TRADING TALK

Market Structure Analysis & Trading Strategy

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A Year in Review (Sort of) and a Holiday Gift List for the NYSE

The most chaotic year for market structure in recent history is finally coming to an end and we thought it would be helpful to recap some of the high points (in our own meandering and indirect way), take a look at where we are now, and hopefully add some new insights. Appropriate for the season we begin with a light-hearted, tongue-in-cheek look at how we've gotten to where we are on the market structure front and then get down to business. We do this with the full understanding that some of you will soon be screaming at your computer screen that we're completely nuts and demand to know why we've left out so many relevant facts (admittedly, they didn't fit into the story very well or just made it a tad boring). For you, we suggest immediately skipping to the more serious and thorough part of this piece. For the rest of you, we hope we can bring a smile to your day before subjecting you to that.

And one more caveat before we begin. With the NYSE/Arca pairing just overwhelmingly approved by their respective members and shareholders and the merger scheduled to close in January, the good news is we are one-step closer to knowing what the new trading landscape will look like. The bad news is that we had hoped things would be more settled by now so we could start talking substance and give practical trading advice on navigating the new order types and choices that will exist. That lament must sound like a broken record from us by now and we apologize. So, yes, we are warning you that you are in for another piece from us that focuses mostly on big-picture observations and implications of the ongoing market structure changes. In particular, we'll spend a lot of time on trying to point out what we believe the NYSE must do if it is to prosper in a post-Reg NMS world.

A Tale of Two Markets: And You Thought They Knew What They Were Doing

"It was the best of times, it was the worst of times, it was the age of wisdom, it was the age of foolishness…" Forgive the cheesy allusion to Dickens' A Tale of Two Cities, but it sort of works with what we're about to say and it is the right season for Dickens, isn't it?

The fight for market share is about to heat up and quite possibly the winner will be the one who gets it wrong the least. Trading stock is a relatively simple game, but understanding why one system is better than another is mired in complexity. The marketplace game is still the NYSE's to lose and it often appears they are trying their best to do just that. Looking back in time, we start with two very different market models or paradigms. One is a manual auction where most of the liquidity is displayed to no one and buyers and sellers are forced to negotiate an equilibrium price in an open environment inviting all competitors to try to take the trade for themselves by offering better prices--think the NYSE any time prior to 2001. Strategy, reputation and capital, all play a part. Our second basic system is fully automatic where all liquidity is displayed, speed rather than competition determines who wins the trade, and equilibrium of supply and demand is neither sought nor achieved—think a green-screen Instinet terminal circa the 1980s. That's the basic philosophy of each system, but now let's mix them up to see what happens.

The automated market makes the first move. Realizing that its requirement to display all available liquidity is keeping investor's true intentions away from the marketplace creating unacceptable volatility, it changes the game. New order types are created to allow brokers to hide the bulk of their liquidity. It works. More of the total order is sent to the market resulting in less

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volatility.

Now it's the auction's turn. It already has a much higher percent of the order in the marketplace due to the broker's ability to display any amount of her intention she wishes and change her strategy at will. Because of this and the market inviting all interested players to compete, and the resultant greater liquidity and lower volatility, its market share becomes the envy of the industry. Pressured by its largest players, it creates an automated market product that only recognizes displayed liquidity and doesn't invite any of the other interested players to compete. This new product is limited to just over one thousand shares, and the players who demanded it never use it. The reason, it turns out, is that all players in both markets are supposed to get the best prices they can. By not inviting all players to compete, the largest players realize there is no way they can get the best price and stay away (or at least they do when the NASD reminds them of this obligation shortly after the product launch—see inset box on "Best Execution"). Instead of just ending up on the junk pile though, the new product takes off. Arbitrageurs and momentum players don't care about price as much as the relation between investments and the direction of movement. When a situation meets their requirements, all they want is speed, certainty of execution and low cost. The market seems to forget that its primary function is to get the price right and welcomes the new players with open arms.

