

The Rise of Alternative Trading Systems

In the second quarter of 2009, trading revenue for the Toronto Stock Exchange was down almost 20% from the year earlier period, despite a 32% increase in trading volume.¹

Two US Senators urged the SEC to ban “Flash” orders² – certainly the first time I can remember a stock exchange order type becoming a flashpoint of political controversy! In response, the SEC has proposed such a ban and is seeking public comment on the issue³, with a great many comments received – and published⁴, such is the openness of American regulation.

I recently received a communication⁵ from a puzzled investor, who could not understand why his broker had confirmed a trade execution for him which he could not see on the TSX website www.tmxmoney.com.

These three disparate observations are related by the rise of Alternative Trading Systems (ATS), which were discussed⁶ in a relatively ineffectual manner throughout the 1990s, were given a regulatory framework in 2001⁷ and are now exerting a great influence on Canadian securities trading. The major ATSs in Canada are⁸:

- Alpha Trading Systems, <http://www.alphatrading.com>, owned by the dealer subsidiaries of the Big Six banks, Canaccord, Desjardins, and the Canada Pension Plan
- Chi-X Canada, <http://www.chi-xcanada.com/index.jsp>, owned by Instinet
- Omega, <http://omegaats.com/>, owned by Perimeter Financial (which is now owned by CI Financial), MarLar Group and Swift Trade
- Pure Trading, <http://www.puretrading.ca/>, operated by Canadian National Stock Exchange
- Match Now, <http://www.triactcanada.com/>, owned by TriAct Canada
- Liquidnet Canada, <http://www.liquidnet.com/> owned by Liquidnet Holdings

The last two ATSs listed above, Match Now and Liquidnet are “dark pools”, which are marketplaces with no pre-trade transparency. IIROC has released a discussion paper, *Dark Pools, Dark Orders, and other Developments in Market Structure in Canada*⁹, that will be of interest to those wishing to learn more about the topics; dark pools will not be discussed further in this essay.

Another entrant, Block Book, was closed by its owner in February 2009 as it was “unable to achieve a critical mass of order and trading activity to justify ongoing operations”.¹⁰ Its owner, Perimeter Financial, has since been acquired by CI Financial.¹¹

In this introduction, I will briefly describe the various marketplaces that are currently active, concentrating on five major attributes:

- order types: New trading strategies have been made possible by a fragmented marketplace. The list of order types allowed can be a source of competitive advantage for an ATS.
- fees: passive orders generate rebates from the exchange, which make their profit from the difference between the fees paid to the passive side and those received from the active side
- co-location: many were surprised to learn during the “Flash Order” debate that exchanges would allow user’s computers to be located at the exchange, and to charge for the privilege. In a fast environment, microseconds of order transmission time are important!
- smart routing: large orders are split up and sent to different marketplaces by a “smart router” computer program. Different strategies are possible and small improvements can be worth big money
- listing: The ATSs do not and cannot charge listing fees. Most list only the symbols with which they can generate a lot of order flow.

¹ Toronto Stock Exchange, *2nd Quarter 2009 Report to Shareholders*, available on-line at <http://www.tmx.com/en/pdf/TMXGroup2009Q2Report.pdf> (accessed 2009-11-13)

² Jesse Westbrook, Bloomberg News, *SEC Proposes Ban on Allowing Stock Flash Orders*, 2009-9-17, available on-line at <http://www.bloomberg.com/apps/news?pid=20601087&sid=aXT.s7CqgB0Q> (accessed 2009-11-13)

³ Securities and Exchange Commission, Press Release 2009-201, *SEC Proposes Flash Order Ban*, 2009-9-17, available on-line at <http://www.sec.gov/news/press/2009/2009-201.htm> (accessed 2009-11-13)

⁴ Securities and Exchange Commission, *Comments on File No. S7-21-09*, available on-line at <http://www.sec.gov/comments/s7-21-09/s72109.shtml> (accessed 2009-11-13)

⁵ See <http://www.prefblog.com/?p=8405>

⁶ Ontario Securities Commission, *Notice of Proposed National Instrument 21-101 “Marketplace Operation”*, 1999-7-2, available on-line at http://www.osc.gov.on.ca/documents/en/Securities-Category0/rule_19990702_ats.pdf (accessed 2009-11-13)

⁷ Canadian Securities Administrators, *NI 21-101, NI 23-101 and OSC Rule 23-501 – Regulation of Marketplaces and Trading*, 2001-11-02, available on-line at http://www.osc.gov.on.ca/documents/en/Securities-Category0/rule_20011102_alternative_trading_sys.pdf (accessed 2009-11-13)

⁸ Jennifer Kwan, Reuters, *Factbox – Alternative trading systems in Canada*, 2008-11-7, available on-line at <http://www.reuters.com/article/marketsnews/idINN0741241120081107?rpc=33&pageNumber=2&virtualBrandChannel=0&sp=true> (accessed 2009-11-13)

⁹ Available on-line at <http://docs.iiroc.ca/DisplayDocument.aspx?DocumentID=7CA6856622A4482B86E4BB4639710343&Language=en> (accessed 2009-11-13)

¹⁰ James Langton, Investment Executive, 2009-1-22, *Perimeter shuts Blockbook ATS*, available on-line at <http://www.investmentexecutive.com/client/en/News/DetailNews.aspx?id=47806&IdSection=148&cat=148> (accessed 2009-11-13)

¹¹ CI Financial, News Release, *CI Financial to acquire Perimeter Financial*, 2009-3-10, available on-line at http://www.pfin.ca/documents/news/perimeter_ci.pdf (accessed 2009-11-13)

The Toronto Stock Exchange

It is not long ago that the Toronto Stock Exchange (TMX) existed as a consortium of its members, but its reinvention as a public company necessarily involved the separation of ownership from direct use. Additionally, the ever-decreasing cost of computers and communication technology has made it easier for potential competitors to set up shop; the rise of ATSS has forced the TMX to take steps to protect its franchise.

The Toronto Stock Exchange introduced¹²:

- New order types that have been implemented¹³ (non-implemented order types are discussed below)
- Fee incentives to attract liquidity such as the Electronic Liquidity Provider Program (ELP)

The ELP was announced¹⁴ on October 29, 2008; since then, due to industry concerns regarding the increased cost of liquidity-taking trades, the ELP fees were changed¹⁵ and the credit per passive share decreased to \$0.0032, while the charge for trades which remove liquidity from the market changed to \$0.0033.

However, only the most liquid symbols (less than four-hundred) are eligible for the ELP programme, which eliminates preferred shares! Additionally, the TSX does not allow many order types¹⁶ other than “plain vanilla”:

- Market
- Limit
- Anonymous
- Iceberg
- Market On Close
- Short Sales
- Short Exempt
- On-Stop
- Duration
 - Day
 - Good Til Date
 - Good Til Cancelled
 - Immediate or Cancel
 - Fill or Kill

The OSC has recently approved¹⁷ two new order types, which the TSX has not yet implemented¹⁸. These new order types are described as¹⁹:

“Discretionary Order” means a limit order with both a disclosed portion and an undisclosed portion where the undisclosed portion has a price that is not displayed and is more aggressive than the price on the order’s disclosed portion. The undisclosed portion of a Discretionary Order will execute only against an Inside Spread Order. The disclosed portion of a Discretionary Order is eligible to execute against an Inside Spread Order as well as all other orders.

