Journal of Economics and International Finance

Volume 6 Number 5 May 2014
ISSN 2006-9812

Academic Journals

ABOUT JEIF

The **Journal of Economics and International Finance (JEIF)** is published monthly (one volume per year) by Academic Journals.

Journal of Economics and International Finance (JEIF) is an open access journal that provides rapid publication (monthly) of articles in all areas of the subject such as econometrics, trade balance, Mercantilism, Perfect competition etc.
The Journal welcomes the submission of manuscripts that meet the general criteria of significance and scientific excellence. Papers will be published shortly after acceptance. All articles published in JEIF are peer-reviewed.

Contact Us

Editorial Office: jeif@academicjournals.org

Help Desk: helpdesk@academicjournals.org

Website: http://www.academicjournals.org/journal/JEIF

Submit manuscript online http://ms.academicjournals.me/.

Editorial Board

Journal of Economics and International Finance

Table of Contents: Volume 6 Number 5 May 2014

ARTICLES

Research Articles

academicJournals

Vol. 6(5), pp. 91-102, May 2014
DOI: 10.5897/JEIF2014.0569
ISSN 2141-6672

http://www.academicjournals.org/JEIF

Journal of Economics and International Finance

Full Length Research Paper

Market reaction to chief executive officers (CEOs) appointments on Johannesburg securities exchange (JSE): stock price and volume approach

Nthoesane M.G.[1]* and Kruger J.W.[2]

[1]Centre for Business Management, University of South Africa.
[2]Graduate School of Business Leadership, University of South Africa.

Received 15 January, 2014; Accepted 9 April, 2014

The study is aimed at assessing the market reaction to the announcement of the appointment of CEOs of companies listed on the Johannesburg securities exchange (JSE). To achieve this objective an event study was conducted. The dataset consist of 43 firms who satisfied the inclusion criteria, who have announced the appointment of CEO within the period January, 2000 to December, 2012. In this study both the volume traded and the share price were analysed in the 72-month event window. The results show that share price cumulative returns are negative at 1% significance level. In contrast, while observing the volume traded approach the cumulative returns are significantly showing positive returns. This study like the previous ones indicates the conflicting findings on the subject of CEO appointments subject.

Key words: CEOs appointment, event studies, market reaction, stock prices, trading volume.

INTRODUCTION

The phrase *"… the buck stops here …"* is claimed to have been popularised by the United States (US) President, Truman (Mathews, 1951). Arguably, at least from the President's point of view the display of this phrase indicated a commitment to accountability from his office. In corporate South Africa (SA), like elsewhere in the world, presidents to a certain extent are a proxy for chief executive officer (CEO) of a country. It should suffice to expect the same level of accountability from heads of corporate SA. However, accountability is a broad subject and it is necessary to contextualise what accountability is expected from corporate SA executives. CEOs are entrusted in creating wealth and value for their shareholders and therefore, at least for listed companies, share price performance reflects one of the ways of creating shareholders' wealth. It should stand to reason that CEOs are or should be accountable to their respective companies' share price movements.

Across the globe, stock markets react to various corporate announcements; given the important nature of CEOs in companies, announcements of CEOs appointments is one of the significant announcements stock markets reacts to. In efficient market, announcements that are carrying vital information (good/bad) result in the (upward/downward) movement in the share prices. With this in mind, do CEOs-related corporate actions or

*Corresponding author. E-mail: nthoemg@unisa.ac.za Tel:+27 74 11 33 550

activities provide for vital information? More specifically, is the appointment of a CEO in any company, important enough to elicit a market reaction to such news?

Actions of CEOs or actions regarding CEOs are of interest to many and varying stakeholders. For instance, CEOs compensation is of much importance and interest to shareholders and law-makers alike. In South Africa specifically, the compensation of CEO is both topical and controversial, for instance, Masondo and Roberts (2011) report on how South Africa's Minister of Finance has articulated his (Minister of Finance) discomfort with escalating salaries of South African business executives. Ashton (2010), for example, criticise the alarming increase in salaries of South Africa's CEOs despite declining economic activity and the financial crisis at the time. Mantshantsha (2007), Oberholzer and Theunissen (2012) and Labour Market Navigator (2012) report on how CEOs' salaries in corporate South Africa far outstrip the salaries of lowest paid employees. Finally, Labour Market Navigator (2012) further adds that this salary escalation is linked neither to profitability nor productivity. This interesting observations suggests that CEOs actions are vital and should prompt the market reaction.

Various studies have been conducted to establish the market reaction to dismissals and or appointments of CEOs with conflicting results. In the South African context no literature has been found that relates to assessing the information content of appointing CEOs. Based on this observation the study is aimed at assessing the market reaction to the announcement of the appointment of CEOs of companies listed on the Johannesburg securities exchange (JSE). To achieve this objective an event study was conducted.

The remainder of the article is organised in the following format. The next section critique the literature of market reactions to CEO announcement (appointments and dismissals); then we outline in detail the methods utilised; the following section presents and discuss the results and finally, we report on the study conclusion, highlight our recommendations and acknowledge the limitations of the study.

Literature Review

The literature on the appointment announcements of CEOs provides inconclusive results in that some researchers report that there is no information content associated (that is, no upward or downward share price movement is observed) with the announcement; others report a negative market reaction, and the remainder of the literature reports a positive reaction to the announcements. Lubatkin et al. (1989) concluded that CEOs succession announcements convey negative information to investors, however, in events where an *outsider* is appointed, a favourable reaction is observed in particular for those firms that are financially healthy. This study on its own confirms the contradictory nature of the subject.

Martin et a., (2009) compared the appointment of male and female CEOs, possibly with the intention to establish whether the market reaction to male female CEOs is any different to male CEO appointments. The results of their study showed that abnormal returns are not significantly different within these groups. However, the window period for this study is arguably too short (three days). These authors further reported that changes in risk for female appointments were found to be low and the perception is that female CEOs are risk averse. This observation presupposes that in high risk firms the appointment of female CEOs should be perceived as a possibility to reduce the firm's risk and therefore an appointment announcement might positively move the market. However, this assumption will have to be tested empirically. Interestingly, Lucey and Carron (2011) concur with the findings of Martin et al. (2009), in that there is a market effect when executives are appointed based on their gender. In Singapore, Kang, Ding and Charoenwong (2009) support this standpoint by reporting that investors generally respond positively to the appointment of women executives.

Lassoued and Attia (2013) studied both the share price and the volume traded post CEO announcement in the Tunisian market, authors posit that there has been significant negative market reaction when volume traded approach is utilised. In addition this study reports the negative reaction for both internal and outsider succession. This is in contradiction to Lubatkin et al. (1989) findings, regarding an outsider appointment. However, there are concerning observation regarding this study, namely, the dual role of CEO (as both CEO and chairman) is mentioned and this has a potential skewing of results and secondly, the window period is also relatively short (12-days).

Van Doorn (2011) in a Dutch study concludes that the appointment of CEOs and CFOs (chief financial officers) leads to a positive market reaction, albeit not significantly different from zero. Li (2012) in the Nasdaq and New York stock exchange (NYSE) found that CEO changes announcements have no impact on the market and stock prices. This further brings to surface the contradicting findings in this area of study. The Pakistani study conducted by Urooj et al., (n/d) using firms listed on Karachi stocks exchange also found that no movement on stock return, however, the sample used in this study is very small (ten CEO given the size of the exchange, and no clear inclusion criteria was outlined in the study) and this brings about questions regarding external validity in this study. In Indonesia, Setiawan et al. (2011) show that there is no market reaction post CEO announcement. The results of this study are based on the volume analysis and it will have been interesting to concurrently conduct the returns and observe if the results will come to the same conclusion. Charitou et al. (2010) found that the announcement of outside CEO elicit a positive market

reaction. Bonnier and Bruner (1989) report a positive reaction on CEO announcement of distressed firms, and the CEO is an outsider. The study however, does not report on either internal CEO or firms that are not distressed. In agreement, Ang et al. (2003) report a positive reaction to CEO appointment; however, this is reported to be true only for 'better-quality' CEO. Warner et al. (1988) reports that no stock reaction is detected around management change. In a South African study Bhana (2003) did a reverse study, he studied the market reaction on the dismissals of CEOs. The study concludes that the market reacts favourably where the replacement of a dismissed executive is an outsider. The concerning observation for this study is the weak control of con-founding announcements. The study seem to sug-gest that both dismissal and appointment where announced on the same day.

Other researchers like Vafeas and Vlittis (2009) conducted the study on chief marketing officers' appointment and conclude that there is a positive market reaction especially when an executive does possess a prior marketing experience. These results add to the discussion, the human capital element and experience of executives, preceding the appointment. It was reported earlier in this article that Ang et al. (1988) referred to better quality CEO, authors were referring to those CEOs who receive a pay premium ex-ante, underscoring this observation is the assumption that CEOs are not the same in terms of what they bring to the firm. This is interpreted in the context of Vafeas and Vlittis (2009) in that we can safely assume that CEO with no prior job and/or industry experience will either have no effect to market upon their appointment announce or the market will react negatively. Yermack (2006) affirms this argument by concluding that share prices are sensitive to variables such as executive's occupation and professional qualification. However, the validity of these observations (human capital and experience) is beyond the scope of this study. It is necessary to report that all the previous studies observed in the literature that were analysed in this article used the event study methodology, the same methodology that was undertaken in the research that produced this article.

The primary aim of the study is to explore whether there are any significant abnormal (positive or negative) returns around the public announcement of appointment of CEOs. Given the inconclusive and mainly conflicting findings on the subject across the globe, the null hypothesis theorises that cumulative average abnormal returns (CAAR) due to CEO appointments' announcements are not significantly different from zero.

$$H_{01}: CAAR_t = 0$$

The alternate hypothesis states that the CAAR on CEO appointments' announcements is significantly different from zero.

$$H_1: CAAR_t \neq 0$$

In addition, to test the trading volume before and after the public announcement of CEOs' appointments.

$$H_{02}: CAVTR_t = 0$$

The alternate hypothesis states that the CAVC on CEO appointments' announcements is significantly different from zero.

$$H_2: CAVTR_t \neq 0$$

Where, $CAAR_t$ is the cumulative average abnormal return during the post-transaction period or event window and $CAVC_t$ is the cumulative average volume change during the event window.

