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The special issue contains papers selected from the International Conference organized by the *European Research Centre of Managerial Studies in Business Administration* (CESMAA) and Faculty of Financial Management Accounting Craiova in each October of every academic year. There will prevail the papers containing case studies as well as those papers which bring something new in the field. The selection will be made achieved by:
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Schedule

Deadline for Submission of Papers: 15th May 2012
Expected Publication Date: June (e-version) – July (hard-copy) 2012
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Journal of Applied Research in Finance

Table of Contents

AN EMPIRICAL STUDY OF DIVIDEND POLICY MODELS IN INDIAN CONTEXT WITH SPECIAL REFERENCE TO ENGINEERING INDUSTRY

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Abstract
    Hindsight of literature, last decadal studies and de facto corporate trends as studied in our empirical research conducted in hand revealed the fact that dividend payouts by the companies and their relative firms' value are based on the two theories i.e.

1. Introduction

Theory of Relevance and **Theory of Irrelevance** and various dividend models was given by the various academicians and professionals. Conceptually, '***dividends are payments by a corporation to shareholders and represent a return on the capital directly or indirectly contributed by the shareholders'***. *Efficient dividend decision making is of paramount importance for any company as it influences its share prices in the market, maximizes its shareholders' welfare and enhances its reputation in the market*. Hence, it is quite imperative that the companies have to be very cautious in dividend decision making. In simple words, dividend decision refers to the amount/quantum of profits to be distributed as dividend among the shareholders. There is a reciprocal relationship between retained earnings and cash dividends i.e. larger retentions mean lesser dividends whereas smaller retentions imply larger dividends as the retained earnings help the firm to concentrate on the growth, expansion and modernization of the firm. Thus, the alternative uses of net earnings – dividends and retained earnings have always been an issue of contention, competitiveness and conflicting among the various domains of knowledge.

2. Significance of dividends

    The study of corporate dividend decision is important from the point of view of shareholders since it affects their current earnings as well as savings and the market value of their investments. Thus, plays an important role in creating a healthy investment climate for rapid economic growth of a country. Dividend policy influences, to a large extent, the saving pattern in an economy and corporate savings, an important source of corporate liquidity and investment potential is inversely related to the changes in dividend policies. Distribution of dividends has an impact on the savings of the household sector as well. The pattern of savings generated is thus of great importance to the planners entrusted with the task of planning for economic growth which in the long run depends upon flow of savings as viewed by Khurana (1985).

3. Objectives of the study

▪ *To test the applicability and validity of dividend models especially in the context of Engineering Industry in India.*

Table 5. Regression Results of Dobrovolsky Model

Company name	a	b_1	b_2	b_3	R^2	F
Alfa Laval (India) Ltd	14.865	-0.16	0.454	0.104	0.472	1.785
BEML Ltd.	0.344	.200**	-0.012	0.004	0.963	52.302**
Bharat Forge Ltd.	0.677	.266*	0.111	-0.01	0.905	19.118**
Cummins India Ltd.	2.524	0.112	0.593	-0.011	0.469	1.768
Electrosteel Castings Ltd.	2.008	0.058	0.189	0.003	0.633	3.451
Engineers India Ltd.	-15.164	0.96	1.808	-0.047	0.67	4.058
Graphite India Ltd.	-0.353	.199**	.328**	-0.001	0.97	64.564**
Greaves Cotton Ltd.	5.461	0.118	0.063	0.113	0.526	1.478
HEG Ltd.	-1.652	.327**	0.01	0.025	0.955	42.296**
Larsen and Toubro Ltd.	2.369	0.164	0.135	-0.029	0.404	1.356

* Significant at 5% level.
** Significant at 1% level.

The table describes that R2 is statistically significant only in 40% of the companies which indicates a slightly below average positive relationship between first two variables i.e. current earnings after tax and lagged dividend and negative relationship between operating asset expansion and dividend. However, only one independent variable i.e. current year profit shows significant relationship with the dividend payout whereas other two variables do not show so good relationship. Conclusively, it is evident from the analysis that only current year profit after tax is considerably significant whereas the other variables considered by Dobrovolsky do not have significant impact on dividend payout. However, the values of R2 and F-values seem to be significant and have dependency on first independent variable i.e. current year profit after tax.

8. Conclusion

It can be concluded from the data analysis carried out in this paper that dividends refer to the amount and timing of any cash payments made to the company's stockholders/ stakeholders. Dividend decision is an important element for every firm that influences its capital structure and stock price. The objective of the present study was to test the applicability of dividend models in the Indian context with special reference to Engineering Industry. It have been found that out of four models under study, the models developed by Dobrovolsky, Darling, Brittain do not offer appropriate explanation of dividend behavior in majority of the companies under study. However, the **Lintner's model** provided a good fit and considering current earnings after tax as a measure explanatory independent variable that effects the dividend payout and coefficient of determination (R2) is statistically significant at 1% for majority of the companies in the Engineering Industry.

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EQUITY HOME BIAS PUZZLE BETWEEN MACRO-FINANCE INTERFACE AND RISK-FACTORS INTERFERENCE

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Abstract

Through this article we shed light on equity home bias puzzle in the current global finance area. We aim to see where the problem lies and to highlight, theoretically and practically, its determining factors. In that framework, a sample of developed and developing markets is studied using annual frequency data over the period 2001 to 2007. By means of dynamic panel data approach, we find that equity home bias is closely associated with both local and global risk factors (risk-factors interference) and it's a matter of the macro-finance interface. Indeed, it rises with domestic economic growth, industry value added, local PER and momentum effects on domestic markets. However, it falls with the rising local inflation, trade openness, national systematic risk and cross-border capital flows. As for the value added of the paper, we confirm the rise of global risk factors and, then, the interference between idiosyncratic and common factors. Moreover, specification tests enable as to verify the suitability of the selected variables and corroborate the mild-segmentation hypothesis. We state that our findings provide a potential usefulness for portfolio managers and domestic governors who plan on improving their attractiveness indices.

Keywords: home bias, behavior finance, beta, momentum, investor perception, optimism, macro-finance.

JEL Classification: D23, E44, F21, F33, G11, G15, G18

1. Introduction

Standard Portfolio theory establishes a straight link between diversification across domestic and foreign markets to maximize portfolio efficiency (Levy and Sarnat 1970) and enhance benefits from international diversification (Solnik 1974). However, a persistent gap between domestic portfolio allocation and value-weighted portfolio allocation has been observed on international equity markets (French and Poterba 1991). It's the puzzling equity home bias (Obstfeld and Rogoff 2000) in international finance but also it becomes a likely feature of international macroeconomics.

In fact, International portfolio allocations are associated with economic and financial development in host countries, national governors' strategies and with the behavior of international investors. Accordingly, numerous explanations consist of economic factors, financial factors and behavioral factors that belong to macro-finance interface. Furthermore, given the sustainable international financial integration (Vo and Daly 2007), Arfaoui and Abaoub (2010c), interconnection between local risk-factors and global risk-factors has rather been raised. It's the risk-factor interference.

In this paper, we attempt to contribute to empirical literature by investigating the dynamics of individuals' portfolio holdings. Indeed, we plan to clarify local factors and specify them separately and consider the context of increasing financial integration to assess the eventually contribution of global risk factors having a common feature.

2. Theoretical motivation and background

The financial theory of capital markets provides various immediate explanations to the equity home bias puzzle. However, empirical literature supports few of these explanations supposed *a priori* relevant. In fact, Black (1974), Stulz (1981), Adler and Dumas (1983), Solnik (1974, 1983), Sercu (1980), recommends the effect of observable barriers, such as restrictions on capital flows, taxes, risk of stochastic inflation and transactions costs. For instance, Errunza and Losq (1985, 1989), were interested in institutional barriers and restrictions on foreign positions. Nevertheless, Cooper and Kaplanis (1994), Coën (2000), rejected the assumption of hedge against local inflation risk and human

literature and we're thinking of inserting our assumptions in the present framework of persistent international financial integration (e.g. Lane 2003, Vo and Daly 2007, Arfaoui and Abaoub 2010c). In fact, to our knowledge, the relevance of global risk factors in the process of holding of international assets was not been enough documented (e.g. Ferson and Harvey (1998). In this direction, our second motivation was an attempt to provide a valid empirical contribution while testing for the job of global risk factors in the explanation of equity home bias. Consequently, we joined an additional assumption (H8) by which common factors affect the home bias phenomena.

Our findings support the initially formulated predictions. Indeed, home bias increases with local economic growth, added value of domestic industrial sectors, local growth opportunities and in the presence of momentum on behalf of domestic investors. These results corroborate those obtained by recent empirical tests. We cite, *inter alia*, Agenor (2003), Bekaert *et al..* (2007), Sehgal (2006), Burger and Warnock (2006), Stulz (2006), Rojas (2007), Buchannan and English II (2007), Graff (2008), and Akbas *et al..* (2008). On the other hand, this bias decreases with a rising local inflation, economic openness, systematic risk on domestic markets, and with the capital mobility. Furthermore, we point out that results confirm the economic theory (keynesienne and post-keynesienne theory) and lessons of the portfolio fundamental theory.