“Inside Spread Order” means an Undisclosed Order that is constrained to execute inside the Canadian Best Bid Offer. An Inside Spread Order will execute only against a Discretionary Order.

“Undisclosed Order” means an order that is not displayed on the Exchange.

The introduction of Smart Order Routing has led to an increase in the number of Immediate or Cancel orders flowing to the TMX.²⁰ The TMX Smart Order Routing service²¹ sends FOK orders to the various marketplaces listing the security in question, either simultaneously or sequentially depending upon the choice of algorithm. There is an ongoing arms race among vendors engaged in increasing the smartness of their order routers.²²

Co-location demand was initially underestimated²³ by the Toronto Exchange, indicating that the arms race among putative liquidity providers is vigorous.

¹² Toronto Stock Exchange, *Annual Report 2008*, available on-line at http://www.tsx-group.ca/AnnualReport08/pdfs/TMX_ANNUAL_08_ENG.pdf (accessed 2009-11-12)

¹³ The new order types are basically technical changes introduced to ensure that various regulatory requirements do not conflict. The types are “Bypass” and “Designated Cross”; Toronto Stock Exchange, press release 2008-6-19, *TMX Group introduces two new order types to facilitate traders executing pre-arranged trades and to meet best price obligations*, available on-line at <http://www.newswire.ca/en/releases/archive/June2008/19/c6120.html> (accessed 2009-11-12)

¹⁴ Toronto Stock Exchange, *Notice to Participating Organizations and Members, #2008-046, TMX Group Introduces the TSX Electronic Liquidity Provider (“ELP”) Program*, available on-line at <http://www.tmx.com/en/pdf/notices/2008-046.pdf> (accessed 2009-11-12)

¹⁵ Toronto Stock Exchange, *Notice to Participating Organizations and Members #2009-032, Equity Trading Fee Change Notice*, 2009-08-14, available on-line at <http://www.tmx.com/en/pdf/notices/2009-032.pdf> (accessed 2009-11-12)

¹⁶ Toronto Stock Exchange, *TSX Order Types*, updated 2009-6-17, available on-line at http://www.tmx.com/en/trading/order_types/ (accessed 2009-11-12)

¹⁷ Ontario Securities Commission, *Notice of Commission Approval*, available on-line at <http://www.osc.gov.on.ca/en/25741.htm> (accessed 2009-11-12)

¹⁸ TSX Inc. Notice, *Approval of Amendments to the Rules of the Toronto Stock Exchange (Exchange) to introduce Undisclosed and Discretionary Orders*, available on-line at http://www.tmx.com/en/pdf/TSXRuleAmendments_Sep2009.pdf (accessed 2009-11-12)

¹⁹ Ontario Securities Commission (2009) 32 OSCB 7750, 2009-9-25, available on-line at http://www.osc.gov.on.ca/documents/en/Marketplaces/xrr-tse_20090925_approve-undisclosed.pdf (accessed 2009-11-12)

²⁰ Toronto Stock Exchange, *Notice to Participating Organizations and Members #2009-037, Notice of Change to Dissemination of IOC and FOK Unfilled Order Details*, 2009-9-18, available on-line at <http://www.tmx.com/en/pdf/notices/2009-037.pdf> (accessed 2009-11-12)

²¹ Toronto Stock Exchange, *TMX Smart Order Routing Solution*, 2009-6-17, available on-line at http://www.tmx.com/en/trading/order_routing/index.html (accessed 2009-11-12)

²² E.g., Joseph Wald, CEO EdgeTrade, *What’s so smart about order routing*, The Trade Magazine, Jan-Mar 2007, No. 11., available on-line at <http://www.thetradenews.com/791> (accessed 2009-11-12)

²³ Toronto Stock Exchange, *Notice to Participating Organizations and Members, #2009-39, Co-Location Initial Allocation Deadline – November 2, 2009*, 2009-10-5, available on-line at <http://www.tmx.com/en/pdf/notices/2009-039.pdf> (accessed 2009-11-12)

Alpha Trading Systems

Alpha Trading Systems is the ATS with the most natural business plan – I feel certain that being owned by the major dealers allows their salesmen to gain access to the decision makers much more easily than might otherwise be the case! They are attempting to replicate most of the functions of the Toronto Stock Exchange as the “Alpha Ecosystem” which will include²⁴:

- The trading platform
- A consolidated market data platform
- Co-location services
- Connectivity to other marketplaces (which implies a smart order routing service)

Their market share is quite impressive: on September 22, they announced²⁵ that they had achieved a greater market share than the TMX in “Horizons BetaPro Nymex Natural Gas Bull ETF” (HNU), which they claim is the most actively traded security in Canada – although with a traded value of less than \$300-million, it would appear that their definition of “security” excludes government bonds.

Fees for “continuous market” trades of shares priced in excess of \$1 are \$0.0035/share for the active side, with a rebate of \$0.0031/share for the passive side.²⁶

Alpha supports a number of order types²⁷ that are not offered by the TMX:

- Market On Open (MOO)
- Limit on Open (LOO)
- Fill and Kill (FAK)
- All or None (AON)
- Price Improvement Iceberg (PII)
- Inside Match (IM)

Of interest in their order features is the Good Till Time (GTT) order, which allows the entry of a specific time of day through which the order is valid.

All TMX²⁸ and TMX-Venture²⁹ securities are traded on Alpha.

Like the TMX, Alpha offers a free on-line quotation service³⁰ with a delay of “at least five minutes”. They also offer daily summaries of their volume by symbol³¹ and their total market share, claiming shares of 19.2% by volume, 15.0% by value and 13.8% by trades on November 12.³² Oddly, a casual inspection of these daily summaries indicates that their share of the preferred share market is trivial.

Alpha Group’s July, 2009, newsletter³³ offers a good comparison of pricing between the ATSS.

Chi-X Canada

Chi-X is most notable in my mind for its very reasonable pricing of historical data³⁴ which was announced on October 7.³⁵ Like the TMX, they also offer a smart-routing service,³⁶ but do not appear to offer co-location services.

Most importantly for the development of the retail market in Canada, they offer³⁷ various types of pegged orders (discussed in depth below):

- Primary Peg – orders pegged to the passive side of the Canadian Best Bid and Offer Book. Orders are displayed in the Chi-X book and float to the limit price.
- Mid Peg – orders will float at the mid point in the Chi-X book to the limit price. Orders may execute at the half penny (this is not only a dark order, but one that may execute between incremental price ticks; it is therefore the subject of two of IIROC’s requests for comment)
- Pegged Order Offset – An increment or decrement can be set that allows a pegged order to become more passive or aggressive than the quote.

