

Professor Antoine Faure-Grimaud, 1968-2009



It is with great sadness that we have to report the death of Professor Antoine Faure-Grimaud on 6 July 2009, at the age of 41. Antoine spent his entire academic career at LSE, joining the staff in 1996 and becoming a Professor in 2004 at the age of 36. His contribution to the academic life of the Institute of Management (now the Managerial Economics Strategy Group), the Department

of Economics and, finally, the Department of Finance, was exceptional. Throughout his entire time at LSE he was a key member of the FMG. His reputation as a researcher in corporate finance and regulatory economics placed him at the very top of the profession internationally.

Antoine was magnificent: a brilliant teacher and researcher, and a wonderful person. It was a privilege to have him as a colleague and a friend. He loved LSE and played a key role in building the new Department of Finance. He was a cornerstone of the department's PhD programme, as well as the FMG's Corporate Finance and Governance Research Programme, which he directed. During his time as the programme's Director, Antoine saw the continuous growth of its research output. He also played a leading role in many high profile initiatives and events, such as the establishment of the Corporate Governance at LSE seminar series and the Regional Advantage and Knowledge-Based Entrepreneurship (RICAFE 2) project. The FMG community is greatly indebted to his outstanding contribution to the development of the research environment and for his legacy.

His untimely death deprives us of a great colleague and an academic leader. Many of us have lost a good friend. However our sympathies must be with his wife, Soenje, his mother and his three sons.

Professor David Webb

FMG and Deutsche Bank Conference Reforming the Global Architecture of Financial Regulation 19 March 2009

The Financial Markets Group and Deutsche Bank hosted a one day conference, entitled 'Reforming the Global Architecture of Financial Regulation: what are the Crucial Steps?', at the Waldorf Hilton hotel, Aldwych.

The conference began with an analytical session to help identify the underlying weaknesses that led to the financial crisis, and the factors which have aggravated it. It then proceeded to panel discussions which attempted to identify key features that increase the stability of the financial system.

Session 1: What are the Causes of the Financial Crisis and what is Required to Restore Financial Stability?

Raghuram Rajan (University of Chicago) opened the conference with a discussion of the proximate causes of the financial crisis. He argued that high bank holdings of mortgage-backed securities (MBS), financed with a capital structure heavy on short-term debt made the crisis somewhat inevitable. Once house prices stopped rising, mortgage defaults started increasing and MBS fell in value, and their prices became more volatile. As banks tried to sell out of their positions, prices plummeted further and it became hard for

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(Left to right) **Ron Anderson** (FMG, LSE), **Hugo Banziger** (Deutsche Bank), **Howard Davies** (LSE) and **Gillian Tett** (Financial Times)

Financial Regulation Conference

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Charles Goodhart (FMG, LSE)

the banks to borrow against these securities, making them illiquid. Bank runs started, with the bankruptcy of Lehman Brothers being the trigger for a worldwide panic. Credit markets froze up, not only because of banks' liquidity and solvency concerns, but also because of the fear of being short of funds if investment opportunities improved in the future.

According to Professor Rajan, the seeds of this crisis lay in previous financial crises. Crises in emerging markets during the late 1990s made

countries that were affected more circumspect about borrowing from abroad, and a number of them became net exporters of financial capital. These surplus savings led to record low interest rates in the developed world, igniting demand for housing in these countries and eventually resulting in housing bubbles. Securitisation and financial innovation allowed the surpluses in emerging economies to be channelled into the housing sector, with the banking system acting as a conduit. Incentive structures and compensation systems in the banking industry fostered excessive risk taking and ensured that banks held ever-increasing numbers of MBS in their own portfolios.

Professor Rajan suggested three possible ways to deal with the crisis. The first requires the authorities to buy illiquid assets through auctions and house them in a federal entity, much like the original Troubled Asset Relief Program. Alternatively, he suggested that the government could ensure the stability of significant parts of the financial system that holds illiquid assets through the recapitalisation of entities that have a realistic chance of survival, and the merger or closure of those that do not. Lastly, he suggested a mix of the first two, where the authorities buy illiquid assets, while cleaning up the regulated financial sector, focusing particularly on resolving entities that are likely to become distressed.

Markus Brunnermeier (Princeton University) then presented his paper, 'Financial Crisis: Mechanisms, Prevention, and Management', in which he reviewed the generating and spreading process of the recent financial crisis, focussing especially on the spiral and network effect, which highlights difficulties relating to the possibility of measuring banks' internal risk tolerance and margins, based on Value-at-Risk (VaR).

Professor Brunnermeier proposed a new risk measure – CoVaR – that focuses on the contribution of a financial institution to systemic risk, as suggested in his recent work with Tobias

Adrian. CoVaR is the VaR of the financial system, conditional on institutions being under distress. In a 2009 working paper, Adrian and Brunnermeier argue for regulatory requirements that are based on the difference between CoVaR and the financial system VaR, capturing an institution's (marginal) contribution to systematic risk. Therefore, countercyclical regulation should take into account institutions' characteristics such as leverage, maturity mismatch and size, that predict systematic risk contributions. CoVaR has potential for implementation in regulatory policy making.

Professor Brunnermeier also suggested several policies aimed at minimising the adverse impact on the real economy following a financial crisis, given that a crisis can only be abated and never fully prevented. He argued that a good policy intervention in the context of crisis should coordinate investors' beliefs such that the 'good' equilibrium with an active lending market is reinstalled. The suggested policies include debt-equity swap provision, nationalisation via prompt corrective action, partial nationalisation via public equity injection, tender offers by government to buy debt at the current market price, the purchase of toxic asset bundles, guaranteeing a floor for asset bundles, and propping up house prices via mortgage subsidies.

Matt King (Citigroup) closed the first session by critically reviewing the prospect of a timely global recovery from the current financial crisis, saying that politics may initially work to hinder the recovery process rather than alleviate it. There is currently a conflict between what governments want banks to do and what banks want to do for their shareholders. Even following 'bailouts' from the government, some banks' finances are in so precarious a state that they have only enough liquidity to provide loans for a month, but not necessarily for six months, and so they do not feel in a position to lend. Mr King likened the state of today's banks to that of a person on life support, who can barely breathe and so cannot be expected to walk. Similarly, banks are barely staying afloat in the current climate, and thus cannot be expected to perform their regular tasks. He pointed out that the banks that are best coping with the current crisis were previously not favoured by investors during the good times, due to the fact they did not have much appetite for risk.

