

Market Risk: Old Calculations, New Perceptions

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Thank you, Micah, for the kind introduction. Good afternoon, everyone.

I'm very pleased to be here. Given recent events, there couldn't be a better time to have a conference on credit and risk management.

For all of us in the bond industry, risk is inevitably our companion. Wherever we go, it follows. It's part of the business. We constantly calculate risk. We always try to manage it.

Five weeks ago today, however, we came face to face with risk on a scale we've not seen before. In the chaotic hours and days following the attacks on the World Trade Center and the Pentagon, the risk to our entire trading and financial system was considerable. There was fear in some quarters that this risk would prove unmanageable.

In the end, of course, we did manage it.

The system did not gridlock. Nor did it slip into an uncontrolled chain reaction of financial implosions. Instead, within two days, many of you were back at your trading desks. This was an extraordinary accomplishment by people working together throughout the industry.

Let me share with you briefly some of the steps we took at DTCC to contribute. Then I want to touch on some of the longer-range risk issues facing the industry.

For those of you who may not be familiar with us, The Depository Trust & Clearing Corporation, or DTCC, for short, is the largest post-trade infrastructure organization in the world's financial service industry. Through our two major subsidiaries, DTC and NSCC, we provide clearance, settlement, custody and information services for equities, corporate and municipal debt, money market instruments, ADRs, exchange-traded funds, unit investment trusts, mutual funds, insurance products and other securities.

On an average day, our clearing corporation processes more than twelve and a half million equity and debt transactions. This includes the trading volume from the New York Stock Exchange, AMEX, Nasdaq, the regional U.S. exchanges . . . and the alternative trading networks such as Instinet, Archipelago and so on. We clear and settle these transactions, which last year had a value exceeding \$105 trillion.

Our depository subsidiary has custody of two million securities issues from the United States and 65 other countries. The value of these is just under \$23 trillion. We not only handle the receipt and transfer of these assets, but we also service them. We provide distribution of IPO allocations, for example, and ensure that dividends, not to mention the interest payments on the bonds you trade, are distributed to investors around the world.

Many of you are probably familiar with our sister organizations, GSCC and MBSCC. The Government Securities Clearing Corporation clears most trades in U.S. government bonds, agency paper and repos, while MBSCC clears the trading of mortgage-backed securities..

Five weeks ago today, even though the financial markets did not open in the wake of the attacks, and even though sadly many of our colleagues and customers were lost or forced to flee, we still had a big job to do. We still had billions of dollars in trades outstanding from the previous three days that had to be settled. Like many of you, I'm sure, we also had staff in shock and people who feared our headquarters might be the next target.

Nonetheless, we had to get this job done. If we didn't, it would have locked up billions of dollars, choking off liquidity, paralyzing the markets and undermining confidence in the financial system at a time when we could least afford it.

We were determined not to let this happen. So we went to work.

We made the decision to stay in our offices that dreadful Tuesday for as long as it took to complete settlement. Many of our phones were still working, and we were able to contact the bulk of our customers. While part of our staff assessed the needs of our customers for connectivity, we also reached out to our network of settling banks and the Federal Reserve to reconfirm our ability to make and receive payments.

A number of New York-based firms were effectively out of commission, at least for that day. But most of these firms were supported by their banks through the first settlement cycle. Eventually, we settled nearly \$300 billion in trades--and breathed a little easier. But settlement was not without wrinkles. Out of a daily average of roughly \$110 billion in commercial paper, we had to recycle almost \$45 billion for later settlement.

Since it was clear that most of our employees couldn't work the next day at our offices in the financial district—in fact, they couldn't even get to work—we moved for the rest of the week to our alternate data sites. While we have decentralized capabilities that performed well, we are now, like so many of our customers, looking at how we further decentralize and strengthen these facilities for the future.

Unfortunately, by the time I thought about leaving the building Tuesday evening, military patrols were already out on the street and transportation had been shut down. So I stayed put. Like some of you, I suspect, I was in my office for 36 hours. (This caused some systemic shock of a personal nature, especially since the air conditioning and ventilation had long been turned off. I can't say I recommend breakfast of microwave popcorn, either.)

Wednesday I thought might be easier. Most firms now had their backup offices running. But the collapse of World Trade Center Building 7 Tuesday evening severely crippled the phone system. At one point, we had 170 customer lines down, and I was even passing messages on for the Federal Reserve until they could get their phones functioning. Our technicians worked frantically—and creatively—to reestablish data connections and, in some cases, hand-delivered new modems and routers to customer backup sites all around New York.

