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Transaction Costs & Institutional Trading

Rey Juan Carlos, Barcelona



INSTITUTE FOR QUANTITATIVE INVESTMENT RESEARCH

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Summary of Inquire Europe Seminar

**“Transaction Costs
and Institutional Trading”**

5-7 October 2003

Rey Juan Carlos, Barcelona

Summarised by:

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REY JUAN CARLOS, BARCELONA, SPAIN

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Monday, 6 October 2003

Key Note Address: Are Institutional Brokerage and Best Execution Compatible?

Benn Steil, *International Economics Council on Foreign Relations*

**The Role of Transaction Costs for Financial Volatility:
Evidence from the Paris Bourse***

Harald Hau, *INSEAD*

The Microstructure of the EuroMTS*

Frank de Jong, *University of Amsterdam, Finance Group*

Institutional Trading and Spread,

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Shady Stocks And The Value Premium

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Risk, Dispersion of Analyst Forecasts and Stock Returns

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Panel: Transaction Costs in Practice

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Remco Kroon, *Aegon*

Arjen Pasma, *ABN-AMRO Asset Management*

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Tuesday, 7 October 2003

Key Note Address: A Brief Review of Short Exposure

David Musto, *Wharton School, University of Pennsylvania*

Breadth of Ownership and Stock Returns

Joseph Chen, *Marshall School of Business, University of Southern California*

Securities Lending, Shorting and Pricing

Nicolae Gârleanu, *INSEAD*

* Research Sponsored by Inquire Europe

Keynote Address: Are Institutional Brokerage and Best Execution Compatible?

Benn Steil,
International Economics Council on Foreign Relations

In the opening key note address, Benn Steil presented some of his work on institutional trading costs. Key issue in his presentation was the relation between market structure, trading practice and trading costs.

Over the past decades, improvements in trading system technology have led to reduced trading costs and a reduced need for human intermediation in the trading process. Research shows that over the period of 1996-1998 average trading costs amount to 37 basis points for the U.S. markets and 38 basis points for European markets. For the U.S., average trading costs of brokeraged orders are 11 basis points higher at the NYSE and 26 basis points higher at NASDAQ. Why is a considerable amount of order flow still intermediated? Research addressing this question focuses on the U.S. markets because in Europe, most of the trading costs can be attributed to explicit costs. For the U.S. markets, only 7 basis points of the total average trading costs can be attributed to explicit costs. Apparently not all trading commissions paid are used for trading. Commissions bundle execution and non-execution payments.

The practice of paying commissions wholly unrelated to trading (soft commissions) is widespread in the U.S. An average broker kicks back 63% in products and services to the investor (1998 SEC findings). However, many of these trading arrangements are not disclosed to clients and some of them involve products and services that do not directly benefit the clients of the investor. In these cases commission bundling entails a conflict of interest between the investor and the clients. After correcting for the value of the kick back of products and services by the broker, soft-dollar practices still cost money rather than add value.

Results from a survey of chief investment officers and head equity traders at 72 major asset management firms in North America, Europe and Australia shed further light on this issue. A majority of head equity traders say that soft commissions are appropriate for both broker research as well as third party services such as computer systems. At the same time a majority state that unbundling execution and non-execution payments is desirable but doubt the feasibility. In judging the quality of execution, traders find immediacy (fast execution) important. This desire for immediacy can neither be explained from the larger weight given to longer term share prices in stock purchase decisions, nor from the time period taken to make a purchase decision (typically longer than one day). Furthermore, if the trade decision is made on the

basis of a perceived mispricing, traders on average believe the price correction to occur between one month and a year. A possible explanation is the effect of commission bundling. It requires traders to give up their identity and order information, leading to information leakage and traders want to prevent potential front running by brokers by requiring immediacy. The remedy to this problem would be to trade directly and anonymously.

For a stylized fund with a 100 basis points management fee and 127% turnover, 70.5 basis points are additional costs clients do not know of because of soft dollar trading. Suppose the fund switches to buying research with its own capital and starts trading through automated trading systems (ATS). The amount saved on direct commissions turns out to be outweighed by the increase in costs of research and execution. If the management fee would have been higher than 118 basis points, the effective management fee from buying research oneself and trading through an ATS would be lower than the fee under commission bundling.