Meanwhile, our automated market has had a taste of success with its introduction of discretionary orders and continues to pursue new order types in an attempt to look more like the manual market and attract some of its order flow. It even introduces open and closing crosses to mimic the manual market's efforts to bunch buyers and sellers to find a momentary balance of supply and demand. It watches closely as the manual market prepares to increase its automated component in spite of the potential to weaken competition and increase volatility. The automated market couldn't be happier.

Keep in mind that momentum players and arbitrageurs don't enter large orders so the expansion of auto-ex in the manual market really isn't for them. You got it. The expansion is for large brokers and their customers who never used the original system in the first place. Remember best execution? Maybe the manual market figured that if it reduced competition, the difference between its automated price and its manual price wouldn't be so great and then the large firms wouldn't be so worried about using the automated component of its market. Two small problems here. First of all, the primary function of the market is to get the price right. Second, the manual market's largest single competitive edge against the automated market is its superior pricing. Now wouldn't you think the S.E.C. would be up in arms about weaker pricing and less competition? So far, radio silence. After all, they have a right to get it wrong too. Their job is to encourage more efficient markets and protect the public investor. Their primary tool is to insist on thorough surveillance and enforcement

Best Execution

As an example of the lack of clarity we still have (and may continue to have) despite hundreds of pages of Reg NMS, we thought we would take a brief look at best execution responsibilities in a post-Reg NMS world. At first glance, Reg NMS would seem to simplify things. The new trade-through formulation will offer protection to the National Best Bid or Offer (NBBO) as long as it is an immediately accessible quote, and market centers will be required to route out to the NBBO if they aren't willing to match it. Seemingly, investors can sit back and relax as smart-order routers, broker-dealers and market centers have to make sure they get best execution with these rules, right? Wrong. Like the NASD's pronouncements aimed at discouraging wide-scale internalization at the NBBO around the time of the launch of the NYSE's first auto-ex product, Direct +, things are a lot murkier than they at first appear ("executing small orders on an automated basis at the NBBO may not satisfy a member's duty of best execution… [because] prices better than the NBBO may be readily accessible to the member.")

Let us walk through two examples in a post-Reg NMS world, one of "posting" and one of "taking" liquidity. In the case of "posting", whether driven by attractive rebates, a desire to increase the value of an equity investment by delivering order flow, a disdain for the NYSE or a genuine appreciation of one market's functionality advantages over another, investors and broker-dealers may decide to post their listed orders on the regional exchanges or ECNs. Since Reg NMS essentially demands that all markets are linked and the best price wins, posting at any market center would seem safe and consistent with best execution duties. Not so fast. Choosing to post elsewhere if the NYSE's Hybrid sweep functionality is offering price improvement to orders on the book on a consistent basis could compromise best execution obligations for instance. The picture is similarly muddied with respect to "taking" liquidity. For example, if statistics show that one market center offers price or size improvement 20% of the time, whether that be an ECN's reserve and discretionary features or those of the Hybrid, choosing to route first to another market center with the same or an even better advertised quote would presumably be violative of best execution duties. Similarly, if a market center stops offering immediately accessible quotes to balance supply and demand when a stock is particularly volatile, routing there may in fact be what is demanded by best execution responsibilities even if automated quotes are available elsewhere. Hopefully, the S.E.C. or NASD will address these issues of best execution before going live with Reg NMS to avoid any unnecessary confusion and after-the-fact questioning of routing decisions.

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of law and rule. To play our game you must be at least a little confused and the S.E.C. wants very much to play. They decide that their primary function is surveillance and ignore why they surveil in the first place. The manual market is by far the most difficult in terms of surveillance so they pass new rules that strongly encourage automation whether it improves pricing and dampens volatility or not.

In the meantime, our automated market continues to embrace hidden liquidity and encourage greater competition with more new discretionary order types and is even talking about launching an intra-day cross, in essence validating the benefits of the manual auction that for some reason can't seem to recognize its own value.

