

Book of Abstracts

1. Daniel ANDREI, Lausanne

Trade Costs, Heterogeneous Firms and International Portfolio Choice

This paper builds on a two-country dynamic stochastic general equilibrium (DSGE) model in which households can invest in home and foreign equities. First, a benchmark model is created to obtain several previous results of the existing literature. A closed form solution is derived for the optimal portfolio holdings. In this benchmark model it is shown why the hedging of both real exchange rate risk and labor income risk will generate foreign equity bias. Then, new features are introduced, such as non-traded goods, heterogeneous firms and endogenous export. The interaction between trade costs and these new features helps to explain the home equity bias documented in many empirical studies.

2. Vera BARANOUSKAYA, Lugano

Real options approach to vertical product differentiation

This paper discusses the model of vertical product differentiation in the dynamic setup. The market is covered by one active firm (the Incumbent), whereas the Entrant is considering a possible entry at a lump-sum entry cost. The Incumbent has an opportunity (an option) to invest into cost decrease (into reducing firm-specific cost parameter). The Incumbent is aware that the resulting reduction in the cost parameter will lead to an increase in the profits of the Entrant (in case it enters), as well as in its own profits. The cost parameter follows a jump process with a fixed size of the downward jump coming according to a Poisson process. Initially, the net present value of future cash flows of the Entrant is non-positive; without the option held by the Incumbent, the Entrant would never enter the market. I solve the dynamic model for the trigger value of the cost parameter under both monopoly and competition. I find that the option to invest into cost decrease allows the Incumbent to choose optimal time of investing (different from time zero) and thus to increase its value. Furthermore, even under the threat of entry, the Incumbent will still invest into cost decrease, triggering the immediate entry of the competitor. I also find that competition reduces option value that conforms to the findings of the previous literature.

3. Marina DRUZ, Lugano

Absence of Access to Management-Provided Information as a Reason to Issue a Sell Recommendation

An analyst issuing a “Sell” risks angering two powerful forces: investment bankers and management of the firm. This leads to the well-known optimistic bias in analysts’ recommendations. This paper examines the reasons why some analysts still issue “Sells” despite the risks involved. I find that the analysts who issue first sell recommendations about a firm are on average worse forecasters for this firm than their more optimistic colleagues. Thus, I reject the hypothesis that the first sell recommendations are issued by more successful or more informed analysts. I conclude instead that an issue of a first sell recommendation is the step undertaken by analysts who have not much to lose in terms of management-provided information. This hypothesis is also supported by the fact that the issue of a first “Sell” has no negative impact on further accuracy. This means that the management does not (can not) punish for this kind of negative recommendations by reducing information provided. Probably, because information supply was already reduced to the minimum.

4. Laurent FRESARD, Neuchatel

Financial Strength and Product Market Behaviors: The Real Effects of Corporate Cash Holdings

This paper empirically studies how corporate cash holdings affect product market decisions. Using U.S. intra-industry data from 1971 to 2005, the analysis provides several pieces of evidence that firms’ cash holdings strategically influence product market outcomes. In particular, I report that larger relative-to-rivals cash reserves lead to systematic future market share gains that obtain at the expense of industry rivals. Noteworthy, this “competitive” effect of cash turns out to be magnified when rivals face tighter financing constraints and when firms intensively interact in their product market. From a different perspective, the analysis further reveals that firms’ cash policy plays a significant preemptive role that distorts rivals’ financial and real decisions. Specifically, consistent with a deterrence effect of deep pockets, I find that incumbents’ cash reserves significantly curb the entry of potential competitors. In a similar vein, cash holdings considerably hamper the expansion of rivals by constraining both their investment and acquisition policies. Additional tests also document that the competitive effect of cash seems to be valued by investors and has considerably increased over time.

