Research Study

Ideal Attributes of a Marketplace

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1. Executive Summary

Changes in the marketplace and in how securities are traded - resulting from the development of new technology; new paradigms of investor behaviour; the increasing dominance of cost-conscious block-trading institutions; and more informed retail investors - have prompted many stock exchanges to review and reform the processes that govern securities trading and to explore different market models that can accommodate this new dynamic. This paper, commissioned by the Task Force to Modernize Securities Regulation in Canada, explores the ideal attributes of a marketplace and the different market models that might best suit the Canadian market.

I first set out that the ultimate goal of secondary markets is to have an efficient price mechanism, i.e. a visible price that reflects a large number of differentiated buyers and sellers. If a large number of different opinions are brought to bear on pricing; the greater the number of large and small retail investors, institutional investors, locals, and others all competing to value and price a security, the more efficient the market.

I go on to describe factors contributing to recent changes in the Canadian securities marketplace. Fragmented markets, changing demand for and supply of market services, and a reshaping of Canadian capital markets in 1999 with the reorganization of the Toronto Stock Exchange and the Canadian Securities Administrators proposed regulation of Alternate Trading Systems have all affected how securities are traded in Canada.

In the main part of this report, I identify the attributes of a competitive capital market and describe some of the tradeoffs associated with increasing and decreasing specific attributes (increased liquidity might be obtained at the expense of rules fairness, for example). The attributes identified were adopted in 1996 by the Toronto Stock Exchange as a framework of analysis for addressing the impact of market fragmentation. They are:

i. Maximizing liquidity;
ii. Maximizing immediacy;
iii. Maximizing market visibility or transparency;
iv. Maximizing price discovery;
v. Minimizing transaction costs;
vi. Ensuring fairness;

vii. Ensuring the integrity of the credit ring; and
vii. Maximizing integrity of the marketplace.

I also explore the policy implications of different market structures that have different implications for these attributes – all against the background of the tension between consolidated and fragmented markets, competing systems for order flow and the changing needs of market participants.

Market participants seek varying degrees of performance from each attribute, depending upon their specific circumstances, trading objectives and the prevailing market conditions. An ideal market structure would blend and balance the service qualities and attributes preferred by each of marketplace's customers. However, it is impossible for marketplaces to fully satisfy all participants' preferences at the same time.

Of the range of different market structures that can be considered, a "chooser market" model - in which a central order-driven market is augmented by a number of alternate trading systems with different features and protocols – is the ideal. This model allows for trader flexibility; service unbundling; anonymity; improved aggregate national liquidity; tighter spreads; and lower trading costs. Despite its potential drawbacks, which include the possible disenfranchisement of investors; a deficiency in rules; reduced price discovery; problems allocating regulatory costs; and information fragmentation, I conclude that the "chooser market" model can best foster innovation and competition, and may result in more competitive pricing.

2. Introduction: The Changing Marketplace

The remarkable pace of technological change, coupled with new paradigms of investor behaviour, the increasing dominance of cost-conscious block-trading institutions, and more informed retail investors have opened the windows on how securities are traded. New theories of security pricing have resulted in increased emphasis on cost, speed and mode of trade execution as portfolio managers pursue different models and different goals. For example, increasing institutional activity means larger and more frequent block trades, resulting in an increasing number of trades negotiated outside the central exchange. [1] New technology has also fostered the growth of alternative trading mechanisms or liquidity pools.

In response, many major stock exchanges are currently undergoing a review and reform process. [2] The general thrust is toward tightening trading rules and procedures toward improving overall market quality in terms of liquidity, visibility, price discovery and fairness. The motivation for reform reflects the self-preservation instinct and a need to meet the challenges of a changing environment, shifting investor needs and new competition from other liquidity pools or mechanisms, including the "upstairs market," the Internet and so-called “alternate trading systems”. The growth of the latter has sparked much of the debate about market fragmentation, market integrity and competition for order flow.

Fragmented Markets

Technological advances have changed the way in which stock markets are perceived and the way in which trading is conducted. Competition for order flow is a growing feature of the current stock-trading environment. One of the results of this is that the order flow for Canadian securities is fragmented.[3] Trading in securities takes place in a number of different locations and ways and there is no national market system for trading. Market fragmentation occurs when orders can be executed in different places (external) or in different ways (internal).

