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Markets Research

Global

Quantitative Strategy
Academic Insights

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Harnessing the best ideas from academia

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Welcome to our monthly Academic Insights report

Each month we survey the academic literature for interesting published and working papers related to quantitative investing. We review five papers in detail and also provide a list of other papers that piqued our interest this month.

Fresh insights from academia

Most of the academic finance literature has a massive U.S.-centric bias. Almost all the important studies focus on U.S. data, often leaving non-U.S. results either to an obscure appendix or for other authors to follow up on, often years later. However, an interesting paper this month suggests there may be a valid reason for this. The authors show that lagged monthly U.S. returns predict returns in major markets, but not the other way around. It seems that empirically speaking at least, the U.S. market does lead the world. The paper is also a nice complement to our own recent work on lead-lag relationships in economically-linked companies and countries.

Key papers this month

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

- International stock return predictability: What is the role of the United States
- Market expectations in the cross-section of present values
- The trend is our friend: Risk parity, momentum and trend following in global asset allocation
- Factor covariances predict factor returns
- Advancing strategic asset allocation in a multi-factor world

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 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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A letter to our readers

Welcome to *Academic Insights*

Growing up in New Zealand, your author was always a little bemused with the way Americans crown "world" champions in their professional sports leagues. Sure there are a few Canadian teams here and there, but to say the known world ends at the shores of the Atlantic and Pacific is surely a bit of a stretch.

Most academic research is U.S.-centric, despite the growing importance of other markets…

U.S.-centric for a reason?

Of course, the academic finance literature is not much better; it shares a similar U.S.-centric focus. In fact, almost all the most cited studies in the literature start with U.S. data, and then either include the rest of the world as an afterthought, or leave the international results for other authors to study, often years later. Interestingly though, a paper we review this month provides some justification for this biased view of the world. In Rapach, Strauss, and Zhou [2013], the authors show that lagged monthly U.S. market returns predict returns in other major markets, but not the other way around. In other words, international markets tend to follow the lead of the U.S. This result is a little surprising, largely because it is so simple. However, the fact the paper is forthcoming in *Journal of Finance* gives us some comfort the results are robust. Well worth reading for anyone trading global portfolios.

…but one paper this year provides some empirical evidence that the U.S. does indeed matter more than other markets

Multi-asset momentum

In addition to being U.S.-centric, most academic finance studies are also equities-focused. However, this is starting to change with the growing interest in cross-asset class portfolios. In our own research, we have studied in detail the efficacy of momentum in different asset classes.[1] For those looking for more reading on the topic, a useful new paper by Clare, Seaton, Smith, and Thomas [2013] offers some additional insights. A key feature of their study is the use of trend following strategies (essentially technical rules like moving average crossovers) to help mitigate so-called "momentum crashes", i.e. the episodic large drawdowns that tend to devastate momentum performance from time to time.

Momentum is pervasive even in a multi-asset setting; however it can be further improved by overlaying trend following strategies

Cross-sectional predictions for time-series returns

Another interesting paper this month focuses on predicting future market returns. This is a difficult task of course. Past research has suggested that country-level dividend yield and interest rates may have some explanatory power, but out-of-sample that power is weak at best. An interesting paper by Kelly and Pruitt [2013] tries something else. They focus on cross-sectional book-to-price ratios for all stocks in the universe. Using the information contained in that vector, they show how to build a more predictive model of future market returns that appears to work well even out-of-sample.

Information coded in the cross-section of book-to-price ratios can be used to predict market returns

For the rest of this month's papers, please read on. As always, if you have any comments or suggestions, we would love to hear them.

Regards,
The Deutsche Bank Quantitative Strategy Team

[1] Jussa et al., 2012, "Signal Processing: Cross asset class momentum", *Deutsche Bank Quantitative Strategy*, 5 November 2012

Five key papers this month

Paper 1: "International stock return predictability: What is the role of the United States"

- David Rapach, Jack Strauss, and Guofu Zhou
- *Journal of Finance*, forthcoming, available at http://www.afajof.org/details/journalArticle/4508371/International-Stock-Return-Predictability-What-is-the-Role-of-the-United-States.html
- Reviewed by Rochester Cahan

Why it's worth reading

In one of our recent research reports, we studied lead-lag relationships between economically-linked companies.[2] We've also examined such effects at the country level; for example our country rotation model exploits lead-lag relationships in the returns of import-export partners.[3] This paper falls into the same category, albeit with an even simpler message: U.S. market lagged returns significantly predict returns in other non-U.S. countries. However, those other countries *do not* predict U.S. returns.