METHODOLOGY

Event studies

An event study methodology was implemented in this study to test the stated hypothesis. An event study defines a technique of empirical financial research that permits a researcher to assess the financial impact (positive or negative) of a particular 'unanticipated' event (MacKinlay, 1997; McWilliams and Siegel, 1997) on a company's share price. The event of interest for this study is the public announcement of CEOs appointments. It is regarded as a powerful financial tool in efficient market hypothesis research. To this effect many researcher globally have successfully utilised this tool, for example though not exhaustive, Aharony and Swary (1980), Bowman (1983), Cox and Weirich (2002), Dey and Radhakrishna (2008), and Laidroo (2008). In South Africa researchers like Bhana (1995/1996, 2005, 2007a), Mushidzi and Ward (2004) and Ward and Muller (2010) successfully utilised the tool to assess the information content of announced corporate event. In addition, Das et al.(2008:64) argues that an event study "assess the significance of the economic event" on the market value of a firm.

Pioneering work by Bowman (1983) and Brown and Warner (1985) provide a framework of how to conduct an event study, and the approach in this article adopted this framework in conducting the research.

Sampling

To conduct the study the population of interest was all the companies listed on the JSE, which publically announced CEO appointments in the ten year period between the 1st January, 2000 to 31st December, 2010. The target population was extracted from the McGregor BFA database of CEO appointments' announcements released by JSE Security Exchange News Services (SENS).

A population of 300 public announcements was extracted. Thereafter, a purposeful and judgmental sampling method was utilised to focus only on those announcements that were referring only to the appointment of CEOs. In order to be included in the target sample, the extracted sample of CEO appointments' announcements had to adhere to *all* of the inclusion criteria set. The inclusion criteria included the following: the announcement should include only the appointment of a CEO; no confounding

announcement (these include chairman, other directors and the resignation of an outgoing CEO, where it applied, management change, restructuring (whether financial, operational or otherwise)); the share information should be available for twelve months before announcement and three to five years after the announcement and actively trading in that period; the announcement should have been released by SENS and finally, the CEO should have stayed in the company for a minimum of three years to the maximum of five years. The sample contained 38 relevant public announcements.

Technical analysis

The approach adopted in this was the single index model that uses the market index (JSE) to proxy for the systematic factor (Bodie et al. 2005). In this study, the method of calculating the security-specific expected returns was the capital asset pricing model (CAPM) that places an emphasis on the covariance between the market returns and the firm returns, the beta. Beta measures the volatility of the excess returns on those individual securities relative to that of the market as a whole (Hitchner, 2006).

It is acknowledged, that the use of the CAPM to calculate the securities' returns has been criticised by researchers like Drew et al. (2005), Fama and French (1992, 1996), Graham and Uliana (2001), Lee and Upneja (2008), Robins et al. (1999) and Van Rensburg (2001), amongst others, contending that a single factor beta model provides little, if any, reasonable explanation for the cross-section of expected security returns, given the multiplicity of factors that explain security returns.

Notwithstanding these arguments against the model, many researchers still find the model both practical and reliable. Empirical evidence reports that the model still explains about 61% of the cross-section of returns (Drew et al., 2005). Selim (2008), for instance argues that the inclusion of risk-free rate in CAPM displays the essence of Islamic financing (no interest payment) and therefore supports the usage of the model in returns calculation. Galagedera (2007) claims that CAPM still holds if the normality of returns can be achieved, because then, the mean and the variance are sufficient to describe the return distribution. Guan et al. (2007) in support of using beta provide evidence that as measurement error (over or under-stated) in beta is reduced, the role of beta in explaining the securities' returns increases. Ingram and Margetis (2010) provide empirical evidence showing that CAPM delivers an acceptable method of estimating the market –priced risk of firms.

So it is therefore believed that enough evidence has been provided to support the usage of CAPM. Like all other models is not the best, but evidence suggests that it is still a valid and reliable tool to use when measuring securities' returns.

The most widely accepted form of CAPM is based on the following:

$$E(R)_{jt} = R_{ft} + \beta_j(R_{mt} - R_{ft}) \quad t = -11, +60 \qquad (1)$$

Where:

$$\beta_j = \frac{Cov(R_j, R_{mt})}{Var(R_{mt})} \qquad (2)$$

In the above formulation

$E(R)_{jt}$ = the expected return for security *j* on month *t.*
R_{mt} = the market return, on month *t.*
R_{ft} = risk-free rate in period *t.* Government bonds, R157 and R153 were utilised in this study.
$Cov(R_j, R_{mt})$ = is the covariance or correlation coefficient between the returns of an individual security and the returns on the market.
$Var(R_{mt})$ = is the variance of returns on the market.
β_j = is the relative risk of a specific security in relation to the risk of the market.

Data Collection

Share data were extracted from McGregor BFA-Net using McGregor RAID Station. The data required included the monthly closing prices for all shares listed on the JSE which announced earnings within a ten year period from 1st January, 2000 to 31st December, 2010. The closing price data for at least twelve trading months before the interested CEO appointment announcement, this is needed to ensure that no prior similar announce where done and to compute the abnormal returns a year before the announcement. CEO appointment announcements were extracted from the SENS, the month in which companies published this announcement is what constituted t_o. A SENS announcement platform was also reviewed to ascertain any related confounding events, as discussed earlier, which could have occurred within the event window.

Data Analysis

The impact on the security's monthly closing price was measured over a period of 12 trading months prior (*ex-ante*) to the announcement month, and sixty trading months after (*post ante*) the announcement month (referred to as *t-12 …. t+60*, *the event window*). The monthly share price return for each security in each portfolio was calculated using log-returns. Strong (1992) argues that logarithmic returns are preferred because they are theoretically better when linking together sub-period returns to form returns over a long time, and is given by:

$$R_{jt} = \log(P_{jt} / P_{jt-1}) \qquad (3)$$

Where:
R_{jt} = the share price return for security *j* for month *t*; and
P_{jt} = the share price of security *j* at the end of month *t*.

Beta coefficients were calculated for each share in the sample by regressing the market's monthly share price return over the six years of the event window against the monthly returns of each of the 38 companies for the same period. After calculating the beta coefficients for each security, the expected return for each security for each month in the event window was calculated. This was done by using formula (1), the CAPM.

Once the expected return for security ***j*** in period ***t*** is calculated, the abnormal return for each selection for each month in the event window was calculated. Abnormal returns were calculated for each security over the 72-month event period, t = -12 to +60 trading months, and any significant differences found between actual returns and expected market returns were attributed to the information content of CEO appointment announcement. The abnormal return is simply the actual return of security $_j$ in the same period less the calculated expected return:

$$AR_{jt} = R_{jt} - E(R_{jt}) \qquad (4)$$

Where:
AR_{jt} = the abnormal return of security $_j$ in period $_t$

$E(R_{jt})$ = the expected share price return of security $_j$ in period$_t$ as constructed by returns-generating model
R_{jt} = actual return of security$_j$ in period $_t$

These above abnormal returns are summed and averaged cross-sectional on month *t* as follows:

$$AAR_t = \sum_{j=1}^{N} AR_{jt} / N \quad (5)$$

Where N is the number of CEO appointment announcements in the sample at month. The cumulative average abnormal returns (CAAR) for *T* months are calculated by:

$$CAAR = \sum_{t=-12}^{+60} AAR_t \quad (6)$$

Bamber (1987) presented an approach to use while using trading volume for event study, this approach was modified for this study. The author use the abnormal trading volume formulated as:

$$AV = V_{jt} - \overline{V}_j \quad (7)$$

In this study, the approach was to look at the *return* on volume traded, and is formulated as follows:

$$AVTR_t = \sum_{j=1}^{N} V_{jt} - \overline{Vj} / N \quad (8)$$

The cumulative average volume traded returns (CAVTR) for *T* months are calculated by:

$$CAVTR = \sum_{t=-12}^{+60} AVTR_t \quad (9)$$

The statistical analysis used to test the significance of the AAR, under the null hypothesis that they are equal to zero, the procedure by (Brown and Warner, 1985) was followed. It follows a *t*-distribution and is formulated as:

$$t_{AAR} = \frac{AAR_{jt}}{\sigma(AAR) / \sqrt{n}} \quad (10)$$

The statistical significance of the cumulative abnormal returns is given by:

$$t_{CAAR} = \frac{CAAR_{jt}}{\sigma(AAR)\, d^{0.5}} \quad (11)$$

Where $\sigma(AAR)$ is the estimated standard deviation, *d* stands for the total number of months for which AAR are cumulated. The significance level was set at a 1% margin of error to determine whether the CAAR differed statistically significantly from zero, (H_0: $CAAR_t = 0$). In the same approach, the statistical significance for the volume traded was conducted.

FINDINGS AND DISCUSSIONS

We begin by presenting the performance of the market for the period April, 1999 to June, 2013, the period during which all the announcements took place (Figure1). It is observed that in general terms the market had a positive performance (Bull market). In the same period government bonds R157 and R153 were generally yielding negative performance, and finally it was also observed that the market was relatively highly volatile as reflected by the South African Volatility Index (SAVI). Arguably, these observations seem to suggest that investors would have been better of investing in the market than interest yielding financial products.

The results of this study show that in general there is a significant negative cumulative average abnormal return (Figure 1 and 2) and also highly volatile. Empirical evidence supports the hypothesis that investors react unfavourably to announcements of appointments of CEO on JSE. Albeit a slightly upward performance on month t_{-1}, this observation can be explained by many possibilities, even though this is beyond the scope of this study. It is possible that the market expected the announcement of either internal/external candidate and the expectation was not met; possibly a better-quality CEO, as coined by Ang et al. (2003) appointment announcement was expected and similarly the market expectation was not met. The results of this study are in line with the findings reported by Lassoued and Attia (2013). The interesting observation is that of the reports regarding market reaction to CEO announcements, evidence from that stock markets in Asia (Kang et al., 2009), Europe (Charitou et al, 2010; van Doorn, 2011 and Vafeas and Vlittis, 2009) and America (Lubatkin et al., 1989) concluded that there is positive market reaction surrounding the announcement. This study and that of Lassoued and Attia (2013) are coincidentally listed on African stock markets, namely Johannesburg and Tunis, respectively. However, this might as well be by chance, studies in other African stock markets will have to be conducted to ascertain if there is any emerging trend on how investors react to the announcement of CEOs.