We declare, also, that global risk factors affect negatively equity home bias. Indeed, the home bias decreases with world economic situation, a rising international interest rates and high world PER. These results fit within the framework of a persistent financial integration and reflect the logic of initially developed reflection and corroborate the recent empirical literature which recommends the gone up of common factors. We quote, *inter alia*, De Santis and Gerard (1998), Carrieri *et al..* (2006a, b), Abugri (2008), Arfaoui and Abaoub (a,c). More generally, we point out that idiosyncratic factors form an engine of equity home bias while common factors support the holdings of foreign assets.

We consider that our results are plausible and economically interpretable. In parallel, they have a potential utility for portfolio managers and, also, for domestic governors aiming at promoting their attractiveness' indices.

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DYNAMIC RELATIONSHIP BETWEEN EXCHANGE RATES AND STOCK PRICES: EMPIRICAL EVIDENCE FROM INDIA

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Abstract
   This study empirically determines the causal relation between the stock price and exchange rate in India. We used daily data since the use of monthly data may not be adequate to capture the effects of short term capital movements. Having established the stationarity condition of each series using ADF, PP and KPSS unit root tests, the causal linkages were examined using the Granger non-causality test prescribed by Toda and Yamamoto (1995). The study found that, there exists unidirectional causality from exchange rate to stock price in the India over the period 2004 to 2011. Johansen and Juselius (JJ) cointegration result shows that there is long run relationship between stock prices and exchange rates. The study suggests that the relationship between equity returns and exchange rate movements may be used to hedge their portfolios against currency movements. Additionally, risk management must take into consideration that these markets are correlated.

Keywords: stock prices, exchange rates, cointegration, vector error correction, TandY causality.

JEL Classification: C32, G15

1. Introduction

   The last decade has witnessed significant changes in the international financial system such as the emergence of new capital markets, advent of floating exchange rates, opening up of current account, liberalization of capital account, reduction of customs duties, the development of 24-hour screen based global trading, and innovations in internationally traded financial products in emerging countries. All the mentioned features have broadened the variety of investment opportunities but, on the other hand, they have also increased the volatility of exchange rates and added a substantial portion of risk to the overall investment decision and portfolio diversification process. The weakness of the local currency against the greenback is beginning to hurt foreign investors. For example, the Indian rupees weakness has a cascading effect on equity returns of investor who buy stocks with dollar. In the absence of full convertibility, FIIs have to convert their dollars into rupees to buy stocks here and do the reverse while selling. Due to falling in Indian rupees, investors get fewer dollars for their rupee. That shaves off more from their already deflated equity portfolios. Foreign Institutional Investors have seen their investment lose more than the benchmark due to currency vagaries.

   Studying the interaction between foreign exchange and stock markets has therefore become more complex and has received more research interest than before. The relations between exchange rate movements and stock prices are based on the rise in the domestic interest rate that leads to capital inflows and makes the exchange rate appreciate. This suggests that, for export dominant industries, currency appreciation has a negative effect on stock prices. In such industries because of reduction in exports while currency appreciation boosts the stock market (positive effect on stock prices) for import dominant industries due to increase in imports.

1.1. Theoretical framework

   In retrospect of the literature, a number of hypotheses also support the existence of a causal relation between stock prices and exchange rates. Several studies have been conducted to examine the effect of changing exchange rates on the stock prices. There are two theories about the dynamic relationship between exchange rates and stock prices – the traditional and portfolio approaches – which have been discussed for a long time, yet have not resulted in any consensus. The traditional approach claims that a depreciation of the domestic currency makes local firms more competitive, leading to an increase in their exports and consequently higher stock prices. This implies a positive correlation between exchange rates and stock prices. The inference from the above traditional approach suggests that exchange rates lead stock prices. This relationship is attributed to Solnick (1987). He argued that a real currency appreciation is a bad news for domestic firms, because it will reduce its competitive ability to export, while a real depreciation enhances its ability to export in the

From the above analysis, it's explained that, Sensex and exchange rates have long run relationship. But that does not mean they have short run equilibrium. There may exist short run dynamics among Sensex and exchange rate also. For taking care of short run equilibrium Error Correction Mechanism (ECM) has been adopted. Three types of inference, concerning the dynamics of the two variables, can be drawn from the Error Correction Mechanism results Table 4.3. It is evident from the co-integration coefficients found to be weekly exogenous or endogenous, that is shocks exchange rate do destabilize the equilibrium Sensex.

4.2. TandY causality analysis

Having identified that all series exhibit I (1) behavior or the maximum degree of integration in the system is unity, we examine the nature of causal linkages between the stock price and exchange rate by performing the Granger non-causality test. Applying the methodology proposed by Toda and Yamamoto (1995) outlined in section III, we analyze the nature of causal linkages between stock price and exchange rates. The bivariate model was estimated and the results for are tabulated in Table 2.

Table 4. Results of TandY causality: Sensex and Exchange rate

Cause	Effect	MWald- Test values	P-Value	Causality Inference
Exchange Rate	Sensex	10.438	0.033	Exchange rate does causes Sensex
Sensex	Exchange Rate	5.796	0.214	Exchange Rate does not causes Nifty

The result of bivariate model suggests that there exist unidirectional causal relation between stock price and exchange rate for both sub-sample periods. It means changes in exchange rate may effects the stock prices but changes in stock prices does not have any impact on exchange rate.

5. Conclusions

In this paper we have explored the association between two important component of an economy named as stock prices and exchange rates. First of all, we applied unit root test to find the stationarity of data series. The results show that all the data series of the variables are non-stationary and integrated of order one. Then we applied Johansen procedure to test for the possibility of a cointegrating relationship. Result shows that there is cointegrating relationship between stock prices and exchange rates. In India, stock market investment does not constitute a very significant portion of total household savings compared to other form of financial assets, due to this it may have a significant impact on exchange rate movement as FII investment has playing a dominant role in Indian stock market. This study confirms belief of investors that there is an association between exchange rates and stock prices and they are predictable on the basis of the values of other variables. One of the practical applications of portfolio management is that the relationship between equity returns and exchange rate movements may be used to hedge their portfolios against currency movements. Additionally, risk management must take into consideration that these markets are correlated.

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AN APPROACH OF COMBINING EMPIRICAL MODE DECOMPOSITION AND NEURAL NETWORK LEARNING FOR CURRENCY CRISIS FORECASTING

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Abstract

This paper presents a hybrid model for predicting the occurrence of currency crises by using the artificial intelligence tools. The model combines the learning ability of the artificial neural network (ANN) with the inference mechanism of the empirical mode decomposition (EMD) technique. Thus, for a better detection of currency crises emergence, an EMD-ANN model based on the event analysis approach is proposed. In this method, the time series to be analyzed is first decomposed into several intrinsic mode components with different time scales. The different intrinsic mode components are then exploited by a neural network model in order to predict a future crisis. For illustration purposes, the proposed EMD-ANN learning approach is applied to exchange rate data of Turkish Lira to evaluate the probability of a currency crisis. We find evidence that the proposed EMD-ANN model leads to a good prediction of this type of crisis. Significantly, the model can thus lead to a somewhat more prescriptive modeling approach based on the determination of causal mechanisms towards finding ways to prevent currency crises.

Keywords: emerging markets, currency crisis, artificial neural network, early warning system, empirical mode decomposition, intrinsic mode components.

JEL Classification: G01, G17, C45, F31

1. Introduction

Many crises of financial origin took place during the 1990ties and currency systems have often played the major role within the observed dynamics. Thus, the sudden currencies' depreciation experienced by the European Monetary System (EMS), Latin America or Asia has prompted many studies seeking to model situations of vulnerability and exchange rate depreciation. The different generations of currency crises models have therefore enabled the development of several tests regarding the optimal monetary policy to implement in such situations.

Many emerging economies have benefited from substantial inflows in direct and portfolio investment. However, especially when short-term flows are concerned, changes in investors' attitude - often motivated by concerns related to the accumulation of public debt or financial imbalances – have often determined sudden capital outflows. Since 1994, these reversals have generated important financial turmoil in most Latin American countries, a part of Southeast Asia, and some countries in transition. These crises have often been aggravated by financial contagion, during which liquidity suddenly dried up in some countries, not because of changing of fundamentals of their economy, but because of common characteristics with other economies that lost market confidence. Experiences show that the risk of contagion increases when news on the financial health of a country are limited.

The increasing integration of economies is reflected by a rise in the systemic risk and by a multiplication of crises over the recent years in some developing countries. These successive crises were often followed by bailouts insured by international institutions (especially IMF) in order to restore confidence and limit the slowdown in global economic growth. These successive crises are usually triggered by a brutal depreciation of exchange rate of domestic currency.

In this context, the literature on currency crises has experienced a rapid growth. Its aim is to build a successful model for crisis forecasting, which can detect the emergence of problems in the foreign exchange markets in order to help countries to avoid crises.

