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## SPRING 2006 JOIM CONFERENCE SERIES

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### Presentation Summaries

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The Stanford Court Hotel, San Francisco, CA

*Paul Hanouna, Villanova University*



#### EQUILIBRIUM SIMULATION

*William F. Sharpe*

In his presentation, Bill Sharpe introduces us to his new book *Investors and Markets: Portfolio Choices, Asset Prices and Investment Advice* forthcoming at the Princeton University Press and its accompanying equilibrium simulation programs. Equilibrium simulation is a valuable tool that specifies investors' initial conditions such as positions, preferences, and predictions to determine final portfolio weights, asset prices, and security and portfolio characteristics. The advantages of equilibrium simulation are numerous. Equilibrium simulations can analyze complex economies, suggest hypotheses for analytic models, and be an effective pedagogic tool. The disadvantage, however, is that the generalization of results may be difficult. The presentation walks us through several examples using a simple framework of two traders, four states of the world, and three securities. The simulation uses the inputs to determine the equilibrium portfolios and consumptions, equilibrium prices, price per chance, the pricing kernel, total returns, the security, and capital market lines. The simulation is particularly well suited to analyze the effect of behavioral assumptions on asset prices.

#### A DYNAMIC MODEL OF PORTFOLIO MANAGEMENT

*Richard Grinold*

Risk and Return are obviously two important concepts to portfolio management but they are only a part of the whole picture. To be complete one needs to consider Risk, Return, and the Costs to dynamically rebalance a portfolio in light of new informational updates. Richard Grinold provides a complete picture of these tradeoffs by presenting a model that includes all three dimensions. The model is really not intended to be a portfolio management tool *per se* but a way to obtain a strategic view of risk, return, and costs

in an analytical setting. The applications of the model are broad and include determining the impact of additional assets under management on performance, estimating the value of diversifying investment themes, finding the best mix of themes, designing financial products, and improving myopic operational schemes of portfolio management. The model uses as inputs a risk aversion coefficient and information ratio just as in a classic static model as well as the information half-life and transaction costs to output the expected returns, risk, and cost. The model can be extended to multiple alphas and general quadratic transactions cost.

## THE RELATION BETWEEN FIXED INCOME AND EQUITY RETURN FACTORS

*Terry Marsh*

What are the *realized* correlations between equity and fixed income returns from the 1960s to the present? What explains the co-movement? In his presentation, Terry Marsh documents the correlations between the two markets and finds that there are substantial jumps in those co-movements over time. These jumps seem to be associated with at least two phenomena: a flight to quality and a flight to liquidity environment while other outliers seem to be a result of surprise revisions in expected macroeconomic conditions. From this preliminary analysis several interesting patterns emerge. First, there has been a substantial shift over the last decade in realized correlation between equity returns and treasury returns. Second, while both the term structure level and slope factors co-varied with equity returns across sectors and value-growth categories in “conventional” ways pre-2001, only changes in the yield curve slope have co-varied with equity returns in the last five years. Third, the common approach of defining the term structure level in terms of the short-term yield is not as useful as an approach using implicit term structure factors, or longer-term yields, in understanding the interaction between the equity and treasury markets. Four, Fed rate management seems to be an important factor in explaining the long-run serial dependency in the co-movement between the two markets post-2001. Currently, Terry Marsh is doing research on how to best model this long-run serial dependency.

## DO NOISE TRADERS MOVE MARKETS?

*Brad Barber*

Do individual investors significantly distort asset prices? Is trade size a good proxy for trades made by individual investors? Do individual investors herd? Brad Barber’s presentation answers these questions by examining data from Trade and Quotes (TAQ) and Institute for the Study of Security Markets (ISSM) transaction data over the period 1983–2001. The first finding is that small trades are a reasonable proxy for the trading of individual investors. This finding was obtained by examining the order imbalance based on buyer- and seller-initiated small trades from the TAQ/ISSM data and correlating it to order imbalances based on trades that are known to be from individual investors, using data from a large retail broker. The second finding is that the trades of individual investors are coordinated. In other words individual investors herd. This begs the question regarding whether coordinated trading by individual investors can forecast the cross-section of equity returns. The answer is that it does: stocks heavily bought by individual investors subsequently underperform stocks heavily sold by 4.4 percentage points annually. The underperformance widens for stocks heavily traded by individual investors to 13.5 percentage points annually.

