

Nobel Laureate elect fulfils prior commitment to visit the FMG

The weekly FMG Capital Markets Workshop schedule for the Michaelmas term included a presentation on 10 December by Professor Robert Engle of New York University.

A committee in Stockholm had also decided to schedule this year's Nobel Prize award ceremony for precisely the date previously arranged for Engle's seminar. This would not have been a problem had the committee not decided to award Engle, along with Professor Clive Granger, the 2003 Bank of Sweden Prize in Economic Sciences in memory of Alfred Nobel. Rob Engle and Clive Granger were long-time colleagues at the University of California, San Diego, and both played fundamental roles in introducing time series analysis to economics.

Clive Granger was awarded the prize for his work on 'methods of analysing economic time series with common trends (cointegration)'. In addition to his work on cointegration, Clive is also well-known for his pioneering work on forecasting and causality, common factors and long-memory time series.

Robert Engle was awarded the prize for his work on 'methods of analysing economic time series with time-varying volatility (ARCH)'. Autoregressive conditional heteroscedasticity (ARCH) models have revolutionised the way financial economists think about risk in financial markets. These models have had wide practical implications, and were one of the foundation stones for the new field of financial econometrics.

Engle's work on ARCH models commenced during a sabbatical at LSE in the late 1970s. He said that he thought it appropriate that the first academic presentation he gave after his Nobel award should take place at LSE. Since Engle's visit in the 1970s was to the LSE econometrics group, and his recent presentation was at the Capital Markets Workshop, this reflects the trajectory and importance of the ARCH model: from a new econometric method to a fundamental tool for empirical finance.

The Capital Markets Workshop (on October 20) focussed on two currently unresolved problems in volatility modelling: that of modelling the co-movements between multiple risky assets, and that of modelling the asymmetries in these co-movements.



The ability to model the co-movements between risky assets is imperative for making good portfolio decisions. Progress on this problem was made as far back as 1988 (Bollerslev, Engle and Wooldridge, *Journal of Political Economy*) but only for small groups of assets (such as 2 or 3). Many portfolio problems involve dozens of assets, which raises difficulties. The *Dynamic Conditional Correlation* (DCC) model of Engle (2002, *Journal of Business Economics and Statistics*) overcomes these problems through a clever restriction on the way each of the co-movements change through time.

Another open problem in the modelling of risk in financial markets relates to dealing with asymmetries in asset co-movements. It has long been known, that as the price of a stock falls its risk tends to increase (the so-called 'leverage effect'), see Black (1976). More recently, it has come to light that when the prices of multiple stocks are falling, their correlations tend to increase. So the benefits of portfolio diversification (which come from low correlations between risky assets) diminish during falling markets, just when they are wanted most! Developing models to capture this effect is a difficult problem, and in his seminar Engle showed preliminary results that suggest that the DCC model may help solve it.

We extend our warmest congratulations to our long-time friends of the FMG on their awards of the 2003 Nobel prizes in Economics.

New Programme Co-ordinated by FMG

The Risk Capital and the Financing of European Innovative Firms (RICAFE) research network brings together researchers from the London School of Economics and Political Science (Financial Markets Group), the Centre for Financial Studies in Frankfurt, HEC School of Management Paris and Turin University. The European Commission DG-Research sponsors RICAFE. The Programme aims to provide research breakthroughs in the economics of risk capital financing of innovative companies, and to offer informed, insightful research advice to the Commission.

The Financial Markets Group hosted the First RICAFE Conference on 24 and 25 October, 2003. The Risk Capital and the Financing of European Innovative Firms (RICAFE) is a research network formed by members from the FMG, Centre for Financial Studies, Frankfurt, HEC School of Management, Paris and Turin University and is sponsored by the European Commission, DG-Research. The conference brought together leading researchers from both Europe and the US and focussed on range of theoretical and empirical issues affecting venture capital.

The first session of the conference, chaired by **Roman Inderst** (FMG/LSE), started with **David Thesmar's** (ENSAE) presentation of a joint paper with Augustin Landier (Chicago) entitled 'Financial Contracting with Optimistic Entrepreneurs: Theory and Evidence'. This paper considers a setting in which entrepreneurs are more optimistic about their project than are investors and traces out the implication of this divergence of opinion on incentives, contractual choice and performance.