We hope you've enjoyed the game so far, because there is no sign of the players changing the way they are playing it any time soon.

Getting Down to Business: A Christmas Wish List for the NYSE

OK, now that that's out of our system, let's get down to business. With all of the criticism we have for the NYSE, some of you may think we'd put coal in the NYSE's stocking this Christmas. However, we've decided to give the gift of unwanted advice (no gift receipt included so it's non-returnable). In fact, we'll take advantage of the fact that the start of Hanukkah is falling on December 25th this year to coincide with Christmas for the first time in almost 30 years and give the NYSE eight gifts, one for each night of Hanukkah. OK, make it seven--we ran out of gift ideas. Here goes: 1) Start with the big picture and don't forget your true value-add. 2) Don't be pressured into cost-cutting if the cost savings will be offset by a decline in your value proposition. 3) Don't get tempted by further acquisitions. 4) Don't be distracted by competitor initiatives such as rebates that are self-destructive. 5) Be creative and you can bring back blocks. 6) Fix the specialist business model—it's broken. 7) Think twice before competing with your customers. Let us take each briefly in turn.

First, the big picture. If the NYSE keeps on referring to this, this one will be the gift that keeps on giving throughout the years. It's been clear to us for a long while (and we have written about it before and now poked fun at it above) that the two distinct paradigms of full automation and manual auction that exist in theory are morphing and the lines between them are getting less clear when they are translated into actual business models. We believe that that can be a good thing if combined properly. With respect to the NYSE in particular, we believe that unfettered auto-ex is valuable and serves a large segment of the trading community who wants more control over their trading and addresses the most justifiable criticism that has been levied against the Exchange over the years (the risk of missing markets when availing oneself of the Exchange's advertised liquidity, accurate price discovery and potential for price improvement). The problem in our opinion only surfaces when the pendulum swings too far and auto-ex is pursued at the expense of accurate price discovery and attracting liquidity, which we think the NYSE is dangerously close to doing with certain aspects of the Hybrid. Let us explain with an example.

In the Hybrid, specialists and floor brokers will be given the opportunity to interact with incoming auto-ex orders by entering their levels of interest and what they would do via their API algorithms and handheld-controlled broker interest file, respectively. Requiring these NYSE participants to pre-program their interest is certainly appealing on the surface from a fairness standpoint, but it results in far fewer trading opportunities by the nature of its design. Remember, meaningful liquidity is reactive and automated markets force participants to predetermine their interest levels. This ultimately disenfranchises large pools of liquidity, resulting in less accurate price discovery. A more sensible approach to the Hybrid in our opinion would be an auto-guarantee product in which an incoming auto-ex order would be guaranteed a price no worse than the advertised quote, but then there could be a "free-for-all" where the most aggressive party in the crowd could price improve by reacting to the incoming order (as opposed to having to pre-program its interest). Obviously, there would need to be some type of system to prevent the same stock from trading twice, but that's relatively easy. This approach would create a much, much greater number of trading opportunities. And frankly this approach could even be employed without a physical trading floor—the key to it is the concept of allowing reactions to incoming order flow (after it is guaranteed) rather than requiring *ex ante* layering of orders/via reserves and algorithms.

Prior Analysis

Thinking Outside the Black Box: Accurate Price Discovery and Certainty of Execution May Just Be Compatible After All,

March 23, 2004.

Some might complain that the liquidity provider is disadvantaged through this increased competition approach. We would argue, on the other hand, that in the vast majority of occasions posting of liquidity on the NYSE is merely an attempt to draw contra-side liquidity to the table, which would still have been achieved even though the posted

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order may have missed the individual execution. In any case, we must remember that as traders we are the ones who would like to get the price wrong--to our advantage of course. A marketplace, however, must try to get the price right, which is impossible if it gets trapped into limiting competition or favoring one side of a trade over another.

