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## The MOC Sacred Cow: Worth a Re-Think?

### Why Read This?

The TMX Group appears to be studying the possibility of doing major surgery to the TSX's Market-on-Close facility. If you care about the MOC, read below and fill out the [survey](#).

### The TSX Market-on-Close – Globally Unique?

When the Toronto Stock Exchange introduced the Market-on-Close model in 2003, the idea was to bring some structure to trades benchmarked to the official market closing price. Before the MOC's arrival, whomever traded the last board lot of the day determined the fortunes of indexers. Dealers with significant order flow netted their clients' interest, matching those orders "upstairs" and reporting them as crosses in the 4:15-5:00 extended session. High tech and orderly? Nope.

The purpose of the MOC was to bring some of this activity into the realm of a centralized marketplace, and make the process fairer (or at least better-understood). The model developed, which exists to this day, is of a single 3:40 PM broadcast to inform the Street of potential closing liquidity imbalance – and a mechanism for offsetting orders to take the other side. At that time, the only closing order type was "market" on close, or an offsetting limit on close, meaning that investors with closing benchmarks were forced to be price-insensitive – or risk trading contra an imbalance that may not materialize (or be big enough).

More importantly, the ability of multiple investors to offset the same imbalance means that the true imbalance can change size and direction at any time – with no indication that this has occurred. This is known to eloquent practitioners as a "flip" of the MOC. This behaviour leaves some players with an information advantage (if they are the ones that cause the flip) while others are frustrated that the imbalance doesn't give them a directional indication. In other words, the MOC imbalance information is highly imperfect.

To be clear, the ability of an imbalance to "flip" for any reason – and lack of transparency over this – is by far the biggest complaint we hear about the TSX MOC model. The griping on this point is understandable, since the imbalance is also the only bit of information being provided and as a result investors have a hard time understanding closing price movement dynamics.

Changes to the MOC over the past 15 years have all revolved around fixing some of the shortcomings of the basic model, without attempting a wholesale rethink of what the MOC is all about. These include:

- A publication of the indicative closing price at 3:50PM, an idea which was scrapped when it became apparent that investors were waiting until 3:50 PM to put in their offsetting orders, lest they give up information.
- The introduction of Limit-on-Close (LOC) orders, which could contribute to the published imbalance – but which meant that the 3:40 PM publication lost relevance as soon as prices moved.
- Tweaks to the price-movement-extension mechanism, to make the PME mechanism more relevant.
- The introduction of closing-offset orders to give investors a last-resort mechanism for offsetting imbalances which might "flip".

These changes are all at the margins. The fundamental Canadian MOC model is "give some information at 3:40, and offsetting orders will happen. If the result at 4:00 looks weird, give 'em another 10 minutes." The dreaded "flip" very much remains a fixture of the MOC.

### The Alternatives

In other jurisdictions, closing auctions fall largely into one of two buckets:

- Continuous imbalance (prevalent in the US).
- A separate closing session ("the LSE model").

In a continuous-imbalance world, imbalance information is disseminated constantly (or at least at regular intervals) during the final minutes of the trading day. This includes the size of and direction of the imbalance, as well as measures like "paired-off volume" which can give an indication of what else might be coming. The basic premise is that more information draws more participants.

Unfortunately, while this may be efficient for the market at large, individual participants are loathe to give up their trading edge by broadcasting that someone just offset an imbalance; they would much rather have the market overreact to a published imbalance, and

take advantage of better prices. As a result, many participants wait until the last possible moment before putting in their MOC orders, and the action is reminiscent of a TSX-style “flip” over a much narrower time window.

By contrast, the “LSE model” (variants exist in other markets) separates the closing call into its own session – with a defined start time but a random finish. The imbalance and indicative closing price is disseminated continuously. The advantage of this model is that transparency is provided, with the significant anti-gaming measure of not knowing when the music stops and the closing price is determined. This forces investors with closing benchmarks to put in their orders early enough to provide offsetting players a chance to contribute.

Both of these models have their advantages and shortcomings. If we told you which one we like, it could taint the [survey](#) (but rest assured that we have an opinion).

## Should Canada Change?

The TSX’s Market on Close Advisory Committee recently heard from a participant who vehemently argued that it is time for Canada to revisit the [sacred cow](#) of the MOC, and potentially turn it into sacred burgers. The rationale is that Canada has fallen behind its global peers, and international investors’ experience with the TSX MOC leaves something to be desired (though stronger words were used). The argument is that if the MOC worked better, Canada may be more appealing to international participants – or at least cause less grief and fewer questions.

We are skeptical that foreign investors overlook Canada purely because the MOC isn’t well-understood outside the narrow group of Canadian market structure geeks. On the other hand, we are sympathetic to the view that solutions appropriate in 2003 are past their prime, and that change is appropriate. We therefore support the TSX’s willingness to ask participants for their opinion on whether an LSE-style model would be a welcome development to Canada.

If the decision is ultimately made to revise the Canadian model in favour of an LSE-style close, we believe it would be among the most consequential changes to Canadian market structure in many years. After all, the close is the most important point of the day for most investors. The TSX’s closing mechanism is understood by the participants that are most active in Canada, despite its shortcomings. A change to the closing dynamics will inevitably require re-education of participants and (significant) re-development of close-aware trading systems and algorithms. This is a large undertaking. While it may be worth it, it should not be taken lightly.

We also wish to highlight that this is not a TSX-only issue. All participants – including all competing marketplaces – have skin in this game because a change to the closing model would shift the trading patterns in the closing minutes of the day. In an LSE-style model, some of the activity we now see between 3:40 and 4:00 (in the continuous session) could migrate to the closing session. On the other hand, if the closing session becomes the domain of benchmark risk, then perhaps more “MOC” orders end up traded continuously in the final minutes of the day. There’s no way to know in advance (clearly; this is all hypothetical) – but we believe there will be “some” impact.

To the extent that the revised MOC concentrates activity in the closing call and away from the continuous market, the TSX’s competitors will likely push back, because they will have less opportunity to compete for flow and hence make less money. On the other hand, investor sentiment may well be that a change is appropriate, and the profitability of marketplaces isn’t investors’ concern. Either way, commercial interest might collide with the greater good of a structural change.

For now, we encourage interested parties to fill out the TMX Group’s [survey](#).

## Word of the Day

[Sacred cow](#) (n.): a belief, custom, etc. that people support and do not question or criticize.

Please do not hesitate to contact us if you have further questions.

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