Table 1 show that throughout the 72-months event period, only nine performance results could be found to be statistically significant at 1% significant level. These periods are significant for all the event periods that showed a positive reaction to CEO announcements. This implies that the market responds favourably to the appointment of CEOs linking the firm prospects to the executive, this further implies that there is an expectation that CEOs are viewed as worthwhile to the firm. Given this observation it is safe to argue that the AAR in the months that recorded upward movement of the market suggests that investors react positive to CEO announcements. These periods are event months t_{-8}; t_0; $t_{+1;}$ t_{+5}; t_{+9}; t_{+19}; t_{+24}; t_{+35} and t_{+49}. However, it is necessary to also look into the returns for the entire event window; it

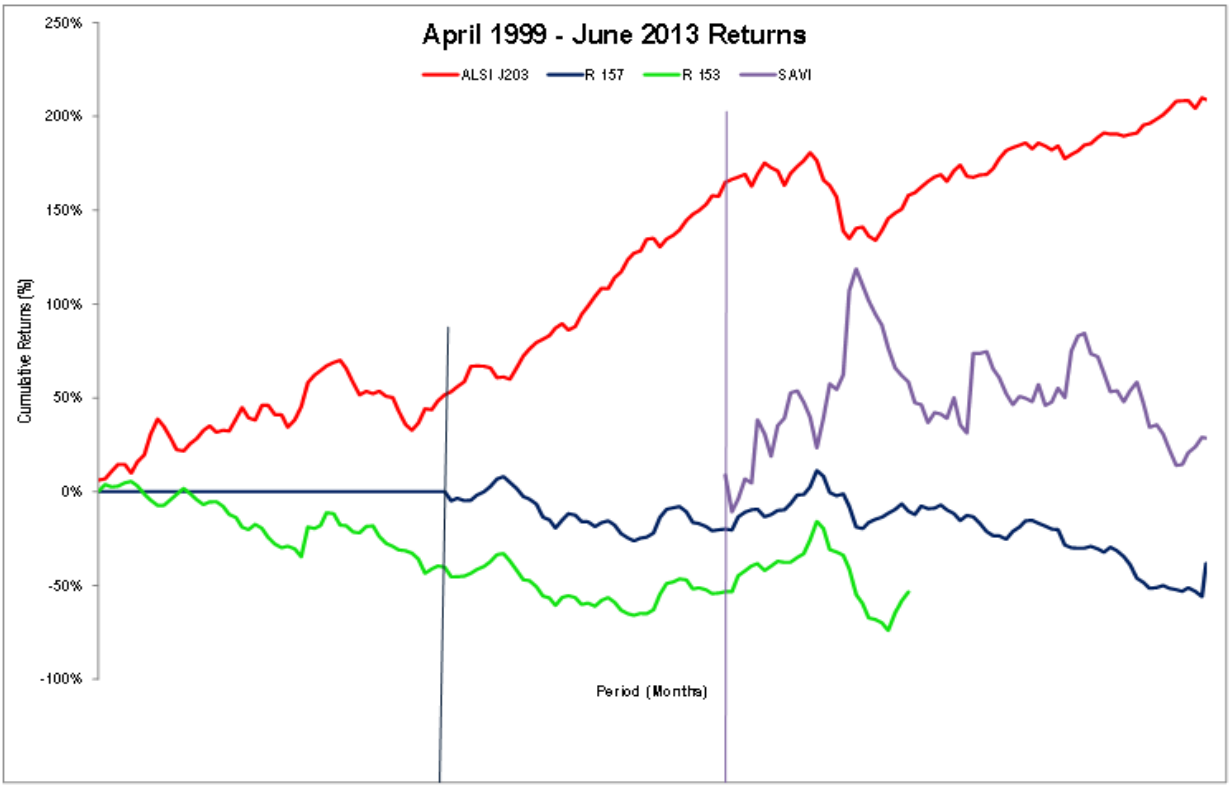


Figure 1. Market performance, Government bonds performance and Volatility Index 1999 to 2013

is then observed that the market has reacted negatively, albeit not statistically significant. This observation then lead to a negative cumulative reaction (CAAR), interestingly, the significance of these findings correlates with the data-points of AAR that displayed statistically significant negative performance at 1% significant level, with the exception of t_0 that show the 10% significant level. It is important to note that the cumulative negative effect of non-significant result contribute the negative performance of those periods that show statistically significant performance. The announcement month (t_0) is the only period with considerable and significant positive returns of 17.4%, as alluded to earlier, this seem to suggest that the market links the appointment of CEOs to possibly better prospects of the firm and secondly, it affirms that appointment of CEO is a price sensitive event. What is also observed here is that once the returns are on the down-slide, they do not seem to recover quickly and much of invested capital can be eroded.

Regarding the volume traded, the general trend is the significant positive reaction for both the average volume traded and the cumulative effect, thereof. This study finding coincides with that of Kang et al., (2009), Charitou et al, (2010), van Doorn (2011), Vafeas and Vlittis (2009) and Lubatkin et al. (1989). Furthermore, coincides with the study of Setiawan *et* al. (2011), but contradicts that of Lassoued and Attia (2013) both studies used volume approach to measure the market reaction to CEO announcements. (As shown in Table 2, 72-month event period volume performance results and statistical analysis).

CONCLUSION

This study was undertaken to assess the market reaction to the announcement of CEOs, which should translate to whether value has been added or lost to the share-holders, as measured by the share price movements and the willingness of investors to buy the shares on firms in question when CEO appointments of public companies are publicly announced. To achieve this objective, the share price movement and volume traded approach were utilised. It has been proven in this study that this null hypothesis that stated that CAAR are not significantly different from zero is invalid, and therefore in line with the findings, null hypothesis is rejected in favour of the alternate hypothesis. Empirical evidence demonstrates that there is substantial negative share price reaction to CEOs appointment announcements on the JSE stock market. Similarly, it is concluded that when volume traded is used, the hypothesis that states that CAVTR are not significantly different from zero is also invalid, and therefore rejected in favour of the positive reaction. To

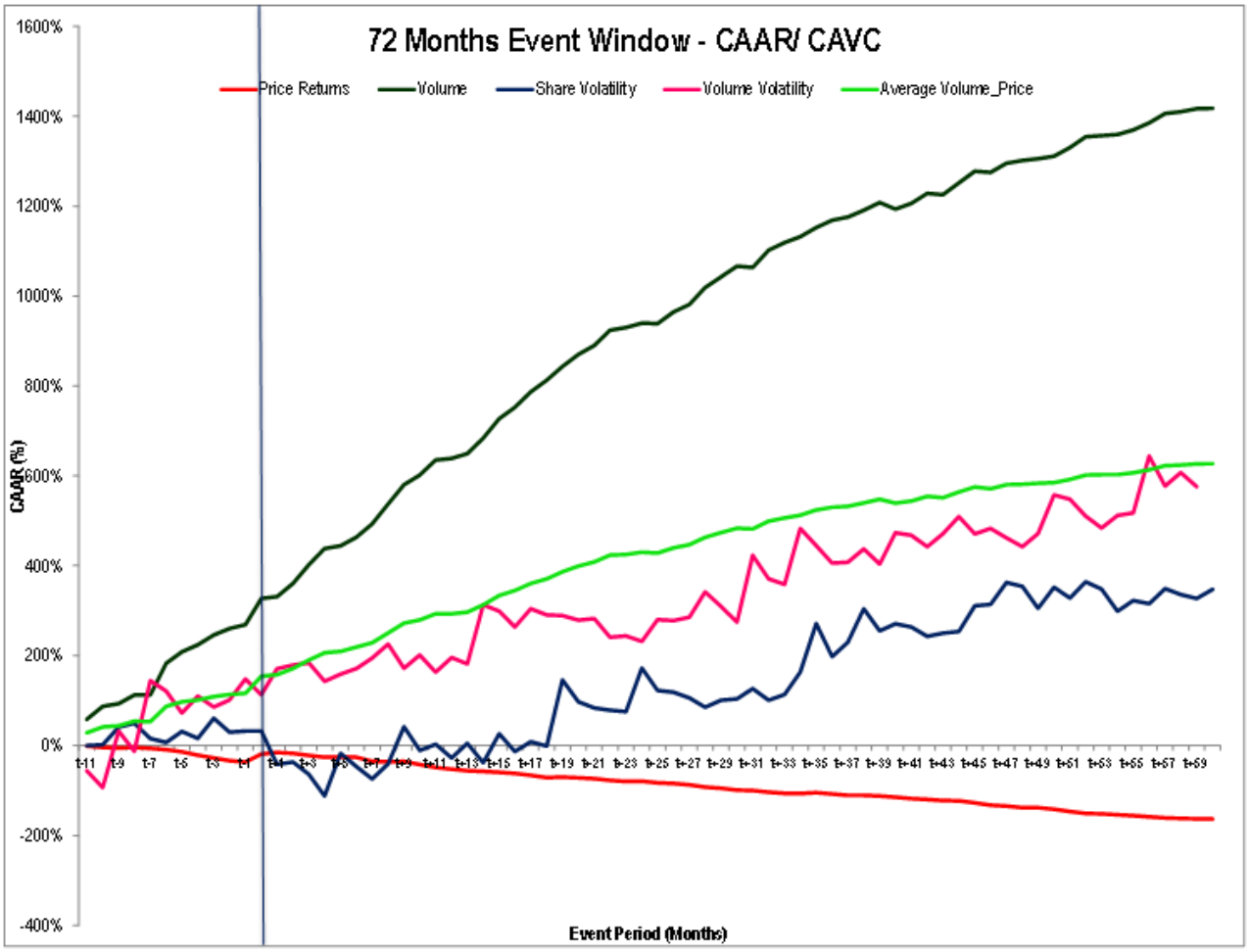


Figure 2: Share price and volume traded performance over a 72-month event window

Table 1. 72-month event period share performance results and statistical analysis

Event Month	AAR	t-statistics (2-tailed)	CAAR	t-statistics (2-tailed)	SD
			0		
t_{-11}	-1.4%	42.98	-1%	6.97	0.143
t_{-10}	-3.1%	42.21	-5%	6.97	0.146
t_{-9}	-0.8%	30.33	-5%	19.47	0.203
t_{-8}	0.8%	27.97***	-4%	-12.11***	0.220
t_{-7}	-1.8%	42.48	-6%	10.61	0.145
t_{-6}	-2.9%	46.41	-9%	9.72	0.133
t_{-5}	-4.8%	37.26	-14%	6.66	0.165
t_{-4}	-7.4%	43.93	-21%	7.30	0.140
t_{-3}	-6.3%	30.39	-28%	7.18	0.203
t_{-2}	-5.9%	43.94	-34%	12.85	0.140
t_{-1}	-3.0%	42.91	-37%	25.31	0.144
t_{0}	17.4%	4.55***	-19%	-0.24*	1.352
t_{+1}	3.6%	17.70***	-16%	-3.41***	0.348
t_{+2}	-2.0%	16.79	-18%	6.52	0.367
t_{+3}	-4.3%	23.24	-22%	4.95	0.265

Table 1. Contd.