External fragmentation is the dispersion of trading orders over different liquidity pools. This is caused by dual or multiple listing of securities on various domestic and foreign exchanges and by competing trading

[1] The "upstairs" block trading market where broker-dealers find counterparties to trades or commit their own capital is a response to institutional investor needs for liquidity and anonymity.
[2] For example, the venerable London Stock Exchange has recently moved toward a more order-driven auction and away from the dealer-dominated form that had prevailed for close to 500 years. Some exchanges including the Toronto Stock Exchange (now the TSX) have reorganized as for-profit share capital publicly traded entities.
[3] Fragmentation is not necessarily a negative feature. There are positive aspects to fragmentation including the stimulus for market trading innovation.

mechanisms such as the "upstairs market" and alternate trading systems. External fragmentation causes information loss as trading data becomes dispersed due to different trading mechanisms. There is also the danger of double-counting, due to competing auctions and different reporting and disclosure requirements.

Internal fragmentation refers to segmentation within a market, and occurs when an exchange member executes an order without exposing it to the auction market. For example, a retail client's order might be sent directly to an exchange mechanism for execution. Alternatively, it could be internalized by a broker and either crossed against another client's order or against the dealer's own inventory.[4] If an order is intercepted by a dealer, it obviously doesn't interact with other orders on the exchange. Accordingly, dealer internalization creates an alternate liquidity pool.

Consolidated markets generally mean increased transparency, fairer application of rules, greater liquidity, and enhanced price discovery. On the other hand, fragmented markets can be more competitive and foster innovation resulting in lower costs and a wider range of services.

Changing Demand for and Supply of Market Services

Simultaneous with markets reviewing their own functions, recent trends have affected demand for market services. These trends include:

1. shifting investment paradigms as fund managers start to pursue different models, including the growth of passive investing;
2. the globalization and deregulation[5] of world markets and the resulting increased competition for order flow;
3. the development of new analytic techniques, including momentum and arbitrage-based valuation models where the focus is on quick and timely trade execution;
4. the development of new technology, including systems with remarkable capability with respect to stochastics and analytics; and

[4] Although subject to a minimum order exposure rule.
[5] Aspects of deregulation include in numerous jurisdictions, the elimination of fixed commissions, lifting of restrictions on foreigners holding domestic shares and stock markets moving to for profit status. The moral hazard issue of a stock exchange being both a public utility and a for profit entity is an interesting issue raising obvious analogies to other public utilities and monopolies.

5. the institutionalization of the equity market, reflecting the dominance of cost-conscious block-trading institutional traders. The institutional component of the market has risen to about 80% of trading from about 50% 20 years ago. Market impact costs are now considered to be greater than commission costs and order management has become a key responsibility of traders, who are now much more interested in services, fee structures, unbundling and most important, anonymity.

On the supply side, new technology has fostered the growth of alternate trading systems or ATSs. ATSs [6] are proprietary electronic trading systems that perform many of the functions of a stock exchange. To differentiate them from ATSs, we will refer to stock exchanges as conventional trading systems.

No one market, and no one set of rules, can perfectly satisfy all stakeholders at all times. For example, some investors are primarily concerned with fairness and decent order execution. Other investors are primarily concerned with keeping their direct (commissions, exchange levies) and indirect (price pressure effect) trading costs low. On the other hand, many institutional investors want liquidity, while others want anonymity. Investment dealers want to control their own order flow and be rewarded for supplying liquidity to the market.

Changing Market Structure

In March 1999 the Canadian stocks exchanges implemented a massive reorganization and rationalization plan. Then, in July 1999, the Canadian Securities Administrators (CSA) announced its long-awaited proposal on the regulation of Alternate Trading Systems or ATSs.[7] These two events meant a dramatic reshaping of Canadian capital markets and set the stage for our capital markets well into the future.

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[6] ATSs have gone through a remarkable transition in nomenclature. Starting as electronic communication networks or ECNs, they have been designated as COMACS or computer-based market access systems; PTSs or proprietary trading systems, PETSs or proprietary electronic trading systems, ETs (electronic trading systems) NETSs or non-SRO sponsored electronic trading systems and even (tongue-in -cheek) MONSTERS (most new systems for terrifying exchange regulators. ATSs have been slow to develop In Canada thus far. Markets Inc. 2005 was the first and thus far has attracted very little order flow, although there are at least two scheduled to debut in 2006.
The regulation of ATSs is in a fluid state at present. The question is should they be absolutely subject to the Universal Market Integrity Rules (UMIR) of Regulation Services, the only market regulator at present or should there be some flexibility?
The issue is the trade-off between (i) a level playing field (all markets subject to same rules and level of regulation -- an argument in favour of universal application of UMIR) and (ii) encouraging innovation and competition (which may not be consistent trade-through rule is a focal point). Absolute trade-through protection may not be possible for some ATSs that have different trading protocols. The question is whether absolute trade-through protection still a sacrosanct principle? (There is a trade-off between fairness, liquidity and possibly encouraging innovation.)
[7] CSA, "Notice of Proposed National Instruments, Companion Policies and Ontario Commission Rule Under the Securities Act," (1) 22 OSCH (ATS Supp.) July 2, 1999.