## SYSTEMIC RISK AND HEDGE FUNDS

*Andrew Lo*

Do hedge funds create systemic risk? If so how high are the current systemic risks? These questions were answered in Andrew Lo's presentation. Systemic risk is used to describe the possibility of a sudden series of correlated defaults among financial institutions, typically banks. Systemic risk in banks is virtually nonexistent today; thanks to the FDIC and coordinated central banking policies. However, as the collapse of Long Term Capital Management in 1998 has made clear, hedge funds are a new source of systemic risk. Furthermore, because the banking and hedge fund industries are symbiotic, systemic risk might enter the banking sector through the back door. The presentation develops several new measures of the impact of hedge funds on systemic risk such as illiquidity risk exposure, nonlinear factor models for hedge-fund and banking indices, the probability that hedge-funds are liquidated, and aggregate measures of volatility and distress, which are determined using data at both the hedge-fund level and hedge-fund industry level. Preliminary findings are that the hedge-fund industry is entering a challenging period of lower expected returns and higher systemic risks.

## LIQUIDITY RISK IN THE CORPORATE BOND MARKETS

*George Chacko*

What are the risks associated with liquidity? How can liquidity be measured when securities are illiquid to start off with and little trading information is available? George Chacko answered these questions in his presentation by analyzing a unique database of US corporate bond transactions and holdings and developing novel measures of liquidity in that market. Liquidity work has traditionally focused on US equities because that market is fairly liquid and data is plentiful. Yet, the empirical results have been mixed precisely because of the liquid nature of the equity markets. The bond market—several times more illiquid than the equity markets—imposes itself as a much better setting to study the effects of illiquidity. One obvious problem with this setting, however, is that traditional measures of liquidity such as trading volume and bid-ask spreads are useless when securities are not traded to start off with. This problem is circumvented by looking at a security's propensity to trade as a measure of liquidity which is constructed by looking at the aggregate trading characteristics of owners of that security. George Chacko coined the term "latent liquidity" for this new measure. What are the implications of liquidity for risk? US corporate bonds are grouped into thirds based on duration, credit, and latent liquidity risks and three portfolios are created HML (High-Minus-Low) Duration risk, LMH (Low-Minus-High) Credit risk, and LMH Latent liquidity risk representing interest rate, credit, and liquidity risk factors, respectively. Using these three portfolios, beta factor loadings are calculated on individual securities to check for the importance of the liquidity risk factor. Empirical results suggest that the liquidity risk factor is important in determining bond returns. The fact that liquidity is priced suggests that the effects of liquidity risks need to be controlled for carefully when analyzing security returns. Practically speaking one can consider the case of the convertible arbitrage returns. Without the inclusion of the liquidity risk factor the convertible arbitrage returns appear

to outperform a 4-factor Fama-French benchmark, but if the liquidity risk factor is included these abnormal profits disappear.

## FAIR TRADING AROUND THE WORLD

*Meir Statman*

Does fairness matter in finance? Meir Statman shows that fairness matters because notions of what is, or is not, fair systematically differs across and within countries. Using survey's from university students and finance professionals conducted in Australia, India, Israel, Italy, The Netherlands, Tunisia, Turkey, and the US, Meir Statman finds that insider trading is considered a fair game in India, Tunisia, and Turkey, whereas it is frowned upon in the remaining countries sampled. Furthermore, students tend to be more lenient towards insider trading than finance professionals in all countries. Meir Statman also finds results suggesting that rules of fairness differ across trading markets. For example, students in Tunisia and Turkey judge sellers of cars who have inside information about a defective transmission as less fair than in the US and The Netherlands, whereas students in Tunisia and Turkey judge sellers of stocks based on inside information as more fair than they are judged by students in the US and The Netherlands. Ananth Madhavan, the presentation discussant, explains that insider trading is a trade-off between enhancing price discovery to make the market more efficient and creating trust in the financial markets to make them more liquid. The possibility exists that each country has a different break-even point, which is driving people's notion of fairness.