t_{+4}	-4.0%	44.69	-26%	11.70	0.138
t_{+5}	0.3%	22.94***	-26%	-88.69***	0.269
t_{+6}	-0.4%	32.61	-26%	85.75	0.189
t_{+7}	-9.0%	44.64	-35%	6.44	0.138
t_{+8}	-1.0%	33.54	-36%	44.10	0.184
t_{+9}	0.7%	18.31***	-35%	-32.48***	0.337
t_{+10}	-7.2%	38.81	-42%	7.97	0.159
t_{+11}	-6.4%	34.16	-49%	8.84	0.180
t_{+12}	-3.4%	49.24	-52%	25.05	0.125
t_{+13}	-3.7%	37.09	-56%	18.35	0.166
t_{+14}	-1.8%	65.72	-58%	66.98	0.094
t_{+15}	-1.9%	39.91	-60%	39.77	0.154
t_{+16}	-2.7%	65.95	-62%	47.12	0.093
t_{+17}	-3.7%	54.26	-66%	28.92	0.114
t_{+18}	-5.2%	60.01	-71%	24.36	0.103
t_{+19}	1.2%	24.28***	-70%	-42.06***	0.254
t_{+20}	-1.7%	46.95	-72%	57.51	0.131
t_{+21}	-2.1%	54.68	-74%	53.41	0.113
t_{+22}	-3.3%	57.46	-77%	37.34	0.107
t_{+23}	-2.7%	59.25	-80%	48.16	0.104
t_{+24}	0.5%	30.07***	-79%	-132.45***	0.205
t_{+25}	-3.4%	59.75	-83%	38.79	0.103
t_{+26}	-1.6%	62.26	-84%	84.09	0.099
t_{+27}	-3.1%	71.59	-88%	51.86	0.086
t_{+28}	-4.9%	90.42	-92%	44.06	0.068
t_{+29}	-2.9%	78.16	-95%	64.25	0.079
t_{+30}	-3.7%	75.55	-99%	50.46	0.082
t_{+31}	-1.1%	61.66	-100%	137.34	0.100
t_{+32}	-3.8%	83.36	-104%	56.30	0.074
t_{+33}	-2.2%	73.66	-106%	85.27	0.084
t_{+34}	-0.7%	49.28	-107%	186.33	0.125
t_{+35}	2.3%	23.69***	-105%	-26.05***	0.260
t_{+36}	-3.5%	89.75	-108%	65.47	0.069
t_{+37}	-2.9%	67.90	-111%	59.75	0.091
t_{+38}	-0.1%	38.95	-111%	966.05	0.158
t_{+39}	-1.5%	76.01	-113%	131.94	0.081
t_{+40}	-2.4%	65.79	-115%	70.96	0.094
t_{+41}	-3.2%	71.03	-118%	58.69	0.087
t_{+42}	-1.8%	89.16	-120%	134.54	0.069
t_{+43}	-2.8%	83.53	-123%	79.16	0.074
t_{+44}	-0.5%	80.48	-123%	398.29	0.077
t_{+45}	-4.2%	51.13	-128%	33.11	0.121
t_{+46}	-5.4%	49.70	-133%	25.94	0.124
t_{+47}	-1.9%	33.46	-135%	49.58	0.184
t_{+48}	-3.5%	36.49	-138%	29.97	0.169
t_{+49}	0.0%	71.21***	-138%	-100745.22***	0.087
t_{+50}	-3.2%	48.50	-142%	44.03	0.127
t_{+51}	-5.4%	63.92	-147%	35.33	0.096
t_{+52}	-3.8%	46.90	-151%	37.70	0.131
t_{+53}	-1.1%	56.14	-152%	153.87	0.110
t_{+54}	-2.3%	110.95	-154%	150.81	0.056

Table 1. Contd.

t_{+55}	-1.7%	89.30	-156%	162.19	0.069
t_{+56}	-2.9%	96.52	-159%	105.11	0.064
t_{+57}	-2.3%	72.17	-161%	98.18	0.085
t_{+58}	-1.0%	83.04	-162%	272.06	0.074
t_{+59}	-1.3%	90.87	-163%	217.16	0.068
t_{+60}	-0.2%	75.49	-164%	961.66	0.082

Notes: The table presents the test statistics (one sample *t-test)*, column 3 are the test results for the AAR, and column 5 for the CAAR test results. *, **, and *** denote statistical significance at the 10%, 5% and 1% level (two-tailed test), respectively, for the 72-month event period. Column 6 shows the standard deviation

Table 2. 72-month event period volume performance results and statistical analysis

Event Month	AVTR	t-statistics (2-tailed)	CAVTR	t-statistics (2-tailed)2	SD
t_{-11}	0.58	1.71	0.58	1.00	2.035
t_{-10}	0.29	1.97	0.87	2.11	0.890
t_{-9}	0.06	0.66	0.93	8.73***	0.558
t_{-8}	0.19	0.91	1.12	2.94***	1.261
t_{-7}	0.00	0.00	1.12	-1082.35	0.689
t_{-6}	0.71	2.40***	1.83	1.06	1.773
t_{-5}	0.25	1.12	2.08	3.12***	1.355
t_{-4}	0.16	1.35	2.24	5.04***	0.697
t_{-3}	0.22	1.37	2.46	3.76***	0.957
t_{-2}	0.14	1.17	2.60	5.84***	0.725
t_{-1}	0.09	0.64	2.69	9.03***	0.840
t_{0}	0.58	2.83***	3.27	1.63	1.232
t_{+1}	0.04	0.30	3.31	22.89***	0.798
t_{+2}	0.30	1.41	3.61	3.26***	1.263
t_{+3}	0.42	1.84	4.02	2.49***	1.361
t_{+4}	0.36	1.51	4.38	3.04***	1.432
t_{+5}	0.06	0.45	4.45	17.14***	0.847
t_{+6}	0.19	1.16	4.64	5.77***	0.980
t_{+7}	0.29	1.59	4.93	3.86***	1.104
t_{+8}	0.44	1.95	5.37	2.71***	1.362
t_{+9}	0.43	1.45	5.80	2.94***	1.784
t_{+10}	0.21	1.55	6.02	6.01***	0.826
t_{+11}	0.34	1.89	6.35	3.93***	1.067
t_{+12}	0.04	0.32	6.39	36.65***	0.662
t_{+13}	0.11	0.73	6.50	12.13***	0.877
t_{+14}	0.34	2.75***	6.84	3.89***	0.752
t_{+15}	0.43	1.49	7.27	3.25***	1.740
t_{+16}	0.25	1.02	7.53	5.61***	1.497
t_{+17}	0.34	2.12	7.87	4.26***	0.970
t_{+18}	0.26	1.13	8.13	5.76***	1.363
t_{+19}	0.31	1.58	8.44	4.91***	1.174
t_{+20}	0.26	1.37	8.70	5.81***	1.160
t_{+21}	0.20	1.16	8.90	7.70***	1.040
t_{+22}	0.34	1.89	9.24	4.66***	1.077
t_{+23}	0.06	0.56	9.30	26.63***	0.629

Table 2. Contd.

t_{+24}	0.10	0.90	9.40	16.15***	0.648
t_{+25}	-0.01	-0.08	9.39	-212.94	0.570
t_{+26}	0.25	1.81	9.64	6.14***	0.843
t_{+27}	0.17	1.23	9.82	9.22***	0.828
t_{+28}	0.38	2.54***	10.19	4.27***	0.891
t_{+29}	0.24	1.02	10.43	6.87***	1.395
t_{+30}	0.24	1.50	10.66	7.00***	0.940
t_{+31}	-0.03	-0.26	10.64	-60.73	0.608
t_{+32}	0.38	1.53	11.02	4.32***	1.512
t_{+33}	0.17	1.40	11.19	9.88***	0.723
t_{+34}	0.13	1.23	11.32	12.86***	0.636
t_{+35}	0.21	0.86	11.53	8.19***	1.426
t_{+36}	0.16	1.08	11.69	10.56***	0.885
t_{+37}	0.07	0.80	11.76	23.32***	0.539
t_{+38}	0.15	1.65	11.91	11.16***	0.550
t_{+39}	0.17	1.46	12.08	9.76***	0.711
t_{+40}	-0.15	-1.86	11.94	-11.24	0.475
t_{+41}	0.13	0.93	12.06	13.21***	0.805
t_{+42}	0.23	1.79	12.29	7.38***	0.759
t_{+43}	-0.03	-0.34	12.26	-51.55	0.565
t_{+44}	0.27	2.19	12.52	6.28***	0.729
t_{+45}	0.26	1.54	12.78	6.56***	1.006
t_{+46}	-0.03	-0.25	12.75	-65.47	0.618
t_{+47}	0.20	1.76	12.96	8.26***	0.695
t_{+48}	0.06	0.63	13.02	28.94***	0.550
t_{+49}	0.04	0.57	13.06	39.98***	0.441
t_{+50}	0.05	0.57	13.11	30.63***	0.572
t_{+51}	0.20	1.11	13.31	8.57***	1.062
t_{+52}	0.24	1.48	13.54	7.18***	0.956
t_{+53}	0.03	0.27	13.57	62.29***	0.598
t_{+54}	0.02	0.34	13.60	67.46***	0.441
t_{+55}	0.10	1.07	13.70	16.55***	0.564
t_{+56}	0.16	1.59	13.85	10.63***	0.596
t_{+57}	0.21	0.92	14.06	8.18***	1.349
t_{+58}	0.04	0.56	14.10	39.94***	0.450
t_{+59}	0.06	0.65	14.17	26.35***	0.586
t_{+60}	0.01	0.18	14.18	138.91***	0.400

Notes: The table presents the test statistics (one sample t-test), column 3 are the test results for the AVTR, and column 5 for the CAVTR test results. *, **, and *** denote statistical significance at the 10%, 5% and 1% level (two-tailed test), respectively, for the 72-month event period. Column 6 shows the standard deviation

sum up, the announcement of CEO appointment is to create expectation to the market, meaning the market reacts to the information of their announcement. This study suggest that firms need to pay special attention to the person(s) they are intending to appoint as CEO, because there is an expectation in the market that links the person in the capacity of CEO to the prospects of the firm.

RECOMMENDATIONS

It is recommended that a follow-up study should be conducted with focus on both inside and outside candidate, given the conflicting evidence presented here. In addition, in line with literature observations distinction should also be made between male and female candidates and firms that are either undergoing re-structuring or are under

distress. A comparable study looking at more than one stock exchange can also be very useful, given the earlier observation that African studies indicated negative reaction to the announcement. Finally, the application of other asset pricing models might be very useful.

