Special Feature B

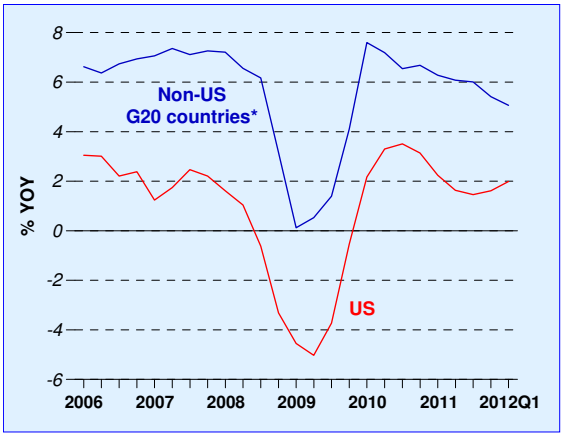
Self-Fulfilling Global Panics

by Philippe Bacchetta and Eric van Wincoop[1]

Introduction

The 2008 financial crisis saw a sharp drop in global asset prices and economic activity. For example, Chart 1 shows the decline in growth in the US and in other G20 countries during the so-called Great Recession. What is unusual about the Great Recession is the significant co-movement of business cycles across the globe. Such close co-movement has never been seen in prior recessions, even in the Great Depression or in recessions caused by a global shock, such as a spike in oil prices. The percentage point drop in the growth of GDP was at least as large in the rest of the world as in the US. The same was true for consumption and investment growth.

Chart 1
Global GDP Growth



*Excludes Saudi Arabia.

At the same time, we observed a large spike in risk across the globe, both pertaining to future asset prices and economic growth. Chart 2 shows implied stock market volatility (a measure of stock price risk) for a broad set of countries that includes both industrialised countries and emerging markets. In the US, this measure of risk quadrupled in the fall of 2008. While the crisis originated in the US, the sharp increase in risk was experienced throughout the world. When analysing survey data on growth expectations, we find a similar quadrupling of one year-ahead output growth risk. The increase is again similar across countries.

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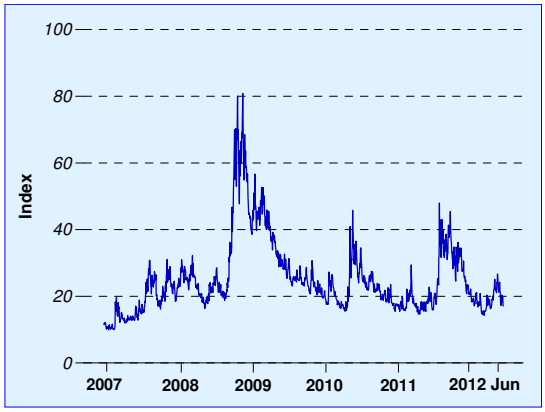
Chart 2
Implied Volatility Indices

US



Germany

Japan

Canada

France

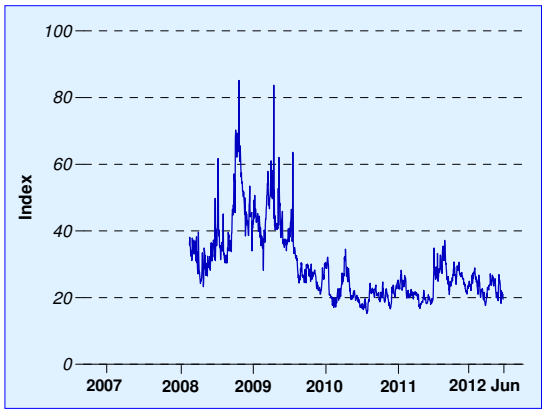
Switzerland

Chart 2
Implied Volatility Indices (Continued)

Belgium

Netherlands

India



Mexico

South Korea

South Africa

Source: Datastream and local stock markets

In our recent research, we argue that this increase in perceived risk is key to understanding the crisis. Such a large increase in risk, regarding both asset prices and economic activity, naturally leads to a sharp decline in asset demand, a rise in precautionary saving and a drop in investment. This can account for the global drop in asset prices, consumption, investment and output.

However, this explanation raises many important questions: what can account for such a large spike in asset price risk? What can account for its global nature? And what can account for the same phenomenon in business cycle variables as opposed to asset prices? These are the main questions we try to address in this Special Feature.

Self-fulfilling Risk Panics in Asset Markets

In two recent papers, we developed a theory for self-fulfilling risk panics that can account for large and sudden spikes in asset price risk.[2] The basic idea is that risk perceptions change rationally over time and that these perceptions may be influenced by macroeconomic variables. Therefore, macroeconomic fundamentals have a dual role in our theory. One is a standard role, where, for example, a deterioration of a fundamental variable reduces expectations of future firm earnings and dividends, which lower the asset price. The other role is one of generating self-fulfilling shifts in perceived risk. This happens in a way that is entirely disconnected from the fundamental role of the macro variable. This is perhaps easiest to understand when thinking of the variable as a pure sunspot, i.e. one that has no fundamental role at all. When investors believe that asset price risk (uncertainty about the asset price tomorrow) depends on the sunspot, and act on those beliefs by selling the asset when risk increases, then the price will depend on the sunspot as well. This suggests that tomorrow's price depends on the sunspot tomorrow. This in turn implies that asset price risk depends on uncertainty about the sunspot tomorrow. The latter will, in general, depend on the current level of the sunspot, making the perceived dependence of risk on the sunspot self-fulfilling.