Mr King said that did not foresee banks entering into widespread lending again in the near future. He recalled that during the US Great Depression there was a 50 per cent drop in lending, and he was not optimistic about banks' abilities to lend in the current climate, despite the wishes of government. He said that he believed the current plan, which disintermediates the banks and uses the market directly as an alternative, was a good step forward, even though it is effectively equivalent to government

banking. The problem with governments directly lending is the high chance that it might lead to a boom-bust scenario, reminiscent of the 1970s, he added.

Session 2: Financial Shock Absorbers and Shock Amplifiers: what have we Learned about Financial Risk Management in Conditions of Systemic Stress?

Alan Howard (Brevan Howard Associates) began the first panel discussion of the day, which was chaired by **Andrew Haldane** (Bank of England), by arguing that the shadow banking sector does not contribute significantly to systemic risk, and so should not be directly regulated. When hedge funds lose money they principally hurt their equity holders, which does not have systemic effects. Also, hedge funds are already indirectly regulated by the regulation which applies to their brokers. He added that the hedge fund industry would be happy to confidentially disclose their holdings to authorities.

In his talk, **Malcolm Knight** (Deutsche Bank and LSE) offered four suggestions for an improved set of financial regulations. Firstly, there should be increased transparency of instruments – especially those held by structurally important institutions. Secondly, there ought to be better corporate governance of risk appetite and risk profile. Banks had previously focussed on operational risk and banking book risk, and had not paid enough attention to risk in the trading book. Lastly, there should be stronger capital adequacy and liquidity requirements. Basel II should be implemented, but there should also be an increased capital charge for risk in the trading book. The shadow banking system should also have capital adequacy requirements equivalent to those of banks. The authorities should do system-wide stress tests, and give guarantees to banks which pass those tests. Dr Knight then argued that authorities must oversee and mitigate system-wide risks. At present there is a severe externality problem, with little incentive to mitigate system-wide risk. An agency responsible for system-wide risk should have tools to deal with stress as it occurs, as in dynamic provisioning.

Peter Praet (National Bank of Belgium) then argued that banks had made poor preparation for extreme events because financial disaster planning compares unfavourably with disaster planning in other industries, such as infrastructure management, healthcare and defence. Mr Praet made five observations about how the financial system has reacted to the current crisis. First, banks had relied on centralised liquidity management without anticipating that liquidity can become trapped because of intervention by national authorities. Second,



Josef Ackermann (Deutsche Bank)

there was some incompetence shown in the poor understanding of the nature of risk by managers, giving the example of the nature of correlation risk and how correlation could cause a

AAA bond to default. Third, bankers should better understand the evolution of the system as a whole; Mr Praet gave as an example that few bankers had thought through the consequences of a possible downgrade of AIG. Fourth, the crisis had had a strong negative impact on the reputation of the sector and its supervisors, and, fifth, too much trust had been placed in formal models of risk. Some specific suggestions were that plans must be made to deal with the failure of a systemic institution, and that creditor rights should be agreed at an international level.

Various suggestions arose in the discussion. Alan Howard said that he supported the movement of a great deal of derivative trading into exchanges, and the session chair Andrew Haldane noted that many different financial institutions had diversified over the last ten years, leaving them all vulnerable to the same shocks. Peter Praet said he strongly supported better pay for members of corporate supervisory committees, and then Alan Howard discussed his own firm's compensation practices, which include clawbacks and automatic reporting of broken risk limits, although he owned that these incentives are more relevant for hedge funds than for banks.

Keynote Speech: 'Reforming the Global Financial Architecture: a Banker's Perspective'

In his keynote speech, entitled 'Reform of the Global Financial Architecture', CEO of Deutsche Bank **Josef Ackermann** expressed optimism about proposals for financial regulation reform, mentioning work by the G20, Financial Stability Forum, EU, IIF, and the Group of 30, and noting that there is considerable overlap in the reforms suggested by each of these groups.

He then went on to discuss some particular reforms he thought to be important. First, macro-prudential supervision which identifies financial institutions' externalities must become a





Sylvie Matherat (Banque de France)

central pillar of the supervisory system. Second, supervision should be extended to market infrastructure providers – such as clearing and settlement systems, payment systems, and unregulated entities, such as money market funds and SIVs – as well as banks. Third, there are some specific improvements to market infrastructure which would improve resilience: standardised settlement of CDS contracts, a central counterparty for CDS settlement, and central settlement in FX trading. Fourth, the market also needs greater transparency on complex security

markets, in particular pooling of information on transaction volumes and prices, as well as more detail on the underlying assets in complex structured products. Fifth, banks' own risk management should be improved. Best practices have been given in a recent IIF report. Sixth, capital adequacy requirements should be made stricter, especially for securitisations and assets in the trading book. Finally, he said that national and international mechanisms must be developed for dealing with the failure of systemically important institutions.

Session 3: What are the Key Macro-Prudential and Regulatory Reforms Needed to Make the Global Financial System Less Crisis Prone?

The third session of the day, chaired by **David Webb** (FMG, LSE), aimed to determine which macro-prudential and regulatory reforms are needed to make the global financial system less crisis prone. First to speak was **Charles Goodhart** (FMG, LSE), who emphasised the differences between micro and macro-prudential oversight: if regulators focus on the micro-prudential requirements, it does not guarantee the financial system will be stable as a whole. He argued that Basel II helped to amplify the cycle, as it is too focused on micro-prudential oversight. Whilst it helped improve the conditions of individual financial agents, it was not enough to guarantee the stability of the global system as a whole. He then suggested three measures of systemic cyclical valuation: leverage, credit expansion and maturity mismatch. These measures and capital requirements should apply to systemic, and non-systemic but large, institutions. He also remarked that some important aspects of macro-prudential reforms should then be operated

by host or guest countries, as cycles vary from country to country. He ended his talk by advocating an improvement in macro-prudential regulatory requirements to support the existing Basel micro-prudential requirements.

In the second presentation of the session, **Sylvie Matherat** (Banque de France) discussed what she thinks regulators should do over two different time spans: in the short term, she argued, they should worry about fixing financial institutions, whilst in the long term, they should design a new regulatory macro-prudential oversight and revisit the micro-prudential regulation. On the micro side, incentives should be improved by preventing short-termism, avoiding regulatory arbitrages and making board directors better prepared. There should be better risk coverage, she said, ensured by improved accounting for tail risks, off-balance-sheet risks, and liquidity and mismatch risks. The regulatory oversight must improve, not only for banks, but also for the shadow banking system, credit rating agencies and hedge funds. She advised that the new macro-regulatory measures must aim to reduce the procyclicality of financial regulation, and to prevent excessive risk taking in order to avoid disconnection between the financial sector and the real economy. She suggested the use of counter-cyclical capital buffers, as well as that leverage ratios be taken into account on off-balance sheet items. She concluded by stressing that it is impossible to prevent financial crises, and reasserted that we should limit the procyclicality of financial regulation.

