Deutsche Bank
Markets Research

Global

Quantitative Strategy
Academic Insights

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Harnessing the best ideas from academia

Welcome to our monthly Academic Insights report

Fresh insights from academia

We are always on the lookout for new sources of alpha. This month an interesting paper suggests that ESG (Environment, Social and Governance) factors can potentially offer long-term performance benefits. The key finding is that a statistically significant and positive relationship occurs between ESG ratings and company fundaments, specifically return on assets. Another paper proposes an indicator derived from the options market which has predictive power in stock selection.

Momentum is certainly one of the simplest factors to calculate and exploit, one paper this month proposed a new explanation for momentum anomaly based on the premise that momentum profits come from exposures to cross-sectional market volatility.

Key papers this month

This month we focus on five papers spanning a range of topics including alpha generation, portfolio construction, and risk management:

- The Relationship between Environmental Social Governance Factors and Stock Returns
- The Information Content of Option Demand
- Market Risk and the Momentum Mystery
- Risk Parity Portfolios with Risk Factors
- Risk, Uncertainty and Monetary Policy

Upcoming events

We also highlight upcoming conferences and seminars in the quantitative investing space that may be of interest.

The best of the rest

At the back of this report we include abstracts from some additional papers that we think are also quite interesting. These are arranged by topic to make skimming the list quicker. If you need any further information on any of the papers in this report, please contact the Deutsche Bank Equity Quantitative Strategy team at (+1) 212 250 8983 or (+44) 20 754 71684 or (+852) 2203 6990, or email us at DBEQS.Global@db.com.

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Introduction

Welcome to *Academic Insights*

Environment, Social and Governance (ESG) can be associated with company specific reputational risk; some academic studies have shown that companies with high ESG ratings likely have superior management which equates to the success of the company. The paper by John Evans and Dinusha Peiris [2010] investigates the relationship between ESG factors and company fundamentals, and suggests that ESG factors should be considered when making investment decisions. This can potentially be a new source of alpha for quants.

ESG factors can be new source of alpha factor for quants

Can option data predict stock returns?

Can we get information from the options market to predict stock returns? Our research in The *Options Issue*[1] shows that quant factors derived from options data have significant predictive power in forecasting future stock returns. The paper by Kerstin Kehrle and Tatjana-Xenia Puhan [2012] is another example of alpha generated from a new data source. The authors derive a measure to capture the excess options demand of put options and call options from informed traders, their empirical tests show that informed demand in options can generate economically significant stock returns.

Excess option demand factor constructed from informed traders have predictive power for the stock selection

Momentum explained by market risk

In our previous research[2], we have studied momentum with the usual market risk, but in the paper by James W. Kolari and Wei Liu [2012] suggests that momentum profits come from cross-sectional market risk. The paper introduces a zeta risk indicator to analyze the relationship between momentum and cross-sectional market risk. Portfolios formed on the zeta risk factor are highly correlated with momentum portfolios but at the same time yield higher returns.

Momentum profits come from cross-sectional market risk

Risk parity revisited

Risk parity is another topic we studied in several previous publications[3]. The paper by Roncalli T., Weisang G [2012] provides new insight on how to pursue diversification using risk-parity within risk-budgeting methodology focused on risk factors. The paper runs three portfolio simulations to analyze all the different properties and implications of risk-parity portfolio construction with risk factors.

The paper shows risk parity with budgeting methodology focus on risk factors

Monetary policy can affect risk appetite

Last but not least, Geert Bekaert, et al.[2012] gives important implications on the role of monetary policy, it seems to suggest that we can incorporate monetary policy in style rotation strategies. For the rest of this month's interesting papers, read on.

Monetary policy can affect risk appetite

Regards,
The Deutsche Bank Quantitative Strategy Team

[1] Cahan, R. *et al.,* "Signal Processing - The Options Issue", Deutsche Bank Quantitative Strategy, May 12, 2010
[2] Alvarez, M. *et al.,* "Signal Processing - Reviving Momentum: Mission Impossible?", Deutsche Bank Quantitative Strategy, July 6, 2011
[3] Mesomeris, *et al.,* "Thematic Report - A New Paradigm in Asset Allocation", Deutsche Bank Quantitative Strategy, July 5, 2012, and Alvarez, M. *et al.,* "Portfolio Under Construction - Risk Parity and Risk-Based Allocation", Deutsche Bank Quantitative Strategy, October 13, 2011

Five key papers this month

Paper 1: "The Relationship between Environmental Social Governance Factors and Stock Returns"

- John Evans & Dinusha Peiris
- SSRN, available at http://ssrn.com/abstract=1586146
- Reviewed by Javed Jussa

Why it's worth reading

There has been a growing base of academic evidence suggesting that ESG (Environment, Social and Governance) factors can potentially offer long-term performance benefits. In a nutshell, ESG metrics offer investment managers insight into a company's management, culture, risk profile, product quality, and environmental stability. Companies exhibiting a strong ESG presence tend to direct capital towards developing communities, social programs, and the betterment of the environment. Some academic studies have shown that these types of companies likely have superior management, which equates to the success of a company. Other studies have shown that companies can significantly reduce their reputational risk by indoctrinating the principles of ESG. ESG based screening is a growing investment segment and some studies suggest that over 10% of assets under management in the US and Europe use some sort of ESG conditioning. This paper is unique from other studies as it investigates the relationship between ESG factors and company fundamentals.

ESG factors when integrated into the investment process can potentially offer long term performance

Data and methodology

The study considers stocks in the Domini 400 Social Index (DSI), a benchmark for US socially screened stocks. The analysis is conducted over a period of 15 years from 1991 to 2006. The authors obtain ESG scores for each company grouped by community relations, corporate governance, diversity, employee relations, environment, human rights, and product quality, as well as an aggregate overall score. The authors perform three panel regressions. The first panel regression analyzes the relationship between stock returns and the return of the DSI index. The next panel regression analyzes the relationship between a company's market to book value and the underlying ESG factor scores. Lastly, the authors test the relationship between a company's return on assets and the underlying ESG scores.

The authors try to uncover the relationship between ESG ratings and company fundamentals specifically market to book value and return on assets

Results

They key finding is that a statistically significant and positive relationship exists between a select group of ESG scores and company fundaments, specifically return on assets. The authors also find that in general, companies that have higher ESG scores tend to be larger cap companies.

A statistically significant and positive relationship exists between ESG scores and company fundamentals

Our take

These results are interesting as they suggest that ESG factors do impact financial ratios which in turn affect stock price performance. This suggests that ESG factors could potentially be considered when making investment decisions. The next step would be to test ESG factors in stock selection.

The next step would be to test ESG factors in stock selection

Paper 2: "The Information Content of Option Demand"

- Kerstin Kehrle and Tatjana-Xenia Puhan
- SSRN, available at http://ssrn.com/abstract=2005763
- Reviewed by John Chen

Why it's worth reading

The options market potentially leads the stock market.

Academic research has found that there is an information linkage between the options market and the stock market. Our research in *The Options Issue*[4] shows that quant factors derived from options data have significant predictive power in forecasting future stock returns. This is another paper that investigates the information in the options market. The authors derive a factor to capture the excess options demand of put and call options from informed traders. Their empirical tests show that demand in options by informed traders can generate economically significant returns in the stock market. This paper also implies that informed options demand is likely to reduce liquidity in the options market and increase deviations from the arbitrage equilibrium.