3. The Attributes of a Market

A market structure needs to reflect some grand vision. The ultimate goal of secondary markets is to have an efficient price mechanism, i.e. a visible price that reflects a large number of differentiated buyers and sellers. If a large number of different opinions are brought to bear on pricing, then the greater the number of large and small retail investors, institutional investors, locals, and others, all competing to value and price a security, and the more efficient the market.

In this section I will identify the attributes of a competitive capital market and describe some of the tradeoffs associated with increasing and decreasing specific attributes (increased liquidity might be obtained at the expense of rules fairness). I will explore the policy implications of different market structures that have different implications for these attributes – all against the background of the tension between consolidated and fragmented markets, competing systems for order flow and the changing needs of market participants.

The Attributes of an Ideal Market

The quality of services and the competitiveness of any exchange or equity market are generally measured against standards or attributes. A set of standards was adopted by the Toronto Stock Exchange Special Committee in 1996[8,9] which adopted the following attributes as a framework of analysis for addressing the impact of market fragmentation:

i. maximizing liquidity;
ii. maximizing immediacy;
iii. maximizing market visibility or transparency;
iv. maximizing price discovery;
v. minimizing transaction costs;
vi. ensuring fairness;
vii. ensuring integrity of the credit ring; and
viii. maximizing integrity of the marketplace.

[8] Eric Kirzner (Chair), TSE Special Committee Report , Market Fragmentation: Responding to the Challenge, 1996
[9] The Special Committee of the Toronto Stock Exchange was established by the TSE Board of Governors in late 1995 and was comprised of institutional investors, registered traders, large and medium size brokerage firms, and electronic trading system providers. Four public governors served on the SC as well. The mandate was to address the fragmentation of Canadian markets and suggest reforms that could improve the TSE's overall market quality.

These attributes were also identified by the Canadian Securities Administrators (CSA) in their proposal on the regulation of Alternate Trading Systems or ATSs.[10] Each of these market attributes is fundamentally affected by an exchange's market structure.

i. Maximizing Liquidity

The classic definition of liquidity relates to the ease and certainty with which a non-cash asset can be converted into cash. In equity markets, liquidity may be defined as the market's capacity to absorb customers' buy and sell orders at or near the last sale price of a particular security.[11] The greater the capacity to absorb customers' buy and sell orders and the greater the number of orders and volume of shares that orders at or near the last sale price of a market can trade with little or no change in market price, the greater the market's liquidity. Liquidity is measured by the depth of the bids and offers for a security in the market. The expression "visible liquidity" is used to describe the depth of the posted bids and offers for the security.

Investors want to know that their trades are likely to be executed at or near the last sale price. They also want a market that will cope effectively with reasonable order flow, generally without significant price volatility. The more liquidity a marketplace provides, the more these particular needs will be satisfied. Accordingly the more liquidity a marketplace provides, the greater the probability that it will attract more investors' orders.

Ceteris paribus, investors will seek to trade on a marketplace that has greater liquidity than another, and will defect from a marketplace if they discover the market is losing liquidity. To be successful, any marketplace must build up a "critical mass" of orders and be able to maintain that critical mass in the face of competition from other exchanges and alternative trading systems. The venerable maxim always holds: "liquidity attracts liquidity".

In auction markets, "visible liquidity" is provided by investors' limit orders (bid or ask) that are declared or entered in the limit order book. The amount of visible liquidity is vital to the effective functioning and success of an auction market. The trading process in an auction market operates through the

[10] CSA, "Notice of Proposed National Instruments, Companion Policies and Ontario Commission Rule Under the Securities Act, "(1) 22 OSCH (ATS Supp.) July 2, 1999.
[11] Assuming the absence of other factors (e.g., new information or economic developments) that would affect the underlying supply and demand.

consolidation of buy and sell orders (e.g. in the order book), where they interact through an auction mechanism to produce:

i. the bid-ask spread (the “quote" or “current market”);
ii. the size (or volume) of the bid and ask;
iii. executed trades; and
iv. the last sale price.

The more that limit-orders are exposed for auction, the more visible the market's liquidity, and, in turn, the greater is:

i. the efficiency of the pricing mechanism;
ii. the attractiveness of the market to potential buyers and sellers;
iii. the assurance that a buyer or seller will obtain the best available price at the time of the trade; and
iv. the likelihood that an investor has received best execution.[12]

The public reporting of this trading data constitutes a "public good". When this information is reported by a marketplace, all investors benefit. The more orders that are exposed in the auction market, the more likely it is the market will produce an efficient or informed price in relation to the underlying supply and demand for any particular security.

