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Subcommittee on Capital Markets and Government Sponsored Enterprises

"Market Structure: Ensuring Orderly, Efficient, Innovative and Competitive Markets for Issuers and Investors"

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Chairman Garrett, Ranking Member Waters and members of the subcommittee, thank you for convening today's hearing on equity market structure. I am pleased to offer the views of Rosenblatt Securities about this topic.

My name is Joe Gawronski, and I am Rosenblatt's president and chief operating officer. Rosenblatt is an agency broker serving institutional investors in the US equity market. We are pure agents, who seek to execute trades on the best possible terms for our clients. We do not engage in proprietary or principal trading, or own or operate any exchanges or dark pools. Rosenblatt is also a leading global authority on market structure. Traders, investors, exchanges and governments all around the world rely upon our independent, granular analysis of the rules, regulations, competitive dynamics and behavior of participants in equity and derivatives markets globally.

We have studied extensively the massive changes to US equity market structure that have occurred since the US Department of Justice alleged widespread price-fixing among dealers on the Nasdaq Stock Market in 1996. We've also lived through them, as brokers representing institutional orders in the market.

We believe that there are **two major points** regarding market structure that must be understood above all others by the Subcommittee:

First, today's market structure is a Rube Goldberg of sorts. It is the product of a gradual, 15-year evolution, during which government repeatedly acted in big ways and market forces repeatedly reacted accordingly. Each time the industry changed its behavior in response to a new regulatory, legislative or judicial mandate, practices and structures sprung up that upended decades, even centuries of established practice. And these consequences, some of them unintended, triggered the government to revert with yet another round of fresh rules addressing the new order. The result? Today's profoundly complex, patchwork market structure is certainly not what one would design if starting with a blank slate.

But despite its complexity and the largely *ad hoc* way in which it was created, modern market structure generally results in better outcomes, for both retail and institutional investors, than what it replaced. This is the second major point we believe the Subcommittee must understand above all others. With apologies to

Sir Winston Churchill, what we have today is the worst market structure possible — except for all the others that have been tried.

Importantly, this does not mean that things are perfect. Indeed, there are a few critical, problematic gaps in today's structure that merit exploration by regulators and legislators for potential fixes. Among these are the rules regarding off-exchange trading, safeguards against systemic risk and the quality of markets for shares of smaller companies.

Now I'd like to elaborate a bit on the first point — that today's market structure is the product of a 15-year cycle of government action and market reaction. This began in 1997, with the imposition of new "order-handling" rules following the price-fixing settlement between the Justice Department and the Nasdaq dealers I mentioned earlier. Dealers were required to display to the market customer limit orders that were priced better than their own, proprietary quotes. Rather than narrow their own quotes on the Nasdaq system, the firms did this mostly by shipping these orders to electronic limit-order books known as ECNs. The ECNs soon multiplied, dreamed up new and creative ways of attracting orders from other market participants and by the end of 1999 had captured one-third of the volume in Nasdaq-listed stocks.

In that same year, 1999, the SEC responded to the new (and mostly unexpected) popularity of ECNs by passing Regulation ATS. This new rule allowed ECNs and other alternative execution venues to operate under a lighter set of regulatory requirements than those applied to exchanges. One of these ECNs, Island, developed a new way to lure customers into posting limit orders on its book — pay them a rebate every time another customer accessed one of those quotes. This was the beginning of the so-called maker-taker system under which most stocks in the US and, increasingly, other parts of the world, trade. Also in 1999, GETCO and Tradebot, two of what are today the world's biggest automated market-making firms —often referred to as high-frequency traders — were founded. Firms such as these often gravitated to the new ATSs, which generally were more innovative, tech-savvy and responsive to customer needs than the incumbent exchanges.

