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The Determinants of Foreign Exchange Exposure of EGX30 Companies

"An Empirical Study"

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Abstract

This study aims to examine the evidence for measuring the significance of foreign exchange exposure (FXE) for EGX30 companies during the period from 2000-2016. The problem of the study is concerned with the fluctuations of the foreign exchange (FX) rate in Egypt, which have a great effect on the financial performance of EGX30 companies. Following prior studies (e.g. Aggarwal R., 2010; Lee, 2011 and Sam Agyei-Ampomah K. M., 2012), this study uses Fama-French (FF) model to measure the FXE.The resultof the study shows that 70% of EGX30 companies were significant to the foreign exchange exposure; the results are robust to the choice of model design.

Keywords: foreign exchange exposure, EGX30 companies, Fama-French model, financial performance, foreign exchange rate.

1. Introduction

Foreign exchange exposure (FXE) has been widely discussed recently due to the high fluctuations in the FX rate. The most dangerous effect of the FXE is that it makes the company more exposed to bankruptcy during the fluctuation of the FX rate. Therefore, in order to grow and compete in the market, companies need to improve their protection against the fluctuation in the FX rate.

FXE has been studied by several authors. These authors arrived at different conclusions using different approaches. As (Mwangi J. W., 2015)measured the FXE through measuring the types of the FXE (transaction- translation and economic exposure) applying it on the Oil Marketing Companies and (Peter Blum, 2001) applying it on the Reinsurance Companies. Moreover, some studies measured the FXE using the foreign sales and liability model dependent and cross-sectional model such as (Ngarifrancis Gachua, 2011) and (Lee, 2011)applying it on the Listed Companies and U.S Multinational Companies respectively.

However, (Raj Aggarwal J. T., 2010, pp. 1619-1636) approved that the Domestic Companies face a FXE not less than the Multinational Companies, and he measured the indirect FXE of the U.S Domestic Companies using FF model.

Other studies such as (Sam Agyei-Ampomah K. M., 2012, pp. 251–260) and (d'Almeida, Dec. 2016) used Jorianand FF Model to measure the effect of the FXE on the financial performance of the U.K Non-Financial Companies.

The study will cover some of the most important cases,asit focuses on the stock market because of the high uncertainty of their prices and their high effect on the economic growth through different channels.Our study will also focus on the indirect effect of the FXE on EGX30 companies for two reasons; first, EGX30 companies did not disclose the foreign currency operations in their financial statement, second, high globalization of financial and product markets will increase the competition with the foreign and international companies.

The reminder of the paper is structured as follows: section 2 is the problem identification. Section 3 is the objective of the study. Section 4 is the literature review. Section 5 is the data and methodology. Section 6 is the empirical result. The paper ends with section 7 where we present the summary and conclusion.

2.Problem Identification

The problem of the study is that the fluctuations of the FX rate (jump from L.E 3.55/$ in 2000 to L.E 17.929/$ in 2016) may harm the financial performance of EGX30 companies. Moreover, EGX30 companies did not have a basis to measure the determinants of the FXE in order to mitigate its risk.

3. Objective of the Study

The most important aim is to examine the significance of the FXE in the EGX30 companies. Moreover, the specific objectives of the study are as follows:

- Measure the FXE to mitigate the risk of losses generated from the FX rate fluctuation.

- Identify the most important variables that determine the FXE.
- Investigate the effect of the FXE on the financial performance of EGX30 companies.

4. Literature Review

Measuring the FXEcan be made using (Adler, 1984, pp. 41-50) model, who states a procedure for assessing the FXE using a single factor to estimate the changeability of the company's equity returns to exchange rates.

$$R_{i,t} = \alpha + \gamma_i XR_{j,t} + \varepsilon_i$$

Where $R_{i,t}$ is the return on company i, over the period t. $XR_{j,t}$ is the change in exchange rate. The coefficient γ_i measures the company's total exposure to FX rate.

After that, (Jorion, 1991, pp. 363–376)measured the exposure using two-factor model, which became the standard for controlling the exchange rate risk.

$$R_{i,t} = \alpha + \beta_i R_{m,t} + \gamma_i XR_{j,t} + \varepsilon_i$$

Where $R_{m,t}$ is the return on the marketindex.The rest of the variables are defined as above.Finally, (Bill B. Francis I. H., 2008, pp. 169-196.)measured the exposure using three-factor model, also known as FF model;which studied the FX risk premia or risk premium (the difference between the expected return on a portfolio and the riskless exchange rate).

$$R_{i,t} = \alpha + \beta_1 MRP_t + \beta_2 SMB_t + \beta_3 HML_t + \gamma_i XR_{j,t} + \varepsilon_i$$

Where MRP is the market risk premium, SMB is the return of the small minuslarge stocks. HML is the return for the value relative to growth stocks.(Stephen P.Huffman, 2010, pp. 1-12) found more FXE coefficients that are significant using FF three-factor model compared to the traditional market model. Therefore, the study will use FF model to measure the FXEofEGX30companies.

