8th Swiss Doctoral Workshop in Finance, Gerzensee, June 8/9, 2009

Book of Abstracts – ALL SELECTTED PAPERS

1. Daniel ANDREI and Julien CUJEAN, Lausanne
Global Public Signals, Comovement of Stock Markets, and Home Bias

We consider two countries A and B. Country A is populated by investor A and country B is populated by investor B. We consider the aggregate endowment process

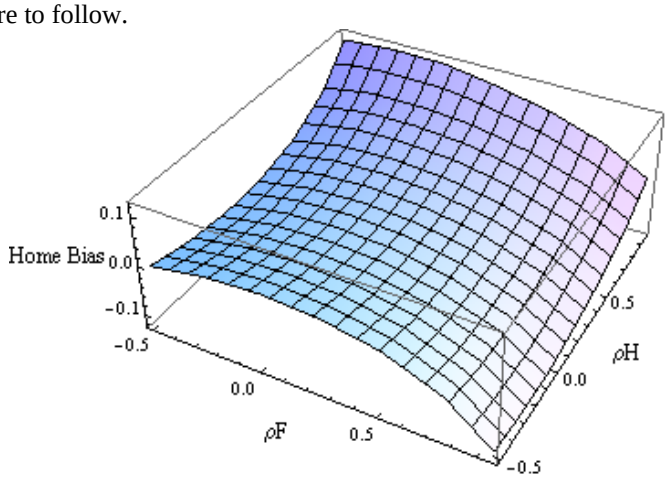
$$\frac{d\delta_t^A}{\delta_t^A} = f_t^A dt + \sigma_\delta dZ_{A,t}^\delta,$$
$$df_t^A = \zeta\left(f - f_t^A\right)dt + \sigma_f dZ_{A,t}^f,$$

for investors located in country A and

$$\frac{d\delta_t^B}{\delta_t^B} = f_t^B dt + \sigma_\delta dZ_{B,t}^\delta,$$
$$df_t^B = \zeta\left(f - f_t^B\right)dt + \sigma_f dZ_{B,t}^f,$$

for investors located in country B. Investors cannot observe the drift of dividends from each country. Since the fundamental process is a hidden state, agents of both countries need to filter it out. They do so by using the observable dividend processes as well as a global public signal s. This signal obeys the dynamics $ds_t = dZ_t^s$. $\left[Z_A^\delta, Z_B^\delta, Z_A^f, Z_B^f, Z^s\right]$ is a vector of independent Brownian motions under the objective probability measure. Agents can invest in both stocks. The investor of each country thinks that both fundamentals are correlated with the global signal s when, in fact, they are not. The correlation with each fundamental may differ. We denote by ρ_H and ρ_F the correlation of the domestic and the foreign dividend with the global signal, respectively. We derive solutions for the stock prices and optimal portfolio holdings in a general equilibrium framework. We investigate the parameter values that allow to generate substantial home bias in portfolio holdings. Results are roughly illustrated in the figure below.

On the other hand, we analyze the co-movement of both stock markets induced by the overconfidence of both investors. We try to isolate the contribution from the fundamentals and from the overconfidence to the international stock market co-movements. Related results are to follow.



5. Anna CIESLAK and Pavol POVALA (University of Lugano)
Macroeconomic Uncertainty and the Yield Curve

We study economic sources and pricing implications of fluctuating interest rate volatility using high-frequency identification. With almost two decades of bond transaction data, we obtain a tick-by-tick view on the development of the yield curve and its volatility. Several facts stand out from the analysis of the realized yield co-variation series: First, the nature of state variables driving yields varies broadly and persistently over time, with the level factor capturing from 95% down to 50% of yield variation across periods. As such, static decompositions of yields into level, slope and curvature wash away valuable information about the behavior of the curve. Second, several factors are at work in determining yield volatilities. This finding runs counter the preferred approach in the affine term structure research, dominated by a univariate volatility specification. Third, the conditional covariance of yields subsumes vital knowledge about the prospects and uncertainties surrounding key macro variables. Indeed, to the extent that our yield co-variation measures arise from trading in very liquid Treasury bonds, they give the most timely and undistorted reflection of market expectations and fears.