²⁴ Alpha Group, *Inside Alpha*, November 2009, available on-line at <http://alphatradingsystems.ca/ff/Newsletter/November%202009%20Newsletter.pdf> (accessed 2009-11-13)

²⁵ Alpha Group, *Alpha Primary Market in Canadian most actively traded Security*, 2009-9-22, available on-line at <http://alphatradingsystems.ca/ff/Press%20Releases/Alpha%20Primary%20Market%20in%20Canadian%20most%20actively%20traded%20Security.pdf> (accessed 2009-11-13)

²⁶ Alpha Group, *Fees*, available on-line at <http://www.alphatradingsystems.ca/alphaportal/tabid/448/Default.aspx> (accessed 2009-11-14)

²⁷ Alpha Group, *Order Types and Order Features*, available on-line at <http://www.alphatradingsystems.ca/alphaportal/tabid/107/Default.aspx> (accessed 2009-11-13)

²⁸ Alpha Group, Press Release, *Alpha ATS hits first market share milestone*, 2009-2-19, available on-line at <http://www.alphatradingsystems.ca/LinkClick.aspx?fileticket=gNeZ4e%2fSxNU%3d&tabid=71&mid=1240> (accessed 2009-11-14)

²⁹ Alpha Group, *Inside Alpha, April 2009*, available on-line at <http://www.alphatradingsystems.ca/LinkClick.aspx?fileticket=0XajW11JRzc%3d&tabid=70&mid=1357> (accessed 2009-11-14)

³⁰ See <http://www.alphatradingsystems.ca/ALPHAMARKET/MarketActivity/SymbolLookupResults/tabid/97/Default.aspx> (accessed 2009-11-13)

³¹ See <http://www.alphatradingsystems.ca/alphaportal/tabid/468/Default.aspx> (accessed 2009-11-13)

³² Alpha Group, *Closing Summary Report for November 12, 2009*, available on-line at <http://alphatradingsystems.ca/ff/Daily%20Summaries/2009/Nov/Nov%2012.pdf> (accessed 2009-11-13)

³³ Available on-line at <http://www.alphatradingsystems.ca/LinkClick.aspx?fileticket=uXR4nEtS%2BIM%3D&tabid=70&mid=1357> (accessed 2009-11-14)

³⁴ IFS, *Chi-X Data Service Overview*, <http://chixcanada.if5.com/Overview.aspx> (accessed 2009-11-13)

³⁵ Chi-X Canada, *Chi-X Canada and IFS Introduce Historical Data Service*, 2009-10-7, available on-line at http://www.chi-xcanada.com/pdf/news/Chi-X_Canada_IFS_.pdf (accessed 2009-11-13)

³⁶ See <http://www.chi-xcanada.com/includes/indexShow.jsp?thePage=/orderrouting/index.html> (accessed 2009-11-13)

³⁷ Chi-X Canada, *Advanced Trading*, on-line at <http://www.chi-xcanada.com/includes/indexShow.jsp?thePage=/advancedtrading/index.html> (accessed 2009-11-13)

Interestingly, Chi-X seems to have a marketing strategy aimed at attracting active traders – which, of course, means their rebate to passive traders is also relatively low. Passive orders receive a rebate of \$0.0025 per share and aggressive orders pay \$0.0029.³⁸

Their market share is very good, as they claim³⁹ a total market share of about 5%, including about 12% of the volume in TSX-60, but they list only 319 symbols – none of which are preferred shares.

Omega ATS

Omega ATS has an unusual fee structure in that it charges the active side of the trade a flat \$7 regardless of size, while passive traders neither pay nor receive anything. They claim that the volume of active trades they attract is sufficient to attract liquidity providers.⁴⁰

A rather odd order type allowed is “Post Only”, which will be posted to the order book only if it cannot be immediately executed. If it can be filled – thereby becoming a liquidity-taking, active order – it is instead rejected.⁴¹

Unfortunately, the company’s website is rather bare-bones; suspiciously, they do not tout their market share and their market overview⁴² for November 13 shows relatively few symbols, a small number of trades and limited volume.

Pure Trading

Pure Trading is designed to offer a platform virtually identical to that of the Toronto Stock Exchange⁴³, with the exception that there are no market makers or registered traders; this means there are no rules related to the TMX’s “Minimum Guaranteed Fill” (MGF) facility, or any guarantees related to odd-lot orders.

Fees are⁴⁴ \$0.0037 to take liquidity, with rebates of either \$0.0027 or \$0.0032 to supply liquidity, depending on the participant’s monthly passive volume.

A smart routing system, Pure Compass, is in development,⁴⁵ but they do not appear to offer co-location.

Quotes are made freely available to the public with a twenty minute delay, via <http://www.puretrading.ca/>.

Pure Trading does not tout its market share – their last market update⁴⁶ is dated September 2008, but they do make available⁴⁷ market activity statements on a daily, weekly, monthly and annual basis in tab-delimited text format – ideal for importation into user software. Sadly, the daily summaries provide only the closing price, and not the closing quote – otherwise I would be seriously considering cancelling the (very expensive) data service used to update HIMIPref™!

The monthly summaries, together with TMX data, have been used to analyze the changes in market share of the TMX that inspired the writing of this review.

The Effect of ATSS on the Canadian Preferred Share Market

In order to analyze the pattern of trading for Canadian Preferred Shares, monthly summaries of trading on Pure were downloaded from its website. These summaries are ordered by ticker symbol and include data on the number of trades and the share volume for each month. It is most fortunate that the sole ATS to provide historical data in this kind of detail is also the only ATS that has a significant presence in the preferred share market!

Data for all instruments tracked by HIMIPref™ was extracted and subjected to further analysis. HIMIPref™ is Hymas Investment Management Inc’s proprietary software for the analysis of the preferred share market and portfolio management thereof; 223 symbols are analyzed daily as of November 13, 2009. This does not include all preferred shares recognized by the Toronto Stock Exchange (with the “.PR.” element of the ticker symbol) and it does not entirely confine itself to issues with such recognition (e.g., issues such as SPL.A may be included if they are rated by DBRS using their Canadian Preferred Share rating scale). TMX data was recovered from the raw HIMIPref™ database and reorganized into a format consistent with the Pure data.

Results from the analysis are presented in Table 1.

³⁸ Chi-X Canada, *Chi-X Canada Unveils “ETF X Factor” Pricing Program*, 2009-8-10, available on-line at http://www.chi-xcanada.com/pdf/news/Chi-X_Canada ETF_X_Factor_.pdf (accessed 2009-11-13)

³⁹ Chi-X Canada, *Monthly Report for October 2009*, available on-line at http://www.chi-xcanada.com/pdf/monthly/Chi-X_Monthly_10.2009.pdf (accessed 2009-11-13)

⁴⁰ Omega ATS, *Goodbye Rebates – Hello Priority Fills*, 2009-7-2, available on-line at http://omegaats.com/wp-content/uploads/2009/07/omega-ats-news_july-2-2009.pdf (accessed 2009-11-14)

⁴¹ Omega ATS, *Order types*, available on-line at <http://omegaats.com/order-types> (accessed 2009-11-14)

⁴² Omega ATS, *Market Overview*, on-line at <http://omegaats.com/market-overview> (accessed 2009-11-14)

⁴³ Pure Trading, *Fees, Trading & Rules – FAQ’s*, available on-line at http://www.puretrading.ca/Page.asp?PageID=861&SiteNodeID=142&BL_ExpandID= (accessed 2009-11-13)

