimes for OTC fixed-income markets. However, there have been market-led efforts aimed at enhancing pre-trade transparency. One notable example is BondCliQ, a private company that has developed a centralised quote system for U.S. corporate bonds.

BondCliQ's model:

- ***Quote collection***: BondCliQ aggregates real-time quotes from 45 corporate bond dealers, creating a consolidated view of pricing. They capture quotes for over 17,000 unique bonds each day, with more than 7,000 bonds receiving quotes from at least three dealers. Contributions are voluntary.
- ***Market coverage***: The system records around 700,000 price points daily and covers approximately 90% of market volume.
- ***Impact on market activity****:* According to a study by Hendershott, Li, Livdan, Shurhoff, and Venkataraman (2021), increased market-wide quoting activity is linked to higher trading volumes and lower trading costs. Dealers providing more and better quotes attract more order flow, and this effect is particularly pronounced for lower-rated and more volatile bonds. However, smaller participants may not fully benefit from the increased quote competition.

Recommendations relating to pre-trade transparency

The findings from BondCliQ's data suggest that pre-trade transparency could improve market efficiency by enhancing quote competition. However, the authors of the study caution against straightforward policy adoption without further analysis. Key considerations include:

- ***Mandatory vs. voluntary quoting***: Should quoting be required for all dealers, or should it remain voluntary?
- ***Indicative vs. firm quotes***: Should the system include only firm quotes, or should indicative quotes also be part of the transparency regime?
- ***Compensation for dealers***: What mechanisms should be in place to compensate dealers for providing quotes?

Given these complexities, it is crucial for the Council of Financial Regulators (CFR) to conduct further consultation to evaluate the potential benefits and challenges of implementing a pre-trade transparency regime for bonds and repos. This consultation should focus on:

- ***Designing a transparent framework***: Explore various models for centralising and disseminating quotes, including possible adaptations of systems used in other markets.
- ***Assessing market impact****:* Evaluate how different approaches to pre-trade transparency might affect market participants, particularly smaller and less active ones.

Pre-trade transparency has the potential to significantly enhance market efficiency, but designing an effective regime requires careful consideration and extensive consultation. CFR should take the insights from current market initiatives and academic research into account, and actively engage with market participants to develop a tailored approach for pre-trade transparency in the Australian bond and repo markets.

However, the exploration of pre-trade transparency should not delay the implementation of a post-trade transparency regime. Post-trade transparency offers immediate benefits and should be prioritised to improve market fairness, efficiency, and liquidity. Both measures can contribute to a more transparent and effective bond and repo market, with post-trade transparency laying the groundwork for future advancements.

I am happy to discuss any of the above matters further.

Yours sincerely

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References

Asquith, P., Covert, T.R. and Pathak, P.A. (2019). The Effects of Mandatory Transparency in Financial Market Design: Evidence from the Corporate Bond Market (April 8, 2019). Available at SSRN.

Bessembinder, H., Maxwell, W. and Venkataraman, K. (2006). Market transparency, liquidity externalities, and institutional trading costs in corporate bonds. *Journal of Financial Economics* 82, 251-288.

Bessembinder, H. and Maxwell, W. (2008). Transparency and the Corporate Bond Market. *Journal of Economic Perspectives* 22(2), 217–234.

Brugler, J., Comerton-Forde, C., and Martin, J.S. (2022). Secondary Market Transparency and Corporate Bond Issuing Costs. *Review of Finance*26(1), 43–77.

Edwards, A.K., Harris, L.E. and Piwowar, M.S. (2007). Corporate Bond Market Transaction Costs and Transparency. *Journal of Finance* 62(3), 1421-1451.

Field, L. C., Mkrtchyan, A., and Wang, Y. (2022): Bond liquidity and investment. *Journal of Banking and Finance* 145, 106651.

Goldstein, M., Hotchkiss, E. and Sirri, E. (2007). Transparency and Liquidity: A Controlled Experiment on Corporate Bonds. *Review of Financial Studies* 20(2), 235–73.

Goldstein, M. A., Hotchkiss, E. S. (2020). Providing liquidity in an illiquid market: Dealer behaviour in US corporate bonds. *Journal of Financial Economics* 135(1), 16-40.

Goldstein, M., Hotchkiss, E. and Nikolova S. (2021): Dealer behavior and the trading of newly issued corporate bonds. Available at SSRN.

Hendershott, T., Li, D., Livdan, D., Schurhoff, N. and K. Venkataraman. (2021). Quote Competition in Corporate Bonds (December 4, 2021). SMU Cox School of Business Research Paper No. 22-03, Swiss Finance Institute Research Paper No. 22-70, Available at SSRN.

Jacobsen, Stacey E. and Venkataraman K. (2018). Does Trade Reporting Improve Market Quality in an Institutional Market? Evidence from 144a Corporate Bonds. Available at SSRN

Lewis, R. and M. Stewart. (2021). The Effects of Transparency on OTC Market-Making, Jacobs Levy Equity Management Center for Quantitative Financial Research Paper. Available at SSRN.

Madhavan, A. (2000). Market Microstructure: A survey, *Journal of Financial Markets* 3(3), 205-258.

O'Hara, M. (1995). Market microstructure theory, Basil Blackwell, Cambridge, MA.

Schultz, P., (2001). Corporate bond trading costs: a peek behind the curtain. *Journal of Finance* 56, 677–698