Our model-free empirical results guide us through the second step, in which we specify and estimate a no-arbitrage yield curve model with a multivariate covariance structure of factors. While many agree that higher-dimensional settings are key to explain interest rate risk, the applications of sufficiently rich models fall behind the need on several concerns: (*i*) their hefty parameterization, (*ii*) lack of factor interpretation and (*iii*) the inability to identify bond volatility from yields alone (unspanned stochastic volatility hypothesis, USV). Our specification clears these objections. First, without resorting to "knife-edge" USV restrictions, we are able to simultaneously explain the cross section of yields and their covariance dynamics. Second, and more importantly, our model-implied factors carry economic interpretation: We document a strong link between filtered yield and volatility states and forward-looking measures of economic fundamentals. Expectations and uncertainty about future path of the short rate, real activity and inflation – rather than realized macro quantities – explain up to 95% of the latent factor variation.

6. Giuseppe CORVASCE, Lugano (with Giovanni Barone-Adesi)
Merger Arbitrage: The dynamics of the physical probability
The dynamics of the physical probability of firms that undertake a stock swap merger are developed through a simple model. Using a sample of 1090 deals from 1992 to 2008, we show how movements in bidder and target stock prices are informative of the success or failure of a stock swap merger. Without any assumption on the convergence of the target stock price to the bid offer, our results share the findings of Samuelson and Rosenthal (1986). According to our results, bidder and target price movements represent the "thermometer" of a deal status.

8. Hakim DALL'O, Lugano (with Giovanni Barone-Adesi)
Is the Price Kernel Monotone?
We provide a new method to derive the state price density per unit probability based on option prices and GARCH model. We derive the risk neutral distribution using the result in Breeden and Litzenberger (1978) and the historical density adapting the GARCH model of Barone-Adesi et al. (2008). We take the ratio of these two probabilities in order to describe the shape of the state price density and to evaluate its consistency with economic theory. We find that using a large dataset and introducing non-Gaussian innovations, the pricing kernel puzzle that arises in Jackwerth (2000) disappears both in a single day and over an average of different days with options expiring at the same maturity.

10. Michal Dzielinski, Zurich
The influence of themes on index returns and volatility
The aim of this paper is to investigate, how themes influence the market on an aggregate level. A theme is defined generically as a phenomenon, topic or even a buzzword, known to have been widely discussed in connection with the financial markets. Following the Efficient Market Hypothesis all such themes should be immediately incorporated into the prices and have no lasting impact on the markets. Evidence is presented, showing that this is not the case. The suggested behavioral mechanism is that the exposure investors have to a given theme influences the weight it is assigned when building expectations, thus shaping current market conditions.
The market variables of interest are the level, realized, and implied volatility (as measured by the VIX Index) of the Standard & Poors 500 Index. The investigation period ranges from January 2004 to March 2009, which is dictated by data availability but nevertheless encompasses the current crisis and much of the bull market that preceded it. Analyzed themes are: oil price, recession and subprime. To proxy for their popularity, an innovative dataset obtained from Google Trends is used. This database allows users to track the relative frequency with which given word or phrase was introduced as a search term into the Google search engine on a week-by-week basis.
Linear regressions show that the strongest link exists between the popularity of the themes and implied volatility. This is in line with the suggested behavioral mechanism, since implied volatility, as measured by the VIX Index, shows the expected volatility over the next 30-day period. A separate analysis is performed to test the validity of this link on the commodity market, yielding similar results. Rolling regressions show however that the estimated parameters are not stable over time, which is consistent with the intuitive idea that themes come and go, but raises questions about their applicability to forecasting. Nevertheless attempts are made [not yet complete] to show, whether the inclusion of themes can enhance the predictive power of established predictive models.