Hidden lead-lag relationships have featured prominently in the academic research – and our own work – in recent years

Data and methodology

The data in this study are simple: monthly, cap-weighted, country level equity indexes taken from Global Financial Data's total return database. All returns are excess to each country's Treasury bill rate, and the backtest period is from 1980 to 2010. The countries considered are Australia, Canada, France, Germany, Italy, Japan, the Netherlands, Sweden, Switzerland, the U.K., and of course U.S. The basic methodology is a Granger causality test based on augmented predictive regressions. A country's return is regressed on its own lagged returns, another country's lagged return, and other variables known to predict market returns (like dividend yield and interest rates). All lags are one month. The key result is whether lagged U.S. returns Granger-cause the returns in the other countries, and vice versa. The authors are careful to adjust for the time-zones to make sure there is no look-ahead bias.

This paper has a very simple message: lagged U.S. market returns predict returns in other countries

Results

The authors find that lagged U.S. returns significantly Granger-cause returns in nine out of 10 countries. Furthermore, this impact is economically significant. The relationship does not, however, extend the other way: other countries have little impact on U.S. returns. The results also hold in out-of sample tests, although a caveat is that the gains from having lagged U.S. returns in a non-U.S. forecasting model are concentrated in NBER recession periods.

Lagged U.S. returns Granger-cause the returns in 9 out of ten markets considered

Our take

This is an interesting paper, and is obviously very simple to implement. Our biggest pushback would be that in recent years perhaps the importance of the U.S. has been waning; for example Europe dominated headlines – and market moves – for an extended period through the sovereign debt crisis.

More recent data would be interesting, to see if the U.S. dominance is diminishing

[2] Cahan et al., 2013, "Signal Processing: Uncovering hidden economic links", *Deutsche Bank Quantitative Strategy*, 28 March 2013
[3] Salvini et al., 2010, "Macromomentum country rotation", *Deutsche Bank Quantitative Strategy*, 15 August 2013

Paper 2: "Market expectations in the cross-section of present values"

- Bryan Kelly and Seth Pruitt
- *Journal of Finance*, forthcoming, available at http://www.afajof.org/details/journalArticle/4744271/Market-Expectations-in-the-CrossSection-of-Present-Values.html
- Reviewed by John Chen

Why it's worth reading

The aggregate price-dividend ratio is one of the most informative predictive variable researchers use to forecast the expected future market return. However, while the predictive power is good in-sample, it shows no out-of-sample predictive power. In this paper that authors take a different approach. Specifically they relate disaggregated value ratios to (1) aggregate expected market returns and (2) cash flow growth to create a dynamic latent factor model. The model has consistent predictive power in-sample as well as out-of-sample.

The Price-Dividend ratio works well in-sample to predict market returns, but fails out of sample

Data and methodology

The sample period is 1930 to 2010 for US data, and1975 to 2010 for international data. US market returns and dividend growth are from the CRSP value-weighted index. Individual stock data are from CRSP and Compustat. The authors use partial least squares (PLS) approach to construct a univariate forecaster for market returns which is a linear combination of assets' valuation ratios. The weight of each asset in the linear combination is based on the covariance of its value ratio with the forecast target. The PLS forecast use two sets of inputs. The first input is the forecasting target, and the authors focus on aggregate market returns and cash flow growth. The second input to PLS is the cross-section of book-to-market ratios. PLS is then implemented in three series of OLS regressions. The first stage is a time-series regression on the forecast target with each asset's book-to-market ratio. The second stage is a cross-sectional regression of assets' book-to-market ratios on their loadings estimated in the first stage. The final regression runs on the lagged factors estimated in the second stage with realized returns or cash flow growth rates.

This paper proposes an alternative approach based on the cross-section of book-to-price ratios

Results

PLS forecasts based on the cross-section of portfolio-level book-to-market ratios achieve an in-sample R-squared of 18.1% annually and 2.4% monthly. The out-of-sample prediction is also powerful; the R-squared is 13.1% for annual market returns and 0.9% for monthly returns. The authors also find the approach is robust in a number of ways. They find similar results in using six, 25, and 100 Fama-French portfolios. Strong out-of-sample forecast power is also found for annual returns on value-, size-, momentum-, and industry-sorted portfolios. Similar predictability is also found in the international sample.

The model shows strong predictive power both in-sample and out-of-sample, for both monthly and annual returns

Our take

This paper sheds new light on the dynamic processes for expected returns, and is a good addition to the literature. Many alternative predictors in this topic tend to perform well in-sample but have no predictive power out-of-sample, and even perform worse than forecasts based on the historical mean return. The authors' three-stage regression approach combines time-series information with cross-sectional information and can be used as an effective way to exploit a wealth of predictors in relatively short-time series, especially when the number of predictors is near or more than the number of observations, a situation where the standard OLS doesn't work.