Due to the high fluctuations of financial time series, it is difficult to use a single technique to capture its non-linearities and accurately describe its moving trend. Hence, a novel hybrid intelligent forecasting model, based on empirical mode decomposition (EMD) and neural network (ANN), is proposed in this paper. EMD can adaptively decompose the dataset into a number of independent intrinsic mode components (IMC) and a residue. These IMC could represent factors that affect exchange rate movements. These IMC which have different scales will represent the input layer for the proposed neural network learning system. The probability of crisis will then be the output layer of the neural network. Successful forecasting application on the Turkish exchange rate will demonstrate the feasibility and validity of the presented model.

In the proposed EMD-ANN approach, the exchange rate - a typical financial indicator reflecting changes in economic conditions - is chosen. Then, the EMD algorithm is applied on the exchange rate data and the IMC of the exchange rate series with different scales are obtained. Consequently, the relation between these different IMC and the probability of crisis is explored by a back-propagation neural network algorithm.

The distinct feature of the proposed model is that it uses only one indicator (the exchange rate). However, most previous studies (i.e. several statistical-based models, structural analysis models and some artificial intelligence methodologies), use different financial indicators related to crisis situations. However, these indicators are usually hard to obtain, mainly because disastrous financial crises occur rarely, or over a very short period of time. Another important characteristic of this study is that the exchange rate data is used to judge whether the economic condition is approaching a crisis state or not.

The paper is articulated as follows: Section 2 gives a literature review on currency crises. Some empirical evidence is developed in Section 3. Section 4 describes some previous forecasting models of currency crises. The construction of the EMD-ANN system and its benchmarks is discussed in Section 5. The empirical results are presented and interpreted in Section 6. Finally, in Section 7, we provide some conclusions and considerations for further researches.

2. Currency Crises Literature Review

Models of currency crises deal with situations in which a speculative attack is triggered in the foreign exchange market and causes important sudden depreciation of the exchange rate.

The first studies attempting to explain the occurrence of crises have been developed by Krugman in 1979. According to Krugman (1979), economic programs implemented by public authorities that are incompatible with a fixed exchange rate regime are the main cause of the outbreak of a crisis.

The first models have shown that the origin of currency crises comes from the weakness of fundamental economic variables typically related to expansionary monetary and fiscal policies. Krugman's model shows that under a fixed exchange rate, an expansion of domestic credit higher than the money demand leads to a gradual, but inexorable, decline in international reserves and ultimately to a speculative attack on the currency. This attack brutally depletes reserves and forces the authorities to abandon the parity. The attack is justified by the fact that agents understand that the fixed exchange rate regime will collapse, followed by capital losses on their holdings in domestic currency. In terms of indicators, this model suggests that the months preceding a currency crisis are characterized by a progressive decline in reserves, and a rapid rise in domestic credit compared with money demand.

A number of extensions have been added to this basic model. They showed that a speculative attack is usually preceded by an appreciation of the real exchange rate and a deterioration of trade balances. These results derive from models where fiscal policy and expansionary credit lead to greater demand in both tradable goods (which causes deterioration in the trade balance) and non-tradable goods (which causes an increase in the relative price of these goods, and therefore an appreciation of the currency in real terms).

The different currency crises in the nineties have strained the predictive qualities of these models. Indeed, these models fail in taking into account financial globalization and the reversibility risk of capital flows. However, the speculative crisis that hit the EMS in the early nineties has

Moreover, if we suppose that a database of different currency crisis indicators is available, we will be able to build a database providing more detailed causal relationship among variables, hence suggesting potential policy decisions for increasing the chances to avoid crises. These relationships can also be the basis for theoretical modifications in the modeling approach to be implemented by further researches.

To sum up, this work provides the following main contribution: we proposed an estimate for the probabilities of occurrence of currency crisis, as well as an alternative to deal with the inherent nonlinearities of this problem. The main drawback of our work is the inability of this modeling to offer an economic explanation of the crisis and to detect potential economic indicators that are responsible for crisis. This limit comes from the fact that we have used only one explanatory financial indicator in our empirical study (the exchange rate).

Finally, a general approach to identify the relationships among the different variables can be the basis for further hypothesis testing on other important explanatory indicators of currency crises. Another significant area for future applications could be banking crises and stock market crashes.

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INTERNATIONAL DIVERSIFICATION AND STOCK MARKETS VOLATILITIES

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Abstract

The current paper examines the volatility parameters of thirteen stock markets returns (mature and emerging) by GARCH models in order to see its effects on the potential gains of international diversification. Then, we identify the effects of the volatilities on the correlation between international stock markets.

The empirical results show that an ARCH effect exists for all stock markets returns and that volatility is persistent and asymmetrical according to the shock nature. Moreover, the volatility spillover, which is important between the mature stock markets, is checked between the majorities of stock markets. Indeed, we observe the contagion effect which negatively affects the potential gains of international diversification. The assumption stipulating the increase of a coefficient correlation in period of high volatility, which reduces the benefit of international diversification, is confirmed for the majority of markets.

Keywords: international diversification, volatility, GARCH model, asymmetric effect and volatility spillover.

JEL Classification: G15, G19

1. Introduction

Characterized by its integration and a reduction into the international financial investment barriers during the last decades, the international financial market situation encouraged the investors to distribute their wealth between several stock exchange markets. At this level, we can say that such an investment aims at a better widening of the financial markets. This release was characterized by the progressive lifting of various barriers to the foreign investment and by the suppression of capital movement restrictions, where the intervention of international diversification serves to improve the profitability of various financial assets rather than the domestic diversification. For that, international investment has been regarded for a long time as a means to reduce and distribute the total risk of the financial portfolios by encouraging investment in companies belonging to different industrial branches. The reduction of the risks will be actually stronger mainly when the national economic situations are more and more different and disconnected. Hence, a fall in a stock exchange market is met by a rise in another stock exchange market.

On this basis, international diversification is one of the fundamental principles of a careful management with regards to investment in stock markets. The profits of international diversification strategy were discussed in the pioneering works of Grubel (1968), Grubel and Fadner (1971), Levy and Sarnat (1970), Lessart (1973), and Solnik (1974). The principal advantage of international diversification lies in the possibility of increasing its long-term returns by reducing to the minimum the risk as well as the effects of the market's volatility on a portfolio. A geographically diversified portfolio can help to reduce the risk, i.e. the geographically diversified placements is largely recommended and forms an integral part of a strategic placement seeking to design the optimal portfolio which reaches a better balance between the risk and the return.

The variety of reforms, already introduced, led to major changes in the financial environment and announced thereafter the process of financial integration which would have increased the correlations between various international financial markets reducing the benefits of international diversification. Therefore, the discounted profits of international diversification are functions of returns and volatilities of the selected market. However, when it comes to a strictly segmented market, the local factors play a pivotal role. So, when the integration of a domestic market in the world market increases, its financial assets become increasingly sensitive to the international factors. This sensitivity

is basically originated from three sources: value share variations, operator's behaviors and contagious effects.

Despite these risks, the international diversification profits remain always higher than those of the domestic diversification because of the existence of several specific national factors for each country creating thereafter weak correlations between international stock markets. However, the studies which were interested in the exploration of the correlations' variability between international stock exchange markets showed that integration as well as capital movements and the strong volatility of these markets increase along the period of crises.

Moreover, the financial crises of the last decades seem to differ from those having preceded them with regard to the fragile banking system which appeared to be one of the first symptoms, but never a result as it was in previous works such as those of Kaminsky and Reinhart 1996. This banking fragility of the emergent countries probably increased the aversion of risk degree for the international investors, inducing a volatility increase of international capital movements and increasing contagion crises. We can say that the financial markets volatility is a measurement of the risk which constitutes the basis of the financial theory. Besides, with the development of the statistical tools, it is assumed that volatility varies in time and is influenced by several factors. Fundamental work of Engel (1982), generalized by Bolleverse (1986), initiated a panoply of heteroscedastic models – ARCH and GARCH. These models make it possible to study the dynamics of the volatility of the stock exchange markets. Since then, a set of representations was proposed to check the characteristics of conditional volatility, asymmetry, persistence, and the international volatility spillover.

The objective of this paper is to study – in weekly frequency – the various aspects of stock returns volatility of four developed markets and nine emergent ones over the period of July 1997 until 2009. Basing on GARCH model, this work tries to compare the markets and to highlight the upheavals induced by the financial crises. The objective is therefore to check whether the observed empirical works on the developed markets are also checked on the emergent markets.

2. Literature review

Several studies indicate that the impact on the market volatility shocks is asymmetrical: volatility is more sensitive to the negative shocks than with the positive ones. This asymmetrical effect was explained by two arguments, namely: the leverage effect (Black 1976, and Christie 1982) and the feedback effect of volatility (Pindyck 1984, and French, Kenneth, Schwert, and Stambaugh 1987).

Volatility is also characterized by its persistence (Poterba and Summers 1986, Lamoureux and Lastrapes 1990) which indicates that the important variations of assets prices do not stop directly after the arrival of new information, but tend to persist. Poterba and Summers (1986) explain this phenomenon by the fact that a high volatility for certain titles can affect future anticipations.