Data and methodology

The authors design factors to capture the excess demand of out-of-the-money call options and put options

The data consists of all exchange traded securities at the intersection of Option Metrics Ivy DB, the CRSP NYSE/AMEX/NASDAQ, and COMPUSTAT during January 1996 through December 2009. Options contracts with a maturity of more than 250 days are excluded. The authors design a factor called option market sidedness (OMS) to capture the informed trading in the options market. The OMS call factor is the correlation between the change in open interest of out-of-the-money (OTM) call options and the change in open interest of in-the-money (ITM) put options. Similarly, the OMS put factor is the correlation between the change in open interest of OTM put options and the change in open interest of ITM call options. The logic behind these factors is that informed investors will buy OTM call or put options and increase the demand pressure for OTM options in excess of the long-run mean supply. Therefore, in case of a positive correlation the change in open interest on the put market is lower than the long-run mean value as only the uninformed fraction of traders continues to trade ITM put options. Analogously, a negative signal will increase the demand pressure for OTM put options, which will lead to an increase in put open interest and a lower change in ITM call open interest

Results

The authors empirically verify that OMS can predict future stock returns

The test results show that the OMS call factor forecasts positive stock returns while OMS put factor predicts decreasing stock returns, even after controlling for the change in open interest due to the volatility of informed trading. The study also finds that smaller and more volatile firms exhibit a higher concentration of informed trading activities.

Our take

This paper provided independent verification of some of the results we found in our recent research

This paper is a good addition to the literature that studies inter-market correlation. The authors demonstrate that information can flow between different markets, and indicators derived from the options market have the predictive power in stock markets. Our research has shown that information in the bond market[5] and text information in news[6] can predict stock returns.

[4] Cahan, R. *et al.*, "Signal Processing - The Options Issue", Deutsche Bank Quantitative Strategy, May 12, 2010
[5] Cahan, R. *et al.*, "Signal Processing - Do Bonds Know Better?", Deutsche Bank Quantitative Strategy, May 4, 2011
[6] Cahan, R. *et al.*, "Signal Processing - Beyond the Headlines, Deutsche Bank Quantitative Strategy, July 19, 2010,

Paper 3: "Market Risk and the Momentum Mystery"

- James W. Kolari and Wei Liu
- SSRN, available at http://ssrn.com/abstract=2159951
- Reviewed by Jean-Robert Avettand-Fenoel

Why it's worth reading

Momentum is certainly one of the simplest risk factor everyone seeks to exploit. Nevertheless, explanations for the anomaly still lack a clear consensus. Among others, academics have proposed both behavioral and rational explanations. In this paper, Kolari and Liu propose a new explanation based on risk, namely that momentum profits come from exposures to cross-sectional market volatility. This is an interesting feature because we are very well aware of the relationship between momentum and the usual market risk (i.e. beta, see Alvarez et al. (2011)[7]) but maybe its relationship with cross-sectional market risk could also help us improve the factor performance.

Kolari and Liu propose a new explanation for the momentum anomaly based on risk, namely that momentum profits come from exposures to cross-sectional market volatility.

Data and methodology

The authors use all NYSE, AMEX and NASDAQ stocks from the CRSP database from 1965 to 2010. Two types of indicators are computed from that database. First, momentum indicators are obtained by calculating the return of a stock over 6-month and 12-month periods, skipping the most recent month. Then, to compute each stock's sensitivity to cross-sectional market risk (also called zeta risk), the authors estimate an empirical form of the ZCAPM as follow: $R_i - R_f = \beta_i(R_m - R_f) + Z_i^*\sigma_m + \varepsilon$ .Where R_i is the stock return, R_f the risk-free rate, R_m the market return, σ_m the cross-sectional market volatility, and Z_i^* the zeta risk of the stock. Intuitively, a high positive zeta risk means that a stock will have higher returns over and above its market exposure when the cross-sectional volatility of the market is higher. The zeta risk is estimated both on a 6-month and 12-month period. Finally, zero-investment long-short portfolios are formed from the above indicators, using either the top/bottom 5 percent or the top/bottom 10 percent of the universe.

The authors use the CRSP universe from 1965 to 2010, and compute usual price momentum indicators as well as the zeta risk.

A high positive zeta risk means that a stock will have higher returns over and above its market exposure when the cross-sectional volatility of the market is higher.

Results

On a univariate basis, the authors confirm that momentum has had strong returns through time (1.32% for a 1-month holding period), but the paper also reveals that portfolios formed on zeta risk earn much higher returns (2.10% for the same holding period). The relationship between momentum and zeta risk is then uncovered in two ways: first the average zeta risk of "winners" is found to be significantly positive, while the average zeta risk of "losers" is significantly negative. Second the return correlation of the momentum strategy with the zeta risk strategy is reasonably high, varying between 48% and 56% according to the specifications. Finally, double sorts on momentum and zeta risk confirm that picking "winners" ("losers") with the highest (lowest) zeta risk improves the performance of the traditional momentum factor.

The momentum and the zeta risk strategies are correlated since the average zeta risk of "winners" ("losers") is found to be significantly positive (negative). The returns of the two strategies are also highly correlated.

Our take

Even though the Low Risk anomaly has kept many investors in awe, the zeta risk indicator could actually reconcile the financial theory with empirical evidence, since here higher risk is finally associated with higher returns. The additional fact that this risk is related to price momentum is definitely intriguing and should deserve further empirical checks to be used in practice (i.e. on smaller investible universes and in other regions).

Zeta risk and its relationship with momentum would require further empirical checks as well as a better explanation

[7] Alvarez, M. *et al.*, "Signal Processing - Reviving Momentum: Mission Impossible?", Deutsche Bank Quantitative Strategy, July 6, 2011

Paper 4: "Risk Parity Portfolios with Risk Factors"

- Roncalli T., Weisang G.
- Available at: http://ssrn.com/abstract=2155159
- Reviewed by Marco Salvini

Why it's worth reading

Over the last year we have allocated a substantial amount of our attention and research on the properties of risk factors and risk-based portfolio construction methodologies[8] in asset allocation. We are finding these subjects highly topical in the US and Europe as pension funds and other asset allocators are revisiting their traditional asset allocation process. The paper provides new insights into pursing diversification using risk-parity within a risk-budgeting methodology with focused on risk factors.

The paper provides new insights on how to pursue diversification using risk-parity within risk factors.

Data and methodology

The paper can be divided in two sections. First, the authors derive the relationship between asset and risk factor contribution to overall risk and provide insightful mathematical illustrations. In the second section, they consider different potential applications. The first one concerns the risk budgeting of equity factors. The second application constructs portfolios of hedge funds that possess greater diversification across the principal component factors. Finally, the authors compare the risk parity approach based on risk factors and asset classes in a strategic asset allocation framework. The six equity factors are captured using MSCI Indices (large growth, large value, mid growth, mid value, small growth, and small value), and the factor model is specified using the Fama-French-Carhart factor model. Three sets of risk budgets are used with respect to the risk factors. In the second simulation the authors use the Dow Jones Credit Suisse All Hedge Indices. The statistical risk factors are computed using the principal component analysis of the two-year covariance matrix of asset returns. Three portfolios are analyzed: the asset-weighted portfolio, the equal-risk contribution portfolio and the factor-weighted portfolio. In the latter, the authors investigate the ATP Pension Fund portfolio construction methodology by combining the risk budget approach to define asset allocation, and the economic approach to define the factors.

The paper can be divided in two sections: in the first one the authors derive the relationship between asset and risk factor contribution to overall risk.

In the second section they consider different applications that highlight many of the benefits of the methodology.

Results

In the first application the authors exploit the risk budgeting properties of the Fama-French equity factors. However, in this approach the significance of the Beta coefficient estimates remains unclear. The results obtained in the second example using PCA factors as the underlying sources of true risk, are quite interesting. However, the improved portfolio performance is sensitive to the PCA factors. Finally, in the pension fund example, the underlying idea is to construct a portfolio in order to hedge certain economic risk factors. The preliminary results are quite promising.

The results are varied, but overall show that the methodology produces portfolios with greater diversification

Our take

We find this paper quite interesting. It provides a methodology that can be used to improve the portfolio construction process and generate better diversification for more balanced portfolios. In addition, the three different examples demonstrate how to implement the methodology in practical applications and exposes insightful properties and implications of risk-parity portfolio construction methodology with risk factors.

The methodology presented in the paper is useful and the examples are illustrative for implementation purposes.