Traditional dealers were marginalized by these new rules and the market's reaction to them. The final nail in their collective coffin came two years later, in 2001, when the markets finally implemented Congress' mandate to move from quoting prices in fractions of a dollar to using decimal pricing. With the minimum price variation now just one penny, down from 12.5 cents[1] (1/8 of a dollar) in the old order, and new types of firms able to compete with traditional dealers by quoting narrower markets, the "spread" between the best bid and best offer prices available for investors to access shrunk dramatically. Traditional dealers could no longer earn suitable profits from these spreads, and changed their business models as a result. By 2003 firms

[1] Technically speaking the minimum increment had narrowed to 1/16 of a dollar starting in 1997, when Bernard L. Madoff Investment Securities began making markets in 1/16 increments. Regional exchanges, Nasdaq and the NYSE later followed.

such as Goldman Sachs, Morgan Stanley, Merrill Lynch and Credit Suisse First Boston were abandoning principal trading in favor of charging agency commissions for Nasdaq-listed stocks. They laid off hundreds of equity trading floor personnel and replaced them with computerized algorithms, which chopped big institutional trades into small pieces to be executed over time.

At the same time, HFT firms such as GETCO and Tradebot were beginning to fill the market-making niche left vacant by the Nasdaq dealers. With the minimum tick just one penny, instead of a *de facto* 25 cents in the pre-Justice Department days, these new market makers earned far less per share than did their predecessors. As a result, they had to trade more frequently to amass sufficient profits. The average trade size in the market came down, and trading volumes began to rise. By 2005-2006, HFT and HFT-related firms like Wedbush Morgan[2], Citadel and Automated Trading Desk became firmly entrenched in the ranks of the top liquidity providers for Nasdaq-listed stocks.[3]

Institutional investors, who had become accustomed to an average trade size of 2,000 shares or more in the old era, and plentiful block liquidity for even larger trades, were confronted with a completely new market structure and needed to interact with this new type of liquidity using different tools and tactics. Institutions began using the algorithms offered by the big investment banks that had once committed capital *en masse* to facilitate asset-manager orders. This only made the ground more fertile for the automated HFT firms that today account for at least half of US equity volume.

Then, starting in 2007, the SEC began implementing a sweeping set of equity-market-structure reforms known as Regulation NMS. These were designed to better knit together markets that had become increasingly fragmented as a result of the limit-order-display rule and Reg ATS, and to bring to NYSE-listed trading the more-automated style and structure that grew to dominate the Nasdaq market in the years following the Justice Department settlement. The most important element of Reg NMS was the dictum that manual, or "slow," markets would not enjoy protection against traders executing orders on other exchanges or ATSs at inferior prices. This effectively forced the NYSE to move from a manual to an auto-ex structure, making it possible for the first time for institutions and HFTs using algorithms to trade NYSE-listed shares on the same electronic exchanges and ATSs that they'd been turning to for several years already in the Nasdaq-listed world.

This is not a comprehensive account by any means — to provide that would require more of your time, and patience, than is available in this setting. But it is essentially how we got to where we are today. As you can see, the current market structure has been patched together over many years, with the industry reacting to significant government reforms in ways that often prompted further regulatory adjustments and further cycles of unintended consequences and even more new rules.

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[2] Wedbush is a well-known clearing firm for large HFT firms.

[3] Source: Nasdaq OMX Group – Top Nasdaq Liquidity Providers, November 2006

This action-and-reaction cycle has, oddly enough, taken us to a better place with respect to investor outcomes than where we were in the mid-1990s, before the transformation began. Both explicit costs — such as exchange fees and brokerage commissions— as well as implicit costs like bid-ask spreads, the price impact of big orders and the "slippage" from the "arrival" prices of institutional orders to the average prices at which they are actually executed — have come down dramatically during this period. Instead of just one anointed "specialist" per NYSE-listed stock, or a cartel of upstairs dealers keeping spreads artificially wide for Nasdaq-listed shares, dozens of liquidity providers compete to make the tightest possible markets in the most actively traded US equities.[4] Investors who once paid 25 cents per share in spread alone when buying and selling large-cap, actively traded stocks like Intel and Microsoft now pay no more than a penny or two. Exchanges that once extracted monopoly or duopoly rents from trading customers now compete vigorously to offer the most attractive fees and rule sets for various client segments, allowing those firms to charge lower commissions to their customers. Executions are largely instantaneous, and algorithms can be programmed to mask an asset manager's intent, limiting market impact and other implicit costs.

