Liquidity Management in a
Cross-Border Context

by

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I’m a risk manager and responsible for Citigroups’s involvement in “value transfer networks”, which is larger term than payment systems. Payment systems tend to be confused as cash only. We think of them as anything that transfers value: intranet involved. , So you have clearing houses; depositories; stock exchanges; derivatives exchanges; traded products exchanges; all the things that we would, in Citibank, utilise daily and rely upon.

I’ll speak about the risks associated with that, some of the challenges facing the industry and at the end what Citibank does in this regard, hopefully coming up with a consensus on how to go forward.

Firstly, I want to challenge your own definition of who you are. I am reminded of years ago when I was at Chemical Bank, the Head of Transaction Services, Barbara Kapsalis, sat us all down in a room and some of us from not so senior management were invited to sit up front. It was a meeting of all the sales people and Barbara, innocently enough asked, who among you are sales people? Half the room raised their hand. She once again asked, who among you are sales people? A few more raised their hand. When she finally asked, who among you talks to customers, is responsible for the revenue growth and expense control, risk moderation and the overall performance of the firm? I finally got the idea. Yes, it was my responsibility too.

So, in a little while I am going to ask you, who among you are risk managers? I was happy to think, as Don was talking about continuity of business (COB), “I’m very happy not be involved with COB because of this expense and all this telecommunications stuff”. Then I thought, “Oh my god! It’s my job.” Yes, ladies and gentlemen, it is your job to manage risk. It’s a process that at Citibank we found we didn’t do very well because we didn’t fully understand the risk continuum and the dichotomy between a robust payment system, or value transfer network (VTN), and the inherent risk that we as individual participants took. You can have a wonderful value transfer network. However given some of the features and functionalities of how we share loses, or given how we put up collateral and how we margin, each individual institution can be phenomenally exposed.

Within the concept of payment systems risks there are subcategories, credit risks, operational issues and legal issues, which tend to colour everything.
We are also seeing some trends emerge which are somewhat disturbing. We will talk about a way forward and have a brief look at how we manage these issues.

I joined Citibank six years ago, and am still a little bit in awe of what this company does. When I was first asked to approve a transaction for a small clearinghouse in Peru, Caja de Valores, I said well, it clears for the Stock Exchange in Lima. We looked at how they did things and it became the prototypical way of how not to do things. We never knew what the right answer was but having your continuity of business recovery site one floor above your existing trading floor is not the ideal. To have no membership standards in the exchange whatsoever and also having acquired several liabilities was also not the idea of how to do it. So we learnt by trial and error.

Payments systems risks, that is those risks associated with being a member, user, owner, operator and or manager of a value transfer network, are probably, certainly theoretically, but becoming more and more practically, the largest risk that a financial institution faces.

When people ask me to describe payments risk we must first agree the definition because there are so many different understandings of these terms. What risks are we talking about? The risk to payment systems is: “the risk to earnings and capital stemming from a financial institution’s relationship with payments systems, exchanges, clearing houses and depositories (collectively “value transfer networks” or VTNs”).

What is this animal called risk, what is this animal called value transfer networks?

VTNs are complex, undergoing massive change and capable of inflicting tremendous damage on the balance sheet should something go awry for the individual member.

I had this wonderful conversation with Bob Rubin, former Treasury Secretary, who now works with us. We were talking about how financial crisis are first evident, how they become known and what are the first pop points (points of presence) along the line. We talked of course about current account deficits and balance of payments, money supply, interest rates and all sorts of wonderful macro economic stuff. We sat down and said the first and foremost generator of a financial crisis is the payment system when, within that payment system one of us gets nervous, one of us has a problem or one of us defaults and liquidity starts to dry up. Not only within that payment system, but since that liquidity in the cash system is used to settle securities transactions, which are in turn used to settle derivative transactions, the whole thing can rapidly grind to a halt. Bob said “Oh my god! You’re right, we have never quite thought about it that way”. It is the crux, this is the funnel through which all economic activity goes. I am fond of telling the board that the payment system, which has long been a neglected view within the transactional services world and within the bank, is the funnel through which each and every product that Citibank and

Citigroup has to offer goes. This is the effect, if you will, of all the “fancy” stuff that we do, with very few exceptions. It is this that we have to pay attention to.

