#### **ABSTRACTS**

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## 1. THE IMPACT OF NEW FINANCIAL TECHNOLOGIES ON STOCK PRICES

James F. Refalo, California State University, Los Angeles, California, USA Manoj Dalvi, Long Island University-C.W. Post Campus, New York, USA

#### **ABSTRACT**

This paper examines the effect of new financial technologies by examining the role of portfolio insurance in the stock market crash of 1987, and by modeling insurance as an asset enhancement technology that it is not available to all market participants. We examine the implications for the equilibrium price and asset demands for the risky asset using an overlapping generations model, and investigate the implications of misperceptions about the efficacy of the technology. Our findings have implications for both domestic and international markets. We find that a small fraction of agents using the technology can disproportionately influence risky asset price, and an infinitesimal increase in this fraction can induce a rapid increase in price. This is consistent with summary observations regarding the role of portfolio insurance in the 1987 crash. We also find the interesting result that the equilibrium asset price is disproportionately sensitive to the price forecasts of those using the technology. Finally, we identify principle weaknesses with the model, namely that parameter assumptions—risk aversion and perceived hedging efficiency—needed to attain a run-up of the asset price may be unrealistic, and that this is consistent with findings from related research.

Keywords: Financial Technology, Investor Sentiment, Asset Valuation, Portfolio Insurance

#### 2. MONTE CARLO SIMULATION OF FIXED CHARGE COVERAGE RATIO: A CASE STUDY

Abbas Heiat, Montana State University, Billings, Montana, USA Rakesh Sah, Montana State University, Billings, Montana, USA

## **ABSTRACT**

Banks must judge the credit worthiness of new or existing clients based largely on a financial concept known as the Fixed Charge Coverage Ratio. Monte Carlo simulation can provide a method of more accurately estimating the Fixed Charge Coverage Ratio of a particular type of loan. The data used for the simulation was gathered from the U.S. Bank Small Business Banking Database. The results of experiments indicated the usefulness of incorporating stochastic modeling through simulation approach in loan analysis and decision making. This method allows bankers to set the ratio levels for individual loans along with the need to control the default rate for an entire pool of loans.

Keywords: Monte Carlo Simulation, Credit worthiness, Fixed Charge Coverage Ratio

# 3. EXAMINING THE INFLUENCE OF INSTITUTIONAL SHAREHOLDERS AS A MANAGERIAL DISCIPLINING MECHANISM

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Byron J. Hollowell, Penn State University Worthington Scranton, Scranton, Pennsylvania, USA

## **ABSTRACT**

This study examines whether large institutional ownership monitoring reduces agency costs by disciplining managers to pursue shareholders' interests, and thereby contributing to firm performance. The ability to mitigate the agency costs associated with the separation of ownership and control through the use of internal control systems has been examined in previous research. This study uniquely examines external control systems, specifically, the influence of monitoring by large institutional blockholders, and their ability to reduce agency problems inherent in the separation of stock ownership and corporate control. I find little evidence to support the disciplining effects of external controls in forcing the convergence of managers' and shareholders' interests. However, a significant presence of affiliated blockholders, block shareholders made up of board members and firm managers, is shown to be significantly related to poor firm performance. These results are consistent with the managerial entrenchment predictions.

Keywords: Institutional Shareholders, Blockholders, Agency Issues

#### 4. A GUIDE TO THE CHINESE STOCK MARKETS

Joseph F. Greco, California State University, Fullerton, California, USA

#### **ABSTRACT**

This study provide professionals in the international financial sector with a useful, up-to-date explanation of the most significant feature, market segmentation, and related issues associated with the Chinese stock markets. The work incorporates the current academic research of the Chinese stock markets that from their inception were intentionally segmented between foreign and local investors. This study also provides international business departments, curriculum developers, and international companies, banks and other financial institutions with a better understanding the importance of the dynamics of the Chinese markets that are currently undergoing significant and planned changes.