Without full knowledge of the bids and offers that are available in the market, investors will have difficulty estimating a security's true market value and more time may be required to find a counter-party.

Liquid equity markets are characterized by depth and breadth, and by resiliency.

Depth and Breadth

In a deep and broad market, the limit order book will contain a significant number of orders at prices above and below the market price at which a security is currently trading. Further, the orders at any given price level are of substantial aggregate volume and are accordingly sufficiently large to absorb reasonable order flow.

[12] Best execution means the quality of the executed trade which includes price, immediacy and (lack) of market impact.

Resiliency

In a resilient market, a security will rebound quickly from sudden price changes. Temporary price changes resulting from order imbalances tend to attract offsetting orders relatively quickly.

In choosing an exchange to trade on, investors and dealers focus on: the reported bid/ask prices of securities; the reported available volume at those prices (the certainty that orders will be executed at, or near, reported prices); and the transaction costs. These items constitute market quality.

Lack of liquidity in an equity market adversely impacts all these measures of quality. Other things being equal, as liquidity in a market for a security decreases:

i. the spread between the bid- and ask-price for a particular security may widen;
ii. the market's price reaction or volatility to temporary imbalances between buy and sell orders will be greater; and
iii. the costs of trading will be higher.

Liquidity is affected by the overall marketplace structure. In a fragmented market, the resulting reduced liquidity on a specific marketplace may result in inefficient prices. Prices can be lower (for sellers) and higher (for buyers) relative to prices produced by the total unfragmented supply and demand for the security. Increases in the costs of trading may be manifested in these pricing inefficiencies, by increases in the amount of time it takes to fill an order or by market impact. In a consolidated market with all order flow taking place on a single marketplace liquidity (including visible liquidity) is maximized. However, consolidation may be at the expense of other attributes such as fairness and market quality.

ii. Maximizing Immediacy

“Immediacy" refers to how fast an order can be filled, as measured by the amount of time it takes to execute an order at a reasonably acceptable price. The greater the liquidity on the marketplace, the less time it takes to complete a trade.

An investor's demand for immediacy generally depends on the investment management strategy the investor chooses. Impatient traders are driven by a need for quick execution. They are typically willing to

pay for fast execution.[13] Impatient traders would include traders executing hedge transactions, basket trades and liability transactions.

In auction markets, professional market-makers may provide the market with continuous, competitive bids on reasonable volumes to provide this service. In dealer markets, investment dealers stand ready to buy or sell reasonable volumes at stated bid- and ask-prices.

Both types of market structure, however, must deal effectively with investors' demands for immediacy if they are to retain investors' order flow. The demand for immediacy arises because at any particular time .the number and volume of buy orders at a given price level are unlikely to match the number and volume of sell orders. If an investor wants timely execution of their orders, they will route their orders to the market which best satisfies this demand.

iii. Maximizing Market Visibility or Transparency

Market visibility - or transparency as it is sometimes called - refers to the degree to which real-time dissemination of information about orders and trades is made publicly available. The metrics are real time dissemination of pre-trade [14] and post-trade information.[15]

Visibility is measured by the degree to which customer orders are entered into an auction market or central order book. Although there is reasonable, albeit incomplete, post-trade visibility in Canada, pre-trade visibility is low and shrinking. A decade ago, over 50% of Canadian equity trading on both a dollar and share basis was transacted in the upstairs market.[16] Today, that number may be higher. However, the impact on visibility has to be balanced against the liquidity and immediacy that the upstairs market provides.

Shrinking pre-trade visibility is a self-fulfilling cycle. The old expression that "liquidity attracts liquidity" can easily be reversed to "decreasing liquidity causes more illiquidity."

A robust auction market is vital to the pricing of securities. Without visible depth and breadth of orders in a market, investors and brokers are unable to evaluate supply and demand and current prices on an

[13] For example, in the form of an increased bid/ask spread; higher commissions.
[14] Trade volume, bids and offers.
[15] Price, trade volume.
[16] TSE Special Committee Report, Market Fragmentation: Responding to the Challenge, February, 1997, page 66.

informed basis. Reported bid- and ask-prices are the benchmarks relied on by dealers and investors to assess the current market and choose the marketplace to which orders are sent.