[8] Mesomeris, *et al.*, "Thematic Report - A New Paradigm in Asset Allocation", Deutsche Bank Quantitative Strategy, July 5, 2012

Paper 5: "Risk, Uncertainty and Monetary Policy"

- Geert Bekaert, Marie Hoerova and Marco Lo Duca
- SSRN, available at http://ssrn.com/abstract=1561171
- Reviewed by Ada Lau

Why it's worth reading

In recent years, market commentators have pointed out to the high level of correlations among stocks. We have ourselves talked at length about this topic[9] and linked it to the macroeconomic environment as well as the concept of the Variance Risk Premium[10]. Loose monetary policy may have led to financial instability. This paper provides one of the first few attempts to quantify the dynamic links between risk, uncertainty and monetary policy.

Loose monetary policy may have led to financial instability

Data and methodology

Using VRP (Variance Risk Premium) the squared VIX and the realized variances (computed using squared 5-minute returns), from 1990-2010 as predictors, the authors first estimate the expected realized variance. VIX is then decomposed into 2 components: a physical expected variance labeled as the Uncertainty Component, and a residual term labeled as Risk Aversion. The Uncertainty Component is estimated as the log of the expected realized variance. Risk Aversion is measured as the log of the difference between squared VIX and the uncertainty component. Monetary policy is measured as real interest rate, which is the Fed funds end-of-month target rate minus the CPI annual inflation rate. Business cycle indicator is taken as the log difference of industrial production index. A Vector Autoregressive (VAR) model is then constructed with four variables: Uncertainty Component, Risk Aversion, Monetary Policy and Business Cycle. By imposing restrictions and assumptions on the dynamics of the variables, the authors estimate the model and obtain the Impulse Response Function (IRF), which is the response of a variable to shocks in another variable. The authors also use both high frequency changes in the futures rate around FOMC announcements and unexpected change in the monthly Fed funds rate as alternative proxies to monetary policy shocks.

A Vector Autoregressive (VAR) model is constructed with four variables: 1). Uncertainty Component, 2). Risk Aversion, 3). Monetary Policy, and 4). Business Cycle. Impulse Response Function (IRF) is used to study the response of a variable to shocks in another variable

Results

The authors find that loose monetary policy decreases both Risk Aversion and Uncertainty Component, with a stronger effect in Risk Aversion. The effect on Risk Aversion starts to be significant after nine months and lasts for over two years. The immediate response on Uncertainty Component is weaker than that on Risk Aversion. Results are shown to be robust by using various measures of monetary policy.

Loose monetary policy decreases both Risk Aversion and Uncertainty Component

Our take

This paper gives important implications on the role of monetary policy by showing evidence that it significantly affects risk appetite. As we have shown in our own research, it could be beneficial for investors to incorporate this macroeconomic information in the design of their dynamic style rotation strategies.

It could be beneficial for investors to incorporate macro-economic information in style rotation strategies

[9] Alvarez, M. *et al.*, "Portfolio Under Construction - Correlation & Consequences", Deutsche Bank Quantitative Strategy, January 24, 2012.
[10] Alvarez, M. *et al.*, "Portfolio Under Construction - Uncertainty and Style Dynamics", Deutsche Bank Quantitative Strategy, April 18, 2012.

Upcoming conferences

Europe

Figure 1: European event calendar

Date	Location	Conference
6-7 November 2012	Paris, France	Quant Invest http://www.terrapinn.com/conference/quant-invest/index.stm
10-13 December 2012	Paris, France	Market Microstructure: confronting many viewpoints http://market-microstructure.institutlouisbachelier.org/
20 December 2012	Paris, France	10th International Paris Finance Meeting http://www.eurofidai.org/december2012.html
20 December 2012	Paris	10th International Paris Finance Meeting http://www.ima.org.uk/conferences/conferences_calendar/mathematics_in_finance.cfm
28 Feb – 1 Mar 2013	Venezia, Italy	IMA Conference on Mathematics in Finance http://www.quant.it/
8-9 April 2013	Edinburgh	Quantitative and Asset Management Workshop 2013 http://www.eurofidai.org/december2012.html

Source: Deutsche Bank

North America

Figure 2: North American event calendar

Date	Location	Conference
16 November 2012	New York	Deutsche Bank Global Quantitative Strategy Conference http://registration.db.com/GlobalQuantitativeStrategy2012
4-6 January 2013	San Diego	2013 AFA Annual Meeting http://hq.ssrn.com/Conference/Reports/conf_preliminary_program.cfm?conflink=AFA-2013-San-Diego
22-24 March 2013	Miami	International Mathematical Finance Conference http://www.bradley.edu/academic/continue/professionals/imfc/

Source: Deutsche Bank

Asia

Figure 3: Asian event calendar

Date	Location	Conference
9-11 January 2013	Hong Kong	1st Asian Quantitative Finance Conference http://cqf.nus.edu.sg/AQFC2013/aqfc2013.htm
19-22 May 2013	Singapore	66th Annual CFA Institute Annual Conference http://www.cfainstitute.org/learning/products/events/Pages/05192013_66150.aspx

Source: Deutsche Bank

Other papers of interest

Alpha generation and stock-selection signals

Predicting First-Year Returns of Health Care IPOs

- Richard Borghesi, Thomas Pencek
- SSRN, available at http://ssrn.com/abstract=2152548
- Abstract: "Prior empirical work shows that IPOs generally earn positive excess first-day returns yet subsequently underperform. Many researchers examine the determinants of post-first-day IPO success, however these studies do not test for first-year IPO return predictability due to unavailability of pre-IPO data with which to predict first-year performance. In this study we utilize strictly pre-IPO financial data manually obtained from corporate IPO registrations to predict the first-year post-IPO performance of health care firms. We do so by utilizing firm size, free cash flows, discretionary accruals, and Altmans Z. Results suggest that each metric is a significant determinant of first-year raw cumulative and excess cumulative returns, and we are able to reliably identify which firms will be in the top and bottom performance quartiles 30 days, 6 months, and 12 months after the IPO."

Digesting Anomalies: An Investment Approach

- Kewei Hou, Chen Xue, Lu Zhang
- SSRN, available at http://ssrn.com/abstract=2152674
- Abstract: "Motivated from investment-based asset pricing, we propose a new factor model consisting of the market factor, a size factor, an investment factor, and a return on equity factor. The new factor model outperforms the Carhart four-factor model in pricing portfolios formed on earnings surprise, idiosyncratic volatility, financial distress, net stock issues, composite issuance, as well as on investment and return on equity. The new model performs similarly as the Carhart model in pricing portfolios formed on size and momentum, abnormal corporate investment, as well as on size and book-to-market, but underperforms in pricing the total accrual deciles. The new models performance, combined with its clear economic intuition, suggests that it can be used as a new workhorse model for academic research and investment management practice."

Orphan Versus Non-Orphan IPOs: The Difference Analyst Coverage Makes

- Romain Boissin
- SSRN, available at http://ssrn.com/abstract=2152864
- Abstract: "This paper addresses the question of the importance of analyst coverage for the long-run returns of IPO firms over the period from 1991 to 2010. In US IPOs, during the one- to five-year horizon, we find a significant long-run abnormal performance by orphans (IPOs without analyst coverage) compared to non-orphans (IPOs with analyst coverage). Further analysis reveals that this outperformance by non-orphans stems from high analyst coverage. Our results are robust after accounting for venture capital backing, underwriting syndicates, underpricing, institutional investor ownership, or operating performance variables."