Their model contains two entrepreneurial moral hazard problems: a standard effort choice as well as an 'adaptation decision' where the entrepreneur needs to decide whether to pursue a risky growth strategy or a safe option. Optimism implies that entrepreneurs will exert more effort but would take inefficient adaptation decisions as they update their prospects incorrectly. As a result, the optimal contract for optimistic entrepreneurs is short-term debt since optimistic entrepreneurs underestimate the probability of not meeting repayment terms. Furthermore, it allows realistic investors to impose the efficient adaptation decision in case of default. By contrast, realistic entrepreneurs would prefer long-term debt.

The authors then test their model and find that optimists indeed do use short-term debt more often. Moreover, those optimists that use more short-term debt perform better than those who use less. Finally, Thesmar presented evidence that their measure of optimism is consistent with the existing literature and does not proxy for project quality.

The second speaker **Alexander Ljungqvist** (NYU) presented a paper on 'The Investment Behaviour of Private Equity Fund Managers', joint with Matthew Richardson (NYU). In a setting in which demand for private equity varies over time and the supply of private equity is sticky in the short run, the authors examine how changes in the degree of competition affect the fund manager's investment behaviour. In particular, they investigate the speed with which Private Equity Funds (henceforth PEFs) invest their capital over time, after how long the capital is returned to investors, when exit occurs and what returns are realized.

They test their hypotheses using a unique data-set of large institutional investors which includes information on the exact timing of cash flows within private equity funds as well as on information on individual investment decisions within a PEF's portfolio.

Consistent with their hypotheses, the authors find that the competitive environment is important in shaping investment decisions. When investment opportunities are good, ie when competition is low, funds are invested more quickly, exit takes place more rapidly and returns are higher. The opposite occurs when competition increases. Furthermore, the authors find evidence of overheating when 'too much money chases deals', resulting in poor returns. The discussant of the paper, **Marco Pagano** (Salerno), pointed out potential pitfalls arising from the endogeneity of several variables.



Marco Da Rin

Marco Da Rin (Turin) concluded the morning session by presenting a paper, joint with Laura Bottazzi (Bocconi) and Thomas Hellmann (Stanford), on the topic 'Are financial intermediaries defined by their organizational structure or their people? Evidence from venture capital'. The paper

empirically examines venture capital from the point of view of organization, human capital and investment decisions. To proxy for human capital, the authors use previous experience in the venture capital industry. Using a hand-collected survey-based database, which matches each company with the partner(s) in charge of the deal, and which also gives a measure of the human capital of the partner(s) involved, the authors investigate two dimensions of venture capital investments. Firstly the type of firm in which the investment is made is considered (High-tech vs Low-tech and Early stage vs. Late stage) and secondly the degree of involvement in each firm is examined (if the venture capitalist takes a board seat, helps in hiring outside directors or in recruiting management).

They find that venture capital investments tend to be more in early stage and high tech firms, with also a higher involvement in assisting with recruiting directors and management. Moreover, they argue that both human capital and organizational structure are important.

The discussant, **Per Stromberg** (Graduate School of Business, University of Chicago), pointed out the innovative aspects of this analysis. However, he emphasized how it is difficult to 'quantify' human capital; for instance the corporate culture matters and plays an essential role in the venture capital industry. Finally, he suggested further investigations in the analysis, for instance the use of syndications and the choice of organizational forms.

The second session of the first day was chaired by **Antoine Faure-Grimaud** (LSE/FMG) and started with a presentation by **Michel Habib** (Swiss Banking Institute) on 'An Analysis of Shareholder Agreements', joint with Gilles Chemla (UBC) and Alexander Ljungqvist (NYU). Shareholder agreements frequently feature clauses such as put and call options, pre-emption rights, catch-up clauses, drag-along rights, demand rights and tag-along rights. The authors rationalise their use in a model in which two parties jointly own a project and can both take two non-verifiable actions: a beneficial action that is undertaken prior to the realisation of the state of nature and a detrimental one, which is taken after the state of nature has been realised. As a result, the sharing rule that provides optimal incentives for the beneficial action will generally not be that which optimally deals with the detrimental action. Put and call options embedded in the shareholder agreement can be seen as a solution to this dilemma.

