

Commentary: The “Big C”: Identifying and Mitigating Contagion

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There is a large literature on contagion. It is perhaps the most important systemic risk to the financial system. The term is widely used so this covers many topics. The paper starts with a discussion of exactly how the term is used. Perhaps most importantly it is used to refer to the spread of crises from one country to another through real links such as trade, through portfolio rebalancing and through the banking system. By and large these literatures developed fairly independently from each other. They cross reference each other but that is all.

The first contribution of the paper is to survey these literatures and provide a conceptual framework to think about them together. Contagion is divided into four types.

1. Trade
2. Banks and Financial Institutions
3. Portfolio Investors
4. Wake-up Calls/Fundamentals Reassessment

These are not mutually exclusive and it is stressed they often occur together.

The second contribution is an empirical analysis showing that contagion has increased significantly in recent decades. The third is to use the framework to draw policy conclusions. Finally, there is a discussion of the eurozone.

This is an important paper for the academic literature and will be widely cited. It is also very important for policymakers. It draws simple and persuasive policy conclusions. Many are adhered to but some are not.

In this discussion, I will apply the framework developed in the paper to some past and current examples of contagion. I will also stress one of the policy conclusions in the paper that I regard as particularly important in avoiding severe contagion. This is that policymakers should clarify in advance the policies they will pursue in various crisis scenarios.

One of the things that the paper stresses is that contagion is about extreme negative events. The problem is that extreme events are rare and this means that we have very few data points. This makes rigorous statistical analysis impossible. Instead we have to examine particular episodes in detail and combine the case studies with theory to try to understand what is going on.

The most frightening recent example of the destructive effects of contagion is the sequence of events following the default of Lehman Brothers in September 2008. There were dramatic falls in GDP in many countries, and most other indicators of the state of the economy also suffered. This is an example where all four of the mechanisms for transmitting contagion were in operation. The contagion started in the financial sector and at first spread through that.

There was some of the classic domino type of contagion. This occurs when one institution has a claim on a failing institution. It may then itself be threatened and so on down the chain so there may be a whole string of bankruptcies. A money market fund called Primary Reserve Fund held a significant amount of Lehman Brothers debt. When Lehman defaulted, Primary Reserve Fund “broke the buck.” In other words, the value of their shares fell below the promised \$1 and they were required to liquidate the fund. This set off runs

on many money market funds. Within a few days the government guaranteed money market funds to stop the run. Thus, the problem was quickly solved.

The second type of financial contagion is where if one institution fails, then people's assessment that other similar institutions will fail goes up significantly. This type of contagion also occurred. When Lehman Brothers failed, Morgan Stanley and Goldman Sachs had great difficulty in raising short-term finance. They were allowed to become commercial banks and gained access to the Federal Reserve's discount window and this allowed them to survive. Without the Federal Reserve allowing this they may well have failed. Again, the contagion was stopped.

However, it is the third type of financial contagion that was the most damaging. Unfortunately, this is the one that we know least about. The events surrounding the Lehman default included the government takeover of Fannie and Freddie, the purchase of Merrill Lynch by Bank of America, the bailout of AIG and the problems in the money market mutual fund sector described above. They came as a great surprise to most people. This led to a flight to quality where many people invested large amounts in safe-haven assets such as Treasury securities. The drain of funds from risky to safe assets caused large price adjustments and put great strain on banks and other financial institutions. Volumes in interbank markets fell and banks became reluctant to lend to firms, particularly small and medium-sized ones. The crisis spilled over into the real economy as the crisis spread.

Interestingly, the country that was worst affected by the contagion was Japan. In the year following the Lehman default, its GDP fell by around 10 percent, far more than in the United States where it fell by around 5 percent. The fall in Japan's GDP had very little to do with finance within the country. Japan's banks had very little direct exposure to the U.S. subprime problems, and they did relatively well during this period. Supply of credit was not a problem. Trade, however, played a very important role. Many of their exports are automobiles and other consumer durables. These were particularly hard hit as some consumers in the United States and other countries cut back their spending, while others found it difficult to borrow to purchase

these items. This is a case where the different types of contagion reinforced each other.

But even in the case of Japan, invoking trade as the source of contagion is not quite enough. South Korea has a broadly similar kind of economy where automobiles and other durables are important exports. However, it did not suffer nearly as badly with GDP falling only about 4 percent. The problem is that Japan is a safe-haven currency. Its exchange rate did not adjust. On the other hand, South Korea's depreciated significantly. This allowed its exports not to be hurt nearly as much as those of Japan. Companies like Samsung and Hyundai were able to take market share from their Japanese rivals and this exacerbated Japan's plight. While South Korea's GDP has grown about 15 percent from where it was at the beginning of the crisis, Japan's GDP is still below that level.