**Keywords:** Chinese Stock Markets, Shanghai Stock Exchange, Shenzhen Stock Exchange, Segmented Markets, Teaching about Chinese Stock Markets

# 5. RECONCEPTUALIZING ENVIRONMENTAL SCANNING, ITS CORRELATES, AND THEIR EFFECTS IN INTERNATIONAL CONTEXT

Detelin S. Elenkov, the University of Tennessee, Knoxville, Tennessee, USA Joana R. C. Pimentel, The University of Tennessee, Knoxville, Tennessee, USA Peter Wright, The University of Memphis, Memphis, Tennessee, USA Kristian Serafimov, Southern Connecticut State University, New Haven, Connecticut, USA

## **ABSTRACT**

Based on analyses of data from 5 European countries (Bulgaria, Cyprus, Greece, Poland, and Romania), this study supported the proposition that executive scanning of the environment could be a major contributor to the success of innovation at the organizational level. In addition, cultural intelligence of top executives appeared to enhance the effectiveness of top executive scanning in relation to innovation.

Keywords: environment, cultural intelligence

## 6. CAN PRINCIPLES-BASED STANDARDS WORK?

Kirsten M. Ely, Sonoma State University, Rohnert Park, California, USA Elizabeth Stanny, Sonoma State University, Rohnert Park, California, USA

#### **ABSTRACT**

The Sarbanes-Oxley Act of 2002 ("The Act") required that the Securities and Exchange Commission ("SEC") conduct a study on the feasibility of the U.S. adopting principles-based accounting standards. The study was required, in part, because of accounting failures (e.g., Enron) where preparers structured transactions to be in compliance with rules-based standards. The problem with rules-based standards is that companies' financial statements do not represent their financial condition if their transactions are structured to achieve accounting results rather than to reflect economic results.

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According to the SEC study (2003), for principles-based standards to be effective the responsibilities of preparers and monitors would increase. In particular, if standards are more principles- than rules-based preparers would have to exercise more professional judgment and provide more transparent disclosures. Auditors, audit committees and enforcement bodies would have to be more diligent to assure compliance with the intents of the standards.

We investigate the level of mandated and discretionary disclosures for software development costs under Statement of Financial Accounting Standard Number 86 ("SFAS 86"), a relatively principles-based standard, to shed light on whether incentives existed before and after the passage of the Act for preparers and monitors to comply with the intent of the standard. In particular, we explore whether mandated and discretionary disclosures were made for the 1998 fiscal year and then again during 2002 that would allow financial statement users to understand accounting choices for software development costs and to compare companies that selected different methods for accounting for these costs.

We find that approximately one-third of the sample does not provide the mandated disclosures before and almost half do not provide the mandated disclosures during the passage of the Act and that in both years at least two-thirds of the sample provide little that would help users understand the accounting for software development costs particularly across firms. These results suggest that for principles-based standards to be effective the incentives for preparers, auditors, audit committees and the enforcement bodies must be enhanced.

**Keywords:** Software Development Costs, Accounting Standards, Sarbanes-Oxley Act, Principles-based Standard

## 7. DETERMINANTS OF BLOCKHOLDER SHARE OWNERSHIP

Richard H. Fosberg, William Paterson University, Wayne, New Jersey, USA

#### **ABSTRACT**

In this study, an empirical analysis was conducted to try to determine some of the factors that effect the blockholder share ownership that a firm attracts. The evidence presented here indicates that the share ownership of non-CEO blockholders is inversely related to firm size, current year EPS, and CEO share ownership and directly related to five-year average EPS and firm risk. These findings imply that non-CEO blockholders prefer to invest in more risky, historically profitable firms that have low current earnings and lower CEO share ownership. These results are generally consistent with the theory that blockholders provide valuable monitoring services to the firm and seek to invest in ways that will yield the greatest returns for the monitoring they perform. CEO blockholders share ownership is generally responsive to the same factors as non-CEO blockholders except it is unrelated to current year EPS. A firm's growth prospects and leadership structure were found to be unrelated to any type of blockholder share ownership.