## ASSET INDIVISIBILITY, SECURITY DESIGN, AND ASSET QUALITY

*Nancy Wallace*

When sellers possess private information about the true value of the asset they wish to sell and the asset is divisible, prior theoretical research shows that a solution is for informed agents to retain a residual claim in the asset, which serves as a costly signal of the true asset quality. This solution is not possible, however, in the case of securitized assets sold to Special Purpose Vehicles (SPVs) since they need to be "bankruptcy remote" from asset sellers according to rule FAS 140. Nancy Wallace presents a theoretical model of the quality of assets sold when they are indivisible, as in the case of securitized assets sold to SPVs. The model prediction is that these indivisible assets will be of lower quality compared with assets that are divisible, which implies that assets sold to SPVs will be of lower quality than those sold to other entities. These predictions are then tested using a comprehensive data set of sales of mortgage-backed securities (the Freddie Mac Participation Certificates, or PCs) to SPVs over the period 1991–2002. The predictions are tested in two ways. First, PCs sold to SPVs should exhibit faster prepayment speeds (early termination of the loan) in falling interest rate environments (and slower prepayment speeds in rising interest rate environments) than non-SPVs PCs if the model predictions are correct. Regression results show with a high degree of statistical significance that pools of PCs sold to SPVs exhibit relatively lower terminations when interest rates are rising and higher termination rates when they are falling. These results confirm the model prediction that PCs sold to SPVs are lemons. Furthermore, if PCs sold to SPVs are indeed lemons they should have a lower value than those sold to other entities. Using a two-factor structural model valuation estimates indicate that PCs sold to

SPVs are valued at least 39 cents lower per \$100 of face value compared with PCs sold to non-SPV entities. Given the size of the markets these differences are clearly economically significant.

## PITFALLS IN PERFORMANCE EVALUATION AND ATTRIBUTION

*Josef Lakonishok*

The evaluation and attribution of investment performance is crucial for investment research and practice. This is why both academic and practitioner research has produced a large array of methods to evaluate and attribute investment performance. However, are investment performance inferences sensitive to the choice of which benchmark method to use? In a first pass, one can take the Fama-French 3-factor model as a benchmark on the one hand and independent size and book-to-market matched benchmarks on the other and compare the results of the two benchmarks on a sample of 199 active managers. At the very least the two methods should produce the same sign (over- or underperformance). The results, however, tell a different story. In almost a quarter of the cases the two benchmarks produce different results. Furthermore, this divergence is not confined to a subset of the stocks and as further cause for concern the mean abnormal returns frequently diverge by large magnitudes. For the overall sample, the levels of the absolute differences exceed 2.5 percentage points annually in 43.22 percent of the cases. These divergences are even more striking when one considers quarterly data. The divergence in benchmarking methodologies is particularly important when one considers the associated fund flows that accrue to funds with higher performing managers. For instance, fund managers in the highest performing quartile were able to attract new assets at a rate of 1.6 times their beginning assets (over 4 years). Which methodologies provide better accuracy then? Tracking error volatilities provide a way to judge how well the benchmarks capture the behavior of active portfolios. In general, the characteristic-matched benchmarks using independent size and book-to-market ranks and the regression-based benchmarks have high tracking error volatilities. However, simple alterations can improve the performance of the benchmarking methods. Two-way within group sorts by size and value/growth orientation do well in terms of producing relatively low tracking error volatility.

## LIABILITY-RELATIVE INVESTING: MANAGING PENSION FUNDING RISK

*Barton Waring*

Most efforts for developing investment policies have focused primarily on finding the weights that should be assigned to different *asset* classes. However, a total portfolio might contain liabilities such as defined-benefit pension plans that have both value and market-related risks, both of which can be estimated. It is important, therefore, to consider surplus optimization: optimizing the difference between assets and liabilities. Barton Waring shows us how it is possible to optimize the surplus to obtain results that are similar to the familiar CAPM setting with an alpha and a beta. When surplus optimization is used rather than asset optimization, Barton Waring finds that current fund management practices take on too much risk.