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SINGAPORE MANAGEMENT UNIVERSITY

SMU knowledge hub

A news update on research activity at SMU

inside this issue

MESSAGE

The Office of Research is proud to introduce SMU Knowledge Hub to the community. This newsletter updates the public on the research activity at SMU – SMU faculty's research as well as collaborative work with Wharton faculty under Wharton-SMU Research Center (WSRC).

Research is a vital element in SMU's drive towards becoming a world-class university. The Office of Research is the central unit tasked at the university level to establish and enhance the research culture at SMU and catalyze the conduct of high-quality cutting-edge research by the SMU community, mainly through the management of university-supported research projects of SMU faculty and the coordination of the WSRC.

Since 2001, the Office of Research has funded 120 faculty research projects which have resulted in numerous publications. WSRC was established in 1999 with the primary objective of establishing a strong research collaboration between Wharton and SMU faculties in the international research arena, with specific focus on issues relevant to Singapore and Asia. Today WSRC funds about ten Wharton-SMU collaborative projects every year, covering a wide range of topics such as finance, marketing, management and economics.

This inaugural issue of SMU Knowledge Hub features the winners of the 2003 Lee Kuan Yew Fellowship for Excellence in Research – Winston Koh and André Bonfrer, and the honorable mentions – Tony Kang and Pearlie Koh, as well as Wharton-SMU research collaborators Robert Meyer and Jin Kyung Han.

Roberto S. Mariano
Vice Provost for Research
Office of Research
12 March 2004

Accounting matters more to you than what you think!

Assistant Professor Tony Kang, *School of Accounting*

Prof Kang knows all about earnings and value. As a professor in accounting, his research interest has led him to unearth some of the most unusual characteristics of a firm's earnings and value that are not immediately obvious to others.

In a paper published in the *Journal of International Accounting Research Vol. 2* (2003) "Level of Economic Development of a Firm's Country of Domicile and the Patterns in Stock Market Reaction Surrounding U.S. Earnings Announcements: A Test of the Global Market Segmentation Hypothesis", for example, he shows that different markets react differently to earning announcement from the same company listed in two different countries. The announcement typically induces a stronger response in an emerging market than a developed economy market. The fact that it is being listed in two markets does not appear to bring about a unified perception about the company. "This finding is consistent with the segmented market hypothesis and it shows that cross-listing alone will not eliminate the segmented market structure," said Prof Kang.

In another paper published in the *Journal of International Accounting, Auditing, and Taxation Vol. 12, No. 2* (2003) "The Association Between Legal Regime and the Value-Relevance of Accounting Information: A Japan - U.K. Comparison", Prof Kang shows that how much value there is in the accounting information that a company releases depends not only on the nature of the information provided but also on the legal system under which the information is interpreted. The same set of accounting information from some US companies, for example, appears to provide more value to investors when it is prepared by UK firms under the UK Generally Accepted Accounting Principles (GAAP) than when it is reported by Japanese firms under Japanese GAAP. Prof Kang attributes this to the fact that the legal framework could influence the way investors interpret accounting information.

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In "The Effects of Legal Regime on the Patterns of Stock Returns around ADR Earnings Announcements", a paper published in the *International Journal of Accounting, Vol. 38, No. 3* (2003), Prof Kang again tries to see how the legal system could affect the perceived quality of a company's earning information. Using some sample of American Deposit Receipts (ADR), he found that earning announcements from companies based in common-law countries generally induce a stronger market reaction in the US than similar announcements from companies based in code-law countries. To Prof Kang, this is in line with previous research findings that earning information from common law countries tend to be more timely and more conservative than those from code law countries. "My study shows that such differences in quality persist even when the company operates in another country", he said.

In "The Profitability of EP Trading Rule Based on Operating Income," a paper published in the *American Business Review Vol. 21, No. 2* (2003), Prof Kang shows that using different measures of earnings could have an impact on the profitability of investment strategies based on earnings-to-price ratio. Specifically, it matters a great deal whether earnings are measured in the conventional way (e.g., net income before extraordinary items) or as operating income which relates more to the core operation of a company. The profitability goes up when operating income is used. What does this mean in practice? "Accounting method matters!" said Prof Kang. ■

Company Directors: Do your fiduciary obligations end when you leave the board?