In a nutshell, my results unambiguously highlight that firms’ cash policy encompasses an substantial strategic dimension. As such, the findings in this paper provide at least three important insights. First, the results add to the growing literature on corporate liquidity by suggesting that the strategic value of cash is large. Consequently, future research aiming at assessing the soundness of the recent cash hoards and at understanding whether and how investors should be worried should not ignore the strategic nature of cash holdings. Second, the present study sheds some new lights on the connections between finance and product market conduct. Arguably, by establishing a link between cash holdings and product market outcomes, my results point out that the interactions between financial and real decisions clearly go beyond the simple association between debt financing and competitive strategies. Finally, the analysis confirms that firms do not operate in isolation but incorporate rivals’ financial status and competitive position in their (financial) decision process. While this natural idea has recently emerged in diverse theoretical developments, it is fair to say that, so far, the empirical evidence remains patchy.

5. Nicola FUSARI, Lugano (with G. Barone-Adesi and J. Theal)

Barrier Option Pricing Using Adjusted Transition Probabilities

Methods for pricing barrier options consist of two approaches: numerical methods and theoretical closed-form expressions. In this paper we use the former approach with a suitable transition probability adjustment to demonstrate an increased convergence rate for the standard Kamrad and Ritchken (1991) trinomial tree and Cox-Ross-Rubinstein (1979) binomial tree models applied to barrier options.

For European-style exercise put and call options the Cox-Ross-Rubinstein (CRR) binomial tree model is able to yield convergence towards the “true” (i.e. continuous time model) option price. However, if the CRR method is used to price more complex options such as single (constant) barrier, multiple barrier and time-varying barrier options, the CRR method converges so slowly and exhibits such large bias that its use becomes impractical. Consequently, a need for improved lattice pricing models exists, particularly for the more complex options.

Specifically, the bias obtains when the option barrier passes between two successive layers of nodes comprising the binomial tree without coming close to a node. Numerically, this is perceived as a mispricing of the option that takes the form of an upward/downward bias (i.e. convergence to the “true” price from above/below) added to the option price. In order to reduce this bias, Boyle and Lau (1994) and Ritchken (1995) proposed to reposition the nodes in the lattice such that the barrier passes as close as possible to a given layer of nodes in the tree. With this modification, increased convergence rates were achieved.

However, the node-repositioning technique of Boyle and Lau is unable to produce an approximation to the option price when the initial underlying price lies close to the barrier, when there are multiple barriers or when the barrier is time-varying.

Ritchken’s method, while exhibiting good convergence, suffers from two drawbacks. The first is that his method encounters difficulty converging to the “true” option price (and in some cases fails to converge at all) when the initial underlying price is very close to the barrier. The second drawback is that if a parameter of the option changes (maturity, volatility, etc...) then the entire lattice must be repositioned before calculating the new option price.

Another efficacious pricing model for barrier options is the adaptive mesh model (AMM) of Figlewski and Gao (1999). Their technique works by grafting a fine resolution lattice onto the coarse lattice of a trinomial tree and using smaller time and price increments to compute the finer mesh. However, owing to the difficulties in constructing a fine-resolution lattice, the AMM model encounters problems with options possessing sloped linear and nonlinear barriers.

Barrier option pricing using lattice techniques becomes a trade-off between convergence rates and having to reposition the nodes of the lattice in proximity to the barrier. Consequently, it would be of interest to develop a generalized lattice-pricing model that can be readily applied to options with arbitrarily specified barrier types.

The following work is based on a simple modification of both the CRR binomial model and the trinomial tree model; specifically an adjustment to the transition probabilities of the tree lattice that eliminates the need to reposition the nodes of the lattice. Simultaneously, this approach yields significantly increased convergence rates compared to the standard models. To calculate the “true” option price we make use of a series of analytical methods and empirical results available in the barrier option pricing literature. We are thus able to compare our calculations to a known value.

