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CAPITAL STRUCTURE IN NEW TECHNOLOGY-BASED FIRMS: FINANCING IN THE IRISH SOFTWARE SECTOR

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ABSTRACT

It is widely agreed that technology-based small and medium-sized enterprises (SMEs) play an important role in the development and diffusion of innovation, and in employment creation and economic growth. As a result, the financing of technology-based firms has become an increasingly important focus of government policy both in Britain (Bank of England, 1996 and 2001) and in the European Union (European Commission, 1999). At the centre of concern is the possibility that new technology-based firms (NTBFs) experience severe financing constraints, especially at start-up. The extent of interest by policymakers in the financing of NTBFs has not, however, been matched by academic research. The little available academic evidence on NTBFs is that they can experience financing constraints at start-up, and it is to this significant gap in the literature that this paper is addressed.

In this study we examine the financing of 117 Irish software product companies. In addition to gathering information on the sources of finance for these firms, our survey approach allowed us to pose a number of questions and statements directly to the founders of respondent companies. We queried Irish software product company founders on their perceptions of such issues as debt financing constraints, their preferred sources of finance, their willingness to cede control, and their goals and motivations for being in business. Standard corporate finance theories of capital structure – the pecking order hypothesis and the static trade-off theory – assume that companies can freely obtain their preferred sources of finance. Amongst SMEs and NTBFs, however, financing constraints make the capital structure decision more complex, and pose additional challenges to researchers. It can be difficult to ascertain whether observed SME capital structure results from financing constraints, or whether it simply reflects the preferences of owner-managers. Our unique approach, which combines gathering information on financing sources with soliciting the opinions of owner-managers on various financing issues, has allowed us to address an important issue in small business and NTBF finance that has received little academic attention. Does the observed capital structure result from financing constraints or is it simply the result of owner-manager preference?

Consistent with the pecking order hypothesis, we find that internal sources of funding dominate, particularly at start-up. However, contrary to the standard pecking order hypothesis we find that equity rather than debt is the primary source of external finance employed by NTBFs. The split between inside and outside finance for the sample firms is close to 50/50, but the proportion of inside finance for start-up firms (those less than 2 years old) is considerably higher at 73 percent. Debt finance in the form of bank loans comprises a mere 4 percent of total financing for the sample firms, or 8 percent of outside finance. The majority of outside equity comprises venture capital and angel finance.

Our findings confirm that NTBF founders perceive a severe information asymmetry between themselves and banks. The respondents' perceptions were that banks are reluctant to provide funds to software product firms (with the exception of overdraft facilities), and that banks tend to require fixed assets as collateral. However, the fact that outside equity dominates

RETURNS IN THE POST-IPO MARKET: HOW QUICK DO THEY BECOME EFFICIENT?

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ABSTRACT

This paper explores the efficiency of the post-IPO market through the analysis of post-event abnormal returns. The unique setting of the immediate aftermarket allows us to assess market efficiency after the trading has just begun, and no pre-existing history of return behavior exists. This will allow us to answer two questions: how do companies with no pre-existing history of trading react to the arrival of new information, and more importantly, does this reaction change as these stocks mature?

Significant price changes are used to infer information events. Blume et al (1994) find that a price change is a good proxy for the magnitude of an information signal. We find that newly issued stocks overreact to both positive and negative events, and that the extent of overreaction is greater for negative events. We analyze the relationship between post-event mispricing and time elapsed since issue in two ways. First, we regress post-event abnormal returns (the measure of mispricing) on the number of trading days (since the IPO) on which the event occurred, controlling for other relevant variables. There is no clear research hypothesis linking the extent of over/underreaction to the length of the aftermarket.

Uncertainty about the directional hypothesis leads us to a non-directional analysis using the absolute values of post-event abnormal returns as the dependent variable. In this case, a definitive research hypothesis is proposed. Immediately after the IPO, market participants have no information on the return behavior of the stock (its volatility, market beta, etc.). Therefore, they are likely to misinterpret certain information signals, which will result in a large degree of mispricing immediately following an event. As the length of the aftermarket increases, the market learns about the properties of a stock, and the magnitude of post-event mispricing diminishes. Our results conform to this hypothesis.

Our sample includes all companies that went public on NYSE, AMEX and NASDAQ in the period between 1987 and 2001. Such a large dataset is needed since the immediate aftermarket window for each firm is quite small. We eliminate certificates, ADRs, shares of beneficial interest, units, closed-end funds, REITs and companies incorporated outside the United States. We do not eliminate utilities and financial institutions.

It is assumed that a significant price change is a sufficient condition for the information signal. In other words, even though our event sample does not include all information signals, we can be sure that some event has occurred on the day of the significant price change. The price change is considered significant if the abnormal (market-adjusted) return on a given day moved more than two standard deviations away from the mean computed over the entire sample period. Several restrictions are used to determine which significant price changes are included in the sample. No significant price change can occur ten or less days before a given price change, the stock price has to be at least three dollars per share at the time of a price change and no days with zero trading volume can occur within ten days of a given price change.

We propose several hypotheses about the relationships of post-event mispricing and certain explanatory variables. We expect the magnitude of mispricing (as measured by the absolute value of the 30-day post-event cumulative abnormal return) to be negatively related to the length of the aftermarket on the event day. This would imply that as investors acquire information about the properties of stock returns, their reaction to new information signals becomes more accurate. We also expect the magnitude of mispricing to be negatively related to the size of the firm as measured by the event-day market capitalization. We hypothesize that market participants possess more information about larger firms, which would result in more accurate price responses. Event-day turnover is also included as an explanatory variable, although no clear hypothesis linking it to post-event mispricing is available. Other explanatory variables can also affect the results of our analysis. We hypothesize that the firms with the immediate aftermarket falling in the years 1995 – 2000 will be characterized by greater mispricing following information signals. The fact that many newly established, smaller firms went public during that period amounted to the limited knowledge of market participants about those firms. Utilities, financial institutions, and technology firms are separated into distinct categories.

To properly test the Uncertain Information Hypothesis, the measure of event-induced risk change must be introduced. This poses a difficulty, since this requires the measure of pre-event risk, which is unavailable for events occurring during the first days of the aftermarket. We, therefore, crudely approximate the risk measure by post-event risk.

The main empirical finding of this paper is the significant negative relationship between the post-event mispricing magnitude and the time elapsed since the IPO on the event day. The regression coefficient is statistically significant during the first year of the aftermarket. As mentioned before, several factors should be controlled for to ensure that our results are not driven by the changes in event/firm characteristics. The main finding is that the inclusion of additional variables has a negligible effect on the significance levels of the “aftermarket” variable.

Market capitalization on the event day is positively related to the magnitude of mispricing following positive events. This finding is surprising, since it contradicts our research hypothesis. It appears that the degree of misinterpretation of new information is greater for larger companies in the first year of the aftermarket. A similar, although weaker, anomaly is established for negative events. A large, positive regression coefficient for the risk measure is not surprising – the mispricing magnitude is greater for “riskier” firms.

As predicted by the research hypothesis, the magnitude of post-event abnormal returns is greater for those events that occurred during the market boom of the late nineties. Mispricing magnitude is lower for financial institutions and greater for firms issuing stock on NASDAQ. Finally, we introduce interaction effects to explore the post-event return dynamics of firms belonging to some particular industries and/or markets. It is found that the magnitude of mispricing is not only greater for those events that occurred during the market boom, but that it also diminishes more slowly. A similar result is established for NASDAQ stocks.

Some directions for future research may include the analysis of public coverage of information signals on post-event returns in the aftermarket as well as the analysis of the specific types of information signals and their role in the development of aftermarket efficiency.

SOME PROPERTIES AND APPLICATIONS OF A MEASURE OF INFORMATION DISCREPANCY

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ABSTRACT

Companies going public in Greece include a forecast of next year's profit in their prospectuses. Investors use this information for their future decision. Accuracy of the forecast is crucial because it seems to be a credible signal for long-term performance of stocks. In this study we examine the accuracy of management profits forecasts contained in prospectuses of companies newly listing on the Athens Stock Exchange.

For that reason four different forecast error metrics, forecast error, absolute forecast error, squared forecast error and superiority of management forecast are considered. The results derived show a medium level of accuracy in Greek market. The interesting feature in this paper is the mandatory status of Greek market for the disclosure of earning forecast in the prospectuses of the companies and the motivation is that there is no previous literature covering forecast earning accuracy not only in Greek market but also in European level. Data set consists of 208 IPOs, which were floated, in the Athens Stock Exchange during January 1994 to December of 2001.

In order to test a number of company specific characteristics, for the accuracy of Greek IPO management earnings forecasts we conduct a regression analysis. We apply a cross sectional model to explain variations in accuracies but it has very weak significant power. Our results suggest that investors are able to anticipate forecast errors at the time of listings. Investigation on independent variables, influencing the forecast accuracy show that four factors named size of the IPO' (Size), age of the firm by the time it goes public (Age), financial leverage (Lev) and ownership by insiders (Own) are significant determinants.

Keywords: Earnings forecast accuracy, Error Metrics, Absolute forecasts error, Initial Public Offerings, Athens Stock Exchange

M1, M2, AND THE U.S. EQUITY EXCHANGES

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ABSTRACT

Acknowledging the disparity on the causality direction and on the nature of the relationship between the aggregate measures of money supply and the returns on the equity exchanges, this paper considers the relative positions of M1 and M2 in light of their relationships with four U. S. equity exchanges: S&P500, Dow Jones Industrial, NASDAQ, and Wilshire 5000 composite. It is demonstrated that a long-term equilibrium relationship does indeed exist. Short-run dynamics are also considered and are found to be temporary departures from the long-run equilibrium. Based on a model, which yields robust estimated results and is thus considered well behaved, the direction of causality is established. The model is then put further to test to check the predictive power of the M1 and M2 money aggregates. Based on a set of in- and out-of-sample forecast experiments, the results overwhelmingly indicate that M2 is a better predictive measure and hence a superior indicator than M1.

ENTROPY OF GLOBAL EQUITY PORTFOLIOS

Les Gulko

ABSTRACT

This paper designs and tests a methodology that captures potential signals from the inventory of individual stock prices in 60 global equity exchanges. Prior research has considered this topic, in general, under the heading of “information contents” of a designated variate within the context of a single country or industry analysis. The choice of the “variate” has often been limited also to a single item encompassing a variety of topics. The predominant methodology in most, if not all, of the prior research is the abnormal performance index (API). The API methodology, as is well known, has its own limitation, i.e., it is event dependent.

This paper departs completely from the prior research, both in the employment of methodology and in the scope of its coverage. It draws from the unique literature on the equality of dispersion matrices and resorts to individual stock prices worldwide in constructing random portfolios. In some sense, the approach is micro that lends itself to a macro platform in the final analysis. The implications of this work will spill over into a few other areas of finance, including: market efficiency, market timing, diversification strategies, and, in general, market selection.

FORECASTING GLOBAL EQUITY MARKETS

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ABSTRACT

Research and controversies surrounding the predictability of global equity exchanges continue unabated. This paper contributes to this substantial body of literature by considering the role of expectations in these markets. It assigns the entire weight to investors' expectations and employs a state-state platform that utilizes the returns on equities own components. i.e., a combination of trend, cycle, forward/backward-looking process, and a random variate. Under these premises, this study models and forecasts the *ex-ante* returns of eight major global equity exchanges using daily equity total return indices for the period of January 2, 1994 to February 28, 2004. The methodology employed is structural time series analysis under a time varying estimation process. The results of both the estimated models as well as their forecasting power in terms of RMSPEs are very encouraging.

ESTIMATION OF THE PROBABILITY OF DEFAULT IN CORPORATE LOAN PORTFOLIOS

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ABSTRACT

The aim of this study is, firstly, to make an analysis of the regulations proposed by the Basel Committee concerning the quantification of credit risk and, secondly, to suggest a method of calculating one of the three variables which, according to the Committee's regulations, is required for carrying out this quantification within a particular portfolio made up of company loans.

The literature on credit risk quantification has been abundant in the past few years. However, perhaps the most important contribution in the field, in terms of operational effect, is the Basel Committee proposal. The Committee has issued a series of regulations, currently at a consultation phase, so banking institutions can determine their capital requirements for credit risk hedging purposes. These regulations establish a new framework for capital on the basis that this capital must be more sensitive to risk, especially to credit risk. In this way, they narrow the gap between the concepts of regulatory capital and economic capital, with the application of the calculation methodologies permitted by the Committee.