Associate Professor Pearlie Koh, *School of Business*

As a specialist in corporate law, Prof Koh is well-positioned to discuss the fiduciary obligations of a former company director. This she did in a paper, "Once a Director, Always a Fiduciary?" published in volume 62 (2003) of the *Cambridge Law Journal*.

A corporate director is naturally subject to strict fiduciary obligations of good faith and loyalty. Such obligations demand that, among other things, he should not take advantage of any benefit, advantage or opportunity that might be of interest to the company on whose board he sits. The question is whether such obligations end when he leaves the board.

This cannot be, according to the law, as it would then mean that a "fiduciary" could easily avoid his obligations by the simple act of resigning and continue to exploit information obtained while he was a director with impunity. Indeed, a director's resignation does not change the fact that information, as an exploitable asset, continues to be of value to the company. This much is clear. What remains unclear, however, is the extent to which an ex-fiduciary is restricted from exploiting such information for himself because of his continuing fiduciary obligations. Confusion about the scope and ambit of these continuing obligations could unnecessarily restrict the business activities of former company directors.

In the paper, Prof Koh attempts to provide a framework with which to determine the extent of a former director's fiduciary obligations to the company. She argues that the answer depends on the director's previous role in the company and the scope of the discretion conferred on him prior to his resignation. According to Prof Koh, "how wide the discretion is will determine how much control he had over information flows to and within the company, and this should be the basis for the extent of his continuing obligations."

However, Prof Koh argues that the restraint cannot last forever and that a reasonable time frame for the continuing obligation would be up to a year. "The law should also recognize that there are certain business opportunities that cannot be exploited by an ex-director, regardless of his previous role and position in the company," she adds. These are opportunities in which the company already has, or is expected to have, an interest.

"I hope that by clarifying these issues, we will be able to provide a better balance between protecting a company's interests and the needs of ex-directors," said Prof Koh. ■

How you send your emails to customers could affect your company's revenue!

Assistant Professor André Bonfrer, *School of Business*

Leveraging on the opportunities provided by the SMU-Wharton Research Program, Prof Bonfrer has been able to collaborate with researchers from the other side of the Pacific Ocean to study some important issues in the field of marketing and consumer behavior.

In a joint paper "A Renewable-Resource Approach to Database Valuation" with Professor Xavier Drèze, a Wharton faculty in marketing, Prof Bonfrer tries to find out how the value of a client to a firm is affected by the way marketing campaign is conducted. In particular, how frequently the marketing messages are sent to the client has a large impact.

In the context of email marketing campaigns, Prof Bonfrer argues that how effective a marketing campaign is depends on how often the customer reads the marketing messages from the company. Yet, how often she reads the messages is affected by the frequency with which the messages are sent to her. If the messages are sent too frequently, it may cause the customer to leave the database (as messages from the same company are treated as nuisance and ignored completely). At another extreme, if the messages are sent too infrequently, their effects will be limited too. "It is important for firms to recognize that the frequency with which they send out their marketing messages has a great deal of influence on the value of the customers," Prof Bonfrer points out. "We also go one step further in this paper and try to work out the optimal inter-campaign frequency."

In another paper "The demand and supply-side impact of the Kimberly-Clark, Scott Paper Products merger in the facial tissues category" Prof Bonfrer, together with Wharton Professor Jagmohan Raju, looks at the impact of merger on the firms' competitive behavior, using the merger 1995/96 between Kimberly-Clark (KC) and Scott Paper Products as an example. The findings suggest that the merger considerably increased KC's competitive position in the market. Indeed, it enabled KC to take over the market leadership position from Procter & Gamble (P&G), its main rival.

