MAIN LESSONS FOR FINANCE OF THE 2007-2009 CRISIS

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Abstract

This paper discusses issues that should receive an increased weight in how finance is being taught in the future, based on the experiences of the financial crisis of 2007-2009. The three specific lessons are: the role of basic economic analysis in understanding the foundations of asset values, the shortcomings of diversification as a method to reduce risks, and the increased role of information asymmetry in crisis stricken financial markets.

Keywords: financial crisis, asset value, diversification, risks

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Main lessons for Finance of the 2007-2009 Crisis

The financial crisis that shook the world economy in 2007-2009 has triggered massive soul searching among financial economists. For economists working in the academia the issue is what impact the crisis should have on how we teach financial economics to our students. Is there anything we can do to improve the understanding held by future finance experts that could reduce the likelihood for similar profoundly disruptive chain reactions in the future? This paper gives some suggestions for where rethinking triggered by the crisis is most urgently needed.

Background

By now a large number of books and papers have been published that document the details of the crisis from different angles. The MSCI World Index in Figure 1 evidences the dramatic impact that the crisis had on the world's stock markets.

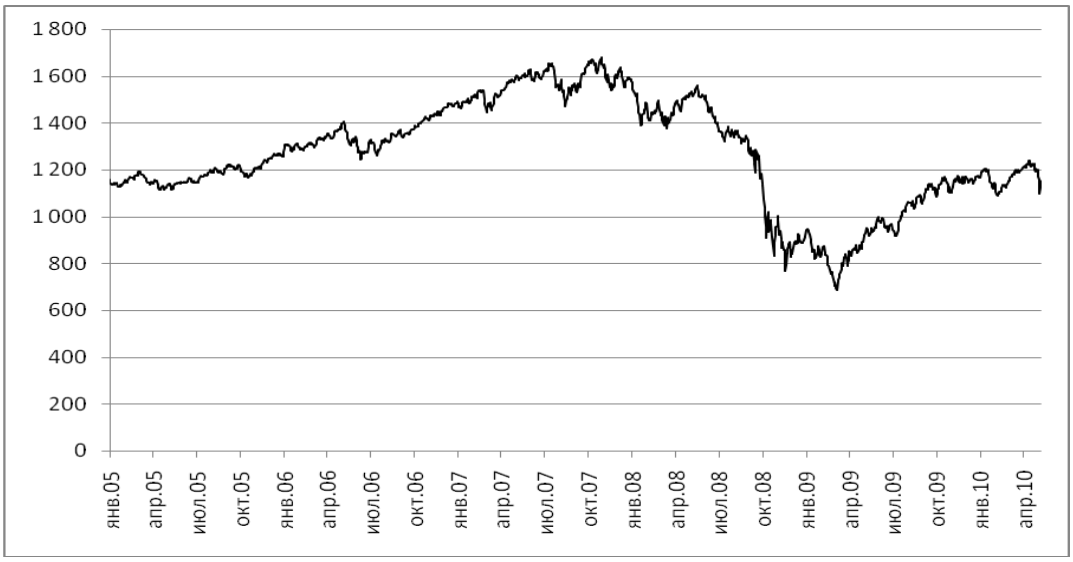

Figure 1. MSCI World Index

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As can be seen from the figure 2005 and 2006 marked the later part of an unusually stable bull market that commenced after the burst of the IT bubble, in the first years of the present millennium. This stable trend drove stock prices upwards until mid 2007. In that year the global stock price trend broke and market volatility went up sharply. This increase in perceived uncertainty reflects the first subprime related problems that surfaced in the USA leading to a marked increase in risk premiums for risky debt[12]. The stock market jitters then continued into the first half of 2008 when the investment bank Bear Stearns, overexposed in subprime related assets, had to be rescued by US authorities in a subsidised sale to JPMorgan.

The major slide in the World's stock prices, though, commenced in the middle of September of 2008. The triggering event was the filing for bankruptcy by the investment bank Lehman Brothers. The vast net of financial contracts that Lehman Brothers had built up over time made it practically impossible on short notice to determine how big the losses would be, and how they would be distributed among investors around the world. Even more importantly, the markets suddenly faced the prospect that other large players could fail too. Suddenly counterpart risk, which earlier had been a marginal worry, became the main issue in valuation of financial contracts.