In contrast, the last panelist, **Andreas Preuss** (Deutsche Boerse), argued that more regulation is not needed. He emphasised that markets are working as they were designed to do and, if anything, they are simply badly designed. He said that using market principles is still the best method of allocating resources, and that market design was the main reason for the recent financial crisis. He suggested several areas of market design which should be worked on in order to restore market integrity, namely: asymmetric information, lack of disclosure, distortion of price signals, and undervaluation of risks and shocks of illiquidity with an oversized risk, which led to the breakdown of the financial system. Finally, he stressed we should not focus on more regulation, but seek more transparency, enhance risk management capabilities and the advent of more centralised clearing services in order to mitigate counterparty risk.



Session 4: Seeking Global Financial Stability: what are the Implications for Risk Management and Reform of the Global Regulatory Architecture?

The fourth and final session of the day was chaired by **Ron Anderson** (FMG, LSE) and was concerned with the implications of the financial crisis for risk management and reform of global regulatory architecture. Professor Anderson began the session by asking the first presenter, Hugo Banziger (Deutsche Bank), what Deutsche Bank's Return on Equity (ROE) over the next five years would be. Dr Banziger asserted that ROE is not set by banks, but rather by investors. He said that investors mistakenly compared those 25 per cent ROE with three per cent low-yield bonds, given that 25 per cent ROE was only possible because loose regulation allowed enough leverage. Dr Banziger advised lines of defence for institutions, namely: good risk management, by choosing more qualified risk managers, and the right processes and systems; high PNL, as high profit might be needed to support mistakes; and capital, that should be between five and nine per cent tier one capital. He concluded by reaffirming that 25 per cent ROE is achievable if these lines of defence are followed.

Gillian Tett (Financial Times) began her presentation with a discussion of the Asian crisis of confidence in 1997, saying that some Asians who started keeping safes at that time still do so today, as an illustration of how difficult it can be to restore trust and how big the challenge for today's regulators is on that matter. She then highlighted two main components of the recent financial crisis – the large bank losses and defaults and the trembling of faith in the financial system – and said that Western society is not used to such big failure systems. She concluded by discussing the likely consequences of the crisis, saying that investors and consumers will certainly become more cautious, and that regulators will need to bring in more transparency if they want to restore the credibility of the financial system.

Professor Anderson asked **Sir Howard Davies** (LSE) what the first step in building a new regulatory system should be. Sir Howard emphasised that we should be looking to rebuild trust and confidence in the future. In the short term, he argued that fiscal policy should pump reserves into the economy, and that there should be recapitalisation of financial institutions, however he also stressed that we should seize the opportunity of the crisis to make changes that are difficult to accomplish in other times. Firstly, in architectural and global



Howard Davies (LSE)

terms, he advocated a new global standard of regulation and urged regulators to achieve this more quickly than the ten years it took for Basel II to come into practice. There is an open question to be answered about what the roles of the IMF and FSA should be, he said, and there should be different mechanisms to regulate systemic risk. Secondly, countercyclicality should be favoured. To achieve this, tax on banks, the definition of a leverage ratio and the extension of the regulatory frontier to include investment banks and hedge funds are essential. Sir Howard concluded his presentation by stressing that the most important short-term focus ought to be rebuilding confidence.

The conference was organised by:

Hugo Banziger (Deutsche Bank), **Malcolm Knight** (Deutsche Bank and LSE) and **David Webb** (FMG, LSE).



European Financial Regulation and the Financial Crisis

Dr Mario Nava

17 March 2009



Mario Nava (European Commission)

The FMG and Cairn Capital hosted a public lecture by **Dr Mario Nava**, head of the Financial Market Infrastructure unit of the European Commission. Dr Nava discussed European financial regulation and the financial crisis, with a special emphasis on the credit derivative markets. He argued that the only way forward towards rebuilding confidence in financial markets is by employing effective fiscal measures and efficient regulation, which is necessary if fiscal stimulus is to work.

Dr Nava began by discussing the origins of the current financial crisis. He argued

that the current crisis was triggered by macroeconomic developments, such as loose monetary policy in the US and low interest rates, leading to housing and consumption booms that were transmitted from the US to some EU countries. Secondly, the crisis was exacerbated by market and regulatory failures, including lax lending standards, opaque securitisation of mortgages, faulty internal and external controls (including both dubious risk management, with a focus on returns rather than risk, and rating agency problems), and a lack of certainty about counterparty risks. All of this brought about the general market sense of mistrust, he said.

The EU response for tackling problems associated with the financial crisis has been channelled through, on one hand, rebuilding confidence in the financial markets by rescuing financial institutions, increasing protection of bank depositors (by raising the minimum guarantee), increasing reliability of credit rating agencies through the introduction of supervisory regime and disposing them of providing advisory services, amending the Capital Requirements Directive, reinforcing supervision of banks and insurances, and adjusting accounting rules, in particular IAS 39. On the other hand, what is needed is financial market reform, he argued. Dr Nava highlighted five key objectives that are geared towards future financial regulation: the supervisory framework; filling gaps in EU and national regulation; protection of consumers, investors and SMEs; improvement of risk management and pay incentives; and more effective sanctions against market wrongdoings.

In terms of supervisory framework, Dr Nava highlighted the importance of giving greater power to European authorities. Further, he stressed the urgent need to 'fill the gaps', in terms of proposals for regulation of hedge funds and private equity, as well as revision of Capital Requirements Directive. He paid special attention to the notion of upgrading capital requirements for complex securities and stressed the need for Central Counterparty (CCP) clearing for complex products, such as CDS. What is inherently needed, in CDS markets in particular – bearing in mind their special characteristics, such as discontinuous pay-offs, non-fungible contracts, opaque market, difficulties in assessing systematic exposure – is some kind of function by which the risks of positions with long maturities are managed over time. Dr Nava addressed concerns relating to there being one global, or perhaps several, CCPs, highlighting the need for there being at least one European CCP, even if this would prove to be costly.

The European Commission has so far secured industry's commitment to use CCPs for CDS (both index and single name) in the EU, as major dealers in CDS, including Citigroup, Deutsche Bank, and JP Morgan Chase, have agreed. The move to CCP is expected to be completed by the end of July 2009, and it is expected to resolve issues such as the restructuring of credit events and auction processes for cash settlement, as well as to provide dispute resolution mechanisms.