We recognize that this ship has probably sailed with the Hybrid as advanced in its planning as it is (a pilot actually went live on the floor last week), but we bring up this point again for a reason. We want to remind the NYSE and market participants who care about better markets that the NYSE is in serious danger of losing its competitive edge. The current design of the Hybrid reduces the number of trading opportunities and therefore weakens price discovery, as well as the ability of the centralized auction to balance supply and demand and dampen volatility. That is the NYSE's core competency and what makes it unique (recall the hedgehog concept in Good to Great for those of you have read Jim Collins' best seller). If the NYSE is not careful and goes too far down the road of auto-ex at the expense of the auction instead of complementing it, the NYSE risks ending up a giant, "me too" ECN. If that happens, it will lose its distinct advantage and massive market share losses won't be far behind.

If we think of our long list of complaints about the specialist system and the NYSE itself, they really have little to do with the theory of a centralized auction, but with a misguided implementation of that theory that many of us believe may end up destroying what is good about the NYSE. There are two key axioms when it comes to understanding liquidity. The vast majority of liquidity is never displayed and that this hidden liquidity is best drawn into the market by maximizing information flow and providing significant trading opportunities to which to react. No better system than manual agency representation in an open competitive market has yet been found that can provide participants with a comfort level that they are receiving a fair price and are not at an informational disadvantage. Automated markets can only be proactive, allowing strategies for anticipated trading opportunities and have no way of providing information about buyers and sellers. Until computers become far more intelligent, we still must resort to manual solutions to disseminate trading information and react to unanticipated trading opportunities. The fact is the NYSE is probably the last market in the world capable of providing this (other than select crossing networks whose success is actually rooted in the combination of allowing for this reactive liquidity and the hiding of intentions, something the exchanges and ECNs aren't providing).

Our second gift of advice, which is related to the first one, but we'll try to make much shorter, is that while cost-cutting will be a priority for the NYSE as it becomes a public company, it must be careful not to be penny wise and pound foolish. Undoubtedly, there will be pressure from public shareholders to eliminate the floor as an electronic exchange will be much, much cheaper to run (a December 12th piece in *Pensions & Investments* already quoted potential activist investors such as CalSTRS and OPERS, albeit more on the governance side of things). There are some who even believe that this has been John Thain's plan all along—sing the virtues of the floor to woo the members before the vote and once that is behind him merge the two platforms with Arca being the survivor. We are not that cynical. Thain may be a fan of Arca from his Goldman days and Gerry Putnam may be convinced of the superiority of his model and the likelihood of its near-term triumph (see his telling *Wall Street and Technology* comments from back in late October "We'll end up with a marketplace that is not an ECN and is not floor-based - it will be somewhere in between," he says. "Eventually, we'll move to one system - shareholders will demand it."), but we believe that the Exchange does understand at least at the 30,000 foot level that eliminating the uniqueness of the Exchange is a sure fire recipe for plummeting market share.

Third, considering Thain's repeated statements about the need for further consolidation in the exchange space and the Arca transaction giving the NYSE the currency to participate in it (see, for instance, his November 10, 2005 comments at the SIA Annual Conference), we think expansion could be very tempting to him. Domestically, where he has commented on the need to link the futures and options exchanges with the equity markets, there are bite-sized acquisitions possible like the International Securities Exchange (ISE). Internationally, with the London Stock Exchange (LSE) on the block for so long and its government actually willing to permit a foreign takeover (which we believe will be a rarity going forward), the rumors about the NYSE's interest can't be dismissed. Merger discussions between Deutsche Borse and Euronext, as well as the CME's expressed interest in a stake in the NYMEX, will undoubtedly add to the pressure to play with the other big dogs. Frankly, we believe the NYSE simply has too much on its plate to seriously contemplate such moves and should concentrate on getting the Hybrid right for the next year, maintaining market share and exploiting the inherent opportunities that a proper integration of Arca present. However, we would not put an acquisition past the NYSE. Of course, we also worry that the acquisition of a pure

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electronic exchange, which is a description that captures most of the world's exchanges at this point, would also further take the NYSE down the road of going "all-electronic" to its detriment.

