

*Global Journal of*  
**Business  
Research**

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VOLUME 7

NUMBER 3

2013

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# Global Journal of Business Research

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ISSN : 1931-0277 (print) and ISSN: 2157-0191 (online)



# FORECASTING REAL ESTATE BUSINESS: EMPIRICAL EVIDENCE FROM THE CANADIAN MARKET

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## ABSTRACT

*In this paper, we compare the out-of-sample forecasting ability of three ARIMA family models: ARIMA, ARIMAX, and ARIMAX-GARCH. The models are tested to forecast turning points and trends in the Canadian real estate index using monthly data from April 2002 to March 2011. The results indicate that the ARIMAX model, which includes exogenous macroeconomic variables such as the gross domestic product, the consumer price index, the difference in long-term and short-term interest rates, and the exchange rate of the Canadian dollar against the US dollar and their lags, provides the best out-of-sample forecasts. Overall, the models are suitable only for short-term forecasts.*

**JEL:** R3, G01, O51, C53

**KEYWORDS:** Real Estate, Financial Crisis, Canada, ARIMAX, GARCH

## INTRODUCTION

Since the 2008 financial crisis, the world markets have gone through much uncertainty, and even after four years of crisis, the markets are unstable. The crisis led many economists to probe the nature and causes: low interest rates, high interest rates, mortgage-backed securities, asset-backed securities, credit default swaps, bad regulations, cheating, etc. However, the real estate market played a central role, bringing real estate issues before policymakers. The real estate industry is unique in terms of its contribution to a country's gross domestic product (GDP) and the overall impact on economy. At the same time, the real estate market is inefficient and illiquid, and faces regular intervention by governments across the world. Hence, the movement of the real estate business becomes a key ingredient in planning for the layperson, investors, and policymakers.

Although much research is available for the US market, research on the Canadian real estate market is unavailable. Though the Canadian market is very similar to the US market in most cases, the Canadian real estate market has several different features. The Canadian real estate market was not hurt by the financial crisis compared to the US real estate market, which is still struggling to recover. In contrast, the Canadian real estate market has increased since the beginning of 2009. In terms of broader differences, the average Canadian saw his or her income grow, and the Canadian banking structure imposes uniform and stable interest rates. These factors suggest that other factors played a role in the real estate market. This study tests a simple and widely available model to assist the common forecaster. In particular, the study uses the time series auto regressive integrated moving average (ARIMA), and then uses the auto regressive integrated moving average with exogenous variables (ARIMAX) and the auto regressive integrated moving average with exogenous variables including generalized auto regressive conditional heteroskedastic (ARIMAX-GARCH) models to test their forecasting capability.

To understand the nature of the Canadian real estate market, this study uses a times series model with a macroeconomic variable in line with other studies such as those Brooks and Tsolocas (1999), De Wit and Van Dijk (2003), and Karakozova (2004), who found the effect of the macroeconomic variable on real estate. This paper contributes significantly to the existing real estate literature by adding knowledge of

# DETERMINANTS OF THE HOME PRICE- INCOME RELATIONSHIP: 1990-2011

Adora D. Holstein, Robert Morris University  
Brian O’Roark, Robert Morris University  
Min Lu, Robert Morris University

## ABSTRACT

*Many studies have attributed the housing bubble or misalignment of home price and income to inefficient markets, irrational behavior, excessive leverage, financial innovations, macroeconomic imbalances, the Fed’s easy money policy, and repeal of the Glass-Steagal Act. However, no study has actually looked at data for the past two decades to determine whether these factors do explain the movement in the home price relative to income in the United States. This study uses reduced form models to find the determinants of the income/home price ratio using data over the period 1990 to 2011. We find empirical support that lagged values of household debt and foreign indirect investment are significant predictors of movements in the income/home price ratio. Our results confirm that although the conventional mortgage rate has a stronger negative association with the income/home price ratio, the federal funds rate is a significant determinant as well. This supports the view that keeping the federal funds rate target too low for too long could prolong a misalignment between disposable income and home price. This study also identifies the inception of a housing bubble on a national scale by using the 20-year trend in a home affordability index as a benchmark.*

**JEL:** E50, G18

**KEYWORDS:** housing bubble, debt, macroeconomic imbalance, monetary policy, financial deregulation

## INTRODUCTION

Following a slight decline during the recession of the early 1990s, the average price of homes in the United States remained fairly stable until June 1997, then began its steep climb until its peak in the first quarter of 2006. The Case-Shiller Home Price index almost tripled from 79.91 in June 1997 to 226.38 in March 2006. The National Association of Realtors (NAR) home affordability index, which relates the median price of single-family homes to the median family income, fell below trend beginning in the first quarter of 2004, and reversed its decline when the bubble burst in the second quarter of 2006.