⁴⁴ Pure Trading, *Pure Trading Fees and Rebates for TSX-V Listed Securities*, 2009-3-20, available on-line at http://www.puretrading.ca/Page.asp?PageID=122&ContentID=6600&SiteNodeID=142&BL_ExpandID= (accessed 2009-11-13)

⁴⁵ Pure Trading, *Operations*, on-line at http://www.puretrading.ca/Page.asp?PageID=122&ContentID=646&SiteNodeID=124&BL_ExpandID= (accessed 2009-11-13)

⁴⁶ Pure Trading, *Monthly Updates*, on-line at http://www.puretrading.ca/Page.asp?PageID=751&SiteNodeID=129&BL_ExpandID= (accessed 2009-11-13)

⁴⁷ Pure Trading, *Market Activity*, on-line at <http://www.puretrading.ca/Page.asp?PageID=860&SiteNodeID=118> (accessed 2009-11-13)

	Jan. '09	Feb	Mar.	Apr.	May	Jun	Jul	Aug	Sep	Oct
TSX	52,889,040	33,290,941	40,145,042	50,068,528	45,864,591	52,431,810	48,309,196	42,727,444	50,710,676	47,589,300
PureTot	2,830,280	1,122,415	1,957,041	1,820,098	2,255,081	1,915,206	1,345,883	682,955	6,782,537	25,579,489
PureTrade	285	202	364	252	393	445	305	253	1,305	2,487
PureRet	916,945	1,122,415	1,852,233	1,534,447	1,980,841	1,726,032	1,301,518	682,955	5,624,569	3,976,691
PureInst	1,913,335	0	104,808	285,651	274,240	189,174	44,365	0	1,157,968	21,602,798
PureAvgSize	9,931	5,557	5,376	7,223	5,738	4,304	4,413	2,699	5,197	10,285
PureRetTr	214	202	358	236	370	428	301	253	1,201	995
PureInstTr	71	0	6	16	23	17	4	0	104	1,492
PureRetAvgVol	4,285	5,557	5,174	6,502	5,354	4,033	4,324	2,699	4,683	3,997
PureInstAvgVol	26,948	0	17,468	17,853	11,923	11,128	11,091	0	11,134	14,479
TSXTotal	9,125,854,656	9,547,033,960	11,359,347,528	10,676,901,193	11,462,309,022	10,856,684,577	8,740,413,393	8,606,992,280	10,963,194,567	10,149,664,580
TSXPref%	0.58%	0.35%	0.35%	0.47%	0.40%	0.48%	0.55%	0.50%	0.46%	0.47%
PureTotalAll	320,635,814	223,779,878	198,394,610	224,930,700	176,276,524	240,273,729	208,518,648	102,620,013	198,111,230	289,385,891
PurePref%	0.88%	0.50%	0.99%	0.81%	1.28%	0.80%	0.65%	0.67%	3.42%	8.84%

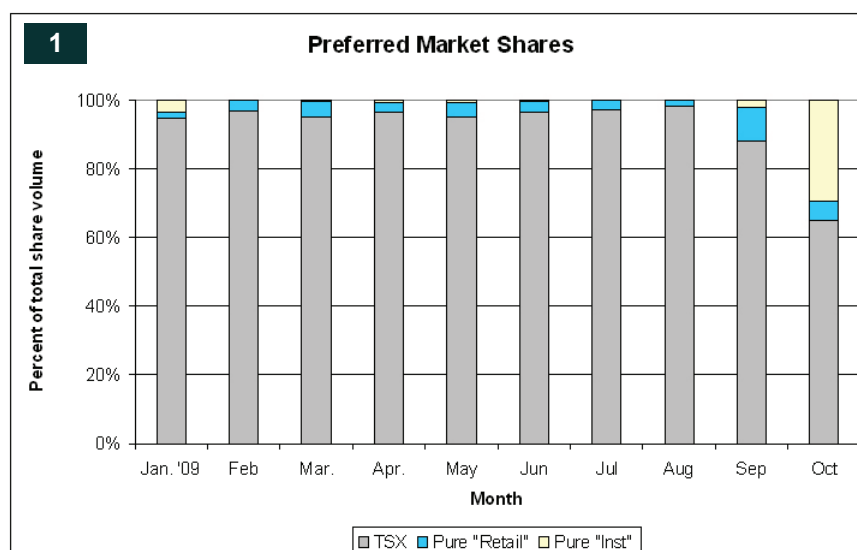
"TSX" is the total TMX trading volume of the symbols examined
 "PureTot" is the total Pure trading volume of the symbols examined
 "PureTrade" is the number of trades reported by Pure for the symbols examined
 "PureRet" is the total Pure Trading Volume for instruments designated as "retail dominated" for the month (see text)
 "PureInst" is the total Pure Trading Volume for instruments designated as "institutional dominated" for the month (see text)
 "PureAvgSize" is "PureTot" divided by "PureTrade"
 "PureRetTr" is the number of trades for instruments designated as "retail dominated" for the month (see text)
 "PureInstTr" is the number of trades for instruments designated as "institutional dominated" for the month (see text)
 "PureRetAvgVol" is "PureRet" divided by "PureRetTr"
 "PureInstAvgVol" is "PureInst" divided by "PureInstTr"
 "TSXTotal" is the total volume of all shares traded on the Toronto Stock Exchange
 "TSXPref%" is "TSX" divided by "TSXTotal", expressed as a percentage
 "PureTotalAll" is the total volume of all shares trading on Pure
 "PurePref%" is "PureTot" divided by "PureTotalAll"

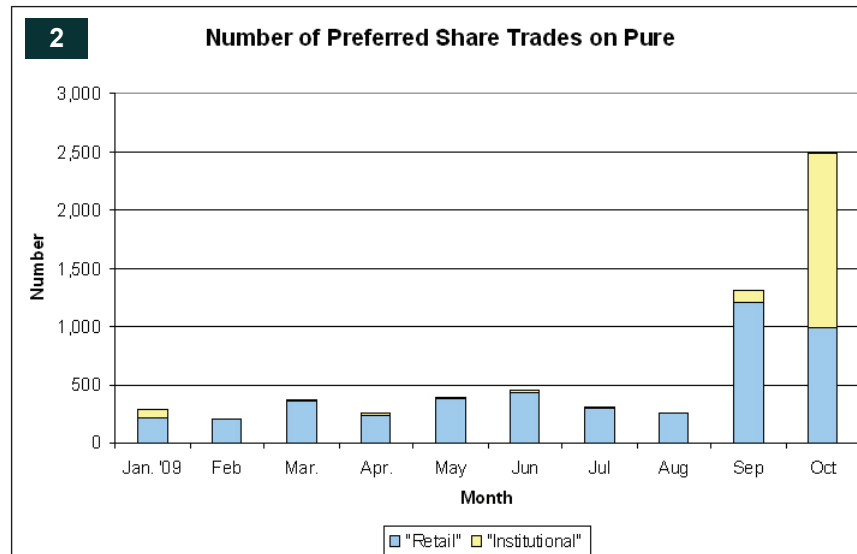
Table 1 divides the trading on Pure into two groups, "Retail" and "Institutional" in an admittedly haphazard manner. The traded volume for each month was divided by the number of trades; if the average trade was over 10,000 shares, the instrument's trading was deemed to be "Institutional"; if less, "Retail".