11. Nicola FUSARI, Lugano (with Fulvio Corsi and Davide La Vecchia)
Back to the Past: Pricing Options with Realized Volatility
We develop a stochastic volatility option pricing model that exploits the informative content of historical high frequency data. Using the realized volatility as a proxy for the unobservable return volatility, we propose a simple (affine) but effective long-memory process: the Heterogeneous Auto-Regressive Gamma (HARG) model. This process, combined with an exponential affine stochastic discount factor, leads to a completely tractable risk-neutral dynamics. The explicit change of probability measure obtained within this framework allows the estimation of the risk-neutral parameters directly under the physical measure, leaving only one free parameter to be calibrated. We find that this parameter is fairly stable over time and it is closely related to the variance risk premia. Thanks to this remarkable feature we notice that in our approach it is possible to avoid standard calibration procedures and option prices can be computed just relaying on historical data. An empirical analysis on S&P 500 option index shows that the proposed model outperform competing GARCH models, especially for short term options where our model is able to better capture the smile of the implied volatility curve.

12. Raul GONZALEZ, Geneva
Extensions of Affine Models
Drawing from the theory of partial differential equations, this article presents a method to obtain closed-form expressions for the characteristic functions of stochastic processes whose drifts and diffusive variances are allowed to be non-linear functions of the current value of the state variable. This setup allows the range of asset pricing applications usually reserved for affine models to be extended to a wider class of nonlinear stochastic processes typically found in the nonparametric diffusion estimation literature (e.g., Stanton (1997), Chan, Karolyi, Longsta and Sanders (1992), and Bandi and Philips (2003)). The econometric analysis of the proposed model is undertaken, and a number of pricing applications are explored.

13. Mario HAEFELI, UZH
Stability Measures with respect to Funding Liquidity Risk
How do we measure the stability of a banking system with regard to price recessions of the illiquid assets? This paper gives an answer by defining and exploring the stability measure with respect to funding liquidity risk. It is a function assigning numbers between zero and one to each banking system. The higher the number, the more stable the system. This stability measure has an economic interpretation: it quantifies the maximal proportional price shock that a system can bear without suffering a reduction in the equilibrium price of the illiquid assets.

In order to investigate the subjects of financial stability, funding liquidity risk and systemic risk, we present a model of banking systems with financial interconnections and prudential regulations. When assets are marked to market in a system of mutually dependent banks, regulatory liquidity requirements can induce forced sales of illiquid assets in times of market turbulence. Even a small initial illiquid price shock reduces the market value of a firm's balance sheet which can generate a downward spiralling of the illiquid asset price via the constraints. This mechanism suggests that systemic risk in networks is market risk and not only credit risk which is caused by balance sheet interlinkages among banks.
Investment banks, hedge funds or insurance companies hold mainly marketable assets. For these financial firms the above explanation of contagious failures is relevant. However, even commercial banks hold some financial assets on their trading book that are marked to market. Therefore, the theoretical analysis of mark-to-market rules combined with prudential regulations as a possible source of financial crises is important for many financial institutions.
The starting point of our work is the framework by Cifuentes, Ferrucci and Shin (2005). Their model of several interconnected banks is able to explain the downward spiral in asset prices after a small initial shock by regulatory solvency constraints and financial institutions that mark their assets to market. Contrary to the model of Cifuentes et al., the future demand of the illiquid asset is not determined by a specific function. It only has to fulfill a short list of weak assumptions and is stochastic. Thus, our setup allows for more general market conditions. Our model suggests the definition of the stability measure with respect to funding liquidity risk which has a clear meaning, is easily computable and admits a precise mathematical formulation.
The recent literature on the topic of systemic risk in a financial system can be classified in three groups. First, the traditional bank run models involve only a single bank. The second group considers contagion in multiple bank systems. The failure of a small number of banks is transmitted to others due to financial linkages across institutions (interbank credit exposures). For example, Wells (2002) and Cifuentes (2003) are exponents of the second branch of literature. The third group assumes that the distress of a small number of banks spreads to other banks through the disruption of the market. Distressed banks can perturb the markets and this disruption alters the value of the positions of every bank in the system. For instance, Allen and Gale (2002) contribute to the third branch. Cifuentes, Ferrucci and Shin (2005), Estrada and Osorio (2006) and our paper add to the second and the third group of literature.