This finding has encouraged the authors to try to understand whether the merger has any "collateral" competitive effects in a parallel market. Besides facial tissue products, for instance, both KC and P&G have branded products in the disposable diaper market as well, but not Scott Paper Products. Yet, a collateral effect on the competitive behaviors of KC and P&G could occur in the diaper market for various reasons e.g. if the merger changes the relationships between the two competitors or if there are spillovers of competitive aggressiveness from one product category to another. The latter could arise from the fact that one firm has a reputation (and corporate culture) of being aggressive.

The third paper "Recovering SKU-level Preferences and Price Sensitivities from Market Share Models Estimated on Item Aggregates", conditionally accepted in *Journal of Marketing Research*, by David R. Bell, Andre Bonfrer and Pradeep K. Chintagunta looks at how aggregated sales data can be used to infer market behavior at a lower level of aggregation. In a retail environment, especially for fast-moving consumer goods, it is common to have a stock keeping unit (SKU) to track the changing stock level of the product over time. Do activities at the SKU level affect the company's sales? The answer has a large bearing on how the SKU process should be designed. Yet, most models that measure the impact of marketing activities on sales make use of aggregated data. For example, all the Colgate toothpastes sales are added across items including Tartar Control, triple action, anti-cavity and so on.

If the messages are sent too frequently, it may cause the customer to leave the database.

In this study, Prof Bonfrer shows that using a particular technique, the findings on market behaviors generated by aggregated data can be translated to the level of individual items. "With this technique, we can improve the forecasting ability of the existing models" says Prof Bonfrer. This, he adds, could help facilitate the design of an optimal "assortment" system for a retailer and help answer questions such as: Should the retailer increase the number of large size packets of toothpaste on the shelf? Should she carry more toothpaste with the triple protection function? ■

The allure of being new and flexible

Assoc Prof Jin Kyung Han, *School of Business*
& Professor Robert Meyer, *Wharton School*

Intrigued by how consumers often buy more technologies than they can make use of, Prof. Han decided to take a serious crack resolving this seemingly "irrational" behavior. The result was a joint paper with Prof Robert Meyer of the Wharton School and his doctoral student Shenghui Zhao, titled "The Enhancement Bias in Consumer Decisions to Adopt and Utilize Product Innovations."

In the paper, the authors analyze how individuals decide on buying a new technology and how they use it after the purchase. The key hypothesis is that consumers often overestimate the benefits they can derive from new technology and underestimate the learning costs required. "Consumers tend to evaluate product innovations through rose-tainted glasses," says Prof Han.

The hypothesis was tested using a computer simulation in which the subjects are trained to play a *Pacman*-like arcade game. They are then given the option to play a series of games for money with an existing game platform or to pay to play with an alternative version that offers either an expanded set of controls. As the authors found out, the subjects typically displayed a tendency to exaggerate the benefits of the new technology despite never realizing them. Moreover, few accepted the choice of being paid to trade down to a more efficient device, even after they realized that they had made a mistake previously in over-estimating the value of the new technology.

Interestingly, the respondents were drawn to new technology not only because of an erroneous calculation of the net benefits provided by the new technology, but also because of other, seemingly less rational factors such as a desire to own top-of-the-line products and a preference for flexibility in using the new features -- even when such flexibility was never exploited. This suggests that when introducing new products, companies should include both the new and the old sets of features, so that consumers can enjoy both the benefits of novelty and flexibility. This may help to explain why when releasing Windows XP, Microsoft took pains to ensure that the new product would be seen by consumers as only modestly different from the old version, to the point of giving users the option of eliminating the new screen views if they wanted (through the "revert to classic view" command). ■

Bubbles, Decision-Making Rules and Quota Auctions

Associate Professor Winston Koh, *School of Economics and Social Sciences*

Returning to the academia after eight years as an investment banker, Assoc Professor Winston Koh plunged into a series of research projects when he joined SMU in July 2002. "I had lots of ideas I wanted to pursue, and I was fortunate to find collaborators who are willing to work with me," Prof Koh said.

These projects range from the changing science and technology policies in Singapore to studies of Asian hedge funds, organizational design, procurement auctions, Singapore's vehicle quota system and real estate bubbles in East Asian economies.