The Basel Committee on Banking Supervision suggests obtaining credit risk weighted assets with a choice of two methods. The first consists of evaluating the risk using a standard approach, based on external credit evaluations carried out by previously authorized classification agencies (*ECAIs*). The other alternative – IRB – has two methods: the basic method and the advanced one. The IRB approach is provided so banks can use their own internal classification systems. The system designed by the Committee for companies in particular, but in general for all risk categories, lays down a procedure for calculating minimum capital requirements based on a function designed by the Committee itself. For this function, the basic variables are *LGD* (loss given default), *EAD* (exposure at default) and *PD* (probability of default). It is to determine the values of these variables that the banking institutions must develop their models.

In this paper we put forward a method for estimating the value of one of these variables (perhaps the most complex) – the probability of default – which is also the only one that all banks using the IRB approach must calculate (the basic method of this approach pre-establishes values for the other parameters and leaves the institutions only to calculate the probability of insolvency). The proposed method is based on Altman's (1968) model. This author, using the linear combination (Z_I) of five ratios, put forward a method for distinguishing between states of solvency.

We propose calculating the probability of default for companies (that is, the values of the *PD* parameter in the Basel Committee proposal) starting from the Z_I model of Altman's. Taking into account that the Z_I values are inversely related to the probability of default in companies, a density function to reflect the relationship between the two variables (Z_I values and probability of default) would be a decreasing monotone defined by positive values. The suggested function is the one defined by the following expression (1):

$$PD(X) = \frac{1}{e^X} \quad (1)$$

$$X \in [0, \infty) ; PD_i \in [0, 1]$$

where PD is the company's probability of default and X is a variable proportional to the score obtained by the Altman (1968) model defined according to the expression (2):

$$\left. \begin{array}{l} X = 0 \quad \forall Z_1 < 0 \\ X = \alpha \cdot Z_1 \quad \forall Z_1 \geq 0 \\ \alpha > 0 \end{array} \right\} (2)$$

with α being a proportionality factor.

The proposed model is applied within the IRB approach as, according to the Committee, institutions can introduce their calculation models for the probability of default only in this approach. In addition, the results provided by the proposed model are compared with those provided by the standard method applied to the same loan portfolio. The method proposed for calculating the probability of default has been used to determine the minimum capital requirements for a hypothetical portfolio made up of 634 loans granted to that many companies belonging to the same sector (textile firms).

Table 1
CAPITAL REQUIREMENTS FOR CREDIT RISK

Z_i	N° of Loans	(%)	Standard Approach		IRB Approach	
			RPM _{RC} (m.u.)	RPM _{RC} / Investment (%)	RPM _{RC} (m.u.)	RPM _{RC} / Investment (%)
Less than 1.23	59	9.31	944	8.00	2,518.83	21.35
Between 1.23 and 2.90	400	63.09	6,400	8.00	3,993.25	4.99
Greater than 2.90	175	27.60	2,800	8.00	182.68	0.52
TOTALS	634	100.00	10,144	8.00	6,694.77	5.28

Z_1 : score obtained by the Altman's (1968) model

RPM_{RC}: minimum capital requirements (credit risk)

The results obtained (see table 1) show that the standard method provides uniform handling of all risks if there is no classification by an external agency, which is normal in portfolios of loans to small and medium-sized companies. On the other hand, when the method proposed in this paper, within the IRB approach, is used, discrimination is achieved between loans depending on credit quality. Moreover, for a portfolio like the one used, in which the majority of the loans fall into an area for which it is difficult to assess credit quality, the proposed method provides a calculation of capital requirements that is more favourable than the one provided by the standard method

In summary, the proposed method provides values for the probability of default in accordance with the Committee's proposals: values which, through the application of the IRB approach, provide a figure for capital requirements that favours institutions with cleaner portfolios.

BANK FAILURE RESOLUTION: A STUDY OF SAFETY NET DESIGN ACROSS COUNTRIES

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ABSTRACT

This paper focuses on a particular aspect of design of safety nets for banks, namely the legal powers given to bank regulators to intervene and resolve bank failures and the presence of extra judicial remedies to bring relief to depositors of a failed bank. It builds an index for measuring the legal powers given to banks for bank failure resolution and examines its relationship with the state of creditor rights and general rule of law and with a history of bank crises.

Bank safety nets consist of laws, institutions, procedures and regulations enabling the rescue of banking systems in crisis. They are a part of the corporate governance system of a country in so far as they supplement the deterrent remedies available to bank depositors. They are necessary because of the presence of potential externalities in the bank resolution process, loss of value of bank assets in the course of liquidation, and the enormous costs of bank resolution.

The objective of a safety net is to prevent banks from failing and to contain systemic crises. Past research has thrown up a number of objectives of a safety net. This study summarizes them as:

1. Minimizing externalities by ensuring depositors' timely access to money,
2. Minimizing costs by efficient restructuring or liquidation, and
3. Minimizing moral hazard, ex ante.

While the first two objectives are traditionally met by judicial remedies, the unique nature of the banking industry may prompt governments to create alternatives to judicial remedies. These alternatives would typically take the form of legal powers granted to a resolution agency. These powers could involve revoking a bank's license, intervening in its management and undertaking restructuring among others.

This paper used data for 28 countries from a World Bank database on Global Banking Law to build an index to measure the legal powers available to a regulator to carry out resolution and extra judicial liquidation of banks. Six variables measuring the efficiency of restructuring in terms of legal powers given to regulators to intervene, revoke a banking license, alter capital structure, merge whole or part of bank, recapitalize, and expropriate shareholders are constructed. Three more variables measuring the presence of judicial immunity given to the restructuring process, prioritization of payments to creditors and presence of some sort of extra judicial liquidation are constructed to measure the efficiency of the liquidation process. These nine variables are combined to build an index called **REGULATION**.

REGULATION is regressed on indices of Rule of Law and Creditors' Rights to examine if the legal powers given to regulators to resolve banks are related to the general state of law and creditors' rights in the country. The regression finds a statistically significant relationship

between the two variables. Legal powers granted to regulators are likely to be higher in countries with poor rule of law and lax creditor rights.

A second regression using REGULATION is conducted to find if the presence of higher regulatory powers is related to the past occurrence of a systemic crisis in a country. For this purpose the Database on Episodes of Systemic and Borderline Financial Crises available with the World Bank is used to construct an index called CRISIS. This is then put through a regression with REGULATION. The results show that the past occurrence of a systemic crisis in a country is a good predictor of the level of legal powers given to regulators. Greater legal powers are given to regulators to intervene and resolve banks by countries with a history of systemic crises.

In particular the power to increase or decrease capital levels is more likely to be granted to regulators by countries that have faced crises and this is also less likely to be the case when creditor's rights are strong.

Key Words: Safety Net, Index of Regulatory Powers, Rule of Law, Creditors' Rights, Systemic Crises.

AN INDUSTRY ANALYSIS OF CORPORATE CAPITAL STRUCTURE CHOICE: EVIDENCE FROM FIRMS LISTED IN THE COLOMBO STOCK EXCHANGE

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ABSTRACT

It is argued that the firms located in developing countries often encounter extensive challenges when attempting to secure external sources of financing. This study attempts to empirically investigate the overall corporate capital structure of the Sri Lankan listed companies, the determinants in general and the inter-industry differences in particular. It compares the average corporate leverage ratios of Sri Lankan firms with those of the firms located in developed and some developing countries. The analysis is centered around ten quantifiable determinant factors selected from the literature and based on published data from the firms quoted in the Colombo Stock Exchange (CSE). In addition industry classification is based on the intensity of production, which examines whether industry groupings are significant predictors in shaping the firm's financial makeup.

The investigation is formulated on the basis of the findings of literature that were mostly examined in developed country perspectives. Two multivariate models developed in the study analyze the impact of determinants on four leverage measures of long-term and total debt calculated at both book value and market value. The study investigates ten determinant factors, which are quantitatively measured by financial ratios with a view to test the relevancy of these factors in determining corporate capital structure choice in the context of highly promising market in South Asia. Industry Analysis has been carried out to observe if any inter-industry variation exists among the sectors of different nature.

The study employs five-year data from 1997/98 to 2001/02 extracted mostly from the financial reports published in the *Hand Book of Listed Companies 2002* CD-ROM. The models test the sensitivity of ten explanatory variables in the cross section namely size, tangibility, growth, profitability, age, flexibility, tax shield, volatility, price-earning and retained earnings both in total market as a whole and specific individual industry concerned in the study. Of the twenty three industry classifications of CSE, the firms classified under Banking Insurance and Finance and Investment Trusts are excluded in the sample due to their unique nature of financing and Telecommunication, Power and Energy and Information Technology sectors are also not considered due to inadequacy of consecutive data for the period concerned. The balance industry groupings are re-grouped under four broader categories taking their mode of production into considerations. While two industry groupings of Food Beverage & Plantation and Manufacturing are capital intensive, Trading and Services and Hotel and Health Care are highly labor intensive.

Based on five-year average measurements of the sample of 156 firms, it was found that Sri Lankan firms have far lower gearing ratios compared to the same of the firms in G - 7 countries showing underutilization of external sources to finance their capital mix.

As evidenced in most other developed economies, leverage of Sri Lankan firms increases with firm size and decreases with profitability, flexibility, growth opportunities, volatility, price-earnings, and retained earnings. The results support the relationships assumed in theoretical conceptualizations and confirm the evidences found in empirical investigations. But different from the evidences in literature, no relationship is shown between fixed assets

ratio (proxy for tangibility) and leverage emphasizing that the significance being assigned to tangible assets as collateral is relatively lower in Sri Lanka. Besides, it is revealed that tax shield on debt is not a determinant factor in deciding corporate financial structure. The analysis finds contradictory results in relation to firm's age showing a negative relationship with leverage measurements. Some inconsistent relationships are also found in some sectors confirming the existence of optimal capital structure while showing deviations from generalizations. On average, debt-financing accounts for 45% of financing in the Manufacturing sector, compared to 19% of financing in Hotel and Health Care industry. The result proves the existence of inter-industry differences in making capital structure choice by Sri Lankan listed firms. Not only that but also it unveils the fact that industry itself could be considered as a significant predictor of a firm's financial structure.

In general the findings highlight that the trend is more towards equity financing following the doctrine of Peking Order Theory than to have a higher vertical slice of a capital structure. Nevertheless, the overall analysis provides a piece of evidence that Sri Lankan companies are following the fundamentals of a market driven economy in deciding the best mix of debt and equity in their capital structures.

The contribution of this study is twofold. Firstly this study may fill the gap of empirical evidence in the context of an emerging market provided that most studies on capital structure decisions are based on developed economies. Secondly the findings add evidence to empirical literature on how the capital structure choice varies across different industry classes by investigating the financial structure of the firms located in one of the rapidly transitional economies in Asia.

BOARD STRUCTURE AND THE INTERDEPENDENCE OF CORPORATE GOVERNANCE MECHANISMS

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ABSTRACT

This paper examines the link between separation of the posts of chairpersons and the CEO (board duality) and governance. In examining further the association between board effectiveness and board structure, this study contributes to the literature on corporate governance in two specific areas. First, it examines the possibility of interdependence and substitutability between governance mechanisms by comparing attributes of board structure that influence top management turnover in boards characterized by duality and boards without duality. A corporate board has the attribute of duality when the posts of the chairperson and the CEO are held by the same person. The issue of complementarity and substitutability between governance mechanisms has important policy implications, as individual aspects of the board have increasingly been the focus of policy reform and shareholder activism. Second, it provides comparative evidence on the link between board structure and board effectiveness by using empirical data on UK firms.

Top management turnover is normally the outcome of a complex set of circumstances and factors. Consequently, there will always be the problem of omitted variables in any empirical evaluation of top management turnover. With the help of panel data, however, it is possible to obtain consistent estimates even when there are omitted variables (Johnston and Di Nardo, 1997). Panel data techniques allow for the identification of firm-specific heterogeneity or group effects, which will pick up omitted variables.

To evaluate top management turnover the following relationship is estimated:

$$\text{Top management turnover} = \phi(\text{Pit}, \text{Git}, \text{Cit}) + v_i + \omega_t + \xi_{it}$$

Top management turnover is the measure for governance changes. The operational measures are the annual turnover of executive directors; and the likelihood of change in CEO. Pit, represents the financial performance measures. Git are the board attributes. Finally, Cit represents the control variables. v_i is the firm-specific error component or sources of variation in governance changes that are specific to the firm, ω_t is the period specific error component or time effects that reflect the impact of policy or macroeconomic developments on top management turnover over a period of time. Finally, ξ_{it} is the normal error term or the pure error term.

Empirical studies have reported significant interaction effects between board attributes in their impact on top management turnover. In this paper we examine the interaction effects of board duality between board characteristics. We account for these interaction effects in a more general form across all the variables by splitting the sample. We examine the significance of board structure, ownership and performance for top management turnover in two sub-samples of firms. In one sub-sample the board is characterized by duality - the chairperson and the CEO are the same person. In the other sub-sample board duality is absent.