This division is not very satisfactory; for instance, an instrument with three trades on the month, one for 25,000 shares and two for 100, will be deemed to be "Retail", but in the absence of trade detail this approximation was made in an effort to discern patterns of trading. Frankly, I expected to see all trading dominated by the "Institutional" label, since most block trades will be processed on a relatively manual basis by the preferred share trader at the institution in question, who might choose to execute the cross on Pure due to cost considerations, but this is not the case. One possible explanation is that these traders execute on the TMX in order to boost their positioning on the league tables, but this is a matter of conjecture.

Despite the inconclusive result of the exercise, I have retained this division for publication in order to encourage discussion.

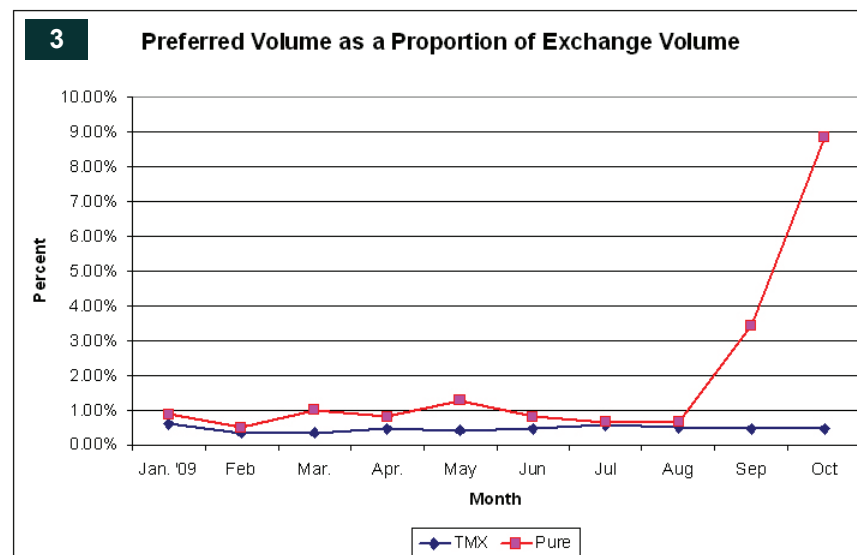
Of great interest is the recent explosion of Pure's market share in our little backwater: after spending most of the year with a 5% market share, as shown in Chart 1, Pure commanded slightly over one-third of the preferred share market in October. As shown in Chart 3, this was entirely due to gains in volume in the specific sector rather than proportional gains across the board. Sadly, both Pure and the TMX declined to answer questions regarding marketing strategy.





A sobering fact to note is that preferred share trading on the TMX comprises less than one percent of the common share trading, which goes far to explain why many of the ATSs reviewed in this essay do not bother to list them. One might almost wonder why my firm bothers to specialize in the asset class – but I am a man of modest ambition and will be content to receive as little as 0.1% of all Canadian investment advisory revenue.

Investors should definitely be aware of a marketplace in which one-third of the asset class is traded!



Implications of Market Share Changes for Investors

Multiple marketplaces imply more work for preferred share investors who do not have the advantages of employer-provided data feeds, data displays and smart order routers that will allow them to trade the fragmented marketplace on a consolidated basis.

Investors who make a habit of entering market orders – not a wise thing to do – or liquidity-taking limit orders will probably be pleasantly surprised by the effects of increased competition, since there may well be price-improvements on fills relative to quotes posted on the TMX when their broker routes the order to the marketplace offering best execution, as required by the regulators.

For example, an investor viewing only TMX data, seeing the market for a particular issue quoted at 20.00-10 and entering an order to buy at 20.10 may be filled at 20.09, with the trade not showing up on his screens. In such a case, it is almost certain that the order has been routed to an ATS that was offering the shares at 20.09 and filled there. A penny improvement may not be much, but every little bit helps!

However, investors who seek to eke out incremental returns by supplying liquidity to the market may be less enchanted by the complications when entering their limit buy order in such a case at 20.01. In this event, and assuming the order is routed to the TMX, his screens will now show the market quotation at 20.01-10, as expected – but the story doesn't end there.

A massive buy order may have been entered on an ATS at 20.02 causing all subsequent sell market orders to be routed to this ATS. The investor is not only unknowingly outside the market quote when he believes himself to be on the bid, but also ignorant of a potentially huge stream of orders that is being filled by participants accessing the ATS.

There is not much that retail investors can do about this situation, other than to

- Be aware of the potential for such a situation
- Ensure that the broker's policies regarding routing of the order is understood
- Use the ATS websites as much as possible to determine the current consolidated quote – albeit on a time delayed basis
- Lobby the regulators, exchanges and brokers to permit order types that will allow participation by retail in the provision of liquidity

It is with respect to this last point that I wish to discuss “Pegged Orders” and “Switch Orders”.

Pegged Orders⁴⁸

IIROC is seeking commentary on the issue of Pegged Orders, with a deadline of December 31, 2009, citing commentary by Jeffrey MacIntosh as a source of concern. A “pegged order” is an order entered with an indefinite price: it is displayed on the exchange at a price determined by other orders in the national consolidated book. If, for instance, the market is quoted at 20.00-10 and an investor enters a pegged buy order with a limit of 20.05, this order will be displayed on the ATS as a bid with a price of 20.00. If another participant enters a bid of 20.01, the order will float up to a price equal to that of the new bid. This process may continue, upwards and downwards, until the best bid exceeds the order's limit price of 20.05, at which point it will convert into a normal limit bid of 20.05. Pegged orders have been available on NASDAQ since 2003.⁵¹

Prof. MacIntosh is the Toronto Stock Exchange Professor of Capital Markets at the Faculty of Law, University of Toronto⁴⁹, and is a director of the Canadian National Stock Exchange (CNSX), which owns and operates Pure Trading, according to the National Post.⁵⁰

He states that the “current technological state-of-the-art does not allow regulators to generally enforce inter-market price-time priority”, by which he means that a limit order at a given price entered on one market may not be filled, while a limit order entered at the same price at a later time on a different market place does receive a fill.

This, he claims, is damaging to the marketplace. In placing a limit order, an investor is showing his hand, giving other participants an option – for free! – to decide whether or not they will fill it. Pegged orders “reduce the returns to posting limit orders” since the order-peggers may piggyback on the firm declaration of interest and, potentially, jump the price-time queue in the consolidated marketplace.

Thus, Prof. McIntosh considers the practice to be parasitic, since they remove order flow from the visible marketplace, adversely affecting both price discovery and public market liquidity, and concludes that such orders should be banned.

However, intra-exchange price-time priority has been routinely violated for quite some time, an issue Prof. McIntosh does not address. He notes that the “upstairs market” (in which institutional traders directly negotiate with their counterpart at a securities dealer) allows crossing of large blocks at or between the best bid and ask, with the result that big block traders can achieve better execution than they can achieve in the public market, but his explanation of why internal trade-crossing is acceptable for large institutions but unacceptable for small traders is unsatisfactory.