Keywords: Blockholders, Share Ownership, CEOs

## 8. DO MERGERS AND ACQUISITIONS PROMOTE CORPORATE SURVIVAL?

Doocheol Moon, State University of New York-Old Westbury, Old Westbury, New York, USA Wei Jiang, State University of New York-Old Westbury, Old Westbury, New York, USA Jia Wu, University of Massachusetts – Dartmouth, North Dartmouth, Massachusetts, USA

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## **ABSTRACT**

We investigate the important question of why, in the face of strong evidence that mergers and acquisitions (M&As) do not generate returns for acquiring firm shareholders, CEOs continue to pursue these strategies. One possibility is that managers factor in some unquantifiable value associated with M&A deals. This study suggests the need to survive as one of the rationales for M&As. Using the proportion of firms that continue to trade ten years after M&As as a measure of the survival rate, we find that the survival rate is higher for firms that enter into M&As than for firms that go it alone. Furthermore, in a logistic regression that controls for various financial variables, we find that acquiring firms are associated with higher likelihood of corporate survival. In general, our results are consistent with the hypothesis that M&As promote corporate survival.

Keywords: Mergers and Acquisitions (M&As), Corporate Survival, Survival Rate

# 9. THE STOCK MARKET'S RESPONSE TO UNFAVORABLE NEWS IN BEAR VERSUS BULL MARKETS

Stephen J. Larson, Minnesota State University, Mankato, Minnesota, USA

#### **ABSTRACT**

This paper addresses whether overall market sentiment is related to the under-reaction of share prices at the time unfavorable news about a firm becomes available. Deciles are formed based on the stock market's monthly performance (S&P 500 Index) during the period January 1994 through December 2003. The bottom decile (twelve month period) is considered the bear market period and the top decile is considered the bull market period. For each day in the bull and bear market months the largest loser is identified in the Wall Street Journal. The results of this study suggest that overall market sentiment may be related to the under-reaction of share prices when unfavorable information about a firm becomes known. Specifically, there is modest evidence that the market under-reacts to unfavorable information about specific firms during bull market periods, but efficiently re-prices shares during bear market periods.

Keywords: Stock Market, Under-reaction, Overreaction, Market Efficiency

#### 10. ICT INDUSTRY DEVELOPMENT: THE CASE OF NORTH KOREA

Ook Lee, Hanyang University, Seoul, KOREA

## **ABSTRACT**

The study investigates the potential to develop the Information Communication Technology (ICT) industry with North Korea. It is recognized that this region exhibits significantly low economic growth and is reported as one of the poorest nations globally. Although North Korea has made some attempts to improve its economic decline, through promoting its ICT industry in particular, there remain a number of fundamental problems in establishing a sustainable growth pattern. These are identified as lack of national ICT infrastructure, of democracy and of a free market enterprise culture. Consequently, there exists a severe restriction on many aspects normally and historically essential to engage in processes towards economic prosperity. The paper reports that efforts by North Korea in pushing toward a viable ICT

industry may be inconsequential given the current political, social and economic agenda. A theoretical framework is proposed to ameliorate these issues which are argued to be of value to similar economies seeking to enhance their ICT industry performance.