The data set comprises 218 United Kingdom quoted manufacturing enterprises for the years 1988-1989 to 1994-1995. Due to significant changes in board structure induced by the recommendations of the Cadbury Committee the data collected had to be terminated for the years 1994-95. The Cadbury Committee's report represents an important watershed in the corporate governance structure of UK firms. The Committee had submitted its recommendations by 1993 and an important recommendation was to separate the posts of chairperson and the CEO. This attribute of board structure became an important touchstone of corporate governance compliance. Most corporate boards had started reflecting this attribute in their board structure in their annual reports by 1995/1996. There is not much variation in the board structure regarding the separation of the posts of chairperson and the CEO in the sample of firms after 1994/1995.

In contrast to the Cadbury and Hampel reports, the estimates do not support the view that boards with CEO duality are less desirable. The empirical evidence presented in the paper shows that the link between duality and accountability is not straightforward and other control variables take on importance when the board is characterized by CEO duality. A separation of the posts of chairperson and CEO is not necessarily a prerequisite for good corporate governance because the estimates suggest that there is considerable interdependence in the effectiveness of board attributes in ensuring corporate accountability. For example, our estimates show that outside directors may offset the possible adverse effects of board duality by becoming more effective. Consequently, good corporate governance cannot be independently associated with specific board characteristics like board duality.

BANK FAILURE PREDICTION AND THE MEASURE OF INFORMATION DISCREPANCY¹

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ABSTRACT

Based on a group of axioms, a measure of information discrepancy among multiple information sources has been introduced in [1,2,3,4,5] and it possesses some peculiar properties compared with other measures of information discrepancy, so it can be used in some areas, where the traditional measures are not valid or not efficient, for example, in the study of DNA sequence comparison, prediction of protein structure class, evidence analysis, questionnaire analysis, predictions on financial market, and so on. In this paper, the various properties of this measure are listed and the application, as an example, in bank failure prediction is also shown.

As well known that some approaches were proposed to measure the stability and fragility of banking system, such as linear discriminant analysis(LDA), logit analysis, multilayer perceptron(MLP) and multidimensional scaling(MDS) methods. These methods have different limitations on data and their implementations. We use this new approach to evaluate banks' operation and to predict failure; the prediction results for the commonly used practical example are satisfactory compared with those of other methods; the new approach has no special requirements on data and is easy to implement; the complexity of algorithm linearly depends on the number of banks. In addition, some extra information are also obtained, especially, these results are stable under different transformations of data.

These properties and results show that this new way may be beneficial to globally financial management.

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OPEN ECONOMY MODEL OF CAPITAL ACCUMULATION WITH IMPERFECT CAPITAL MOBILITY

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ABSTRACT

Among the most important issues in international macroeconomics are those pertaining to the long-term dynamics of open economies – growth, capital accumulation, the evolution of relative prices and interest rates. In a closed economy context, the Ramsey-Cass-Koopmans model provides a starting point for such analysis, in a setting characterized by rational, forward-looking households and profit-maximizing firms, operating in a perfectly competitive environment with flexible prices. In the model, transitional dynamics are driven primarily by capital accumulation, while exogenous technological progress accounts for steady-state growth.

As is well known, a straightforward extension of the Ramsey model to the open economy case under the assumption of perfect capital mobility eliminates all interesting dynamics. Convergence on the production side is instantaneous. Convergence on the consumption side is instantaneous as well, unless one chooses the parameters of the model in such a way that the economy implodes or explodes. However, the actual catch-up process of emerging economies with more advanced ones is gradual.

The literature has developed several ways to introduce dynamics into the behavior of an open economy, including adjustment cost for investment, constraints on the amount that can be borrowed abroad, and nontradability of capital goods. While each of these approaches breaks the link between being able to borrow in international credit markets and the ability to invest at an infinite rate, the domestic interest rate in these models either cannot be defined at all or equals the world interest rate throughout the course of transition. However, such immediate interest rate convergence has not been the experience of emerging economies. The purpose of this paper is to introduce a realistic and tractable friction mechanism that would break the interest rate parity and allow for nondegenerate dynamics in consumption, capital accumulation, and adjustment of relative prices.

In our model, the cost of foreign borrowing increases with the amount borrowed in any given period. This reflects the fact that making a foreign loan requires expending resources that are in scarce supply, and the cost of those resources is going to be higher if the demand for them (the amount of new lending) increases. This friction is similar in spirit to adjustment cost, but rather than being the cost of installing a unit of capital equipment, it is a cost of “installing” a new loan. We think of this mechanism as combining in reality with other factors, such as investment adjustment costs and nontradability of certain capital goods, to slow down the convergence process, but we focus on the capital market friction to highlight limits to capital mobility even in the absence of institutional restrictions and to generate realistic dynamics of the interest rate differential.

The paper introduces the friction mechanism, explains the motivation, suggests a specific formulation, and derives a dynamic relationship between the interest rate differential and capital inflows. In the adopted formulation, the marginal cost of lending to borrowers from a particular country is proportional to the total flow of capital into the country. Assuming competition among lenders and perfect foresight, this formulation gives rise to a differential

equation linking capital inflows and the interest-rate differential between emerging markets and advanced economies. Limiting the scope of foresight, one can replace the differential equation with a simple linear algebraic relationship.

The mechanism is then embedded into a two sector, infinite horizon, open economy model of capital accumulation and growth. The model generates gradual convergence toward a steady state. Along the convergence path, the capital stock, the stock of debt, consumption, and the product wage gradually increase. The interest rate differential declines. If the tradable good production is more capital intensive, the ratio of nontradable to tradable prices go up over time, generating real exchange rate appreciation along the Balassa-Samuelson lines.

MARKET EXPECTATIONS ACROSS THE WEEK: NEW EVIDENCE FROM THE FTSE-100 INDEX OPTIONS

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ABSTRACT

Recent literature (see e.g., Balaban et al. 2001; Steeley 2001) suggests that most of the day-of-the-week (hereafter DOW) effects with respect to the first and second moment of the return distribution (realized return and realized volatility) have disappeared from the UK stock market. On the other hand, there have not yet been attempts to investigate the intraweek changes in the market participants' overall expectations with respect to the whole return distribution. Options as forward looking instruments provide an interesting tool to examine market expectations for each day of the week. By constructing a fixed maturity time series of these expectations [i.e. the risk-neutral density, RND] extracted from option prices, the daily variations of the expectations across the week can be investigated. Variations in the 2nd moment (standard deviation) can be attributed to variations in expected risk, whereas changes in the 3rd moment (skewness) can be viewed as changes in the asymmetry of the expected distribution. The 4th moment of the expected return distribution (kurtosis) shows the degree of sharpness of the distribution near its center and the likelihood of extreme outcomes.

The purpose of this paper is to examine intraweek changes in market expectations, as measured by implied risk-neutral distributions implied by the prices of the FTSE-100 index options. Moreover, as explanations for the changes in market expectations across the week, this paper focuses on the effect of clustered information and the investors' learning process hypothesis. Clustered information is accounted for by major macroeconomic news announcements from the US and UK. To quantify the investors' learning process, this paper uses information contained in the overall trading volume of futures and trading pressure of options and information obtained from the implied distributions. This paper contributes to the earlier literature in three main ways. First, to my knowledge this is the first paper to examine and interpret the intraweek changes in the market expectations by using the information obtained from the entire implied distributions. Second, while the effect of clustered information as a cause for the DOW effect for implied volatility, i.e. the second moment of the implied distribution, is examined by Ederington and Lee (1996) and Kim and Kim (2003), this paper examines the effect of clustered information on the DOW effect for whole stock return distribution implied by option prices, not only for the second moment. Third, whereas earlier work by Harvey and Whaley, 1992; and Ederington and Lee, 1996, have not tested the impact of trading volume of the underlying instrument or the trading pressure of options on the daily option pricing pattern, this paper investigates their impact.

The results show that there are significant intraweek changes in market expectations implied by option prices. Implied volatility is lowest on Mondays, increases through the week and declines again on Fridays. Return distributions are found to become more left skewed throughout the week, whereas kurtosis of the distribution decreases on Tuesdays and increases on Fridays. The interpretation of fluctuations in the moments of implied distributions together with the trading volumes of futures and options strongly favors the investors' learning process hypothesis in explaining the price generating process across the week. Furthermore, some of this variation in market expectations across the week can be explained by the clustered information, namely scheduled macroeconomic news

announcements. Processing and accumulating new information through the week is shown in more confident price level and in lower risk on Fridays, after all the news has been released.

**ANNUALIZED AND CUMULATIVE RETURNS ON VENTURE:
BACKED PUBLIC COMPANIES CATEGORIZED BY INDUSTRY**

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ABSTRACT

This paper investigates the actual performance of 2,895 Initial Public Offerings of companies that were backed by venture capital from 1968 until the end of 1998. It seeks to refute the myth that investors demand very high annualized and cumulative rates of return to compensate for the risks they are taking by financing ventures. In fact, it argues that the total returns of the venture capital market are reasonable given the level of risk, based on historical statistics. This is done by concentrating on sections of varied types of industries, which have been supported by venture capital.

Venture capital traditionally has been a low profile, private industry. Although the national media has given increased attention to the venture capital process during the 1980s and the 1990s, misconceptions about the industry continue to proliferate.

The unique database used in this study includes currently active and inactive public companies. The data enables one to ascertain the relationships among a company's cumulative rate of return, share price at the IPO date, IPO size, current total shares, and the role of venture capital for different stages of financing, and for different industries. In this paper we concentrate on the annualized and cumulative returns of venture capital in different sectors.

**DEBT, CASH DIVIDENDS AND SIGNALING:
EVIDENCE FROM AN EMERGING CAPITAL MARKET**

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ABSTRACT

Modern Joint Stock Company is a very significant arrangement in financial architecture, which led to the acceleration of the process of industrialization of the society. In view of the massive reliance on capital market and multitude of shareholders, there is always the problem of information gap between the shareholders (and investors in general) and the managers of the operations of these giant legal entities, viz., companies. The reference to ‘information’ here is in the area of knowledge about future prospects of the company; parity in information endowments between Managers and shareholders in general and investors in particular, is essential to enable the company’s share attain a value nearer to its intrinsic value. Absence of this parity in information endowments gives rise to information asymmetry. Since current market value of any asset (Physical or Financial) is the present value of its future earnings stream, appropriate value could be assigned to this asset by the investor when he/she has complete knowledge of the future earnings stream. Realization of shareholder wealth maximization goal hinges, to a considerable extent, on this knowledge possessed by the investors; companies send ‘signals’ to mitigate situations of information asymmetry. Financial Policies – debt and dividend policies - are considered by Corporate Managers to be effective signaling devices in communicating with the capital market.

FINANCIAL ENGINEERING: STRATEGIC OPTIONS FOR INDIAN COMPANIES

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ABSTRACT

Today's increasingly competitive business environment forces the Indian manufacturing firm to remain proactive to sustain the competitive advantages. The company should reengineer the complete business process to achieve the operational and financial efficiency. Indian manufacturing companies are facing the heat of the competition particularly after the opening up Indian economy through ensuring Liberalization, Privatization and Globalization in the country. To face the competition from the global economy, Indian manufacturing companies have to identify all the critical factors required for the all round success of the companies.

One of the important factors is prudent financial risk management with venturing for the innovative sources for funding the growth of the company. Apart from this, there is plethora of financial products lying in the hands of the company to hedge the financial risk. Now-a-days, the Financial Derivative products are being used by large number of companies to minimize their financial risks. The use of financial derivative products is getting momentum, which is evident from the growing volume of transactions made by Indian companies through BSE and NSE. Indian manufacturing companies should aim to engineer the financial products and process, which involves the design, development and the implementation of innovative financial instruments, and formulate the creative solutions to problems in financial risk management of a company. Indian capital market saw the launching of index futures in June 2000 on BSE and NSE. A year later, options on index were also introduced for trading on these exchanges. Later, stock options on individual stocks were launched in July 2001.

The latest product to enter into the derivative segment on these exchanges is contracts on stock futures in November 2001. Particularly, manufacturing companies should not leave any opportunity unexplored to use all the financial derivative products to manage the financial risks.

CURRENT VIEW AND ISSUES OF JAPANESE CORPORATE GOVERNANCE

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ABSTRACT

This study examines the nature of current view of the Japanese corporate governance and thereby recognizes major contemporary issues to be handled. More specifically the study attempts to address three main empirical questions. (i) How far has the recent reform of corporate governance progressed? (ii) What factors determine a company's reform effort? And (iii) Do reforms actually improve the level of corporate performance?