6. Georgios GATOPOULOS, Geneva

ADR Returns Reflecting US Investor Sentiment

ADR premiums being discrepancies between returns on ADRs and returns on underlying shares, they do provide us with an indicator of US investors' relative optimism or pessimism. Panel data of firms with ADR programs from 35 countries during the last 10 years, reveal that global and local risk factors, related to market, exchange rate, commodity and liquidity premiums, account for these discrepancies. The investor sentiment hypothesis cannot be rejected and there is evidence that ADR premiums have significant predictive power over next period's ADR returns. On a time series level, major events, such as the terrorist attacks of September, 11, are identified as structural breaks in the evolution of US investors' sentiment, as well as on its impact on ADR premiums. On a cross-sectional level, markets are "partially segmented" and the relative importance of premiums' factors varies across different regions of the world, as well as between emerging and developed markets.

7. Peter H. GRUBER, St Gallen (with Claudio Tebaldi and Fabio Trojani)

Option pricing with matrix affine jump processes

We introduce a new option-pricing framework in the class of matrix affine jump diffusions with stochastically correlated risk factors. Our model can simultaneously account for stochastic skews, smiles and general maturity effects, and it nests most existing affine jump-diffusion option pricing models, e.g. the models of Heston (1993), Christoffersen, Heston and Jacobs (2007), and DaFonseca, Grasselli and Tebaldi (2008).

We identify a level, slope, curvature and maturity component in the dynamics of the implied volatility surface of S&P 500 index options and find evidence in favour of multiple and stochastically correlated volatility factors containing a non-negligible jump part.

We test the pricing performance of the model over a wide range of maturities and degrees of moneyness, by performing cross-sectional and time-series estimations of the model parameters. For the best models, we obtain an average absolute pricing error of less than \$0.50, with more than 70% of the model prices within the bid-ask spread. Our findings indicate the necessity for, first, at least two – not necessarily correlated – volatility factors with a jump component and, second, for a more general leverage structure than in a two-factor Heston model.

Work in progress studies procedures for an accurate factor identification and for a joint cross-sectional and time-series estimation of the model.

8. Natalia GUSEVA, Lausanne

Corporate Governance and Firms' Acquisition Decisions

This paper is an empirical study of the role of corporate governance in firms' acquisition decisions and strategies. Corporate governance defines the way in which the company is managed and, naturally, it affects all the decisions taken by the firm. Takeovers are very opportune cases to study the effects of corporate governance: they are discrete, require active participation of all decision makers, firm choices and market reaction are easily observable. This analysis looks at the choice of the means of payment, the form of the acquisition and the premium paid. Corporate governance plays an important role in these decisions. Finally, I analyze market reaction to takeover announcements. Board size, executive ownership and GIM index are found to be important determinants of bidder abnormal returns. This study draws a special attention to the differences in acquisition of private and public targets.

9. Alexandre JEANNERET, Lausanne

A Structural Model for Sovereign Credit Risk

This paper provides, and empirically estimates, a structural model of sovereign default risk on external debt. The sovereign endogenously determines its level of foreign debt and default policy. Consistent with default crisis episodes, the sovereign and its lenders bargain at default over a reduction of the debt service. The potential for debt restructuring offers the sovereign greater incentive to default. This model offers theoretical predictions of the relationship between credit spreads and related macro-variables that are consistent with the empirical literature. I also compare estimates of daily credit spreads implied by the structural model with observed EMBI+ spreads for Brazil, Mexico, Peru, and Russia over the period 1998-2006. In a panel analysis, the model explains about 92% of the time variation in daily credit spreads. In contrast to some recent studies, there remains limited scope for additional explanation from U.S. Treasury rates and the VIX index.