This is an interesting approach, and worth exploring for any investor trying to better forecast future market performance

Paper 3: "The trend is our friend: Risk parity, momentum and trend following in global asset allocation"

- Andrew Clare, James Seaton, Peter Smith, and Stephen Thomas
- SSRN, available at http://ssrn.com/abstract=2126478
- Reviewed by Mehmet Beceren

Why it's worth reading

In the academic and practitioner literature, we can find many studies that analyze the performance of momentum and trend-following strategies (basically technical rules like moving average crossovers). A common result documented by those studies is that trend-following factors can help improve the risk-adjusted return of momentum strategies. This paper extends that literature to a multi-asset setting where momentum and trend-following signals are backtested within and across different asset classes. The results provide a reference point for the stylized facts related to a set of commonly-used technical signals driven from risk parity, momentum and trend measures.

For those doing asset allocation, this paper is a welcome departure from the usual equity-centric literature on momentum and trend following

Data and methodology

To investigate the performance of risk parity, momentum and trend-following strategies in multiple assets, the authors consider market indices from five broad asset classes: DM equities, EM equities, government bonds, commodities, and real estate. Also, they use the sub-components of some of those indices to delve into the country- or sector-level drivers of performance. The analysis is solely based on the total return series of the market indices and the technical signals calculated from the returns. The methodology of the paper is mostly a replica of two earlier papers by Faber [2007, 2010]. The analysis extends the asset universe in Faber [2010][4] and implements the technical signals within the asset allocation decisions.

The authors study an empirical asset allocation example using five broad asset classes

Results

The results are mainly the performance statistics of various combinations of momentum, risk-adjusted momentum and trend following strategies. Briefly, the main result is the common observation that the combination of momentum and trend-based strategies is able to show better performance, and smaller draw-downs, consistently in different asset classes. Also, the results demonstrate that a combination of momentum and trend signals can potentially be used as an asset allocation tool to improve long-term, risk-adjusted return. The authors also investigate if the returns of the backtested strategies are driven by the widely employed risk factors such as value and size; but they do not find any evidence suggesting that their backtests are driven by systematic exposures to value or size factors.

The authors show that the combination of momentum and trend following strategies work better than momentum alone, particularly from a downside risk perspective

Our take

Momentum is a well-documented risk factor. However, the crash-risk of plain momentum strategies is also widely known. To combine momentum with other technical measures to make the factor more reactive to fast-moving factors is a common practice. Therefore the paper does not present an innovation on that front. However, it is an extensive study that documents the nature and the stylized facts of the momentum and trend-following factors in a multi-asset framework. The results provide a good summary and a number of thinking points about momentum, risk parity and trend measures that can be applied across various asset classes.

Momentum is always topical, but much of the focus is on equities momentum; this paper is a useful addition to the multi-asset momentum literature

[4] Faber, M., 2010, "Relative Strength Strategies for Investing", SSRN working paper, available at http://ssrn.com/abstract=1585517

Paper 4: "Factor covariances predict factor returns"

- Nigel Barradale and Soeren Hvidkjaer
- SSRN, available at http://ssrn.com/abstract=2283084
- Reviewed by Sheng Wang

Why it's worth reading

Alternative beta (aka risk factor premium) has taken center stage amongst the various topical subjects being followed by the asset owner community and other institutional investors. This paper analyzes the returns to a set of characteristic factor portfolios and examines their relationship with naïve investor behavior via means of factor covariances. The aim of course is to use this relationship to predict factor performance that can potentially be used in factor timing.

This paper discusses factor return predictability via means of factor covariances

Data and methodology

This paper uses the standard US stock data from CRSP and Compustat covering stock returns from July 1967 to December 2010. The authors considered nine conventional low turnover factor portfolios which have significant positive returns over the sample period and were not highly correlated with each other. All factor portfolios are formed at the end of June each year based on the prior year's accounting data. The composite factor portfolio is equally weighed across the nine factor portfolios. The authors controlled their results for the Market Premium, Size and Momentum.

This paper used the data from CRSP and Compustat from 1967 to 2010 and factor portfolios are formed in June each year

Factor Beta and Relative Volatility are computed using daily factor returns within each month. Then the following predictive variables are constructed across the factors: Average Factor Beta; Average Factor Relative Volatility; Standard Deviation of Factor Beta; Standard Deviation of Factor Relative Volatilities; First Principal Component of the time series of each of the prior metrics. The authors then use these predictive variables to analyze a factor timing strategy using the composite factor portfolio returns which are sorted according to the decile of the prior month's First Principal Component.