However many market participants, with good reason, do not want to reveal their willingness to trade. As Lawrence Harris observes:

> "Some traders expend significant resources to obtain information about fundamental [equity] asset values. Their research may include studies of firm activities, product markets, technologies, leadership and the national economy. These informed traders... attempt to profit on this information through their trading. ..".
>
> "Informed traders profit when the information which they trade upon becomes well known after they have traded…"
>
> "Market trading structures that reveal orders [however] also tend to reveal informed traders' proprietary information before they can trade on it." [17]

Informed investors, especially investors with large volume orders, prefer to trade anonymously and reveal their orders only to those with whom they are trading. They do not want to reveal their willingness to trade because of .the potential loss of costly proprietary information about the underlying value of a security, and the potential market impact of having their proprietary information exploited by other investors and their orders "front-run" [18] by other market participants.

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[17] Harris, L. "Consolidation, Fragmentation, Segmentation and Regulation", Financial Markets, Institutions and Instruments, Vol. 2, No.5 December, 1993.

[18] 'Front-running' on investor's order may be described by the following example. Suppose an institutional investor is known to be highly informed about the fundamental prospects of a particular company. If that investor exposes an order to buy--other market observers and participants may reasonably infer that the current price of the company's stock is under-valued. With knowledge of this information, other investors or dealers may buy the stock at existing prices or slightly higher prices. Potential sellers may also be willing to sell only at higher prices. The ultimate result is that market prices for the stock will rise in anticipation of the execution of the exposed order and based on the identity of the buyer before the institutional investor is able to execute its own trades. This "front-running" of the institutional investor's orders by other market participants, therefore, deprives the informed investor of an appropriate return on its investment in research and the display of its orders provides others with a 'free option' on the stock. This is in contrast to the usual definition of "front-running", which refers to trading by a member ahead of a block order that has been disclosed to it and that is likely to affect the stock price.

iv. Maximizing Price Discovery

Price discovery is the process by which the execution price for a trade is established.

Price discovery relates to a market's ability to price a security at the value which the supply and demand of well-informed investors would place on the security. In the long run, a stock's market value will ultimately be determined by the profitability, stability and growth of the underlying corporation's business and the general forces of supply and demand for equity investments in that corporation.

The Value Investing approach to security analysis, initiated by Benjamin Graham and perpetuated by such luminaries as Warren Buffett and Sir John Templeton, assumes that price only equals value in the long run. However, the effectiveness of a market's price discovery process, on the other hand, relates to the determination of prices at which trades are executed in the short run and even the very short-run (e.g. on a per-trade or hourly, daily or weekly basis. In an efficient marketplace price is, in fact, an unbiased estimator of value at any time.

If a market does not price a security at its proper value, the price discovery process is ineffective or inefficient. This result may occur where there is a large imbalance of knowledge (i.e. some investors are well-informed, while a majority of investors are not); the exchange's mechanics are faulty (i.e. it fails to provide incentives for orders to be shown); the market is subject to manipulation through the dissemination of false information or deceptive trading practices[19]; or the market lacks visibility. [20]

Investors need to know that the price discovery process in any securities market continues to provide a reasonably accurate reflection of the underlying supply and demand for that security in the short run. The structure of the market is a fundamental determinant of the efficiency and effectiveness of the operation of the price discovery process.

An effective price discovery process is, therefore, highly dependent on the aggregate market structure, particularly:

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[19] In the United States the courts have accepted a "Fraud on the Market" doctrine which assumes a presumption of informed buyers and sellers, analysts, other professionals acting to drive price to intrinsic value. If false information is released that renders a market inefficient investors need not show reliance in order to succeed in a law suit. See Cammer v. Bloom, 711 F. Supp. 1264, 1276 n.17 (DNJ 1989).

[20] There is not enough information known about a security to enable investors to assess the real demand and supply for the security.

- the public disclosure and reporting of orders and trading data;
- the degree to which orders consolidate to a central location[21];
- the trading rules governing the way that orders interact; and
- the ways in which investment dealers and professional market makers participate in trades.

In the absence of an effective price discovery process, it is more likely that trades will be executed at prices above or below the level dictated by overall supply and demand. Some participants will do better than they might have expected when they entered the market; some participants, in the absence of an effective price discovery process, will do worse.

Pricing inefficiencies and inability to properly assess supply and demand may cause investors to lose confidence in the integrity of the aggregate marketplace and begin searching for other markets or mechanisms, or they may choose to invest in different securities or assets altogether.

v. Minimizing Transaction Costs

The elimination of fixed commissions, the explosive growth in trading volumes and liquidity of many exchanges and, above all, revolutionary advances in the application of information technology that have occurred over the past three decades have greatly reduced transaction costs.

Transaction costs represent the cost of implementing an investor's investment strategy. These costs are important to investors as they directly reduce the net return on investment. In the case of a professional investment manager, these costs also directly reduce the realized returns against which the manager's performance is measured. Thus, transactions costs are a major factor in determining on which market centre investors or brokers will choose to execute trades.