The lack of obvious ways out of the chaos that the Lehman bankruptcy caused led to a rapid loss of confidence in a large number of more or less troubled financial institutions, not only in the USA, but around the globe. The deepening insight that the major powers in the world were short of remedies to sort out the mess that the Lehman bankruptcy had created drove the world's stock prices downwards all the way into March 2009. By that point more than half of the value in listed stocks had melted away globally since the peak in 2007[13]. March 2009, however, marked the low point of the crisis. Since that month confidence has gradually been restored and stock prices have generally been rising, with occasional fairly dramatic, albeit nor very persistent, setbacks.

The focus of this paper is on the main lessons that can be drawn from the chain reactions that produced the above dramatic shifts in the value of global stock markets. The paper will focus on lessons that have been of particular importance in this crisis[14]. Thus issues like the perils of excessive leverage will not be covered. Those perils have been well known for ages, even if market participants seem to have a tendency to forget them after a few years of steady growth. More specifically this paper will focus on three important lessons that have been vindicated by the recent crisis, starting out from the role of basic economic analysis, going on to the role of diversification, and finally highlighting the time varying nature of asymmetric information problems.

Economics 101 is highly relevant

The first lesson that financial economists should pay attention to is the usefulness of basic economic theory. If analysts that rated the housing related assets in the USA, or the clients who relied on their reports, would have recalled what they learned when they took their Economics 101 course back in time, much of the chaos brought about by the crisis could most likely have been averted. Basic economics tells us that housing is a normal good that households invest part of their wealth in. To the extent that housing markets are competitive competition should bring housing prices down to a level that corresponds to production costs. Of course there are a number of frictions in the housing market that tend to slow this process down, but for a major part of the housing markets these forces continue to be at work in the background. [15]

Basic economics also teaches us that campaigns that increase the demand for housing, i.e. by paying subsidies to house buyers, will drive up prices in the short run. The giant federal mortgage institutions Fannie Mae and Freddie Mac, that had to be rescued by the US government in September 2008, were in effect set up to channel subsidised funding to low-income households. The price impact of demand subsidies, however, is bound to be temporary. Once the additional demand caused by the subsidies has been satisfied normal forces of competition will take over and drive down prices again.

The fact that ownership related claims on housing are being packaged into different kinds of complicated portfolios will in no way mitigate the underlying economics of housing that ultimately will determine house prices.

Diversification is overrated

The big insight that forms the basis of portfolio theory, as originated by Markowitz in 1952, is that risk can be reduced by diversification. Thousands of papers discussing and estimating the impact of diversification on risk have been published since Markowitz's seminal piece. What the financial crisis in 2007-2009 teaches us, however, is that diversification benefits tend to be substantially reduced in a financial crisis. What this means is that the conclusions that we can draw concerning the risk reduction potential in diversification, based on data collected over a stable period, are quite limited. A substantial part of the benefits that obviously were there when the economy was growing at an even pace, simply evaporated when the crisis broke out.

[12] For a good overview of the developments in the US debt markets into the crisis see Dwyer & Tkac (2009).

[13] Since MSCI World do not contain smaller firms nor unlisted ones the total drop in valuation is likely to be even larger. Smaller, less liquid, firms' values generally fall more large firms values when investors loose confidence in previous valuations.

[14] For an interesting analysis of recurrent features in financial crises see Reinhart and Rogoff (2009) & (2010).

[15] For an interesting overview of the developments in the housing markets in the USA in the run up to and during the financial crisis see Sowell (2009).

The housing markets in the USA constitute the prime example in this crisis. As long as housing prices were going up, because of increase in demand, defaults on housing loans were not much of problem, the house was worth more than the loan. A portfolio containing a large number of geographically dispersed housing loans suffered marginal losses, if any, due to defaults.

However, when the economy stagnated and households started to adjust their demand for housing to lower income levels, a downward pressure on housing prices took over in most parts of the US economy[16]. As a consequence defaults on housing loans increased almost everywhere. The risk that wasn't there in the data collected over a five-year period of stable growth suddenly materialized.