The central banks have got smart about VTN credit issues, perhaps smarter and faster that the private bankers have. The central bankers a long time ago, in the mid 80’s, decided that they were the one and only source of liquidity, the one and only source of bail out, in fact taking responsibility for bailing out private sector systems, used by the private sector for their own profit. Given these circumstances, central banks decided: “We should insist upon structures that more adequately mirror the risks that the private sector is visiting on us.”“We should ask them for more collateral, more self-insurance, more guarantees and more margin.” It has evolved that way for the last 15 or so years. That is the good news. The bad news is that most private sector banks haven’t fully understood that transference of risk, haven’t fully accounted for it, reserved against it and/or believe it is there. It does manifest itself in some very interesting arrangements or agreements that we have all signed as members of these things. We see a proliferation of joint and several uncapped loss sharing arrangements within these value transfer networks. You are all members of the club that are choosing to clear this security, or this payment, and as a good club member, if the clubhouse burns down, the surviving members have to pay to rebuild it. Sometimes that can lead to cascading failure and enormous costs for those that survive the conflagration.

We talked about higher collateral requirements, which are costly, and higher margining requirements, also costly. I am not suggesting that the burden has unduly shifted, but we need to be mindful of that burden and occasionally push back to the point of balance.

Fortunately, or unfortunately, senior management at Citigroup now more fully understands the risk it is taking in these memberships, and we take a much closer view of these risks in our desire to continue to do business in those exchanges.

Operational issues is a long subject.

Failed technology and operational outages can lead to some staggering carry over events. Liquidity events, if a specific stock exchange goes down for several hours or several days, seem not to matter every much if it is a very small exchange. However, if we position and hedge most of our underlying equity trades through it, and we can't balance our portfolios of maturing equities that are held elsewhere, you find that there is a tremendous market price risk for several days when one exchange impacts another. This again crosses over all the markets, securities, cash, derivatives and capital markets.

Clearly VTNs need to be scrutinised for operational robustness. We have found that while we do a fairly good job when looking at our own continuation of business plans we hadn't, until recently, thought about incorporating our risk review of the robustness and the continuation of business of each of the VTNs in our risk assessment. How do we link with them? As Don pointed out earlier, the whole thing is connected across a sphere of energy and water and telecom. Where are the white spaces in your models, and how do they fit in terms of your view of robustness?

It is very difficult to convince people that have been in the business for 30 or 40 or 100 years that this is a significant problem. The old operating types fully believe that, no, it ain't going to happen, it's not going to be an order of magnitude problem, we've never seen much of this, the last real problem was in 1974 with some little Cologne, German bank we can't remember the name of. That bank incidentally collapsed 22 minutes after the close of business. Somehow they managed to keep all of our money in Herstatt and we didn't get any of theirs. It was the first time we all woke up to the fact that clean for clearance wasn't the issue.

There have been some nasty near surprises along the way. We had a very small, nasty surprise just a couple of months ago with CCG in Italy, a broker dealer default where we got a bill for EUR 0.5 million. In the greater scheme that is not all that much money but it was terribly instructive to see who was going to pay for it. We gave it to the traders and said, "it's yours". "What are you talking about it's mine, I don't trade with Bartolini, I don't trade those products, why should I be tagged with this?" "Well if you read the fine print on page 44 of your agreement with CCG it says you are liable, as a member of the club, to pay for defaults". This guy wasn't even a member of the club, he was trading OTC and crossed the trades into the exchange to get the protection of membership. Well, we paid the bill, the price of that was cheap but the instructive value was - read your contract and understand what you are in fact signing up for. Most of us at Citigroup had were not focused on that. We are now.

Happily the examples in history are few and far between. Are we to rely on history? The past is certainly not prologue given the rapid change, the degree of complexity and the way the world is evolving. There are few actual loses, however, I am unhappy to report that our focus post the world trade centre, and post Chernobyl has shifted to believe that the improbable is more than likely going to happen at some point, and perhaps sooner than we all thought.

Legal issues, the underpinning of most of everything we do. We are interested in such things as finality, enforceability and certainty.

The impact on deliberately confused bankruptcy laws, within certain countries, allows the regulators to decide whatever they want to do at the time, generally speaking to protect their national interests, perhaps at the expense of others. They will all say that that can't possibly be, but in fact that has been the case.