The Cross-Section and Time-Series of Stock and Bond Returns

- Ralph S. J. Koijen, Hanno N. Lustig, Stijn Van Nieuwerburgh
- SSRN, available at http://ssrn.com/abstract=2153456
- Abstract: "Value stocks have higher exposure to innovations in the nominal bond risk premium than growth stocks. Since the nominal bond risk premium measures cyclical variation in the markets assessment of future output growth, this results in a value risk premium provided that good news about future output lowers the marginal utility of wealth today. In support of this mechanism, we provide new historical evidence that low return realizations on value minus growth, typically at the start of recessions when nominal bond risk premia are low and declining, are associated with lower future dividend growth rates on value minus growth and with lower future output growth. Motivated by this connection between the time series of nominal bond returns and the cross-section of equity returns, we propose a parsimonious three-factor model that jointly prices the cross-section of returns on portfolios of stocks sorted on book-to-market dimension, the cross-section of government bonds sorted by maturity, and time series variation in expected bond returns. Finally, a structural dynamic asset pricing model with the business cycle as a central state variable is quantitatively consistent with the observed value, equity, and nominal bond risk premia."

Active Ownership

- Elroy Dimson, Oguzhan Karakas, Xi Li
- SSRN, available at http://ssrn.com/abstract=2154724
- Abstract: "Using an extensive proprietary dataset of corporate social responsibility engagements on environmental, social and governance issues, we document positive market reactions to engagements with US public firms over 1999-2009. The average one-year abnormal return after initial engagement is 1.8%, with 4.4% for successful engagements whereas there is no market reaction to unsuccessful ones. The positive abnormal returns are most pronounced for engagements on the themes of corporate governance and climate change. We find that reputational concerns and higher capacity to implement corporate social responsibility changes increase the likelihood of a firm being engaged and being successful in achieving the engagement objectives. Target firms experience improvements in operating performance, profitability, efficiency, and governance indices after successful engagements."

Financing Asset Growth

- Michael J. Brennan, Holger Kraft
- SSRN, available at http://ssrn.com/abstract=2160017
- Abstract: "We document the existence of a debt anomaly that is in addition to the asset growth anomaly: for a given asset growth rate, firms that issue more debt, as well as firms that retire more debt, have lower stock returns in the 12 months starting 6 months after the calendar year of asset growth. Exploring the reasons for debt issuance, we find that managers of firms for which analyst expectations are more over-optimistic, which suffer from declining investment profitability, and whose earnings-price ratios are relatively high are inclined to rely more heavily on debt financing. On the other hand, firms that retire more debt for a given asset growth rate tend to have improving profitability but to be over-priced. We also find that the financing decision is influenced by the prior debt ratio, the asset growth rate, profitability, and CEO pay sensitivity. We interpret our results in terms of managerial incentives, signaling, and market timing."

Prediction Markets for Economic Forecasting

- Erik Snowberg, Justin Wolfers, Eric Zitzewitz
- SSRN, available at http://ssrn.com/abstract=2153510
- Abstract: "Prediction markets--markets used to forecast future events--have been used to accurately forecast the outcome of political contests, sporting events, and, occasionally, economic outcomes. This chapter summarizes the latest research on prediction markets in order to further their utilization by economic forecasters. We show that prediction markets have a number of attractive features: they quickly incorporate new information, are largely efficient, and impervious to manipulation. Moreover, markets generally exhibit lower statistical errors than professional forecasters and polls. Finally, we show how markets can be used to both uncover the economic model behind forecasts, as well as test existing economic models."

Dividend Yields, Dividend Growth, and Return Predictability in the Cross-Section of Stocks

- Paulo F. Maio, Pedro Santa-Clara
- SSRN, available at http://ssrn.com/abstract=2158406
- Abstract: "There is a generalized conviction that variation in dividend yields is exclusively related to expected returns and not to expected dividend growth --- e.g. Cochrane's presidential address (Cochrane, 2011). We show that this pattern, although valid for the stock market as a whole, is not true for small and value stocks portfolios where dividend yields are related mainly to future dividend changes. Thus, the variance decomposition associated with aggregate dividend yields (commonly used in the literature) has important heterogeneity in the cross-section of equities. Our results are robust for different forecasting horizons, econometric methodology used (direct long-horizon regressions or first-order VAR), and also confirmed by a Monte-Carlo simulation."

Stock Price Reactions to Share Buyback Announcements

- Ashish Arora
- SSRN, available at http://ssrn.com/abstract=2158424
- Abstract: "Share Buyback is one of the tools introduced in Indian financial scenario recently. Many Indian companies have gone repeatedly for the usage of this tool in order to enhance their basic value. The post buyback impact on share prices has been measured by taking a sample of companies which went for buyback. The results clearly show the effectiveness of buyback in raising share prices of companies in short term."

Modeling Trade Direction

- Dale W. R. Rosenthal
- SSRN, available at http://ssrn.com/abstract=2158424
- Abstract: "I propose a modeling approach to classifying trades as buys or sells. Modeled classifications consider information strengths, microstructure effects, and classification correlations. I also propose estimators for quotes prevailing at trade time. Comparisons using 2800 U.S. stocks show modeled classifications are 1%-2% more accurate than current methods across dates, sectors, and the spread. For Nasdaq and New York Stock Exchange stocks, 1% and 1.3% of improvement comes from using information strengths; 0.9% and 0.7% of improvement comes from estimating quotes. I find evidence past studies used unclean data and indications of short-term price predictability. The method may help detect destabilizing order flow."

Does Wage Rigidity Make Firms Riskier? Evidence from Long-Horizon Return Predictability

- Jack Favilukis, Xiaoji Lin
- SSRN, available at http://ssrn.com/abstract=2158738
- Abstract: "We explore the relationship between sticky wages and risk. Like operating leverage, sticky wages are a source of risk for the firm. Firms, industries, or times with especially high or rigid wages are especially risky. If wages are sticky then wage growth should negatively forecast future stock returns because falling wages are associated with even bigger falls in output, and increases in operating leverage. Indeed, we find this to be the case in aggregate data, and in industry data. Furthermore, we find that industries with higher wage rigidity have a more negative relationship between wages and returns."

Davids, Goliaths, and Business Cycles

- Jefferson Duarte, Nishad Kapadia
- SSRN, available at http://ssrn.com/abstract=2155000
- Abstract: "We develop a simple, intuitive variable that is the single best predictor of market returns out-of-sample amongst traditional predictors. Our variable is the annual change in the weight of the largest 250 firms in the aggregate stock market. We provide a theoretical foundation for our predictor's forecasting ability by showing that it is positively correlated with changes in risk aversion in a representative agent model, and hence positively related to expected returns. This positive correlation comes about because our proposed predictor is significantly counter-cyclical; since small and large firms react differently to business cycles, the weight of large firms in the market portfolio increases in recessions and decreases in expansions."

Modelling Time-Variation in the Stock Return-Dividend Yield Predictive Equation

- David G. McMillan
- SSRN, available at http://ssrn.com/abstract=2156850
- Abstract: "Using data for forty markets, this paper examines the nature and possible causes of time-variation within the stock return-dividend yield predictive regression. The results in this paper show that there is significant time-variation in the predictive equation for returns and that such variation is linked to economic and market factors. Furthermore, the strength and nature of those links are themselves time-varying. The inclusion of this time-variation in the predictive equation increases the predictive power compared to the standard constant parameter predictive model. Evidence is also reported for time-varying dividend growth predictability. Long-horizon predictability is also examined with evidence reported that the nature of the factors affecting time-varying predictability changes with horizon. The results here, while directly contributing to the returns predictability debate, in particular regarding its existence and source, may also inform the discussion that links time-varying expected returns (and risk premium) to economic factors."

Optimization, portfolio construction, and risk management

A Macroeconomic Framework for Quantifying Systemic Risk

- Zhiguo He, Arvind Krishnamurthy
- SSRN, available at http://ssrn.com/abstract=2160847
- Abstract: "Systemic risk arises when shocks lead to states where a disruption in financial intermediation adversely affects the economy and feeds back into further disrupting financial intermediation. We present a macroeconomic model with a financial intermediary sector subject to an equity capital constraint. The novel aspect of our analysis is that the model produces a stochastic steady state distribution for the economy, in which only some of the states correspond to systemic risk states. The model allows us to examine the transition from normal states to systemic risk states. We calibrate our model and use it to match the systemic risk apparent during the 2007/2008 financial crisis. We also use the model to compute the conditional probabilities of arriving at a systemic risk state, such as 2007/2008. Finally, we show how the model can be used to conduct a Fed stress test linking a stress scenario to the probability of systemic risk states."