For the factors the authors compute a range predictive variables, and then extract the first principal component to use as a single predictor

Results

They find that the factor portfolios exhibit significant negative market Betas and that more negative Beta across the factors predicts higher returns over the next two years. Average Factor Relative Volatility, the standard deviation of the Factor Beta and Factor Relative Volatilities are also found to predict future factor returns. The strongest predictive power however is found in the first principal component of the four predictive variables. Moreover, the average beta across factors is highly negatively correlated across time with the Baker and Wurgler investor sentiment measure; supporting the hypothesis that the trading behavior of naïve investors drives returns to the factor portfolio. The factor timing strategy suggests that the First Principal Component has predictive power for the returns of the composite factor portfolio.

They find that the factor portfolios have negative market bet; the average and the standard deviation of market beta and factor relative volatility predict future factor returns

Our take

We like this paper because it takes a different approach to factor timing than some of our past work[5][6][7]. However, it's important to note that this paper is not a trading strategy per se, as the principle component and decile break points are determined using the whole time-series. So while theoretically interesting, more work is needed to determine if the results hold out-of-sample.

Factor timing signals introduced in this paper are interesting, but not yet a real-time strategy

[5] Alvarez et al., "Uncertainty and Style Dynamics", *Deutsche Bank Quantitative Strategy*, 18 April 2012.
[6] Cahan et al., "It's all in the timing", *Deutsche Bank Quantitative Strategy*, 19 August, 2010
[7] Yin et al., "Style rotation", *Deutsche Bank Quantitative Strategy*, 7 September, 2010

Paper 5: "Advancing strategic asset allocation in a multi-factor world"

- Farshid M. Asl and Erkko Etula
- *Journal of Portfolio Management*, Volume 39, Number 1, available at http://www.iijournals.com/doi/abs/10.3905/jpm.2012.39.1.059
- Reviewed by Yin Luo

Why it's worth reading

As the authors argue "strategic asset allocation is arguably the most important, yet one of the least advanced aspects of investing". In this paper, Asl and Etula developed a multi-factor framework to analyze strategic asset allocation issues, such as portfolio construction, risk analytics, etc.[8] Most existing multi-factor models are developed within a given asset class, while Asl and Etula's model is the first of its kind designed for multi-assets.

Strategic asset allocation is arguably the most important investment decision of all; yet it is in many ways the least advanced

Data and methodology

The authors suggest a six-factor model for all asset classes: equity (equity market risk), term (inflation and interest rate risk), funding (risk in short-term credit conditions), liquidity (risk in market-wide liquidity conditions), FX (systematic exchange rate risk), EM (risks specific to emerging markets).

This paper proposes a simple multi-asset risk model that can be used in the asset allocation decision

Asl and Etula also develop a robust optimization framework that takes into account the long-term return forecast and risk forecast of each asset class. They use this to illustrate the benefit compared to traditional techniques like risk parity[9].

Results

The authors show that their six-factor model more than doubles the average estimation precision for typical asset classes, especially for hedge funds and other alternative investments. For example, the traditional CAPM explains a negligible portion of historical returns for macro/tactical hedge funds, while Asl and Etula's six-factor model assigns a total risk premium of 3%. Along the lines of Mesomeris et al. [2012], the authors also suggest there are potential benefits to be had from diversification across factor risk premia (since the six risk factors are investable) rather than traditional asset classes.

The risk model more than doubles the average estimation precision for typical asset classes

Our take

We think this research is very interesting and proposes a few innovative features. However, we wish the authors could provide more details on their methodology. For example, there is no detailed description of the asset classes, backtesting horizon and frequency, and mathematical definitions, which makes it almost impossible to reproduce the results. The benefit of the robust optimization over risk parity critically depends on the accuracy of return forecast. Without details, it is difficult to verify the results. The last two sections on "factor-based risk analytics" and "factor-based portfolio projections" are also a little light compared to the other sections.

This is an interesting read, although it would be nice to have more details on methodology

[8] We have also been publishing in this space. See Mesomeris et al., 2012, "A New Asset Allocation Paradigm" and Luo et al., 2013, "DB Handbook of Portfolio Construction, Part 1",

[9] In Luo et al., 2013, "DB Handbook of Portfolio Construction, Part 1", we have independently developed a few other robust optimization techniques to account for the non-normal nature of asset returns in portfolio construction.