A risk panic occurs when risk beliefs shift from a normal, non-panic state, where the macro fundamental plays only a regular fundamental role, to a panic state where it also generates self-fulfilling shifts in perceived risk. The moment this shift happens, there is a large spike in risk and a drop in the asset price. Subsequently, the price becomes very sensitive to changes in the fundamental, as it becomes a focal point of the market around which perceptions of risk are coordinated in a self-fulfilling way. During the 2008 crisis, we can think of this fundamental as related to the health of US financial institutions. More recently, since the start of the European debt crisis in 2010, one can think of the fundamental as relating to European sovereign debt and various related bailout packages. A switch to a panic state can be triggered by any event, such as the bankruptcy of Lehman Brothers in 2008 or the discovery of accounting irregularities associated with Greek debt in the spring of 2010.

[2] See Bacchetta, Tille and van Wincoop (2012) and Bacchetta and van Wincoop (2012).

Our research has also shown that such a risk panic can be global in nature. The same trigger event leads to a sharp and simultaneous spike in risk across the globe, accompanied by a similarly large drop in asset prices everywhere. It is important to emphasise that it is not contagion (or transmission) that causes the co-movement across countries. We think of transmission as a situation where a shock in one country is transmitted across the world through international trade and financial linkages. While such transmission is surely important, it is nonetheless partial at best. The reason is the significant home bias in both goods trade and asset holdings. In the US, for example, trade is about 14% of GDP. This means that 86% of goods and services purchased are domestic and only 14% are foreign. Similarly, estimates for stock, bond and bank holdings show that about 80–90% are domestic holdings. Consistent with this, several recent papers have found that financial linkages with the US did not impact the extent to which countries were affected in 2008.[3]

Rather than contagion, or transmission, the co-movement of asset prices in our model of self-fulfilling risk panics is a result of a global coordination of beliefs about risk around a large trigger event, and subsequently, around a particular macro fundamental that becomes a gauge of fear in the market. This can explain, for example, why stock price risk spiked similarly in Asia in 2008, even though most Asian countries had virtually no exposure to US asset-backed securities. It can also explain why in 2010, stock price risk in the US (the VIX) spiked at least as much, if not more than in Europe, and has subsequently been very volatile in response to any news related to the European debt crisis. Even recognising linkages between US and European banks, the exposure of US banks to sovereign European debt pales in comparison to that of European banks. This makes it hard to attribute the close co-movement of asset price risk to financial linkages.

Self-fulfilling Risk Panics in Business Cycles

Our most recent research has focused on business cycles rather than asset prices. We have shown that it is possible to have a sudden spike in uncertainty about real economic prospects (growth, wages, employment) that takes place simultaneously across the globe. It is again self-fulfilling and generated by a singular trigger event. When people believe risk is suddenly higher, and act on those beliefs, then it is indeed possible for risk to become higher. In particular, our models have focused on beliefs of consumers and firms. If consumers believe that future wages and employment prospects are weaker and more uncertain, they will act upon those beliefs by cutting spending. While such an increase in precautionary saving may be good for an individual household, it can drag down aggregate demand and generate a recession when it takes place across an entire economy. This also weakens firms' profits and discourages new investment. The associated increased risk of firm bankruptcies implies increased uncertainty about future labour demand and wages, making initial beliefs self-fulfilling. This story is consistent with the sharp decline in consumption, investment and output seen during the last two quarters of 2008 and first quarter of 2009. It also explains the accompanying sharp deterioration in and increased uncertainty about future growth prospects as reflected in survey data.

[3] See van Wincoop (2012) for a review of the literature.

There are two possible explanations, which may have acted jointly, that can account for the global nature of the recession. One is that the trigger event was a particularly large and frightening one. With Wall Street considered the centre of global finance, financial market developments in the fall of 2008 were a natural attention grabber that made headlines globally for a sustained period of time. Innovations in communication over the past century have made it possible to follow such events in real time across the globe, something that was not possible, for example, during the Great Depression.

A second explanation relies on trade and financial integration across the globe. We have already argued that these trade and financial linkages are not strong enough to explain why the rest of the world, through transmission of a shock that took place in the US, experienced an equally large recession as in the latter. However, our research shows that even limited global integration can lead to perfect co-movement of business cycles if trade and financial links become a focal point of beliefs that coordinates a panic across countries. Even with limited trade or cross-border asset holdings, it may be impossible to have a panic in the US that does not spread to the rest of the world. Either countries panic together or they do not panic at all. Together with the frightening nature of the trigger event, a joint panic was the most likely outcome in the fall of 2008.

Sum-up

According to our theory, the large losses of leveraged financial institutions and associated decline in credit were not directly responsible for the Great Recession. Rather, a deterioration of macroeconomic fundamentals, such as a negative credit shock, contributed to a panic by generating conditions that made self-fulfilling beliefs, which otherwise would not have existed, feasible. A sharp and sudden deterioration in fundamentals, in addition, served as a trigger event for a self-fulfilling spike in risk that set off a sudden and deep recession.

Naturally there are policy questions related to how a panic can be avoided. This becomes even more important if these panics are coordinated on a global scale. Our ongoing research shows that countercyclical spending on a large enough scale can help to avoid panics altogether. A large government, for example, will do the job, assuming that it does not behave in a pro-cyclical manner that reinforces beliefs held in the private sector. In addition, it remains important for policy-makers to pay attention to macroeconomic fundamentals.

References

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