In one of the clearing systems we found that we did an enormous amount of volume each day in what we thought was a DvP system. In an attempt to understand it more fully, because we were giving enormous credit lines to our broker dealer customer and counterparties where we were trading on their behalf buying and selling securities, we said do we really need these lines, how does it really work? I am giving cash and getting securities, if Goldman Sachs, just to pick a name, happened to default I could just represent those securities and suffer a very small market volatility price risk and be done with it. The answer was that in this particular country, while you own the securities, and while no one disagrees that you paid for them, you couldn't sell them without going to court. I asked how long will it take me to get adjudication in this regard? Answer: a minimum of six week. Just theoretically, if I am suing a local bank, as opposed to Goldman Sachs, how long will it take me? Answer: not in your lifetime. So I have infinite market price risk on a security that I own but can't sell. That is an interesting way of colouring our behaviour. Happily with the introduction of the euro we could convince this particular government that we could trade these securities in a neighbouring country. The law was changed so that not only can you own, but you can also sell on the same day. It takes understanding to fully appreciate the risk that you are taking and in a quiet and patient way try to change those risks.

There is a feature in a lot of deferred net settlement systems that we call unwinds. It used to exist in CHIPS. We went through two or three iterations of how CHIPS works, eventually now it is a quasi RTGS system which is pre-funded, and a little bit of it is balanced at the end of the day, with a substantial amount of money, but each transaction that goes through it is final. In most deferred, end-of-day net payment and settlement systems, this is not the case. We send, via this group, lots and lots of messages. People think of these as payments and we duly credit them to our customers, who in turn sent them out again and credit them to different customers and on and on. At the end of the day we all settle net. It is very efficient from a liquidity point of view but there is this theoretical risk that someone will default. If you default what is the remedy? In some cases, there is a participant loss fund, which evidences our ability as members to at least answer what happens if the largest member defaults? Most systems don't go beyond that. If the largest member defaults and we can cover it everyone thinks: "Lamfalussy is just fine." We think beyond that. What happens if two members default? There isn't enough collateral to go around. We can then ask the members to provide some more money, we can ask the central banks to intermediate, or we can just send all the transactions back and unwind it. It sounds good on paper, but to unwind a deferred net settlement system in our view is chaotic, and the opportunity of getting that money back through the multiplicity of transactions is almost impossible. These systems still exist. They present us with enormous challenges and we would like to work with those owners and managers to rethink their design, perhaps more CHIPS like, or with more collateral, or more robust.

Let me speak about liquidity trends. As I said before the old days are long gone and those of us who spend time and effort thinking about this realise that the world is changing faster than, at least I, can get my mind around at one point in time.

There was the move, as previously discussed, towards RTGS and DvP. From a risk management point of view that is a very robust construct. Pay as you go. CLS is a slightly different version but essentially the same thing. It is very expensive from a collateral and liquidity point of view. Those who are interested in the P&L, as we all should be, have looked for ways of making straight-through-processing (STP) and making more efficient use of liquidity, and have come up with a variety of designs, one of which is the deferred, end-of-day, net settlement system.

Another is the rise of central counterparty systems, through novation of one kind or by an exchange becoming your counterparty. When you knew who was on the other side you could set credit limits against that, you could basically mitigate your risk and trade with whom you thought appropriate and not appropriate. Now with central counterparties, I am not entirely sure how we do that. We must be totally reliant upon the infrastructure and management ability of the CCP itself. We don't really pay attention to those issues and we don't spend a lot of time in the governance mode of all of these exchanges.

We talked about the explosive growth in domestic and cross-border transactions. We also see the growth of transnational systems to accommodate these as a natural result. If there is a problem, as there was in Asia recently, with a large bank collapsing, the central bank intervened and it was all over in a matter of minutes. I would like to know who is going to intervene in a transnational system, one that crosses borders and products. Which central bank wants to raise its hand to say, "I'll bail you out to the tune of several million dollars?" It's unclear to me that that answer is forthcoming.

We talk about the growing dislocation in cross-border intraday liquidity. Some of the things that are happening are: that foreign banks are becoming more active in local markets; there is a greater asymmetry in payments flows; bank liquidity is very fragmented and time-sensitive and in the wrong place when you need it.How do you move it?By virtue of pressure being put on by people like me, Citibank is always looking for more liquidity, more collateral, more margin, more RTGS environment, which is expensive but safer, and raising that capital is the issue.