In summary, Dr Nava once again stressed the importance of narrowing the channels of contagion, through the improvement of the infrastructure of complex financial instruments, and also the necessity of industry commitment to be monitored through various commission roles.

The lecture was organised by: **Tim Frost** (Cairn Capital), **David Webb** (FMG, LSE) and **Jean-Pierre Zigrand** (FMG, LSE).

Housing, Financial Markets and the Macroeconomy

18-19 May 2009

This conference was the final communication event of the three year Home Ownership, Housing Collateral and Aggregate Fluctuations research project at the FMG, which was funded by the Economic and Social Research Council as part of Phase II of its World Economy and Finance Research Programme. The project's research, led by **Alex Michaelides** (FMG, LSE), aimed to understand the role of housing markets in business cycle fluctuations and the monetary transmission mechanism in the presence of housing. This conference focused on understanding the joint determination of consumption, housing and asset prices in the macroeconomy.

The conference was opened by **Francois Ortalo-Magne** (University of Wisconsin-Madison), who presented his paper co-authored by Andrea Prat (LSE), 'Spatial Asset Pricing: A First Step'. In their model, agents not only choose consumption and portfolios, but also locations in which to live. The model deviates from standard asset pricing models, and might open up space for new empirical questions involving spatial and financial variables. The main concerns raised by the paper's discussant **Felix Kubler** (University of Zurich) were based on the model's assumptions, which were required to guarantee tractability.

The second talk of the conference was given by **Giovanni Favara** (HEC Lausanne), in which he presented a joint paper with Zheng Song (Fudan University) entitled, 'House Price Dynamics with Heterogeneous Expectations', which showed that house prices have varied substantially over time in different cities in the US, and attempted to explain this variation. In their model of the housing market, agents rent or buy houses to consume housing services and speculate on future price changes. He then outlined how the model had been tested using a panel of US cities.

Christopher Carroll (Johns Hopkins University) presented his joint paper with Misuzu Otsuka (Asian Development Bank) and Jirka Slacalek (European Central Bank), entitled 'How Large are Housing and Stock Wealth Effects? A New Approach'. The key issue addressed in the paper is whether the 'housing wealth effect' is readily definable and empirically measurable. They critically review the extant cointegration approach adopted in the literature, and argue that the long-run relationship between consumption and wealth components can go 'horribly wrong' following unanticipated shocks to a variety of economic factors. They propose to exploit sluggishness in consumption changes to reflect habit formation and sticky expectations. On the basis of empirical estimates and related simulations, Professor Carroll argued that eventual and immediate wealth effects differ significantly, with housing wealth being greater than stock wealth effects. **Christian Julliard** (FMG, LSE) gave a comprehensive discussion of the paper, showing that the approach adopted in it ruled out cointegration by assumption, and hence that the horse race undertaken by the alternative approaches was



Silvana Tenreiro (LSE)

invalid. He proposed that the authors consider multi-stage estimation procedures within the cointegration approach, which would allow for multiple cointegration relationships and, more importantly, for time-varying cointegration.

Next, **Paul Willen** (Federal Reserve Bank of Boston) presented his paper, 'Renegotiating Home Mortgages: Evidence from

the Subprime Crisis', co-authored with Manuel Adelino (MIT) and Kris Gerardi (Federal Reserve Bank of Atlanta). The key motivation for the paper is to shed light on why mortgage modifications are rare; whether because of the principal-agent issue, questions of securitisation, costs of adjustment, or some other factor. There has been little empirical work done on modifications under different ownership structures. Professor Willen presented a formal framework to highlight the difficulty of the decision problem and the various factors that affect lenders' decisions to offer loss mitigation options. The paper exploits a rich LPS data set, currently covering 60 per cent of active US mortgages, from which an extensive exercise is undertaken to detect modified loans. The transformed data is then exploited to estimate transition intensities utilising the Kaplan-Meier and Cox proportional model. The empirical evidence on foreclosures indicates that about 10 to 25 per cent of securitised loans are more likely to be foreclosed. Overall, loans that were more than 60 day delinquent resulted in only seven per cent receiving modifications. Similarly, even after foreclosure starts, there appears to be no renegotiation for 94 per cent of the loans. There is no significant difference between loans that are securitised and those that are not. This result is robust to a variety of exercises. The discussant, **Jirka Slacalek** (European Central Bank) complemented the authors on a thorough analysis of a timely issue, but noted that the LPS data under-represents the subprime mortgage market, and wondered if the inevitable measurement errors would affect the results obtained. He also questioned whether the time instability affected intensities of transitions for different regimes, and to what extent the estimates presented would be informative about the future.

Joao Gomes (University of Pennsylvania) presented his joint paper with Leonid Kogan (MIT) and Motohiro Yogo (University of Pennsylvania) on 'Durability of Output and Expected Stock Returns', in which the authors

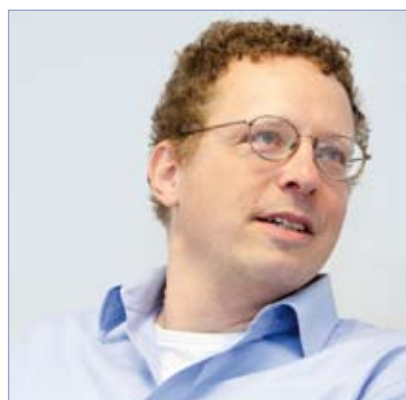
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identify an important source of systemic risk that is priced in the cross-section of stock returns. Their approach builds on the idea behind the consumption-based CAPM, which dictates that assets with higher exposure to aggregate-demand risk command higher risk premia. Due to the fact that some components of aggregate demand are more cyclical than others, those firms producing the more cyclical components must command higher risk premia. Specifically, the authors argue both theoretically and empirically that firms that produce durable goods are exposed to higher systemic risk than those that produce nondurable goods and services. Consequently, the cash flow and stock returns of durable-good producers are exposed to higher systematic risk. Using the NIPA input-output tables, the authors construct portfolios of durable-good, nondurable-good, and service producers. In the cross-section, a strategy that is long on durables and short on services earns a sizable risk premium. In the time series, a strategy that is long on durables and short on the market portfolio earns a countercyclical risk premium.