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**Keywords:** ICT industry development, National IT infrastructure, Democracy, Free Market, Freedom of Information Flow. E-business

# 11. ECONOMIC CONDITIONS AND MACROECONOMIC NEWS IMPACTS ON STANDARD AND POOR'S 500 INDEX RETURNS

Choon-Shan Lai, University of Southern Indiana, USA Manfen W. Chen, University of Southern Indiana, USA

## **ABSTRACT**

This paper studies implications of economic conditions to impacts of nineteen types of macroeconomic news announcements on the return of Standard and Poor's 500 index. A Generalized Autoregressive Conditional Heterogeneity (GARCH) framework is employed. Macroeconomic news impacts vary across different states of the economy. In "high" states of economy, news surprises in announcements of business inventory, construction spending, capacity utilization, core Consumer Price Index, trade balance and non-farm payrolls have significant effects on stock returns. In "medium" states of economy, surprises in construction spending, core Consumer Price Index and new housing starts impact stock returns significantly. In contrast, surprises in core Consumer Price Index and hourly earnings have significant effects on stock returns in "low" states of return. This paper also disaggregates sources of these news impacts into impacts on expected earnings growth, interest rates and equity risk premium in different states of economy.

Keywords: Standard and Poor's 500 index, Consumer Price Index, trade balance

# 12. M-COMMERCE AND E-COMMERCE APPLICATIONS: COMPARISON OF IMPLEMENTATION RESULTS

Zinovy Radovilsky, California State University-East Bay, Hayward, California, USA

#### **ABSTRACT**

This paper presents and analyzes survey results of implementing mobile commerce (m-commerce) applications and their comparison with e-commerce implementation results in the same organizations. Although m-commerce may be considered as an extension of the Internet-based e-commerce, the survey results showed that the development and implementation of m-commerce and e-commerce applications have significant differences. These differences are associated with: types of applications implemented in m-commerce vs. e-commerce; their benefits and drawbacks; and overall satisfaction level. The survey results also showed that the underlying principles of implementing m-commerce applications are: providing value-added offerings to m-commerce users; being free of charge to customers; being complimentary to existing e-commerce channels of marketing and sale; utilizing mobile innovative technology; and employing existing e-commerce resources.

**Keywords:** Management of Electronic Commerce and Mobile Commerce, E-commerce, M-commerce Management of Information Technology

# 13. CORPORATE TAKEOVER BIDS, GROWTH OPPORTUNITIES OF BIDDERS, AND ANNOUNCEMENT DAY EFFECT: AN EMPIRICAL STUDY

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Niazur Rahim, Christopher Newport University, Newport News, Virginia, USA Mojib U. Ahmed, University of Dhaka, Dhaka, BANGLADESH

#### **ABSTRACT**

This paper examines the stock price reaction at the announcement of merger by companies having different levels of growth opportunities. Though mergers by high growth bidders are expected to have positive impact on their share price, it is argued in this paper that mergers by low-growth bidding firms carry more marginal good information than high-growth firms. Results indicate that market reaction to stock price for low growth firms are higher or less negative than that of high growth firms. These evidences lend support to the theory that signaling effect of low-growth firms is more positive than high-growth firms.

Keywords: Growth Opportunities of Bidders, Announcement Day, Signaling Effect

#### 14. PRICE PERCEPTION AND THE OLDER SUPERMARKET SHOPPER

R. Stephen Parker, Missouri State University, USA Allen D. Schaefer, Missouri State University, USA Charles E. Pettijohn, Missouri State University, USA

## **ABSTRACT**

This study examines differences in price perception between older and younger supermarket shoppers in the United States. The study specifically focuses on age differences in price consciousness; value consciousness and coupon proneness. Three age related hypotheses drawn from Meredith and Schewe's (2002) cohort theory are developed and tested. While numerous significant age differences are found, the results generally do not support the cohort theory.