10. Jan P. KULAK, Lausanne

Why (Only) Some Firms Issue Equity Globally: Evidence of Price-Pressures Revealed Through Firms' Geographical Placement Choices

Previous research suggests that both the share price reaction to SEO announcements and offer discounting are less negative for US firms when parts of the offering are placed internationally. Despite the presence of these apparent benefits to global placement, the large majority of US firms abstain from issuing globally. This study investigates whether firms' geographical placement choices and the resulting differences in pricing and announcement effects can be explained by price-pressures (demand inelasticities) faced by US issuers in different markets. It is tested whether a bias in foreign-investor preferences for shares with certain attributes (as documented by Kang and Stulz (1996) and others) drives firms' geographical placement decisions. A model is built that endogenizes the firm's choice to issue domestically or globally. Market-specific price-pressures are parameterized as a function of several observable variables expected to predict demand elasticity, as well as a proxy for foreign investor demand. The model is estimated on a large dataset of SEOs by US industrial firms between 1986 and 2007.

[Results to follow. In line with the hypotheses, a preliminary analysis suggests that firms who issue equity globally hold attributes that coincide largely with those that Kang and Stulz (1996) report for firms with foreign holdership. Estimation results are expected yield new insights into the quantitative importance of price pressures relative to informational effects in explaining SEO pricing effects.]

11. Thomas LEIRVIK, Lugano (with Bernt Øksendal)

Optimal Portfolio Reallocation and Dividend Payments in a Market driven by Lévy Processes

In this paper we investigate an extension of the classical Merton portfolio optimization problem. First, we add transaction costs. Second, we consider the optimal time to pay cash flows from this portfolio. In practice, this is important when the investors has the choice either to get cash payments from the fund or to reinvest the fund returns. We consider a market with jumps modeled by Lévy processes. Our theory extends two stochastic control theories, the Singular and the Impulse control theories. We have established the relevant verification theorem apply the theory to the benchmark case of a portfolio consisting a stock and a bank account.

12. Jens MARTIN, Lugano

Sweet escapes: analysts' recommendations and the lockup period

The end of the lockup period of initial public offerings constitutes in general the first time corporate insiders sell shares in significant numbers to the market. I test the hypothesis that selling shareholders put pressure on analysts to support the share price up until the end of the lockup period. In a sample of U.S. IPOs from 1995 up to 2006 I find that analysts issue too optimistic recommendations up to the end of the lockup period. I find a significant downward revision of recommendations for the whole sample of firms as soon as the lockup period ended. The market takes this analyst behavior partly into account.

13. Sebastien MICHENAUD, Lugano

Analyst Coverage, Stock Price Informativeness, and Firms' Investment Decisions

I model the effects of financial analyst coverage on the investment decisions taken by a risk neutral CEO who maximizes shareholder value. The CEO makes an investment decision that benefits from the information feedback provided by the stock market. The analyst's forecast precision influences the quality of this feedback by (i) attracting more noise traders in the market, and (ii) reducing the informational advantage of informed traders. If the analyst has a compensation that is tied to traded volume, he may not always maximize forecast accuracy. As a result, sell-side analysts may have an ambiguous effect on stock price informativeness, and hence on the quality of the firm's investment decisions. The model predicts that the higher the analyst's forecast accuracy, the lower the firm's investment sensitivity to stock price, and the lower the variability in investment policy. Furthermore, diversified firms' investment policy should be less sensitive to analyst coverage.

14. Emilio OSAMBELA, Lausanne

Asset Pricing with Overconfidence and Limited Commitment

This article studies a dynamic general equilibrium economy in which one class of agents presents two frictions: overconfidence in the quality of a public signal on the unobserved fundamental; and inability to fully commit to transfer future income streams. Overconfidence makes investors change their beliefs too often, introducing an additional risk factor denoted sentiment risk. Limited commitment introduces an endogenous participation constraint which scales up sentiment risk when it binds. In addition to been related with the economy aggregate endowment, the equilibrium state price density is also related to a sentiment risk factor, and to the exercise boundary of an American-style contingent claim with non-linear payoff. When the optimal exercise boundary is hit the participation constraint binds and default becomes optimal, so the shadow price of the participation constraint scales up the sentiment risk factor in order to preclude default. Since the boundary is reflected, the binding of the participation constraint endogenously clusters, which generates equilibrium stock market return volatility clustering.