Meanwhile, the Fed asked me if we would be ready to support trading on the bond market on Thursday. The Fed was eager to begin pumping more liquidity into the economy. If the markets can trade, I said, we will clear and settle. I was confident that you bond traders would find a way to do business, even if some of your trading systems were out. It was the payment systems I was most concerned about.

Throughout that whole week, by the way, some of the most critical work in our company took place overseas. As you know, several broker/dealers such as Cantor Fitzgerald had to piece their operations together through their London offices. For the first time, market executives in London found themselves clearing and settling trades in the U.S. system. This was a novel experience for them. So managers in our London offices, who are experienced in our systems, worked deep into the night alongside our customers to walk them through these functions. We taught an overnight course in continuous net settlement.

Although we had to extend settlement deadlines on Wednesday to allow for late input, we did complete settlement for almost all of our customers. Now the challenge was Thursday. This included a special test for me.

Wednesday evening I hitchhiked on an emergency vehicle to get home in mid-Manhattan. Now I had to figure out how to get through the police cordon and back to our headquarters building on Water Street. Eventually I succeeded by calling in a favor and arranging for a ride in a Corrections Department vehicle. You might call this just one more example of New York resilience.

There was considerable discussion that Thursday morning, as you must know, about extending the period for clearing bond trades. Eventually, after a conference call with The Bond Market Association, the Fed, the SEC and others, we agreed to keep the T+3 cycle in place for corporate bonds and munis, but to extend government bonds to a T+5 schedule beginning the next Monday. So the bond markets reopened and trading volume was fairly high.

By Friday, we were beginning to feel we had come through the worst of the storm. We settled trades valued at more than \$560 billion and only about \$150 million in money market instruments, out of the whopping \$162 billion presented for payment that day, had to be recycled. Now the focus was on preparing for the opening of the exchanges on Monday.

On Saturday morning, we bused several hundred employees into our primary offices. They began testing systems in preparation for Monday, and processed the backlog of physical securities that had to be taken into custody. Our systems staff went back at it on Sunday.

On Monday, the exchanges successfully re-opened. We saw record volumes on the New York Stock Exchange, on AMEX, and on several of the regional exchanges that day. The volume of mutual fund transactions, which had been pent up for nearly a week, doubled the previous record for orders, redemptions and exchanges.

We were able to clear all this volume without serious difficulty. The Street was back in business, fully engaged. And at DTCC, we came through bruised but hardly beaten. In fact, within 3 days following the attack, S&P cited our performance under the pressure of the crisis and reaffirmed its triple A credit rating for our depository and clearing corporation subsidiaries.

The risk to our financial system that had, a week earlier, seemed so menacing and frightening, was successfully contained . . . effectively managed . . . and ultimately overcome. I am very proud of the part DTCC, GSCC and MBSCC employees played in helping contain risk in the post-trade process and to the system itself. They were steadfast in their commitment to support our customers and the marketplaces.

But I extend my congratulations to all of you as well. In one way or another, all of us shouldered the load. This was the work of an entire industry—and an entire nation—pulling together.

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Risk, nevertheless, remains the travelling companion of this industry. As the industry changes—and we see some major changes taking shape—risk factors are likewise altered.

In addition, the events of September 11 have changed forever the model of how our industry should operate. Risks, particularly systemic risks on a scale we never anticipated, now stand out in bold relief.

Consequently, we need to make headway on two fronts simultaneously. We need to address how we manage not only risk associated with structural changes but also potential risks to our entire system.

Government bonds

Let me look first at the structural shifts the industry is facing.

In the U.S. market, as you know, the supply of publicly traded U.S. treasuries is shrinking. Perhaps the events of September 11 and current economic conditions will prompt a change in direction. Government relief efforts may cause government borrowing to rise.

In the meantime, treasuries are not as plentiful as in the past for hedging other instruments. As you know, they have also been in such short supply for the repo business that two weeks ago the Treasury Department held an unscheduled auction to get additional 10-year bonds into the market. The overall decline in Treasuries is causing an unexpected shift in focus. Who would have guessed, even five years ago, that the Federal Reserve would consider dipping into the corporate bond market to help manage the nation's money supply?

In Europe, the introduction of the euro has laid the groundwork for a wider debt market with more potential liquidity and more potential as a hedging vehicle. In fact, Europe's debt market is now measurably more liquid than it was just two years ago. Still, Europe remains Europe, which means that there are still 12 separate sovereign debt issuers . . . and 12 separate trading entities . . . and many separate clearance and settlement systems.