The following limitations in the study are acknowledged, firstly, all other mediums of disclosures besides public announcements are excluded, and only those announcements recorded on SENS were considered for the study. The sampling method used here is non-probabilistic, therefore the study is unable to test external validity, and conclusions can only be made for this sample. The limitations of CAPM for measuring expected returns, methods like market model, and/or three-factor model for expected returns could have been used, particularly given the criticism labelled against beta not being able to fully explain the securities' returns. The presence of outliers, these have a serious impact on the mean (AAR and AVTR, in this case), so it is to be observed that this will have an influence on the interpretation of results. The event window (72 months) appeared not to be able to illustrate, as to when will rectification, or price recovery occur.

Conflict of Interests

The author(s) have not declared any conflict of interests

REFERENCES

Aharony J, Swary I (1980). 'Quarterly dividend and earnings announcements and stockholders' returns: An empirical analysis', J. Fin. 35(1):1-12. http://onlinelibrary.wiley.com/doi/10.1111/j.1540-6261.1980.tb03466.x/abstract

Ang J, Lauterbach B, Vu J (2003). 'Efficient labor and capital markets: Evidence from CEO appointment', Finc. Market. Summer: pp.27-52. http://www.israeli-corporate-governance.org/files/gallery/source/Efficient_Labor.pdf

Ashton M (2010). 'Executive pay on the up' Fin 24, 13 April'. [Online] Available at: http://www.fin24.com/Business/Executive-pay-on-the-up-20100430

Bhana N (2007a). 'The market reaction to open market share repurchases announcements: the South African experience', Invest. Anal. J. 65:25-36.

Bhana N (2005). 'The share price reaction to management buyout announcements of companies listed on the JSE Securities Exchange', Invest. Anal. J. 62:19-30.

Bhana N (2003). 'The share price reaction to announcements of key executive dismissals by companies listed on the JSE Securities Exchange', Invest. Anal. J. 58:29-50.

Bhana N (1995/96). 'The Share market reaction to earnings announcements: A test of the efficiency of the Johannesburg Stock Exchange', Invest. Anal. J. 42:45-57.

Bonnier K, Bruner R (1989). 'An analysis of stock price reaction to management changes in distressed firms', J. Acct. Econ. 11:95-106.

Bowman RG (1983). 'Understanding and conducting event studies'', J. Bus. Fin. Acct. 10(4):561-584.

Brown SJ, Warner JB (1985). 'Using daily stock returns: the case of event studies', J. Fincl. Econ. 14:3-31.

Charitou M, Patis A, Vlittis A (2010). 'The market reaction to the appointment of an outside CEO: An empirical investigation', J. Econ. Int. Fin. 2(11):272-277.

Cox RAK, Weirich TR (2002). 'The stock market reaction to fraudulent financial reporting', Manag. Audit. J. 17(7):374-382.

Das S, Pattanayak JK, Pathak P (2008). 'The effect of quarterly earnings announcements on Sensex: A case with Clustering of events, Icfai Univ. J. Account. Res. 7(4):64-78.

Dey MK, Radhakrishna B (2008). 'Who profits from trading around earnings announcements? Evidence from TORQ data', J. Asset Manage. 9(4):300-308.

Drew ME, Naughton T, Veeraragavan M (2005). 'Pricing of equities in China: Evidence from Shanghai Stock Exchange', Manag. Fin. 31(12):46-57. http://www.emeraldinsight.com/journals.htm?articleid=1515202

Fama EF, French KR (1996). 'Multifactor Explanations of Asset Pricing Anomalies', J. Fin. 51(1): 55-84.

Fama EF, French KR (1992). 'Cross-section of expected returns', J. Fin. 47(2):427-465.

Galagedera DUA (2007). 'A review of asset pricing models', Manag. Fin. 33(10):821-832.

Graham M, Uliana E (2001). 'Evidence of value-growth phenomenon on the Johannesburg Stock Exchange', Invst. Anal. J. 53: 7-18.

Guan L, Hansen DR, Leikam SL, Shaw J (2007). 'Stable betas, size, earnings-to-price, book-to-market and the validity of the capital asset pricing model', Manag. Fin. 33(8):595-614.

Hitchner J (2006). 'Cost of capital/ Rates of return' in J. Hitchner Financial Valuation: Application and Models, 2nd edition, John Wiley and Sons, Inc., New Jersey.

Ingram M, Margetis S (2010). 'A practical method to estimate the cost of equity capital for a firm using cluster analysis', Manag. Fin. 36(2):160-167.

Kang E, Ding DK, Charoenwong C (2009). 'Investor reaction to women directors', J. Bus. Res. 63:888–894.

Labour Market Navigator (2012). 'Are South Africa's CEOs overpaid?' [online] Available at: http://www.grindrodsecurities.co.za/Portals/0/Labour_Market_Navigator_2012Q1.pdf, Accessed, 20September 2013.

Laidroo L (2008). 'Public announcement induced market reactions on Baltic exchanges', Baltic J. Mgmt., 3(2): 174-192.

Lassoued N, Attia MBR (2013). 'The market effects of CEO turnover: The case of post-revolution Tunisia', Glob. Rev. Account. Fin. 4(1):85-103.

Lee S, Upneja A (2008). 'Is the capital asset pricing model (CAPM) the best way to estimate cost of equity for the lodging industry?', Int. J. Contemp. Hosp. Manage. 20(2):172-185. http://www.emeraldinsight.com/journals.htm?articleid=1718189

Li J (2012). 'The relationship between the announcements of CEO changes and stock prices', [online] Available at: http://library2.smu.ca/bitstream/handle/01/24694/li_jiaqi_mrp_2012.pdf?sequence=1

Lubatkin MH, Chung KH, Rogers R, Owers JE (1989). 'Stockholder reactions to CEO changes in large corporations', Acad. Manage. J. 32(1): 47-68. http://amj.aom.org/content/32/1/47.full.pdf

Lucey BM, Carron B (2011). 'The effect of gender on stock price reaction to the appointment of directors: The case of the FTSE 100'. Appl. Econs. Letters 18:1225-1229.

MacKinlay AC (1997). 'Event studies in Economics and Finance', J. Econ. Lit. 35(1):13-39.

Mantshantsha S (2007). ' Is there a case for a maximum salary? [online] Available at: http://thoughtprint.usb.ac.za/Thoughprint%20Publications%20%20Downloads/AGENDA_FEB07_4-6.pdf

Martin AD, Nishikawa T, Williams MA (2009). 'CEO gender: Effects on valuation and risk', Quart. J. Financ. Account. 48(3): 23-40.

Masondo S, Roberts J (2011). 'Pravin Gordhan targets executive salaries', [Online] Available at: http://www.timeslive.co.za/politics/2011/11/15/pravin-gordhan-targets-executive-salaries

Mathews MM (1951). A Dictionary of Americanisms on Historical Principles. Vol. 2, Chicago: University of Chicago Press. http://www.abebooks.com/Dictionary-Americanisms-Historical-Principles-2-Volumes/677715843/bd

McWilliams A, Siegel D (1997). 'Event studies in management research: theoretical and empirical issues', Acad. Manage. J. 40(3):626-657.

Mushidzi TB, Ward M (2004). ‘Abnormal returns for cash vs. share-funded acquisitions’, Invest. Anal. J. 60:17-32.
Oberholzer M, Theunissen M (2012). 'Benchmarking of Johannesburg Stock Exchange CEO Compensation', Int. Bus. Econ. Res. J. 11(9):1061-1076.
Selim TH (2008). ‘An Islamic capital asset pricing model’, Humanomics, 24(2): 122-129.
Setiawan D, Hananto ST, Kee PL (2011). 'An analysis of market reaction to chief executive turnover announcement in Indonesia: A trading volume approach', J. Bus. Econ. Res. 9(11): 63-72.
Strong N (1992). ‘Modelling abnormal returns: a review article’, J Bus. Fin. Account. 19: 533-553.
Urooj SF, Zafar N, Khattak MA (n/d). 'Impact of CEO succession on stock returns', [online] Available at: http://www.wbiconpro.com/316-Syeda.pdf
Vafeas N, Vlittis A (2009). 'Stock market reaction to chief marketing officer appointment announcements', J. Bus. Econ. Res. 7(11):29-40.
Van Doorn M (2011). 'Market reaction to CEO and CFO succession announcements for public companies in the Netherlands', [online] Available at: http://arno.uvt.nl/show.cgi?fid=120541
Van Rensburg P (2001). ‘A decomposition of style-based risk on the JSE’, Invest. Anal. J. 54:45-60.
Ward M, Muller C (2010). 'The long-term share price reaction to Black Economic Empowerment announcements on the JSE', Invest. Anal. J. 71:27-36.
Warner JB, Watts RL, Wruck KH (1988). 'Stock prices and top management changes', J. Financ. Econ. 20:461-492.
Yermack D (2006). 'Board members and company value', Fin. Markets Portfolio Manage. 20:33-47. http://papers.ssrn.com/sol3/papers.cfm?abstract_id=894249

academicJournals

Vol. 6(5), pp. 103-111, May 2014
DOI: 10.5897/JEIF2013.0548
ISSN 2141-6672

http://www.academicjournals.org/JEIF

Journal of Economics and International Finance

Full Length Research Paper

The effect of currency devaluation on output: The case of ethiopian economy

Yilkal Wassie Ayen

Economics department, Jimma University, Jimma Ethiopia.

Received 24 January, 2014; Accepted 9 April, 2014

This paper assesses the short and long run effects of currency devaluation on output growth in Ethiopia. The study is conducted by using quarterly time series data over the period ranging from 1998.Q1 to 2010.Q4 and employing a vector auto regression (VAR) model. By controlling the monetary and fiscal policies, it is found that currency devaluations are contractionary in the long run and neutral in the short-run. Other results are that monetary policy has positive effect on output growth, while total government expenditure has negative effect. Moreover, this study clarifies that devaluation explains a considerable part of real gross domestic product change in Ethiopia. Since the Ethiopian export is dominated by primary agricultural products, it is insensitive for the change in exchange rate; it is not also possible for the government to allow market forces to determine the value of Ethiopian birr. Policy intervention is needed to balance the adverse impact of exchange rate movements until the economy is well transformed from agricultural sector to industrial sector and then, the economy becomes less dependent on imported raw materials. Thus, monetary policy plays a bigger role since it affects the total output positively and significantly.

Key words: Currency devaluation, output, vector auto regression (VAR).

INTRODUCTION

Up to 1970s, countries have the same consensus on the possible effect of currency devaluation on economic growth. There appears a consensus view on the fact that devaluation or depreciation could boost domestic production through stimulating the net export component. This is possible because devaluation increases international competitiveness of domestic industries which leads to the diversion of spending from foreign goods to domestic goods. Up to this period, devaluation has expansionary effect on output. It would improve trade balance, alleviate balance of payment deficits, and accordingly expand output and employment (Acar, 2000).