To be sure, today's is a much more complex market structure, with no shortage of conflicts of interest between intermediaries and end investors, which requires more effort on the part of institutional investors to understand.[5] But those who invest the time and relatively small amounts of money necessary to gain such understanding reap much bigger benefits from greater efficiency and lower transaction costs.

But there are a few corners of the market that either have not shared in the benefits of this transformation or have largely failed to transform in ways that would result in the best possible outcomes for investors.

One such cause for concern is the explosion in off-exchange trading in recent years. According to our analysis of public data, 16.4% of US equity volume was executed away from markets that display price quotes[6] in January 2008. By January 2012 non-displayed trading had more than doubled, to an all-time high of 34.2%. In May, 31.2% of US equity trades were executed off-board.

According to non-public data we collect directly from various brokers and ATSs, about 14-15 percentage points of this off-exchange trading is done in so-called dark pools — automated platforms, most of them registered ATSs, that match customer

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[4] Additionally, the advantages that such market makers can obtain, such as low-latency internal trading systems or co-location with exchange matching engines, are available to all market participants who wish to invest in such technology, whereas the advantages that accrued to specialists and dealers were typically awarded only to them and not available to others.

[5] At the root of most of these conflicts is the incentive for brokers to route orders to venues that pay them rebates or charge the lowest possible fees, rather than to the venues that will provide the best execution. However, we believe that enforcement of current best-execution rules, rather than additional regulations or reforms, would best address this problem.

[6] These figures include all transactions executed away from registered exchanges, excluding major ECNs, such as those operated by BATS Global Markets and Direct Edge, which operated exchange-like limit-order books.

buy and sell orders without displaying price quotes. Based on our understanding of how these platforms work, we believe that the majority of trades executed in dark pools receive *significantly better* outcomes than would be readily available on exchanges. Most of the volume is executed at the midpoint of the National Best Bid/Offer spread, meaning that both customers are receiving significant price improvement. And at least a small portion of dark-pool executions also delivers substantially larger size than is available on exchanges.

But a significant fraction of off-exchange trades do not result in materially better outcomes than would be readily available on exchanges. A minority of trades in the aforementioned dark pools simply matches the NBBO or offers *de minimis* improvement over the best prices quoted on exchanges. Additionally, we estimate that approximately 10 percentage points of the off-exchange market share is retail orders that are executed as principal by wholesale market makers. In the vast majority of cases, these wholesalers either match the NBBO or offer *de minimis* price improvement — about 10% of the spread. Typically the wholesalers also offer cash payments to the retail brokers of roughly 10-15 cents per 100 shares. The end customer benefits from any price improvement, if offered, but does not see any of the payment for order flow, which is kept by the retail broker. In a few cases, big, brand-name online brokers serving retail customers have contracted to execute either 100% or substantial portions of marketable customer order flow with certain wholesalers. Regardless of whether such contractual arrangements are in place, the vast majority of liquidity-seeking retail orders[7] in the United States never interact with the bulk of the country's available trading interest in the exchange environment.

This is important because our trading markets exist to support primary markets — to ensure that companies can raise capital, and that the prices of the securities they sell to raise capital are as accurate as possible. This, in turn, enables the efficient allocation of capital in the US economy. And it is axiomatic that the more trading interest interacts in a centralized market — or at least a market that is virtually centralized using technology — the more accurate prices will be.