A New Heuristic Measure of Fragility and Tail Risks: Application to Stress Testing

- Nassim Nicholas Taleb, Elie R.D. Canetti, Tidiane Kinda, Elena Loukoianova, Christian Schmieder
- SSRN, available at http://ssrn.com/abstract=2156095
- Abstract: "This paper presents a simple heuristic measure of tail risk, which is applied to individual bank stress tests and to public debt. Stress testing can be seen as a first order test of the level of potential negative outcomes in response to tail shocks. However, the results of stress testing can be misleading in the presence of model error and the uncertainty attending parameters and their estimation. The heuristic can be seen as a second order stress test to detect nonlinearities in the tails that can lead to fragility, i.e., provide additional information on the robustness of stress tests. It also shows how the measure can be used to assess the robustness of public debt forecasts, an important issue in many countries. The heuristic measure outlined here can be used in a variety of situations to ascertain an ordinal ranking of fragility to tail risks."

Dynamic Exposure of Hedge Funds to the Changes in the Risk Factors

- Sangheon Shin, Jan Smolarski, Gokce Soydemir
- SSRN, available at http://ssrn.com/abstract=2154625
- Abstract: "This paper models exposure of hedge fund to risk factors and examines time-varying performance of hedge funds. From existing models such as ABS-factor model, SAC-factor model, and four-factor model, we extract the best six factors for each hedge fund portfolio by investment strategy. Then, we find combinations of risk factors that most explain variance in performance of each hedge fund portfolio by investment strategy. The results show instability of coefficients in the performance attribution regression. Incorporating time-varying factor exposure feature would be the best way to appropriately measure hedge fund performance. Furthermore, the optimal models with fewer factors exhibit greater explanatory power than existing models. Time-varying model customized by investment strategy of hedge funds would clearly show how sensitive to risk factors managements of hedge funds are according to market conditions."

On the (Mis)Use of Conditional Value-at-Risk and Spectral Risk Measures for Portfolio Selection - A Comparison with Mean-Variance Analysis

- Mario Brandtner
- SSRN, available at http://ssrn.com/abstract=2083654
- Abstract: "We study portfolio selection using Conditional Value-at-Risk and, as its natural extension, spectral risk measures instead of the variance. We do not focus only on the derivation of the efficient frontiers, but also consider the choice of optimal portfolios within an integrated framework. We find that spectral risk measures tend towards corner solutions. If a risk free asset exists, diversification is never optimal. Similarly, for risky assets we obtain only limited diversification. The reason is that spectral risk measures are based on a regulatory concept of diversification that differs fundamentally from the reward-risk tradeoff underlying the traditional mean-variance framework."

Optimal Portfolio Selection: A Note with a VBA Solution

- Ignacio Velez-Pareja, Pedro Fabin Castilla vila
- SSRN, available at http://ssrn.com/abstract=2161479
- Abstract: "Usually in financial textbooks and courses the theory of portfolio selection is taught in a strictly theoretical way. There is a model (Markowitz) that stipulates that an investor has preferences and that she will choose the best portfolio, given her preference curves and an efficient frontier. On the other hand, the Capital Asset Pricing Model (CAPM) is presented as it is: a genial idea that served to simplify and to make operative the Markowitz setup. Most students and practitioners conclude that those models are just inapplicable theory. This is the most rational behavior one can expect. What can an investor do with the textbook recipes to configure an optimal portfolio? Very little. We show through an example how the portfolio is obtained manually and how to use the add-in developed showing the efficient frontier in the example."

Stock Market Integration and International Portfolio Diversification between U.S. and ASEAN Equity Markets

- Rifqi Ardliansyah
- SSRN, available at http://ssrn.com/abstract=2161330
- Abstract: "The paper empirically analyzes stock market integration and the benefit possibilities of international portfolio diversification across the Southeast Asia (ASEAN) and U.S. equity markets. It employs daily sample of 6 ASEAN equity market indices and S&P 500 index as a proxy of U.S. market index from years 2001 to 2010. The paper examines the stock market return interdependence from three different perspectives which are long-term, short-term and dynamic perspectives. In order to investigate the long-run interdependencies, the Johansen-Juselius multivariate co-integration test and the bivariate Engle-Granger 2-step method were used. In respect to the short-run interdependencies, the Generalized Impulse Response Function (GIRF) and the Generalized Forecast Error Variance Decomposition (GFEVD) are employed. Finally, to assess the dynamic structure of equity market co-movements, the Dynamic Conditional Correlation (DCC) model is engaged. Results suggest that in the long-run, there are no potential benefits in diversifying investment portfolios across the ASEAN and U.S. market since there are evidences of cointegration among them. However, the potential benefits of international portfolio diversification can be seen throughout the short-run-period. Subsequently, the DCC findings suggest an overall proposition that by the end of 2010, most of the ASEAN markets do not share the U.S. stock price movement."

Portfolio Performance Maximization with Generalized Kappa Ratio

- Rania Hentati, Jean-Luc Prigent
- SSRN, available at http://ssrn.com/abstract=2084930
- Abstract: "We examine the maximization problem of performance measure of financial structured products. For this purpose, we introduce the Kappa ratios, based on downside risk measures which take account of the asymmetry of the return probability distribution. First, we deal with the optimization of some standard structured portfolios. We examine in particular the optimal combination of risk free, stock and call/put instruments with respect to Kappa performance measures and in particular to the SharpeOmega ratio. Then, we provide the general solution of the optimal positioning problem with respect to Kappa ratios. We analyze its properties and compare it to the portfolio profile that is optimal with respect to the standard expected utility criterion."

Measuring the risk impact of social screening

- Patrick Geddes
- SSRN, available at http://ssrn.com/abstract=2144484
- Abstract: "Since the nineteenth century investors have incorporated social or ethical values into their portfolios, an approach described over time with such labels as SRI (socially responsible investing), ESG (environmental, social, governance), or MRI (mission-related investing). Among investment professionals a contentious debate rages as to whether SRI is a well-intentioned effort doomed to suffer a performance penalty or a viable alternative with the potential for alpha due to screening based on the assumption that such screening will be rewarded in the market. The performance debate has been covered in other research; this article focuses on the measurement of risk introduced by SRI screening for public equities. For simplicity, the term SRI is used as the term for screened investing in general, with ESG used as a term for the specific environmental, social, and governance issues screened."

Asset allocation and country/sector/style rotation

An Asset Allocation Model with Inequalities Constraints and Coherent Risk Measure: An Application to Brazilian Equities

- Betina Dodsworth Fernandes
- SSRN, available at http://ssrn.com/abstract=2159289
- Abstract: "We propose a method for optimal portfolio selection built on the Black and Litterman model and with two major contributions. We introduce in the investors' objective function a risk measure named expected tail loss, which is useful in portfolio selection context as it supports the benefits of diversification and we allow investors' views to be expressed in terms of linear inequalities among expected returns, which seems more natural in the practice of portfolio selection. Further we implement the models using market database applied to Brazilian equities. The results show that our approach leads to lower risk optimal portfolios and that our proposed methodology to implement the investors' subjective views led to optimal portfolios with superior outcomes."

Stock Market Spread Trading: Argentina and Brazil Stock Indices

- Jonathan A. Batten, Peter G. Szilagyi, Michael C. S. Wong
- SSRN, available at http://ssrn.com/abstract=2162287
- Abstract: "Brazil is the largest stock market in South America, whereas Argentina is one of the smallest. Nonetheless, the most important stock indices representing these markets (the Brazil Bovespa and the Argentinian Merval) are highly correlated with two-way Granger causality. This feature facilitates trading of the spread between these two markets, measured as the ratio of the Bovespa to the Merval. We identify the presence of a temporal fractal structure in daily changes in this ratio using statistical techniques based on rescaled range analysis after accommodating short-term autocorrelation. This series has episodes of both positive and negative dependence, though the positive dependent relationship appears to be dominant. When a simple trading rule, based upon the Hurst coefficient, is applied we find that episodes of fractality may be exploited by traders. Under some circumstances these strategies are more profitable than economic gains from simple moving average systems, which exploit the autocorrelation structure of the series."