Our fourth gift is to advise the NYSE to eschew the rebate pricing structure that the ECNs have just begun to bring over to the listed world. Nasdaq's pilot of a 5 cents a hundred rebate for posting listed stocks began December 1st (see list of stocks to which it will apply at http://www.nasdaqtrader.com/trader/news/2005/headtraderalerts/nysepilot_111405.xls). We have actually objected to this pilot in a letter to the SEC as we believe it will be harmful to the public. Even more recently, Nasdaq's subsidiary INET followed suit with the announcement of a different rebate approach, one which is not nearly so objectionable from a public policy standpoint, but one that nevertheless should not be copied by the NYSE (See http://inetats.com/subscribers/equitytrans/fee/fee.asp. To summarize if you haven't seen it yet: 9 cents a hundred rebate for taking from INET's book, 10 cents a hundred cost for posting to the INET book, 10 cents a hundred for routing to DOT and 15 cents a hundred for routing anywhere else). The NYSE's competitors will continue to throw things up on the wall to see what sticks/works and in our view would like nothing more than for the NYSE to enter the rebate game as that ultimately becomes a race to the bottom with the lowest-cost structure business triumphing (and that will clearly not be the NYSE). Because certain types of order flow might require rebates to be attracted, there will certainly be some business missed. The NYSE should nevertheless stick to its knitting of servicing investors, which tend to be much more concerned with quality executions than making a fraction of a penny for a rebate (and it is really the broker-dealers who receive the rebates anyway, so this structure is not in the interest of institutions in our view—it is also the return of sub-pennies in another form if you think about it).

Fifth, the NYSE needs to seek a way to reverse the dramatic loss of block volume it has suffered over the past several years. The 50% of its volume made up of blocks of 10,000 shares or more in the beginning of 2002 was reduced to almost half that by November 2005 at 26%. With decimalization and the proliferation of algorithms, it is not surprising that the average execution size shrunk dramatically and caught up with the historically smaller average execution size of the ECNs, which initially had been retail-driven. The Exchange actually aided the drive to algorithms by not providing agents with better block trading tools and incorporating a block product into the auction. The NYSE needs to re-focus on bringing blocks back and restoring its image as a place where large negotiated volume can occur. Today, as agents, we seek liquidity wherever it is available and, sadly, on several recent occasions despite being physically in the trading crowd we have found and executed repeated blocks of liquidity away from the floor in crossing networks when there was nothing really happening on the floor. This is disastrous from the NYSE's perspective as it indicates that it has lost the respect of certain block desks and buy-side traders since sometimes they are not even checking for contra interest on the floor before entering orders into crossing networks. We believe it could be possible to put the genie back in the bottle, or at least it's worth a shot. With some very minor tweaks to a couple of order types, we believe the NYSE could harness the discretionary/reserve order types of the Hybrid to create a powerful block crossing network that would not simply rival niche players like Pipeline, Liquidnet and POSIT, but rather constitute game, set and match in the exchange competition for listed share.

Prior Analysis

A Diamond in the Rough: The Potential for a Crossing Network to Emerge from the Hybrid,

September 23, 2005.

