Zicklin School of Business Financial Markets Series

Robert A. Schwartz
John Aidan Byrne
Eileen Stempel *Editors*

Equity Trading Round-Up

Proposals for Strengthening the Markets

Springer

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Zicklin School of Business
Baruch College/CUNY
New York, NY, USA

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To our friend, R. Steven Wunsch

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Preface: Equity Trading Round-Up: Proposals for Strengthening the Markets

Robert A. Schwartz, Speiser Professor of Finance, Zicklin School of Business

The title of our conference this year is Equity Trading Round-Up: Proposals for Strengthening our Markets. I want to start by thanking Larry Tabb of the Tabb Group for his collaboration with this conference. I'm very pleased, Larry, to have your name listed next to mine on the program.

We have an excellent array of speakers, today. I am proud about our keynote speakers: Reto Francioni, CEO of Deutsche Börse; Kevan Cowan, president, TSX Markets and Group Head of Equities at TMX Group. I was just up there about a month ago in Toronto, looking at the Toronto Stock Exchange. Toronto was the first exchange globally to introduce electronic trading. I am also looking forward to another keynoter, Seth Merrin, founder and CEO of Liquidnet. Then, our closing keynote speaker is Tom Farley, President of the New York Stock Exchange.

We owe a huge debt of gratitude, as always, to our sponsors: BATS, BIDS, Bloomberg Tradebook, Canadian Securities Exchange, Deutsche Börse, Instinet, International Securities Exchange, ITG, Liquidnet, NASDAQ, NYSE, PDQ ATS, TABB Group, and TMX Group.

We have a most distinguished and diverse audience here today. It represents many countries and professions. The industry at large—the very backbone of our conference—is well represented. Professors from a sizeable number of academic institutions are here, as are numerous media reporters along with some of my students. Their presence is a great personal pleasure. I don't really recognize my students in suits, and they don't seem to recognize me either. But it's great to see them! [laughter]

Thanks are due also to the *Institutional Investor*. More specifically, to *The Journal of Trading* at *Institutional Investor,* for publishing a panel discussion from our October, 2011, conference.[1] It takes more than a year for us to finalize the editing and to publish the book, so every year we fall further behind. But we have a great record of accomplishment. And, as you sweep back over the 17 years of these

[1] *What Makes an Exchange a Unique Institution?* Robert A. Schwartz and John Aidan Byrne. *Journal of Trading, Institutional Investor.* Winter 2014. Vol 9. No 1: pp 22-23.

books, you are reviewing a very interesting documentary of how our markets have evolved and of how our discussions about them have also evolved.

From that 2011 conference, the aforementioned panel discussion moderated by Andy Brooks, "What Makes an Exchange a Unique Institution," was published in edited form, in the winter 2014 issue of *The Journal of Trading*.[2] And then, guess what? Ian Domowitz of ITG responded to our published piece in a subsequent issue. It was a magnificent exchange of ideas. Ian wrote a thought-provoking critique of the panel discussion. When we wrote a reply to his comment, that, too, was published in the summer 2014 issue of *The Journal of Trading*.[3]

Now let's cut to the chase: "Proposals for Strengthening the Markets." The very title of today's conference implies that something is not working well with our markets. This thought has been clearly and widely expressed by others. As we speak, a great deal of regulatory attention is being devoted to market structure issues. The industry has been most kind to me, and to us all here at Baruch, because the issues are never really resolved. There is always good substance for another Baruch conference.

I'm curious who here has read Flash Boys?[4] Would you raise your hands? I promise I will not ask what you think of it. Thanks, I would say that most of you have read the book. Well, that certainly has generated a lot more attention, a lot broader attention, and a lot more regulatory attention.

I'll take you back to 1975. The US government involvement in market structure issues firmly took hold that year with the enactment of the Securities Acts Amendments of 1975.[5] The government precluded Wall Street from ever returning to fixed commissions. But, for our purposes here, it was Congress's mandate for a National Market System, or NMS, that is most relevant.[6] Did Congress know in 1975 what an NMS is, or should be? I love the idea that, of course, we should have it, but we don't actually know what it is!