The results of the detailed analysis of Japanese corporate governance show that there is a large revolution occurring within the overall perspective of Japanese enterprises and it is drastically shifting towards the market principle. Among the changes, shareholder is becoming an important stakeholder in the Japanese corporation instead of a backbencher, an icon of silence as in the last fifty years. On the other hand, companies significantly compelled to deviate from the dependence on banks, using the capital market as the principle source of financing. Meanwhile remarkable priority on customers is also another striking present-day element. Interestingly all these are evolving while there is a greater priority on markets maintaining the higher emphasis on employees. Thus, this embryonic setup stringently necessitates the changes in the Japanese corporate governance.

The latest research findings categorically evidence that a speedy diversification is taking place among Japanese corporations in terms of corporate governance. However, on average, there is a group of corporations that increasingly depend on capital markets, while their shares are held mainly by foreign investors insisting on proper governance. It is reported that these firms are positive toward governance reforms, in accordance with the changes in the external environment, and their performance is comparatively high. On the contrary, there is another group of corporations that adhere to the cross-shareholding and depends highly on bank borrowings, while maintaining traditional employment practices. Notably, these firms are reported as passive toward governance reforms and their performance is also much low.

Amongst many voluntary and legislative reforms, introduction of executive officer system and outside directors system are attractive. The executive officer system is flattering more popular at an increasing rate. Compared to the situation prevailed few years ago, the growth rate of companies adopted this system is more than doubled. The outside director system is also becoming popular even though the rate of increase is lower than the executive officer system. Nevertheless, conventional boards were comprised of members who were internally promoted based on seniority or rank, now, becoming greatly diversified ensuring proper segregation between 'execution' and 'monitoring'.

The latest corporate governance reforms were able to contribute for the enhancement of the corporate performance of the Japanese enterprise. The latest studies show, in statistical terms, the relationship between governance reforms and corporate performance is positively significant. Proper information disclosure is significant on corporate performance and therefore increasing pressure on managers will be helpful to reduce the agency problem. However, there is no significant relationship between corporate performance and introduction of 'executive officer system' or 'outside director system' even though there is a good recognition at the implementation stage.

The determinants of the corporate governance reform efforts are considered, companies with high level of foreign ownership and high dependence on capital markets for their financing are very active in reforming their governance structure. Companies with a high ratio of stable stockholders and more dependence on borrowing for financing are passive toward governance reforms. The greater involvement of employees in management at companies is more active toward reforms and companies which maintain lifetime employment & Seniority systems are less active in governance reforms. Companies still assure long-term employment while introducing merit-based wage systems are active in reforms and gaining higher level of performance.

Furthermore, following are some other conclusive observations drawn from the study based on the available latest literature regarding the Japanese corporate governance.

- Present corporate structure of major Japanese corporations more or less converges towards US-style gradually.
- Governance policy making on governance started dramatically moving from main bank and keiretsu mentality.
- Managers are becoming strongly responsible to shareholders.
- Newly proposed corporate structure has no reasonable acceptance from the global level business leaders.

APPLICATION OF E-LEARNING IN A HYBRID PRODUCTION/OPERATIONS MANAGEMENT COURSE

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The higher education institutions are placing an ever-increasing emphasis on the use of Internet as an effective teaching tool and its incorporation into their curricula. Moreover, the substitution of the traditional classroom lectures with on-demand streaming lectures is gaining popularity in the delivery of many subject matters. The question is no longer whether an instructor should or should not employ Internet and its vast features to increase his/her teaching effectiveness. Apparently, it is rather inevitable for most disciplines to use Internet in some capacity. To that end, over the past eight years, the author has gradually incorporated the new and emerging information technologies into his courses. He has placed all of his courses on the web and employed the Internet as a means of acquiring up-to-date, relevant body of knowledge, disseminating the knowledge of subject matters, and effectively communicating with his students regardless of their geographical locations.

The author teaches and coordinates multiple sections a Production/Operations Management (POM) course at California State University, Fresno. This course is a four-unit, upper division, undergraduate core course required of all students majoring in business administration. The purpose of this course is to introduce students to the terminologies, concepts, and key decision problems of production/operations management; and to develop their ability to apply concepts and analytical techniques of production/operations management to decision making situations in the life of a productive system. The course places emphasis on the integration of various functions within the field of production/operations management and the interfaces between this discipline and other managerial functions.

To provide POM students with the opportunity to experience POM decision-making process, about four years ago the author expanded his use of Internet through the development and implementation of a new web-based simulation game which he named WebSim. Each semester, this simulation game provides about 250 students with the real-time communication (decision-making) capability through the Internet. Each POM student regardless of class section or instructor plays this game by managing his/her own WebSim firm, and is required to make individual decisions concerning forecasted demand, aggregate plan, production level, advertising, quality control, preventive maintenance, inventories, etc. Material Requirements Planning (MRP) is the foundation of this simulation game. The primary objective of this game is to increase total profit over a prolonged period of play. The game components are designed to correspond to the POM-related subject matters covered in the class.

To further enhance his teaching effectiveness, the author has recently developed and used a series of virtual lectures (on-demand streaming flash presentations) in lieu of the traditional classroom lectures. Students from all sections of the POM course can now select and stream any of the simulation components and the great majority of the POM subject matters whenever and wherever they may choose. Prior to reviewing each of these lectures, each student should download and print the appropriate worksheet related to the subject matter. These worksheets are designed to help students to take notes while reviewing the lectures. Mimicking a traditional classroom setting, students should use the worksheet to go through the required step-by-step quantitative analyses of each lecture. Students are also advised to

intermittently pause each virtual lecture and complete the analyses on their own and then continue the presentation and check to see if their results match those of the virtual instructor.

Even though a great majority of the course materials are presented through the web, the POM course has a hybrid structure and is taught by multiple instructors. Currently, students are required to attend three hours per week out of the course's four-hour requirement in a regular (traditional) class session. By the next semester, however, students will be required to only attend two hours of the regular class session. During this semester, the school is offering ten sections of this course. Three of the author's POM colleagues are in charge of conducting the regular class sessions and the author is in charge of the virtual portion of all of the POM sections.

The use Internet as a teaching platform, in general, and the use of on-demand flash streaming lectures, in particular, have proven to be effective means of teaching the POM subject matters. Unlike the traditional classroom setting, the on-demand flash streaming lectures place geographically dispersed students in control of their learning process. This approach provides them with the flexibility of pausing, moving back and forth, and restarting any of the lectures. Consequently, the POM students' reactions to this e-learning pedagogy have been quite positive. They are especially pleased with the 24-hour accessibility of the web sites and the ongoing line of communication with each other and their instructors. Finally, in addition to increased teaching effectiveness, the virtual components of this course have enhanced the efficient use of the school's limited available classroom capacity through the reduction of regular class time.

Despite the quality of an e-learning program, however, its perceived effectiveness could be impacted by the student attributes and expectations. Accordingly, the author used a web-based questionnaire composed of five groups of questions consisting of a total of ninety-one variables to study various aspects of this hybrid course. The first group of questions classified students according to their demographic information. The second group concentrated on the respondent's employment status, work experience, workload, course/study load, and accessibility to computer and Internet. The third group of questions evaluated students according to their study habits, course preparation, time management, reading/writing skills, technical skills, and personal attributes. The fourth group of questions was related to various pedagogical aspects of the POM course. And the last group of questions dealt with the comparison of four types of course settings: (1) traditional classroom, (2) web-enhanced, (3) web-based (totally online), and (4) a blend of face-to-face and virtual lectures (a format similar to that of the POM hybrid course). The POM students were informed of the research survey during their regular class sessions, via an email, and through an announcement that was placed on the course web site. The questionnaire was placed on the web for ten days. To maintain confidentiality, this survey did not ask students to provide their names and they were assured that their responses will not affect their grades. A total of 255 students constitute the survey group, of whom 236 (92.5%) completed and submitted the web-based research questionnaire. This presentation primarily concentrates on the findings associated with the POM course's virtual components/functions and the comparison of the four course settings.

The students were asked to express their preference for the four different course settings. The traditional classroom course setting received the highest preference rating closely followed by the hybrid course setting. The web-enhanced course setting secured the third place in order of preference. On the other extreme, the web-based (totally online) course setting

received the lowest level of preference. Apparently, a great majority of students are not yet ready to take totally online courses. The students also rated the overall effectiveness of the POM course (a blend of face-to-face and virtual lectures) in comparison to the courses that they have taken in the traditional classroom, web-enhanced, and web-based (totally online) settings. A majority of them found the POM course setting (hybrid format) to be overall either more effective or far more effective in comparison to the courses they have taken in the traditional classroom and web-enhanced settings.

The students were also asked to rate the effectiveness of the POM course's major virtual components/functions in their learning the POM subject matters. The majority of students found various virtual components of the course to be either effective or very effective. They placed the highest effectiveness ratings on the three major functions of the virtual lectures: (1) the flexibility to view the virtual lectures anytime, (2) the flexibility to view the virtual lectures anyplace, and (3) the ability to pause, move back and forth, and rewind the virtual lectures.

DOES THE MARKET REACT DIFFERENTLY TO LEAD VERSUS FOLLOW ANALYST RECOMMENDATIONS?

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ABSTRACT

This study examines the capital market returns and volumes accompanying lead versus follow analyst recommendations. Our primary goal is to better understand the difference in perceived information contents in the recommendations by these two groups of analysts.

Using the data from First Call database during 1994-2001, we identify lead and follow analysts based on the timeliness of their recommendations. Considering that the clustering of analyst recommendations, we hand-collect (1) the forerunning lead and follow analyst recommendations, which are issued at least 13 days after the most recent recommendations, and (2) the paired-up lead and follow analyst recommendations.

In many ways, our methodology is similar to that of Cooper, Day, and Lewis (2001), who ranked analysts by the timeliness in making earnings forecasts. Both investment recommendations and earnings forecasts are the key elements in analysts' research reports. Nevertheless, as compared with distinguishing the analysts who provide more timely estimates from the others, it may be a more difficult task for the market to recognize the fore-runners for the *buy/hold/sell* ratings. Note that the audience recognizes the target year of each earning forecast measure and can easily find the analysts who provide the EPS estimates well before the report days. In contrast, it may require a systematic investigation in finding the fore-runners in investment recommendations since the extent a firm is over- or under-priced changes incessantly. Even when there exists no new firm value-relevant events subsequent to an unbiased recommendation, a research report issued immediately afterwards may be informative when the market under- or over-reacts to prior analyst opinions. There are various drivers to an analyst's issuing a recommendation. The emergence of value-relevant events, market inefficiencies, or the pressure for mimicry may all trigger a recommendation with short lead time but long follow time. Therefore, it may be more challenging but equally as valuable to identify the leaders and followers among the analysts in terms of their recommendations.

Consistent with the notion that the market perceives the lead analysts as the superior price forecasters, our result documents more pronounced market reactions to these analysts. First, the price impacts of the forerunning leader (follower) recommendations appear to be more (less) pronounced. Moreover, the difference in event-day volumes between upgrading and downgrading observations are significant (approximately 155% and 191% of the non-event-day average, respectively.) Second, for the *buy/hold/sell* ratings arriving in pairs, the market has positive reactions when the latter lead analysts consistently issue favorable recommendations. Nevertheless, the market reactions are more negative for the latter lead analyst recommendations with differential ratings within the pairs. In contrast, the market reactions to the paired-up follower recommendations are insignificant.

GAME THEORY IN FINANCIAL MARKETS LITIGATION

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ABSTRACT

In recent times there has been considerable uncertainty in the manner in which financial markets have operated. Litigation involving financial market participants has illustrated the use of ingenious and opportunistic legal argument to circumvent the proper enforcement of agreements struck in the commercial marketplace. What appears to be a good bargain at the time of formation, can as it often happens, produce a sour result for one of the contracting parties when the deal has been completed. Instead of allowing losses lie where they have fallen, the courts have been sympathetic to hear, and give effect to, opportunistic submissions engendered by losing counterparties.

The central thesis of the article is that financial markets and in particular, litigants in derivatives markets continue to practice significant game playing behavior in the pursuit of opportunistic objectives, which in turn leads to unsettled law. The game playing behavior, which has afflicted financial markets litigation has often produced uneasy outcomes, led to unsettled law and undermined market confidence in rules and regulation.