Indeed, with the increase in the interdependence of the financial markets, the innovations in market volatility are quickly transmitted to the others, especially in very strong volatility period (financial crises, financial crash stock market …). Consequently, the assets' prices behave in the same way, which explains the increase in the stock market return correlation rates. Several empirical studies are interested in explaining the interdependence of the international stock markets during the historical tragic events (crash stock exchange 1986, Asian crisis 1997, Mexican crisis 1998, and subprime crisis 2007…). They showed the increase in returns correlation rates of the stock exchange indexes during strong volatility periods.

The literature on financial contagion is rich. The 1987 stock market crash in the US and the 1992 ERM crisis gave rise to numerous empirical analyses of the transmission of shocks across mature financial markets. Research on financial contagion in emerging markets was boosted by the emerging market crises of the 1990s, in particular the Asian crisis. Given the rapid widespread and large economic impact of these crises, contagion became virtually synonymous with turbulence in emerging markets and studies of the role of different contagion channels during these crises multiplied. Karolyi (2003) and Pericoli and Sbracia (2003) provide comprehensive surveys. Masson (1998), Claessens, Dornbusch, and Park (2001), Kaminsky and Reinhart (2000), Kaminsky, Reinhart, and Vegh (2003) discuss real and financial transmission channels and review different approaches to the analysis of contagion. Pericoli and Sbracia (2003) and Pritsker (2001) examine channels of financial contagion. While views on the precise definition of contagion differ, there is a fairly broad consensus in the empirical literature on financial contagion that contagion refers to an unanticipated transmission of

ARCH and GARCH Models were applied to check the empirical works relating to the volatility of the stock markets indices. The analyzed data proved the existence of ARCH effect for all the returns stock markets indices. The study of the volatility persistence of the various stock markets by the estimated GARCH (1,1) model is checked in all the cases.

The asymmetry of volatility was carried out by the estimated EGARCH (1,1) model for all the markets. It was found that the reaction of volatility to the shocks is asymmetrical according to the nature of the shocks. The reaction is important when the shock is negative. Taking into account the degree of asymmetry, the mature markets represent very high degrees of asymmetry compared to the emerging markets. In addition, the United States market is the most sensitive market to the bad news.

The volatility spillover is checked for the majority of stock markets indices. Indeed, the volatility spillover is more remarkable between the developed stock markets since the latter ones represent an important degree of economic and financial integration. Moreover, the contagion is stronger between American and the European block than between the American and that Asian block or between the European and the Asian block. Lastly, the American market is found out to be the most influential one.

The last conclusion to be drawn from this research is that there exists a positive relation between the moving correlation of each couple of stock markets and their volatilities, with regard to the American market as the domestic one. The results showed that, on the one hand, the variation of the stock markets volatilities can explain the variation of correlations between American and other markets. On the other hand, the variation of the American market volatility is more important than the variation of the foreign market volatility. This relation can be analyzed within the framework of international diversification. As the correlations between international stock markets grow in period of high volatility, the profits carried out by the international diversification of the portfolios are reduced, which explains the orientation of the investors either towards the emerging markets, or towards the domestic markets in period of strong volatility.

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OIL PRICE SHOCKS AND FINANCIAL STOCK MARKETS

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Abstract

This article explores the relation between oil market and the financial stocks market. Particularly, this article examines the impact of oil price shocks on stock markets returns and volatilities for large set of oil importing and exporting countries over 1997:1–2009:08 period. Using VAR approach, we estimate the dynamic relations between oil price shocks, stock markets and other variables, including short-term interest rates, exchange rates, and industrial production. Orthogonalized impulse response function shows that oil exporting countries (Russia, Norway, Canada, Malaysia, Venezuela and Argentina) have a significant positive response of stock market returns to oil price shocks. Although, oil importing countries (UK, France, Italy, Portugal, Sweden, Switzerland and Japan) have a statistically significant negative response of stock returns to an oil price increase. Empirical results from the impact of oil price volatility on stock markets volatilities show that oil price volatility has a significant positive impact for all oil exporting and importing countries expect for Brazil and Korea.

1. Introduction

Several studies document that the variation in crude oil price has significant impacts on a variety of economic activities and certain macroeconomic variables, such as, real GDP growth rates, inflation, employment and exchange rates (Hamilton 1983, Mork 1989, Lee and Ni 1995, Hooker 1999, Davies, and Haltiwanger 2001, Hooker 2002, Hamilton 2003, Kilian 2008).

However, there has been relatively little work done on the relationship between oil price shocks and financial stock markets. Generally, although shocks in the price of crude oil are often considered as a significant factor for understanding variations in stock prices, there is no consensus about the relationship between stock prices and the oil price among economists.

Huang *et al..* (1996) examine the link between daily oil future returns and daily United States returns. They find that oil returns do lead some individual oil company stock returns, but oil future returns do not have much impact on general market indices. Faff and Brailsford (2000) report that oil-price risk proved equally important to market risk, in the Australian stock market.

El-Sharif *et al..* (2005), through a sector-based analysis, investigate the relationship between oil prices and stock returns, listed on the London Stock Exchange. Their empirical findings display that a significant positive association between oil prices and oil-related stock returns is present.

Using daily data of Vietnam's stock market for the period 2000–2008, Narayan *et al..* (2010) find that stock prices, oil prices and nominal exchange rates are cointegrated, and oil prices have a positive and statistically significant impact on stock prices.

By contrast, a negative association between oil price shocks and stock market returns has been reported in several recent papers. Jones and Kaul (1996), Sadorsky (1999) and Ciner (2001) show a significant negative connection.

Also, Hong *et al..* (2002) suggest a negative relation between oil-price returns and stock-market returns. Park and Ratti (2008) show that oil price shocks have a statistically significant negative effect on stock prices for an extended sample of 13 developed markets.

Papapetrou (2001) shows that an oil price shock has a negative impact on stock prices, since they negatively affect output, i.e. industrial production, as well as employment growth.

Pollet (2002) and Driesprong *et al..* (2003) find that oil-price changes predict stock market returns on a global basis. Nandha and Faff (2008) find oil prices rises have a detrimental effect on stock returns in all sectors except mining and oil and gas industries, O'Neill *et al..* (2008) find that oil price increases lead to reduced stock returns in the United States, the United Kingdom and France. Park and Ratti (2008) report that oil price shocks have a statistically significant negative impact on real stock returns in the US and 12 European oil importing countries. Bjornland (2008) shows that oil prices may affect indirectly stock prices, especially via monetary policy shocks.

Kilian (2008) examines the relation between energy prices and economic performance. The results suggest that is critical to account for the endogeneity of energy prices and to differentiate between the effects of demand and supply shocks in energy markets.

Using a structural VAR model, Kilian and Park (2009) relate US stock returns to measures of demand and supply shocks in the global crude oil market. They find that 22% of the long-run variation in US real stock returns is caused by the demand and supply shocks driving the global crude oil market.

The contribution of this paper is to explore the effects of oil price shocks both on the stock market returns and volatilities after controlling the macroeconomic fundamentals. The study considers 27 oil-importing and oil-exporting countries over the 1997:1–2009:8 period.

The methodology followed in this study considers various empirical frameworks. First, a multivariate Vector Autoregression is employed to study the impulse responses of stock returns to oil price shocks and to provide variance decomposition. Second, a GARH (Generalised Autoregressive Conditional Heteroscedasticity) model is used to estimate oil price and market indexes volatilities. Then, the VAR model is considered to estimate the impact of oil price volatilities on stocks markets volatilities.

The rest of the paper is organized as follows. In Section 2, we present the empirical methodology. Section 3 describes empirical data and variables. Section 4 presents the empirical results. Section 5 concludes the paper.

2. Methodology

Our empirical analysis involves the following steps: First, we use a vector autoregressive model (VAR) to capture the complexities between oil price shocks and stock prices in this paper is an unrestricted vector autoregression (VAR) model. A VAR model consists of a system of equations that expresses each variable in the system as a linear function of its own lagged value and lagged values of all the other variables in the system.

For example, a VAR of order p, where the order p represents the number of lags, that includes k variables, can be expressed as:

$$y_t = A_0 + \sum_{i=1}^{p} A_i \, y_{t-i} + u_t$$

(1)

where $y_t = [y_{1t}...y_{kt}]'$ is a column vector of observation on the current values of all variables in the model, A_i is $k \times k$ matrix of unknown coefficients, A_0 is a column vector of deterministic constant terms, u_t is a column vector of errors with the properties of $E(u_t) = 0$ for all t, $E(u_s u_t') = \Omega$ if $s = t$ and $E(u_s u_t') = 0$ if $s \neq t$, where Ω is the variance–covariance matrix. Thus, u_t's are assumed to be serially uncorrelated but may be contemporaneously correlated and Ω is assumed to have non-zero off-diagonal elements. All the variables, $y_t = [y_{1t}... y_{kt}]'$, in the model must have the same order of integration.

Using this VAR model, we estimate the dynamic relations between oil price shocks and stock prices and other variables, including short-term interest rates, exchange rates, and industrial production, that may influence the connections between oil price shocks on stock market returns. At least since the formulation of Fama's (1981) hypothesis, measures of inflation and real activity have played a role in analysis of the behavior of real stock returns. In literature focused on oil price shocks, Sadorsky (1999) considers the effect of oil price shocks on real stock returns in the US within a

5. Conclusion

The vast literature establishing robust results across many countries on the connection between oil price shocks and aggregate activity implies that connections should also hold between oil price shocks and stocks markets. This study estimates the impacts of oil price shocks on the stock market returns of the 6 oil importing and 21 oil exporting countries over 1997:1–2009:8 using a multivariate VAR analysis. We find that oil price shocks have a significant impact on stock market returns in most countries. However, the impacts of oil price shocks on the stock market are different between oil exporting countries and oil importing countries.