Transaction costs may be broken down into a number of categories:

- brokerage commissions and/or dealers' mark-ups;
- member firms' transaction fees;
- facility costs; and
- execution costs.

[21] Price discovery may be impaired in a fragmented marketplace unless there is some form of consolidated book or tightly enforced trade-through and best execution rules.

The first three forms are self-evident and generally visible. Execution costs can be broken down further into: the market (or price) impact of executing a trade, and the timing costs of executing a trade.

Execution costs are also affected by market timing because of the possibility that between the time an order is made and a trade is executed, the market price may move against the investor.

Market impact costs represent the potentially largest cost and are the cost component most affected by the structure of a trading centre or exchange. Market impact costs may be defined as the difference between the execution price of an investor's order and the market price before the trade was made. Other things being equal, an order to buy increases the execution price; an order to sell reduces the execution price, especially for larger size orders.

Existing technology allows investors to route orders for immediate execution from remote locations. Many trades are automatically executed, reported and locked into clearing for settlement without human intervention. These changes have greatly reduced the processing costs of both exchanges and market intermediaries. To maintain their market centre position and future competitiveness, marketplaces must continue to embrace new technologies and implement trades efficiently.

vi. Ensuring Fairness

Fairness is the universal applicability of rules and procedures to all market participants. Fairness means meaningful price and time priority (orders on the book should trade) and minimal principal/agency conflicts. Fair and equal treatment for all participants means a set of rules guaranteeing a fair "order displacement" function, whereby existing orders at a given price must be satisfied before a transaction at an inferior price can take place, and where the first order in at a price gets the trade.

To some extent, the concept of "fairness" is a matter of perception and perspective. For investors, a "fair" market is one in which all participants operate under essentially the same rules and conditions and in which no individual or group of participants has advantages over others in terms of access to the marketplace, priority of trade execution or the receipt of market information.

A significant potential for unfair treatment is created if the marketplace is one in which all different buyers and sellers are systematically denied a "level playing field" in terms of availability of market participants.

For example, if two investors simultaneously place orders for the same stock and one order is filled more quickly and at a superior price than the other, the market would be deemed as unfair. Similarly if Mr. X places an order to buy at $5.35 when the current quote is $5.20 to $5.40, and an order is subsequently filled at $5.30 and Mr. X's order is unfilled, Mr. X's order has been traded through. He would indeed assume that he had been treated unfairly and may seek out a new marketplace where the trading rules and trading executions were more fair and transparent. If the members of a marketplace are seen to have advantages[22] most people would consider the system unfair.

Internal fragmentation impairs the universal application of trading rules and makes the market less fair. For example, suppose investor Y is looking to buy 10,000 shares of company A stock. The stock is quoted at $20 bid, $20.50 offered. "Y" enters an order at $20.25, establishing time priority. Investor Z decides to offer his stock at $20.25. Instead of entering the order on the exchange, investor Z's trading desk buys the stock for its own inventory or crosses the order with one of its own clients. The result is that Y's order is not filled, time priority is essentially not honoured, and Y is not rewarded for improving the market. Price and time priority are the cornerstones of an efficient central auction. Investors lose confidence in the market when these are circumvented. On the other hand, dealers do provide liquidity to the market by using the firm's capital to buy the shortfall when a client's order cannot be executed in full on the exchange.

Specific concepts of fairness are embodied in a marketplace's primary and secondary priority trading rules.

The primary trading priority rule asserts that the order at the best price should have priority over orders at inferior prices. Buyers bidding a higher price are given trading priority over those bidding a lower price; sellers asking a lower price are given priority over those asking a higher price. Simply put, fairness dictates that the best-priced order trades first. The perception or the reality that primary priority trading has been violated[23] would be clear evidence of an unfair market.

Secondary trading priority rules specify the sequence of trading for orders entered at the same price. The most common secondary trading priority rule is time priority: the first orders entered are executed before orders entered later. This principle recognizes it is unfair to allow late buy- or sell-orders to "jump the queue" and to be filled before previously submitted ones. Since prices are continuously changing, filling

[22] Such as superior access to the market, priority of information, receipt of information ahead of clients
[23] Such as through a trade-through.

a late order ahead of an early one can significantly influence investors' perception of the fairness in the marketplace.

Alternatively, priority rules may give priority to orders based on their benefit to the market. For example, orders placed in the Order Book provide useful information to all actual or potential participants in the marketplace, and investors benefit from the display of large volumes. Therefore, it is fair to require these orders to be filled before any off-exchange orders at the same price are filled.