15. Alexandre JEANNERET, Lausanne
Default, Exchange Rates, and Asset Prices
This article develops a framework that unifies the economics behind the structural modeling of both sovereign and corporate credit risk and the equilibrium modeling of international asset pricing. The default decisions of the sovereign and the firm are derived optimally and embedded in a two-country, two-good consumption-based asset-pricing model with a representative risk-averse agent for each country.
Within the model, the world consists of a developed and an emerging economy, each one consisting of a representative defaultable firm, which is financed by equity and debt, and a government. The government can default on its debt in the emerging country, whereas it is default risk-free in the developed economy. The model endogenously links unobservable risk-neutral probabilities to observable actual probabilities via the market price of consumption risk. It allows, therefore, to study endogenously the effect of a country's macroeconomic conditions on the exchange rate, on the firms' and the emerging government's default decisions, and thus on each firm's asset prices.
The recent period of economic downturn in the U.S., characterized by a high level of economic uncertainty (measured by the VIX option-implied volatility index), has been accompanied by: i) low levels of U.S. Treasury rates as a result of a flight-to-quality reaction; ii) a simultaneous fall in stock market prices and a rise in corporate credit risk in both the U.S. and emerging markets; iii) an increase of sovereign credit risk in emerging market economies (as documented in Longstaff et al. (2008); Pan and Singleton (2008); Jeanneret (2009)). The model developed in this paper successfully replicates these qualitative predictions and, thus, offers a rationale for these empirical observations. Last but not least, the model explains the non-linear negative relationship between sovereign credit spreads and stock market prices that has been empirically documented in Jeanneret (2009).

16. Benjamin JONEN (University of Zurich)
Explaining Cross Country Home Ownership
This paper develops a life-cycle asset allocation model to study cross-country home ownership. Investors acquire housing services from either renting or owning while assuming that renting provides less utility. Agents have access to an extensive set of asset and debt instruments: A risky and a riskless asset as well as collateralized and uncollateralized debt. Uncertainty about the relative cost between renting and owning enters the model through a stochastic mortgage rate.
The model is calibrated in three steps. First, common parameters such as the return on the risky asset are calibrated. Second, the following house market relevant parameters are calibrated for each country individually: Housing return, mortgage rate, down payment and life-cycle income profiles. Third, the strength of the rental discount embedded in the utility function is calibrated to fit empirical ownership patterns.
The study focuses on the US and the UK. Age-income profiles for the former country are adopted from related papers focusing on the US. Profiles for the UK are estimated for three different educational groups using Synthetic Cohort Estimation. Higher educated individuals face increasingly hump shaped income profiles.
The model is able to capture stylized facts on home ownership. In particular, empirically low housing participation of young households is generated by the two key model ingredients: Country-specific income profiles and a minimum housing constraint. Related papers rely on transaction costs to produce low ownership of the young. Abstracting from transaction costs, young households in this setup are discouraged from ownership by the minimum housing constraint in combination with their limited access to cash.

17. Matthias JUETTNER, Zurich

A credit risk model incorporating microstructural dependencies and stochastic recovery

Due to the subprime crisis financial institutions around the world have reported tremendous losses. Further consequences for all parts of the economy are entirely unforeseen. Governments around the world take steps against the crisis, establishing spending programmes, relaxing financial accounting methods or discussing more rigorous supervisory processes and regulations. In this paper we focus especially on aspects associated with capital requirements for credit risk. We provide a very general credit risk model which contains as a special case the Internal Rating-Based Approach (IRB-Approach) of Basel II. After introducing the model, we propose a recursive approximation for obtaining explicit representations of the asset value. We derive some properties and compare the model with the IRB approach. We analyze the asset correlation of both frameworks and give some comparative statics of the expressions for the expected loss. Due to this analysis of the dynamics we realize that the regulatory framework neglects many important relations, e.g., among obligors and also between risk components. An adequate risk assessment is consequently not possible.