The study of the impact of oil price shock on stock market returns, by examining orthogonalized impulse responses and variance decomposition, shows that oil exporting countries (Russia, Norway, Canada, Malaysia, Venezuela and Argentina) have a significant positive response of stock markets returns to oil price shocks at the 5% level in the same month and/or within one month. Also, the contribution of oil price shocks to the variance of stock market returns is greater than that of industrial production, exchange rate returns in all oil exporting countries except for Canada.

For the oil importing countries, we can not find a consensus for the response of stock market to oil price shocks. Indeed, for US, Germany, Netherlands, Belgium, Greece, Denmark, China, Indonesia, Hong Kong, Singapore, Korea, and Brazil an oil price shock has a positive and statistically significant impact on stocks markets returns at the 5% level in the same month and/or within one month. By contrast, UK, France, Italy, Portugal, Sweden, Switzerland and Japan have a statistically significant negative response of stock returns to an oil price increase.

Moreover, variance decomposition shows that the contribution of oil price shocks to the stock market variance is greater than that of industrial production, short-term interest rate and exchange rate returns in most of oil importing countries (UK, Italy, France, Greece, Netherlands, Portugal, Sweden, Switzerland, Japan, and China).

Empirical results from the impact of oil price volatility on stock volatilities show that oil price volatility has a positive and statistically significant impact on stocks markets volatilities for most oil importing and exporting countries.

Overall, oil price shocks have a significant impact on the stock market returns and volatilities in most countries, and the impacts in oil importing countries are fairly different from those in oil exporting countries.

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THE ANNUAL FINANCIAL STATEMENTS – SOURCE OF INFORMATION FOR DETERMINING COMPANY PERFORMANCE

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Abstract

This study begins with definitions for the concept of performance and its components. Also, based on the profit and loss account for the period 2004-2010 of company X, we determined the performance indicators for frozen assets, current assets and the performance given by the rates of return. The research methods used in this study were documentation and economic analysis. The novelty of this study consists in the specific calculation of performance indicators based on annual financial statements, as well as establishing a correlation between fixed assets and the turnover, meaning the role played by investments in the size of the turnover from year to year.

Key words: financial statements, balance sheet, performance, profit and loss account, efficiency.

JEL classification: C; M41

1. Introduction

The etymology of the word performance originates in the Latin word 'performare', which means 'form completely'(Jianu 2007). In English, the verb 'to perform' means 'to execute something, method and application, to excel, to accomplish in a convenient manner' (Jianu 2007).

The economic and financial performance is defined by Gheorghe O. Bistriceanu in Finance, Banks and Insurance Lexicon, volume III, Economica Publishing House, Bucharest, 2001, p. 31, as being a high quality level of the economic and financial activity conducted by economic agents, which is computed with the help of several indicators, such as: turnover, return on capital, labour productivity, yield on capital, gross and net profit, annual renewal rate of fixed capital, the efficient use of fixed assets, etc.

Recently, Iulia Jianu showed that 'performance is a state of competitiveness of the enterprise, which ensures its sustainable presence on the market. Performance is the indicator of a potential of future results, which emerges as result of meeting the strategic objectives. Therefore, performance doesn't describe a temporary situation, but refers to the future'.

We believe that company performance is a complex concept, which may be measured through a series of indicators and which shows its position within the competitive environment.

2. Content

a. Annual financial statements – source of information for determining company performance

To calculate performance indicators, we will use data from company X (real data), processed as follows:

A. Short version balance sheet

Table 1. Short version balance sheet (in lei)

ASSETS	2004	2005	2006	2007	2008	2009	2010
Frozen assets, total	51131	58122	1198990	1386777	1620691	3260987	3834286
Current assets, total	35606	95758	191500	555897	881477	1933344	2168465

No. cr.	INDICATORS		PERIOD / YEARS						
			2004	2005	2006	2007	2008	2009	2010
8	Total assets		86737	153880	1393732	1947687	2510950	5212445	6044452
9	Net turnover		8746	100226	301173	1250997	1679710	3491678	3976006
10	Social capital		200	200	38200	38200	38200	38200	38200
11	Permanent capital		-53199	-51563	989155	1041458	1068009	2133509	1774518
12	Current profit		-24968	1940	15496	120944	42070	408928	-619130
13	Expenses related to goods for resale				99636	519827	820994	1225256	1353888
14	Sale of goods				123383	557395	914261	1617957	1677187
15	Margin trading				23747	37568	93267	392701	323299
16	A. The ration between means and results: gross profit/fixed assets			3.33	1.32	8.72	2.60	12.54	
17	B. Rates of return	B.1.Renturn on capital		1.26	1.14	6.21	1.68	7.85	
18		B.2.Retrun on equity			1.95	13.14	4.32	30.72	
19		B.3. Return on social capital		970.00	41.74	316.61	110.13	1020.49	
20		B.4. Rate of return based on turnover		1.94	5.29	9.67	2.50	11.71	
21		B.5.Return on permanent capital			1.61	11.61	3.94	19.17	
22	C. Return on assets			5.89	4.26	11.92	2.78	13.57	
23	D. Financial return rates	D.1.Financial return before tax			1.52	11.06	3.50	25.92	
24		D.2.Financial rate of return			1.89	13.14	4.37	30.72	
25	E. Commercial rates of return	E.1. Commercial rates of return; margin trading rate			19.24	6.73	10.20	24.27	19.28
26		E.1. Commercial rates of return; margin trading rate		1.63	4.14	8.14	2.00	9.88	

The data related to profitability indicators show that the company had the highest net profit of 345.051 lei in 2009, and in 2010 it registered a loss of 625.580 lei even though the turnover in 2010 increased by 484.328 lei compared to 2009, but the operating expenses were higher and tipped the scale.

3. Conclusions

The presented data show that company performance is measured through specific indicators for frozen assets, current assets and profitability, resulting that the results of the company are determined by the investment effort put in to withstand the competitive environment of the market.

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IMPACT OF CRUDE OIL PRICE VOLATILITY ON WORLD EQUITY MARKETS BEHARVIUR

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Abstract

In the age of globalization, it has become very important to find out the economic and non-variables which are significantly responsible for volatility in stock markets. Investors have become largely sensitive to these factors which results in change their investment strategy at the time of emergence on national and international level. The present study is an attempt to measure how equity markets of developed and developing countries respond to volatility in international crude oil price. To investigate the problem, the study uses a set of ten stock markets from developed countries and seven stock markets from developing countries. To analysis how investors react to crude oil price volatility which results in volatility in stock market, two stages GARCH (1,1) model is used. In the first stage, GARCH (1,1) is used to estimate the conditional volatility of crude oil price expressed in dollar, thereafter in the second stage, the estimated conditional volatility of crude oil price is used as independent regressor to estimate the conditional volatility of world equity markets in question by running GARCH (1,1) model. The data set used in the study involves the monthly prices of stock exchange listed indices for the period ranging from January 1995 through December 2007. In brief, the research methodology applied in the study includes application of Jarque-Bera test to determine the normality of data, Ljung-Box to examine the cross correlation in stock returns, GARCH (1,1) estimation of asymmetric volatility, and finally correlation to examine the volatility integration between world equity markets returns and crude oil price in the international market. The results reveal the following-

- *Oil prices are normally distributed during the study time period,*
- *The significance of Jarque Bera statistics indicates that out of developed countries, Japan stock market and out of developing countries, India and China stock markets returns are normally distributed,*
- *On an average, stock markets of developing countries have offered higher average return to the investors,*
- *The first stage GARCH (1,1) results of oil price exhibit that oil price volatility is significantly influenced by unexpected events in international markets and volatility in preceding time periods,*
- *The second stage GARCH (1,1) results exhibits that crude oil price volatility significantly determines the stocks markets return volatility of both developed and developing countries. The direct observations can be made here that investors are largely sensitive to fluctuations in crude oil prices in the international market,*
- *Correlation matrix of stock markets return volatility and crude oil price volatility in case of both developed and developing countries exhibit a higher degree of correlation. These results bring out the corresponding relation between crude oil price volatility and stock markets return volatility.*

Keywords: conditional volatility, GARCH, volatility integration, autocorrelation, world equity market, expected volatility, unexpected volatility.

JEL Classification: C52, E3, C1, C4

1. Introduction

A forecast of oil price volatility works important input into macroeconomic econometric models for the assessment of risk and return of financial markets, and modeling of volatility. Recent empirical works suggest that oil price shocks tend to have an adverse impact on the macro economy as a whole and stock market as particular. This paper provides empirical support for this proposition by showing the correlation of a set of world equity markets return volatility and crude oil price volatility, measured by conditional variance of oil prices, which helps to forecast stock market movements. A part of the asymmetric

movements in stock returns reported in previous studies can be explained by taking crude oil price volatility as independent regressor in forecasting the stock market volatility.