Risk-Adjusted Performances of World Equity Indices

- Yigit Atilgan, K. Ozgur Demirtas
- SSRN, available at http://ssrn.com/abstract=2160773
- Abstract: "This paper investigates whether equity indices of 24 emerging and 28 developed markets compensate their investors equally after taking risk into account. We place special emphasis on downside risk by calculating both nonparametric and parametric value at risk. We find that when all 52 markets are ranked based on their alternative reward-to-risk ratios, almost all of the countries in the top quartile are emerging markets whereas almost all of the countries in the bottom quartile are developed markets. These results are supported by the finding that pooled means of the reward to-risk ratios are significantly higher for emerging markets compared to those of developed markets. Focusing on the period after the initiation of the recent financial crisis reveals that, although both developed and emerging markets suffered in terms of generating higher returns per unit risk, emerging markets continued to outperform developed markets and the outperformance became more pronounced."

Timing Foreign Exchange Markets

- Robert B. Gramacy, Samuel W. Malone, Enrique Ter Horst
- SSRN, available at http://ssrn.com/abstract=2154035
- Abstract: "Priced level, slope, and volatility risk factors recently proposed in the finance literature help explain long-standing puzzles related to the cross-section of carry trade returns. In this paper, we examine whether the information contained in these global factors allows foreign exchange market speculators in individual currencies to successfully time the direction of their carry trades, both when they can foresee the realizations of these factors one-month in advance, as in the classic exchange rate forecasting literature, and when they cannot. We find that, in stark contrast to most previous attempts to forecast monthly exchange rates, perfect foresight of these fundamentals confers statistically and economically significant market timing ability upon speculators. Conditional linear and nonparametric models based on these factors outperform the random walk. Without perfect foresight of these fundamentals, simple strategies based on the directional forecasts of conditional models still manage to outperform the random walk with respect to market timing statistics and realized Sharpe ratios for a large minority of currencies, especially when combined with information on global liquidity factors."

The Case of Gold and Silver: A New Algorithm for Pairs Trading

- Jay Desai, Arti Trivedi, Nisarg A. Joshi
- SSRN, available at http://ssrn.com/abstract=2152324
- Abstract: "In this paper we propose a new algorithm for pairs trading. Pairs Trading is a very popular trading strategy also known as market neutral position. The basic idea is to create a long/short position with securities that move together. Securities having strong co-relation (We propose correlation greater then 0.90) can be traded by using the proposed method in this paper. The basic concept of stochastic is applied to find the entry and exit points of a trade. The algorithm is tested on gold and silver prices for market neutral position. From a researchers point of view as per Efficient Market Hypothesis theory, pairs trading strategy should not result in positive returns as the past behavior of a stock price reflects the information flow of past. And has no effect on the future prices. The main objective of this research is to propose a simple method of pairs trading useful to market practitioners and researchers. The proposed algorithm generated 100% accurate trades with return of 44.45% for the test period."

Double Portfolio Selections in the Presence of Background Risk

- Jin-ray Lu
- SSRN, available http://ssrn.com/abstract=2160705
- Abstract: "Most people allocate their wealth in alternative accounts, in which each sub-portfolio has its asset allocation. According to this stylistic fact, this paper solves an individuals decision-making problem of double portfolio selections in the presence of background risk. Contrary to the predictions of the single-accounts portfolio selections, I show that the optimal decisions of double portfolios appear to be strategically interdependent, and can be analyzed in the framework of multi-stage or simultaneous decisions. Specifically, the asset allocation of a sub-portfolio that is not exposed to the background risk, also responds to the background risk in a simultaneous decision. If the background risk is ignored, our analysis also shows that the mutual fund separation theorem holds in the double portfolio choices."

The Risk Parity Approach to Asset Allocation - Climbing the Wall of Worries?

- Fabian Dori, Frank Haeusler, Manuel Krieger, Urs Schubiger, David Stefanovits
- SSRN, available at http://ssrn.com/abstract=2159283
- Abstract: "The risk parity asset allocation methodology has recently increased in popularity, as such strategies have in general avoided the hefty drawdowns during the recent volatile market periods. Even the most fervent critics appreciate the diversifying potential historically provided by risk parity concepts. However, they point out that the tide may be turning. It is often stated that the past merits of the strategy may be its future challenges. Concerns raised relate to issues like: While being of inestimable value during the subprime crisis, isnt it overly risky to be considerably exposed to government bonds in light of uncomfortably high sovereign debt? Having successfully exploited dynamic correlation relationships in the past, can the concept still provide a diversified portfolio even with the virtual outage of fixed income instruments as a source of return because of record low yields? In spite of facilitating the equalisation of risk contributions, does the leverage usually employed not expose the portfolio to heightened tail risks? The responses brought forward to these legitimate criticisms, are as diverse as the group of discussants is numerous. The objective of this note is, therefore, to contribute to the discussion by taking a general point of view. What can be inferred from empirical evidence in order to judge the future attractiveness of the risk parity concept relative to alternative asset allocation strategies in general? And how does the concept compare with respect to the specific concerns highlighted above? In order to answer these questions, we contrast three different yet popular allocation styles, namely a traditional balanced strategy, the minimum variance concept and the risk parity methodology. The results suggest that while the current criticism has its warrants, empirical evidence points towards the expectation that risk parity strategies may further climb up the wall of worries."

Momentum in Government-Bond Markets

- Bac Van Luu, Peiyi Yu
- SSRN, available at http://ssrn.com/abstract=2161368
- Abstract: "The authors explore the risk-return properties of simple momentum strategies in six major government-bond markets and find that trend-following investment rules generate positive information ratios in the 1987-2011 sample period. They simulate the combination of momentum portfolios with fixed-income funds to study the potential diversification benefits of momentum with regard to active credit strategies."

Trading and market impact

The Diversity of High Frequency Traders

- Bjrn Hagstrmer, Lars L. Norden
- SSRN, available at http://ssrn.com/abstract=2153272
- Abstract: "The regulatory debate concerning high frequency trading (HFT) emphasizes the importance of distinguishing different HFT strategies and their influence on market quality. Using unique data from NASDAQ OMX Stockholm, we are the first to empirically provide such a distinction for equity markets. Comparing the behavior of market making HFTs to opportunistic HFTs (arbitrage and momentum HFT strategies), we find that market makers constitute the lion share of HFT trading volume (63-72%) and limit order traffic (81-86%). Furthermore, market makers have higher order-to-trade ratios, lower latency, lower inventory, and supply liquidity more often than opportunistic HFTs. In a natural experiment based on tick size changes, we find that both market making and opportunistic HFT strategies mitigate intraday price volatility. The findings indicate that, e.g., the financial transaction tax proposed by the European Commission, which would render most HFT strategies unprofitable, would primarily hit market makers and increase market volatility."

Market Quality Breakdowns in Equities

- Cheng Gao, Bruce Mizrach
- SSRN, available at http://ssrn.com/abstract=2153909
- Abstract: "A breakdown in market quality occurs when an order book thins to the point where extreme price movements are observed. These are frequently reversed as the market learns that nothing fundamental has occurred. This paper analyzes the frequency of these events in the period 1993-2011. We first examine whether changes in market structure have reduced market quality. Controlling for volume and volatility, we find that the daily probability of breakdowns has fallen 41.78% since Reg NMS. Market fragmentation does not have a statistically significant impact on the breakdown frequency. We then model the effects of cross-security liquidity shock correlation on the order book. Our model predicts that a rising correlation should contribute to a higher breakdown frequency. Spikes in market correlation make breakdowns 22.88% more likely. High frequency trading increases breakdowns an additional 16.86%. ETFs breakdown nearly three times as often as common stocks. Both ETFs and high frequency trading Granger cause market correlation. Rapid increases in prices are more common than decreases after 2002. Breakdowns are predictable, with lagged volume and prior crash probabilities significant for up to two days."