In the recent period, devaluation has become the basic macroeconomic policy issue in most less developed countries. The effect is contractionary or expansionary depending on the structure of the economy. During the structural adjustment program, the international monetary fund (IMF) and world bank (WB) suggested for developing countries to devalue their currency for the development of domestic firms. Devaluation increases the demand for domestic product and protects infant firms from outside competition (Genye, 2010). Krugman Taylor (1978)

E-mail: wassieyilkal@yahoo.com

examine the negative effect of currency devaluation on output in developing countries which has used devaluation as a policy strategy. However, many researchers found different results on the effects of currency devaluation on output in less developed countries.

Some researchers examined that devaluation has mixed results. Even though ambiguous results were observed, developing countries have actively used devaluation as a policy instrument. This study investigates the long and short run impacts of currency devaluation on output growth in Ethiopia for two reasons. First, the country has short history of using exchange rate adjustments as policy tools to promote external competitiveness. Since 1992, Ethiopia devalued its currency where the 'Birr' exchange rate is adjusted continuously rather than discretely, as it was previously the case. Second, Ethiopia is heavily dependent on agricultural products and imported intermediate goods that would have contractionary effect on output. In addition, research outputs on the effects of currency devaluation in Ethiopia are very scanty. A research output done by Genye (2010), which is the recent antecedent to this study, addresses the effect of currency devaluation on output growth in Ethiopia based on time series data from the year 1980 to 2010. However, results from this study have limited policy implications as it did account for the fixed exchange rate of the Derge regime. This study has contributed to the literatures in such a way, it covers a period ranged from 1998.Q1-2010.Q4, during which Ethiopia was experiencing currency devaluation, and the study depends on a quarter data rather than annual data. The other paper, Taye (1999), found the effect of devaluation on the macroeconomic performance of Ethiopia is not sector specific and has time gap with this study.

Empirical Literatures

Empirically, many researchers give different results for the effect of currency devaluation on real output growth. In some countries, devaluation is contractionary while it is expansionary in some other countries. In some cases, devaluation has mixed results (that is, both contrationary and expansionary) in the short and long run. In some other countries, the effect is neutral.

Typically, this controversial issue is more sensitive in less developed countries. Ratha (2010) supported the traditional view of devaluation for the case of India. The result showed that devaluation has contractionary effect in the short run, but the effect is expansionary in long run.

After 1970s, the international organizations like IMF and WB suggested the less developed countries to adopt the structural adjustment program (SAP). Researchers like Narayan and Narayan (2007) support this idea in their study on Fiji. Devaluation is expansionary in the long and short run; whereas a research conducted on developing countries by Agenor (1991) states that expected devaluation is contractionary while unexpected devaluation has expansionary effect.

Many researchers tested the possible effect of devaluation in the long run as well as short run. Most results suggest that devaluation is contractionary in least developed countries (LDCs), while some others expansionary and some researchers' found neutral (zero) result as well. Edwards (1986) in his study in LDCs, devaluation has contractionary effect in the short run, but the effect changed into expansionary in the long run. Unlike Edwards, Acar (2000) has found different results on the effect of devaluation in less developed countries. Accordingly, devaluation is expansionary in the short run and neutral in the long run. Both Edwards and Acar used lagged variables as explanatory variable in their model.

On the other hand, various researchers obtained different result of devaluation on output growth. Researchers like Gylfason and Schimid (1983), and Connolly (1983) supported the conventional effect of devaluation on output. However, Gylfason and Risager (1984) confirmed the modern view of devaluation in developing countries. Whereas, researchers like Bahmani-Oskooee (1998) found that devaluation has neutral (zero) effect in the long run.

A study done by El-Ramly and Abdel- Haleim (2008) in Egypt on the effect of devaluation on output by applying a VAR model, the effect is contractionary in the short run, whereas expansionary in the long run. This different result of currency devaluation in different countries comes from the economic structures of the countries, the model adopted and the variable used by researchers. Some empirical studies on the effect of devaluation on output is not adequately control economic variables. These economic variables are terms of trade, government expenditure, money supply and exchange rate. Kalyocu et.al (2008) by using error correction model found mixed results. In the same token et al. (2008) by using error correction model found different results in the short and long run.

A study by Galbotswe and Andrias (2011), on the effect of devaluation by using error correction model with appropriate stance for monetary and fiscal policy the effect is contractionary in the long run while it is expansionary in the short run. Miteza (2006) tests the effect of devaluation on output in a group of five transition economy. He use panel unit root and panel co-integration test. Based on the result devaluation has contractionary effect on output in the long run. Kandil and Mirzaie (2005), in their study investigate the effects of anticipated and unanticipated devaluation in less developed countries. Unanticipated devaluation has expansionary effect on output, whereas anticipated devaluation is contractionary. Due to unavailability of data, there is no significant research output on the effect of devaluation in Ethiopian economy. On the other hand, the empirical studies on this topic that focus on Ethiopia have been extremely limited. Taye (1999) as cited in El-Ramly and Abdel-

Table 1. Summary of empirical studies that suggests the contractionary effect of devaluation.

No	Author	Year	Region	Period
1	Van-Wijinbergen	1986	LDCs	
2	Edwards	1986	LDCs	
3	Nunnenkamp and schweickert	1990	LDCs	Short run
4	Agenor	1991	LDCs*	
5	Domac	1997	Turkey*	
6	Taye	1999	Ethiopia	
7	Upadhyaya et al	1999	Latin America	
8	Acar	2000	LDCs	Long and short
9	Miteza	2006	5 Emerging economies	Long run
10	Yiheyis	2006	20 African Countries	Short run
11	El-Ramly and Abdel-Haleim	2008	Egypt	Short run
12	Galebotswe and Andrias	2011	Open import dependent	Long run
13	Ratha	2010	India	Short run
14	Genye	2010	Ethiopia	Short run

Source: Researcher's own computation

Table 2. Summary of empirical studies suggests neutral effect of devaluation.

No	Author	Year	Region	Period
1	Upadhyaya and Upadhyaya	1999	6 Asian countries	
2	Upadhyaya et al	2009	Kenya Tanzania Uganda	Short run

Source: Researcher's own computation

Haliem, (2008), used a macro simulation approach to a macroeconomic model for Ethiopia found that devaluation has positive impact on the current account balance. The result reveals that devaluation reduces import and increase export, while it decreases output and employment.

According to Genye (2010) in Ethiopia, devaluation has contractionary effect in the short run. She uses variables like private investments, openness, education, war beside the exchange rate. Thus, the result suggests that devaluation has expansionary effect on output in the long run (Table 1-3).

MODEL SPECIFICATION

Edwards (1986) investigated whether devaluation is contractionary or expansionary, he considered the important effect of policy variables like monetary, fiscal and trade policy on economic activities in developing countries. In his model, variables included the ratio of government expenditure to nominal income, money supply, terms of trade, the real effective exchange rate and real output are incorporated.

Nominal devaluation translated into real devaluation when the real effective exchange rate is accompanied by policy variables. In this study the real effective exchange rate (REER) is incorporated as variable of interest. This variable is accompanied by macroeconomic variables, in particular fiscal and monetary policy. Appropriate stance for monetary and fiscal policies is included in this model because of their crucial role in sustaining the real devaluation.

This study employs the vector auto-regression (VAR) technique to test the effect of devaluation on output in the Ethiopian economy. The VAR model is a means of overcoming the limitations of traditional approach in estimating economic variables. According to Ramly and Abdel-Haleim (2008), when variables has simultaneity bias the feedback relationship between the dependant and independent variable results in biased coefficients and standard errors if estimated by ordinary least square (OLS) method. Charmeza and Deadman (1997) cited in Ramly and Abdel-Haleim (2008), the traditional multi equation modeling has been criticized on the bases of two main assumptions namely (i) the zero restriction assumption imposed on some variables as a resolution for the identification problem and (ii) initial division of variables in to exogenous and endogenous variables.

In the VAR model there is no particular relationships imposed on the variables. Before estimation, the VAR model the optimal lag length should be determined and all variables deals with endogenous in the system. This avoids the simultaneity problem in the system. The relationships between macroeconomic variables are affected by reverse causation like real exchange rate and output. "Considering the reveres causation between real exchange rate and output, the real devaluation often found to accompany macroeconomic contractions while real revaluation often accompany macroeconomic expansions" Ramly and Abdel-Haleim (2008).

In assessing the impact of devaluation on output, most of the earlier researchers have included in their model a stance of fiscal policy as well as a stance of monetary policy in addition to the interest variable (that is, real exchange rate). Therefore, this study follows researchers like Edwards (1986), Bahmani-Oskooee (1998),

Table 3. Summary of empirical studies that suggests the expansionary effect of devaluation

No	Author	Year	Region	Period
1	Nunnenkamp and schweickert	1990	LDCs	Long run
2	Agenor	1991	LDCs	
3	Bahmani-Oskooee	1998	Fiji	
4	Acar	2000	LDCs	Medium
5	Upadhyaya et al	2004	Greece & Cyrus	Short run
6	Yiheyis	2006	20 African Countries	Long run
7	El-Ramly and Abdel-Haleim	2008	Egypt	Long run
8	Kalyoncu et al	2008	OECD	
9	Upadhyaya et al	2009	Kenya Tanzania Uganda	Long run
10	Galebotswe and Andrias	2011	Small open import dependent countries	Short run
11	Ratha	2010	India	Long run
12	Genye	2010	Ethiopia	Long run

Source**:** Researcher's own computation

Bahmani-Oskooee and Kutan (2008) and Galeboswe and Andrias (2011) to adopt the following model specification:

$$LRGDP_t = \beta_0 + \beta_1 LREER_t + \beta_2 LM2_t + \beta_3 LG_t + \varepsilon_t$$

$RGDP$- Real Gross domestic product is a function of money supply, government expenditure and real effective exchange rate.

$REER$ - Real effective exchange rate has no predetermined sign on output growth.

$M2$ - Broad money supply as a stance of monetary policy has expected positive sign.

G - The amount of total government expenditure as a stance of fiscal policy has expected positive sign.

ε_t Error term

The above equation is a long run model in which real gross domestic product (RGDP) is a measure of real output; M2 is broad money supply as a stance of monetary policy; G is real government expenditure as a measure of fiscal policy; and the real effective exchange rate (REER) is the policy variable, and ε is an error term. Following macroeconomic theories, monetary and fiscal policies have expansionary effect on output in the long run, if we would expect estimates of β_2 and β_3 is positive.