15. Miret PADOVANI, Zurich

Macrofinance innovations for cross-country risk transfer

Countries at different stages of economic development have different needs and risks: as an example, several European countries will very soon face the challenge of paying baby boomers' pensions, whereas most African countries currently face the challenge of encouraging new businesses in an environment of economic instability and political unrest. Rather than bear those risks, stakeholders may transfer them to the financial markets. I will present two possible risk-transfer financial innovations. The first innovation is a swap-like contract allowing the two parties to exchange demographic and country risk. The second innovation "modifies" the existing microfinance collateralized loan obligation into an ETF structure.

16. Rodolfo PRIETO, Lausanne

Predictability in an equilibrium model with portfolio constraints

The article analyzes a dynamic general equilibrium model with multiple stocks in which a fraction of the investors follow a particular trading strategy, in the spirit of Shapiro's (RFS, 2002) study of the investor recognition hypothesis. Various examples, some of them solved in closed-form, show that prices in this economy behave qualitatively similar to those from an economy with a representative agent that features (external) habit persistence, as in the model of Menzly, Santos and Veronesi (JPE, 2004). Expected returns are represented in a two factor C-CAPM, here "discount effects" stems from the endogenous state dependency of preferences of the representative agent, as constrained investors face an incomplete market. The model links the predictability of returns to that of dividend growth, suggesting specific changes to the standard linear predictive regression.

17. Vahe SAHAKYAN, Zurich

IMPERFECT COMPETITION IN FINANCIAL MARKETS WITH UNCERTAIN INFORMATION PRECISION

Most of the models of financial market microstructure make the seemingly inconsequential assumption that all the trader characteristics are common knowledge. In particular, it is always assumed that the distribution of their information is known by all the market participants. However, an examination of institutional features and the information environment in the financial markets reveals that this is unlikely to be the case. Therefore, a descriptively richer analysis should take uncertain trader characteristics into account. One way of doing this is introducing uncertain information precision into an asymmetric information model of a financial market. This can be done by assuming that, in addition to observing a private signal about the future value of a risky asset, the trader is also the only market participant to know the precision of his information. The precision level of information dictates the aggressiveness with which to sell or buy the financial asset. Since good precision translates into more aggressive trading (buying or selling), we can already conjecture that there will be a relationship between the properties of precision and the properties of market parameters, such as trading volume, market depth, price informativeness and volatility in a given economy.

In a dynamic setup the relationship can change over time if we assume that the information precision evolves over time. Since some of the informed traders have incomplete information about the true state, they face uncertainty regarding the price impact of their trades. Nevertheless these traders can extract valuable information about the true state by learning from past market prices and trading volume. As a result of this learning, their beliefs about the true state will also change over time. The dependence of revisions in beliefs on past prices and trading volume implies that strategic trading will also be path dependent. When some informed traders are uncertain about the state of the world, they trade as if the price impact were an average of those in high and low precision states, weighted by their beliefs about the likelihood of each state occurring. The more confident they are that the true state is low precision the more aggressively they trade on their private information. If recent volume has been high, then informed traders tend to revise their beliefs in favor of a high precision and end up trading less aggressively on their private information. Through their dependence on strategic trades, market statistics such as informational efficiency and trading volume then become dependent on the path of prices and trading volumes as well.

18. Bogdan STACESCU, Zurich (with Artashes Karapetyan)

Information Sharing and Information Acquisition in the Credit Industry

Credit bureaus and public credit registers allow lenders to share information about borrowers. Since information asymmetries have been identified as an important source of bank profits, it may seem that the establishment of such arrangements will lead to lower investment in screening and monitoring. However, banks base their decisions on both hard and soft information, and it is only the former type of data that can be communicated via credit bureaus. We show that when hard information is shared, banks are likely to invest more in soft information, whether through initial screening or through monitoring during the life of the loan. This can potentially lead to more accurate lending decisions and favor small, informationally opaque borrowers.