Do we know today what an NMS is? What the national market system should be? It's a great term. We have 13 exchanges, and over 40 Alternative Trading Systems (ATSs), all spouting electronic connectivity. Is this a good NMS? I predict that we will get into this issue in our discussions today.

Trading systems, as we know, are complex. Designing a system is far from simple. Interfacing these alternative markets to achieve a robust national marketplace is

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[2] Ibid.

[3] *What Makes an Exchange a Unique Institution?* A Response to Ian Domowitz, Robert A. Schwartz, John Aidan Byrne, and Andrew M. Brooks. Journal of Trading. Institutional Investor. Summer 2014, Vol. 9, No. 3: pp. 12-14.

[4] *Flash Boys: A Wall Street Revolt. Michael Lewis* (2015, WW Norton & Company, LLC).

[5] Federal legislation launched on June 4, 1975, to amend the Securities Exchange Act of 1934. The 1975 amendments instructed the Securities and Exchange Commission to cooperate with the industry in creating a National Market System (NMS) along with an ambitious system for the clearance and settlement of securities transactions nationwide. The amendments also provided for the prohibition of fixed commission rates, promulgated earlier by the SEC in its Rule 19b-3.

[6] Ibid.

not simple. In the face of this complexity, how much freedom should individual venues have to determine their own structure? How much freedom should the broader marketplace have to evolve naturally?

The complex issues that we're facing today put me in mind of the Gordian knot.[7] Remember, the Gordian knot that Alexander the Great slashed with his sword? How do we unravel that knot? What effect did Reg NMS with its trade-through rule have on the Gordian knot?[8] Has the 2005 regulation solved it, or has it further tightened the knot? Perhaps we should call it the government knot. Why not?

Back then, Paul Davis and I warned against the trade-through rule. Paul is with us today. We produced a Comment Letter filed with the Securities and Exchange Commission as part of the TIAA-CREF Comment Letter.[9] Almost a decade later, I have not changed my opinion on Reg NMS's trade-through rule as outlined in that Comment Letter. Paul, can I tell them that you haven't changed your mind either?

PAUL DAVIS: That's correct.

SCHWARTZ: Isn't that something. So, do we all agree that proposals are called for? Let me mention a few proposals that are high on my list. I have divided these proposals into two groups. The first concerns decision-oriented proposals, not specifically about what to do. This group involves how we might best formulate the problems that we are facing. In academic terms, what should our conceptual framework be?

First, it's widely believed that competition is good. Competition is certainly good. Sure, who would debate that? But what kind of competition should we be promoting? Attention always seems to be focused on competition between alternative trading venues. It's gotten the lion's share of our attention.

There's another form of competition that deserves more attention. It is competition within the order flow. Now, if you say that competition within the order flow is good, you are calling for consolidating the order flow and, by extension, for consolidating the markets. So, where do we stand on this competition front? Competition between multiple venues or competition within a venue?

Second, I propose that we focus more on the quality of price discovery. Where's my co-author, Sila Alan?[10] Some of the work Sila and I have done together suggests that the sharpness of price discovery is more important if on public policy discussions

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[7] An extremely difficult problem, or "knot" to disentangle, often used as a metaphor for a challenging problem, which can be solved easily by finding a loophole or by thinking creatively.

[8] Reg NMS (Regulation National Market System) was adopted by the Securities and Exchange Commission in 2005 and introduced 2 years later to further advance the ideals of a national market system. The regulation includes the order protection or trade-through rule; access rule (fair access) to market data including quotations; and rules on sub-penny trading and on market data.