In fact, with starting the deregulation phase of financial sector, world equity markets are reporting integration to large or less extent. Researchers and policy makers are largely interested in exploring the economic and non-economic factors responsible for stimulating the investors to respond in the same line over the development of these factors. Stock prices are generally believed to be determined by some fundament macro-economic variables such as interest rate, exchange rate, and inflation rates. For global and domestic investors, a highly integrated world equity market indicates that returns of securities are similarly priced internationally in response to global economic and non-economic factors. The emergence of this phenomenon reduces to earn risk premium in diverting funds from one market to another and potential opportunities for global diversification. For corporate, a highly integrated world equity market signifies that there are little opportunities to raise capital at lower cost across the border markets, however, as a matter of fact, the dominate factors are out of explanation yet which are promoting world equity market integration. The present study attempts to investigate the volatility in world equity markets caused by fluctuations in crude oil prices in international market. Oil price volatility creates uncertainty among the investors and their investment decisions therefore tend to become sensitive to volatility in crude oil prices. In the post war period especially after 1986, oil price hikes have reported a significant and deterministic effect on stock markets.

The study also attempts to measure the integration in volatility of stock markets with respect to crude oil prices. A substantial work is found in case of interdependency of developed stock markets, however very less efforts are made to explore the dynamics between crude oil price volatility and stock market returns volatility. Studies (Hamao *et al..* 1990; Kumar and Mukhopadya 2002) employed two stages GARCH model to study the dynamic relationship across the stock markets wherein day time and overnight returns are used. They firstly extracted the unexpected shocks from the day time returns of one market and used it as a proxy for volatility surprise while modeling the other markets overnight returns in the second stage of modeling. Further, number of studies (Cheung and Mak 1992; Karolyi and Stulz, 1996; Masih and Masih 2001) employed co-integration and Gragnger causality test and held that US stock market contributes dominate role in world stock market integration. Studies (Mcclure *et al..*, 1999; Huang Yang and Hu, 2000; Jong and Roon, 2001; Mukherjee and Mishra, 2007) examined group stock markets and held a strong interdependence across the stock markets. Further, number of empirical studies examines the integration of stock markets and possible dynamics like interest rate, foreign investment, trade relations, inflation which integrates the markets (Black and Fraser, 1995; Bracker *et al..*, 1999; Wu, 2001; Pretorius, 2002; Liu *et al..*, 2006). The recent liberations of financial system and accelerating trade relations, have also integrated the world equity markets as whole to more or lesser degree. . Cheung *et al..* (1998) apply co-integration technique in finding out long run co-movements between five national stock market indices and measures of aggregate real activity including the real oil price, real consumption, real money, and real output. Real returns on these indexes are typically related to transitory deviations from the long run relationship and to changes in the macroeconomic variables. Further, the constraints implied by the co-integration results yield some incremental information on stock return variation that is not already contained in dividend yields, interest rate spreads, and future GNP growth rates.

Ewing *et al..* (1999) examined how the North America Foreign Trade Agreement (NAFTA) affected the level of market integration in North America, it however found no evidence of integration in member markets even after the NAFTA agreements was embedded. Sasaki *et al..* (1999) examined the dynamic relationship in accordance with the monetary policies and found significant evidence that monetary variables affect the international interdependencies across stock markets. In conclusions, majority of studies suggested that market integration has increased significantly over the years, however, number of studies yet questions over this phenomenon, and failed to report any dynamic relationship (Cheung and Lee, 1993; King *et al..*, 1994; McClure *et al..*, 1999, Ewing *et al..*, 1999). Gjerde (1999) investigates the utility of the results on relations among stock returns and macroeconomic factors from major markets on a small and open economy by applying multivariate vector autoregressive (VAR) approach on Norwegian stock market data. Consistent with US and Japanese findings, real interest rate

changes affect both stock returns and inflation, and the stock market responds accurately to oil price changes. On the other hand, the stock market shows a delayed response to changes in domestic real activity.

Sadorsky (1999) employs vector auto regression to examine the dynamics between crude oil prices, interest rate and stocks returns. The study reports that oil prices and oil price volatility both play important roles in affecting real stock returns. After 1986, oil price movements explain a larger fraction of the forecast error variance in real stock returns compare to interest rates. There is also evidence that oil price volatility shocks have asymmetric effects on the economy. Study of Darrat and Zhong (2001) however produced the opposite results wherein markets of US, Canada, Mexico were examined. By applying the co-integration tests their results suggested NAFTA enhanced the linkages across member stock markets. Some empirical studies hold monetary variables as dynamics of linkages between stock markets. Papapetrou (2001) attempts to shed light into the dynamic relationship among oil prices, real stock prices, interest rates, real economic activity and employment for Greece by using the multivariate auto regression model. The empirical evidence suggests that oil price changes affect real economic activity and employment. Oil prices are important in explaining stock price movements; however stock returns do not lead to changes in real activity and employment. Sadorsky (2006) study further uses univariate and multivariate models to estimate forecasts of daily volatility in petroleum futures price returns wherein the out-of-sample forecasts are evaluated using forecast accuracy tests and market timing tests. The T-GARCH model fits well for heating oil and natural gas volatility and the GARCH model fits well for crude oil and unleaded gasoline volatility. Simple moving average models seem to fit well in some cases provided the correct order is chosen. The study reports that used models out perform a random walk and there is evidence of market timing. Non-parametric models outperform the parametric models in terms of number of exceedences in backtests.

2. Data and resecarch methodology

This paper investigates how world equity markets behave in response to volatility in crude oil price in international market. To examine this problem, the data set used in the study is the stock exchange listed indices and crude oil prices in the international market expressed in dollar per barrel. The study uses the monthly prices of the ten stock exchanges from developed and seven stock exchanges from developing countires for the period ranging from January 1995 to December 2007. Table 1 briefly outlines the name of stock exchanges, time period and name of indices which are used for the purpose of analysis. The entire data is taken from www. finance.yahoo.com. With the given data set, fluctuations in stock returns mark volatility in stock market. Let P_t is the price of index in time period t, P_{t-1} is the price of index in preceding

time period t-1, the rate of return R_{it} investors will realize in 't' time period as follow:

$$R_t = [Log_e(P_t) - Log_e(P_{t-1})]*100 \tag{1}$$

In the same fashion, the rates of fluctuations in crude oil price are also measured which can symbolically written as:

$$X_t = [Log_e(P_t) - Log_e(P_{t-1})]*100 \tag{2}$$

Where , X_t is rate of fluctuations in crude oil price, P_t is the price of crude oil expressed in dollar in time period t, P_{t-1} is the price of price of crude oil expressed in dollar in preceding time period t-1.

positive significant relationship provides that investors are largely sensitive to crude oil price volatility and redesign their portfolio and investment decisions in the light of ups and downs in crude oil price in international market.

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STAKEHOLDER APPROACH STAKEHOLDERS MENTAL MODEL A VISUALIZATION TEST WITH COGNITIVE MAPPING TECHNIQUE

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Abstract
     The idea of this paper is to determine the mental models of actors in the firm with respect to the stakeholder approach of corporate governance. The use of the cognitive map to view these diagrams to show the ways of thinking and conceptualization of the stakeholder approach.The paper takes a corporate governance perspective, discusses stakeholder model. It takes also a cognitive mapping technique.

Keywords: corporate governance, stakeholder model, cognitive mapping.

JEL Classification: G32, G34, C42

1. Introduction

     One way to help overcome the limitations of shareholder model is the approach proposed by Charreaux and Desbrières (1998). It is consist with the stakeholder model as it integrates all the stakeholders who contribute to create value (suppliers, subcontractors, clients). From the perspective of contractual approaches, the firm is conceived as a production team that creates value (the organizational rent) through synergies between the different factors of production.

     Evolution, in relation to the shareholder model is at the distribution of value: the rent sharing is extended to all participants in the nexus of contracts.

     The underlying assumption is that the parties 'production factor' will be encouraged to contribute to the creation of value only if they receive a portion of the rate. In this sense, corporate governance only affects the creation and the distribution of value. It is akin to a set of rules governing the ex post bargaining that takes place between the partners to share the rent (Zingales, 1998). The theory of the firm specialized (Demsetz, 1988) has the advantage of providing a link with the cognitive theories. It allows you to exceed the fixed view of the stakeholder model 'standard' by trying to integrate the dynamic productive.

     However, like all the contractarian approach, it remains insufficiently explanatory factors for understanding how all the actors that constitute an organization are likely to capture the issues of corporate social responsibility.