The inventory of foreclosed homes increased first in the states of California, Nevada, Arizona and Florida, but by Spring of 2008 housing prices fell nationwide, and the U.S. economy went into a recession more severe than any other cyclical downturn since the Great Depression. The fiscal stimulus and the loans to, and equity infusions into, large financial institutions necessitated by the financial crisis amounted to about \$1.5 trillion. While real GDP has consistently increased since the third quarter of 2009, the housing and job markets have not fully recovered. By now there is a general understanding that the bursting of the housing bubble triggered the financial meltdown of the Fall 2008. Many studies have attributed the housing bubble or misalignment of home price and income to inefficient markets, irrational behavior, excessive leverage, financial innovations (e.g. subprime mortgage-backed security, credit default swap), macroeconomic imbalances, and enactment of the Gramm-Leach-Bliley Act, which repealed the Glass-Steagal Act in November 1999. Moreover, debates continue about whether and how housing bubbles can be identified, whether central banks should prevent asset bubbles from forming, and the role played by the Fed’s easy money policy in causing asset bubbles. However, no study has actually

# BANK RECAPITALIZATION AND MARKET CONCENTRATION IN GHANA'S BANKING INDUSTRY: A HERFINDAHL-HIRSCHMAN INDEX ANALYSIS

Samuel Yaw Akomea, Kwame Nkrumah University of Science and Technology, Ghana  
Michael Adusei, Kwame Nkrumah University of Science and Technology, Ghana

## ABSTRACT

*Using Concentration Ratio and Herfindahl-Hirschman Index techniques, the paper investigates the concentration levels of the banking industry in Ghana and forecasts the future concentration levels of the industry should consolidations triggered by the new bank recapitalization policy occur in the industry. The study finds that the HHI indices provide evidence for the contention that for the past eight years the banking industry in Ghana has been highly competitive with no signs of concentration. Evidence also exists to underpin the conclusion that any consolidation of four banks or less stimulated by the new bank recapitalization policy will not upset the existing market concentration. However, consolidation of five or more banks will culminate in high concentration which will be inimical to the interest of customers. The paper, therefore, recommends that, all things being equal, policy makers should permit consolidation of four or less banks if that is the only way the banks will meet the new bank recapitalization requirement.*

**JEL:** D40, D41, E02, G21

**KEYWORDS:** Banking, Market Concentration, Herfindahl-Hirschman Index, Ghana

## INTRODUCTION

Driven, ostensibly, by the desire to promote prudent management of banks in Ghana, the Bank of Ghana introduced a bank recapitalization policy in 2007. In this policy, universal banks operating in Ghana were required to recapitalize from GH¢ 7 million to GH¢ 60 million (approximately US\$ 60 million at the time) by the end of 2012. Two roadmaps were set for the implementation of this new policy. All majority locally-owned banks were given up to December, 31, 2010 to achieve minimum capitalization of GH¢ 25 million, and December, 31, 2012 to recapitalize fully. Foreign banks that predated the policy were given up to 31<sup>st</sup> December, 2009 to recapitalize whilst banks that were licensed after the announcement of the policy had to start with the new capitalization. All foreign banks that existed before the policy have since met their obligations at the completion point in 2009. However, indications are that their indigenous counterparts are still struggling to meet the target. What seems plausible to conjecture is that some of these may have to consolidate to keep themselves in the industry. This conjecture is premised on the precedents obtainable from similar exercises that took place in other jurisdictions.

After the Asian crises, Malaysia undertook recapitalization in its banking sector whereby about 80 banks shrunk to about 12 within two years. South African experience is also available for reference. A similar policy stimulated bank consolidations in South Africa in 2003 which led to a reduction in the number of banks in South Africa (Akomea, 2009). Nigerian experience obviously lends more credence to prediction of bank consolidations in Ghana. In the Nigerian situation, out of 89 banks that were in existence before the recapitalization exercise in 2004, 14 lost their licenses and the rest consolidated through mergers and acquisitions into 25 banks by the end of 2005 (Ezeoha, 2011).