[9] Comments on SEC Reg NMS: The Trade-Through Rule. Paul L. Davis, Managing Director, TIAA-CREF Investment Management, LLC. Robert A. Schwartz, Marvin M. Speiser Professor of Finance, and University Distinguished Professor Zicklin School of Business Baruch College, CUNY. January 26. 2006. http://faculty.baruch.cuny.edu/rschwartz/SEC%20Comment%20Letter%5B1%5D.pdf

[10] Nazli Sila Alan, Ph.D., Assistant Professor of Finance, Fairfield University Dolan School of Business.

than the size of bid-ask spreads. So, why isn't it given sufficient attention? The reason: it's very hard to assess empirically the quality of price discovery. What do you contrast it to? Spreads you can see. And if you can see them, you can measure them. Of course, there are different ways of measuring spreads. Nevertheless, it's tangible. Now, if you can see it, if you can measure it, then you can have policy proposals to shrink it.

What about the stability of the quotes? Our approach to understanding price discovery is to look at the level of intraday volatility. What explains it? Is it bid-ask bounce? Is it market impact? Or is it noise in the price discovery process?

Here is a price discovery related thought. We should take into account the public goods attributes of price discovery. You want good price discovery, not just for the people who participate in a trade. You need it for the broader market. We've noted in a number of places what that broader market consists of. It's people who use exchange and/or market produced prices (for example, derivative pricing, mutual fund redemptions, and estate valuations).

We should explicitly recognize that the continuous trading environment will never be a fair and level-playing field. It's an inherent dynamic of the continuous market. If we keep trying to level the field, to make it fair, if we keep that as our goal, it can have what in medicine is called side effects. In our field, it's called unintended consequences. We should keep that in mind.

I suggest that we rethink the use of the time clock. Given our ability to measure time in miniscule fractions of a second and because we can track the actual sequence of events in milliseconds, the sequence of order arrivals matters in these extraordinarily small intervals of time. I will repeat: the sequence matters even when orders are separated by only microseconds. In the days of yore, when activity would really heat up by a specialist's post on the floor of the New York Stock Exchange, the specialist would say, "Whoa, whoa, whoa, there's a bunch of you. I don't know who is pairing off with whom, I don't know the price, we have to find it, we have to deal with it." So the specialist would deal with the crowd and find a price. I was there back in the day. I saw it happen. Back then, the market would effectively transition into a call auction. But with electronic trading, that doesn't happen today. With the super rapid time clock, you can separate orders according to their sequence of arrival. Does this make sense? Is it good to do this? Yes, if it's a horse race. In horse racing you want to declare a winner, and there's great economic value to being the winning horse. If trading is a horse race, wow, then my horse might be able to get there first—and win by a nose. Wow, I could win by a millisecond! I win, because the sequence of arrival matters, because the sequence has economic significance.

This puts me in mind of a story. It is about two campers in the woods of Maine. Two campers. Their names, Mike and Louis. They were in their tent when Louis heard a thrashing outside. He stuck his head out and saw a bear. "Mike," he shouted, "there's a bear out there, we'd better get out of here." Meanwhile, Mike was putting on his shoes. "Michael," Louis said, "why are you putting on your shoes, you'll never be able to outrun the bear!" And Michael responded, "I don't have to outrun the bear, Louis, I just have to outrun you."

Here is my last conceptual framework proposal: We need an environment that generates meaningful innovation. Two problems, in particular, still confront us: One, what is the best way to handle large orders for all stocks; and two, what is the best way to trade small caps? We all know about this. I am simply underlining them.

We now have over 40 ATSs and dark pools. How many of them represent truly different ways of trading? Is it competition? When you take microeconomics at Baruch or elsewhere, and you talk about competition, it is generally seen as a way to drive down prices. In the real world, in our world, competition should very much be in terms of product quality. Do we benefit because the number now is 40-plus instead of, let's say, 10 or 15? How many do we need for inter-market competition to be vibrant? I have three specific structural proposals. One I have advocated for a long time, and that is call auction trading. A call auction is a way of consolidating liquidity. It delivers temporal consolidation. I believe that attending that temporal consolidation will be spacial consolidation. When properly combined with continuous market trading, a call auction is a viable alternative that I'd like to see people use more.