Upcoming conferences

Europe

Figure 1: European event calendar

Date	Location	Conference
8-11 September 2013	Oxford	London Quant Group Autumn Seminar http://www.lqg.org.uk/autumn-seminar-2013/
14-16 December 2013	London	Computational and Financial Econometrics http://www.cfenetwork.org/CFE2013/

Source: Deutsche Bank

North America

Figure 2: North American event calendar

Date	Location	Conference
11 July 2013	Boston	CQA Academic Review Session www.cqa.org
16-18 July 2013	New York	CFA Institute/EDHEC-Risk Advances in Asset Allocation Seminar http://www.cfainstitute.org/learning/products/events/Pages/04152013_77335.aspx
17-19 July 2013	New York	Quant Congress USA http://www.quantcongressusa.com/
8-9 October 2013	New York	EDHEC-Risk Days in North America http://www.edhec-risk.com/events/edhec_conferences/northamericadays2013?newsletter=yes
11 September 2013	Chicago	CQA Fall Conference www.cqa.org
10-12 November 2013	New Orleans	Factset Symposium http://www.factset.com/campaigns/symposium2013

Source: Deutsche Bank

Asia

Figure 3: Asian event calendar

Date	Location	Conference
6 November 2013	Hong Kong	CQAsia Fall Conference http://cqa.org/

Source: Deutsche Bank

Other papers of interest

Alpha generation and stock-selection signals

Corporate social responsibility in the banking industry: Motives and financial performance

- Meng-Wen Wu and Chung-Hua Shen
- *Journal of Banking and Finance*, Volume 37, Number 9, available at http://www.sciencedirect.com/science/article/pii/S0378426613002069
- Abstract: "The current study investigates the association between corporate social responsibility (CSR) and financial performance (FP), and discusses the driving motives of banks to engage in CSR. Three motives, namely, strategic choices, altruism, and greenwashing, suggest that the relationship between CSR and FP is positive, non-negative, and non-existent, respectively. We obtained our sample, which covered 2003–2009, from the Ethical Investment Research Service (EIRIS) databank and Bankscope database. The data consists of 162 banks in 22 countries. We then classified the banks into four types based on their degree of engagement in CSR. This study proposes the use of an extended version of the Heckman two-step regression, in which the first step adopts a multinomial logit model, and the second step estimates the performance equation with the inverse Mills ratio generated by the first step. The empirical results show that CSR positively associates with FP in terms of return on assets, return on equity, net interest income, and non-interest income. In contrast, CSR negatively associates with non-performing loans. Hence, strategic choice is the primary motive of banks to engage in CSR."

An emerging markets analysis of the Piotroski F Score

- Charles Hyde
- SSRN, available at http://ssrn.com/abstract=2274516
- Abstract: "We examine the F score in global emerging markets and show there is a meaningful premium attached to high F score stocks which is unrelated to the size, value and momentum premiums. It is larger for high value stocks, moderately higher for high momentum stocks and unrelated to stock size. This suggests the usual explanation for the power of the F score – investor neglect of high F score stocks – is incomplete because big cap and high momentum stocks are typically not neglected. We conjecture another factor shaping the premium to high F score stocks is the confirmation bias."

Optimization, portfolio construction, and risk management

Stock crashes led by accelerated price growth

- James Xiong
- SSRN, available at http://ssrn.com/abstract=2275998
- Abstract: "With a series of robust cross-sectional regressions, we show that accelerated price growth over the last two or three years is a strong contributing factor to stock crashes. We also found supporting evidence in the aggregate stock market. These findings are economically meaningful as investors can better forecast crashes based on the past accelerated rate of growth."

Sovereign and bank CDS spreads: Two sides of the same coin for European bank default prediction?

- Davide Avino and John Cotter
- SSRN, available at http://ssrn.com/abstract=2282587
- Abstract: "This paper investigates the relationship between sovereign and bank CDS spreads with reference to their ability to convey timely signals on the default risk of European sovereign countries and their banking systems. For a sample including six major European economies, we find that sovereign and bank CDS spreads are cointegrated variables at the country level. We then perform a more in-depth investigation of the underlying price discovery mechanisms, and find that both variables have an important price discovery role in the period preceding the financial crisis of 2007-2009. However, during the global financial crisis and the subsequent European sovereign debt crisis, sovereign CDS spreads dominate the price discovery process. Our findings strongly suggest that, especially during crisis periods, sovereign CDS spreads incorporate more timely information on the default probability of European banks than their corresponding bank CDS spreads. Price discovery measures based on CDS prices could be used as market triggers to increase equity levels at financial institutions and in the various forms of contingent capital."

Asset Allocation and sector/style/country rotation

Flight to quality and asset allocation in a financial crisis

- Terry Marsh and Paul Pfleiderer
- *Financial Analysts Journal*, Volume 69, Number 4, available at http://www.cfapubs.org/doi/abs/10.2469/faj.v69.n4.3
- Abstract: "With respect to the recent financial crisis, the authors argue that the appropriate adjustments to portfolio allocations in response to the market dislocation are determined by equilibrium considerations (supply must equal demand) and depend on individual investors' characteristics relative to societal averages. Using a simple model that captures the magnitude of the recent crisis, the authors show that the optimal tactical adjustments for most portfolios require a turnover of less than 10%."