We found evidence that strongly suggests that the under-pricing was widespread in Thailand, Malaysia, and Indonesia. Consequently, these countries experienced a far more severe real estate market crash than Hong Kong and Singapore, where under-pricing was kept under control by strong government intervention and appropriate incentive mechanisms.

In a joint project with Professor Susan Wachter from The Wharton School and SMU Professors Roberto S Mariano, Augustine Tan and Phang Sock Yong, Prof Koh investigated the Asian real estate price run-up and collapse in the 1990s. The paper, "Bank Lending and Real Estate in Asia: Market Optimism and Asset Bubble" identified two sets of potential causes for the observed real estate price behavior; namely, fundamental shifts in demand, and under-pricing of mortgage loans.

"We found evidence that strongly suggests that the under-pricing was widespread in Thailand, Malaysia, and Indonesia. Consequently, these countries experienced a far more severe real estate market crash than Hong Kong and Singapore, where under-pricing was kept under control by strong government intervention and appropriate incentive mechanisms," Prof Koh noted.

Another subject that interests Prof Koh is decision theory, a field in which he had published a number of papers previously. "I was curious to see what else I could do," Prof Koh said. This has led to a paper "Optimal Sequential Decision Architectures and the Robustness of Hierarchies and Polyarchies," to be published in *Social Choice and Welfare*. The paper looks at the optimal design of a sequential decision process, where decision-makers are fallible in their judgments and organizational costs are incurred when projects undergo additional reviews. He found that the optimal sequential architecture in this case is made up of a pair of sequential majority rules, which sets the boundary for the ranges within which projects are accepted, rejected, or where an additional evaluation is called for.

What is interesting, says Prof Koh, is that two popular structures, the *hierarchy* – where full consensus is required for a decision to be implemented - and the *polyarchy* – where a project is accepted as soon as it receives the support of one manager – emerge as optimal sequential architectures only under very stringent conditions. "Moreover, their optimality is very sensitive to the external investment environment, and slight changes in the environment will render them suboptimal," he adds.

Besides studying real estate bubbles and sequential processes, Prof Koh also tackled another favorite subject of his: the license auctions under Singapore's vehicle quota system. The scheme, the world's first, has successfully capped the growth of the vehicle population in Singapore to 3% a year since 1990. However, over the years, there had been numerous calls to re-design the system, especially on the transferability of licenses and the format of the auctions.

On license transferability, Prof Koh notes, in the paper "Congestion Control and Vehicle Ownership Restriction: The Choice of an Optimal Quota Policy," that the case for or against it is not clear cut. A missing link in the policy discussion is how the license auctions affects competition in the dealership market. The presence of a quota has led to a more concentrated market structure, that is, a smaller number of firms hold a larger proportion of market shares. This result is consistent with data showing that industry concentration in the dealership market has indeed increased. "License transferability can result in higher industry concentration," Prof Koh notes, "as a result, social welfare may be higher or lower under license transferability."

Another paper, "Open versus Sealed-Bid Auctions: Testing for Revenue Equivalence under Singapore's Vehicle Quota System," conducted jointly with Professor Roberto S. Mariano and Professor Yiu Kuen Tse, looks at the impact of the switch in auction format in 2001, from a sealed-bid auction to an open-online format. "Intuition would suggest that the increased transparency of the online bidding process, by reducing uncertainty, should result in less aggressive bidding behavior," says Prof Koh. This was indeed the case, according to their study. "License prices were indeed lower than what would have been the case had the sealed-bid auction format remained in place," says Prof Koh. "This finding therefore refutes the argument that choice of the bidding format is non-consequential." These findings, and others, are discussed in detail in the papers, published or to be published in *Journal of Transport Economics and Policy, and Transportation Research A: Policy and Practice.* ■

Upcoming special research event

The School of Economics and Social Sciences of SMU is holding an international conference on Econometric Forecasting and High Frequency Data Analysis on April-May, 2004. The highlight of the Programme is a Symposium on May 7-8, 2004, involving invited presentations by noted econometricians and a public panel discussion of "Econometrics Today in Business, Finance and the Global Economy," led by Nobel laureates Lawrence Klein and Robert Engle. ■

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