19. Philip VALTA, Lausanne (with Giovanni Favara, Enrique Schroth)

Legal Institutions, Bankruptcy, and Stock Returns

This paper investigates the impact of legal institutions on stock returns. More specifically, we examine how differences in debt enforcement and creditor protection around the world affect stock returns of individual firms. We hypothesize that if legal institutions matter for strategic behavior in default, then, all else equal, firms in countries with high creditor protection and effective debt enforcement should earn, on average, higher returns. We use a comprehensive sample of publicly traded firms over the period 1990 to 2005 from over 40 countries to test this hypothesis. Correcting stock returns for factors such as the market, liquidity, size, book-to-market, and momentum, preliminary results support our main hypothesis. We find that distressed firms in countries with institutional environments that allow for efficient debt enforcement earn, on average, significantly higher returns than firms located in institutional environments that favor deviations from priority rules.

20. Andrea VEDOLIN, St Gallen (with Andrea Buraschi, Fabio Trojani)

Option Returns and Disagreement Risk

We study the relation between beliefs disagreement among investors and the cross-sectional differences in option returns. Writers of index options earn high returns due to a significant and high volatility risk premium but writers of options in single-stock markets earn lower returns. We develop a structural model using an incomplete information economy with multiple assets and explain endogenously the different volatility risk premia of index and single-stock options. We show that higher disagreement increases the volatility of stock returns and the volatility premia of individual options. At the same time, it generates a higher endogenous correlation of stock returns that further increases the volatility premium of index options relative to single-stock options. In equilibrium, this different exposure to disagreement risk is compensated for in the cross-section of options and model-implied trading strategies exploiting differences in disagreement earn substantial excess returns. We test the model predictions in a set of panel regressions, by merging three datasets of firm-specific information on analysts' earning forecasts, options data on S&P 100 index options, options on all constituents, and stock returns. We find that beliefs disagreement is the most powerful determinant of volatility risk premia in individual and index options. Sorting stocks based on differences in beliefs, we find that volatility trading strategies exploiting different exposures to disagreement risk in the cross-section of options earn high Sharpe ratios. The results are robust to stock risk-characteristics and are not subsumed by other theories explaining the volatility risk premia.

21. WANG Songtao, Zurich (with Rajna Gibson Brandon)

Hedge fund alphas: do they reflect manager skills or mere compensation for liquidity risk bearing?

In this paper, we investigate how liquidity risk affects the performance of portfolio strategies in hedge funds. Based on Avramov et al (2007), the portfolio strategies are formed by incorporating predictability in (i) manager skills, (ii) fund risk loadings and (iii) benchmark returns. When liquidity risk is ignored, within most hedge fund styles, long-only strategies that incorporate predictable manager skills perform better than other strategies. But, the outperformance will be reduced or even disappear as soon as liquidity risk is considered. Our results show that, within six out of ten fund styles, alphas reflect mere compensation for liquidity risk bearing instead of manager skills, and they are robust to different liquidity measures and the exclusion of January effect documented in Eleswarapu and Reinganum (1993).

22. Johannes WUNSCH, St Gallen (with Fabio Trojani)

Multivariate Pricing of Capital Structure Derivatives with Stochastic Smiles and Skews

We present a comprehensive framework for the joint modeling of credit spreads, stock prices, stock options and basket credit derivatives based on a multivariate structural firm value model with stochastic correlations and skewed asset return distributions. Our framework is very successful in addressing several empirical facts that cannot be implied from the Merton (1974) approach. First, stochastic volatility coupled with left-skewed asset returns can increase credit spreads on corporate bonds to more realistic levels at short maturities and low firm leverage. Second, the multi-factor structure of our model is consistent with common arbitrage violations relative to the Merton approach such as positive comovement between credit spreads and equity prices. Third, our model generates stochastic skewness of stock returns which is a key feature in explaining the dynamics of option prices in some markets. Fourth, implied volatility skews on stock options can be both positive and negative depending on the level of firm leverage and asset return skewness. Finally, our framework yields realistic patterns of the implied correlation smile for multi-issuer credit derivatives as observed in the market for CDOs, index tranches or CDS baskets. Since our framework fits in the exponential affine class it is highly tractable and yields semi closed-form solutions for credit spreads, stock and credit derivative prices.