Applying the work of game theorists it is argued that uncertainty generated from game playing in financial markets has no clear winners. Indeed, it is further submitted that the surrounding uncertainty has generated considerable legal risk, has no clear benefits and overwhelming social costs. As game theorists have pointed out with every agreement there are corresponding winners and losers. This is certainly the case with derivative agreements, which are effectively zero-sum games. So the following point can be simply made. Although opportunism can produce wealth-maximizing returns for successful claimants, society as a whole may not be any better off. This is consistent with our earlier representation of the likely market response from a finding of legal risk. Prices will rise and the market will contract and this can prove to be harmful. In the worst case scenario entire markets may be driven offshore.

Opportunism continues to affect the rule of law in a most perverse manner, encouraged by the adversarial nature of the common law system with its emphasis on competitive advocacy. Indeed, it is an interesting observation that competition in the legal arena may in fact produce a sub-optimal outcome because the rule of law becomes uncertain, encapsulating more subjectivity and arbitrariness in the decision making process.

Market participants have not been alone in generating uncertainty through such litigious conduct. State regulators, encouraged by their political masters to aggressively pursue the enforcement of securities laws and related disclosure rules, have also contributed to the legal malaise. Regulators have also employed the practice of legal opportunism in a number of cases dealing with the characterization of Over-the-Counter (OTC) derivatives instruments. OTC markets were traditionally less regulated than exchange traded markets because they comprised sophisticated, repeat players, were less susceptible to manipulation and were not accessed by retail investors. The principal motive for regulators here is to broaden the regulatory net and regulate OTC markets, an outcome which has now been achieved through wholesale legislative changes in Australia and the United Kingdom, with pressure now building for similar changes to be made in the United States.

INTEGRATED VOLATILITY AND UHF-GARCH MODELS: A COMPARISON USING HIGH FREQUENCY FINANCIAL DATA

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ABSTRACT

A very promising literature has been recently devoted to the modeling of ultra-high-frequency (UHF) data. The main problem encountered to measure volatility dynamics of high-frequency intra-daily data lies in the irregularity at which observations arrive. Engle and Russell (1998) have proposed a new class of point processes with dependent arrival rates: autoregressive conditional duration (ACD) point processes. Engle (2000) has generalized this approach and developed a Ultra-High-Frequency GARCH model. At the same time, Andersen and Bollerslev (1998) and Bollerslev and Wright (2001) have studied the volatility of UHF financial data by introducing the concept of integrated volatility. This integrated volatility is measured by the squared value of intra-daily returns.

Our first aim in this paper is to develop an empirical application of ACD GARCH models in forecasting future volatilities. Then we propose another contribution in comparing the performances of ACD GARCH models with the integrated volatility. Therefore we propose a procedure to take into account the calendar effect or the time of day effect. We introduce an adjusted duration to calculate volatilities before comparing volatility forecasts. We show that the models induced by the two approaches lead to poor performances. Nevertheless, our results show that the integrated volatility method tends to outperform UHF-GARCH models.

Our results show that the integrated volatility seems to be better, in terms of RMSE, MAE, and Mincer-Zarnowitz (1969) criteria, than any of UHF-GARCH models. Although none of the tested models has well performed on the IBM stock data used for the empirical analysis, it is quite deceiving that the ACD GARCH has not performed better than the integrated volatility. It is well known in the literature that when using GARCH models to forecast higher frequency data, they perform very poorly. Nevertheless, the theoretical improvement developed by Engle to take into account time deformation seems to show poor performances when it is used to forecast volatilities.

Keywords: Integrated volatility, Ultra High Frequency GARCH, time deformation, financial markets.

ETHICAL BEHAVIORS IN FINANCIAL MARKETS

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ABSTRACT

The role of ethics within the stock market and business environments has a significant impact on the methods and processes within our domestic and global environments. The ramifications of unethical behavior within the market structure have an overwhelming impact on both short term and long term considerations for investors. It is imperative that ethics be considered and evaluated based on the significance of its existence within the business and investment sectors. The unethical events of recent years have proven to be symbolic of the growing importance of this topic relative to the betterment of the marketplace and society in general. Very few studies have investigated the relationship between unethical behavior in stock markets and the level of stock market activity. This paper discusses the recent unethical behavior in the U.S. stock markets and analyzes the relationship between market exuberance and the amount of unethical activity. Results of this study are useful to policymakers, investors, and to senior management of companies.

CORPORATE GOVERNANCE AND THE CONTROL OF BANKS IN GERMAN FAMILY-OWNED FIRMS

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ABSTRACT

Over the last years various initiatives to reform corporate governance have sought ways to better control companies and to keep them on course toward achievement of their objectives. These predominantly capital market-driven initiatives only partly effect the numerous family-owned firms in Continental Europe, as they are usually not financed via the capital market. The paper investigates the corporate governance of family-owned firms in Germany (mainly in contrast to the U.S. and the U.K.) and the role of bank control. While family firms traditionally value independence from the interests of outside shareholders, increasing bank regulation, partly stimulated by initiatives reforming corporate governance in the banking industry, leads to a larger share of control for banks. Studies show that sharing control with banks is a widely spread phenomenon. As banks threaten to terminate in case of poor performance, a share of control gets transferred to them. For family firms, the banks' latent commitment to liquidate may become an obstacle, as banks usually receive an only small fraction of the going concern value but a disproportionate share of the liquidation value of the firm. In German practice, banks' control on family firms increases. Recent empirical research by Freidank and Paetzmann (2002) shows that German banks have begun to perform Basel II-compatible credit assessment processes, swinging from traditionally retrospective to more and more prospective rating criteria as well as increasing the frequency of information flow relevant to rating criteria. In the end, this may lead to a specific bank monitoring supported by the family firm's specific reporting system. Out of three hypotheses, the empirical study cited in this paper supports two. Firstly, in order to exert control on family firms, banks increasingly value frequent monitoring information for which they more and more request prospective strategy and planning data (hypothesis 1). Secondly, in case of financial distress the banks' control on family firms increases significantly (hypothesis 3). Finally and other than hypothesized, banks continue to highly value independent auditor's reports as supplementary information for credit assessment (hypothesis 2).

Keywords

corporate governance, corporate ownership and control, bank control, family firms

JEL Classifications

G34, G38, G32, L22

INITIAL PUBLIC OFFERINGS, ATHENS STOCK EXCHANGE

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ABSTRACT

Companies going public in Greece include a forecast of next year's profit in their prospectuses. Investors use this information for their future decision. Accuracy of the forecast is crucial because it seems to be a credible signal for long-term performance of stocks. In this study we examine the accuracy of management profits forecasts contained in prospectuses of companies newly listing on the Athens Stock Exchange. For that reason four different forecast error metrics, forecast error, absolute forecast error, squared forecast error and superiority of management forecast are considered. The results derived show a medium level of accuracy in Greek market. The interesting feature in this paper is the mandatory status of Greek market for the disclosure of earning forecast in the prospectuses of the companies and the motivation is that there is no previous literature covering forecast earning accuracy not only in Greek market but also in European level. Data set consists of 208 IPOs, which were floated, in the Athens Stock Exchange during January 1994 to December of 2001.

In order to test a number of company specific characteristics, for the accuracy of Greek IPO management earnings forecasts we conduct a regression analysis. We apply a cross sectional model to explain variations in accuracies but it has very weak significant power. Our results suggest that investors are able to anticipate forecast errors at the time of listings. Investigation on independent variables, influencing the forecast accuracy show that four factors named size of the IPO' (Size), age of the firm by the time it goes public (Age), financial leverage (Lev) and ownership by insiders (Own) are significant determinants.

Keywords: Earnings forecast accuracy, Error Metrics, Absolute forecasts error, Initial Public Offerings, Athens Stock Exchange

CURRENCY SUBSTITUTION: EVIDENCE FROM TURKEY

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ABSTRACT

In a seminal paper on currency substitution, Imrohoroglu (1994) used a dynamic equilibrium model of a monetary economy to estimate the elasticity of currency substitution between the Canadian Dollar and the US Dollar. His results showed that currency substitution was of second order importance in a low inflation country, although he argued that this analysis might give different estimation results for high inflation countries, such as Turkey and Mexico, whose financial markets have some characteristics of the developing countries' financial markets.

This paper examines the currency substitution phenomenon in a high inflation small open economy, namely Turkey, using money in the utility function model of Imrohoroglu (1994). The purpose of the paper is to determine the economic significance of currency substitution in the high inflation Turkish economy. Selçuk (1994) provided some support for the existence of currency substitution in Turkey using Imrohoroglu's separable utility function. We extend Selçuk's analysis by incorporating Imrohoroglu's non-separable utility function for the case of Turkey.

DATA AND METHODOLOGY

The variables that are used in this study are all taken from the IMF International Financial Statistics, the Turkish Central Bank and the Turkish Treasury database. The duration of the study starts from January 1986 to December 1999. This sample was selected to cover the floating exchange rate period and data for foreign currency deposits available. We use M1 as a measure of the nominal domestic money supply, and dollar denominated foreign currency deposits held in Turkish banks by nonofficial, non-bank Turkish residents as a measure of the foreign currency demand and therefore a measure of currency substitution. This proxy for currency substitution should be seen as the lower bound for demand for foreign currency. Monthly observations on the US price level (CPI 1995=100) and the Turkish price indices (CPI, 1995=100) are taken from the IMF--International Financial Statistics CD-ROM (November 2001).

To determine the degree of currency substitution and to explain currency substitution and its implications for the case of Turkey, we use Hansen's Generalized Method of Moment estimation technique and Golan, Judge and Miller (1996)'s Generalized Maximum Entropy estimation technique.

RESULTS

Using foreign currency deposits as a proxy for foreign currency being used as a medium of exchange, our results from both estimation techniques showed a high degree of currency substitution in the Turkish economy. The high share of foreign real balances in the production of liquidity services, as well as the high degree of elasticity of currency substitution, indicate that currency substitution is of first order importance in the Turkish economy.

GMM estimation results for both separable and non-separable utility functions show that foreign real balances enter in the production of liquidity services and that the economic significance of foreign real balances is very important, given the magnitude of the estimate, which is between 36 percent and 26 percent. This implies that the US Dollar has an important role in individuals' transactions. Similarly, the estimates of elasticity of the currency substitution parameter imply an elasticity of currency substitution greater than one, between 36.76 and 2.72, depending on the instrument set used and utility function. Using the traditional instrument set, our result suggests that US Dollar is almost a perfect substitute for the Turkish Lira. This might be a spurious conclusion but it reflects the importance of currency substitution in Turkey. Such findings of high degrees of currency substitution are in line with what we observe in the actual data set. Currency substitution is of first order importance in Turkey. Using other instrument sets results in relatively more robust estimations of the elasticity of currency substitution and the share of domestic balances in the production of liquidity services.

GME estimation results are quantitatively different from the GMM estimation results, but are qualitatively the same. The coefficient on the share of domestic real balances in the production of domestic liquidity services, is between 0.4007 and 0.632 depending on the utility function, and implies that foreign real balances enter in the production of liquidity services. The economic significance of the foreign real balances is very important, given the magnitude of the estimate, between 47 and 56 percent. This estimate is in line with what we observe in the data. During the last decade, currency substitution as proxied by the ratio of foreign currency deposits to total currency in the economy has been around 55 percent. The point estimate for the elasticity of currency substitution parameter implies the elasticity of currency substitution is between 1.33 and 1.38, which is way below what we found using GMM estimation. However, it still shows the importance of currency substitution in the economy. In the production of domestic liquidity services, the US Dollar and the Turkish Lira can be substituted, and residents accept both currencies in their transactions without any charges or costs.

This paper is divided into six sections. In addition to the introduction, Section 2 discusses the currency substitution literature. Section 3 introduces the basic model, where we discuss Imrohoroğlu's dynamic money in the utility function in detail. Section 4 describes the data, estimation procedure and the tests. Empirical findings are given in Section 5. Section 6 contains some concluding remarks.

THE IMPACT OF CUSTOMER SERVICES ON PRICE DISPERSION IN ONLINE MARKETS

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During April 1995 through April 2000, an era known as the dot.com boom, e-tailers developed and introduced new Internet-based marketing techniques. Kasyanov and McIntyre (Journal of the Academy of Marketing Sciences, Volume 30, 2002) have developed a single unifying taxonomy for this new phenomenon. Their extensive literature review identified more than 30 e-marketing tools and terms. Synthesizing these 30 e-marketing tools and concepts by utilizing the paradigms of exchange, relationships, and digital interactions in networks, they have identified eleven e-marketing functions that constitute the new phenomenon of e-marketing mix (traditional marketing mix elements are: product, price, place, promotion, plus two new Ps: personalization, and privacy; 2 new Cs: customer service and community; and 3 New Ss: site, security, and sales promotion.). The resulting e-marketing mix is expressed by the following acronym: 4Ps + P2 C2 S3. Using the Kasyanov and McIntyre model this paper focuses on the price component of e-marketing mix and its relationship to level of customer services as defined and measured by Bizrate.com. Pricing on the Internet has attracted much research attention. The central themes of researches have centered on whether price dispersion exists or they are higher online than offline. This study used the new conceptual framework proposed by Kasyanov and McIntyre to examine whether or not the observed price dispersion in e-markets are due to differences in customer services quality offered by e-tailers.