The increased automation that is now cheaply available to brokers has enabled the internal crossing process to be automated; if I enter my limit order through Broker A and am in the exchange's price-time queue behind an order at the same price entered by another investor through Broker B, I may still be filled prior to my competitor. If another client of Broker A enters an order that would fill either one of us, Broker A may well have automated an internal trade-matching process whereby the two orders are filled at a cross – earning the broker two commissions rather than just the one.

This has been going on for years and may be thought of as a microcosm of the current environment, with individual brokerages acting as ATSs and the single exchange functioning as “the marketplace”.

Through this automated matching, brokers and their clients are rewarded for increased order flow and – to a limited extent – the process may be viewed as a competitive edge for retail business: if I am considering my choice of brokers, I will be influenced to use the one with greater activity, as my chance of queue-jumping will be increased and my chance of being jumped decreased.

The current existence of price-time queue-jumping by small investors via automated internal crossing does not negate Prof. MacIntosh's argument, but it does mean that Pegged Orders, in and of themselves, are not responsible for the introduction of potential queue-jumping.

The greatest flaw in Prof. MacIntosh's argument is his assertion that Pegged Orders will necessarily lead to a decline in liquidity by reducing – slightly – the rewards inherent in being the first to post a limit order inside the market quote. While it is true that the rewards to the investor who enters the limit order decline, it is also true that Pegged Orders magnify the effect of such an order and, I suggest, are more likely to increase liquidity in an otherwise illiquid market.

Say, for instance, we start with a normal market for a preferred share, quoted at 20.00-50, 1x1. We may now add ten board lots of pegged buy orders; the quote is now 20.00-50, 11x1. Finally, we add a relatively impatient buyer who, seeking to purchase 100 shares but unwilling to pay the full spread, enters a new limit buy order at 20.10.

⁴⁸ Much of this discussion follows my blog post *Pegged Orders*, 2009-5-2, available on-line at <http://www.prefblog.com/?p=6379> (accessed 2009-11-13)

⁴⁹ University of Toronto faculty biography, on-line at http://www.law.utoronto.ca/faculty_content.asp?itemPath=1/3/4/0/0&profile=34&cType=facMembers (accessed 2009-11-14)

⁵⁰ Jeffrey MacIntosh, National Post, *Pegged orders: an unfair trade*, 2009-1-12, available on-line at <http://network.nationalpost.com/np/blogs/fpcomment/archive/2009/01/12/pegged-orders-an-unfair-trade.aspx> (accessed 2009-11-13) and at http://utorontolaw.typepad.com/faculty_blog/2009/01/jeffrey-macintosh-pegged-orders-an-unfair-trade.html?no_prefetch=1 (accessed 2009-11-13)

⁵¹ Deloitte Securities Brief, *Regulatory Update December 2003*, available on-line at http://www.public.deloitte.com/media/securitiesbriefs/pdf/ru_1203_23.pdf (accessed 2009-11-13) Note, however, the IIROC discussion paper claims that the word “Peg” in the SEC release No. 34-39729 *NASD Rulemaking: Various Orders Relating to the Creation of an Order Audit Trail System*, 1998-3-6, available on-line at <http://sec.gov/rules/sro/nd97560.htm> is a reference to Pegged Orders as discussed here.

All ten of the assumed pegged buy orders instantly float to the new bid price, so the market is now 20.10-50, 11x1. The effect of the single order has been magnified by a factor of 11; we may thus conclude that in this particular scenario the liquidity of the market has been enhanced due to the presence of pegged orders. While it is, perhaps, somewhat less likely that an improved limit order will be posted, there is a strong probability that the magnification of those orders that do get posted will result in a net benefit to market liquidity.

I will also suggest that rational investors might well become more aggressive in providing liquidity through the use of Pegged Orders, in direct contradiction to Prof. McIntosh's assertion that levels of aggression will be reduced. An investor might wish to purchase a given security, but also wish to pay the minimum possible price. It is not unreasonable to suggest that an investor looking at our hypothesized market quotation of 20.00-50 might wish to buy the issue, but not if he has to give up too large a fraction of the fifty cent spread in order to do so. If such an investor has only a limit order available, he may enter his bid at 20.10 and leave it at that. If Pegged Orders are available, he may enter such an order with a more aggressive limit of 20.20; such an order will have the initial effect of providing less liquidity – being pegged to the extant 20.00 bid – but with the potential to provide greater liquidity later in its existence, as it floats with other bids to its limit of 20.20.

There have been many academic papers⁵² devoted to controlled experiments designed to test various hypotheses regarding market mechanics; it would be most interesting to see the results of such experiments designed to measure the effects on overall liquidity of Pegged Orders.⁵³

Another flaw in Prof. McIntosh's critique is uncovered through determination of how a sharp – perhaps too sharp! – trader could exploit the situation. If the pegged orders are visible⁵⁴, it should be fairly straightforward to determine through observation of the market that there are a lot of pegged buy orders – a related example of algorithm determination by hostile third parties has been provided by Themis Trading.⁵⁵

If I want to sell 1000 shares of the issue used as an example and have knowledge that a substantial portion of the buy side of the market is pegged, I could potentially enter a limit buy order for 100 shares at 20.49; after the pegged orders float to the new bid the market will be 20.49-50, 11x1. I then enter a sale order of 1100 shares and am filled at 20.49 – 1,000 from the pegged buyers and 100 from myself. This is a substantial improvement from the 20.00 I would have realized had I entered my sell order without using the information!

This strategy would be considered a predatory trading practice and probably get me into all kinds of trouble with the regulators – but that is my point. If Pegged Order writers need regulation to protect them from the consequences of their action – then it's probably not a particularly good trading strategy, at least not when used in a simple-minded manner and therefore should not be thought of as being a cost-free destroyer of liquidity as Prof. McIntosh asserts. To a certain extent, the Pegged Order writer is giving up control of his posted limit price, and that lack of control serves to offset, if not eliminate, the potential benefits of queue-jumping.

However, the most effective argument in favour of allowing Pegged Orders is that widespread availability will allow retail investors to trade on a more equal basis with professional traders and High Frequency Trading sharks. As IIROC points out, *Originally, dealers manually canceled and re-entered orders to revise stale quotes to match the best bid or offer so that they could participate in trades against incoming marketable orders. The automation of this strategy occurred with the evolution of electronic trading, where algorithms react and adjust to changing conditions of the NBBO.*

A retail trader does not have time to watch the market like a hawk, cancelling and re-entering his bid for 100 shares thirty times a day to stay matched to the market in an effort to avoid paying more than necessary for his investment. Indeed, a retail client will probably not even have access to the NBBO on either a convenient or real-time basis! Pegged Orders will allow retail investors to provide liquidity to the marketplace in a more convenient manner than is now possible; they should be allowed by the regulators and made available to such investors by their brokers and order-execution services.