Furthermore, when the jointly owned project can be sold to outsiders, a partner could threaten to sell his stake to an outsider even when such a sale would not be efficient at the company level and thus strengthen his bargaining position. Pre-emption rights and tag-along rights rule out this conflict. Drag-along and demand rights, by contrast, eliminate the corollary conflict that occurs when a partner can threaten to hold up an efficient sale to outsiders. Finally, the authors use the above analysis to provide insights into the design of tender offers.

The discussant, **Denis Gromb** (LBS), pointed out that other mechanisms exist to mitigate ex post conflicts of interest between shareholders, eg the

requirement for supermajorities in take over contests, and encouraged the authors to elaborate on the relationships between these mechanisms and the design of shareholder agreements.

The second presentation of the afternoon was given by **Charles Cuny** (Texas A&M) on 'The Staging of Venture Capital Financing: Milestones vs Rounds', joint with Eli Talmor (LBS). Their model provides an analysis of whether venture capital funds are committed round by round or whether such a commitment stretches over several rounds, conditional on certain milestones being achieved. Round financing implies that future investment will be committed at the market price, while the commitment to a higher level of investment implicit in milestone financing implies that the investor must be allocated more cash flow rights. As a result, round financing is better at providing incentives to the entrepreneur while milestone financing is better at providing incentives to investors. Generally, the relative importance of these moral hazard problems will determine which form of finance is chosen.

The authors then extend the analysis to account for the investor's desire to exit and for entrepreneurs that are optimistic about their projects. Since milestone financing allows more flexibility in allocating cash flow rights across states and stages, it will generally be better equipped to deal with these frictions. **Gerard Llobet** (CEMFI) was the paper's discussant and focussed on the complexity of the model, suggesting that more precise results could be obtained in a simpler setting.

Ulrich Hege (HEC) concluded the first day by presenting the paper 'Determinants of Venture Capital Performance: Europe and the United States', joint work with Frederic Palomino (Tilburg) and Armin Schwienbacher (University of Amsterdam). The authors perform an empirical analysis of the performance of venture financing in the United States and Europe. The objective of the paper is to investigate the peculiarities and the differences of the two very different venture capital markets on a micro-level basis. In particular, the authors try to explore what factors drive performance at fund level and the reasons of the dissimilar venture market developments in the two continents.

The authors find that monitoring activities are positively related with performance; US venture capital funds are more active monitors and perform better than those in Europe. They argue that these features signal a better screening capacity of the US VCs. Moreover, they find that in the US, the use of contingent control rights in the venture capital market are widespread since the use of convertibles and entrepreneur replacements are more frequent. In the light of this evidence, the authors assert that these important differences in the contractual relationship drive the differences in performance at portfolio level.

However, the discussant **Alessandro Sembenelli** (Turin) pointed out possible endogeneity problems in the regression and commented on the surprisingly low use of convertible stocks in the United States sample.



Giovanna Nicodano (Turin) chaired the morning session on the second day of the conference. **Felix Muennich** (FMG/LSE) presented the first paper of the session entitled 'The Benefits of Shallow Pockets', joint work with Roman Inderst (FMG/LSE). In this paper, the authors investigate the role of portfolio management within private equity funds in alleviating entrepreneurial agency problems. When projects are financed in stages, the investor limits the amount of investment raised when a venture capital fund is created in an attempt to induce competition among portfolio entrepreneurs in later stages. Although such limited funds increase the investor's bargaining power during negotiations over later stage funding, the authors also show that the responsiveness of an entrepreneur's payoff to his type may increase. As a result, the non-contractual device of limited funds may allow the venture capitalist to provide incentives and sort between entrepreneurial types when contracts alone cannot.