Sydney Ludvigson (New York University) presented her joint work with Jack Favilukis (FMG, LSE) and Stijn Van Nieuwerburgh (New York University and CEPR) on 'The Macroeconomic Effects of Housing Wealth, Housing Finance, and Limited Risk-Sharing in General Equilibrium'. The paper studies the macroeconomic consequences of fluctuations in housing wealth and housing finance. By studying a two-sector general equilibrium model of housing and non-housing production where heterogeneous households face limited risk-sharing opportunities as a result of incomplete financial markets, the authors are trying to answer several questions, namely: to what extent can episodes of national house price appreciation be attributed to liberalisation in housing finance? How do the movements in house prices affect expectations about future housing fundamentals and future home price appreciation? What is the impact of changes in housing wealth on output and investment, risk premia in housing and equity markets, measures of cross-sectional risk-sharing, life-cycle wealth-savings patterns, and what are the size of housing wealth effects on consumer spending? Professor Ludvigson argued that house prices are volatile relative to measures of fundamental value. The model she presented generates substantial variability in national house price-rent ratios, both because they fluctuate procyclically with the state of the economy, and because they rise in response to a relaxation of credit constraints and a decline in housing transaction costs. During an economic expansion, financial market liberalisation adds fuel to the fire in an already heated housing market, driving up price-rent ratios to a level which is higher than would occur as a result of an economic boom alone. The authors find that a financial liberalisation, plus an infusion of foreign capital, calibrated to match the increase in foreign ownership of US Treasuries from 2000-07, generates all of the increase in two out of four measures of national house price-rent ratios over this period, and 84 per cent of the increase in a third measure. A financial market liberalisation drives risk premia in both the housing and equity market down, shifts the composition of wealth for all age and income groups towards housing, and leads to a short-run boom in

aggregate consumption but a short-run bust in investment. By contrast, an infusion of foreign capital by governmental holders increases risk premia in both the housing and equity markets. Finally, the model implies that procyclicality increases in equilibrium price-rent ratios reflect lower future housing returns, not higher future rents.

José Víctor Ríos Rull (University of Minnesota) then presented his paper 'Aggregate Shocks and House price Fluctuations', which was coauthored with Virginia Sánchez Marcos (Universidad de Cantabria). An initial observation made by Professor Ríos Rull is that house prices are more volatile than GDP, and that foreclosures are counter-cyclical. The exercise undertaken in his paper is to have a model economy which replicates the data with dimensions such as home-ownership distribution, wealth distribution and some macroeconomic aggregates. This is undertaken in a stylised setting of the Bewley-Imrohoroglu-Hugget-Aiyagari variety, and the ability of the model to replicate some of the features observed in the housing market as a response to different types of aggregate shocks under limited rationality and irrationality is measured. The model is calibrated to derive steady state solutions where the model matches selected cross-sectional facts. An experiment is undertaken whereby there is an aggregate shock with persistence of 95 per cent, and impulse responses to aggregate shocks are derived. The experiment is initially undertaken with almost rational agents and mean-reverting shocks. In this setting, house prices are no more volatile than GDP, and house sales are counter-cyclical. However, when expectations are altered to over-optimism during times of expansion, and pessimism during recessions, house prices become more volatile than GDP and sales become procyclical. It appears that expectations are crucial for house prices and sales dynamics. The discussant, **Dirk Krueger** (University of Pennsylvania) presented an informative presentation and analysis of the key assumptions and findings of the paper, emphasising the fact that the manner in which expectations are formed matters greatly for outcomes. He ended with a reminder of Tom Sargent's caution of using expectations as free parameters.



Martin Schneider (Stanford University)

The second day of conference was opened by **Martin Schneider** (Stanford University), who presenting his paper 'Momentum Traders in the Housing Markets: Survey Evidence and a Search Model', which was co-authored with Monika Piazzesi (Stanford University). The paper analyses the housing boom of the early 2000s and shows that with market frictions, even a small number of optimistic market participants can affect prices with very small increase in traded volume. The



Kathy Yuan (FMG, LSE)

first part of the paper tries to capture beliefs about the housing market using a survey. In particular, the authors look at both the basis for people's beliefs about when the right time to buy a house is, and some central macroeconomic variables, including future business conditions, interest rates and inflation. Using this information they divide the survey participants into three types: gloomy, optimistic

because of good credit conditions, and optimistic because they expect housing prices to rise. The latter are the momentum traders. During typical times they make up 9.5 per cent of the sample, but during booms their number can reach more than 20 per cent. In the second part of the paper, the authors develop a search model and show that, because of these momentum traders, a shock to a small group of people's beliefs can lead to a large increase in house prices.

Kathy Yuan (FMG, LSE), who discussed the paper, highlighted the authors' use of both a survey and a search model, since a combination of the two is rarely used in the literature. Commenting on the survey data, she enquired if there could be some geographical pattern of the beliefs linked to the distribution of the boom areas. She also argued that momentum believers might not be momentum traders. Even if they are optimistic, they might not be active on the market. She suggested that making search intensity endogenous could be an interesting topic for future research.

In the next session, **Jonas Fisher** (Federal Reserve Bank of Chicago) presented his joint research with Martin Gervais (University of Southampton) entitled 'Why Has Home Ownership Fallen Among the Young?'. Dr Fisher started out by discussing data that shows that the home ownership rate among Americans aged between 25 and 44 years peaked in 1980 at about 60 per cent and then sharply declined up until 1990, after which it recovered somewhat, reaching 57 per cent in 2007. These facts may be puzzling at first sight because mortgage markets were deregulated during the period under consideration, and especially in the 1980s when the sharp drop in home ownership took place, and mortgage credit was relatively easily available. However, Dr Fisher and Dr Gervais found that a decline in marriage rates as well as increased income risk among Americans in the age group 25-44 years could explain the changes in home ownership in their regressions, although other factors, such as divorce rates and parenthood, have apparently not been as important. He continued by explaining an overlapping generations life-cycle macroeconomic model that he and Dr Gervais set up in order to better understand a potential causal relationship between marriage rates, income risk and home ownership. Calibrating this model to match the observed changes in home ownership, they found that, in their model, marriage rates and income risk together could explain the decline in home

ownership that has occurred since 1980. The paper's discussant, **Qiang Zhang** (Leicester University) said he appreciated the motivation and the results of the paper and pointed out some potentially interesting extensions, notably that the model could be modified to make more specific predictions on consumption of goods other than housing, and also to account for productivity differences in different regions of the United States.