Liquidity Measurement Problems in Fast, Competitive Markets: Expensive and Cheap Solutions

- Gennaro Bernile, Alok Kumar, Johan Sulaeman, and Qin Wang
- SSRn, available at http://ssrn.com/abstract=2102078
- Abstract: "We investigate whether todays fast, competitive U.S. equity markets yield liquidity measurement problems when using the popular Monthly Trade and Quote (MTAQ) database. We find that MTAQ yields a percent effective spread 58% higher than the expensive Daily Trade and Quote (DTAQ) database and a percent quoted spread that goes negative 37 times more often. We find that these problems are driven by: (1) withdrawn quotes, (2) second (vs. millisecond) timestamps, and (3) other causes, including cancelled quotes. We test ways to eliminate or mitigate these problems. We find that the expensive solution, using DTAQ, is first best. If a researcher is financially constrained, then the cheap solution, using MTAQ with our new Interpolated Time technique, adjusting for withdrawn quotes, and throwing away economically nonsensical states, is second best. We find that both our first best and second best solutions yield different inferences than using MTAQ with no adjustments."

Optimal Order Placement in Limit Order Markets

- Gennaro Bernile, Alok Kumar, Johan Sulaeman, and Qin Wang
- SSRn, available at http://ssrn.com/abstract=2155218
- Abstract: "To execute a trade, participants in electronic equity markets may choose to submit limit orders or market orders across various exchanges where a stock is traded. This decision is influenced by the characteristics of the order flow and queue sizes in each limit order book, as well as the structure of transaction fees and rebates across exchanges. We propose a quantitative framework for studying this order placement problem by formulating it as a convex optimization problem. This formulation allows to study how the interplay between the state of order books, the fee structure, order flow properties and preferences of a trader determine the optimal placement decision. In the case of a single exchange, we derive an explicit solution for the optimal split between limit and market orders. For the general problem of order placement across multiple exchanges, we propose a stochastic algorithm for computing the optimal policy and study the sensitivity of the solution to various parameters using a numerical implementation of the algorithm."

Intraday Share Price Volatility and Leveraged ETF Rebalancing

- Arthur Rodier, Edgar Haryanto, Pauline M. Shum, Walid Hejazi
- SSRN, available at http://ssrn.com/abstract=2161057
- Abstract: "Over the last few years, market watchers and regulators have been concerned about leveraged ETFs' role in driving up end-of-day volatility through their daily rebalancing activities. Leveraged ETF providers and analysts have countered that leveraged ETFs assets are too small to have an impact. We investigate the merits of both claims. Using trade data for a balanced panel of 346 U.S. blue-chip equities from 2006 to 2011, we show that leveraged ETF rebalancing explained on average, 31 to 37 percent of the end-of-day share price volatility, and 54 to 75 percent on days when the market experienced a large (three percent or higher) price swing. Once controlled for expected volatility, however, the impact is reduced, although it remains statistically significant. Given the predictable patterns of leveraged ETF rebalancing demands, we also explore the implications for strategic trading and for leveraged ETF tracking errors during periods of large market swings."

Finance theory and techniques

The Pricing and Performance of New Corporate Bonds: Sorting Out Underpricing and Liquidity Effects

- Igor Kozhanov, Joseph P. Ogden
- SSRN, available at http://ssrn.com/abstract=2161452
- Abstract: "Recent developments in the U.S. corporate bond market, as well as recent evidence on the pricing of illiquidity in this market, prompt us to reexamine the pricing of new bonds. The pricing of new investment-grade bonds appears to reflect both initial underpricing and higher liquidity: New bonds generally have lower yields than seasoned benchmarks, and average benchmark-adjusted returns form a humped pattern by horizon. We then test whether liquidity effects in bonds are linked to issuers equity liquidity. Generally, we find that equity and bond illiquidity are linked at the firm level, and that equity illiquidity is priced in bonds. For new bonds, equity liquidity is generally higher for new-bond issuers than for firms with benchmark seasoned bonds, and equity liquidity explains liquidity effects in both the pricing and performance of new bonds."

The Cake-Eating Problem: Non-Linear Sharing Rules

- David Schroder and Florian Esterer
- SSRN, available at http://ssrn.com/abstract=2151812
- Abstract: "Consider the most simple problem in microeconomics, a maximization problem with an additive separable utility function over bundles of two goods which provide equal satisfaction to an agent. Although simple, this framework allows for a very wide range of applications, from the Arrow-Debreu contingent claims case to the risk-sharing problem, including standard portfolio choice, intertemporal individual consumption, demand for insurance and tax evasion. We show that any Engel curve can be generated through such a simple program and the necessary and sufficient restrictions on the demand system to be the outcome of such a maximisation process. Moreover, we identify three classes of utility function that generate non-linear sharing rules. The gap between the two expenditure shares increases in absolute, average or marginal terms with the total amount of wealth, depending on whether DARA, DRRA and convex risk tolerance are considered. The extension of the different results to the case of more than two goods is provided."

Income Smoothing, Information Uncertainty, Stock Returns, and Cost of Equity

- Linda H. Chen
- SSRN, available at http://ssrn.com/abstract=2155044
- Abstract: "This paper examines the effect of income smoothing on information uncertainty, stock returns, and cost of equity. I show that income smoothing through both total accruals and discretionary accruals tends to reduce firms information uncertainty, as measured by stock return volatility, analyst earnings forecast dispersion, and analyst earnings forecast error. Further, I provide evidence that stocks of income smoothing firms are priced with a premium. Controlling for earnings shocks and other firm characteristics, income smoothing firms have significantly higher abnormal returns around earnings announcement. In addition, I show that income smoothing reduces firms implied cost of equity or expected returns. The result is more robust over short horizons up to two years."

Combining Market and Accounting-Based Models for Credit Scoring Using a Classification Scheme Based on Support Vector Machines

- Dimitrios Niklis, Michael Doumpos, C. Zopounidis
- SSRN, available at http://ssrn.com/abstract=2156220
- Abstract: "Credit risk rating is a very important issue for both banks and companies, especially in periods of economic recession. There are many different approaches and methods which have been developed over the years. The aim of this paper is to create a credit risk rating model combining the option-based approach of Black, Scholes, and Merton with an accounting based approach which uses financial ratios. While the market model is well-suited for listed firms, the proposed approach illustrates that it can also be useful for non-listed ones. In particular, the option-based model is implemented to a group of listed firms and its results are applied in order to develop a model for credit risk evaluation of non-listed firms, using financial ratios. This approach is tested on a sample of Greek firms and the results are compared to other already established models."

Weak-Form Market Efficiency and Calendar Anomalies for Eastern European Equity Markets

- Francesco Guidi, Rakesh Gupta, Suneel Maheshwari
- SSRN, available at http://ssrn.com/abstract=2162564
- Abstract: "In this article we test the weak form of the efficient market hypothesis for Central and Eastern Europe (CEE) equity markets for the period 1999-2009. To test weak-form efficiency in the markets, this study uses autocorrelation analysis runs test and variance ratio test. We find that stock markets of the CEE do not follow a random walk process. This is an important finding for the CEE markets as an informed investor can identify mispriced assets in the markets by studying the past prices in these markets. We also test the presence of daily anomalies for the same group of stock markets using a basic model and a more advanced Generalised Autoregressive Conditional Heteroscedasticity in Mean (GARCH-M) model. Results indicate that day-of-the-week effect is not evident in most markets except for some. Overall results indicate that some of these markets are not weak and an efficient and informed investor can make abnormal profits by studying the past prices of the assets in these markets."