Sovereign bond risk premiums

- Engelbert Dockner, Manuel Mayer, and Josef Zechnew
- SSRN, available at http://ssrn.com/abstract=2275916
- Abstract: "Credit risk has become an important factor driving government bond returns. We therefore introduce an asset pricing model which exploits information contained in both forward interest rates and forward CDS spreads. Our empirical analysis covers euro-zone countries with German government bonds as credit risk-free assets. We construct a market factor from the first three principal components of the German forward curve as well as a common and a country-specific credit factor from the principal components of the forward CDS curves. We find that predictability of risk premiums of sovereign euro-zone bonds improves substantially if the market factor is augmented by a common and an orthogonal country-specific credit factor. While the common credit factor is significant for most countries in the sample, the country-specific factor is significant mainly for peripheral euro-zone countries. Finally, we find that during the current crisis period, market and credit risk premiums of government bonds are negative over long subintervals, a finding that we attribute to the presence of financial repression in euro-zone countries."

Factor investing

- Andrew Ang
- SSRN, available at http://ssrn.com/abstract=2277397
- Abstract: "Factor investing asks: how well can a particular investor weather hard times relative to the average investor? Answering helps her reap long-run factor premiums by embracing risks that lose money during bad times, but make up for it the rest of the time with attractive rewards. When factor investing can be done cheaply, it raises the bar for active management."

Currency premia and global imbalances

- Pasquale Della Corte, Steven Riddiough, and Lucio Sarno
- SSRN, available at http://ssrn.com/abstract=2280952
- Abstract: "Global imbalances are a fundamental economic determinant of currency risk premia. We propose a factor that captures exposure to countries' external imbalances - termed the global imbalance risk factor - and show that it explains most of the cross-sectional variation in currency excess returns. The economic intuition of this factor is simple: net foreign debtor countries offer a currency risk premium to compensate investors willing to finance negative external imbalances. Investment currencies load positively on the global

imbalance factor while funding currencies load negatively, implying that carry trade investors are compensated for taking on global imbalance risk."

Currency risk premia and macro fundamentals

- Lukas Menkhoff, Lucio Sarno, Maik Schmeling, and Andreas Schrimpf
- SSRN, available at http://ssrn.com/abstract=2282480
- Abstract: "Macroeconomic fundamentals have substantial predictive power for exchange rates. Adopting a multi-currency portfolio perspective, we show that currency excess returns are predictable out of sample conditioning on several standard macro fundamentals, including interest rate differentials, real GDP growth, real money growth, and real exchange rates. The predictability primarily derives from variation in fundamentals across countries and much less from variation of fundamentals over time. This explains why prior work focusing on the time-series behavior of bilateral exchanges rates generally had trouble establishing a robust link between economic variables and exchange rates. We further show that currency excess returns to portfolios sorted on fundamentals can be understood by their joint exposure to dynamic business cycle risks."

Trading and market impact

Do opening stock prices contain information content?

- Harlan Platt and Licheng Cai
- *Journal of Trading*, forthcoming, available at http://www.iijournals.com/doi/abs/10.3905/jot.2013.2013.1.026
- Abstract: "Some traders employ strategies that are based on taking advantage of opening price gaps. Using a large data set of company-specific trading days, we explore the question of whether after opening with a price gap, securities tend to continue to trade in the direction of the gap or whether they trade in the reverse direction. In addition, we also compare the opening price level, following a price gap, to the intraday high and low prices."

A big data approach to analyzing market volatility

- Kesheng Wu, Wes Bethel, Ming Gu, David Leinweber, and Oliver Ruebel
- SSRN, available at http://ssrn.com/abstract=2274991
- Abstract: "Understanding the microstructure of the financial market requires the processing of a vast amount of data related to individual trades, and sometimes even multiple levels of quotes. Analyzing such a large volume of data requires tremendous computing power that is not easily available to financial academics and regulators. Fortunately, public funded High Performance Computing (HPC) power is widely available at the National Laboratories in the US. In this paper we demonstrate that the HPC resource and the techniques for data-intensive sciences can be used to greatly accelerate the computation of an early warning indicator called Volume-synchronized Probability of Informed trading (VPIN). The test data used in this study contains five and a half year's worth of trading data for about 100 most liquid futures contracts, includes about 3 billion trades, and takes 140GB as text files. By using (1) a more efficient file format for storing the trading records, (2) more effective data structures and algorithms, and (3) parallelizing the computations, we are able to explore 16,000 different ways of computing VPIN in less than 20 hours on a 32-core IBM DataPlex machine. Our test demonstrates that a modest computer is sufficient to monitor a vast number of trading activities in real-time -- an ability that could be valuable to regulators."