When the REER is decline, it reflects real depreciation of domestic currency against trading partners. Therefore, real depreciation is expansionary, if an estimate of β_1 is negative. Unless, real depreciation is contractionary, if an estimate of β_1 is positive.

RESULTS

Testing variables for stationary is the first step in time series data analysis. Variables should be stationary in the same order, unless it leads to spurious regression results. The co-integration analysis and the associated error correction modeling are among the next steps, and are recent solution to the problem of estimating relationship to the variables that have unit roots. (Table 4).

The first step in estimating a VAR model and undertaking co-integration test is determining the optimal lag length. Length selection criteria which are the sequential modified Likelihood ratio test statistic (LR), final prediction error (FPE), akaike information criteria (AIC) and the hannan-quinn information criterion (HQ), are used in this study. All this information criteria confirms four optimal lag lengths at 5% level of significance (Table 5).

All variables in this model are integrated of the same order I (1). This permits to conduct test for co-integration among variables. The trace statistics adjusted for degrees of freedom confirms that the null hypothesis of one co-integrating vector is not rejected at 5% significance level. This indicates the presence of one co-integrating vector in the system. The test is reported in the following table (Table 6).

The result depicted in the above table reports the existence of one co-integrating vector in the system. The null of no co-integration vector is rejected at 5 % significance level. On the other hand, the null that there exists at most one co-integrating vector is accepted.

$$LRGDPt = \underset{(4.4689)}{0.29061}\, LREERt + \underset{(5.4540)}{0.7451154}\, LM2t - \underset{(-2.8402)}{0.27587}\, LGt$$

In line with the definition of real effective exchange rate, the regression result shows that currency devaluation has contractionary effect in the long run, and broad money supply (M2) as stance of monetary policy produced a significant and positive effect on output. But, total government expenditure as a stance of fiscal policy has a negative effect on output growth.

From the forgoing discussions, the variable real effective exchange rate has positive sign and statistically significant in affecting output growth. Thus, increase in real effective exchange rate by one percent increases

Table 4. Unit root test.

Variables	Specifications	ADF statistics	PP statistics	Order of integration
LRGDP	With C	0.378815	2.5478	
	With C and T	-1.445699	-1.2746	
DLRGDP	With C	-4.2648**	-3.3464*	I(1)
	With C and T	-5.1310**	-3.428847*	
LREER	With C	-1.147379	-1.258273	
	With C and T	-1.623180	-1.734994	
DLREER	With C	-6.1602**	-6.1453**	I(1)
	With C and T	-6.1530**	-6.1339**	
LM2	With C	3.059563	3.50759	
	With C and T	-1.20101	-1.07552	
DLM2	With C	-6.8621**	-6.86377**	I(1)
	With C and T	-7.3285**	-8.79454**	
LG	With C	-1.0496	-1.343112	
	With C and T	3.0793	-1.28045	
DLG	With C	-9.7101**	-9.7829**	I(1)
	With C and T	-9.6100**	-9.6805**	

Table 5. VAR Lag Order Selection Criteria.

Lag	Log L	LR	FPE	AIC	SC	HQ
0	81.72578	NA	4.30e-07	-3.307480	-3.150021	-3.248227
1	317.9179	422.1305	3.68e-11	-12.67736	-11.89006	-12.38109
2	354.8314	59.68991	1.54e-11	-13.56729	-12.15016	-13.03401
3	385.2341	43.98694	8.66e-12	-14.18017	-12.13320	-13.40988
4	424.8030	50.51355*	3.43e-12*	-15.18311*	-12.50630*	-14.17581*
5	438.9455	15.64698	4.25e-12	-15.10406	-11.79742	-13.85975

output growth by 0.29061%. The inverse is true devaluation (decrease in real effective exchange rate) by one percent promoted economic growth by 0.29061% in the long run. This result is consistent with researchers like, Wijinbergen (1986) in LDCs, Taye (1999) in Ethiopia, Upadhyaya et al (1999) Latin America, Acar (2000) in LDCs, Miteza (2006) in 5 emerging countries and Galebotswe and Andrias (2011) in small import dependant countries. But, it is inconsistent with researchers like Nunnenkemp and Scheickert (1990) in LDCs, Yiheyis (2006) in 20 African Countries, El-Ramly and Abdel–Haleim (2008) in Egypt, Rathta, (2010) in India and Genye (2010) in Ethiopia.

From the above long run model, money supply has a positive contribution for the economic growth of Ethiopia. In fact, the coefficient 0.7451154 indicates that a 1% increases in the broad money accounted for 0.7451154% increase in the real gross domestic product in Ethiopia.

Total government expenditure has a negative effect on economic growth implying that, large size of government expenditure goes to current expenditure. Thus, current expenditure may have impeded growth by reducing the resources available for capital expenditure. Data used for this study is after 1997.3Q, during this period, government current expenditure were higher than capital expenditure. Defense expenditure, poverty targeted expenditure (which includes education, health and agriculture) and expenditure on interest payment constitute the most important components of current expenditure. As a result,

Table 6. Co-integration Rank Test.

Null	Alternative	Trace Statistics	Eigen Value	5% critical Value	P - value	Hypothesized No. of CE(s)
Trace[1]						
r = 0	r ≥ 0	57.45124	0.445957	47.85613	0.0049	None *
r ≤ 1	r ≥ 1	29.69709	0.335736	29.79707	0.0513	At most 1
r ≤ 2	r ≥ 2	10.47057	0.145294	15.49471	0.2463	At most 2
r ≤ 3	r ≥ 3	3.091654	0.063663	3.841466	0.0787	At most 3
Maximum Eigen value[2]						
r = 0	r = 1	27.75415	0.445957	27.58434	0.0476	None *
r = 1	r = 2	19.22652	0.335736	21.13162	0.0905	At most 1
r = 2	r = 3	7.378914	0.145294	14.26460	0.4453	At most 2
r = 3	r = 4	3.091654	0.063663	3.841466	0.0787	At most 3

[1]Trace statistics accepted at least one co-integrating vector
[2]Maximum Eigen value accepted there is exactly one co-integrated vector in the system

Table 7. Result for the vector error correction term (VECT).

Variables	Coefficient	Std. Error	t- Value	Prob.
ECM_1	-0.051403	0.02377	-2.16265*	0.0390
D(LRGDP(-1))	1.813536	0.16280	11.1399	0.0000
D(LRGDP(-2))	-1.664093	0.31940	-5.21009	0.0000
D(LRGDP(-3))	0.944422	0.30747	3.07162	0.0046
D(LRGDP(-4))	-0.235922	0.16917	-1.39459	0.1737
D(LREER(-1))	-0.003606	0.01579	-0.22845	0.8209
D(LREER(-2))	-0.007052	0.01461	-0.48281	0.6329
D(LREER(-3))	-0.022531	0.01512	-1.48996	0.1470
D(LREER(-4))	0.016301	0.01575	1.03513	0.3092
D(LM2(-1))	0.037495	0.03685	1.01757	0.3173
D(LM2(-2))	0.018880	0.03269	0.57748	0.5681
D(LM2(-3))	0.049870	0.03221	1.54822	0.1324
D(LM2(-4))	0.033360	0.03211	1.03881	0.3075
D(LG(-1))	0.009482	0.00739	1.28347	0.2095
D(LG(-2))	0.005317	0.00535	0.99362	0.3286
D(LG(-3))	0.007487	0.00460	1.62874	0.1142
D(LG(-4))	0.006558	0.00572	1.14678	0.2608
CONSTANT	-0.003171	0.00340	-0.93387	0.3581

long run responsiveness of real gro9ss domestic product (GDP) to the change in total government expenditure is -0.27587. It means that a 1% increase in total government expenditure decreases real GDP by 0.27587%.

The Dynamic Model

Having obtained the long run model and estimated coefficients, the next step is to determine vector error correction model (VECM) which captures both the long run and short run relationship. The change in the variables represent variation in the short run, while the coefficients obtained for the error correction term represents the speed of adjustment towards the long run relationship (Table 7).

In modeling short-run dynamics, all weakly exogenous variables which are considered in the long run are entered into the right hand side of the model by differencing. The main reason for differencing this variable is due to the fact that there would be high level of correlation between current and lagged values of the variables, which would

therefore result in problems of multi co-linearity.

The coefficients of vector error correction terms interpreted as speed of adjustment to the long run model. This result suggested that, the coefficient is less than one, negative and statistically significant. The result confirms the model converges to its long run and the speed of adjustment is too slow. Only each quarter over 5% of the disequilibrium is adjusted.

In general, this study gives mixed results on the relationship between devaluation and output growth in the short-run and long-run. Results from short run econometric analysis confirms that devaluation has no significant effect on Ethiopian output in the short run, while it is contractionary in the long run.

CONCLUSION

The long and short run results of this study are confirmed by the help of co-integration and vector error correction models. In the long run, devaluation has negative effect on output, while the effect is insignificant in the short run. Thus, in the long run devaluation has contractionary effect in Ethiopian output.

Different authors give different argument for the negative effect of devaluation in the long run. According to Cooper (1971), Krugman and Taylor (1978) and Edwards (1986), devaluation may create contractionary effects through imported cost, real balance, income distribution, external debt, speculative demand, trade liberalization, tax, wage indication and cost of working capital channels. Developing countries like Ethiopia depends on exports of agricultural products and the export elasticity of their product is insensitive. Devaluation increases the cost of imported items and raw materials. Since the major imported item in Ethiopia is petroleum, it significantly affects the value of import. By doing so, devaluation harms real gross domestic product in the long run.

Monetary policy has a positive and significant role in affecting the overall performance of Ethiopian economy. Based on the result, total government expenditure (including current and capital expenditure) has a negative effect on output growth. From the forgoing discussion, current expenditure accounts large proportion of total government expenditure, implying that large proportion of government expenditure goes to consumption expenditure like salaries, pension payment and defense expenditure.

Even though, devaluation helps the growth of some sectors in the economy, the foreign exchange earnings may not be sufficient enough to cover imported costs. This is true when the supply side channel is greater than the demand side channel of devaluation. Thus, the final result is reducing the economic growth unless the government reduces imported materials and reverts to other options. So, government should use other options such as import restriction like import quota, and tariff on selected imported items to improve the external sector rather than rather than intensive devaluation.

The study clarify that real exchange rate variation explain a considerable part of real gross domestic product change in Ethiopia. Since the Ethiopian economy is dominated by primary agricultural products, it is insensitive for the change in exchange rate. Thus, it is not possible for the government to allow market forces to determine the value of Ethiopian birr. Policy intervention is needed to balance the adverse impact of exchange rate movements until the economy become well transformed from agricultural sector to industrial sector and then, the economy becomes less dependent on imported raw materials. To this end, monetary policy plays bigger role since it affects the total output positively and significantly.