The example shows that there is an economic rationale for intermediation and commission bundling in current industry practice. Three factors can help to kill soft commissions. First, because automated trading costs are still decreasing, the implicit cost of research under commission bundling is increasing. Second, awareness of transaction costs is increasing through education and better measurement. Using only measures such as volume weighted average price (VWAP) is too limited. Third, regulatory forces are at work. In the U.K., the Myners report argues for restructuring incentives in the industry. These factors will move the industry towards unbundling of commissions for execution and research and to transparent, disintermediated trading systems.

The Role of Transaction Costs for Financial Volatility: Evidence from the Paris Bourse*

Harald Hau,
INSEAD

The presentation by Harald Hau on the relationship between transaction costs and volatility is sponsored by Inquire Europe and relates to an older unresolved debate on the role of speculation in financial markets. Keynes argued that an increase in transaction costs through government taxation would mitigate the predominance of speculation in trading, whereas Friedman argued that speculation is stabilizing rather than the reverse. Nowadays the relation between transaction costs and volatility is still an open question. Is it a coincidence that transaction costs have decreased over the last decades while financial volatility has increased?

The existing literature on this topic suffers from two shortcomings. In a series of papers the distinction between changes in volatility due to time and changes in volatility due to changes in market structure is not properly made. As volatility is time varying this is an aspect that should be accounted for. In other papers the applied volatility measure is not robust to the market microstructure. The existing evidence on the relation between transaction costs and volatility is therefore questionable. Tick size regulation of the electronic limit order book on the Paris Bourse (prior to introduction of the Euro) offers a natural experiment to deal with the first issue, a linear volatility metric deals with the second.

On the pre-Euro Paris Bourse, the FF 500 stock price boundary determined the tick size of the stock. When the stock price passed FF 500, the tick size changed significantly from FF 0.1 to FF 1. Evidence on U.S. and Canada tick size studies strongly suggest a positive correlation between tick size and transaction costs. The advantage of the Paris Bourse setting is that a change in tick size is not a single event affecting all stocks at the same time. Depending on the price process, a stock can move into both tick size regimes several times. Using 4 years of data (1995-1998) of all CAC40 stocks which trade in the price interval from FF400 to FF600, a panel data set is thus created on which powerful statistical tests can be applied. The effective spread turns out to be 20% larger in the large tick size regime.

To measure volatility, a metric is needed that is robust to the use of different tick sizes. In some of the previous studies standard deviation is used, but this measure is sensitive to the size of the rounding error that is implicit in an observed price. Therefore, the range is proposed as a volatility metric that is insensitive to the use of different tick sizes, as it is linear in the rounding error. The range is defined as the

difference between the highest and lowest midprice in a time interval. Using this measure, the unconditional volatility is 15% higher in large tick size regimes. The panel data can be used to condition the volatility measure on the regime, time of day and stock idiosyncratic variables. The conditional impact of tick size regime on volatility turns out to be even larger, around 26%. These findings are even more pronounced when controlling for market wide volatility, as the large tick size constraint is more binding in periods of low market wide volatility.

Apart from the empirical finding of a relation between transaction costs and volatility, these results also contribute to the debate on the stabilizing effect of taxes. The tick size regime shift can be seen as an implicit Tobin tax from the liquidity demand side of the market, but liquidity suppliers will prefer a larger tick size to a taxation. So taxation will decrease liquidity supply and increase volatility. If larger ticks do not create more stability, a tax will even less do so. Results of this paper therefore oppose Keynes argument that taxes have a stabilizing effect on volatility.

The Microstructure of the EuroMTS*

Frank de Jong,
University of Amsterdam, Finance Group

Frank de Jong presented an Inquire Europe sponsored paper that is joint work with Yiu Chung Cheung and Barbara Rindi. In the first part, details of the MTS system and its transaction costs were presented, followed by an analysis of price and order flow dynamics.