The impact of insider ownership level on equity market timing decisions

- Frank D'Souza and Curya Chekikani
- SSRN, available at http://ssrn.com/abstract=2140231
- Abstract: "Equity market timing refers to the issuance of equity when a firm's stock is overvalued. Despite such efforts resulting in these firms significantly underperforming in the long run, managers are assumed to be acting in the best interests of current shareholders. Agency theory and current events clearly show that managers do not always act in the shareholders' interest. Therefore it is imperative that this issue of shareholder benefit be further investigated. This paper attempts to overcome the hurdle of superior insider information, and determine if shareholders do indeed benefit. We use Logit and Probit models to evaluate the propensity of managers to issue new equity conditioned upon the degree of alignment (as measured by managers' equity ownership) of their interests with those of shareholders. Specifically, how does the likelihood of equity market timing change in relation to the level of insider ownership? Our results indicate that the probability of issue increases with managerial holdings of common stock. Managers are acting for shareholder benefit, since they are more likely to issue equity when they themselves are heavily invested in the firm's common stock."

Idiosyncratic Volatility, Institutional Ownership, and Investment Horizon

- Doina Chichernea, Alex Petkevich, Blerina Bela Reca
- SSRN, available at http://ssrn.com/abstract=2160825
- Abstract: "This paper reevaluates the cross-sectional effect of institutional ownership on idiosyncratic volatility conditioned on institutions investment horizon. Prior literature attributes the increasing trend in idiosyncratic volatility to growing institutional ownership. However, over the last decade idiosyncratic risk has declined, while institutional ownership continually increased. We document that short-term (long-term) institutional ownership is positively (negatively) linked to idiosyncratic volatility in the cross section. These opposite effects persist after controlling for institutional preferences and information-based trading and remain qualitatively unchanged before and after the structural break. This suggests that short-term (long-term) institutions exhibit higher (lower) trading activity, which increases (decreases) idiosyncratic volatility."

In Germany the CAPM is Alive and Well

- Roman Brckner, Patrick Lehmann, Richard Stehle
- SSRN, available at http://ssrn.com/abstract=2161847
- Abstract: "Using data on all firms listed in the top segment of the Frankfurt Stock Exchange during the years 1960 to 2007, we investigate how the (Sharpe-Lintner) CAPM performs under the assumption that the German capital market is totally segmented from other capital markets. We also check whether this model should be extended by the firm characteristics size and book-to-market. We can identify strong size and book-to-market effects in the German stock market. However, their direction, strength, and interaction are different in the two subperiods 1960-1990 and 1990-2007. We use the standard test procedures (BJS, GRS, Fama/MacBeth) to test the CAPM and do a large number of tests which differ by the length of the test period, the length of the return interval, beta calculations, firm level and portfolio data, sorting, and weighting. The total number of CAPM rejections is somewhat higher than what we would expect based on the statistical significance level. Long-term GRS tests often lead to rejections of the CAPM, especially in the second subperiod and in sorts on anomalies. Short term GRS-tests always reject the CAPM during the years 2000 to 2005. The results of Fama/MacBeth cross-sectional regressions depend on sorting, weighting and beta calculation. When we sort on beta and use value-weight portfolios the results for the full period, 1960 to 2007, are fully in line with the CAPM. Our interpretation of the results is that in Germany the pure domestic version of the CAPM works better than an extended model. It also works better for large firms than for small firms."

Return-Illiquidity Relationship Revisited

- Ricardo Buscariolli, Joao Mergulhao
- SSRN, available at http://ssrn.com/abstract=2154681
- Abstract: "We deal with the dynamic relationship between illiquidity and return assuming that these variables may be jointly determined. We decompose the effect of expected and unexpected illiquidity through time using a multi-equation model and then we measure the impact of illiquidity on returns accounting for simultaneity bias. Our analysis suggests that liquidity is priced but by a larger component when simultaneity biased considered. We also find that the impact of unexpected illiquidity on contemporaneous returns may be very small followed by positive effect, unlike past evidence, when we relax some previously taken assumptions on its functional form."

How are Shorts Informed? Short Sellers, News, and Information Processing

- Joseph Engelberg, Adam V. Reed, Matthew Ringgenberg
- SSRN, available at http://ssrn.com/abstract=2158900
- Abstract: "We find that a substantial portion of short sellers trading advantage comes from their ability to analyze publicly available information. Using a database of short sales combined with a database of news releases, we show that the well-documented negative relation between short sales and future returns is twice as large on news days and four times as large on days with negative news. Further, we find that the most informed short sales are not from market makers but rather from clients, and we find only weak evidence that short sellers anticipate news events. Overall, the evidence suggests that public news provides valuable trading opportunities for short sellers who are skilled information processors."

Business Financial Structure and Asset Pricing in the Spanish Stock Market

- Jose Luis Miralles-Marcelo, Maria del Mar Miralles-Quiros, Jose Luis Miralles-Quiros
- SSRN, available at http://ssrn.com/abstract=2151830
- Abstract: "The aim of this research is to analyze the implications of leverage and default as additional sources of systematic risk in the asset pricing process for the Spanish stock market over the years 1995-2010 employing two alternative methodologies based on Ferguson y Shockley (2003) y Vassalou y Xing (2004) respectively. Our results indicate that models which incorporate financial risks perform better than the traditional market model or the Fama and French (1993) model, both in time-series analyses and cross-sectionally. Finally, we observe that the market prices the leverage risk over the all sample while the default risk is only priced in recession and bear markets."

Derivatives and volatility

Stochastic Volatility and Jump-Diffusion --- Implications on Option Pricing

- George J. Jiang
- SSRN, available at http://ssrn.com/abstract=2155955
- Abstract: "This paper conducts a thorough and detailed investigation on the implications of stochastic volatility and random jump on option prices. Both stochastic volatility and jump-diffusion processes admit asymmetric and fat-tailed distribution of asset returns and thus have similar impact on option prices compared to the Black-Scholes model. While the dynamic properties of stochastic volatility model are shown to have more impact on long-term options, the random jump is shown to have relatively larger impact on short-term near-the-money options. The misspecification risk of stochastic volatility as jump is minimal in terms of option pricing errors only when both the level of kurtosis of the underlying asset return distribution and the level of volatility persistence are low. While both asymmetric volatility and asymmetric jump can induce distortion of option pricing errors, the skewness of jump offers better explanations to empirical findings on implied volatility curves."

Arbitrage Illustrated by Options Models

- Tumellano Sebehela
- SSRN, available at http://ssrn.com/abstract=2159474
- Abstract: "Most empirical studies on arbitrage opportunities tend to focus on arbitrage resulting from two securities, normally option value in relation to its underlying assets. However, in this empirical study it is illustrated that by writing different option values the amount of arbitrage increase than in case alluded earlier on in this abstract. More importantly, there are emerging multiple flexibilities in each case which gives rise to hedging opportunities without incurring any extra cost if any. Lastly, despite that the empirical study is on multiple arbitrage opportunities, overall results exemplify that sequential exchange opportunities are beneficial as they afford one opportunities to earn riskless profits while hedging without incurring extra costs."

Comparison of Methods to Estimate Option Implied Risk Neutral Densities

- Wan Ni Lai
- SSRN, available at http://ssrn.com/abstract=2156307
- Abstract: "This paper is a comparison study of non-parametric techniques used to estimate risk neutral densities from option prices. Cross sectional option prices are first generated using Monte Carlo simulation. Using these simulated options data, risk neutral densities of the underlying asset are estimated using three different non-parametric methods. The performance of these non-parametric estimation methods are then evaluated by comparing the estimated densities to the theoretical density. Unlike previous comparison studies that use traded options data without knowing the true risk neutral densities, this study uses simulated option data with known data generating processes and their corresponding risk neutral densities, hence giving a real evaluation on the non-parametric estimation methods. This study finds that the kernel regression method yields the best performance, followed by the spline interpolation method and the neural network models."

Appendix 1

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