# EFFECTS OF INSIDER SHAREHOLDING ON CORPORATE GOVERNANCE IN EMERGING MARKETS: EVIDENCE FROM TAIWAN

Te-Kuang Chou, Southern Taiwan University

## ABSTRACT

*Ownership structure is one of the key determinants constituting internal corporate governance, which is especially crucial in emerging markets. This study explores the effects of insider shareholding, an obvious characteristic of ownership structure, on corporate governance. The empirical results demonstrate partial support for the convergence-of-interests argument. This means that a higher insider shareholding structure tends to benefit corporate governance. However, the results also show possible moderating effects from different industrial settings; further studies are needed to deepen the understanding of these effects. Policy implications are provided for legislation and investing in emerging markets.*

**JEL:** G32; G34; G38

**KEYWORDS:** corporate governance, ownership structure, insider shareholding, agency theory

## INTRODUCTION

In recent years, emerging markets have drawn considerable attention for their growth potential. Correspondingly, corporate governance in emerging markets has become a focus of discussion (Kearney, 2012; Claessens & Yurtoglu, 2012). Emerging markets provide different research settings for academic-oriented researchers to re-examine theories and hypotheses derived from developed markets. Meanwhile, demands from the practical application front are also strong. Knowledge on emerging markets is crucial for extending business into these regions and for improving the institutional environment in these regions.

A complete system of corporate governance includes external mechanisms originating from the market and internal mechanisms within corporate organizations. However, emerging markets typically suffer from a lower level of legal protection for shareholders (Lins, 2003), a lack of influential institutional investors and an inactive takeover market (Tsai et al., 2006). Under these conditions, corporate governance systems in emerging markets tend to have a greater reliance on internal mechanisms rather than external ones (Sheu & Yang, 2005).

Taiwan's minimum shareholding requirement for insiders (directors and supervisors) is exactly such a case. According to the Security Exchange Act in Taiwan, the entire body of insiders in a public company must possess at least a certain number of shares of this company, which is presented in Table 1. This legal requirement attempts to strengthen internal corporate governance by regulating ownership structure (Hung & Chen, 2009). Although a similar regulation does not exist in any major country, ownership structure has long been considered a key determinant constituting internal corporate governance (Berle & Means, 1932; Jensen & Meckling, 1976; Fama & Jensen, 1983; Demsetz & Lehn, 1985; Shleifer & Vishny, 1997; Demsetz & Villalonga, 2001; Sanchez-Ballesta & Garcia-Meca, 2007). Insider shareholding is an obvious characteristic of ownership structure (Garcia-Meca & Sanchez-Ballesta, 2011; Gugler et al., 2008). Does a higher insider shareholding really benefit corporate governance? This study examines the effects of insider shareholding on corporate governance. Policy implications are provided based on the empirical results.

# THE EFFECT OF INNOVATION CAPABILITIES AND EXPERIENCE ON CROSS-BORDER ACQUISITION PERFORMANCE

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JaeJoon You, Yonsei University  
PhilSoo Kim, Yonsei University

## ABSTRACT

*Due to the integration of the European market, the globalization process, and the rising importance of technological innovation, there has been a surge in cross-border acquisition strategy for European firms. Innovative technology and experience are the main drivers behind firms' acquisition imperatives to realize sound performance. Based on the resource-based view and organizational learning perspective, our empirical research focuses on the effects of European firms' innovative capabilities and experience on their acquisition performance when targeting United States firms. The results indicate that both innovative capabilities and experience have a positive effect on acquisition performance. This suggests that in order to have successful acquisition performance, European firms need to reinforce their innovative capabilities and commit to accumulating experience in articulating cross-border acquisition strategy. In addition, we discuss the interaction effect that relatedness has on the acquisition performance of European firms. Our findings indicate that related acquisitions associated with redundant or similar innovative capabilities and acquisition experience hinder acquisition performance. We posit that relatedness has a negative moderating effect on acquisition performance.*

**JEL:** M16

**KEYWORDS:** Resource-based view, organizational learning, cross-border acquisition, innovation capability, acquisition experience, relatedness.

## INTRODUCTION

Merger and acquisition (M&A) has long been a key strategy for firms wishing to initiate strategic growth and expansion (Shimizu, Hitt, Vaidyanath, and Pisano, 2004). Acquisitions represent a significant strategic choice, with increased global activity over the last decade (Boeh, 2011). As the globalization of business radically increases, it is evident that firms encounter opportunities for growth through cross-border acquisitions (CBAs). The increasing globalization of business has heightened both the opportunities and the pressures for firms to engage in CBAs (Hitt, Ireland, and Lee, 2000). The recent decade has proven that the already unprecedented number of CBAs is continually increasing (UNCTAD, 2011). Typical phenomena observed with the current acquisitions streams include more global attributes, with the value of CBAs growing more significant (Bertrand and Zuniga, 2006). However, numerous studies suggest that the intended CBAs are not highly successful.