Japan, as you know, has the world's second largest government securities market. And given Japan's recent history of trying to spend its way out of the economic doldrums, this market will no doubt keep growing in size. With near-term interest rates hovering around zero, however, this is not exactly the place for high returns.

Corporate debt

The result is a growing interest in the corporate debt markets. Debt issuance has been very high recently, in part, of course, because of a favorable interest rate environment and doldrums in the equity market. If the Fed begins moving in and out of the private debt market, as expected, this will have an impact on liquidity. All of this is changing the structure of the debt markets, as well as what had been some longstanding assumptions about risk.

At DTCC, we're tracking these changes and working with the industry to develop suitable responses.

Consolidation

First, we're consolidating our businesses to reflect the consolidation occurring throughout the industry.

As some of you know, the boards of the three clearing corporations for government, mortgage-backed and emerging market securities have all voted to become subsidiaries of DTCC. While this is subject to SEC approval, I am hopeful the commission will say yes in time for us to exchange shares and complete the consolidation before year-end.

This was, however, not an abrupt decision. The boards began discussing the idea last year, and the groundwork goes back a number of years. It reflects the industry's trend toward consolidation. Numerous firms that once were totally separate businesses dealing with separate clearing companies are now part of the same business. Consolidation and the pursuit of competitive positioning will continue . . . with companies merging or being acquired across borders and across time zones.

Over the last few years, we have also seen the fixed income markets grow more interdependent. And this is a trend that's likely to continue if U.S. government debt issuance slows and private debt takes on a new role. So our consolidation of all the clearing organizations under one holding company is really not surprising. It mirrors the trends in the industry itself.

Each of the clearers will remain a separate company serving its respective market segment, but together we believe we can offer a single clearance and settlement platform that eliminates redundancy, cuts costs, helps you to marshal your capital as the industry consolidates.

Technology

The second step we've taken as a way to respond to industry changes is to open our technology. We need to keep pace with the changes in technology, and to help the industry focus its own technology expenditures

One of the forces driving this is the dramatic increase the size of the debt markets. Since 1990, according to the SIA, corporate debt issues have climbed more than 800%. Their value has jumped to almost \$1.7 trillion from \$288 billion. Over this same time period, the number of munis issued has risen 23% and their value is up to \$194 billion from \$126 billion.

Meanwhile, despite the drop in Treasury debt, total issuance of U.S. government paper—mostly in the form of agency debt—is up 78%. In the first half of this year alone, new issue activity in the bond market was up 64%. More debt outstanding has led to more trading, and this volume growth has an impact.

At the least, it means that we have been feeding our computer systems steroids in order to keep up with the processing load. This includes more than simply clearing and settling trades. It also involves servicing all the fixed-income paper that ends up in our depository. On peak days —when interest payments on many municipal bonds are due—we sometimes handle more than 200,000 payments worth \$20 billion to our participants.

The reality we face, however, is that adding muscle to our computing base is not enough. Instead, we need to reengineer our entire technology platform. The goal is to take advantage of the innovative technologies now coming of age.

In doing this, we also have to make it mesh with an entire industry, both here and overseas. This is why we published a technology architecture study for all the industry to see, and why we keep moving toward common industry standards and open architecture. We're now one year into a multi-year redesign of our technology. We're doing this inside the fish bowl, sharing design ideas as we go along and asking firms for input.

Electronic trading

Our third response to the changes in the industry is to keep close watch on the emergence of electronic and Web-based bond trading systems. We track this phenomenon because these systems feed data into our systems.

You know better than I do how many syndication and trading systems are competing out there. Within a few years, The Bond Market Association estimates these systems will handle more than half of all bond trades. For us on the clearance and settlement side of the industry, that's an interesting number. It implies that nearly half the bond trade transactions flowing into our systems will arrive already matched.

Shorter settlement and RTTM

Until that day arrives however, and with the industry heading toward T+1 for almost all kinds of transactions, we need to have trades submitted, matched and reconciled on trade date. Achieving that means building a centralized, automated infrastructure, which is part of what our own technology effort is all about.

The good news is that we already have a competent system to put at the core of this new infrastructure. The Government Securities Clearing Corporation has constructed a real-time trade matching system, which does precisely what its name says. It processes trades as they're reported. It's also designed to accept trade data in a number of ways, including over the Internet.