The conference continued with **Rachel Ngai** (LSE) presenting her joint work with Silvana Tenreyro (LSE) on 'Hot and Cold Seasons in Housing Markets'. The authors document a strong seasonal pattern in housing transactions and prices in the US and the UK between the second and third quarter of the year (the 'hot season') versus the first and fourth quarter (the 'cold season'). Controlling for a number of factors, Dr Ngai and Dr Tenreyro find that in the UK the difference in annualised growth rates between hot and cold seasons is above eight per cent for house prices, and 108 per cent for transactions, whereas in the US the corresponding numbers are above three per cent and 148 per cent respectively, though there is considerable variation within the country (particularly for prices). Dr Ngai continued her talk by presenting a macroeconomic model with search frictions that she argued is able to shed new light on the mechanisms governing housing market fluctuations. The model features two key features, namely a match-specific utility of buyers purchasing houses that personally suit them and a 'thick market' effect of buyers being more likely to find a house that matches them well in busy markets. Dr Ngai and Dr Tenreyro find that the model is able to generate substantial amplification of the seasonality in vacancies into the seasonality in transactions and prices, the latter depending positively on the assumed bargaining power of sellers. In a passionate presentation, **Winfried Koeniger** (Queen Mary University) lauded the originality of this paper and at the same time suggested several avenues for further improvement. Primarily, Dr Koeniger argued that, although their argument was very plausible, he would like the authors to present more hard evidence for the importance of search frictions in the housing market and the reasons for the seasonality in vacancies, which is amplified by their model. Dr Tenreyro concluded the session by responding to Dr Koeniger's points and to questions from the audience.

Morris Davis (University of Wisconsin-Madison) presented his paper 'Agglomeration and Productivity: New Estimates and Macroeconomic Implications', jointly written with Jonas Fisher (Federal Reserve Bank of Chicago) and Toni Whited (University of Rochester). The paper starts with a big picture that cities exist because of agglomeration externalities, and raised the question of how important agglomeration is for aggregate growth. In order to answer this question the authors built a dynamic multi-city model with density externality, in which the Cobb-Douglas function was applied in firms' production, and households maximised their average utility given goods prices, land prices, wages, and the economy-wide rental rate of capital. Then they characterised the balanced growth path and showed that the relationship between wages, prices of outputs, and rental prices across different cities using the result from first order condition. Based on this

Housing Conference



Jonas Fisher (Federal Reserve Bank of Chicago)

appreciated the attempts made to measure the externality, however he raised the problem of identification, and argued that the properties of equilibrium allocation were not clear or intuitive.

The next talk was given by **Carlos Garriga** (Federal Reserve Bank of St. Louis), who presented his joint work with Don Schlagenhauf (Florida State University), entitled 'The Design of Foreclosures Punishments: You Just Cannot Walk Away!', in which the authors develop a model of housing default that incorporates qualitative features of the legal environment. Since foreclosing can be regarded as a property that provides a lower bound on the deficit, the value of what can be obtained in deficit has important implications for the incentives to foreclose, since it partially determines the cost of default. From a comparison of anti-deficiency states and deficiency states, they showed that anti-deficiency states have a lower level, and higher volatility, of foreclosures. Then they built a housing model in which mortgages are long-term contracts with default options, and maximised households' utility according to the choices of repay or foreclosure. The model also illustrates some trade-off between up-front premiums and the amount of repossession collateral.

Valery Polkovnichenko (University of Texas at Dallas), who discussed the paper, agreed with the chosen starting point of analysing various default punishments, however he also offered some other suggestions for the model, including an alternative choice for strategic default, the concern on heterogeneous types, and endogenous response.

Matteo Iacoviello (Boston College) presented his work, co-authored with Marina Pavan (University College Dublin), on 'Housing and Debt over the Life Cycle and over the Business Cycle'. The paper introduced a general equilibrium life-cycle model with heterogeneous agents and aggregate shocks. Importantly, the model takes account of housing transaction costs as a key element that enables them to reproduce some business cycle regularities of household investment and debt behaviour observed in the post-WWII era in the US. The role of housing is crucial for its role as collateral, its lumpiness and the inherent choice of renting versus owning. The model successfully replicates the procyclical behaviour and high volatility of housing investment, as well as the procyclicality of mortgage

relationship, they estimated the impact of agglomeration on local productivity with panel data, and finally quantified the impact of agglomeration. They concluded that a conservative estimate suggested ten per cent of per-capita consumption growth rate was due to agglomeration.

The paper's discussant, **José**

Víctor Ríos Rull (University of Minnesota), said that he

debt. In addition, it also reproduces the wealth distribution and replicates the life cycle profile of housing: the young, the old and the poor are mostly renters and hold very few assets, whereas the middle aged and the rich are homeowners. In the experiments with the calibrated model, the authors distinguish between two periods: 1952-1982 and 1983-2008. Interestingly, they find that the combination of larger idiosyncratic risk and lower down-payment requirements that characterised the Great Moderation period post-1980s can explain the reduction of the relative volatility of housing investment and the lower correlation between household debt and GDP. Taken together, these two mechanisms can explain 30 per cent of the reduction in the variance of housing investment, and the entire decline in the correlation between debt and economic activity.

The last paper of the day, 'Winners and Losers in Housing Markets' was presented by **Nobuhiro Kiyotaki** (Princeton University) and is coauthored with Alex Michaelides (LSE) and Kalin Nikolov (Bank of England). The paper studies the interaction between housing prices, aggregate production and household behaviour, and is motivated by the recent fluctuations in housing prices in many countries. The authors develop a life cycle model to investigate the mechanism by which housing prices, aggregate production and the wealth distribution react to changes in technology and financial conditions. Importantly, the authors take account of the limit on the supply of land and the difficulty of enforcing of contracts in real estate and credit markets. As a result, households may face financing constraints and creditor demands. Ultimately, the authors identify the winners and losers from changes in fundamentals. In particular, a permanent increase in the growth rate of labour productivity and the decrease in the world real interest rate substantially redistributes wealth from the net buyers of houses (relatively poor tenants) to the net sellers (relatively rich, unconstrained homeowners) with the house price hike. On average, households gain from the increase in the growth rate of labour productivity, and do not gain from the decrease in the world interest rate. Due to fact that the gap in welfare effects between winners and losers in the housing market is substantial, especially where land is more important for production of tangible assets compared to capital, the authors suggest that a credible welfare evaluation should take into account household heterogeneity, contract enforcement limitations in housing, and credit markets that generate realistic life-cycles of consumption and homeownership.

The conference was organised by **Alex Michaelides** (FMG, LSE). The FMG gratefully acknowledges support from the Economic and Social Research Council and the World Economy and Finance Research Programme.

The following FMG conferences and lectures will be reported in the next edition of the *Quarterly Review*.

Animal Spirits: How Human Psychology Drives the Economy, and Why it Matters for Global Capitalism

Professor Robert Shiller

20 May

Professor Robert Shiller gave a public lecture on the subject of his new book, entitled: 'Animal Spirits: How Human Psychology Drives the Economy, and Why it Matters for Global Capitalism', to LSE students, staff and external guests in May.

