Vítor Constâncio: Understanding the driving forces behind systemic financial crises

Speech by Mr Vítor Constâncio, Vice-President of the European Central Bank, at the 2011 Bernácer Prize Award Ceremony in honour of Mr Lasse Heje Pedersen, Madrid, 28 June 2012.

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Ladies and Gentlemen,

It is a great pleasure for me to address a few words to you in honour of this year's winner of the 2011 Bernácer Prize, Professor Lasse Pedersen from New York University. The developments on the global financial markets that we have been witnessing in the past years are unprecedented in nature and have raised a number of challenges for policy makers and central banks alike. In times like these it is more important than ever that we use the advice of the brightest and most talented scholars in order to find answers to complex questions and develop effective tools with real-world applicability in order to combat the potentially adverse effects of financial instability without jeopardizing our primary mandate of medium-term price stability. Without doubt, Lasse Pedersen has been one of the leading minds that have re-shaped our thinking about financial markets, as his contributions during the past decade have greatly improved our understanding of the driving forces behind systemic financial crises and the propagation of liquidity shocks across markets and throughout the economy.

Naturally, academic research plays an important role for central banks in general because it provides the foundations for the conduct of monetary policy and its impact on the real economy. The Eurosystem is no exception to this and naturally finds itself in constant exchange with the global research community in the form of research seminars and conferences as well as regular academic visitors. Moreover the ECB regularly funds policy-relevant academic research via the Lamfalussy Fellowship. In 2010, the Eurosystem launched the Macroprudential Research Network MaRs with the objective to develop core conceptual frameworks, models and tools that would provide research support in order to improve macro-prudential supervision in the European Union.

Lasse Pedersen's research focuses on the role of liquidity in financial markets. While much of the classical theory of asset pricing assumes a frictionless world, his work departs from this idealisation and acknowledges that real-world features such as the institutional structure of the way capital is invested around the globe have profound implications for both the determination of asset prices as well as for the stability of the financial system itself. Today, most trade in financial markets – be it stocks, bonds, currencies, or derivatives – does not take place between individuals but rather financial institutions such as banks and investment firms. This has important implications for the functioning of these markets because it introduces several important types of frictions.

As we have all witnessed in the past years, many of these entities are very large, at least in terms of their balance sheets. Besides giving rise to the too-big-to-fail problem that has been at the heart of the current financial crisis, the size of these financial institutions has profound implications for the way investment portfolios are constructed and assets are traded, because it makes a large difference whether an agent wants to buy or sell 100 shares or 100,000 shares. For large investors, the impact of their actions on market prices is no longer negligible and they potentially incur large transaction costs due to "market impact", such that fluctuations in market liquidity – the ease with which a security can be transformed into cash – become a first-order concern. Based on this real-world insight, Acharya and Pedersen developed the liquidity adjusted Capital Asset Pricing Model (CAPM),[1] which shows that investors do not only require compensation for bearing the risk associated to an asset's fundamentals but also will command an additional premium related to the asset's liquidity risk. Their theory is strongly supported by numerous empirical studies and can explain real-world phenomena such as the episodes of a flight to liquidity that we have witnessed more than once during the past years.

Another salient feature of financial institutions that has featured prominently in the current financial crisis is leverage. In fact, most market participants do not finance their entire trading positions with equity but rather fund part of their investments by pledging the securities as collateral in repurchase agreements and asset-backed commercial paper. This implies that asset prices are also affected by funding liquidity, a concept that refers to the ease with which a security can be used to raise outside capital. In the years preceding the 2007–2008 financial crisis, leverage in the financial sector build up steadily fuelled by high demand for dollar-denominated short-term debt in conjunction with low interest rates. When the first rumours of problems in the market for sub-prime mortgages began to spread, uncertainty of exposures to potential losses directly translated into funding liquidity problems. In an equally rigorous and elegant contribution, Pedersen and his co-author Markus Brunnermeier – Winner of the 2008 Bernácer Prize – show how shocks to funding liquidity and market liquidity can reinforce each other and culminate in a downward spiral that gives rise to financial instability and systemic risk.[2] If funding conditions worsen, initial losses on leveraged positions may lead to forced selling, and this temporary excess supply of securities cannot absorbed by liquidity providers precisely because speculative capital has become more costly. In turn, this reduced market liquidity leads to lower prices and increased volatility, thus creating a negative feedback effect as these developments imply a further tightening of funding liquidity, culminating in further fire sales and so on.

The events around the collapse of the US housing market and the 2008 Lehman bankruptcy underline the central role of this vicious circle in the propagation of shocks across markets and market participants. Uncertainty about the exposures of potential counterparties lead to a temporary breakdown of the interbank market, thereby disrupting banks' ability to manage their liquidity and additionally distorting the transmission of monetary policy. Because many investors, including hedge funds, heavily relied on bank funding, these problems ultimately spilled over to many other asset markets as liquidity providers were forced to become liquidity consumers, which lead some markets to virtually cease to exist while others saw repeated failures of the famous law of one price, that is instruments (nearly) identical cash flows traded at different prices.[3]

Another important *contribution* of Lasse Pedersen with co-authors relates to the measurement of systemic risk with development of indicators like the Marginal Expected Shortfall (MES) of financial institutions which jointly with Leverage is used to estimate Systemic Risk.[4]

Fortunately, Lasse Pedersen's research does only help our understanding of these phenomena but also provides exact prescriptions of what policy makers can do to improve market stability and break these vicious downward spirals. In particular, his research

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1 Viral Acharya and Lasse H. Pedersen (2005) "Asset Pricing with Liquidity Risk", Journal of Financial Economics, 77, 375–410.

2 Markus Brunnermeier and Lasse H. Pedersen (2009) "Market Liquidity and Funding Liquidity", The Review of Financial Studies, 22, 2201–2238.

3 Nicolae Garleanu and Lasse H. Pedersen (2011) "Margin-Based Asset Pricing and Deviations from the Law of One Price", The Review of Financial Studies, 24(6), 1980–2022

4 Acharya, V., L. Pedersen, T. Philippon, and M. Richardson (2011) "Measuring Systemic Risk", in Acharya, V., T. Cooley, M. Richardson, I. Walter (editors), " Regulating Wall Street" , John Wiley & Sons

prescribes an intervention aimed at improving funding liquidity as a measure of breaking the mentioned downward spiral and restoring market liquidity, thereby avoiding the failure of illiquid but solvent financial institutions. Additionally, he shows that measures such as broadening the universe of acceptable collateral and adjusting margin requirements can serve as important monetary policy tools in times of protracted liquidity and are complementary to the interest rate policy. In line with this, the European Central Bank has, as have many other monetary authorities around the globe, adopted several of these non-standard measures in an effort to combat a potential market breakdown and I think it is fair to say that their success in unquestionable.

While considerable progress has been made with respect to our understanding of the causes, consequences and propagation of systemic financial crises, our knowledge is far from sufficient. Further advances are particularly needed in the fields of macro-prudential policy and regulation, and the Eurosystem aims to continue contributing to a filling of this knowledge gap, in particular via its Macroprudential Research Network and its involvement with the European Systemic Risk Board. I am confident that Lasse Pedersen will continue making extraordinary contributions in the coming years and hereby extend my very best congratulations to him for winning the 2011 Bernácer Prize.

I thank you for your kind attention.