The key element for determining regulatory capital requirements, but also for the pricing of credit derivatives, is the computation of the distribution of aggregate credit portfolio losses. One of the crucial parameters is the expected loss (EL), which is defined as the product of three risk components: probability of default (PD), loss given default (LGD) and the exposure at default (EAD). The LGD describes the magnitude of likely loss on the exposure and is expressed as a percentage of the exposure. Moreover, the loss is contingent upon the amount to which the bank was exposed to at the time of default, commonly expressed as EAD. Many credit risk models, also the rules of the Basel II, are implicitly based on the assumption of independent LGD rates and default events. However, there is strong evidence of correlation between LGDs and default events. In general each of the components of the EL can be affected by systematic risk factors, e.g., the decline of real estate prices has a positive impact on the LGD of loans, which are secured by means of collaterals. Therefore, during an economic downturn the misfortune of banks may be twofold: a higher rate of default among their borrowers and a lower rate of recovery on defaulted loans. Additionally, firm interdependencies can also produce correlated PDs. The credit deterioration of a counterparty can trigger the credit deterioration of other counterparties through these inter-firm links. Beside the systemic factors, the dependence between PD and LGD can also be established by firm relations. The lower recovery rate of firm A implies ceteris paribus a higher PD of the counterparty firm B. In the case that firm A defaults, only a smaller fraction of the amount of outstanding receivables or debt can be reimbursed, which weakens the financial condition of firm B and therefore increases the PD of the firm.

We develop a structural credit risk model, which accounts for all described dependencies. We start by modeling the recovery rate and PD explicitly, where both depend on macroeconomic variables; this setup is similar to Andersen and Sidenius (2004/05). The shared set of systematic factors allows capturing the empirical observation that both default and recovery are affected by the state of the economy. Moreover, the common systematic factors create correlation between the PDs and LGDs of the obligors in the credit portfolio itself. However, we extend this setup anticipating inter-firm connections. Through this microstructural channel we also establish related default probabilities (contagion) and correlation between PD and LGD as already described above. We integrate the recovery dynamics into the basic setup following Egloff et al. (2007). The asset value depends as usual on a systematic and an idiosyncratic risk factor. The idiosyncratic factor is replaced by a function which depends on firm relations and macroeconomic variables. We anticipate possible defaults and corresponding losses of interlinked firms. The effect of this modeling approach is on the one hand macroeconomic shocks can have a direct impact on the asset value of a firm and an indirect impact through the inter-firm channel. On the other hand we have established a link between PD and LGD, i.e., the dependencies serve as channel for defaults triggered by other than pure macroeconomic factors.

18. Mustafa KARAMAN, UZH (joint with Loriano Mancini and Yacine Ait-Sahalia, Princeton)

Jump Risk Premia Implicit in Variance Swap Contracts

This paper analyzes the impact of price discontinuities to the determination of variance swap rates using more than a decade worth of variance swap quotes at five maturities from a major broker dealer in New York City. We use variance swap rates, which reflect market's expected volatility for a given time horizon, and S&P 500 index returns to estimate our jump diffusion stochastic volatility model. The model assumes the square-root process which was introduced by Heston (1993) for the evolution of the stochastic variance. The estimation results show that the jump risk premium in the underlying asset returns is not significantly different from zero which was expected to be positive economically. This shows that, using square root process for the variance dynamics causes mispricing of jumps in the variance swap market.

19. Matthias KURMANN, Lausanne

Optimum Portfolio Allocation with Multivariate Poisson Jumps

This paper investigates the optimal portfolio allocation of a risk averse investor if asset prices follow jump-diffusion processes. The multivariate compound Poisson process entails a systematic and an idiosyncratic jump component. Furthermore, the conditional co-jump sizes are not perfectly correlated. Several jump tests confirm the presence of both components in foreign exchange data. A calibration shows that jump risk may indeed fundamentally alter portfolios compared to a jump-risk ignoring investor, i.e. a Merton investor. In particular, the interplay of the different jump components leads to effects far beyond a simple fled into the risk-less asset as found in the related literature. A jump-risk robust allocation may even inverse short-long positions or allocate more funds to assets reducing the exposure to macro shocks despite modest returns. However, parameter estimates are so far not yet available.