Professor Shiller is Arthur M Okun Professor of Economics, Department of Economics and Cowles Foundation for Research in Economics, Yale University, and Professor of Finance and Fellow at the International Center for Finance, Yale School of Management. He received his undergraduate degree from the University of Michigan in 1967, and his PhD in Economics from the Massachusetts Institute of Technology in 1972. He has written on financial markets, financial innovation, behavioural economics, macroeconomics, real estate, statistical methods, and on public attitudes, opinions and moral judgments regarding markets.

Paul Woolley Centre Second Annual Conference

28-29 May

The second annual conference of the Paul Woolley Centre for the Study of Capital Market Dysfunctionality took place in May.

The conference comprised of five sessions:

Session 1: Financial Institutions and Asset Prices: Theory

Session 2: Financial Institutions and Asset Prices: Empirics

Session 3: Behavioural Finance

Session 4: Financial Contracting

Session 5: Financial Institutions and Portfolio Choice

Speakers at the conference included Paul Woolley Centre Director Dimitri Vayanos (FMG, LSE), and the keynote speech was given by Andrei Shleifer (Harvard University).

Managers, Incentives and Organisational Structure: Latest Research and Implications for the Financial Services Industry

26-27 June

The recent financial crisis has brought firm governance back into the spotlight. With hindsight, internal governance and incentive mechanisms in banks, financial institutions, credit rating agencies, regulatory agencies and governments appear to have failed to deal with the issues that led to the crisis.

This two-day conference brought together leading scholars in Economics and Finance to present and discuss the latest cutting-edge research on the role of managers, organisational structure and incentives, and their consequences for financial institutions and regulators.

London Financial Regulation Conference

2-3 July

Two major academic reports on the financial crisis have emanated from the Financial Markets Group at LSE, in the guise of 'The Fundamental Principles of Financial Regulation', Geneva Report, 2009 (CEPR & ICMB), and from the Stern School of Business at NYU, in the shape of their book, *Restoring Financial Stability: How to Repair a Failed System* (John Wiley & Sons, March 2009).

This conference included the key authors of both monographs, and several other leading experts, who led discussions on continuing key issues, such as liquidity, quantitative easing, and remuneration.

Discussion Papers



DP 621: Paul Woolley Centre Working Paper Series No 1

An Institutional Theory of Momentum and Reversal

Dimitri Vayanos, Paul Woolley

We propose a rational theory of momentum and reversal based on delegated portfolio management. A competitive investor can invest through an index fund or an active fund run by a manager with unknown ability. Following a negative cashflow shock to assets held by the active fund, the investor updates negatively about the manager's ability and migrates to the index fund. While prices of assets held by the active fund drop in anticipation of the investor's outflows, the drop is expected to continue, leading to momentum. Because outflows push prices below fundamental values, expected returns eventually rise, leading to reversal. Fund flows generate comovement and lead-lag effects, with predictability being stronger for assets with high idiosyncratic risk. We derive explicit solutions for asset prices, within a continuous-time normal-linear equilibrium.

DP 622

Foreign Bank Entry: A Liquidity Based Theory of Entry and Credit Market Segmentation

Nikolaj Schmidt

This paper analyses how entry by an international bank into a developing economy affects the credit market equilibrium. It offers a novel explanation of how a foreign entrant overcomes asymmetric information problems, and complements extant hard vs. soft information based theories of credit market segmentation. In the model, the banks are protected by limited liability. This introduces an agency problem since, in certain states of the world, it is optimal for the banks to lend to negative net present value projects. The agency problem has an asymmetric impact on the local and the foreign bank. The model illustrates how the diversification of the foreign bank's loan portfolio eliminates the agency problem. In contrast, in certain states of the world, the agency problem frustrates the local bank's ability to raise finance. The paper explores the importance of the foreign bank's ability to provide finance during local liquidity shortages, and illustrates how this can lead to a segmentation of the credit market. In equilibrium, the foreign bank finances local firms with a low exposure to the local economy, and the local bank finances firms with a high exposure to the local economy. The model predicts, that foreign entry increases the domestic financial sector's vulnerability to liquidity shocks.

DP 623

Foreign Bank Entry: The Stability Implications of Greenfield Entry vs. Acquisition

Nikolaj Schmidt

Banks can enter new countries either through greenfield entry or by acquiring local banks. I model the effect of a foreign bank's mode of entry on the stability of the local financial sector. Banks exert costly effort when they extend credit. Limited liability creates an agency problem which leads to under provision of effort. I show that the diversification of the foreign bank's loan portfolio mitigates the agency problem, and permits the foreign bank to extend credit during downturns where the local banks are forced to contract credit. The risk management framework employed by the foreign bank creates a divergence in the behaviour of a greenfield entrant and an acquirer. The greenfield entrant does not own a portfolio of local loans, and therefore, it has a greater risk taking capacity than the acquirer. Thus, competition, and thereby the distortion of the local banks' incentives to exert effort, is greater following greenfield entry than following entry through acquisition.

DP 624

Best Ideas

Sudipto Bhattacharya, Sergei Guriev

This paper provides powerful evidence that mutual fund managers can pick stocks that outperform the market. Many have argued that the inability of mutual fund managers to outperform benchmarks is the most persuasive evidence in favor of capital market efficiency. Berk and Green (2004) argue that this is not necessarily the case, because factors related to the structure of the money management industry will cause even good stock pickers not to outperform. We circumvent this problem by examining the performance of stocks that represent managers' 'Best Ideas.' We find that the stock that active managers display the most conviction towards ex-ante, outperforms the market, as well as the other stocks in those managers' portfolios, by approximately 39 to 127 basis points per month depending on the benchmark employed. This leads us to two conclusions. First, the U.S. stock market does not appear to be efficiently priced, since even the typical active mutual fund manager is able to identify a stock that outperforms. Second, consistent with the view of Berk and Green, the organization of the money management industry appears to make it optimal for managers to introduce stocks into their portfolio that are not outperformers, even though they are able to pick good stocks.