The MTS is an interdealer system for trading fixed income securities that originated from the Italian government bond market. Euro government bonds are the most actively traded asset and subject of study in this paper. There is also some trading in assets like supranational bonds, corporate bonds and mortgage backed securities. Euro government bonds are not solely traded on the MTS, there is trading in over the counter markets and exchanges as well. The MTS is organized as an electronic limit order book, in which primary dealers are obliged to quote prices (“proposals”) and traders act as market takers. They decide whether or not to trade given the current quotes. Ex-ante traders are anonymous, but the identity is revealed after a trade .

The MTS currently accomodates a domestic trading platform per country as well as a EuroMTS platform. On the domestic platforms all issues of one country are traded whereas on the EuroMTS platform only the most active (benchmark) bonds are traded. In terms of trading volume, the domestic platform is dominant for Italian, French and Belgium bonds. The best 5 bid and ask quotes with quantities are available to market participants. Market makers are constrained by a maximum spread and a minimum quote quantity.

Data on transactions from the 2001 to beginning of 2002 period are used as well as data on quotes from two weeks in February 2001. This latter dataset covers a shorter period of time as data on quotes grows rapidly in size as quotes change very often. Most of the transaction data is from the Italian market because of its size. The volume weighted quoted spread (VWQS) is around 3 basis points for most issues and around 12 basis points for longer maturity issues. Italian bond spreads are smallest. Available depth is sufficiently large for all issues. The effective spreads take into account realized transaction prices and are smaller than the VWQS, but not significantly so. Spreads on the EuroMTS are wider compared to domestic MTS spreads, but again the difference is not significant.

The second part of the presentation deals with price and order flow dynamics. A vector autoregression model with time varying parameters is estimated in which price change and quantity (signed by the direction of the trade) are explained by their lagged values, duration between trades and a EuroMTS platform dummy. Impulse response functions can be inferred from the estimation results, which show the accumulated price effect of a trade. Order flow immediately affects prices with hardly any lagged effect. For a typical Italian bond that matures in 2011, the average impact is around 0.6 basis points. This is larger when the market is relatively inactive. In these periods, order clustering (buy orders followed by buy orders) is weaker as well.

In short, the results show no significant difference in spreads between the domestic and EuroMTS platform and order flow is important to price discovery. The price and order flow dynamics depend on the level of trading intensity.

Institutional Trading and Spread

Malay Dey,

Morgan State University, Department of Accounting and Finance

The presentation by Malay Dey on the relation between institutional trading and the bid-ask spread and its components is joint work with B. Radhakrishna. Institutions are more and more dominating U.S. equity markets and at the same time large trades are becoming more important. But this does not mean that all large trades and institutional trades are the same. Large trades are usually associated with information trading and increasing volatility but an institution may be trading due to liquidity shocks of clients. So although the institution itself is informed in one direction, the trades may well go in the other direction. The aggregation of information and non information effects determines the trading of the institution.

In the literature significant relationships are found between market and trade variables and the spread. In this paper, institutional trading is tested as additional explanatory variable using a panel data regression model. Furthermore the differential effect between buy and sell trades is tested. Given the size and unique features of institutional trading, both effects are hypothesized to be present. In the panel data regression model, the daily spread (effective and relative) is explained by number of trades, trading volume, price and the proportion of institutional trading for each day. The estimator takes into account both the autocorrelation as well as the contemporaneous correlation in the error term. The TORQ dataset is used to test the hypotheses, as it includes an indicator of institutional trading. The sample contains 63 days of trading from November 1990 to January 1991. Of all 144 firms in the dataset, only 51 are actively traded, the rest is not analysed.

The panel regression results show that all individual variables contribute to explaining the bid-ask spread including the proportion of institutional trading, which has a negative effect on the spread. Results from a more refined regression model that includes a stock activity measure and different levels of institutional trading show a non linear relation between institutional trading and the spread. At higher levels of institutional trading, the negative slope flattens out. If the stock is actively traded the spread decreases with institutional trading. For inactively traded stocks, the spread increases with institutional trading.