2. Literature review

     The stakeholder model turns to all stakeholders
     The notion of stakeholder has been deepened by Freeman (1984) which defines stakeholder as any individual or group that could influence or be influenced itself by the organizational activity, 'a stakeholder in a organization is (by definition) Any group or Individual Who Can Affect Or Is Affected by the achievement of the organization's objective '. Schematically, this concept is represented by a circle whose center is the company and stakeholders, the radii (Freeman and Reed, 1983; Freeman, 1984). Each group represented in a bubble is biased, a stake (a stake) in the company, hence the name of a party, a holder of issue (stakeholder). New institutional sociological theory shows the importance of the institutional environment in understanding the behavior of organizations (M.Capron, andF. Quairel-Lanoizelée, 2004). 'The conditions of the environment cannot be separated

intention based on a partnership approach based conflicts of interest. The design they make the partnership approach is through different logics: one based on the value of logic of agency and that based on the valuation of a productive logic value. The logic of agency can be explained by the concept of ownership; the conflict is rooted in the possibility of agent behavior (leader) not in the interests of the principal (shareholder). We can now common practice for challenging all power, both in its exercise of its legitimacy.

The logic of productive value is explained by the notion of value creation, we find the idea that the firm is the headquarters of the opposition between different logical organization of the firm consists of two dimensions: the organization of production which function is efficient and productive commercial organization whose function is to value the assets of the company by buying and selling. These two types of functions performed by the respective actors of the firm, may conflict because they do not establish the same criteria for evaluating economic efficiency.

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CORRELATION AND VOLATILITY TRANSMISSION ACROSS INTERNATIONAL STOCK MARKETS: A BIVARIATE GARCH ANALYSIS

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Abstract

The study empirically examines correlation and volatility transmission across international stock markets by employing Bivariate GARCH model. The study uses weekly data for major five stock indices such as S&P 500, BSE 30, FTSE 100, Nikkei 225 and Ordinary share price index from 3th January, 2000 to 30th November, 2009. Long run and short run integration are investigated through Johansen cointegration and Vector error correction models respectively. The results of Johanson test show that long run integration is found across international stock indices prices. Further, results suggests that any external news arrives simultaneously received by US and Japan stock markets and then transmits to other Asian and European stock markets. The results of bivariate GARCH model reveal that there is bidirectional volatility spillover between US and Indian stock markets. This is due to fact that these two economies are strongly integrated through international trade, foreign direction investment (FDI) and foreign portfolio investment. Finally, results show that a unidirectional volatility spillover from Japan and United Kingdom to India.

Keywords: Johansson Cointegration Test, vector Error Correction Model, Bivariate GARCH and Volatility Spillover.

JEL Classification: G32, G34, C42

1. Introduction

The world financial markets and economics have becoming increasingly interrelated due to free flow capital and international trade during globalization regime. Further, the important outcome of globalization is also increased co movement in stock prices across international markets. This co movement, of course, also stimulates vulnerability to market shocks. Therefore, shocks originated in one market not only affected own market but are also transmitted to other equity markets. Some argue that these linkages could even be destroying the very benefits that diversification offered in the first place.

There has been debate between two groups of studies how correlation of international stock markets changes over period of time. Some studies argued that correlations across international stock markets are not constant over time due to change in economics, political and market environments among countries. For example, (Baharumshah, Sarmidi, and Tan (2003) Shamsuddin and Kim (2003) Voronkova (2004), Bekaert and Harvey (2003); Bekaert and Harvey (2000) Errunza and Losq,(1985). Specially, Corhay, *et al.* (1995) study the stock markets of Australia, Japan, Hong Kong, New Zealand and Singapore and find no evidence of a correlation among these markets. Nath and Verma (2003) studied the market indices of India, Singapore and Taiwan. They demonstrated no correlation between these indices. While Cheung and Mak (1992) and Masih and Mash 1997 b) found evidence that international stock markets are strongly correlated. Specifically, they found that the US is a global factor affecting both the developed and developing markets. Therefore, study made an attempt to examine cross border interrelation between international stock markets.

Second, the study investigates volatility transmission across international markets. There are studies which have been examined on this issue. For instance, Theodossiou *et al.*. 1997, Yiuman Tse and Booth, 1996; Mansor and Mahmoodof, 2003; Savva, 2008; Shiun and Hsueh, 1998; have found that significant mean and volatility spillovers from the US market to other international markets.

Koutmos and Booth (1995) examine the price and volatility spillovers among US, Japanese and British stock markets in a multivariate EGARCH model. They found significant asymmetric volatility spillovers from NY and London to Tokyo, from Tokyo and NY to London and from London and Tokyo and NY.

However, some studies reveal that weaker or no volatility spillover effects from US to Asia (For instance Ng, 2000; Baele, 2002; Bae and Karolyi, 1994). Ng (2000) studied volatility spillovers the between Japan and the US stock markets and found that there is no volatility transmission from USA to Japan. Baele (2002) investigated the time-varying nature of the volatility-spillover effects between the US (global effects) and European stock markets and found volatility spillover from European to US stock markets. The most of studies are inconclusive on this issue.

Therefore, the study proposed to examine how common news (external news) driving both the Asia and European stock markets including BSE (India) and also how these news are transmitted from one market to another. Specially, BSE 30 sensex conditional variance is conditional upon on the innovations from the US and the Asian Markets. Further, change in conditional variance from one market will also change variance in another market because these markets are basically auto correlated.

The correlation and volatility transmission between stock markets is important for risk managers and policy makers for following reasons. The correlation of stock markets is useful to design of a well-diversified portfolio for investors. Changes in international correlation patterns call for an adjustment of portfolios. Policy makers are interested in volatility transmission across markets because its implications for the stability of the global financial system. For instance, if volatility spillovers are significant between markets, a shock originating from one market may have a destabilizing impact on other markets. Hence, it is important for policy makers understand the inter relations and volatility spillovers between financial markets.

The remainder of the study is organized as follows. Section 2 provides some empirical evidence on interrelation and volatility transmission across international stock markets. Section 3 describes methodology and the data used. Section 4 presents results and discussion. Section 5 provides a summary and conclusion of the study.

2. Some Empirical Evidences

Ng, (2000) investigated the magnitude and changing nature of the return and volatility spillovers from Japan and the US to the Pacific–Basin markets using bivariate GARCH model. The empirical results show that there are significant volatility spillovers from both the Japanese and US markets to Malaysia, Singapore, Taiwan and Thailand. Apart from the significant volatility spillovers, Malaysia, Singapore and Thailand also experience significantly positive mean spillovers from the US. No significant volatility spillover from the US to Hong Kong is found.

Angelos Kanas (1998) examined volatility spillovers across the three largest European stock markets, namely London, Frankfurt and Paris by employing the Exponential Generalized Autoregressive Conditional Heteroscedasticity (EGARCH) model. Using daily closing prices from 1984 to 1993 and he found that reciprocal spillovers are found to exist between London and Paris, and between Paris and Frankfurt, and unidirectional spillovers from London to Frankfurt. Finally, his results show that spillovers are asymmetric in the sense that bad news in one market has a greater effect on the volatility of another market than good news.

In Indian context, international linkages have been sparsely studied and mostly investigated with US and some developed Asian market like Japan, Korea etc. Using cross-spectral analysis, Rao and Naik (1990) examined the correlation among US, Japanese, and Indian stock markets and found that the relationship of the Indian market with international markets is poor. They concluded that integration of Indian market with US and Japan was weak, because of heavy controls and restrictions on trade and capital flow in India.

Nath and Verma (2003) studied the market indices of India, Singapore and Taiwan. They demonstrated no correlation between these indices. Kaur (2004) studied the return and volatility spillover between India (Sensex and Nifty) and US (NASDAQ and S&P 500) markets by using EGARCH and TGARCH volatility models. Their results shows that mixed evidence of return and volatility spillover between the US and the Indian markets. The significant correlation between US and Indian markets was time specific.

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TWO NEW MEASURES OF HOUSEHOLD-LEVEL INVESTMENT RISK

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Abstract:

This paper defines two new measures of household investment risk acceptance/rejection and demonstrates their extremely close linkage to total financial assets. The pair of novel risk indicators is based on different sub-sets and functions of a household's portfolio composition. The best fitting relationships between each asset mixture-based assessment of risk tolerance and the division of financial assets are power law functions. Why this outcome occurs is a mystery: power laws have no scale and money certainly does. Lastly, the two novel risk tolerance measures are tightly related even though they derive from different aspects---and transformations---of a household's portfolio composition. Indeed, the main utility of this discovery is an original viewpoint of the risk averse investment behavior of a household as a function of its investment choices. This is especially true because the population frequency distribution of the more refined household risk propensity measure almost perfectly follows a lognormal distribution. Also demonstrated is a puzzling, very nearly linear, relationship between a household's accumulated stock of wealth and current annual household income. The data come from the 2004 edition of the Survey of Consumer Finances. Since its asset categories are broad, why the connections are so strong and the residuals from the fits so small, is difficult to understand.

Keywords: Portfolio composition, ass*et al.*location, risk aversion, wealth, income

JEL Classification: CO2, D14, D31, G11

1. Background

The Survey of Consumer Finances is a triennial effort between the Board of Governors of the Federal Reserve and the Statistics of Income Division of the Internal Revenue Service. The Federal Reserve's principal publications regarding the Surveys include some comparisons between the current and earlier editions (e.g., Bucks, *et al.*. 2006 and 2009). However, neither Federal Reserve personnel, nor others publishing in the academic or professional literature, discuss portfolio composition as a separate topic. A thorough literature search uncovered about two dozen papers on the general subject of asset mixture. They were mostly concerned with portfolio composition and income taxes or portfolio composition and a (some) demographic parameter(s). In addition, papers on asset mixture and housing and asset mixture and risk acceptance/rejection were available. No paper examined the connection between asset mixture and financial assets *per se* and that is what this paper does.