After consulting with The Bond Market Association and the SIA, we are confident this system can be adapted for all fixed-income instruments. This is why the MBS Clearing Corporation is going to begin testing the RTTM engine early next year for mortgage-backed instruments, and why NSCC intends to begin phasing it in during 2003 for corporate bonds and munis.

Transparency

In the meantime, the SEC is pushing everyone in this business to open the shades and pull back the curtains.

The Commission's mandate, issued early last year, aims to make bidding and prices more transparent. Since we capture price data as part of trade information submitted to us, regulators have asked us to participate in their transparency mandate.

For municipal bonds, we provide the Municipal Securities Rulemaking Board daily trade and price data at the end of each day, and we'll be supporting the NASD's objective of obtaining intra-day reporting of corporate bonds early next year. The goal for the industry, when we move to real-time trade matching in 2003, is provide timely price information by utilizing both our approach and the NASD's transparency initiative, which they have named "Trace". In any case, you will not have to report twice. Your submission of trade data to RTTM will serve both processing requirements and regulatory goals.

Risk Management Initiatives

Finally, let me mention the significant changes we're instituting in the way we measure risk and allocate collateral and margin against it. A number of you have told us you want more effective risk management, but you also want more effective use of your capital. We're working hard at that.

For example, we have now launched a more aggressive value-at-risk management program in DTCC's clearing corporation. We have also become more aggressive in our cross-margining efforts. The agreement our clearing corporation, NSCC, has put into effect with the Options Clearing Corporation has already let us reduce margin requirements based on our ability to see how NSCC customers offset their open positions with futures and options.

GSCC has been setting up similar cross-margining programs with the New York Clearing Corp., the Chicago Mercantile Exchange and the Board of Trade Clearing Corporation. This gives GSCC a bird's eye view of a customer's business across several clearing corporations, so that it can observe a customer's positions as a single portfolio. As a result, they can see what the offsetting positions and hedges are and make appropriate adjustments in the collateral requirements.

Although we haven't explicitly explored this yet, in coming years we may also be able to construct cross-margin information programs with European clearing organizations. The growth of the Eurobond market has helped to fuel more U.S. investment overseas. If there's a way to use that investment to offset risk in U.S. markets—and thus to reduce collateral requirements—I think we should pursue it. Capital is too precious to tie up as unnecessary collateral.

Systemic Risk Questions

In the meantime, on the second front I mentioned—systemic risk—we have some tough questions to ask ourselves following the September 11 attack. Most of these questions stem from the risk associated with concentration—or, as we used to call it—centralization.

One specifically involves the bond markets – and that's the concentration of settling banks, or at least the proximity of their technology back-up sites. In light of last month's events and the difficulties the industry experienced, I wonder . . . will the industry continue to view this concentration as in its best interests?

The second question likewise involves concentration. Will firms continue to believe they need to keep their pools of professional experts and technical staff centrally located? Or will they create multiple satellite sites that can assume these activities if necessary? Judging from recent articles in the Wall Street Journal and elsewhere, we're already seeing a shift in thinking along these lines.

The third question that comes to my mind is whether concentration is a problem we need to bear in mind as we do contingency planning for telecommunications support. Broader dispersion would likely reduce risk by yielding a similar dispersion of switching and routing centers—and perhaps even offer multiple service providers.

And all of these questions lead into the last: whether it's advisable to decentralize our processing capacity and

back-up operating facilities more broadly. We're already reviewing this at DTCC—and we're likely to expand to sites beyond our current redundant capabilities. But it's a relevant question as well for most of the companies in the room today.

Making some of these changes will require time and sizeable investments. In the current economy, where we all need to trim expenses wherever we can, this adds an extra burden. From a big-picture, cost-benefit perspective, however, managing risk and insuring safety must be the driving considerations.

We need to re-order priorities and tackle these questions now. Otherwise, we continue to be threatened with damage to the financial system that may not be repairable—and that's a risk I believe none of us is willing to take.

I believe we ought to initiate dialogue throughout the industry on these questions now, and DTCC, let me add, will look to play a leadership role in helping the industry find solutions, share best practices, and manage these risks.

Ultimately, what we're trying to do is create a post-trade business where the relationship between risk and reward has to do with intrinsic market forces, not with the mechanics of the industry's infrastructure.

We have made good progress in that direction. And we do not intend to let the events of last month deter us. Together, we succeeded in managing the immediate risks we faced then. From this point forward, working together, we will only get stronger.

Thank you.