Conflict of Interests

The author have not declared any conflict of interests

REFERENCES

Acar M (2000). Devaluation in Developing Countries: Expansionary or Contractionary?. J Econ. Soc. Res. 2(1): 59-83

Agenor PR (1991). Output, devaluation and the real exchange rate in developing countries. Weltwirtschaftliches Archiv. 127(1): 18-41

Bahmani-Oskooee M, Kutan AM (2008). Are Devaluation Contractionary in the Emerging Economies of Eastern Europe. The Center for Research on International Economics and Department of Economics, The University of Wisconsin-Milwaukee Milwaukee, WI 53201.

Bahmani-Oskooee M (1998). Are devaluations contractionary in LDCs? J Econ. Dev. 23(1):131-145

Connolly M (1983). Exchange Rates, Real Economic Activity and the Balance of Payments: Evidence from 1960s, In: E. Classen and P. Salin, (ed.) Recent Issues in the Theory of the Flexible Exchange Rates, North- Holland.

Cooper R (1971). Currency devaluation in developing countries. Essays in International Finance No.86, Princeton, New Jersey: Princeton University Press.

Domac I (1997). Are devaluations contractionary? Evidence from Turkey. J. Econ. Dev. 22(2):145-163

Edwards S (1986). Are devaluations contractionary?. Rev. Econ. Stat. 68 (3):501-508.

El-Ramly H, Abdel-Haleim SM (2008). The Effect of Devaluation on Output in the Egyptian Economy: A vector Autoregression Analysis. Int. Res. J. Finan. Econ.14:82-94.

Galebotswe O, Andrias T (2011). Are devaluation contractionary in small import dependent economy? Evidence from Botswana.

Genye T (2010). Currency devaluation and economic growth the case of Ethiopia; M.Cs thesis, Stockholm University.

Gylfason T, Risager O (1984). Does devaluation improve the current account? Eur. Econ. Rev. 25(1-3):37-64.

Gylfason T, Schmid M (1983). Does devaluation cause stagflation? Can. J. Econ. 16(4):641-654.

Kalyoncu H (2008). Currency Devaluation and Output Growth:An Empirical Evidence from OECD Countries. Finan. Econ. 14(14).

Kandil M, Mirzaie I (2005). The effects of exchange rate fluctuations on output and prices: evidence from developing countries. J. Dev. Areas 38(2):189-219.

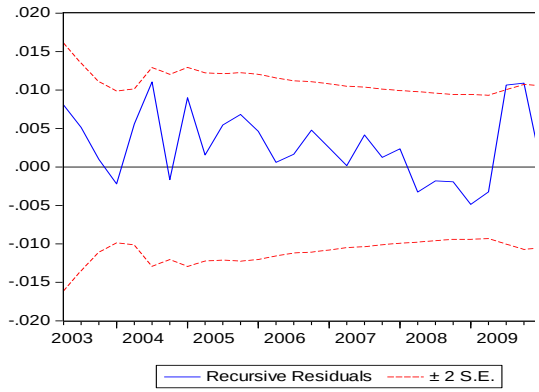
Krugman P, Taylor L (1978). Contractionary effects of devaluation. J. Int. Econ. 8:445-456.

Metiza I (2006). Devaluation and Output in Five transition Economies: A panel cointegration Approach of Poland, Hungary, Czech Republic, Slovakia and Romania, 1993-2000. Appl. Econom. Int. Dev. 6 (1): 77-86.

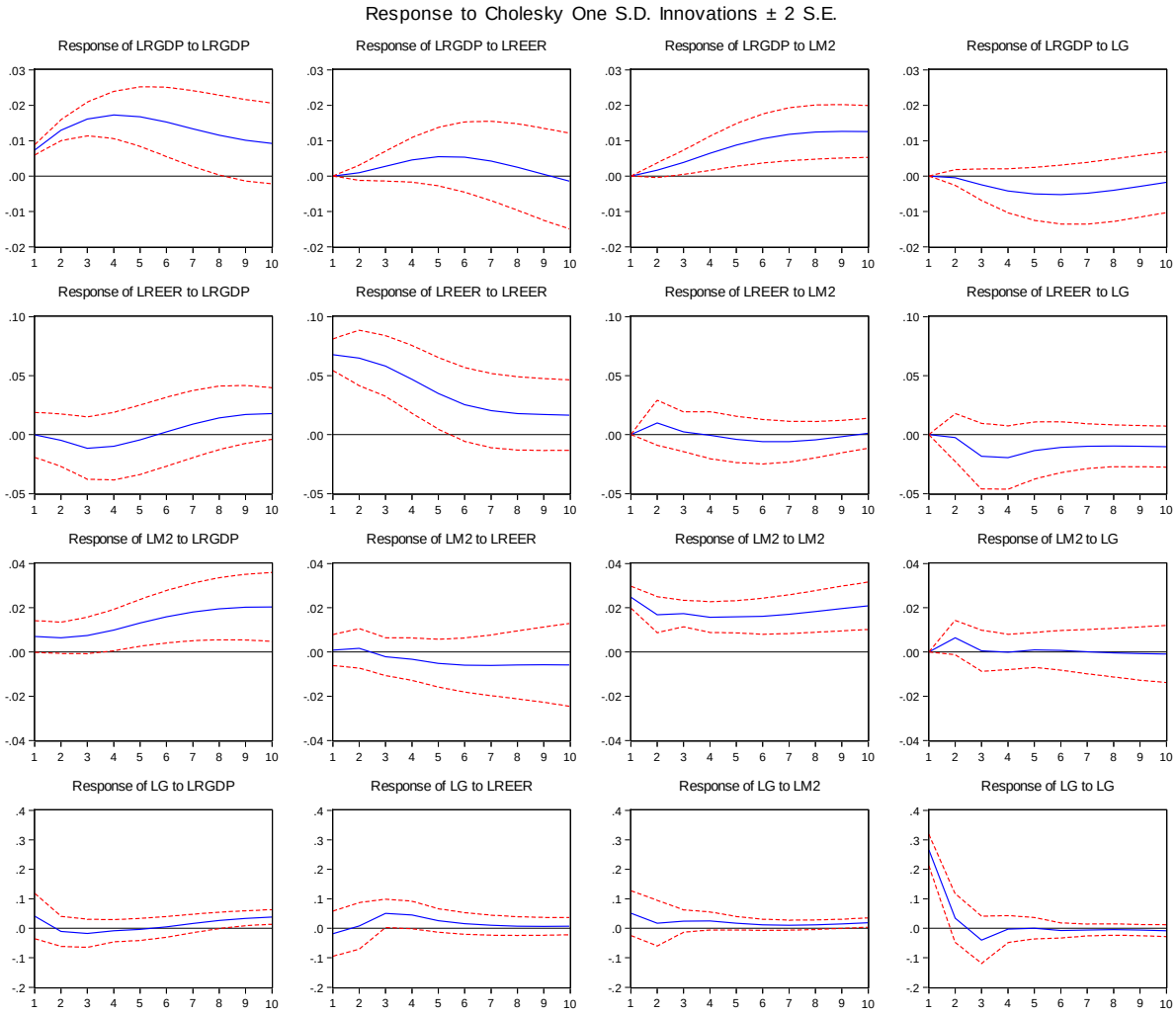
Narayan PK, Narayan S (2007). Is devaluation expansionary or contractionary? Empirical evidence from Fiji. Appl. Econ. 39(20):2589-2598.
Nunnenkamp P, Schweickert R (1990). Adjustment policies and economic growth in developing countries; is devaluation contractionary? Weltwirtschaftliches Archiv. 126(3):474-493.
Ratha A (2010), Does Devaluation work for India? Economics Bulletin, 30(1):247-264.
Taye H (1999). The Impact of Devaluation on Macroeconomic Performance: The Case of Ethiopia. J. Policy Model 21(4):481-496.
Upadhyay MP (1999). Output Effects of Devaluation: Evidence from Asia. J. Dev. Stud. 35:89-103
Upadhyaya KP (1999). Currency Devaluation, Aggregate Output, and the Long Run: An Empirical Study. Economics Letters 64:197-202
Upadhyaya KP, Mixon D, Bhandari R (2004). "Exchange Rate Adjustment and Output in Greece and Cyprus: Evidence from Panel Data", Appl. Finan. Econ. 14:1181-1185.
Upadhyaya KP, Rainish R, Phelan J (2009). "Currency Devaluation and Aggregate Output in East Africa". Indian J. Econ Bus. 8(2). http://www.freepatentsonline.com/article/Indian-Journal-Economics-Business/214101897.html
Van-Wijnbergen S (1986). Exchange rate management and stabilization policies in developing countries. J. Dev. Econ. 23:227-247.
Yiheyis Z (2006). The Effects of Devaluation on Aggregate Output: Empirical Evidence from Africa. Int. Rev. Appl. Econ. 20(1):21-45.

APPENDIX

Model stability test



Impulse response function



UPCOMING CONFERENCES

Academy of World Business, Marketing and Management Development Conference, Dubai, University of Wollongong in Dubai, UAE. 11-14 August 2014

EUMMAS 2014 International Conference on Marketing, Management and Economics, Sarajevo, Bosnia.
29TH -31st August 2014. - Sarajevo, Bosnia and Herzegovina

Conferences and Advert

May 2014

International Conference on Accounting and Finance (ICAF 2014), Colombo, Sri Lanka

International Conference on Construction in a Changing World, Kandalama, Sri Lanka

International Conference on Accounting and Finance, Colombo, Sri Lanka

Learning Innovations and Quality (LINQ 2014)/EFQUEL Innovation Forum, Crete, Greece

Asian Aquaculture Insurance and Risk Management Conference, Kowloon, China

2nd International Conference on Environmental and Economic Impact on Sustainable Development, Ancona, Italy

AICPA Conference on Tax Strategies for the High-Income Individual, Las Vegas, USA

June 2014

AMA 2014 Marketing & Public Policy Conference, Boston, USA

Vietnam International Conference in Finance, Hanoi, Vietnam

20th International Symposium on Society and Resource Management, Hannover, Germany

14th INFINITI Conference on International Finance, Prato, Italy

Internal Revenue Service – Tax Policy Center Research Conference, Washington, USA

12th Annual International Conference on Marketing, Athens, Greece

Journal of Economics and International Finance

Related Journals Published by Academic Journals

- Journal of Hospitality Management and Tourism
- African Journal of Business Management
- Journal of Accounting and Taxation
- International Journal of Sociology and Anthropology
- Journal of Public Administration and Policy Research
- African Journal of Marketing Management

academicJournals