Various studies found the determinants of the FXE such as (Ines Chaieb, 2013, pp. 781- 808) revealed that the level of exposure in the U.S Company over the period 1973–2005 was negatively related to growth opportunities and size. However, it was positively related to the degree of leverage and international involvement. (Bergbrant, 2014, pp. 885-916) found that exposure rises with the strength of competition. (Raj Aggarwal J. T., 2010, pp. 1619-1636) showed that the domestic companies face significant FXE, and the level of domestic company exposure was inversely related to size. However, it was positively related to the level of research & development expenses and to a smaller extent, positively related to financial leverage (debt ratio) and growth opportunities (MTBV). Finally, it was negatively related to asset turnover, asset tangibility and industry concentration. In other words, small domestic companies that have a great MTBV, debt ratio and little asset turnover located in extremely competitive industries are likely to face the highest exposure to FXrisk.

(Starks, 2013, pp. 709 - 735) showed that the level of FXE elasticity representative for the probability of financial distress, growth opportunities and product uniqueness. Furthermore, companies with a greater probability and higher costs of financial distress exhibit superior returns in response to large exchange rate shocks. In addition,(Donghui Li, 2009, pp. 306-320) found that the significant operational and size effects were documented and that the frequency of FXE increases with the time horizon in the U.S industries.

However, various studies disagree with those previous studies such as (Sam Agyei-Ampomah K. M., 2012, pp. 251–260)pointed out that the determinants of FXE were model-dependent. Nevertheless, the cross-sectional analysis proposes specific-company factors (size, growth opportunities, leverage and liquidity of the Non-Financial Company) have very little or no impact on a company's exposure to FX risk, combining the data across companies and time rises the explanatory power of some of these factors. Additionally, (Kamar, 2015) found that the size, liquidity, debt, asset turnover, profit margin, currency diversification and foreign subsidiary diversification were not significant in determining the FXE.

According to the previous studies, the study will use the following model to identify the most important and significant variables causing this exposure.

$$\gamma_i=\alpha+\beta1\text{ReinR}+\beta2\text{Current}+\beta3\text{MTBV}+\beta4\text{Debt}+\beta5\text{Assetturn}+\beta6\text{Assettang}+\beta7\text{Size}+\beta8\text{HHI}+\beta9\text{ROA}+\beta10\text{GPM}+\in$$

Where ReinR is the reinvestment ratio, Current is the current ratio, MTBV is the market to book value ratio, Debt is the debt ratio, Assetturn is the asset turnover, Assettang is the asset tangibility, Size, HHI is the average industry Herfindahl index, ROA is the return on asset, GPM is the gross profit margin ratio.

5. Data and Methodology

5.1 Data

To conduct this study, secondary data is used. The study is conducted on the EGX30 companies. All the data is collectedovera period of 16 years from 2000 to 2016 for 30 companies.

5.2 Hypotheses

H1 : There is a negative relationship between the firm’s stock return and FX rate.

H2 : There is a positive relationship between the firm’s reinvestment ratio and FXE.

H3 : There is a negative relationship between the firm’s liquidity ratio and FXE.

H4 : There is a negative relationship between the firm’s growth opportunities and FXE.

H5 : There is a positive relationship between the firm’s financial leverage and FXE.

H6 : There is a positive relationship between the firm’s asset turnover and FXE.

H7 : There is a positive relationship between the firm’s asset tangibility and FXE.

H8 : There is a positive relationship between the firm's size and FXE.

H9 : There is a positiverelationship between the firm's competitiveness ratio and FXE.

H10 : There is a negative relationship between the firm's profitability ratio and FXE.

5.3 Identification of the Variables

The study uses two model,

5.3.1. THEFIRST MODEL

5.3.1.1 The dependent variable: Firm's Stock Return.

• The study uses the Firm's Stock Return as a proxyfor the stock return (financial performance) of the EGX30 companies, $R_{i,t} = (\text{Close price} - \text{Open price}) / \text{Open price}$

5.3.1.2 The independent variables:

• MRP (Market Risk Premium) =Market return – Risk-free rate.

$$\text{Where market return} = (p_t - p_{t-1}) / p_{t-1}$$

• SMB (Small MinusBig stocks) =Return of small stocks – Return of large stocks.