An empirical analysis of market segmentation on U.S. equities markets

- Frank Hatheway, Amy Kwan, and Hui Zheng
- SSRN, available at http://ssrn.com/abstract=2275101
- Abstract: "This paper examines the impact of trading on markets partially exempt from National Market System requirements on equity market quality. Lit and dark trading venues differ in their regulatory structure most notably in whether they must provide fair-access and pre-trade transparency and restrict sub-penny trading increments. We find evidence consistent with the notion that dark venues rely on their special features to segregate order flow based on asymmetric information risk, which results in their transactions being less informed and contributing less to price discovery on the consolidated market. We show that the effects of order segmentation by dark venues are damaging to overall market quality except for the execution of large transactions."

Assessing stop-loss and re-entry strategies

- Joachim Klement
- SSRN, available at http://ssrn.com/abstract=2277722
- Abstract: "Stop-loss strategies are used by many practitioners to limit excessive losses on existing investments. In practice, however, the value of stop-losses can only be assessed when re-entry rules are considered jointly with stop-loss rules. In this paper we analyze the benefits of joint stop-loss and re-entry rules from the perspective of both risk reduction and return enhancement for six different global equity markets as well as for listed real estate investments, a commodity index and gold. We find that stop-loss rules significantly reduce volatility and excessive losses. The evidence on return enhancement, however, is mixed, with stop-losses increasing absolute and risk-adjusted returns for most equity markets and listed real estate but not for commodity indices or gold. We also find significant differences between secular bull and bear markets, with stop-loss and re-entry rules providing higher risk-adjusted returns during secular bear markets but not during bull markets."

Should we be afraid of the dark? Dark trading and market quality

- Sean Foley and Talis Putnins
- SSRN, available at http://ssrn.com/abstract=2279719
- Abstract: "Growth in trading without pre-trade transparency, 'dark trading,' has caused considerable concern among regulators and exchanges worldwide about its impact on market quality. These concerns recently prompted Canadian regulators to implement novel restrictions on dark trading. We exploit this natural experiment, which reduced the level of dark trading by more than one third literally overnight, together with proprietary trade-level data from dark trading venues to examine the impact of dark trading on liquidity and informational efficiency. We find that low levels of dark trading, as exist in Canada, are largely beneficial, reducing quoted, effective and realized spreads and increasing informational efficiency. Our results are consistent with the notion that, to a point, dark trading increases competition among informed traders who seek to capture rents from liquidity provision while minimizing leakage of their information. We do not find any evidence that the Canadian restrictions caused migration of dark trading to the US in cross-listed stocks."

Finance theory and techniques

"Sell in May and go away" just won't go away

- Sandro Andrade, Vidhi Chhaochharia, and Michael Fuerst
- *Financial Analysts Journal*, Volume 69, Number 4, available at http://www.cfapubs.org/doi/abs/10.2469/faj.v69.n4.4
- Abstract: "We performed an out-of-sample test of the sell-in-May effect documented in previous research. Reducing equity exposure starting in May and levering it up starting in November persists as a profitable market-timing strategy. On average, stock returns are about 10 percentage points higher for November–April half-year periods than for May–October half-year periods. We also found that the sell-in-May effect is pervasive in financial markets."

Active share and mutual fund performance

- Antti Petajisto
- *Financial Analysts Journal*, Volume 69, Number 4, available at http://www.cfapubs.org/doi/abs/10.2469/faj.v69.n4.7
- Abstract: "Using Active Share and tracking error, the author sorted all-equity mutual funds into various categories of active management. The most active stock pickers outperformed their benchmark indices even after fees, whereas closet indexers underperformed. These patterns held during the 2008–09 financial crisis and within market-cap styles. Closet indexing has increased in both volatile and bear markets since 2007. Cross-sectional dispersion in stock returns positively predicts performance by stock pickers."

Stock market performance: High and low months

- Vichet Sum
- SSRN, available at http://ssrn.com/abstract=2275061
- Abstract: "This study analyzes stock market performance in 70 countries to determine which months generate higher returns and which months exhibit lower returns. Results from numerical analyses and t-tests show that returns are significantly higher in January, February, April, July and December relative to the other months of the year. Return in the month of September is the lowest compared to the rest of the months followed by returns in August, October, June, November, May and March, respectively. The findings seem to offer evidence of the other monthly anomalies (April and December anomalies, in this case) in addition to the January anomaly reported in the literature based on the analyses of market level data."