The law of large number from statistics, which tells us that if we take the average of an increasing number of well behaved independent stochastic variables we will approach a constant number, is not applicable to cases where the outcome suddenly mainly reflects one dormant variable, a factor that hasn't changed much over the recent past. In this crisis the dormant variable was housing price increases. In next crisis it is likely to be something else. In this crisis a steadily increasing housing price trend gave way for a price drop that dramatically overshadowed the impact of the, practically independent, misfortunes that also in good times may strike households in different parts of a large country.

Asymmetric information rules when a crisis strikes

Related to the previous lesson is the time varying role of information asymmetry. What the recent crisis vividly demonstrates is that a lengthy stable period will push information asymmetry problems into the background. As such this is nothing new. We know that reputation plays an important role as a disciplining device in repeated games. The insight that the financial crisis brought was that the nature of "the game" can change completely on financial markets at large when circumstances change.

At the core of this change is the role of the information intensity of different asset classes.[17] Debt instruments with a clearly defined stream of future payments, do not, under normal circumstances, require much scrutiny from the buyer to find out what the pay-off will be. Equity is different. The buyer of shares should be able to figure out if the expected payments to the shareholder are high enough to warrant the price. For listed shares, of course, there are professional analysts who are doing the job, along with a large group of sophisticated investors who are expected to push the price in the right direction if there are any pricing errors. For buyers of unlisted shares there are no other alternatives than to employ a trusted expert or invest the time to learn enough about the company to make an informed judgement.

To sum up: at one end of the spectrum there are assets that are cheap in terms of required information processing costs, and at the other end there are assets that are expensive in the sense that valuing them requires sophisticated information processing capacity. Consequently there are different kinds of institutions that have been tailored to handle these different types of assets. Low information intensity assets, like high grade corporate, and government debt, are taken care of by banks and certifying agencies, that is rating institutes. High information intensity assets are taken care of by venture capital firms and private equity.

What the financial crisis revealed was that a variety of risks can turn low information intensity assets into high information intensity assets in a very short period of time. All kinds of highly rated mortgage backed assets suddenly changed from being assets with a negligible impact from possible defaults into assets where the shortfall from the nominal claim of the asset to the likely pay-out to the holder could turn out to be a major part of the asset's nominal value.

When there is substantial information asymmetry and a lack of institutions that would be able to tackle that information asymmetry the typical problems brought about by information asymmetry will proliferate. In that situation adverse selection is likely to cause a market failure in risky debt instruments since a low ask price will simply signal a high expected default loss. Typical for a crisis is also that a number of large players end up in trouble which will increase the incidence of moral hazard as a part of these players may take additional excessive risks to "gamble for resurrection". Due to the rapid change in assets values, and lack of institutions to do the appropriate valuation and monitoring, spotting potential perpetrators will be difficult. Other market participants will regard firms that make risky moves with deep suspicion.

Summary

The purpose of this paper is to bring up issues in financial economics that should receive an increased weight in how we teach finance, based on the experiences of the financial crisis of 2007-2009. The first lesson is that basic economic analysis remains an important element in financial economics. The economic foundations of the claims that are being traded in financial markets should not be forgotten. The existence of complicated financial contracts should not be allowed to obscure the fact that there is an underlying economic system that obeys certain regularities that we need to know in order to be able to price assets appropriately. This holds for housing related assets as well as for any other assets traded in financial markets.

The second lesson is that diversification as risk protection has a tendency to fail precisely when it is most needed. In a crisis asset prices tend to move in the same direction to much larger extent than they normally do. This naturally limits the value of conclusions that can be drawn on data that doesn't include any crises, which is

[16] See e.g. Sowell (2009), p.57.

[17] This idea is presented in Holmström (2009). For a more extensive discussion of this idea see Holmström (2010). A formal model that incorporates this idea is presented in Dang, Gorton and Holmström (2010).

not saying that that data that happens to include some earlier crises would be much better. Next crisis is likely to be fundamentally different than the previous one.

The third lesson is that information asymmetry problems tend to become dominant in a crisis situation. The reason is that most institutions that have been crafted to deal with crisis stricken assets will be inadequate to handle the overload of new information that will be produced at a rapid pace in the crisis. This leaves market participants exposed to typical information asymmetry problems, which will reduce their willingness to take financial risks, and thus contribute to a "freezing up" of the markets.

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