Using Stoll's spread decomposition the relation between the order processing and adverse selection component and the spread are investigated using a SUR regression model. Institutional sells increase the adverse selection component of the spread,

which could correspond to the increased information content of sell trades because e.g. sell recommendations are more rare than buy recommendations. The increase in the adverse selection component is however outweighed by a decrease in the order processing component of the spread for buys and sells. Not only the level, but also the composition of the spread is affected by institutional trading.

Shady Stocks And The Value Premium

Ludovic Phalippou,
INSEAD

Ludovic Phalippou's paper presentation on shady stocks and the value premium was concerned with finding the driving force behind the value premium. After calculating the book to market value of equity during a certain period and ranking stocks accordingly, the value premium is defined as the return difference between the group of stocks that are in the top 25% and the group of stocks that are in the lowest 25% of the sample. The former group are labeled value stocks, the latter group growth stocks. On an equally weighted basis, the value premium is approximately 1% per month for the NYSE, AMEX and NASDAQ markets over the last forty years. The question arises whether this premium is caused by mispricing and can be captured by arbitrage or that this return can only be achieved at the cost of additional risk. The answer to this question has implications e.g. for performance measurement and IPO performance, because many recent IPO's typically brought growth stocks to the market.

If there is a unique dimension or factor that drives the value premium, this relationship would still hold if mispricing is the reason behind the value premium. On the contrary, if risk drives the value premium, this relationship would disappear after risk adjustment. This factor should indicate the likelihood of mispricing as well as the cost of arbitrage. The likelihood of mispricing decreases when investors are more sophisticated and when information availability is high. The cost of arbitrage decreases with high liquidity and ease of short selling. Institutional ownership is proposed as the factor that proxies both the likelihood of mispricing and the cost of arbitrage.

Empirical results for the U.S. markets over a period of 1981-2001 show that the value premium decreases as institutional ownership increases. Stocks are categorized in deciles according to the degree of institutional ownership and the value premium is as high as 2% per month for the decile with the smallest degree of institutional ownership but even less than 0.2% per month for the stocks in the decile with the highest degree of institutional ownership. About 80% of the total market capitalisation is concentrated in the top four deciles where the value premium is small. The results still prevail after controlling for risk. Several risk models such as the Fama French model and the conditional consumption CAPM do not change the size of the value premium, and the relationship between institutional ownership and the value premium prevails. So the value premium is not driven by the size factor. In fact, within the

group of low institutional ownership the large stocks have high value premiums. The results are also robust to data snooping.

Over time, the value premium has decreased from a cross sectional average of 0.5% over the 1964-1980 period to 0.3% over the 1994-2001 period. However, the sample needs to be corrected for structural changes in the sample composition. A rough way to control for this is to look at NYSE stocks only because the NYSE has not had the large amount of IPO's that e.g. NASDAQ has had. For NYSE the drop in the value premium is more substantial: only 0.04% of the value premium remains in the most recent period. So the value premium is explained by mispricing and not a compensation for risk. But it is located in the stocks that are costly to arbitrage: half of the value premium is located in the four bottom deciles that account for only 7% of the market capitalisation.

Risk, Dispersion of Analyst Forecasts and Stock Returns

Laura Starks,
McCombs School of Business, University of Texas

Laura Starks presented a paper on analyst forecast dispersion that is joint work with Shisheng Qu and Hong Yan. There is conflicting empirical evidence on the effects of dispersion on stock returns. This can be explained by the mixture of aspects present in analyst forecast dispersion. If dispersion measures differences in opinion across analysts and there are short sell constraints then higher dispersion could imply lower future returns (because prices tend to reflect the optimistic views only). On the other hand, if dispersion measures a risk that is priced then higher dispersion can imply higher future returns. The authors use a theoretical model to show that dispersion and the variability of dispersion capture information risk. Moreover, the expected return is a function of differences in forecasts only if there are differences in investors' precisions of forecasts. This will apply more to stocks that get less analyst exposure.