The authors then argue that projects for which the positive impact on agency problems of shallow pockets is outweighed by the costs of inefficient project continuation (implicit in committing to limited funds) have characteristics often associated with venture capital projects: high riskiness and the relative importance of fundamentals in payoff determination. When discussing the paper, **Thomas Hellmann** (Stanford), commented on the need to account for syndication of investments within the model.

Christian Keuschnigg (St Gallen/CEPR) presented the second paper of the session, entitled 'Public Policy and Venture Capital Backed Innovation'. This paper proposed a model of the venture capital industry embedded in a model of industry equilibrium where a downward sloping demand curve for innovative goods determines the overall size of the market.

Within this model, the author analyses a range of public policy instruments that are meant to promote innovation by facilitating start-up entrepreneurship in new industries. The policy initiatives analysed include public spending on basic research, grants for experimental research in the seed phase, entry subsidies to VCs, an investment tax credit on start-up investment spending, capital gains taxation and output subsidies. The main policy implications of the paper are that the government should provide capital gains tax breaks to successful firms in innovative industries, rather than give subsidies to entrepreneurs or support public research. The reason for this is that research grants and direct subsidies do not decrease the mark-up and also discourage private effort in the long run whereas cuts in capital gains tax results in an increase in the number of successful firms.

The discussant for this paper was **Dima Leshchinskii** (HEC), who commented on the complexity of the model and wondered if results could be translated into a more dynamic setting.

The final paper of the session was presented by **Josh Lerner** (Harvard) and was titled 'Private Equity in the Developing World: The Determinants of Transaction Structures', joint work with Antoinette Schoar (MIT). This paper presented details of private equity transactions from several developing countries. The main findings were that contract structures for investments

differed significantly from those observed in the US. In contrast to the US case where the dominant security used for such investments are convertibles, contracts in developing countries rely much more on common stock and debt-like securities. There is also much less provision for control rights and anti-dilution protection than in the US and control is normally achieved through majority ownership. Their analysis also revealed a lot of contractual innovations to solve problems in the local contracting environment.

A cross-country analysis further revealed that contract provisions in common law countries were much closer to that of the US in terms of their use of contingent securities, control rights and anti-dilution provisions. In countries with poor property right protection, private equity groups tend to have larger equity ownership. As regards private equity group structure, US/UK based private equity groups tend to employ contract structures that are closer to the US.

In conclusion the authors felt that private equity investments in developing countries appear to be adversely affected by poor rules of law. Also the country of origin of the private equity group was an important determinant of the final contract structure.

In his discussion, **Yishay Yafeh** (Hebrew/Montreal) wondered whether the differences documented in the paper were not really between the developed and developing world but actually between the US and the rest of the world.

The afternoon session of the second day was chaired by **Mike Burkart** (Stockholm School of Economics) and started with the presentation by **Enrico Perotti** (Amsterdam) of the paper 'Circulation of Ideas: Firms versus Markets', joint work with Thomas Hellmann (Stanford). The paper examines the comparative advantage of different environments (specifically markets and firms) for the generation and implementation of ideas. The authors consider a setting in which the development of ideas is costly and requires a second agent with the right complementary skills. When communicating the idea, however, there is a risk that the second agent, who in turn can develop it with another agent, will steal it from the inventor.

The authors then distinguish between markets, in which communication among agents is unregulated, and firms, which restrict communication between agents within its boundaries through costly monitoring.

The drawback of a firm environment is that some ideas may not get implemented because the set of matches is limited. Overall, the market is shown to be better at circulation and implementation, but firms turn out to be better at supporting the generation of ideas.

This paper was discussed by **Uwe Walz** (CFS). He remarked that the set-up of the model favours firms. The generator of ideas has a very weak position, since she has no bargaining power and needs to hand over the whole idea. Also, on the empirical side, many ideas are generated inside firms but implemented outside firms, whereas the paper predicts the opposite.