Sixth, a word of advice on fixing the specialist system. When we think of business models, the specialist system is our favorite example of getting it wrong, in the language of our Tale of Two Markets piece above. As much fun as it is for everyone to blame the specialists for all of the NYSE's ills, it's by no means all their fault. In fact, their faulty business model has been imposed over the years by the Exchange and it must take a large part of the responsibility for the much needed overhaul. The specialist provides valuable (and often unique) service by providing price improvement, adding to liquidity, bringing buyers and sellers together, providing information about buyers and sellers, maintaining a fair and orderly market to ensure accurate pricing and often acting as agent. The specialist is compensated for none of these services. Instead, their ability to generate income is limited primarily to two situations: (i) when they do nothing as when they execute a limit order that has been sitting on an exchange computer for more than five minutes (oddly, the NYSE charges liquidity providers, rather than rewarding them like the ECNs do) or (ii) when they trade for their own account. The guys who thought this one up could certainly have benefited from a class or two with the late Peter Drucker. Listed companies pay large listing fees to the NYSE. We wonder if they would prefer it if the Exchange used some of that revenue to compensate specialists for serving their shareholders by committing capital when needed and maintaining fair markets. The Exchange for some unknown reason decided long ago that listed companies weren't paying these fees to enhance service to listed company

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shareholders but to help them run the Exchange. They apparently are so committed to this idea that they have petitioned the SEC in the Hybrid proposals to allow specialists to have equal standing with public investors (the listed company's shareholders!) when trading for themselves to establish positions and thus using liquidity instead of enhancing it. It's one thing to have specialists be a liquidity provider of last resort or be able to compete on parity with the public when they are liquidating a position, it's entirely another to let them loose in the chicken coop. It's only later that many will lament the mess caused by feathers strewn about.

Seventh, as it becomes a public company and no longer answers directly to its members (its biggest customers), the NYSE ought to think carefully before competing with its customers. Remember, Nasdaq in essence went down this road a couple of years back with Supermontage by joining the ECNs to add to the decimation of its market maker patrons. And now, Nasdaq-owned Brut has launched an innovative free DOT program that takes advantage of a relic of the NYSE pricing structure that is hard to change because of how it would affect large member firms that the NYSE does not want to alienate. So now Brut can be seen every day among the top 15 volume firms on the NYSE. As this volume grows and is combined with a post-Reg NMS environment and rebates on its parent Nasdaq, this could pose a real threat since these orders pass through the Brut book first before going to DOT (Brut's rationale for offering the service of course). Offering a product free of charge to the buy-side when your largest customer base—broker/dealers— charges the buy-side for it is surely something they can't be happy about. Forgive us for this one—Et tu, Brute?

It's not hard to imagine the NYSE following suit at some point in terms of competing with its customers in some form. For instance, the NYSE's hosting of listed company management in Virtual Investment Forums (see http://www.nyse.com/international/resources/1098814933584.html) may be viewed by the NYSE as a service to both listed companies and investors, but brokers whose livelihoods depend on offering access to management teams to the buy-side may view it differently. Similarly, the NYSE may have a great business opportunity to leverage its brand name by actually getting involved in product creation, such as new ETFs, based on the NYSE Composite or other NYSE-related indices. While this might ultimately be the right choice from an economic standpoint, before it pursues such business opportunities the NYSE ought to think carefully how broker-dealers and large players such as BGI or Vanguard might view them as competitive and adjust their usage of the NYSE accordingly.

We'll end our long-winded NYSE gift list now with a closing thought. We tend to take a long-term view of these challenges and the likely outcome rather than predict doom and gloom. After all, to put it in context, when Dick arrived for his first job at the NYSE in 1969 (the year Joe was born!), he was told that there was no future for the floor. That said, the risk to NYSE market share is greater than at any time we have ever seen and the NYSE must get the Hybrid right if it is to remain the dominant force in trading its own listings. Its competitors are by no means standing still—witness the aggressive moves by Nasdaq in terms of rebates or free DOT over the Brut platform. Focus on what it does best—accurately discovering price and efficiently embracing hidden liquidity through its agency model — along with not getting distracted by the trappings of being a new public company, e.g., a short-term focus on cutting costs, getting bigger through acquisitions, and emulating its peer group, will be the keys to the Exchange's survival and its ability to continue to add value to investors in the 21st century and beyond. Happy Holidays every one!

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