DP 625

The credit crisis and the dynamics of asset backed commercial paper programs

Nikolaj Schmidt

Motivated by the credit crisis 2007-08, this paper presents a theory of capital market banks; banks that use derivative programs to exploit inefficiencies in the capital markets. I model banks' use of asset backed commercial paper (ABCP) programs as a local game, and analyse how these programs affect financial stability. In a financial market where banks are subject to costly capital requirements and investors are heterogeneous, the ABCP program arises endogenously in response to inefficient risk sharing. The sustainability of the ABCP program depends crucially on the sponsoring bank's capital. Small shocks to the bank's capital can lead to a failure of the ABCP program. This amplifies the shock and pushes the bank into bankruptcy. I link the dynamics of the ABCP market to the interbank market, and argue that an unravelling of the ABCP market can cause a seizure of the interbank market. The model indicates, that traditional monetary policy is unable to alleviate seizures of the interbank market, but that targeted liquidity measures, such as the Term Securities Lending Facility, the Term Auction Facility, the Troubled Asset Relief Program, the Money Market ABCP Program and the launch of a super fund, could end the unravelling of the ABCP market and ease the pressures in the interbank market.

DP 626

Understanding Portfolio Efficiency with Conditioning Information

Francisco Peñaranda

Contrary to the classic framework of passive strategies, if investors exploit return predictability through active strategies then there is a tension between the mean-variance frontiers that drive empirical work and the mean-variance preferences that are used in finance theory. We show that standard preferences choose portfolios on a frontier that has not been studied in the literature, develop new betas and Sharpe ratios to construct portfolio efficiency tests, and highlight some concerns with current empirical work. An empirical application to active strategies on stock portfolios sorted by size and book-to-market confirms the relevance of our theoretical results.



Special Papers

SP178

Risk, Uncertainty and Financial Stability

Charles Goodhart

My first-ever essay into quasi-independent research involved an attempt to understand, explain and even possibly extend G L S Shackle's model of decision-making under uncertainty. Undergraduates at Cambridge who had done well in Part 1 of the Economics Tripos were encouraged to participate in a joint student/Faculty seminar, called – as I recall – the Monday Club, and each Monday evening of term one of the undergraduates, chosen by drawing lots, was expected to present a paper. Anyhow when I drew my turn, I constructed a three dimensional graph, out of green plasticine, of Shackle's focus gain and focus loss, potential

surprise, and all that. I recollect that the marks for technical merit were higher than those for artistic ability. The approximate date of that presentation was November 1958.

SP179

Liquidity and Money Market Operations

Charles Goodhart

The relative liquidity of financial assets is significantly influenced by the Central Bank's willingness to buy such assets, or to accept them as collateral, in the course of providing additional cash to banks. Those assets which the Central Bank will deal in for such purposes become more liquid, and more marketable, than those that the Central Bank will not.

SP180

Should Monetary Policy Respond to Asset Price Bubbles? Revisiting the Debate

Sushil Wadhvani

We argue that central banks can improve macroeconomic performance by reacting to asset price misalignments over and above their reaction to fixed horizon inflation forecasts. This is because such countercyclical monetary policy tends to offset the impact on output and inflation of such bubbles. In addition, if it were known ex ante that monetary policy would LATW in this way, it might reduce the probability of bubbles arising at all.

Forthcoming Discussion and Special Papers

Discussion Papers

DP 627

Banking Stability Measures

Charles Goodhart, Miguel Segoviano

DP 628

Labor Hiring, Investment and Stock Return Predictability in the Cross Section

Xiaoji Lin, Santiago Bazdreh, Frederico Belo

DP 629

The Effect of Credit Rationing on the Shape of the Competition-Innovation Relationship

Jan Bena

DP 630

Does Beta Move with News? Systematic Risk and Firm-Specific Information Flows

Michela Verardo, Andrew Patton



DP 631

Large powerful shareholders and cash holding

Ron Anderson, Malika Hamadi

DP 632

The Lifecycle of the Financial Sector and Other Speculative Industries

Bruno Biais, Paul Woolley, Jean-Charles Rochet

Special Papers

SP 181

How, if at all, should Credit Ratings Agencies (CRAs) be Regulated?

Charles Goodhart

Visitors to the FMG January-March 2009

Susan Ball (Clyde & Co)

Nicholas Barberis (Yale University)

Ron Bird (University of Technology, Sydney)

Philip Bond (University of Pennsylvania)

Mikhail Chernov (London Business School)

Ross Fraser (Herbert Smith)

Malcolm Gammie (Essex Court Chambers)

Jens Hilscher (Brandeis University)

Albert Kyle (University of Maryland)

Rosa Lastra (Queen Mary University)

Xuewen Liu (Imperial College)

Ian Martin (Stanford University)

Anna Obizhaeva (MIT)

Francois Ortalo-Magne (University of Wisconsin, Madison)

Enrico Perotti (University of Amsterdam)

Mitchell Petersen (Northwestern University)

Jean-Charles Rochet (University of Toulouse)

David Scharfstein (Harvard Business School)

Marianne Schulze-Ghattas (IMF)

Andre Shleifer (Harvard University)

Giorgio Szegö (University of Rome)

Alan Taylor (University of California, Davis)

Vikrant Vig (London Business School)

Robert Whitelaw (New York University)

Motohiro Yogo (University of Pennsylvania)



Financial Markets Group
RESEARCH CENTRE

Financial Markets Group
Research Centre, LSE
10 Portugal Street, London WC2A 2HD
Tel: 020 7955 6301 Fax: 020 7852 3580
Email: fmg@lse.ac.uk Web: <http://fmg.lse.ac.uk>



The screenshot shows the FMG website homepage. At the top left is the FMG logo and the text 'Financial Markets Group'. Below this is a blue banner with the text: 'The Financial Markets Group Research Centre at LSE is one of the leading centres in Europe for academic research into financial markets. more about FMG'. To the right of the banner is a large image of a modern building interior with a glass dome. Below the banner, there are two main sections: 'Events this week @ FMG' and 'In the news'. The 'Events this week @ FMG' section lists two events for Wednesday, 15th October 2008: a Lunchtime Workshop at 1.00-2.00pm and a Capital Markets Workshop at 5.00pm. The 'In the news' section lists two news items: a Special London Financial Regulation Seminar announced on 13 Oct 2008 and a Managing International Financial Instability Public Lecture on 9 Oct 2008. At the bottom of the page, there is a navigation bar with buttons for home, about, events, news, publications, research, people, be involved, mailing list, contact, and Corporate Partnership Programmes. There is also a search bar with the LSE and RLAB logos.

<http://fmg.lse.ac.uk>

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Editor: Professor Bob Nobay

Associate Editor: Laura Gibbon

Prepared by: Michael Boehm, Nelson Costa-Neto, Tom Cunningham, Dragana Cvijanovic, Pragyan Deb, Gabriella Domingues, Tanya Hall, Daniel Metzger, Alonso Perez-Kakabadse, Yiyi Wang

Photographs by: Maria Moore

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