In more detail, using the data in the 2004 edition of the Survey[1], this paper investigates the links between two functions of portfolio composition and total financial assets and the link between annual household income and total financial assets. Because of the remarkably good fits to the empirical data with simple functions, these measures provide an especially accurate insight into a household's investment risk avoidance/acceptance tendencies.

2. Asset Categories

Following the Survey of Consumer Finances in general, I used seven categories in which to place financial assets. This septuplet is presented in the order from riskiest to least risky (my assignments and paraphrasing):

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[1]The 2007 edition of the Survey of Consumer Finances was released as this paper was being prepared. A quick comparison between it and the 2004 edition shows no significant differences for this research. In addition, the 2007 report is slightly contaminated as the authors' tried to include the early effects of the sub-prime housing debacle. The 2010 questionnaire contains a substantial set of new questions relating to the hostility of the Obama administration to small businesses in particular and job formation in general. Hence, the 2004 version is the last of its kind until our country's economic malaise has been cured for several years.

the fact that there is a nearly linear relationship between the sum of accumulated financial assets and current annual household income is inexplicable to me

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INVENTORY INVESTMENT VOLATILITY AND TRADE CREDIT

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Abstract

This paper investigates the impact of trade credit on firm's inventory investment behavior by incorporating trade credit as a source of external finance into the traditional production smoothing inventory model. Due to imperfect information, alternative types of funds are not perfect substitutes and hence the choice and availability of external funds depend on the strength of firm's balance sheet condition. When bank loan becomes more difficult to obtain, firms use trade credit to overcome liquidity shortages. This study provides evidence showing that the use of trade credit, as an offsetting factor, can smooth out the impact of tight money and make the reduction of inventory investment less severe. This identification from the supply side provides support for a potential channel of monetary transmission, which can offset the tight monetary policy and reduce aggregate inventory investment fluctuations. This finding has important implications for both monetary policy and corporate financing management.

Keywords: Inventory, Investment, Volatility

JEL Classification: G30

1. Introduction

It is a well-known fact that inventory volatility accounts for a significant portion of business cycle fluctuations. Blinder and Maccini (1991) document that in the average US postwar recession declines in inventory investment accounted for about 87% of the total drop in GDP. While after mid-1980s, the volatility of inventories had a striking decline and same thing happens in the volatility of the aggregate output. Thus after mid-1980s, US economy has experienced a period of remarkable stability despite the slowdown after 2001. So it will be interesting to trace out what determine firm's inventory behavior and why the inventory volatility decline after 1980s.

One popular explanation attributes the diminished variability of economic activity to information-technology that led improvements in inventory management. However, McCarthy *et al.*. (2003) shows that the changes in inventory dynamics since the mid-1980s played a reinforcing-rather than a leading-role in the volatility reduction. Although the volatility of total inventory investment has fallen, the decline occurred well before the mid-1980s.

Inventory is mainly financed by short-term debt or trade credit. Recent research has ensured that market imperfections have a significant impact on real economic activities. Especially, in the imperfect capital market, alternative types of funds cannot be regarded as perfect substitutes and hence financial constrained firms most likely have difficulty to raise fund and thus have to cut investment. Given the low adjustment costs and high liquidity, inventories are thus more likely to be much more sensitive to the source of fund like trade credit than physical investment or RandD investment. Trade credit[1] is often related to financing inventories. Rajan and Zingales (1995) and Kohler *et al.* (2000) stated that the use of trade credit increased significantly after 80s. 55% of the total short-term credit received by firms during 1983-95 took the form of trade credit. In 1991, trade credit represented 18% of total assets for US firms. In 1993, 16% of total assets of small US businesses were funded by trade credit.

However, the above listed studies generally focus on the determinants of trade credit and its behavior over the business cycles, without looking at how trade credit actually relates to firms' real activities. When external finance becomes more difficult to obtain and more costly, firms make use of another source of finance to overcome liquidity shortages, namely trade credit. It is therefore possible, that even in periods of tight monetary policy and recession, when bank loans are harder to obtain and more costly, firms are not forced to reduce their inventory holdings too much as they can finance

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[1] Trade credit (i.e., accounts payable) is given by short-term loans provided by suppliers to their customers upon purchase of their products. It is automatically created when the customers delay payment of their bills to the suppliers.

investments with trade credit, which can alleviate the impact of tight monetary policy and smooth out inventory investment fluctuations. The purpose of this paper is to address the question that whether the use of trade credit attributes to the decline of inventory volatility by incorporating trade credit into the traditional production smoothing inventory framework.

This paper contributes to the literature by providing, for the first time, rigorous analysis of the corporate inventory investment behavior in imperfect capital market when trade credit is included among the sources of external finance. I incorporate trade credit into the traditional production smoothing inventory framework, and develop a tractable linearized equation based on the firm's optimization model which describes the joint evolution of inventory investment and financial variables. This study provides evidence showing a significant effect of using trade credit on firms' inventory investment behavior. This suggests that using trade credit can help firms to offset liquidity problems. This identification from the supply side provides support for a potential channel of monetary transmission, which can offset the tight monetary policy and reduce aggregate inventory investment fluctuations. This finding has important implications for both monetary policy and corporate financing management.

The paper is organized as following. First I derive a generalized inventory model with trade credit in section 2. The data set is reported in section 3. Section 4 discusses the econometric methodology, and empirical results are reported in section 5. Section 6 discusses the impacts of trade credit on inventory investment using sensitivity analysis. I conclude the paper in section 7.

2. The Model

I start with the traditional production smoothing inventory model without trade credit as a benchmark model and then generalized the model by introducing trade credit.

2.1. Benchmark Inventory Model

I use the linear-quadratic model, followed by Yang (2010), for finished goods inventories as a benchmark model. In this model, a representative firm chooses the level of inventories to maximize the expected present discounted value of dividend subject to a cost function and production identity. Formally the model is

$$V(S_t, I_{t-1}) = \underset{I_t}{Max}\, D_t + E_{S_{t+1}|S_t} \beta V(S_{t+1}, I_t), \qquad \forall S_t, I_t \tag{1}$$

subject to

$$D_t = S_t - C_t,$$
$$C_t = (\alpha_0/2)(\Delta Q_t)^2 + (\alpha_1/2)Q_t^2 + (\alpha_2/2)(I_t - \alpha_3 S_t)^2,$$
$$Q_t = S_t + I_t - I_{t-1}, \tag{2}$$

where $V(\cdot)$ is the value function, D_t is firm's dividend, I_t is real end of period finished goods inventories in period t, S_t is real sales, Q_t is real production, and β is the discount factor. The cost function, Ct, allows for two motives for maintaining inventories: to smooth production, and to target inventory levels to sales. The first two terms of the cost function captures the gains of smoothing production. The first term is the cost of changing production, and the second reflects the cost of production. The third term captures the cost of deviating from the target level of inventory. It includes the costs of carrying inventories and of stock-outs or backlogged orders. The cost parameters $\alpha_0, \alpha_1, \alpha_2$ and α_3 are assumed to be positive. Sales are stochastic, and follows an AR(1) process. The benchmark model has the implicit assumption of perfect capital markets. It assumes that internal and external funds are perfect substitutes, so the cost of finance and hence the marginal cost of holding inventories does not depend upon the source of finance. Therefore, there are no financial frictions in the model. Because of this, the benchmark inventory model usually has very poor model performance to capture market imperfections.

credit by firms. It is in favor of the fact that the trade credit channel weakens the credit channel. These findings are important as they suggest that the trade credit channel is likely to dampen the effects of contractionary monetary policies, and more in general to make the recessions that generally follow these policies less severe.

The benchmark model has the implicit assumption of perfect capital markets. It assumes that internal and external funds are perfect substitutes, so the cost of finance and hence the marginal cost of holding inventories does not depend upon the source of finance. Therefore, there are no financial frictions in the model. Because of this, the benchmark inventory model usually has very poor model performance to capture market imperfections. The empirical results based on COMPUSTAT data showed that the model performance of the benchmark inventory model is poor, which implies that the model contains missing variable in the error term and therefore cannot fit the data. The model is rejected by J-statistics. However, the generalized model with trade credit captures a missing variable in the baseline inventory model when the capital market is imperfect. The J-stat is very small, which is 3.2. It shows that the overall model performance for the generalized model is superb and matches inventory data very well.

The results also propose a signaling role of trade credit when firms do not have any long-term relationship with banks—trade credit is used when firms cannot have access to bank debt and may simultaneously enhance this access to the banking market. Their restrained access to bank debt leads them to use trade credit more frequently. This, in turn, increases a firm's visibility to the banks. Accordingly, banks may update their information regarding the firm's financial status and fund some projects that would not have been funded otherwise. In other words, there exists a dynamic relationship between trade credit and bank debt for credit-rationed firms. This paper has important implication of monetary policy and corporate management. From the theoretical point of view, it underlines the benefits of models which take into account the influence of trade credit in inventory investment dynamics.

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