Using monthly IBES forecasts from 1983-2001 and stock returns from CRSP, dispersion is measured by the standard deviation of monthly earnings per share forecasts scaled by the stock price at the end of the previous year. Both the dispersion as well as the variance of dispersion are higher for smaller stocks. When stocks are grouped into dispersion quintiles, the high minus low quintile has a negative return that is significant for some subsamples as well as under an alternative measure of dispersion. This is evidence that dispersion is a risk factor. Known risk factors excess market return, size and book to market are significantly positively correlated to dispersion and momentum is significantly negatively correlated to dispersion. Portfolios with higher levels of dispersion or variability of dispersion have progressively more exposure to the common risk factors. This suggests dispersion and variability of dispersion can be considered a combination of other risk factors rather than an independent new risk factor. In a univariate model for stock returns dispersion and the variability have significant explanatory pricing power, although the power decreases in a multivariate model with size, book to market and the excess market return. The dispersion factor is less significant in stable sectors and more significant in e.g. cyclical sectors.

Given that dispersion and the variability of dispersion capture an informational risk, they should be related to expected returns as well. To test this empirically, mutual fund holdings from CDA/Spectrum are used. Under some simplifying assumptions, such as the representation of the mutual fund by a mean-variance optimizer, the

expected returns can be derived from the mutual fund holdings data. A five factor principal components model is used to avoid data problems with constructing the covariance matrix. Portfolio quintiles ordered from low to high dispersion (or dispersion variability) have increasing expected returns. This supports the argument that dispersion and the variability of dispersion proxy for information risk factors.

Panel: Transaction Costs in Practice

Chairman: Andrew Rudd, *Barra International*
Panelists: Pranay Gupta, *ABP Investments*
Remco Kroon, *Aegon*
Arjen Pasma, *ABN-AMRO Asset Management*
Pierre Sequier, *Sinopia*

Andrew Rudd opened the panel discussion by inviting each panelist to give a short presentation on their approach to transaction cost analysis.

According to Pranay Gupta, the approach of ABP Investments follows from its large asset base. The firm structure and investment process are designed with the goal of managing market impact and implementation shortfall at the same time. So transaction cost management is not limited to the operational level. At the portfolio level, the trade off between transaction costs and the extent to which the expected alpha of a trading strategy tends to decay over time determine the trading strategy and rebalancing method.

At Aegon, an in house transaction cost measurement system is used with VWAP as benchmark. Both data from transactions done by the internal trading desk and by the external brokers is fed into the system. Big differences between brokers have been found and transaction cost comparisons have increased the awareness of competition among internal and external traders. At the same time, the internal traders seem to have become more risk averse since their trades have been monitored.

A database of program trades of a European equity fund has been compiled at ABN-AMRO Asset Management over the years. Using the previous day close as a benchmark, the average implementation shortfall is about 60 basis points, of which only 20% is accounted for by direct costs. Broker performance seems to be related to region and the analysis of differences in trading costs between brokers has led to better broker selection.

Pierre Sequier showed recent results of a transaction cost study of trades by Sinopia in liquid large stocks. In a previous study the market was in a bull phase, in this study market conditions were worse. Total costs are still around 20 basis points, perhaps slightly lower than in the previous study. There is a small decrease in brokerage fees but the market impact seems to have increased for smaller trades.

When it comes to defining transaction costs, most panelists report the use of the difference between execution price and the previous day close. Alternatives to the previous day closing price are the price at which the order was given and the VWAP. At none of the organisations there is systematic reporting of transaction costs to clients and fixed income transaction costs have not been measured either.

On the relation of transaction cost management to the investment decision making process, Arjen Pasma responds that at ABN-AMRO orders are screened to prevent that the order size is more than 10% of the average daily volume of the last days. The implementation shortfall is taken into account before the order decision is made. Transaction cost measurement has led to the identification of very costly trades. This in turn has enabled ABN-AMRO to improve the pre-trade screens. A factor model is used to estimate the expected cost which can be compared to the expected alpha. Furthermore, measurement has led to finding the strengths and weaknesses of brokers, which sometimes turned out different from what the brokers themselves claimed. At ABP, identifying the expected alpha decay has led to improved trading and rebalancing strategies. The lesson Aegon so far has learned from transaction cost measurement is to look at regional differences in transaction costs.