20. Jens MARTIN, Lugano (with Richard Zeckhauser, Harvard University)
Exit strategies and cash levels in an IPO
This research project is aiming to document and to investigate the extent and potential purposes of dividend payments of companies prior to their respective IPOs, a question not answered by the existing literature so far. In this part of the research project, we examine if, why and how managers manipulate cash holdings by paying out cash dividends prior to going public. We collect data on U.S. IPOs issuing common class A shares in the years 1990 to June 2006 and subsequently listed on NYSE, AMEX or NASDAQ. We observe a large number of IPOs which pay out cash dividends in the three years prior to their IPO (30% of total sample). These dividend payments are economically significant in terms of market valuation of the company as well as in terms of proceeds raised from primary shares.
We find that insiders use dividend payments prior to an IPO as an exit strategy to avoid selling a large number of secondary shares[1] in the IPO itself. CFOs interviewed by Brau and Fawcett (2006) believe that issuing secondary shares during an IPO sends a bad signal to the market. CFOs fear that the market interprets this signal as a sign that insiders are pessimistic about the future performance of the firm. Even if insider selling can potentially have reasons independent of the future performance, such as diversification or liquidity, the market will worry that this trading could be based on the informational advantage of the insider. Consequently, if insiders seek to sell a large fraction of their shares in an IPO, managers will split the envisioned amount an insider seeks to sell into two parts: a cash dividend prior to the offering, followed by an issuance of secondary shares at the IPO. We find evidence for this hypothesis. Besides other, the amount of dividend payouts is strongly positive correlated with the number of secondary shares offered. However, it is insignificantly correlated with the amount of primary shares offered. Additionally, the amount of cash held by a specific company prior to going public sends a signal to the market. Indeed, a very high level in cash holdings provokes the question by the market why the company needs the new funds of the equity issuances. Thus, it fuels the fear of the market that managers might try to take advantage of an overvaluation of the company. Indeed, the data shows a very clear picture: without incorporating the amount of cash dividends paid out prior to the offering, the levels of cash holdings are similar of dividend and non-dividend paying companies. However, after taking the amount paid out into account, dividend paying companies have a significant higher level of cash prior to their IPO. Thus, dividend paying companies seem to try to reduce their cash holdings to mimic the average IPO to avoid raising potential market concerns on their reasons for going public. In follow on work we will look into the different long term performance.
[1] Secondary shares: “old” shares offered in an equity offering, the proceeds of which go to pre-IPO shareholders and not to the company.

22. David OESCH, St Gallen
Corporate Governance and Firm Value: International Evidence
In this paper, we investigate the relation between firm-level corporate governance and firm value in a large and previously unused dataset from Governance Metrics International (GMI) comprising 6,663 firm-year observations from 22 developed countries over the period from 2003 to 2007. Based on a set of 64 individual governance attributes we construct two alternative additive corporate governance indices with equal weights attributed to the governance attributes and one index which is derived from a principal component analysis. For all three alternative index constructs we find a strong and positive relation between firm-level corporate governance and firm valuation. In addition, we investigate the value relevance of governance attributes that document the companies’ social behavior. Regardless of whether these attributes are considered individually or aggregated into indices and even when controlling for “standard” corporate governance attributes, we demonstrate that they have a significantly positive effect on firm value. Our findings are robust to alternative calculation procedures for the corporate governance indices and to alternative estimation techniques.

23. Emilio OSAMBELA, Lausanne (with Bernard Dumas, Karen K. Lewis)
Differences of opinion in an international financial market equilibrium
We develop an international financial market model in which domestic and foreign residents differ in their beliefs about the information in economic signals. We show that our model can help explain four standard international pricing anamolies: (a) home equity preference; (b) the dependence of firm returns on local and foreign factors; (c) the co-movement of returns and international capital flows; and (d) abnormal returns around foreign firm cross-listing in the local market. While standard explanations of these anomalies have focused upon each individually, we show that our model can address all four empirical regularities. In contrast to standard explanations for these international observations, we do not require market incompletness nor non-separabilities in utility between tradeables and non-tradeables. Moreover, our model delivers features of segmented markets that arise in models of asymmetric information even though in our setup markets are fully integrated and all information is public.

24. Elise PAYZAN, EPFL
Learning and choice under nonstationary and unknown probabilities
Hitherto, the behavioral finance literature has focused on static and stationary situations of ambiguity (Knightian uncertainty), whereby there is no updating of the fixed probabilities. In many environments however, ambiguity is dynamic and complex: the probabilities are learnt, and they may jump. As such, three levels of uncertainty need to be accounted for: from the randomness of the outcomes, from estimating the probabilities, and jump risk. If this appears too demanding, one can ignore the multiple layers and learn action-outcome contingencies through adaptive expectations (the "reinforcement learning model"). Optimal Bayesian learning, however, calls for explicit learning of probabilities and their jumps (the "hierarchical Bayes model"), or, if jumps are accounted for only implicitly through discounting, optimal learning of the discount parameter (the "forgetting Bayes model"). We propose a new experimental paradigm, called the "boardgame," to study how humans cope with such complex ambiguity. The boardgame has been deliberately designed to replicate empirical regularities observed in real-world finance, where lack of knowledge about asset returns that appear to jump all the time (jump risk) is ubiquitous. We found that the Bayesian models explain subjects' choice uniformly better than the reinforcement learning model.