Value around the world

- Nilufer Caliskan and Thorsten Hens
- SSRN, available at http://ssrn.com/abstract=2274823
- Abstract: "Over the last decades the value premium has well been documented for various time spans and countries. It is proven to be a consistent asset pricing anomaly. This study presents the largest international study on portfolio returns formed according to the book-to-market ratio and examines how cultural differences affect the magnitude of value returns. The cultural differences are measured in two dimensions: patience and risk aversion based on the data collected by the International Test on Risk Attitudes (INTRA). In accordance with a consumption based Gordon model we find that risk aversion is positively and patience negatively related to the magnitude of value profits. Similar results hold for the average stock volatility. Although patience is

positively related with the degree of economic development, its relation to value returns does not disappear after controlling for general economic and financial development measures. Furthermore, we find that the value premiums are also positively associated with the country price earnings ratio and negatively related to firm size."

News-driven return reversals: Liquidity provision ahead of earnings news

- Eric So and Sean Wang
- SSRN, available at http://ssrn.com/abstract=2275982
- Abstract: "This study documents a six-fold increase in short-term return reversals during earnings announcements relative to non-announcement periods. Following prior research, we use reversals as a proxy for expected returns market makers demand for providing liquidity. Our findings suggest that market makers demand higher expected returns prior to earnings announcements because of increased inventory risks that stem from holding net positions through the release of anticipated earnings news. These findings indicate that increases in market makers' inventory risks result in reduced liquidity through a channel distinct from adverse selection risks and that pre-announcement demand for liquidity provision results in predictable variation in earnings announcement returns. We also use pre-announcement option prices to show that return reversals increase when there is greater expected volatility during earnings announcements. Collectively, our findings suggest that uncertainty regarding anticipated information events elicits predictable increases in expected returns to liquidity provision and that these increases significantly affect the dynamics and information content of market prices."

Corporate financing activities, fundamentals to price ratios and the cross-section of stock returns

- George Papanastasopoulos, Dimitrios Thomakos, and Tao Wang
- SSRN, available at http://ssrn.com/abstract=2277780
- Abstract: "The purpose of the paper is to provide new insights on the relation between the value/growth anomaly and the external financing anomaly by considering an expanded value/growth indicator: free cash flow yield (free cash flows scaled by price). In line with the literature on contrarian portfolios, we find that firms with low (high) free cash flow yield are experiencing low (high) returns. However, only when an investor buys (sells) stocks of firms with high (low) free cash flow yield that distribute (raise) capital, his zero-cost portfolio is significant. These findings are robust, irrespective of the financing vehicle (equity or debt). Overall, our evidence suggests that distinctions between the value/growth anomaly and the external financing anomaly partially disappear, if one is willing to employ free cash flow yield as a proxy of the former anomaly."

Building a financial conditions index for the Euro area and selected Euro area countries: What does it tell us about the crisis?

- Eleni Angelopoulou, Hiona Balfoussia, and Heather Gibson
- SSRN, available at http://ssrn.com/abstract=2253844
- Abstract: "In this paper we construct Financial Conditions Indices (FCIs) for the euro area, for the period 2003 to 2011, using a wide range of prices, quantities, spreads and survey data, grounded in the theoretical literature. One FCI includes monetary policy variables, while two versions without monetary policy are also constructed, enabling us to study the impact of monetary policy on financial conditions. The FCIs constructed fit in well with a narrative of financial conditions since the creation of the monetary union. FCIs for individual euro

area countries are also provided, with a view to comparing financial conditions in core and periphery countries. There is evidence of significant divergence both before and during the crisis, which becomes less pronounced when monetary policy variables are included in the FCI. However, the impact of monetary policy on financial conditions appears not to be entirely symmetric across the euro area."

Derivatives and volatility

Returns from trading call options

- Ryan McKeon
- *Journal of Investing*, Volume 22, Number 2, available at http://www.iijournals.com/doi/abs/10.3905/joi.2013.22.2.064
- Abstract: "While much work has been done on pricing of options and expected returns theory, far less has been written on the actual returns that investors receive from trading options. In the case of call options on equity, standard asset pricing theory suggests large, positive average returns, while articles and comments in the popular press suggest that many investors lose money trading options. Empirical results in the academic literature are few, and results are mixed. In this article, I study call option returns, analyzing how returns vary by levels of moneyness and different holding periods for both equity index and individual stock call options. I find a general and consistent result that call option returns are low on average and decreasing in the strike price. Only in-the-money options held for a month exhibit positive returns. Deep out-the-money options deliver large negative returns on average, consistent with risk-seeking investing on the part of buyers. I discuss the implications for some common options trading strategies."

Appendix 1

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