To test if retailer service quality explains online price dispersion, this study used the data compiled by www.BizRate.com one of the well-known price comparison. The customers' scores of "Quality of Customer Services" of 272 e-stores who were selling identical products and brands (Canon and Sony camcorders, Quick Book Pro, Quick book Basic, Window XP, Photo shop, Norton antivirus, and Front Page soft wares) were collected and were subjected to rigorous Factor and Regression analysis. Bizrate.com measures ten aspects of e-tailers' services using a 10-point scale. The ten variables included: Ease of Ordering (Convenience and speed of ordering), Product Selection (Breadth/depth of products offered), Product Information (Information quantity, quality & relevance), Price (Prices relative to similar stores), Web Site Performance (Layout, links, pictures, images & speed), Shipping & Handling (Charges & Options), On-Time Delivery (Expected vs. actual delivery date), Product Met Expectations (Product description/depiction vs. what you received), Customer Support (Status updates and complaint/question handling), and Order Tracking (Ability to effectively track orders). The following model was used in this study:

$$P_j / \bar{P} = \alpha + \sum_i \beta_i S_{ij}$$

Where:

P_j = Price of e-tailer J, \bar{P} = average price of all retailers
 S_{ij} = Utility-providing Customer Service Feature i offered by e-tailer_j (factor analysis scores)

To make the prices across different items in each category comparable a price index variable for each item was defined as observed price divided by the mean price of that item. The price index eliminated the cross-item differences. To find whether or not a systematic pattern in factors exist, the analysis was done at three levels: product, product category (electronic and computer software), and at individual brand levels. Kaiser-Meyer-Olkin Measure of

Sampling Adequacy and Bartlett's Test of Sphericity indicated that all obtained factors were statistically significant at .01 level. At three level of analysis five factors were identified. On average 94% of variation in data was explained by five factors. Although the factors had different loading on ten measures of customer services at three level of analysis, nevertheless as the Table 1 shows a clear pattern of significant factors emerged at product and product category levels: Reliability & Shopping Convenience, Product Information & Site Design, Order Tracking, Relative Price, Charges explained & Shown, and Product Expectations Met. When the factor analysis was repeated at brand level a similar pattern emerged. Therefore, the factor scores were used as independent variables and price index was used as dependent variable in regression analysis to examine price discrepancies attributed to customer services.

Because of space limitation here, the important aspects of factor and regression analysis is represented in same table. According to result of regression analysis, on average 25% of variation in price discrepancy in e-stores quality levels of customer services can be explained by quality of customer services. Considering all factors obtained, as Table 1 demonstrates, the perceived reliability of e-store, whether or not all relevant charges are explained, order tracking capability and providing adequate product Information are the most important factors in consumer mind. Therefore, e-tailers can use these factors to position their e-store differently and consequently charge higher prices.

TABLE 1. REGRESSION AND FACTOR ANALYSIS RESULTS

Factors	Canon	Sony	Quick Book Pro	Quick book Basic	Window XP	Photo shop	Norton	Front Page
Regression R-Square	.252	.20	.132	.389	.285	.322	.363	.125
Reliability		X*	X	X	X	X	X	X
Charges Explained	X**	X	X	X***	X*	X*		X
Order Tracking			X		X*	X	X	X
Product Information			X		X		X**	X
Relative Price			X	X			X	X
Shopping Convenience	X	X						
Product Expectation Met		X			X**			
Product Selection	X			X				
Product/price Information		X				X***		
Product/Order Tracking Information				X				
Site Look and Design						X		
On-Time Delivery & S/H charges							X**	

*p<.10, **p<.05, ***p<.01

EXPLORING THE DETERMINANTS OF COST EFFICIENCY OF MICROFINANCE INSTITUTIONS

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EXECUTIVE SUMMARY

This paper has two main objectives: first, to measure cost efficiency by comparing alternative frontier techniques, and second, to analyze possible efficiency determinants of the Peruvian municipal banks (PMBs) between 1994 and 1999. Methodological consistency of parametric and non-parametric cost frontier approach outcomes are tested, by comparing efficiency estimates computed by econometric stochastic frontier (SFA) and distribution free (DFA) and non-parametric data envelopment (DEA) techniques. Additionally, an exploratory analysis of hypothesized explanatory variables is performed, based upon firm's location and age, managerial quality and financial performance, as main determinants of its cost efficiency.

The study case is a microfinance Peruvian experience, selected to show that whenever economic efficiency is an institutional goal, formal economic analysis may be performed rigorously even for microfinance institutions (MFI) engaged with extra-economic objectives. But what does microfinance mean? Limited availability of financial services for small firms and low-income consumers is a common feature of developing countries, as Latin America. Historical bias of the economic policy in favor of large cities and urban areas has reinforced the poor development of financial markets elsewhere in these countries, being microenterprises (ME) among those most affected. Main hypotheses about the poor supply of formal financial services to these clients are high risk, too small scale, high transaction costs, asymmetric information, poor profitability and so. Recent successful experiences of local government, collective organizations and non-government organizations (NGO) show that under convenient conditions, the financial services provision to MEs may be economically feasible and profitable. Parallel to formal financial supply, there have been informal financial channels (*e.g.*, relatives, friends, moneylenders, ROSCAs) historically persistent even in remote locations, with no funding support. Additionally, the significant overlapping between ME activity and urban poverty has induced the international community and LDC local governments to recently promote microfinance programs as part of poverty alleviation policies. A wide arrangement of MFI institutions have implemented those programs, challenging a so alleged trade off between financial services supply to the poor and economic efficiency. Lessons learned from informal channels and from several programs results have favored to evolve toward new paradigms about the role that sustainable MFI may play for these clients, while behaving as efficient financial institutions. Efficiency analysis of MFIs is an important matter not only for institutional interests but also to guarantee sustainability of financial supply to their clients, who other way may have no alternative financial sources available. Thus efficiency analysis becomes a key tool in microfinance, as part of the development and financial policy design of LDC and their policy makers.

For performance analysis purposes, economic efficiency of MFI has been measured adapting the conventional financial ratio methodology, as other financial institutions do as well. In the last three decades, alternative financial ratios have been formulated and computed by international organizations, practitioners and policy makers to measure and compare efficiency of MFI. However, as the literature has shown, this methodology has important main limitations because of its focus on partial measurement of features of performance,

instead of providing an overall result about the firm success in meeting its economic goal. In the case of MFI, the financial ratio analysis may mislead overall efficiency of these firms. One important motivation for this paper is to improve the quality of the efficiency analysis of MFI by applying alternative frontier efficiency techniques, in order to better measure their efficiency for comparison purposes. The frontier approaches adopted here include the non-parametric Data Envelopment Analysis DEA and parametric Stochastic Frontier SFA and Distribution Free DFA techniques, the three of them used to compute overall cost efficiency indices per institution. The application case is referred to the 13 Peruvian municipal banks that operate as MFI during the period of study 1994-1999, considering the possible structural change linked to the German technical assistance departure in 1996. Main results from the three techniques show consistently that two mid-sized PMBs are the most efficient MFI, while the two least efficient are, one large old unit and one small young bank along these years. Most of the differences among these techniques' results are in the middle positions. Through these years, the results report important efficiency changes after 1996, mostly in the middle ranked PMBs. Consistency of the top and bottom ranks for the SFA, DFA and DEA techniques may show that inefficiency issues have been more important than random events among these PMBs, including the German assistance departure.

Finally, an exploratory analysis of potential determinants of efficiency is included in this study, including individual correlations and basic regressions in a panel data frame. Firm's characteristics of location, size and productivity appear to be significant for efficiency outcomes, especially for those performing as the most efficient PMB units along 1994-1999. Financial management variables as deposit preference and leverage risk, and financial performance indicators as default and financial sufficiency, all are somehow significantly correlated to efficiency of PMBs, mainly for those least efficient ones. From these findings, some policy inferences may be proposed. Institutional policies oriented to increase efficiency must be oriented to reinforce the quality of their financial management and their financial performance. Also local governments and international cooperation agencies stressing economic efficiency in microfinance might consider the significant differences across MFIs when looking for reducing their transaction costs. Additional policies might also include supervisory and regulatory rules, incentives to improve the monitoring and advisory roles of second-tier institutions.

Key words: frontier analysis, cost efficiency, microfinance, municipal banks.

JEL codes: C20, C61, D24, G21, H79, O17, O54

EXAMINING THE MULTIPLE VOLATILITIES AND CO-MOVEMENTS AS WELL AS BETA COEFFICIENTS OF INTERNATIONAL STOCK MARKETS

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ABSTRACT

This study establishes and tests two hypotheses. First, both the world and individual country's market equity return shocks are subject to their own processes of volatility state switches. Second, in each equity market, the correlation and the systematic risk coefficients (β) are different in various combinations of the world and the individual market volatility regimes.

Because of the occurrences of many political and economic shocks from domestic or international economic and financial environments, one could easily find that the stock returns are much volatile during some periods. The traditional single- β ICAPM (international capital asset pricing model) did not consider the relationships between the market volatilities and the market correlations, and then assumed the risk coefficient of individual country's stock asset being constant. In this paper, we use the SWARCH models to identify the specific market volatility states at each time point, and then establish and analyze the settings with multi-correlations and the multi- β from the various volatility combinations from the individual and the world stock markets.

Our empirical results are consistent with the following notions. First, the greatest correlation is associated with the terms that *both* of home and world markets being at the high volatility regimes. Second, the largest β appears in the situation that home and world markets are at the high and low variances, *respectively*. Third, the differential β settings from various combinations of volatility states may be one of drivers to the documented abnormal returns. Because of the establishment of international portfolio heavily relies on these variables in this paper and the rapid growth of the trend of the capital globalization, the research designs and the research results of this paper would provide a significant contribution to the theoretical and practical fields.

Keywords: Multi- β International Capital Asset Pricing Model, Equity Return Volatility, Correlation in International Equity Returns, Abnormal Returns, Markov-switching model

JEL Classification: G11, G12, G15

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CORPORATE GOVERNANCE IN EAST ASIA: THE POLICY RATIONALE FOR REFORM

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This paper considers prospects for enhancing corporate governance practices in East Asia. It does so largely by examining questions of evidence and justification. First, what do we know about corporate governance in East Asia? The short answer is that new research in financial economics by Rafael La Porta, Florencio Lopez-de-Silanes, Andrei Shleifer and Robert Vishny (LLSV) has revolutionized the way we look at the subject. The so-called “law matters” thesis holds that legal regulation and enforcement is critical to good corporate governance and has particular application to East Asia. Second, are there good, non-trivial, reasons for seeking to enhance corporate governance practices in East Asia? Again, the short answer is there are such reasons and they stem from the work of economists such as Ross Levine on the link between financial development and economic growth. I contend that governmental focus on this policy rationale – the link between investor protection, the development of financial markets and national economic growth – is the key means to effect corporate governance reform in East Asia. The reason is simple: this rationale provides governments with a trump card to play against the powerful lobbying of controlling shareholders who seek to resist corporate governance reform.

The principal insights discussed in the paper flow from the work of Rafael La Porta and colleagues and other scholars working in this vein – the “law matters” thesis. Simon Johnson and colleagues have advanced a related hypothesis with application to the Asian crisis. Both lines of research imply that legal corporate governance measures are much more important than previously thought. In short, the legal approach to corporate governance holds that the key mechanism is the protection of outside investors through the legal system, meaning both laws and their enforcement. Investor protection is important because of potential and actual expropriation of minority shareholders and creditors by controlling shareholders. There is good evidence of expropriation of minority shareholders in the East Asia. Hence, legal rules and their enforcement are crucial because in some countries enforcement cannot be assumed.

The quality or otherwise of investor protection has consequences for the particular country. First, investor protection has implications for ownership structures; countries with poor investor protection typically exhibit more concentrated control of firms than do countries with good investor protection.

A second consequence is that investor protection encourages the development of financial markets. It is notorious that equity markets in East Asia are underdeveloped and the region suffers from over reliance on bank funding. Thus, increased investor protection measures might be expected to assist the development of equity and debt markets in East Asia. Conversely, it has been found that an absence of investor protection exacerbated the impact of the Asian financial crisis of 1997-98.