Portfolio flows played a part too. Funds were withdrawn from many emerging economies and were returned to their source country. This exacerbated the disruption in financial markets. Also, the crisis was clearly a wake-up call, particularly about the perils of systemic risk. Fortunately, central banks and governments were able to halt the collapse and we avoided a repeat of the Great Depression. Nevertheless, much damage was done and the crisis exposed many weaknesses in the global financial system and economy. In particular, the weaknesses in the eurozone are such that the crisis is still far from over.

As mentioned above, we do not understand this third type of financial contagion very much. It seems that it occurs when something quite unexpected happens. The only paper on contagion that I am aware of that has this kind of result is Oh (2012). This looks at learning behavior about other lenders when all lenders are required to roll over funding of a project. It is shown that contagion is more likely if the triggering event occurs with low probability.

Let me turn next to the Eurozone Crisis. The great worry here is that it triggers a Lehman-type contagion. This is where the paper's recommendation that policymakers need to be very clear about what they do will do is so important. A good example where extreme contagion was avoided was with the Greek Private Sector Involvement

(PSI) that was completed in March 2012. Initially, it was argued by many in the official sector that this PSI should be avoided at all costs since otherwise there would be catastrophic contagion. In fact, by making it clear, slowly over time, how the default would work, there were no Lehman-type extremes. There were effects to be sure. These involved higher yields on Spanish and Italian bonds as people realized that default was a very real possibility, but, because of the way the situation was handled, these were not severe.

What other kinds of events in the Eurozone Crisis could trigger a Lehman-type contagion? The way the European Central Bank (ECB) will intervene in sovereign debt markets going forward will be announced shortly. The details need to be spelled out as explicitly as possible. For example, how will the ECB guarantee that its holdings of sovereign debt will be treated equally with the holdings of private sector debt if there is a sovereign default? Another example will be to explain the limits, if any, to the intervention.

The other event that could trigger a Lehman-type contagion is if one or more countries leave the eurozone. *The Economist* outlined some scenarios for this to happen.¹ They suggested this might play out in a number of ways. Greece may be forced out if it does not meet all its responsibilities under its agreements with the IMF, EC and ECB. Some countries may get into a downward austerity spiral and decide to leave since it can be argued that devaluation is the best short-term growth policy (see, e.g., Allen and Ngai 2012). Other growth policies such as structural reform are a good idea but they take a long time to take effect. At the moment, the official position is that no country can leave the eurozone. Fortunately, though, this is not widely believed so the private sector is clearly planning for it and there are rumored to be a number of governments with working groups to deal with a Greek exit.

However, it would be much safer from a contagion point of view if the official sector were to make it clear how an exit would work. Would a country be able to remain in the EU if it left the eurozone and to re-enter the euro system at some future date? How would debts be dealt with? Would the ECB help with a transition or would a country and its banks be on their own?

If Greece is pushed out, there would be many negatives. But this would have the distinct advantage that it would provide some experience of how things would proceed if it becomes necessary for a larger eurozone country like Spain or Italy to leave. Without such a precedent, an exit by Spain or Italy may lead to a massive contagion problem for the global economy. In retrospect, many would now argue that if Bear Sterns had been allowed to default in March 2008, this would have prevented much of the chaos of the Lehman default. The argument for a Greek exit is similar to this.

The usual reaction from the official sector is to deny that an exit by Greece or any other eurozone country is a possibility. The most important recommendation in the paper is that this is not the right thing to do. It would be much better to be clear about how things would work if such a scenario were to occur.

I will finish with one final example. The United States will have to extend the debt ceiling at some point in the next year. When this happened in 2011, the federal government came much closer to a default than many people would have guessed. However, there was very little guidance as to how such a default would be handled if one were to occur. This increases the chance of a significant contagion. It would again be very helpful in preventing contagion to be much clearer about what would be done. Would interest be prioritized? Would payments be delayed? What exactly would be the measures that would be taken?

To conclude, this is an excellent and important paper. My recommendation is to read it.

Endnote

¹See “The Merkel Memorandum” *The Economist*, Aug. 11, 2012, pp. 20-22.

References

- Allen, F. and V. Ngai. 2012. "In What Form Will the Eurozone Emerge from the Crisis?" *Journal of Applied Finance*, No. 2.
- Oh, D. 2012. "Contagion of Liquidity Crisis Between Two Firms," *Journal of Financial Economics*, forthcoming.