The second paper, presented by **Daniel Schmidt** and co-authored by



Mark Wahrenburg (both CFS), was entitled 'Contractual Relations Between European VC-Funds and Investors: The Impact of Reputation and Bargaining Power on Contractual Design'. The paper explores factors that influence the design of financing contracts between venture capital investors and European venture capital funds. The analysis focuses on the impact of two key factors: the reputation of venture capital funds and changes in the overall supply of venture capital. When trying to analyse these issues, Private Placement Memoranda and Partnership Agreements covering the years 1996-2001 were used.

Concerning reputation, the study finds that established funds are more severely restricted by contractual covenants and that managers of established funds are more often obliged to invest their own capital alongside investors' money. This contradicts the conventional wisdom, which assumes that established market participants care more about their reputation and therefore need fewer incentives not to behave opportunistically.

Regarding the effects of venture capital supply on contract design, the empirical analysis shows that managers of venture capital funds receive higher performance related compensation in years with strong capital inflows into the venture capital industry. This may be interpreted as being due to the overconfidence of fund managers. In times of high growth in the industry, they are willing to accept higher-powered incentive schemes.

The discussant, **Robert Cressy** (Cass Business School), suggested an explanation of the finding that older venture capital funds have more covenants. As they learned from past experience, they now make use of covenants in order to avoid the same mistakes. For the empirical analysis he would prefer a simultaneous and not independent analysis of contract characteristics, as in practise they depend on each other.

Ibolya Schindele (Amsterdam) presented the final paper of the conference, entitled 'Advice and Monitoring: Venture Financing with Multiple Tasks'. The paper offers a theory for the joint allocation of cash flow and control rights in venture capital contracts, highlighting the roles of venture financiers as both advisers and monitors to entrepreneurial projects. Venture financiers put in effort into both advice and monitoring. Both tasks are substitutes – monitoring matters less if advising is intensive. However, there is a conflict of incentives between the tasks, if monitoring has the role of limiting downside risk. It is found that the choice of contract depends on the entrepreneur's own investment into the project. Entrepreneurs who are more capital constrained need to accept intensive monitoring and limited advice and offer a convertible security to the venture financier. In contrast, entrepreneurs who are less capital constrained can obtain intensive advice and limited monitoring with an equity contract.

Augustin Landier (GSB, Chicago), the discussant of the paper, pointed out that the incentives to perform the tasks of monitoring and advising need not be conflicting. If monitoring is done to cut costs and not to prevent risk taking, then advice and monitoring support each other.

RICAPE Working Paper Series

We are pleased to announce the launch of the RICAPE Working Paper Series. The first five working papers have been posted on our website www.lse.ac.uk/RICAPE and are as follows.

RICAPE WP 001

Determinants of Venture Capital Performance: Europe and the United States

Ulrich Hege, Frédéric Palomino and Armin Schwienbacher

RICAPE WP 002

The Value of Benchmarking

Dirk Bergemann and Ulrich Hege

RICAPE WP 003

Underpricing of Venture-Backed and Non Venture-Backed IPOs: Germany's Neuer Markt

Stefanie A Franzke

RICAPE WP 004

Public Policy and Venture Capital Backed Innovation

Christian Keuschnigg

RICAPE WP 005

The Investment Behaviour of Private Equity Fund Managers

Alexander Ljungqvist and Matthew Richardson

Discussion papers



DP 430

Revisited Multi-moment Approximate Option

Bogdan Negrea Bertrand Maillet
Emmanuel Jurczenko

After the seminal paper of Jarrow and Rudd (1982), several authors have proposed to use different statistical series expansion to price options when the risk-neutral density is asymmetric and leptokurtic. Amongst them, one can distinguish the Gram-Charlier Type A series expansion (Corrado and Su, 1996-b and 1997-b), the log-normal Gram-Charlier series expansion (Jarrow and Rudd, 1982) and the Edgeworth series expansion (Rubinstein, 1998). The purpose of this paper is to compare these different multi-moment approximate option-pricing models. We first re-call the link between the risk-neutral density and moments in a general statistical series expansion framework under the martingale hypothesis. We then derive analytical formulae for several four-moment approximate option pricing models, namely, the Jarrow and Rudd (1982), Corrado and Su (1996-b and 1997-b) and Rubinstein (1998) models. We investigate in particular the conditions that ensure the respect of the martingale re-striction (see Longsta, 1995) and consequently revisit the approximate option pricing models under study. We also get for these models the analytical expressions of implied probability densities, implied volatility smile functions and several hedging parameters of interest.