Various motives induce firms to pursue CBAs. Many acquirers pursue CBAs to enhance their capability to gain resources and knowledge (Bartlett and Ghoshal, 1988; Luo, 2000). Specifically, studies indicate that there is a high correlation between research and development (R&D) expenditures and M&A activity, with firms utilizing acquisition strategy to obtain technology (Blonigen, 1997; Blonigen and Taylor, 2000; Kogut and Chang, 1991). This suggests that a technology and innovation seeking motive can be considered as an important driver of CBA. Previous studies have examined technological and innovative asset seeking intent in the context of European acquisitions, and observations of European M&A indicate growth in CBA activities (Sleuwaegen and Valentini, 2006). Scholars have posited that the integration of

# LUMP-SUM QUOTA BONUSES AND OTHER VERTICAL RESTRAINTS WITH COURNOT RETAILERS

Chris Y. Tung, National Sun Yat-Sen University  
Chun-chieh Wang, National Sun Yat-Sen University

## ABSTRACT

*Lump-sum quota bonuses are a specific type of quota bonus that provides a lump-sum transfer from a manufacturer to a retailer when the retailer's sales exceed a pre-determined quota. This paper explores whether lump-sum quota bonuses and two other vertical restraints, two-part tariffs and resale price maintenance, can resolve the double marginalization problem when the market size is uncertain. It emerges that only lump-sum quota bonuses can always resolve the double marginalization problem in our two-state case.*

**JEL:** L42, L13, D89

**KEYWORDS:** Vertical Restraints, Lump-Sum Quota Bonuses, Cournot Competition, Uncertain Market Size

## INTRODUCTION

Perhaps because of a lack of knowledge of the market, manufacturers may not effectively promote their own product, as occurred when Google failed to effectively market the Nexus One. As an alternative to self-promotion, many manufactures sell products through more than one retailer. For example, publishers sell books through bookstores, of which the leaders in the United States include Borders, Barnes and Noble, Amazon.com, and the Follett Corporation (Datamonitor, 2010). The vertical relationships between manufacturers and retailers have been addressed in the literature. Rey and Vergé (2008) provide a good overview of relevant academic studies and legal matters.

This paper addresses a special case in which few retailers control retail markets. In addition to the book market mentioned, the cable television in the U.S. is another example. In each area, there exist only few cable systems operators to carry programming. In this special case, the double marginalization problem (DMP) raises. Market power of retailers induces a pricing inefficiency in vertically related markets, and hence, profits of manufacturers and of channels are eroded. Sprengler (1950) firstly addresses the DMP. Waterman and Weiss (1996) verify the DMP in the U.S. cable television market. Manufacturers often use vertical restraints, which is the restraints imposed by manufacturers on retailers, to regulate retailers' behavior and resolve the DMP. Without market uncertainty, several vertical restraints can resolve the DMP. However, it may not be true when market size is uncertain.

Two-parts tariffs (TTs) and resale price maintenance (RPM) are often discussed in the literature. In addition to the above vertical restraints, this paper address lump-sum quota bonuses (LSBQs), which is only mentioned in very few papers. LSQB, which are similar but not exactly identical to other vertical restraints, are a specific type of quota bonuses, which involve making a lump-sum transfer from a manufacturer to a retailer when the retailer's sales exceed a predetermined quota. For example, car manufacturers often offer some "volume bonus incentives" to dealers. In this paper, we show that only LSBQs can resolve the DMP when market size is uncertain. Hence, we spend more paragraphs in discussing LSBQs than other vertical restraints.

We discuss related literature in the following section. The model and the impacts of LSQB on retailers' best response functions are presented in the section after the next section. If a manufacturer simply maximizes its profits, none of vertical restraints discussed in this paper can be counted upon to always resolve the DMP. However, when a manufacturer maximizes channel profits, LSQB is superior to TTs and RPM. These discussions can be found in the following sections. The final section provides



# SALES FORCE'S ATTITUDES TOWARD TECHNOLOGY: EVIDENCE FROM SPAIN

Julián Pando García, University of the Basque Country  
Virginia Rincón Diez, University of the Basque Country

## ABSTRACT

*Technology has changed company activity. It has equipped companies with elements which give them better and greater knowledge of their target audiences and clients. Within the commercial scope of organizations, it is important to understand which factors explain the use of technology. In this project, a study on vendors' attitude toward technology and on their use of technology is developed. We analyse different sales force opinions toward technology and develop a segmentation of vendors, characterizing each segment identified based on the variables used. The results show, technological use is related to the sales force job, the industry, the size of the organization, in relevance to the different vendors' segments.*

**JEL:** M31

**KEYWORDS:** Sales Force, Attitudes Toward Technology, Market Segmentation

## INTRODUCTION

Technology is an essential element for the development of organizations. Commercial and sales areas are no exception. Several studies have analyzed the development of different aspects of sales force automation. Sales force automation is a process wherein several organizations observe problems in adopting and implementing a strategy. The ratio of negative experiences in implementing technologies such as CRM or SFA (Sales Force Automation) is between 50% (Amerongen, 2006; Frook, 2000; Rigby, Reichheld and Schefter, 2002) and 75% (Kaido, 1999; Petersen, 1997).