What do you need to do to go forward? We already talked about, at least at Citibank, our need to improve our understanding of what risks we were in fact taking. All too often we happen to be among the deep pockets in these schemes for the last person standing, which is a little bit unsettling. From a regulatory point of view the value transfer network is extremely robust, it has all the big players there, with the balance sheet of the parent company, but what is being missed is the ultimate impact on the financial world, being of each of us as private bankers, and the result that that could have in a cascading, catastrophic failure.

The risk managers in the room wish to make a call to the central bankers in the room. The central banks, in concert with the private sector, need to provide a greater understanding of the risks inherent in the value transfer networks. Basically their tools are regulation and supervision. It makes the colour drain out my face to actually ask a regulator, please supervise me more. Nevertheless this is part of the partnership that we are looking for. Without this kind of pressure other people may not get it.

The banks themselves have to take full responsibility for their ownership, membership, utilisation, and risks and understand what is going on. A greater co-operation, as is evidenced in this very important, and almost first time, meeting of the private and public sector.

Greater clarity on whom oversees the transnational systems and, like we had post September 11th, a greater co-ordination of any disasters. The only reason, in addition to the respective central banks injecting money, that we were able to recover from September 11th was we all knew who to call. All manner of formal authorities broke down and it was based in trust, knowledge, awareness, a single language and an ability to work together.

The US Payments Risk committee, which is sponsored by the New York Fed, has looked at how one can enhance collateral, originally posed as a disaster recovery mechanism. I suppose to make it more palatable to the regulators, it has two functions: one to enable the faster movement of collateral across borders during any emergency; and also to allow us as risk people to get the collateral on time and in the right place. It makes it easier and less expensive for the banks to engage in best practices, to support systems that are more RTGS like and more certain and final in their payment than not. There are various solutions, for example real-time repos or bilateral intraday currency swaps.

What do we at Citigroup do, why do we think this is important? Citigroup has 300,000 people plus, there are some 196 members of the UN and we do business with all but 10 of them, plus we have a physical presence in 102 countries. We are members, users, participants, and in some cases managers, of more than 500 value transfer networks around the world. It is a staggering amount and probably a number of you are using us as your financial infrastructure and third party custodian and some other intermediary around the world as well. It is incumbent upon us to understand what risks we are taking, not only for ourselves, but also passing on to our customers. My job today is to try to remove the blindfolds from all of you, and your blindfolds are pretty much job-specific. I think of myself as this, you think of yourself as that, we are all in the same boat together, private sector and public sector. The world is changing rapidly, the risks are theoretically staggering and they are becoming more probable. We never though 9.11 could happen; it happened. There are other things that we all collectively believe cannot happen. Systemic default in a major currency may be more probable than we think. We bear collectively the responsibility to monitor, measure and mitigate the risks in value transfer networks. To that end Citibank has put together a board mandated position reporting to the senior risk office of the corporation. It basically says that for each value transfer network we want two people responsible, we want the senior business managers to sign off on these risks and to accept them for their business. In turn there are people who work for you who have direct daily contact with these value transfer networks. They are the folks at the coalface. They do the analysis, they do relationship management and they are responsible for bringing to senior management attention the risks associated with being a member. We, in payment systems risk management, co-ordinate this whole effort across the firm, provide the tool kit, provide the tools themselves, the questionnaires, the risk rating form, the process flow descriptions and a simple go to guide in case there is a problem (a two page summary of how it all works) and roll up the potential categories of risk for board approval and for senior management to argue over. We have some interesting discussions, one of which would have led, had we not been able to negotiate with the value transfer network, to withdrawing from a major country. The risks were just so extraordinarily large in a new system for us to afford to be there. Happily once again we were able to remediate that in discussion with the central banks and the value transfer network and they changed the rules, which were unintended in the first place. To do that we had to read 500 pages of documents to figure out the legal conflict between the bylaws and the operating requirements.

We have come up with risk mitigation strategies for those systems that we identify, or those countries that we identify, as having medium to high risk, and certainly high risk. We work with our in-country folks as well as with the regulators and the clearing houses themselves to better understand and to move to a best practice kind of scenario.

Let me wrap this up by saying we are all basically collectively responsible for the financial well being of these infrastructures. First you need to understand them better. Secondly there needs to be a form for better communicating this issue. There should not be one firm or one regulator set of challenges, we need greater co-operation between the public sector and the private sector in this regard and I thank you for this forum to begin this process. We, at Citibank, would be happy to share our methodology, information, technology and techniques and at least the thought process, what we do, why we do it and how we do it.