Keywords: Baby boomers, Cohorts, Price Consciousness, Value Consciousness, Coupon Proneness

## 15. COUNTERPRODUCTIVE BEHAVIOR AT WORK AND SOME INDIVIDUAL DIFFERENCE CHARACTERISTICS

Aharon Tziner, Netanya University College, Netanya, ISRAEL Sharon Goldberg, Netanya University College, Netanya, ISRAEL Roni Or, Netanya University College, Netanya, ISRAEL

#### **ABSTRACT**

The term counterproductive work behavior, also known by other names including workplace misbehavior and deviance, relates to all forms of misconduct in the workplace, from minor infractions such as using the company phone for personal calls, to serious criminal activities such as theft. Yet despite its importance for the proper functioning of an organization, it is only in recent years that research has turned its attention to this aspect of organizational life. In the present investigation, counterproductive behavior was divided into two categories: production deviance and the more serious property deviance. Employing a heterogeneous sample of employees from different organizations who reported on the behavior of co-workers and on the organizational culture, we sought to discover the connections between the two types of deviance, level of employee morality, and five individual characteristics. A correlation was found between production and property deviance, indicating that minor infractions can lead to more serious ones. Moreover, age was found to be related to level of morality, and tenure to

production deviance. No significant correlations were found for the other individual characteristics. Directions for future studies of the dynamics and antecedents of counterproductive work behavior are suggested.

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**Keywords:** Workplace Deviance; Organizational Misbehavior, Counterproductive Work Behavior, Employee Defiance at Work

# 16. DIMENSIONS AND DETERMINANTS OF CUSTOMER RELATIONSHIP STRENGTH IN SERVICES SELLING

Guicheng Shi, Macau University of Science and Technology, Macau Allan KK Chan, Hong Kong Baptist University, Hong Kong Yizheng Shi, Hong Kong Baptist University, Hong Kong Yonggui Wang, Nanjing University, Nanjing, P.R. China

## **ABSTRACT**

Customer relationship strength and its dimensions and determinants were studied in the context of policyholder and agent relationships in the life insurance industry. A three-dimension measurement model for customer relationship strength was proposed involving affective strength, cognitive strength and conative strength. Results from structural equation modeling suggest that relationship value, salesperson likeability, personal selling behavior, and customer innovativeness are significantly correlated with customer relationship strength.

Keywords: Customer Relationship Strength; Dimension; Determinant; Service Selling

#### 17. ACCOUNTING IN SUPPORT OF LEAN MANUFACTURING

Clifford R. Skousen, Utah State University, Logan, Utah, USA Richard L. Jenson, Utah State University, Logan, Utah, USA Christopher J. Skousen, University of Texas-Arlington, Arlington, Texas, USA

## **ABSTRACT**

This paper reports findings of our field study of the operational practices and accounting support functions in Glacier Vandervell, Inc., a Shingo Prize winning company for its Excellence in Manufacturing. We first review the current literature describing the opportunities for accounting to more fully participate in supporting continuous improvement initiatives within organizations. We then discuss the continuous improvement activities of Glacier Vandervell in its quest for lean operations and describe the supporting accounting functions. An alternative method to standard cost performance reporting is illustrated. The alternative method more appropriately supports the continuous improvement--lean manufacturing environment. Findings verify that traditional cost accounting performance reporting is no longer adequate and that accountants must actively consult as part of management and production teams.

**Keywords:** Lean Accounting, Lean Manufacturing, Management Accounting, Cost Accounting, Product Costing, Shingo Prize, Manufacturing Excellence

# 18. CAUSAL RELATION BETWEEN RETURN AND ORDER IMBALANCE IN NASDAQ SPECULATIVE NEW HIGHS

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Yong Chern Su, National Taiwan University, Taiwan Han Ching Huang, Chin Min Institute of Technology, Taiwan

#### **ABSTRACT**

Many studies explore the relation between return and order imbalance on some extraordinary events. We examine intraday behaviors when the speculative stocks reach 52-week new high records. In this study, we employ a multiple hypotheses testing method for identifying the dynamic relationship between returns and order imbalances. The size-stratified results show that when the firm size is smaller, the percentage of firms exhibiting a unidirectional relationship from order imbalances to returns is larger. It implies that order imbalance is a predictor of returns in small firm size quartile. Moreover, the volume-stratified results indicate that order imbalance is also a predictor of returns in small trading volume quartile. The order imbalance-based trading strategies are powerful in the opening.