The organisational design is discussed last. The design of a transaction cost measurement system is related to organisation culture as well. Sinopia is a relatively young organisation at which this was less of an issue. At ABN-AMRO the measurement of transaction costs has led to a more mechanical monitoring of brokers. Brokers are fired when they structurally underperform the benchmark. Pranay Gupta mentions that the design has implications at all organisational levels and should be such that the objectives of portfolio managers and traders become aligned. Pierre Sequier agrees that awareness at the company level needs to be created. Current challenges to successful transaction cost management are data availability, data quality and to define a transaction cost benchmark that matches the investment decision process.

Key Note Address:

A Brief Review of Short Exposure

David Musto,
Wharton School, University of Pennsylvania

The second day key note address was entitled “A Brief Review of Short Exposure” in which David Musto presented research on short selling.

One of the research questions that the speaker addressed was the effect of short sell frictions on the profitability of common trading strategies. When stocks are sold short the clearing broker has to find shares to deliver to the buyer, so a swap of ownership occurs. For large cap stocks this is relatively easy, for other stocks it may be more difficult. This aspect of short selling a stock is called the specialness of a stock and is reflected in the pricing of equity loans. At the loan origination the parties negotiate a rebate rate on the cash collateral, which is paid by the lender to the borrower. In the wholesale U.S. equity loan market the average rebate rate is about 10 basis points below the Federal Funds rate (annualized). When there is a relatively large demand to own the stock (higher specialness of the stock), lenders will bargain for an even lower rebate rate. The profitability of a long-short strategy decreases by this discount on the risk-free rate. But given that it is difficult to sell a stock short, this may make the stock overpriced and thus interesting to short sell anyway.

Evidence from the U.S. equity lending market in 1929 supports the latter hypothesis as profitable strategies are found based on the size of the rebate rate. Back then, the equity lending market was far more transparent than it is today. Nowadays it is hard to get data as equity lenders feel blamed for facilitating shorting and excessive price decreases. The counter argument is that prices of bad stocks will go down eventually anyway and equity lenders only contribute to market efficiency. Current stock return data support the latter argument because stocks that are hard to short have relatively more large negative returns. There is empirical evidence that firms that are in trouble exploit this by trying to make their stock hard to short.

With data on over 250,000 equity loans from one U.S. equity lender from November 1998 to October 1999 the profitability of several long short strategies is evaluated, given the increased cost of the strategy which depends on the discount on the rebate rate. The data only show realized loan rebates, not rebate quotes for every stock on each day in the sample period. The trading strategies are therefore adapted to use stocks only for which data is available and the return from these strategies are compared to the unconstrained trading strategy that could have been followed. It turns out that the constrained trading strategy tracks the unconstrained strategy fairly

well and the results suggest that the profitability of the trading strategies (except merger arbitrage) is not endangered by the frictions in the equity lending market. Profitable strategies include shorting all Dot Com stocks around the past bubble period. Here the specialness cost amounts to 115 basis points but this is more than compensated for by the price decrease of these stocks. Shorting seasoned IPO's is a profitable strategy as well.

In practice equity lending occurs for other reasons than to get short exposure only. The first is to use the voting rights of the borrowed stock. Around voting dates big spikes in lending volume are observable for U.K. stocks (using recent Crestco data). Especially when the firm is underperforming and when the vote is close equity lending volumes are abnormally high. The second reason is to take advantage of dividend taxation differentials. An investor with a larger dividend tax can lend his shares and prevent actual selling and buying, which would entail losing the bid-ask spread, losing stock price exposure and having to realize capital gains. The U.K. data suggests that lending volume increases abnormally prior to the record dates of dividends.

Finally, a peculiarity of U.S. option markets was discussed. Market makers do not have to ensure every short sell transaction by locating the shares. If so, option market transactions would be delayed dramatically. However, if shares cannot be located, the market maker fails to deliver. It is currently common practice for a major market maker to fail on half the short exposure. The buyer delivers no cash until the shares arrive so effectively a single stock futures contract is created. On the one hand the necessity of ensuring every transaction is undesirable. On the other hand the current situation in which failing occurs effectively creates loans with zero rebate discounts that e.g. hedge funds can profit from. This is an interesting practical issue that is likely to get more attention in the near future.