DP431 (IAM series 1)

On the Out-Of-Sample Importance of Skewness and Asymetric Dependence for Asset Allocation

Andrew Patton

Recent studies in the empirical finance literature have reported evidence of two types of asymmetries in the joint distribution of stock returns. The first is skewness in the distribution of individual stock returns, while the second is an asymmetry in the dependence between stocks: stock returns appear to be more highly correlated during market downturns than during market upturns. In this paper we examine the economic and statistical significance of these asymmetries for asset allocation decisions in an out-of-sample setting. We consider the problem of a CRRA investor allocating wealth between the risk-free asset, a small-cap and a large-cap portfolio, using monthly data. We use models that can capture time-varying means and variances of stock returns, and also the presence of time-varying skewness and kurtosis. Further, we use copula theory to construct models of the time-varying dependence structure that allow for greater dependence during bear markets than bull markets. The importance of these two asymmetries for asset allocation is assessed by comparing the performance of a portfolio based on a normal distribution model with a portfolio based on a more flexible distribution model. For a variety of performance measures and levels of risk aversion our results suggest that capturing skewness and asymmetric dependence leads to gains that are economically significant, and statistically significant in some cases.

DP 432

Homeownership: Low household mobility, volatile housing prices, high income dispersion

Sven Rady Francois Ortalo-Magne

We develop a dynamic stochastic equilibrium model of two locations within a city where heterogeneous households make joint location and tenure mode decisions. To investigate the effect of homeownership on equilibrium prices and allocations, we compare the response of this model economy to a labor shock with that of a rental-only version. This comparison yields three results. First, homeownership enables more households to remain in the more desirable location at the expense of newcomers. Second, homeownership adds to the volatility of the housing market. Third, homeownership may amplify the dispersion of household income within a location. Homeownership raises distributional issues. The households who consume the most housing gain the most from the ability to own their home. Newcomers to the city are the main losers.



DP 433

The Role of Bank Capital and The Transmission Mechanism of Monetary Policy

Pojanart Sunirand

This paper is a theoretical study of the transmission mechanism of monetary policy in the presence of an endogenous role of bank capital. The basic framework is a standard Dynamic New Keynesian model with price stickiness modified so as firms as well as banks face endogenous financial frictions in obtaining external funds from their respective debtors. This implies that an external financial premium exists, thereby motivating the endogenous role of entrepreneurial net worth and bank capital in the model. In the terminology of Van den Heuvel (2001), the model exhibits the unconventional 'bank capital' channel of monetary policy. The simulation result highlights a financial accelerator effect in that endogenous evolution of bank capital, together with that of entrepreneurial net worth, operate to amplify and propagate the effect of a monetary shock in the macro economy.

DP 434

Optimal Expectations

Jonathan Parker and Markus K Brunnermeier

This paper introduces a tractable, structural model of subjective beliefs. Since agents that plan for the future care about expected future utility flows, current felicity can be increased by believing that better outcomes are more likely. On the other hand, expectations that are biased towards optimism worsen decision making, leading to poorer realized outcomes on average. Optimal expectations balance these forces by maximizing the total well-being of an agent over time. We apply our framework of optimal expectations to three different economic settings. In a portfolio choice problem, agents overestimate

the return of their investment and under diversify. In general equilibrium, agents' prior beliefs are endogenously heterogeneous, leading to gambling. Second, in a consumption-saving problem with stochastic income, agents are both overconfident and overoptimistic, and consume more than implied by rational beliefs early in life. Third, in choosing when to undertake a single task with an uncertain cost, agents exhibit several features of procrastination, including regret, intertemporal preference reversal, and a greater readiness to accept commitment.