**Keywords:** Order Imbalance; Return–Order Imbalance Relation; New High; Information Asymmetry; Multiple Hypotheses Testing Model

## 19. DETERMINANTS OF CHOICE OF COLLEGE MAJOR: A CASE STUDY

Hamid Tabesh, University of Wisconsin, River Falls, Wisconsin, USA

#### ABSTRACT

This paper examines factors influencing the choice of business major relative to elementary and secondary education majors and uses data from a survey of graduating senior students at the University of Wisconsin-River Falls majoring in business, elementary and secondary education areas. A variety of factors, such as gender, ACT score, plans for additional years of schooling beyond the bachelor's degree, encouragement of high school teachers, flexibility of working hours at the job of the first choice after graduation, perceived contribution of job of the first choice to society, long term expected real earnings, and uncertainty associated with long term expected real earnings, have a significant influence on student choice of business major relative to elementary and secondary education majors. Understanding the factors that influence choice of major is one part of the larger process of understanding personal as well as societal returns to varied investment in human capital.

**Keywords:** Choice of major, business, education, ACT score, expected real earnings, multinomial logit, maximum likelihood estimation

# 20. HOW PURCHASING ORGANIZATIONS USE WEB-BASED MARKETPLACE: AN EMPIRICAL STUDY IN AMERICA

Dothang Truong, Fayetteville State University, Fayetteville, North Carolina, USA Van T. Nguyen, Fayetteville State University, Fayetteville, North Carolina, USA

## **ABSTRACT**

This study examines the extent of current and planned Web-based Marketplace (WBM) usage from the buyer perspective with extensive comparisons of the usage level regarding WBM type and company size The data from a Web-based survey of 359 purchasing professionals in the United States suggests that larger companies use WBM at a greater extent since they are more capable of exploiting WBM's benefits.

In addition, among three WBM types, private trading network (PTN) promises a potential growth in the future.

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**Keywords:** web-based marketplace, web-based marketplace usage, purchasing, company size, industry sectors

#### 21. FEMALE DIRECTORS, CEO CHARACTERISTICS, AND BOARD STRUCTURE

Deborah Dahlen Zelechowski, Robert Morris College, Chicago, Illinois, USA Diana Bilimoria, Case Western Reserve University, Cleveland, Ohio, USA Ralph Haug, Roosevelt University, Schaumburg, Illinois, USA

## **ABSTRACT**

This study examines <u>Fortune</u> 1000 corporation environments where women hold dual roles of inside directors on corporate boards and executives of the organization. We found corporations that have given women opportunities as an inside director also have specific characteristics. Women who want to advance to the board level as inside directors should look at the corporate board structure and characteristics of the CEO. Specifically, women should seek to work for corporations where the board has more directors and also has more inside directors, where the CEO has family relationships with other directors or management, the CEO has longer tenure, and the positions of CEO and Chairman of the Board are held by two different officers of the firm.

Keywords: Female Inside Directors; Women Inside Directors, CEO Characteristics, Board Structure

#### 22. CAUSALITY BETWEEN EXPORTS AND ECONOMIC GROWTH: SOME EVIDENCE FOR EGYPT

Bassam AbuAl-Foul, American University of Sharjah, Sharjah, UNITED ARAB EMIRATES

#### **ABSTRACT**

The purpose of this paper is to empirically investigate the validity of the export-led growth hypothesis in the case of Egypt. Using cointegration and error-correction modeling, the empirical results for 1960-2002 suggest that, contrary to the export-led growth hypothesis, causality runs from output to export without feedback. Our evidence for Egypt lends support to the alternative internally-generated growth hypothesis where economic growth is attributed to technological progress and to the accumulation of business skills rather than to export promotion per se.