When an investor gives an order to a broker or dealer, the broker or dealer is placed in the position of agent for the investor. As the investor's agent, the broker or dealer has a legal obligation to act in the investor's best interest and not in the broker or dealer's own interest. As a matter of law, this obligation of an agent to his or her own client has long been recognized. [24]

A broker is expected to act in the best interests of his or her customer and not realize any private gains that might have been obtained for the client. To fulfill this obligation, a securities firm is obliged to seek out the best possible execution for a client's order. If a retail investor places an order with a brokerage firm and that order is subsequently crossed against the firm's own inventory, can the broker readily establish that he exerted best efforts on behalf of his client and received the best possible price?

vii. Ensuring Integrity of the Credit Ring

The integrity of the credit ring may be defined as the certainty with which, once a trade has been executed, the buyer and seller can expect their trade to be settled. Without such certainty, potential participants will be reluctant to trade in a market because of the risk that the counter-party will not be able to complete the trade.

Marketplace members should guarantee that trades made on behalf of their clients always settle promptly. This can be ensured through margin requirements and capital requirements imposed on members and suitable regulatory oversight from the prime regulator and self-regulatory organizations.[25]

[24] As Lord Lougborough stated in 1889: "... he, who undertakes to act for another in any matter, shall not in the same matter act for himself".

[25] Furthermore, clients' assets held at a member firm are insured by the Canadian Investor Protection Fund (CIPF) in the event that a member becomes insolvent.

Investors will prefer to trade in equity markets where they are assured that trades will settle. If this attribute is not provided, investors must bear additional costs in the form of: determining the creditworthiness and trustworthiness of potential counterparties; or losses caused by counterparties who fail to settle.

Depending on market structure, investors may bear these costs directly, or they may bear them indirectly through their participation in a clearing house or insurance pool that guarantees performance.

viii. Maximizing Integrity of the Marketplace

The integrity of the marketplace for stocks may be defined as the level of general confidence investors and the general public have in an exchange's marketplace. This confidence is closely associated with investors' perception of the market's fairness.

If the public perceives that trading in the market is open to manipulation through the dissemination of false information or deceptive trading practices; that insiders consistently are able to take advantage of their special knowledge or access to the market; or that the market systematically discriminates against one group of investors over another, they will lose confidence in the market's integrity. Once this confidence is lost, the public's willingness to invest savings in the market will quickly erode.

The maintenance of market integrity is, therefore, critical to an exchange's success. A crucial ingredient is a marketplace's ability to establish and enforce rules and regulations concerning: trading ethics and procedures; standards of conduct for member firms and their employees; and proficiency requirements.[26] Market integrity itself also implies tradeoffs. For example, the requirement that all block trades be subject to full interference might be fair, it could very well be at the expense of the liquidity of the market.

If an exchange's ability to provide effective regulation, market surveillance and enforcement of both market activity and the conduct of its members and their employees is compromised - through insufficient resources, difficulties of detection or through the availability of alternative trading arrangements outside the exchange's control - there is a significant risk that the market's integrity will not be maintained.

As for an ATS, it has to offer its own services or piggyback on another clearing system.

[26] These can be outsourced to SROs.

Market Regulation

The primary purposes of securities' market regulation are: (i) protection of the investing public; (ii) ensuring public confidence in the marketplace; and (iii) fostering the optimal allocation of financial resources.

Investor protection means that investors have sufficient information to estimate and understand the normal risks of different types of investments. Marketplaces need to have sophisticated market surveillance programs to safeguard market integrity. Surveillance monitoring identifies trading that may negatively impact market integrity, including volatile prices, rule violations, insider trading and unequal information.

4. Conclusion

An ideal market structure would provide the "right" blend and balance of the service qualities and attributes preferred by each of marketplace's customers. This result follows from the fact that market participants seek varying degrees of performance from each attribute, depending upon their specific circumstances, trading objectives and the prevailing market conditions.

The dilemma facing policy makers and marketplaces is that these needs and preferences conflict. For example, an investor's desire for anonymity conflicts with the principle of visible markets. A retail investor may, in some circumstances, prefer to forego full price discovery to facilitate a trade (immediacy) in a non-liquid stock. In other circumstances, the same investor might prefer full price discovery and fair treatment, and would be prepared to pay for that service through higher execution costs. Institutional investors, on the other hand, may prefer the timely execution of their trades and may be prepared to give up full price discovery for trade facilitation.

Minimizing costs may conflict with the goal of providing a well-regulated market. Thus, it is impossible for marketplaces to fully satisfy all participants' preferences at the same time. The consequence is that some market participants will inevitably have incentives to seek alternatives which meet their own specific needs, thus fragmenting the market.