DP 435

Coordination, Learning, and Delay

Amil Dasgupta

This paper studies how the introduction of social learning with costs to delay affects coordination games with incomplete information. We present a tractable noisy dynamic coordination game with social learning and costs to delay. We show that this game has a unique monotone equilibrium. A comparison of the equilibrium of the dynamic game with the equilibria of analogous static coordination games explicates the role of social learning. The analysis is carried out for both endogenous and exogenous order of moves in the dynamic game. In the limit as noise vanishes, social welfare is strictly ranked in these games, with the highest welfare achieved in the dynamic game with endogenous ordering. We demonstrate that exogenous asynchronicity is not a substitute for endogenous asynchronicity. We also show that under endogenous ordering, as noise vanishes, the efficiency of coordination is maximized at intermediate costs to delay. The robustness of these results is illustrated numerically away from the complete information limit, when closed forms are not available. Our results have implications for the initial public offerings of debt, as well as for the adoption of new technology under incomplete information.

DP 436

Financial Contagion through Capital Connections: A Model of the Origin and Spread of Bank Panics

Amil Dasgupta

Financial contagion is modelled as an equilibrium phenomenon in a dynamic setting with incomplete information and multiple banks. The equilibrium probability of bank failure is uniquely determined. We explore how the cross holding of deposits motivated by imperfectly correlated regional liquidity shocks can lead to contagious effects conditional on the failure of a financial institution. We show that contagion is possible in the unique equilibrium of the economy and characterize exactly when it may exist. At the same time, we identify a direction of flow for contagious effects, which provides a rationale for localized financial panics. Simulations identify the optimal level of interbank deposit holdings in the presence of contagion risk. Our results suggest that when the probability of bank failure is low, maximal levels of interbank holdings are optimal. When cross holding of deposits is complete, we demonstrate that the intensity of contagion is increasing in the size of regionally aggregate liquidity shocks.

DP 437

Basel II and Developing Countries: Diversification and Portfolio Effect

Miguel Segoviano, Stephany Griffith-Jones, Stephen Spratt

This paper tries to provide a simple explanation for the empirical finding, documented here and also by Hau, Killeen and Moore (2002), that spreads in the spot USD/EUR market are substantially higher than those in the preceding



Discussion Papers

DEM/USD foreign exchange market. The paper argues that it is primarily the re-factoring of the exchange rate, 1.75 DEM per USD compared to 1 USD per EUR together with the fact that dealers are faced with a minimum tick size, that has caused spreads to increase (as a percentage of mid-quote).

DP 438

Corporate Bond Prices and Co-ordination Failure

Max Bruche

The expressed purpose of the proposed new Basel Capital Accord is to better align regulatory capital with actual risk. However, in this paper we demonstrate the failure of the proposals to date to take account of the benefits of international diversification. By excluding the possibility that banks' capital requirements should take account of portfolio and diversification effects, the proposals effectively impose an inaccurate measure of actual risk, at the portfolio level. This fact represents a distortion that we argue that can run the risk of causing an increase in cost and/or reduction in quantity of bank lending to developing countries, as a consequence of the sharp increase in capital requirements for lending to lower rated borrowers.

DP 439

On time-scaling of risk and the square-root-of-time rule

Jean-Pierre Zigrand, Jon Danielsson

It has been suggested (Morris, Shin 2001) that co-ordination failure between holders of debt can affect the price of debt. In essence, fear of premature foreclosure by other debtors can lead to pre-emptive action, affecting the value of debt. Using a continuous-time framework related

to a Merton (1974)-type structural model, this paper demonstrates how such co-ordination failures can affect the prices of corporate bonds. As it turns out, the resulting model is version of a structural model that allows default before maturity, a model feature that has proven to be popular with practitioners.

DP 440

Analysis of spreads in the Dollar/Euro and Deutsche Mark/Dollar foreign exchange markets

Richard Payne, Ryan Love, Charles Goodhart, Dagfinn Rime

We develop a structural model of an industry with many entrepreneurial firms in order to investigate the cyclical behaviour of aggregate fixed investment, variable capital investment and output. In particular, we consider an environment in which the entrepreneur cannot borrow unless the debt is secured by collateral and cannot sell fixed capital without liquidating her whole business. We show that, when these entrepreneurs experience persistent idiosyncratic and aggregate shocks, the inter-play between financing constraints and irreversibility of fixed capital is essential to explain several common observations. It helps to explain why inventory investment is very volatile and procyclical, especially during recessions, and why the output and inventories of small firms are more volatile and more cyclical than that of large firms. The model is also consistent with the observations that inventory investment leads the business cycle, and that both fixed and inventory investment are sensitive to the net worth of firms, even when marginal productivity of capital is taken into account.