Breadth of Ownership and Stock Returns

Joseph Chen,

Marshall School of Business, University of Southern California

Joseph Chen presented a paper that is joint work with Harrison Hong and Jeremy Stein. Following up on a hypothesis by Miller in 1977, the combined effect of short sell constraints and differences of opinion have two implications for asset pricing. First, the information that goes into stock prices will mostly reflect the valuations of optimists so expected returns will be worse compared to stocks without constraints. Second, there will be greater divergence in valuations across investors with respect to the true price of the stock. Both arguments are plausible. Short sales constraints exist for many institutions and empirical analysis from the U.S. show that aggregate short interest is very low. Even many institutions that are allowed to short sell do not, they rather sell their position and “walk away”. In other words, they are unwilling to short rather than short sell constrained. Divergence in valuation can exist for many reasons such as the presence of private information, different levels of overconfidence and updating of beliefs by investors.

Breadth of stock ownership is suggested as a measure that captures the interaction between differences in opinion and the unwillingness to short. Breadth of ownership is a proxy for how tightly short sale constraints bind and hence for the amount of negative information withheld from the stock price. A single period model for one stock, risk-averse buyers (with dispersed valuations) who can take only long positions and risk-averse unconstrained arbitrageurs yields some testable hypothesis with respect to breadth.

Using 1979 to 1998 quarterly holdings of mutual funds from the CDA/Spectrum, the relation between breadth and returns are tested. Breadth is calculated as the ratio of the number of funds that are long the stock to the total number of funds in the sample. Stocks whose change in breadth in the prior quarter is in the lowest decile of the sample underperform those in the top decile by 6.38% in the first twelve months after portfolio formation. Breadth as a risk factor is correlated to size, book to market and mostly to momentum. After controlling for the presence of these factors, the return figure is still 4.95%. The empirical evidence is consistent with the original hypothesis that short sell constraints affect asset pricing.

Several robustness checks are performed that do not lead to a different conclusion. One concern is the selection bias in the data as there are only mutual funds in the dataset. Using change in breadth and incorporating aggregate holdings controls for these effects. A possible answer on why this profitable strategy can exist in current markets is that the strategy is hard to implement, not all data is observable at the time the strategy is to be carried out.

Securities Lending, Shorting and Pricing

Nicolae Gârleanu,
INSEAD

The presentation on the relation between the shorting process and pricing by Nicolae Gârleanu is joint work with Darrell Duffie and Lasse Pedersen. A theoretical model was presented in which frictions in securities lending explain the fee of short selling (cost of specialness) and overpricing. In a perfect market there should be no lending fee but with the friction of having to locate shares and imperfect competition (limited amount of traders in the market), the lending fee is the outcome of a bargaining game.

A dynamic model for one asset with an uncertain liquidation value is bought and sold by risk neutral agents that have different beliefs with respect to the liquidation valuation. The trouble of locating shares is represented by a meeting intensity parameter. A higher value means that it is easier to meet a desired counterparty i.e. to locate shares. When the market is characterized by low meeting intensity, the price will reflect mostly the beliefs of buyers and there is not much lending going on. As the meeting intensity increases, overpricing decreases but due to imperfect competition some of the lending fee is incorporated into the price. Thus the relationship between the meeting intensity parameter and market price is not monotonically decreasing but first goes up and then down.

The main findings from this model are the explanation of overpricing (even prices above the highest belief) and the effect of short sale frictions on the presence of the lending fee in the price. Due to this latter effect the overpricing can be such that the price is even higher than the maximum of the beliefs. This could explain why subsidiaries can have a higher price than their parent company and the behavior of specialness after IPO's.

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UBS Global Asset Management *
Union PanAgora Asset Management GMBH *
VermogensGroep
Vestek Quantec *
Volksbank KAG *
WestLB Research GmbH
Windham Capital Management Boston *
Zürcher Kantonalbank *

* one seat members