However, our modern market structure encourages full-throated competition among market centers, but not among all individual orders. Retail orders that are hived off from the rest of the markets and executed by a handful of wholesalers — again, approximately 10% of total US equity volume — are not doing worse, *per se*, than they would if they were sent to exchanges. In many cases they are doing better, owing to the *de minimis* price improvement I mentioned earlier. And they are certainly receiving better outcomes than they did in the pre-1996 era, when spreads were much wider. But they are largely divorced from the price-discovery process. And it's possible that they not only could receive better outcomes on exchanges, where midpoint liquidity is often resident in the form of so-called hidden order types, but that prices would be more accurate and capital allocation more efficient if

[7] Market orders and marketable limit orders

exchanges were permitted to compete with wholesalers for this order flow on a level playing field.

Current prohibitions on sub-penny quoting by exchanges, as well as rules that permit *de minimis* price improvement and no size improvement for internalized trades, mean that the field of play is currently tilted away from exchanges and toward brokers. This results in attempts by exchange groups to come up with new, creative order types and rules in efforts to compete with the off-exchange market, such as the NYSE's proposed Retail Liquidity Program, which would add yet another layer of complexity to the Rube Goldberg contraption.

Historically, certain brokers have argued that internalization without significant price or size improvement is necessary to counter the immense market power of exchanges, which once boasted near-monopoly market shares as well as in-house regulatory arms that wielded considerable influence over member firms. Today, however, there are 13 exchanges scratching and clawing for market share, with potentially more on the way. And no one exchange enjoys anything close to a majority of the market share in either consolidated volume or, in the case of listing markets, the activity in their own listed companies. Exchanges can, and would, adopt pricing and rule structures that would be economically attractive to retail brokers and their customers — without lopping this important segment off from the wider market, and without the threat that brokers would face insufficient competitive options for their customer orders. Exchanges also have ceded most of their member-firm regulatory activities to the Financial Industry Regulatory Association, or FINRA. So their ability to use regulatory authority as a competitive weapon is significantly diminished in today's market structure.

The Canadian government recently took action to prohibit off-exchange trading without *significant* price or size improvement, with significant price improvement defined as at least one tick — or the bid-ask midpoint if the spread is one penny. Regulators in Australia may also be moving toward such a regime, and authorities in Europe are considering similar rules as part of a revamp of legislation that opened its markets to greater competition five years ago. The SEC in early 2010 floated the idea of a "trade-at" rule, which would prohibit internalization without significant size or price improvement. We believe the US should consider seriously this and other mechanisms that would maximize the interaction of orders in the secondary markets, with the goal of optimizing price discovery and efficient capital allocation.

Another area that merits continued regulatory scrutiny is the reality that today's automated, fragmented markets, although they deliver better outcomes for investors under normal circumstances, do not perform as well under stress as the more manual, consolidated markets that preceded them.

The most glaring and obvious manifestation of this, of course, occurred on May 6, 2010. In what has become known as the flash crash, major equity indexes lost and then recovered approximately 9% of their value in the space of just a few minutes. One big reason why some stocks traded that day at absurd prices — as low as one

cent for some large-cap issues — is that brokers under Regulation NMS are allowed to bypass so-called slow markets. The NYSE's mechanisms for slowing down trading in times of stress to ensure accurate price discovery — the so-called Liquidity Replenishment Points — were activated in many of the affected stocks during the flash crash. But rather than wait for the LRPs, which depend on human intervention, to run their course and stabilize the stocks, many brokers simply routed around the NYSE, to fully automated exchanges whose order books were overwhelmed by rapid-fire selling.

The lack of coordinated mechanisms to slow down trading and allow for human intervention during times of stress was an unforeseen hole in the market structure that evolved in piecemeal fashion since the late 1990s. The SEC and the exchanges have attempted to patch that hole, first with coordinated circuit breakers on individual securities and more recently with a so-called limit-up/limit-down system. The latter mechanism essentially prevents securities from trading at prices that are outside of pre-determined bands, based on movements away from the previous day's closing price. Such a system may prevent flash-crash-like dislocations that result from technological glitches or mistakes. But we worry that they may also inhibit price discovery for stocks that are affected by significant news — including earnings and other corporate events — that legitimately affects their prices. Of greatest concern is that traders who want to act upon such news will not wait when a stock is "limit-up" or "limit-down" in the US markets and simply go elsewhere to effect their transactions.