Contingent Orders

My copy of the Canadian Securities Course textbook⁵⁶ includes a description of a "Contingent Order", an order type I have never seen available. It is described as *an order to buy one security and simultaneously to sell another security. Contingent orders (for two securities) can be entered (a) at the market, (b) at the same price, (c) at a certain point spread, (d) with a share ratio (e.g., 100 shares of one company and 200 shares of another company). However, one side of the transaction cannot be completed without the other.*

Contingent orders are widely used in the OTC bond market (sell one bond and buy another at a certain price or yield differential) during the trade negotiation process, but are not currently available for exchange-traded securities. I have never seen such an order type offered by a retail brokerage to its clients, or seen any mention of them anywhere but in my textbook. They should be available – a relatively simple algorithm will allow an executing broker to sell one preferred share issue to buy another at a given spread with a high, although not guaranteed, chance of success in executing matching sizes at a given spread.

Retail clients do not typically have access to algorithmic trading packages⁵⁷ – such access is expensive and mired in regulation.⁵⁸ Regulators, marketplaces and brokers should be encouraged to reinstate the "Contingent Order" (perhaps with some understanding that precise matching is not guaranteed), especially now that computer clock-cycles are so cheap.

⁵² See, for example, Caginalp, Porter & Smith, *Financial Bubbles: Excess Cash, Momentum, and Incomplete Information*, Journal of Psychology and Financial Markets, Vol. 2, No. 2, 2001, available on-line via http://papers.ssrn.com/sol3/papers.cfm?abstract_id=658265 (accessed 2009-11-14)

⁵³ Give me a grant, I'll do it.

⁵⁴ The IIROC discussion paper discusses only visible pegged orders.

⁵⁵ Sal L. Arnuk & Joseph Saluzzi, Themis Trading, *Toxic Equity Trading Order Flow on Wall Street*, available on-line at <http://blog.themistrading.com/wp-content/uploads/2009/01/toxic-equity-trading-on-wall-street-final.pdf> (accessed 2009-11-13)

⁵⁶ The Canadian Securities Institute, *The Canadian Securities Course*, ISSN 0317-9451, 1985. Please believe I took the course when I was four years old.

⁵⁷ The only one I know of is offered by Interactive Brokers, but spread trading is not available for non-US products. See http://www.interactivebrokers.com/en/trading/orders/spread.php?ib_entity=llc (accessed 2009-11-14)

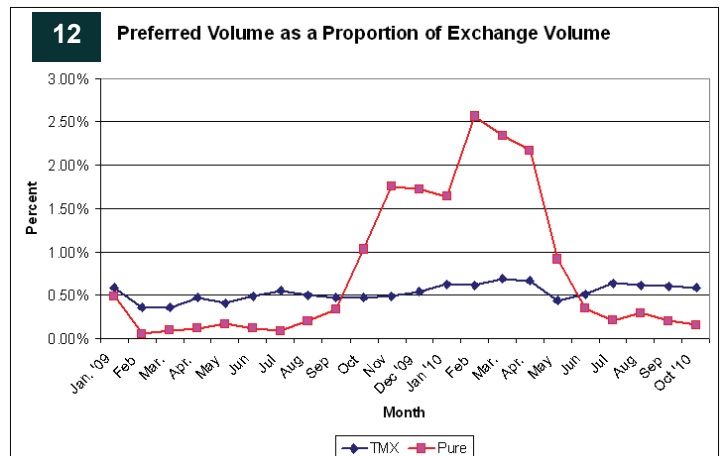
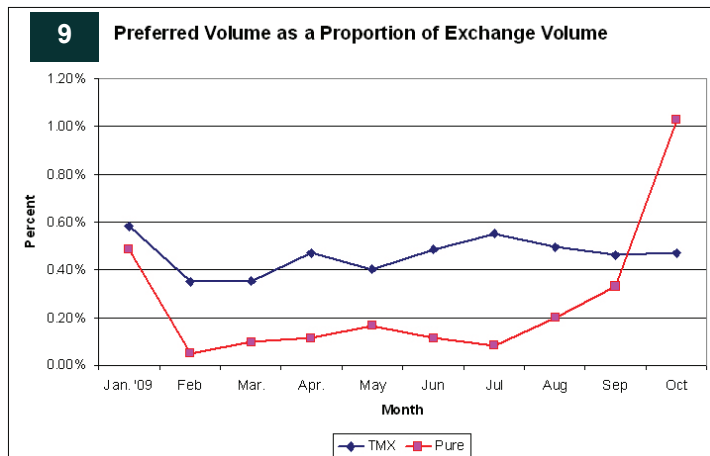
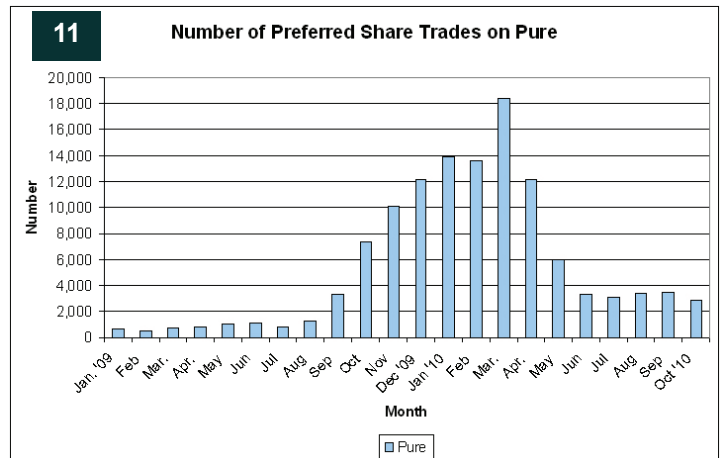
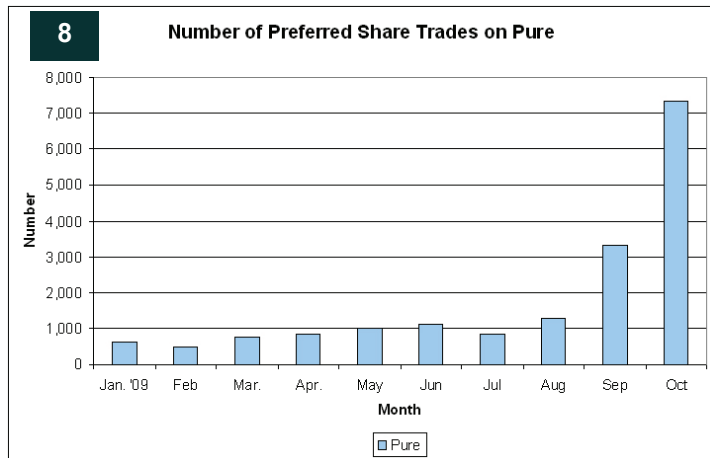
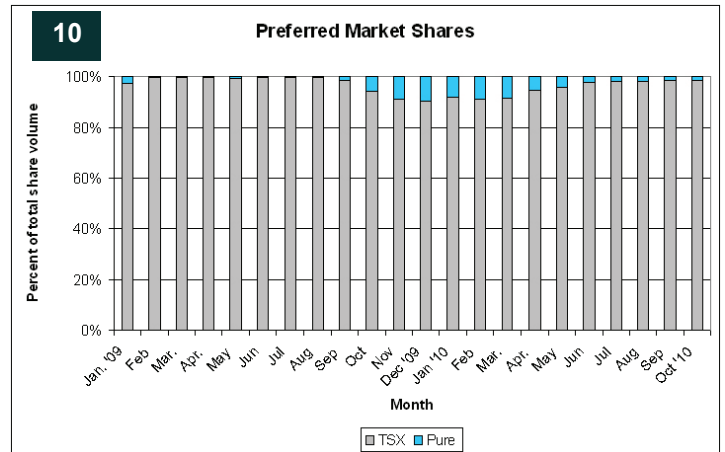
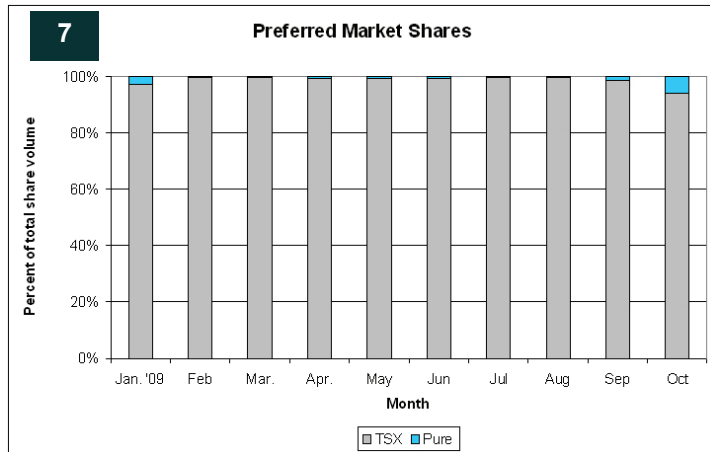
⁵⁸ Market Regulation Services Inc., Market Integrity Notice 2008-03, Supervision of Algorithmic Trading, 2008-1-18, available on-line at <http://docs.iiroc.ca/DisplayDocument.aspx?DocumentID=0E566B16E2394630BFC53DC41CBFF288&Language=en> (accessed 2009-11-14)