Call auctions underscore two other proposals I have advanced. One is supported by my work with Liuren Wu; it involves what we call "staccato trading." How many of you were music majors? Do you know what staccato means? It's da-da-da-da-da instead of mmmmmmm. For us, it is point in time trading, not trading at any moment in continuous time that a buy and a sell order cross.

To illustrate, let's assume a 1 s interval. Every second, you batch the orders. All orders that arrive within the same second get the same timestamp. Then, within a 1 s interval, there is no significance attributed to the sequence of order arrival. All orders with the same second that match or cross are batched together, and executed at the same price according to standard call auction principles. It is in the same spirit of what specialists used to do.

Third is a proposal that I first thought of and put forth in 1988 and have resurrected again. Sila Alan is a partner in this project, so too is John Mask who was at Deutsche Borse during our collaboration.[11] In this proposal, I suggest corporate involvement in liquidity provision. I will not go into it any further now because I don't want to front run what Sila might say on her panel. And Sila, if you don't say enough about it, I promise I'll ask you a question.

However, I will say now that getting listed companies involved is a startling idea. The companies say, why us? That's not our job! Yet, it's their stock and, frankly, I think that they should care. They should care about the accentuation of intraday volatility. They should recognize that price discovery is a public good. And they should know that they are in the catbird seat. They are in the best position to guarantee optimal provision of something that is a public good.

Now I will do something that is a source of great pleasure for me. I will introduce my friend Reto Francioni of Deutsche Börse. Reto, I so very much appreciate your

[11] *A Liquidity Program to Stabilize Equity Markets*, *Journal of Portfolio Management*, August, 2014. Nazli Sila Alan, Fairfield University, John S Mask, Deutsche Börse AG, Robert A. Schwartz, Baruch College—CUNY https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2495819

presence here. I know you flew into New York on a late afternoon flight yesterday and are flying back to Frankfurt in an afternoon flight today. And Reto is here just because of us. This is Tuesday; he gets back into Frankfurt on Wednesday. He then goes to Berlin. I did not have the courage to ask him what he's doing on Thursday. Reto, please come up here, my friend.

New York, NY, USA Robert A. Schwartz
Rockaway, NJ, USA John Aidan Byrne
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Chapter 1
Trading, Clearing, Custody, and the Worldwide Evolution of Exchanges as Unique Organizations

Reto Francioni

There is a singular battle among exchanges that never ends. This battle is an eternal fight for the lifeblood of any exchange—it is for liquidity and order flow! And, by the same token, institutional investors at the other end of the value chain—that is, hedge funds, mutual funds, and other big investors—are also fighting each other for the generation of order flow.[1]

Trading, and the creation and/or concentration of liquidity, is just the first link in this same value chain. Since we are also talking about regulation at our annual Baruch conferences, we have to remember some key developments. For instance, in Europe, you will see the vital role of central counterparties—pools of liquidity providers—as the second link in the value chain. If you want to trade in international markets, clearing services are a perquisite. Clearing is primarily about managing counterparty risk, usually on a state-of-the-art, real-time, online platform, so that the data on trades can be used by the markets for their risk management.

Clearing houses also deal with market risk. If you accept a specific product at your clearing house, you can sum it up, see the key players, and all the positions that have accumulated in that product. You can run stress tests to evaluate potential outcomes under different market conditions, and impose margin calls on clearing members accordingly. In other words, you can estimate the market risk associated with the product and the market players. At the end of the day, clearing houses play a major role in preventing the domino effects that can harm financial markets.

Custody is the third link and the third liquidity pool in the value chain, where this fight for liquidity takes place. And we are talking big volume. For instance, assets

[1] In the US markets, for example, brokers are clearly competing to capture the order flow of retail investors, either by matching transactions off exchange and capturing the spread, or else oftentimes by routing the flow to an exchange that pays the most competitive rebate within the regulatory rules.

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