Musical Chairs

By Ricardo J. Caballero (Department of Economics, MIT) and Arvind Krishnamurthy (Kellogg School of Management, Northwestern University)

August 13, 2007

A liquidity crisis is taking place where investors, banks, and funds are scrambling for liquidity. Several hedge funds run by prominent investment banks in the US and abroad have liquidated or have suspended convertibility.

Paradoxically, when viewed as a whole there is sufficient liquidity in the financial system. Banks are well capitalized and flush with liquidity. Just a few weeks ago stock markets were soaring, investors were optimistic, and the VIX hit 13, not far from its 9.5 all time low. Yes, the residential real estate market in the US was declining and creating a mess in the subprime market. But, it was generally understood that the scale of these subprime losses was small in relation to the US and World economy. Even if all subprime mortgages and related CDOs were to lose all value, this would amount to just 2.5% of US wealth. A more realistic, yet still pessimistic scenario puts the potential losses at $400b, less than one percent of US wealth. These losses could hardly have reversed the liquidity position of the financial sector. Hence, many pundits used the word “contained” in describing the subprime losses. Yet, it is clear that there is a liquidity crisis unfolding before our eyes.

Why? The reason is a rise in uncertainty --- that is, a rise in unknown and immeasurable risk rather than the measurable risk that the financial sector specializes in managing. The financial instruments and derivative structures underpinning the recent growth in credit markets are complex. Market participants cannot refer to a historical record to measure how these financial structures will behave during a time of stress. Thus, today there is considerable uncertainty in who will and will not lose money in the credit market turmoil.

To understand how uncertainty can move an economy from excess liquidity to a liquidity crunch, an analogy may be useful. In the children’s game of musical chairs, when the music stops, only one child will be left without a seat. However if the children are confused about the rules and each is convinced that they will be the one left without a seat, chaos may erupt. Kids may start grabbing on to chairs, running backwards, etc.

In the same way, in today’s market uncertainty is leading every player to make decisions based on imagined worst-case scenarios. Market players that have the liquidity stay out of markets or pull back dramatically. But the financial markets need participants and their liquidity in order to function. When much of the market disengages due to uncertainty, the effective supply of liquidity in the financial system contracts. Those that need liquidity are unable to get it and financial markets turn illiquid.

What should central banks do in this case? They must find a way to re-engage the private sector's liquidity. Understanding that uncertainty is the cause of the
disengagement is the start of finding the solution. A first step in reducing agents’ uncertainty is for the central bank to clarify how it will act if agents’ worst case scenarios come to pass.

The central bank’s mission is to stabilize the economy as a whole and not individual participants. When viewed as a whole, the worst case scenarios that guide the behavior of each market participant cannot simultaneously occur. Like musical chairs, when the music stops, only one child will be left without a seat, not every child. The subprime shock at the end of the day is a small shock; it is only the actions of panicked investors that make it appear large. A central bank that understands this point will convincingly promise large liquidity injections in the event of a meltdown. The likelihood of having to deliver on the promise is minimal, but the reduced anxiety fostered by such a commitment restarts private liquidity circulation and helps restore normalcy.

It is important to understand that this is all about information and not about real liquidity additions. We do not have a true liquidity shortage on our hands; we only have one because of the reactions of an anxious private sector. Talking and providing information and certainty can go a long way to reducing uncertainty. A rate cut may be the right tool, but it is important not for its direct liquid addition, and instead for what it conveys about the central bank's readiness to act if things do get worse.

Will the Fed and other central banks around the world act appropriately? The early reactions are positive. The European Central Bank was first to act, injecting more than $214 billion in the last two days. The Fed followed with a more modest $38 billion on Friday, and the rest of the central banks of the world did their share, lending over $73 billion to the market. It may also be that some of investors’ uncertainty stems from not knowing how Fed Chairman Bernanke will react in case of a meltdown. Is he too much of an inflation targeter and oblivious to the workings of financial market? Not likely. From his extensive academic work on these matters, it is apparent that he is quite aware of the importance of credit markets to the functioning of the economy and the cost of the central bank failing to identify a liquidity event in time. It may well be time to start buying put options on the VIX.