23. Tatyana ZIDULINA, Zurich (with Vahe Sahakyan)

JOINT MODEL OF CORPORATE DEFAULT INTENSITIES AND MACROECONOMIC DYNAMICS

Understanding the corporate default intensities is currently an extremely active research topic. There are three broadly defined research groups in this topic. First of them studies the dynamics of physical (or real-world) default intensities (see for example Duffie, Saita, and Wang (2007) and Duffie, Eckner, Horel and Saita (2006)), while the second one studies the risk-neutral default intensities (see for example Duffie and Garleanu (2001), Giesecke and Goldberg (2005), Longstaff and Rajan (2006), Mortensen (2006), Eckner (2007)). Research in the third group, which is still limited, studies joint multivariate dynamics of physical and risk-neutral intensities (see for example Berndt, Douglas, Duffie, Ferguson and Schranz (2005), Amato (2005), Saita (2006) and Eckner (2008)).

All these studies developed models based on the assumptions of absence of arbitrage opportunities, but typically (with very few exceptions, such as Duffie, Saita and Wang (2007)) left unspecified the relationship between the default intensities and other macroeconomic variables. Macroeconomist, on the other hand, have focused on understanding the relationship between different macroeconomic variables. In doing so, they have typically relied on the “expectations hypothesis”, in spite of its poor empirical record. Combining these two lines of research seems fruitful, in that there are potential gains going both ways. This paper aims at presenting a unified empirical framework where a small structural model of the macroeconomy is combined with an affine model of corporate default intensities. The main innovative features of our paper are: i) we use structural macroeconomic framework, rather than starting from a reduced form VAR representation and ii) we combine structural model of macroeconomy in the joint framework for multivariate dynamics of physical and risk-neutral default intensities.

Another important feature of our paper is that in our estimation results we incorporate into analysis CDX tranche spread data. Single name and structured credit products provide tremendous amount of information about the investors’ risk preferences in credit markets. Hence, modeling and estimating the multivariate dynamics of physical and risk-neutral default intensities using the data on CDX tranche spread allows us to better pin down the multivariate dynamics of risk-neutral default intensities and to quantify certain risk premia that are unique to a joint multivariate-macroeconomic setting.

24. Marc ARNOLD, Zurich

Private Information and Callable Credit Default Swaps

Credit derivatives allow a bank to transfer the credit risk of loans to investors. While useful from a portfolio management perspective, standard credit derivatives such as credit default swaps diminish a bank’s incentives to screen and monitor loans. The reason is that the bank cannot credibly signal to an external investor the information it obtains on the borrower in the close relationship. This paper shows how simple structuring of full protection credit derivatives circumvents the information-asymmetry problem. In particular, a callable credit default swap reveals a loan’s quality to the investor by letting him observe the bank’s readiness to pay for the call feature. This signal restores incentives for beneficial screening and monitoring. The paper also discusses the impact of regulatory treatment.

External Students

24. Enrico BERNINI, Milano (e-mail: enrico.bernini@unibocconi.it)

On Equilibrium Asset Pricing

The purpose of this paper is to value the equilibrium price of a stock market and to explain its dynamics. I find that the stock yield is equal to the real interest of the economy in the long-run. The model considers debt and stock market securities; the aggregate stocks yield is proxied by the dividend-price ratio of a stock index. The investor cares of capital income, and dividends are a substitute of debt coupons. The stock market provides complete diversification and the only risk the investor faces is the distance of the stock yield from the real interest rate: a dividend-price ratio smaller than the long-term real-yield suggests to sell stocks, while a larger value of the ratio recommends to buy stocks (because the stock price is in this case relatively cheap).