The challenge then is to establish an aggregate marketplace in which the key attributes of an ideal market can best be achieved, and which maximizes the benefits to investors, issuers and Canada's capital markets.

A single consolidated marketplace could have serious adverse consequences. Institutional investors have particular liquidity and anonymity needs and sometimes want to trade off-exchange using an "upstairs" or electronic trading vehicle. In fact, a block trade executed off the exchange often may be the most efficient and desirable way to handle the trade from a policy point of view. Managing, rather than eliminating fragmentation, is a viable strategy. The need is to find the right balance.

Institutional investors want liquidity and (sometimes) anonymity. Retail investors want to be treated fairly in a visible market. Dealers want to control their order flow and be rewarded for supplying liquidity to the market. Third-party electronic trading providers want to capture some of the order flow.

Regulators want visibility and an efficient pricing mechanism. No one market, and no one set of rules, can perfectly satisfy all stakeholders at all times.

The Right Market Structure?

An order-driven central auction with a visible liquid order book forms a necessary base for an aggregate market system. However, an order-driven central auction does not meet all participants needs at all times, particularly the needs of institutional traders to execute large volume transactions. Although an auction market best delivers the key attributes of visibility, efficient pricing mechanism and fairness, a hybrid market incorporates the advantage of both agency auctions for smaller orders and dealer markets for larger ones and provides flexible market structure that best meets the diverse range of investor's needs. Extremists present interesting arguments. The pure consolidation school argues that all central markets should be subject to universal order exposure or interference rules, thus eliminating block markets and other forms of internalization. In my opinion, this would constitute throwing the baby out with the bath water. The block trading market is often the most efficient trading forum for institutional investors.

On the other hand, the pure fragmentation school argues that people should be allowed to trade wherever they wish, and that ultimately the best mechanisms and best regulatory regimes will prevail. The risk of this structure is that instead of the higher standards prevailing, we see a “race for the bottom” where the least desirable, least protective and least effective regulatory rules emerge.

Ultimately, it is the multiple marketplace market that is, in my view, ideal; in other words, a chooser market in which a central order-driven market is augmented by a number of alternate trading systems with different features and protocols.

The benefits of such a chooser model is:

- Trading Flexibility: As pointed out above, there are many different types of traders with different needs. In this "chooser" regime, investors will gravitate to the market that appeals to them. For example, institutional traders who need anonymity and quick execution for particular trades will use ATS’s in the form of single-price auction systems or the upstairs market.
- Service Unbundling: Investors will pay for what they want. Investors who have low needs for market surveillance and/or investor protection might choose an ATS that practices little surveillance. On the other hand, an investor interested in a visible auction for governance

purposes, or a high degree of protection, will utilize a conventional trading system or a highly regulated ATS.

- Anonymity: By negotiating on an ATS, a trader avoids disclosing their intentions to the market, mitigating the possible market impact of the order.
- Improved Aggregate National Liquidity: If ATSs extend their operations in Canada this could encourage incremental trading and enhance aggregate liquidity.
- Tighter Spreads: With increased competition for order flow, dealers and market-makers will tighten their spreads in order to compete.
- Lower Trading Costs: A more competitive model would mean increased competition for order flow and reduction of the role of intermediaries. This in turn could well mean lower trading costs.

The Cons Include:

- Possible Disenfranchisement of the Retail Investor: The competing liquidity pool approach raises the possibility that trade execution priority rules will be further debased and that a two-tier system will be the inevitable result, with institutional and retail investors largely segmented except for the occasional large retail trade.
- Lack of Rules: The danger of a "chooser" system is that of a "race for the bottom" where the liquidity pool with the least desirable, least protective and least effective regulatory rules emerge. Obviously the regulatory regime effectiveness is essential.[27]
- Reduced Price Discovery: Under a chooser regime, "free riders" on ATSs could be using an exchange to establish prices for trading. Since liquidity is allocated or split among a number of competing markets, price discovery is diminished.
- Regulatory Cost Allocations: Will ATSs bear their fair cost of secondary market integrity? If they don't, they can operate more cheaply than an exchange because of reduced or no regulatory costs.
- Information Segmentation: If non-users are excluded from quote information, does the market lose some visibility? Could a "chooser" system cause information fragmentation as a result of orders being dispersed to many locations?

This "chooser" style of market model will foster innovation and competition and may result in more competitive pricing, but may also result in lost liquidity and efficiency as the aggregate market becomes

[27] This raises the question of whether the existing Universal Market Integrity Rules (UMIR) are sufficiently robust as to allow ATSs to compete effectively in Canada.

less visible. Order flow and informational fragmentation will be significantly increased. A two-tier or retail/institutional investor market is a possible result.

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