Special papers

Britain, Germany and EMU. What have we learned in the 10 years since Black Wednesday?

On Monday September 16 2002, exactly ten years after Britain's exit from the European Exchange Rate Mechanism, the German British Forum and the Financial Markets Group held a symposium organised by David Marsh and Charles Goodhart to mark that event.

The following Special Papers are now available on request:

SP 145

Britain, Germany and EMU: What have we learned in the 10 years since Black Wednesday? 3 Selected Papers

Peter Wilson-Smith, David Peretz and David Marsh

SP 146

Reflections on the 10 Years Since Britains ERM Departure

Lord Lamont of Lerwick

SP 147

German and British Monetary Policy in the Age of Maastricht: What Have we Learned in the 10 Years Since Black Wednesday?

Helmut Schlesinger

SP 148

Economic Policy and Exchange Rate Regimes: What Have we Learned in the 10 years since Black Wednesday?

Edwin Truman



Forthcoming Discussion and Special Papers

Discussion Papers

DP 441

'Predatory Trading'

Markus K Brunnermeier, Lasse Heje Pederson

DP 431

'On the Out-Of-Sample Importance of Skewness and Asymmetric Dependence for Asset Allocation (IAM Series 1)'

Andrew Patton

DP 442 (UBS Pensions series 6)

'Pensionmetrics 2: Stochastic pension plan design during the distribution phase'

David Blake

DP 443 (UBS Pensions series 7)

'Stochastic Lifestyling: Optimal Dynamic Asset Allocation for Defined Contribution Pension Plans'

David Blake

DP 444 (UBS Pensions series 8)

'UK Annuity Rates and Pension Replacement Ratios 1957 – 2002'

Markus Brunnermeier and Jonathan Parker

DP 445 (UBS Pensions series 9)

'UK Pension Fund Management After Myners: The Hunt for Correlation Begins'

David Blake

DP 446 (UBS Pensions series 10)

'Take (Smoothed) Risks When You Are Young, Not When You Are Old: How To Get The Best From Your Stakeholder Pension Plan'

David Blake

DP 447

'Does Reinsurance Need Reinsurers?'

Gillaume Plantin

DP 448

'Self-Fulfilling Liquidity'

Gillaume Plantin

DP 449

'Tranching'

Gillaume Plantin

DP 450

'Equilibrium analysis, banking, contagion and financial fragility'

Dimitrios Tsomocos

Special Papers

SP 149

'The Governance Structure for Financial Regulation and Supervision in Europe'

Dr Rosa Lastra

SP 150

'The IS Curve and the Transmission of Monetary Policy: Is there a Puzzle?'

Charles Goodhart, Boris Hofmann

Capital Markets Workshop

The Capital Markets Workshop meets regularly throughout the academic year at 5pm on Wednesdays in room R405, Lionel Robbins Building, LSE. Please check the FMG website for changes to the programme.

Summer Term 2004

28 April	Peter Hansen (Brown University)
05 May	Andrew Ang (Columbia)
12 May	Andrei Simonov (Stockholm School of Economics)
19 May	Ernst Maug (Humboldt University, Berlin)
26 May	Tomas Philippon (NYU Stern)
2 June	<i>TBC</i>
9 June	Narayan Naik (LBS) <i>TBC</i>
16 June	David Thesmar (Écoles Nationales d'Économie et de Statistique) <i>TBC</i>
23 June	Suresh Sundaresan (Columbia) <i>TBC</i>
30 June	Markus Brunnermeir (Princeton University) <i>TBC</i>

DC Webb

Revisions to the programme may take place, these will be identified through the website at: <http://fmg.lse.ac.uk>



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