A third consequence is that through its effect on financial markets, investor protection influences the real economy. LLSV note the link between financial development and economic growth. This line of analysis is not new. In 1873, Walter Bagehot argued that laws governing the capital market had economic consequences. He saw a clear link between laws governing capital formation and economic growth.

Are there good, non-trivial, reasons for seeking to enhance corporate governance practices in East Asia? I suggest that nations, foreign investors and other stakeholders (for example, the International Monetary Fund) all have substantial reasons for taking corporate governance reform seriously.

East Asian governments - like governments elsewhere - desire growth in order to improve living standards for their citizens. As Michael Porter has observed, “[t]he principal economic goal of a nation is to produce a high and rising standard of living for its citizens.” The next step in the argument is to refer to the new evidence, which demonstrates that investor protection encourages the development of financial markets. The final step is to advert to the large body of literature that links financial development with economic growth. There is now a rich vein of modern economic analysis showing a positive, first order relationship between the development of financial markets and economic growth. Recently, this research has entered a new phase of sophistication providing more support for the view that “law matters”. Hence, if it is in the national interest to promote economic growth then good corporate governance is one way of achieving that goal.

Foreign investors generally comprise the bulk of minority shareholders in most Asian stock markets. Recall that - according to LLSV - expropriation of minorities is the major principal-agent problem for listed companies in East Asia. Hence, I infer that it is foreign shareholders who are most likely to suffer expropriation. Such a result cannot be in the national interest where there is over-reliance on bank funding and a desire to develop local equity markets. Thus, enhancing corporate governance by protecting minority shareholders must be in the national interest. In China, for example, it is a survival issue since reform of State-owned enterprises will partly turn on the attraction of foreign equity capital.

All shareholders, with the possible exception of some governments and controlling families appear to have a direct interest in enhancing corporate governance. Here, the history of the Renong conglomerate in Malaysia is instructive. There are two lessons to be drawn from this incident. First, good corporate governance can increase corporate valuations and hence benefit all shareholders. Second, a shock to the real economy can propel governments to take strong action on corporate governance.

Investor protection may require radical changes to law and the enforcement of such laws. According to LLSV, the main sources of opposition to such changes come from governments and controlling families. Governments may not wish to cede regulatory control and families oppose a reduction in control rights due to the diminution of expropriation opportunities. Hence, successful reforms have occurred only when the special interests could be destroyed or appeased. An example is legal reform in Japan after World War II. To this extent, a precipitating crisis (punctuated equilibrium) seems a necessary precondition to reform. A real shock to the East Asian economies may provide the requisite stimulus. Alternatively, strong political will may produce the desired result.

It is concluded that prospects for enhancing corporate governance in East Asia are best where governments clearly understand the policy implications of La Porta and colleagues, namely, the significant link between corporate governance and economic growth. In particular, this rationale provides a useful and credible answer to anti-reform lobbying from controlling shareholders. To date, most of the literature has focused on aspects of legal reform. However, the first step in the reform process is political; governments must articulate the policy rationale and then move swiftly to implement investor protection measures.

THE CROWDING EFFECT OF FOREIGN DIRECT INVESTMENT ON CHINA'S DOMESTIC INVESTMENT IN CHINA

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ABSTRACT

This paper explores the impact of Foreign Direct Investment (FDI) inflow in China on its domestic investment. The paper provides a theoretical model of investment function that includes FDI variables. The results show that Foreign Direct Investment in China crowds out domestic investment over the period of 1980-2000. The effect of Crowding out by FDI is strong in the East and Middle region of China.

Since late 1990s, China has experienced a prolonged period of deflation, declining commodity prices, dropping investment rate and intensively enlarging difference between deposits and credits. Many have analyzed the cause of the current deflation in China, and different analysts have put forward many different factors contributing to the deflation. Fan (1999) holds that the aggregate demand shortage is the dominating cause of the current of deflation; Yu (1999) points out that to the lack of efficiency that exit system and macroeconomic constructive policies, the current deflation is due to enterprise loss caused by low production efficiency and high production cost; Liu (1999) finds that the structural transformation gap results in the current deflation; Hong (2000) believes that since China was entering buyer's market while per capita GDP was still low, the cause behind supply exceeding demand is not over supply, but demand shortage. Lin's empirical study (1999) shows that the current deflation is resulted from the serious oversupply; Chen (2001) studies the impact of high saving rate on economic growth by using two-sector Solow model. He concludes that high domestic saving rate is not the germ of demand shortage.

The exogenous demand shock caused by the Asian financial crisis and the endogenous demand shock caused by over capacity of domestic consumer goods and relative shortage of capital goods induce current deflation. Zhang (2002) develops an explanatory framework based on neo-classical growth model to explain Chinese economic growth rate decline since the mid-1990. He finds a negative correlation between capital-output ratio and the growth rate in post-reform era and his paper provided an explanation. He argues that such a negative correlation is a result of insensitivity of capital formation to GDP growth.

The above ideas are really helpful and greatly contributed to the academic and practical researches, but they all neglect one factor --- the inflow foreign direct investment (FDI). Miao Wang (2003) based on data for 50 countries over a 30-year period of FDI in China showed that contemporaneous FDI inflows have a negative effect on host country's domestic investment. However, the total effect of contemporaneous and lagged FDI inflows on domestic investment (the cumulative effect of FDI) is different in developing countries and OECD countries. The cumulative effect of FDI is positive in developing host countries, while the cumulative of FDI inflows is neutral on the domestic investment in OECD countries. The impact of the inflow FDI on domestic investment is greatly related with domestic economic policy, industrial structure and tech level, customers' purchasing power and strength of domestic enterprises. The inflow FDI will not only bring capital and increase employment, but also create knowledge and tech spillover. Therefore, in many cases, the

inflow FDI has favorable effects on the formation of domestic investment and domestic capital. However, when FDI enters economy in sectors where there already exist plenty of domestic producers, multinational enterprises can take advantage of powerful R&D ability, scientific production management, efficient marketing to fight domestic enterprises, and therefore, foreign investors may displace domestic investors. On the other hand, FDI is more likely to take away investment opportunities and crowd out domestic investment when it takes place in areas where there already exist domestic producers.

Since 1990's, foreign-invested companies pay more and more attention to Chinese domestic marketing, which leads to more fierce market competition. Foreign-invested companies, with their leading tech, powerful money strength, mature marketing methods, scientific production management, have rapidly captured the domestic market shares and monopolize many industries. Moreover, superior working conditions provided by foreign-invested companies are always attracting a lot of excellent talents and resulting in the intensively declining competitiveness, surplus production capacity, and less investment of domestic enterprises. Therefore, the research about the crowding-out or crowding-in effect of the inflow FDI on domestic investment may be helpful to explain the current deflation in China.

This paper is in five sections. Section 1 briefly reviews the arguments about the cause of the current deflation in China. Section 2 introduces three different view-points in the effect of crowding-out or crowding-in of the inflow FDI on domestic investment. Section 3 sets out a theoretical model of investment with FDI. Section 4 then develops an econometrical model to estimate the effect of inflow FDI on domestic investment using a time-series data set of China and its Eastern, Middle and Western Regions over the period of 1980-2000. Finally, section 5 presents conclusions and considers reason.

**EFFECTIVE ONLINE TEACHING PROCESS AND POSITIVE LEARNING
EXPERIENCE: A case study**

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ABSTRACT

Academic scholars have concluded that online programs can deliver high quality learning experiences. In this paper we provide further evidence of successful online educational process and present an example of effective online learning experience in accounting. The online learning process is different from the face-to-face learning process. We demonstrate that effective learning is possible through the online media. The online learning experience depends on learners' motivation, technologies used, processes applied, and institutional capacity to provide adequate faculty and other resources. We have described the processes and technologies for organizing and delivering the online courses at one institution. We demonstrate with empirical data that graduate level accounting courses can be successfully delivered through online media. Compared with other online courses and with face-to-face courses the online accounting course performed favorably.

DEVELOPMENT OF COMPUTER SYSTEM FOR FUTURES TRANSACTIONS OF BASE METALS AT LME

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ABSTRACT

The system has been developed for base metal optimal transactions of three-month forwards of sale and purchase at London Metal Exchange. At the paper is given the common approach to this problem and as example its concrete application for primary aluminum.

The system is based on quantitative and qualitative forecasting of average exchange prices for primary aluminum up to 3 months ahead using LME parameters, IAI data for production of primary aluminum, as well as statistic data on industrial production indices in Western countries, IP, IPM and Dow Jones indexes at USA. The prices forecasting is the basis of the probability approach for determining optimal moments and volumes of transactions with three-month forwards securing maximum profits.

The system for transactions with three-month aluminum forwards has been optimized for maximum profits for the period of over 5 years (from July 1996 to December 2001). The maximum profit is provided when the pledge share in the amount of 62% is used for opening positions, and the norm of gained profit allocation is 90%.

The system has been tested by issuance of daily recommendations to a broker for opening and closing of three-month forward positions at LME from July 2000 to March 2002, the pledge volume being \$100 k. The full profit within this period amounted to \$162 k, which corresponded to 95% annually from the pledge amount and was approaching the average results of the executed identification system of 1996-2001.

INTEGRATION AND QUALITY OF ASIAN STOCK MARKETS

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ABSTRACT

Stock market is one of the undoubtedly essential economic units in the economy. Well functioning stock market contributes stability and choices to both corporations and individuals. Globalization leads to unavoidable openness of each nation. The degree of openness is one of the questionable issues that the policy maker has to address. In other words, the question concerning the mentioned issue is the appropriate level of market integration. To obtain the optimal degree of market integration in term of policy, the cost-benefit analysis could lead the clue. Cost of the market integration might be the undesirable characteristic coming with the integration while the benefit is the desirable characteristics.

Stock markets integration could be considered as two-sided coin. The cost-benefit analysis, in this case, needs the measure of stock markets integration together with the measure of liquidity and volatility. The empirical study on the relationship between the degree of stock markets integration and stock markets liquidity will be investigated. Also, the relationship between the degree of stock markets integration and stock markets return volatility will be studied as well. The studies might lead to some valuable conclusion for policy maker concerning nation-wide benefit maximization.

In measuring the degree of stock markets integration, this study employs the observations from Asian countries. They are Hong Kong, Korea, Malaysia, Philippines, Singapore, Taiwan, and Thailand.

The findings indicate that the Asian stock markets excess return and the excess return of world capital market exhibited the same trend. The excess return in stock markets investment has been downtrend since the middle of 1991. In some period the realized excess return was negative such as the excess return during the period of late 1993 to the middle of 1995. However, after the period of Asian economics crisis, there has been a recovery sign of the excess return from Asian stock markets investment since the second quarter of 1999. The volatility of the excess return from Asian stock markets seems to fluctuate during the period of Asian economics crisis.

Hong Kong and Singapore in this investigation are categorized as non-emerging Asian stock markets. The finding from the estimation of degree of stock market integration indicates that it is not necessary that the developed stock market integrates to world capital market higher than the emerging one. They, recently, all seems to have quite high level of stock market integration to world capital market. It could be concluded that the findings from this study are consistent with the previous ones, for example, Bekaert and Harvey (1995), Cumby and Khanthavit (1992). The Asian stock markets became more integrated to world capital market during the period of 1980s. In 1990s, it seems to reach high level of market integration. Another interesting aspect in term of degree of stock market integration is that there is no obvious evidence to indicate the change in the degree of stock market integration relating with the Asian economic crisis, except for Malaysia in particular period. Malaysia imposed very tight control during that period in order to avoid the negative effects of foreign speculators.

The different idea in estimation the degree of stock market integration and the likelihood of stock market integration, though both lies on the CCAPM, is that while the measuring of the degree of stock market integration assumes the local market to be integrated to world capital market without investment barriers, the measuring of the likelihood of stock market integration does not. It provides the measuring of “weight” of the local and global factors that affects the expected return on local stock market. Although the results from the two approaches do not strictly confirm each other, they do not counter each other, either. The measure of the degree of stock market integration seems to be more sensitive to any event than the measure of the likelihood of stock market integration. The measure of the degree of stock market integration seems to capture the “jump” or “shock” in pricing more than the measure of the likelihood of stock market integration. However, it could be argued that Asian stock markets seem to have high level of integration to world capital market, regardless the methodology employed in measuring. Although it is seen that the degree and the likelihood of stock markets integration is “reverting” to integration, it is completely time-varying according to the unit root test.