Departures of the dividend-price ratio from the real interest of the economy return back to their equilibrium value. In this way, dividend growth over time leads stocks price dynamics: dividend growth implies future price capital gain (by the same rate in the long-run), while the real interest pins down the dividend-price ratio in the long-run. This outcome suggests that the equilibrium dividend-price ratio is an invariant yield, given the real interest of the economy.

This property plays a role in understanding the properties of total wealth which are more similar to those of a long-maturity bond portfolio than those of a stock portfolio (cf. Lustig et al [2008]. These authors argue that “equity is special”; the view I propose offer an alternative answer to their puzzle). The division of total returns in dividend-yield and capital gain realistically not only fits the accounting distinction between income and capital: it also clarifies that total returns on stocks can be successfully described in equilibrium by the stable income-capital ratio (established in my model) and the growth rate of capital which (exogenous in my model) can be explained by firms’ investments in the real economy (cf. Eberly, Rebelo, Vincent [2008]).

Empirical evidence: I empirically focus on US data because the US market has largely been the most representative laboratory for empirical pricing of aggregate stocks; in addition long-term real yields have been observable from US Treasury inflation protection securities (TIPS) for the last ten years. The theoretical results of my paper are matched by time-series analysis of stocks fundamentals. In fact, I find that the dividend-price ratio strongly cointegrates with observed long-term real yields, while the earning-price ratio does not; a consequence of this finding is that empirical models of valuation for stocks like the “Fed model” may seriously mislead investors because they lack of foundations in real terms. The cointegrating vector reflects a long-run relation and the statistical test power supports the economic prediction from my investment theory based on real yields.

Final remarks: This work formulates equilibrium in the stock market on the basis of real measures. The (partial) ability of stocks to hedge inflation and to provide real returns was studied in a previous chapter of my PhD thesis; that work successfully evidenced that the difference between nominal and real variables is crucial for stock pricing because of mispricing, that can be interpreted either by (behavioral) inflation-illusion or alternatively by a neoclassical finance perspective, cf. Bernini (2008). That empirical result inspired this work, looking for a new basis to pin down stock prices and explain their relative dynamics by real yields (the dividend-price ratio and the real interest rate).

This work may certainly benefit from the PhD workshop because of the opportunity to focus on the several variants I studied in this theoretical framework developed to match the stylized facts.

25. Mantas VALUŽIS from Vilnius University

THE GENERALIZATION OF PROBABILITY OF DEFAULT: SOME ESTIMATES

This paper investigates the probability of company’s default in the case when the firm’s asset value (or CDS implied asset value) and the bond value (or the default boundary) follow correlated geometric Brownian motions. The upper and lower estimates of the probabilistic measures of company’s default are given. We focus on the first-passage-time approach of credit risk in the case when the firm’s asset value (or CDS implied asset value) as the risky zero coupon bond value (or, in special case, the default boundary) is defined by diffusion process. It is clear that using this approach we have a classical problem of estimating arithmetic average, because the exact closed-form evaluation of the sum of lognormals doesn’t exist. There are no much papers analyzing this problem notably in the context of estimation the whole portfolio credit risk, but the problem of portfolio default risk assessment is quite actual problem. We examine and compare computationally some analytical approximative approaches of estimation of risky zero coupon bonds portfolio default probability defined as follows:

$$P\left(\inf\left\{t \geq 0 : \sum_{i=1}^n V_i(t) = \sum_{i=1}^n D_i(t)\right\} \leq T\right),$$

where $D_i(t)$, $V_i(t)$, $i = 1, 2, \dots, n$ denote, respectively, the zero-coupon bonds and the value of firm’s assets that follows geometric *Brownian* motions and $T = \min\{T_1, \dots, T_n\}$ is the shortest maturity of zero-coupon bonds