Finally, of particular interest to this subcommittee is the quality of markets for small companies. We and other market participants have observed a divide in outcomes for large-capitalization, actively traded stocks and smaller issues. Small-company shares may not be experiencing the efficiency and cost benefits that have accrued to bigger, more liquid stocks as a result of the 15-year market-structure transformation I've discussed here. A 2009 NYSE study of bid-ask spreads, for example, showed that at higher volatility levels, spreads for smaller stocks widened in the years following Reg NMS while spreads for the top 200 issues by market capitalization narrowed significantly.

This alone is certainly not proof positive that market structure is harming market quality for small caps. Surely the dramatic spike in volatility that accompanied the height of the financial crisis in 2008 and 2009 contributed to spreads widening. But it is consistent with much anecdotal evidence. As brokers, we hear from our institutional clients quite often that small and midcap stocks have never been more difficult to trade. And this also squares with what we know about the new generation of HFT liquidity providers, who largely concentrate on shares that already have a critical mass of volume and liquidity, because they need to trade in very large quantities to make their tiny per-share profits add up to something substantial. In short, it appears to us that the change from wide spreads and little competition among market makers to ultra-thin profit margins and intense

competition has removed many of the incentives that used to exist for firms to systematically provide liquidity in small-cap names.

For these reasons, we support experimentation by regulators and legislators to provide new incentives for making markets in the shares of smaller companies. The provision of the recently adopted JOBS Act requiring the SEC to study whether wider minimum price increments would improve market quality for emerging-growth companies is one example of measures that could address this issue.

The subcommittee is also considering the notion of allowing issuers to pay market makers. Although we don't know what form such programs would take, we have reservations about this idea, whether these payments are made directly or funneled through exchanges.

As I mentioned earlier, exchanges and market makers already offer payments to brokers in exchange for order flow. These rebates are part of an often-Byzantine set of fee schedules and rules that create significant conflicts of interest between investors and the brokers who execute their orders. Brokers have a strong incentive to route orders to the venues that will pay them the best rebates, thereby padding their profit margins, rather than to the venues that would provide the best possible executions for customers. These payments for order flow can also provide benefits, such as allowing market makers to quote tighter markets. And it would be difficult to eliminate them after having encouraged fragmentation and competition among trading venues, because fee schedules are one of the biggest competitive differentiators in the exchange business. But they surely are one aspect of our market structure that one would not build in if designing the system today from scratch.

We fear that introducing another set of economic inducements would create more conflicts that could harm investors. It is commonly known within some circles in the trading community that listed companies sometimes have pressed market makers to "support" their stocks. One well-documented case of such behavior involved the former CEO of American International Group, Hank Greenberg, who reportedly had badgered former NYSE CEO Dick Grasso and the specialist in AIG constantly for better pricing of the company's shares.[8]

Exchanges derive substantial revenues from company listings, and don't want to lose them to competitors. That's a tough enough conflict for exchanges and investors to navigate. Issuers who pay market makers, directly or indirectly, may be even more emboldened to push those market makers to artificially prop up their share prices in the face of any number of legitimate market forces — such as unflattering news or short selling — or, simply, if management believes the market is not recognizing the company's true value.

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[8] This episode is laid out in great detail in "King of the Club," the 2008 biography of Grasso by former *Wall Street Journal* reporter Charles Gasparino

In closing, I'd like to reiterate that modern US equity market structure is the creation of 15 years of back-and-forth between government regulation and market reaction to that regulation. It is far from perfect, and there are several aspects of it that merit further investigation and potential reforms. But it serves the investing public better than what preceded it. As a result, fundamental reforms, like the ones that triggered the great market-structure transformation back in 1997, should be considered only with the greatest of care.

Thank you once again for the opportunity to share the views of Rosenblatt Securities. I will be happy to answer your questions.