25. Rodolfo PRIETO, Lausanne
Dynamic equilibrium with heterogeneous agents and risk constraints
We study a pure-exchange, continuous-time economy in which some agents face risk constraints that render a policy which scales down the unconstrained (Merton) portfolio. The reduction in risk taking of the constrained agent induced by the constraint depends on current market conditions. Portfolios behave qualitatively similar to those under VaR-type constraints. We provide parametric restrictions such that the model displays excess volatility and replicate patterns in the risk premium, the Sharpe ratio and interest rates consistent with empirical findings. Risk constraints may give rise to asset pricing bubbles. We develop implications in economies with multiple risky assets and with agents with heterogeneous beliefs.

26. Giovanni W. PUOPOLO, Lausanne
Firm Migration and Stock Returns
This paper studies the asset pricing implications of a general equilibrium model in which real investment is reversible at a cost. Firms face higher costs in contracting than in expanding their capital stock and decide to invest when their productive capital is scarce relative to the overall capital of the economy. Positive shocks to the capital of the firm increase the size of the firm and reduce the value of growth options. As a result, the firm is burdened with more unproductive capital and its value lowers with respect to the accumulated capital. The optimal consumption policy alters the optimal allocation of resources and affects firm's value, generating a mean-reverting dynamics for the M/B ratios. The model (1) captures
convergence of price-to-book ratios - negative for growth stocks and positive for value stocks - (firm migration), (2) generates deviations from the classic CAPM in line with the cross-sectional variation in expected stock returns and (3) generates a non-monotone relationship between Tobin's q and conditional volatility consistent with the empirical evidence.

27. Vahe SAHAKYAN, Zurich (with Joachim Coche, BIS)
Reserve Adequacy and Composition
Establishing the foreign exchange reserves management strategy by central banks comprises decisions on the level of reserves (reserves adequacy) and on the composition of reserves (reserves allocation). Both in literature and practice, the reserves management strategy is often the result of a fragmented, hierarchical decision making process. The objective of this paper is to analyze the implication of a joint determination of adequacy and composition.
We develop a model to analyze the optimal reserves management strategy for a small country that is subject to external liquidity shocks. Long-term capital investments in this country are funded by short-term borrowing in foreign currency. In this setting the central bank aims at mitigating adjustment costs to the economy implied by the external liquidity shocks by providing foreign currency loans to the private sector. In deciding the reserves management strategy, the bank balances adjustment costs, costs of funding foreign reserves as well as investment risks and returns. While investment returns and liquidity shocks are exogenous, funding costs are endogenous and are function of the countries vulnerability.
Inter alia, we show that both the demand for reserves and the reserves' composition depend on the characteristics of liquidity shocks as well as on the central bank's risk aversion. Also a highly risk averse central bank will hold reserves and invest part of these reserves in risky assets in the presence of economically meaningful liquidity shocks.

28. Cornelius SCHMIDT, Lausanne
How internal capital markets reduce conglomerates' values?
The paper proposes a new channel explaining the cross-sectional variation of conglomerates' excess values. Based on the assumption that diversified firms are more exposed to supplier and customer bargaining power than single-segmented firms, conglomerates suffer from a discount because the internal capital market generates value-decreasing cross-subsidies among segments. The prediction is supported by the data: A larger dispersion of segments' supplier and customer concentration, used to proxy stakeholders' bargaining power, decreases the excess values of conglomerates. The finding is robust to adjustments in leverage and to self-selection.