It is important to understand which factors explain the use of technology. In this project, a study on vendors' attitude toward technology and their use of technology is developed. We analyzed different sales force opinions toward technology and develop a segmentation of vendors, characterizing each one of the segments identified based on the variables used.

The remainder of this paper is organized as follows. The next section examines the literature and develops the goal of this study. We then describe our data and methodology and discuss the results of our empirical tests. The final section includes conclusions.

## LITERATURE REVIEW

Most companies implement sales technology in their sales forces with the aim of improving productivity, communication and customer relationships (e.g. Campbell, 1998; Goldenberg, 1996; Moncrief, Lamb & Mackay, 1991). In general, research on barriers to technology adoption is consistent with the general conclusion that organizational barriers are more important than technical barriers. Organizational barriers include issues such as fragmentation and poor relationships between functional departments, non-acceptance by the senior management of the strategic benefits of investment in technology and the absence of a clear strategy for implementation (Wright, Fletcher, Donaldson & Lee, 2008).

Schillewaert and others (Schillewaert, Ahearne, Frambach & Moenaert, 2005) note it is surprising that only a few marketing studies have dealt with adoption of sales technology within sales organizations.

# MODELING OF FINANCIAL CRISES: A CRITICAL ANALYSIS OF MODELS LEADING TO THE GLOBAL FINANCIAL CRISIS

Gurudeo Anand Tularam, Griffith University  
Bhuvaneshwari Subramanian, Griffith University

## ABSTRACT

*The causes of financial crises are multiple but the models of financial crises revolve around four generational models. In this paper, the authors analyzed these models and highlighted the fact that each model was adapted to specific situations to explain the financial crises faced rather than being visionary or systematic in approach. These models suggest crises may develop without significant change in economic fundamentals, since policies usually respond to changes in economy and agents consider these when forming expectations. Therefore, any set of indicators together may not provide an over-all picture but interactions among indicators should be pursued. Common sense and guesswork is used but is not sufficient for representing real behavior. Modeling suggests that stressed or fraudulent companies should be removed to avoid further crises. While the new models handle a wider range of nonlinear behavior, little new work is in fact evident. Apart from a patchwork-like approach of the past, financial or currency crises modeling has not been dealt with systematically. A new way thinking is not emerging suggesting a visionary and dynamic robust mathematical modeling approach is needed with attention to the many possible risks.*

**JEL:** G01

**KEYWORDS:** Applied Mathematics, Generational Models, Financial Crisis Models, Macroeconomic Fundamentals, Financial Indicators

## INTRODUCTION

A currency crisis is defined as a situation in which an attack on the currency leads to a sharp depreciation of the currency, a large decline in international reserves, or a combination of the two (Kaminsky, Linzondo and Reinhart, 1998). Many studies have focused on modeling financial crises and the development of early warning systems relying on different techniques (Lestano and Kuper, 2003; Kaminsky et al., 1998; Kaminsky and Reinhart, 1999; Frankel and Rose, 1996; Sachs, Tornell, and Velasco, 1996; Berg and Pattillo, 1999; Eichengreen, Rose, and Wyplosz, 1995). The models have been developed to understand and predict crises such as the recent global financial crisis. Some were tuned to even predict a particular point of time at which a crisis will occur. However, none of these models could predict or explain the current global financial crises. It seems that previous models were insufficient in structure to aid either in understanding or predicting the 2007 global crisis. Some authors state that current dominant theories and econometric models failed to predict the recent crisis (Bezemer, 2009).

The aim of this paper is to critically review models of the past, investigate approaches taken during their development and pointing out reasons why the models failed. Based on mathematical and critical reflective analysis of the literature, new ideas are explored and some insights provided based on history, for the development of new, visionary models. In the remainder of the paper, the authors present a brief literature review followed by a comprehensive analysis of the four generational models of currency and financial crises. This section also includes models related to signal processing and agent analysis. This is followed by a discussion section. The final section provides some concluding comments.

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