Preferred Share Market Share for Pure Trading

In my discussion of Alternative Trading Systems in the November, 2009, edition of this newsletter, I included some market share statistics for Pure Trading.

To my chagrin, I now find that a silly error found its way into my data analysis; the overall trends were presented properly, but the scale of these trends was incorrect.

Corrected versions of the table and charts published in the November 2009 edition are presented here as Table 1 and Charts 7–9; updated data to the end of October, 2010, are presented as Table 1 and Charts 10–12.



	Jan. '09	Feb	Mar.	Apr.	May	Jun	Jul	Aug	Sep	Oct
TSX	52,889,040	33,290,941	40,145,042	50,068,528	45,864,591	52,431,810	48,309,196	42,727,444	50,710,676	47,589,300
PureTot	1,556,450	108,500	191,200	252,400	289,500	267,700	171,700	202,800	650,100	2,977,000
PureTrade	633	484	777	846	1,027	1,119	835	1,274	3,323	7,363
PureRet	236,000	108,500	191,200	252,400	289,500	267,700	171,700	202,800	650,100	2,977,000
PureInst	1,320,450	0	0	0	0	0	0	0	0	0
PureAvgSize	2,459	224	246	298	282	239	206	159	196	404
PureRetTr	620	484	777	846	1,027	1,119	835	1,274	3,323	7,363
PureInstTr	13	0	0	0	0	0	0	0	0	0
PureRetAvgVol	381	224	246	298	282	239	206	159	196	404
PureInstAvgVol	101,573	0	0	0	0	0	0	0	0	0
TSXTotal	9,125,854,656	9,547,033,960	11,359,347,528	10,676,901,193	11,462,309,022	10,856,684,577	8,740,413,393	8,606,992,280	10,963,194,567	10,149,664,580
TSXPref%	0.58%	0.35%	0.35%	0.47%	0.40%	0.48%	0.55%	0.50%	0.46%	0.47%
PureTotal	320,635,814	223,779,878	198,394,610	224,930,700	176,276,524	240,273,729	208,518,648	102,620,013	198,111,230	289,385,891
PurePref%	0.49%	0.05%	0.10%	0.11%	0.16%	0.11%	0.08%	0.20%	0.33%	1.03%

	Nov '09	Dec '09	Jan '10	Feb	Mar.	Apr.	May	Jun	Jul	Aug	Sep	Oct '10
TSX	42,741,355	44,463,183	54,596,317	43,360,191	64,859,998	58,994,106	40,931,183	40,678,903	42,069,417	44,392,082	58,312,222	51,930,995
PureTot	4,183,800	4,704,300	4,891,900	4,247,000	5,953,600	3,373,440	1,795,800	943,100	790,600	769,538	894,045	747,782
PureTrade	10,078	12,141	13,959	13,609	18,428	12,151	5,989	3,301	3,132	3,362	3,447	2,821
PureRet	4,183,800	4,704,300	4,891,900	4,247,000	5,927,700	3,373,440	1,795,800	943,100	790,600	769,538	879,745	747,782
PureInst	0	0	0	0	25,900	0	0	0	0	0	14,300	0
PureAvgSize	415	387	350	312	323	278	300	286	252	229	259	265
PureRetTr	10,078	12,141	13,959	13,609	18,426	12,151	5,989	3,301	3,132	3,362	3,446	2,821
PureInstTr	0	0	0	0	2	0	0	0	0	0	1	0
PureRetAvgVol	415	387	350	312	322	278	300	286	252	229	255	265
PureInstAvgVol	0	0	0	0	12,950	0	0	0	0	0	14,300	0
TSXTotal	8,797,862,839	8,239,674,706	8,760,933,904	7,124,757,494	9,451,973,986	8,858,785,664	9,320,907,734	7,964,186,287	6,632,701,701	7,223,528,198	9,686,465,053	8,922,238,062
TSXPref%	0.49%	0.54%	0.62%	0.61%	0.69%	0.67%	0.44%	0.51%	0.63%	0.61%	0.60%	0.58%
PureTotal	238,236,136	273,122,214	298,466,937	165,895,672	253,379,630	155,534,976	196,062,290	277,556,663	379,826,373	261,289,961	449,876,614	490,604,155
PurePref%	1.76%	1.72%	1.64%	2.56%	2.35%	2.17%	0.92%	0.34%	0.21%	0.29%	0.20%	0.15%

“TSX” is the total TMX trading volume of the symbols examined

“PureTot” is the total Pure trading volume of the symbols examined

“PureTrade” is the number of trades reported by Pure

“PureRet” is the total Pure Trading Volume for instruments designated as “retail dominated” for the month (see text)

“PureInst” is the total Pure Trading Volume for instruments designated as “institutional dominated” for the month (see text)

“PureAvgSize” is the total Pure volume divided by the number of trades

“PureRetTr” is the number of trades for instruments designated as “retail dominated” for the month (see text)

“PureInstTr” is the number of trades for instruments designated as “institutional dominated” for the month (see text)

“PureRetAvgVol” is “PureRet” divided by “PureRetTr”

“PureInstAvgVol” is “PureInst” divided by “PureInstTr”

“TSXTotal” is the total volume of all shares traded on the Toronto Stock Exchange

“TSXPref%” is “TSX” divided by “TSXTotal”, expressed as a percentage

“PureTotalAll” is the total volume of all shares trading on Pure

“PurePref%” is “PureTot” divided by “PureTotalAll”