29. Katsiaryna SVIRYDZENKA, HEI Geneva
The Varying Price of Risk in Emerging Countries' Stock Markets: the Role of the Foreign Investor Profiles.
Financial integration is expected to result in better risk-sharing opportunities for emerging markets by allowing them to share income risks and smooth consumption. However, as documented by Kose, Prasad, Rogoff, and Wei (2006), this is far from the case. One usual explanation is that emerging markets are below the necessary threshold level of financial development. An alternative interpretation would be to focus on the fact that emerging economies tend (or tended) to borrow from specialized investors, whose main characteristics are that they are highly leveraged, overly exposed to emerging markets, driven by the world conditions, and share similar investment strategies and risk assessment models. A natural question is then to ask whether a more diverse investor base has the potential to stabilize the supply of international capital. This paper analyzes the role of the foreign investor types in the pricing of risk in the stock markets of emerging countries. Taking the APT approach to asset pricing and the dynamic common factor model as its empirical implementation, I extract via the Kalman filter the factors driving stock returns in 40 emerging markets over the 2001-2006 horizon. Having estimated the price of risk for each country with the two-pass procedure, I then show that it is affected by the sector breakdown of foreign equity holders, as measured by the IMF Coordinated Portfolio Investment Survey.

30. Philip VALTA, Lausanne
Product Market Competition and the Choice and Structure of Corporate Debt
I empirically investigate how product market competition affects the choice of firms to issue public and private debt and how it shapes corporate debt along pricing and non-pricing dimensions. Using a large sample of US firms over the years 1994 to 2007 and import penetration as a proxy for product market competition, my preliminary results suggest that product market competition is important for financing decisions of firms. Consistent with recent equilibrium models of financial structure, I find that firms in more competitive industries issue debt with higher spreads and lower maturity. By contrast, debt contracts of firms in more competitive industries have fewer lenders, fewer restrictions, and a lower probability to include financial covenants.

31. Jan WRAMPELMEYER, Zurich (with Loriano Mancini and Angelo Ranaldo)
Liquidity Risk Premia in Foreign Exchange Markets
Recent events during the subprime crisis have highlighted the paramount importance of liquidity. While liquidity has been studied extensively in equity markets only very few papers investigate foreign exchange liquidity. Therefore, the goal of this paper is to develop a liquidity measure particularly tailored to the FX market, to quantify the amount of commonality in liquidity across different exchange rates, and finally to determine the extent of liquidity risk premia inherent in foreign exchange returns.
To that end, a daily reversal measure accounting for the important role of contemporaneous order flow in the determination of exchange rates (Evans and Lyons, 2002) is developed and estimated using a new comprehensive data set including ultra high frequency return and order flow data for nine major exchange rates. Inspired by Pástor and Stambaugh (2003), the new measure is based on structural microstructure models featuring a dichotomy between the true and the observed price. Empirically, the measure nicely captures market participants' perception of periods with high and low liquidity in the expected manner.
Testing for commonality in FX liquidity is crucial as the presence of sudden shocks to market-wide liquidity has important implications for traders as well as regulators. Therefore, a time-series of systematic FX liquidity is constructed representing the common component in liquidity across different exchange rates. In line with expectations, results for both weekly as well as monthly data indicate that liquidity co-moves across currencies and that systematic liquidity decreases in the beginning of the subprime crisis. This decline in systematic FX liquidity is severely aggravated following the default of Lehman Brothers Inc. in September 2008.
The final part of the paper investigates whether there exists a return premium for illiquidity. Thus, a factor model similar to Lustig, Roussanov and Verdelhan (2008) is augmented by a liquidity risk factor constructed from shocks to systematic liquidity and applied to the data set at hand. Estimation results indicate that liquidity risk is a priced state variable important for the determination of FX returns. This finding helps to explain deviations from uncovered interest rate parity as classical tests do not include liquidity risk.

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Pricing accuracy, liquidity and trader behavior with closing price manipulation
We study closing price manipulation in an experimental market in order to evaluate its social harm. We find that manipulators, given incentives similar to many actual manipulation cases, decrease price accuracy and liquidity. The mere possibility of manipulation alters market participants' behavior causing reduced liquidity. We find some evidence that ordinary traders attempt to profitably counteract manipulation. This study provides examples of the strategies employed by manipulators, illustrates how these strategies change in the presence of regulatory scrutiny and assesses the ability of market participants to identify manipulation.