In the study of relationship between the level of Asian stock markets integration and the quality of stock markets in term of liquidity and volatility, there are some interesting findings. The Granger causality analysis between the level of market integration, no matter what the degree or the likelihood, and the quality of stock market, the liquidity and volatility, shows no strong evidence in the precedence. This might be due to no precedence between these two things or the other way around, the simultaneous effects. It might be a kind of “chicken and egg problem”. Another technique in the relationship study is the cointegration test. The cointegration technique is quite appropriate to deal with the non-stationary series, as found in this study for the level of market integration and the proxies of stock market quality using unit root test. It provides the test of equilibrium relationship among a set of non-stationary variables. This implies that their stochastic trends must be linked. From the cointegration test between the series, it is found that there exists the long run relationship between the level of Asian stock markets integration and the quality of stock markets in term of liquidity and volatility. However, the likelihood of stock market integration for Malaysia and Thailand are found to be stationary, then it could not be applied with this cointegration test.

REFERENCES

- Bekaert, G., and Harvey, C. R. 1995. Time-Varying World Market Integration. Journal of Finance 50(2) (June 1995).
- Cumby, R. E., Khanthavit A. 1992. A Markov Switching Model of Market Integration. Working Paper New York University.

GLOBALIZATION AND CORPORATE CASH HOLDINGS

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ABSTRACT

Until recent years, factors that contribute to the level of international cash holdings had largely gone unnoticed in the literature. Examining the 1991 data to study the determinants of capital structure among G-7 countries, Rajan and Zingales (1995) observe that, “Japanese companies have a larger amount of cash and short-term investments ... ” But this observation does not evolve into a methodical analysis of the factors responsible for such discrepancy in international corporate cash holdings. Using data for firms from Germany, the United States, and Japan, Pinkowitz and Williamson (2001) show that, “Japanese firms hold more cash than U.S. or German firms.” They find out that those large cash balances are influenced by “monopoly power of banks” in which “strong Japanese banks persuade firms to hold large cash balances.” They argue that, “this is contrary to widely held beliefs about the Japanese governance system.”

Opler et al. (1999), using data from publicly traded firms in the United States during 1971 – 1994 period, “find evidence supportive of a static tradeoff model of cash holdings.” They conclude that “firms with strong growth opportunities and riskier cash flows hold relatively high ratios of cash to total non-cash assets.” Opler et al.(1999) though a direct attempt to identify the underlying factors of corporate cash holdings, but is limited in scope to the examination of data from the United States.

Dittmar et al. (2003) is the first comprehensive attempt to address the determinants of corporate cash holdings in the context of corporate governance theories. The central theme in their study is to investigate the effect of shareholders rights, and hence agency costs, on corporate cash holdings using data for a sample of 11,591 firms in 45 countries from the Global Vantage database for 1998. They argue that, “when shareholders protection is poor, factors that generally drive the need for cash holdings, such as investment opportunities and asymmetric information, actually become less important” and “shareholder rights, and therefore agency costs, are important in determining cash holdings throughout the world.”

Dittmar et al. (2003) findings may also be explained from a different perspective to which they refer as a “much more benign” interpretation. According to that interpretation, domestic capital markets are less developed in countries that show poor evidence of shareholder rights protection and funds are more expensive to be raised for capital investment purposes in those countries. Therefore, firms may develop a habit to hold larger cash balances to accommodate their potential investment needs. We think that under such conditions, increasing flows of foreign direct investment caused by the rapid pace of globalization may have an important effect on corporate cash holdings. Therefore, focusing solely on variables constructed from domestic capital markets to measure the effect of capital markets development on corporate cash holdings overlooks the influence of FDI inflows as an international source of financing in corporate cash holding decisions.

Durnev and Kim (2003) argue that the anti-director (shareholder rights) index as defined in LLSV(1998) is a *de jure* measure of shareholders protection and does not reflect the *de facto* aspect of this environment. They develop a new measure of shareholder protection by

multiplying the anti-director index in LLSV (1998) by an index of law enforcement. In many developing countries, the problem of legal protection does not reside in the absence of regulations but in their ineffective enforcement regimes.

This paper is an attempt to extend Dittmar et al. (2003) analysis by including the effect of globalization on corporate cash holding in a model similar to theirs. We also utilize the index constructed in Durnev and Kim (2003) to measure the shareholder rights protection in each country. The sample of countries used in this paper is taken from World Scope database and contains data from almost 13,000 firms in 49 countries for the year 2000.

The estimated coefficients of the shareholder protection rights in our models consistently demonstrate positive signs, have smaller sizes, and are statistically significant in all cases. These results are in contrast with those in Dittmar et al. (2003) and do not lend support to the agency problem hypothesis. Our results also indicate that smaller firms and firms with better growth opportunities tend to hold larger cash balances. These are more similar to what Opler et al. (1999) indicates as the determinants of corporate cash holdings.

In today's highly integrated capital markets, inflows of FDI may partially substitute the needed capital that firms traditionally raise in domestic capital markets. Examining the effect of FDI inflows on corporate cash holdings, our findings demonstrate the existence of an inverse relationship between those two variables. When we investigate the nature of such relationship in two groups of G-7 and non-G-7 countries, we find out that FDI inflows play conflicting roles in determining corporate cash holding in those two groups of countries. Explanation of such differences can be the subject of future research.

INFLATION-LINKED FINANCING AND VALUE OPTIMIZATION FOR CORPORATIONS

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ABSTRACT

We present results from a model which shows that fully-inflation-linked financing is the correct choice for corporations seeking to optimize shareholder value, regardless of expectations regarding future inflation rates, and even at today's low inflation rates. The model demonstrates, with "Finance 101" principles, the reasons for an unexpected failure of the commonly applied rule for choosing financing that will optimize shareholder value—i.e., choosing financing that is expected to produce the lowest realized real cost. We also develop an exposition that demonstrates why fully-inflation-linked financing optimizes shareholder value, while traditional, nominal financing cannot do so.

Fully-inflation-linked financing is debt that has fixed real, net of inflation, payments as well as a fixed real, net of inflation, rate of interest. The debt service payments, measured in units of constant purchasing power, are fixed and do not vary with changes in inflation. The fixed real payments and fixed real rate of interest determine the amounts of the remaining real, net of inflation, principal balances over the term of the financing. These real principal balance amounts are also fixed in units of purchasing power and do not vary with inflation. Thus, all of the terms of the financing are fixed in real, net of inflation, units – all of the terms are inflation-linked.

We use fully-inflation-linked financing in our comparison because it best meets the needs of both issuers and investors. The fixed real payments and interest rate determine a fixed real repayment schedule (i.e., real interest and principal amounts that are fixed in units of constant purchasing power and do not vary with changes in inflation). The fixed real repayment schedule can be made to have no amortization of real principal (e.g., TIPS), to have partial amortization of real principal, or to have full amortization of real principal. We use fully-inflation-linked instruments that fully amortize with constant real payments because this is the structure that minimizes default risk for most loans.

The model shows that, even under current low levels of inflation and interest rates, the use of fully-inflation-linked debt will generally result in increased shareholder value as compared to the use of traditional, nominal financing, even when inflation rises rapidly and unexpectedly after the financing is complete. In addition, the fully-inflation-linked debt reduces default risk. Therefore, for corporations, the use of fully-inflation-linked financing is almost always superior to the use of nominal financing.

A VECTOR AUTOREGRESSION MODEL OF POST-BRETTON WOODS EXCHANGE RATES USING DECOMPOSED DATA

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ABSTRACT

In this study, VAR modelling is applied to quarterly post-Bretton Woods time-series exchange rate data, as well as a set of common explanatory macroeconomic variables. The countries examined are Germany, Italy, and the UK, relative to the USA, over the period 1973-1998. The defining characteristic of the data is that only the cyclical components of the data are used, as extracted via the structural time-series model (STM) of Harvey (1989). Initially, single-equation VAR estimates are obtained, with comparisons being made on the basis of goodness-of-fit and diagnostics. Then, accompanying impulse response functions and error-variance decompositions are estimated, with an explanation of the results provided.

Despite the enormous amount of past empirical work investigating models of exchange rate determination, the vast majority of everything has been done so on the basis of single-equation models. Nevertheless, one of the shortcomings of single-equation models is that some of the independent variables are affected by other variables, so that only part of the impact of that independent variable is identified.

To overcome this, a more complete multiple equation model specification is sought. One option would be to use a simple dynamic simultaneous equation model. However, such an approach involves classifying variables as endogenous or exogenous, and then placing constraints on some of the parameters. This involves making many arbitrary and subjective decisions that may be hard to justify. As an alternative, an unrestricted vector autoregressive (VAR) methodology is implemented. A simple VAR model, described in the section 2 of the full paper, is a very useful base for analysing the interrelationships of multiple time series.

The purpose of this paper is to examine the multivariate cyclical relationships that exist within the exchange rate and macroeconomic data. The VAR methodology is explained as a method of testing these relationships in a multiple equation framework. Unlike most studies employing this type of approach, however, only the cyclical components are utilised for the purposes of testing. These cyclical components are extracted via the decomposition technique attributable to Harvey (1989). This methodology arguably produces superior results to other detrending/decomposition procedures.

Following a light discussion of some studies that have used this methodology, a detailed description of the main results is provided – the single equation results (both goodness-of-fit and diagnostics), orthogonalised impulse response functions and forecast error variance decompositions, with a view to comparing the results between the three countries tested and between responses of different VAR system variables to shocks in the variables. The results do not appear to yield anything out of the ordinary, with most of the findings plausible. In the final section of the full paper, a brief dialogue is presented on possible problems with VAR modeling.

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AN EXTENSION OF PRICE IMPROVEMENT DEBATE FOR THE CASE OF AMERICAN DEPOSITORY RECEIPTS (ADRS)

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ABSTRACT

The purpose of this paper is to determine if the change in minimum stock price variation (shifting from the eighth to sixteenth) in the late 90's in NYSE, followed by a system of full decimalization, has led to any significant price improvement in the case of American Depository Receipts (ADRs). Much effort and concern have been generated regarding the question whether investors can receive price improvement on domestic equity trades (Battalio, et al 2001). There has been little debate and no empirical work as to whether the same holds true in the case of foreign securities trading in the form of ADRs. In 1994, the Securities Exchange Commission *Market 2000* Committee addressed price improvement by suggesting that market makers of NYSE listed stocks offer price improvement. Similarly, The New York Stock Exchange instituted the "NYSE Prime" pilot program in October 1995. This effort provided the dollar value of price improvement that an investor attained with the receipt of a trade confirmation notice. One factor behind the increased interest in price improvement, specifically on the NYSE, is due to the rising competition between the specialist and dealer markets. It was not too long ago when the NYSE considered its only competition to be that of NASDAQ and electronically linked regionally exchanges. Currently, the NYSE faces a volatile competitive landscape within a rapidly changing regulatory environment. Electronic Communication Networks (ECN's) has gained access to the Intermarket Trading System (ITS) and with the SEC rulings (Rule 301(b) (3)), they act as exchanges themselves. Trading alternatives are cropping up and new market makers are in their infancy. This competition is forcing the NYSE to take a closer look at the methods that it utilizes with its auction market.

Price improvement is facilitated by the nature and competitive forces of an auction market where investors may be able to receive prices better than they would without competition (Mann 1991). However, price improvement can reflect anti-competitive behavior when a specialist may be delaying quote changes. Additionally, quoted prices may not necessarily reflect the best prices available and this too may result in price improvement (Edwards 1997). Extensive analysis would be necessary to validate any of these conclusions or determine if price improvement can be considered a "good" or "bad" occurrence.

The focus of the analysis of this paper will be upon how price improvement has or has not changed with an adjustment in the fundamental pricing structure of the ADRs. Specifically, this paper examines price improvement before and after the NYSE reduced the minimum variation of security prices on the NYSE. In June 1997, the NYSE reduced the minimum variation of the pricing of securities from 1/8 to 1/16 of a US dollar. Recently, three factors (practices) are receiving much attention because of the possible negative effects that they can have on securities' prices (Ross, Shapiro, and Smith 1996). These practices are preferencing, internalization, and payment for order flow. The details of these practices will be introduced further in this section. To summarize the results of these practices, there has been a redistribution of market share away from the NYSE. Supporters of competition among markets argue that these phenomena are a means for managing order flow and naturally promoting competition. Others argue that customers are not necessarily receiving the best available execution price and are unaware of any conflict of interest that may exist. Simply routing an unpriced order to any market center for immediate transaction at the

national best bid/offer (NBBO) reduces the exposure to order flow and eliminates the possibility for a better execution price. Exposure to the NYSE rather than automatic execution at the NBBO has greater opportunity to interact with other orders since not all market centers expose market orders to other order flow or attempt to improve the price at which market orders are executed. Generally, the above three practices involve smaller retail sized orders and are targeted toward actively traded securities. Furthermore, critics of these practices claim that these behaviors permit intermediaries to capture more of the spread and unnecessarily increase trading cost.