**Keywords:** Exports, Economic Growth, Granger Causality, Export-led Growth Hypothesis, Growth-driven Exports Hypothesis

# 23. DIVIDEND-POLICY AND CROSS-BORDER LISTING: EVIDENCE FROM CANADIAN FINANCIAL FIRMS

Fodil Adjaoud, School of Management, University of Ottawa, Ottawa, CANADA Imed Chkir, School of Management, University of Ottawa, Ottawa, CANADA Samir Saadi, School of Management, University of Ottawa, Ottawa, CANADA

## **ABSTRACT**

Using the Ohlson (1995) model, the present paper tackles several issues related to dividend policy and cross-border listing within the Canadian financial sector. First, as in Hand and Landsman (1999), we test

the free cash flow versus the dividend signaling hypothesis conditional on the rejection of the dividend displacement property. Second, we investigate the role of a cross-listing effect on market price and dividend policy based on our reasoned hypothesis that cross-listing leads to enhanced price discovery and lower informational asymmetries and hence reduces the incentive on the part of management to signal with dividends. Our results strongly reject this hypothesis suggesting that unlike in non-financial firms, cross-listing does not substitute for dividend payments in Canadian financial sector. In fact, the free cash flow hypothesis rather than the signaling hypothesis seems to explain the dividend policy of Canadian financial firms.

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Keywords: Ohlson Model, Dividend Signaling, Free Cash Flow Hypothesis, Cross-Listing Effect

#### 24. OUTSIDE MONEY BEHAVIOR IN THE GREENSPAN ERA

Michael Cosgrove, College of Business, University of Dallas, Irving, Texas, USA Daniel Marsh, College of Business, University of Dallas, Irving, Texas, USA

## **ABSTRACT**

Federal Reserve System officials appear to have an on-going discussion concerning the appropriate target of monetary policy. In particular, should it be an interest rate, price level or quantity of money measure. We argue that some measure of the money supply should be used as a policy target in place of the federal funds rate. But which measure? Monetary theory suggests the most appropriate measure will be the one corresponding most closely to "outside money." Outside money, in contrast to inside money, generates a real balance effect. An increase in outside money generates an increase in society's net wealth, whereas an increase in inside money is an increase in both assets and liabilities, and hence does not create an increase in society's net wealth. Commodity monies like gold or silver are outside money; likewise for fiat money such as the monetary base. An increase in the monetary base is an increase in net wealth, and should generate a large real balance effect. In contrast, most of the M2 money supply measure is interest-bearing debt, so an equivalent increase in M2 should generate very little increase in net wealth, and a small real balance effect.

We demonstrate that there appeared to be a sizeable real balance effect on aggregate spending from outside money, as the theory suggested, during the Greenspan era. In particular, when there was a slowdown in growth of the monetary base to nearly the same level as the growth of real output, the adverse real balance effect created economic and/or financial market dislocations either within or outside the U.S. Other measures of money such as M1 and M2, inside money, were inconsistent in their effects on aggregate spending as suggested by the theory.

Keywords: Outside Money, Net Wealth, Real Balance Effects, Inside Money, Yield Curve, Greenspan

## 25. THE USE OF TAGUCHI METHODS TO SOLVE QUALITY MANUFACTURING PROBLEMS

J. S. Sutterfield, Florida A&M University, Tallahassee, Florida, USA Kenneth R. Gray, Florida A&M University, Tallahassee, Florida, USA

#### **ABSTRACT**

In order for management to make sound decisions it is vitally important that sound information, particularly analytical information, be available upon which to base a decision. Thus, readily available and easily usable techniques can be of great assistance in the management decision-making process. This paper presents one such approach that might be of great use to managers to diagnose problems in which one of several possible factors is the cause of a quality problem requiring correction. The approach is an application of the Taguchi system of experimental design and analysis. The following analysis is of interest

to the manager in that it presents a specific application of a general approach that can be used to resolve many types of manufacturing quality problems at minimal cost.

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Keywords: Quality control, management, cost, Taguchi methods, statistical analysis, analysis of variance