Using market capitalization to identify the small and big stocks.

• HML (High Minus Low) = Return of high stocks – Return of low stocks

Using MTBV to identify the high and low stocks.

$$\text{• XR (Exchange Rate)} = (fx_t - fx_{t-1}) / fx_{t-1}$$

5.3.2. THE SECOND MODEL

5.3.2.1The dependent variable

The regression coefficient of the change in the FX rate on the stock return of the EGX 30 companies (FXE).

5.3.2.2 The independent variables:

The study conductsnine variables as follows:

• Reinvestment ratio: it refers to the amount of cash flow that the firm reinvests it.

• Liquidity ratio: it shows the ability of the current assets to cover the current liabilities. As high current ratio indicates that,the firm will be able to pay its obligation and vise verse.

$$\text{Current ratio} = \text{Current Asset} / \text{Current Liability}$$

• Growth opportunity: The study uses MTBV as a proxy for the firm's growth opportunity. If market value is greater than book value, the ratio will be greater than one. On the other hand, if the ratio is lower than one, it indicates that the company reputation and shareholder expectations in the market are not favorable.

$$\text{MTBV ratio} = \text{M. V of capital} / \text{B. V of capital}$$

• Financial leverage: It indicates theproportion of debt usedby the company to finance its assets. A high debt/asset ratio generally means that a company has been aggressive in financing its growth with debt. (Raj Aggarwal J. T., 2010, pp. 1619-1636)

$$\text{Debt ratio} = \text{Total Debt} / \text{Total Asset}$$

• Asset turnover: it is a financial ratio thatshows the degree ofthe firm's efficiency use of its asset in generating sales. A firm with low-profit margin will be likely to have high asset turnover and vise verse.

$$\text{Asset turnover} = \text{Sales} / \text{Total Asset}$$

• Asset tangibility: it is the company's fixed asset compared to its total assets.

$$\text{Asset tangibility} = \text{Fixed Asset} / \text{Total Asset}$$

• Firm's size: the study uses the logarithm market value of the firm's capital.

$$\text{Size} = \text{Log (M.V of Capital)}$$

• Firm's Competitiveness: it refers to the rate of the firm's competitiveness between the EGX30 companies.

$$\text{HHI} = \text{Firm Sales} / \text{Market Sales}$$

• Profitability: it refers to how profitable a company is relative to its total assets. A high ROA indicates that management is effectively utilizing the company's assets to generate profit. ROA and GPM are the best representativesof the profitability ratio of the firm.

$$\text{ROA} = \text{Net Income} / \text{Total Asset}$$

$$\text{GPM} = \text{Net Income} / \text{Revenue}$$

6. Empirical Result

6.1- Descriptive Statistics

The study uses FF model to measure the FXE. The study finds that the FXE may be positive for some companies and negative for others. Therefore, the study divides the companies into two categories with respect to their exposure to FX risk; positive exposure companies and negative exposure companies. As the positive exposure companies are positively affected by the FX rate, they have enough foreign cash flow to mitigate the risk arises from the FXfluctuation for availing investment opportunities. On the contrary, negative exposure companiesare negatively affected by the FX rate; they have major difficulties, losses and bankruptcy during the fluctuation of the FX rate. Therefore, the empirical result for the positive exposure companies may differ from the negative exposure companies.

The FXE will be estimated using FFmodel for each company from 2000 to 2016 for quarterly time horizon. Table (I), in the Appendix, Panel Apresents the mean and standard deviation of the FXE for EGX30companies, Panel Bis for positive exposure companies and Panel Cis fornegative exposure companies.

Last three columns report the companies that have a significant exposure at 10% significance.The table reveals that 70% of EGX30companies are significant to FXE(44.5% positive exposure companies, 55.5% negative exposure companies). According to that, the study will **reject H1**. The empirical result will exclude the 30% of EGX30companiesthat not significant to FXE.

Table (II), in the Appendix, shows the descriptive statistics of the variables used on Model II. It shows that the reinvestment ratio and GPM have the highest variation from the mean and high divergence in their value. 96% of the variation in the reinvestment ratio is generated from the positive exposure sample and the remaining percentage is generated from the negative exposure sample. The dispersion in the GPM ratio is generated from the negative exposure sample as the positive exposure sample has a good homogeneity in the data of the GPM.

It also shows that there are dispersions in current ratio, MTBV, asset turnover, HHI and ROA, as the minimum and maximum for each variable have a great divergence in their value. The dispersions in the data of ROA and current ratio are generated from the positive exposure sample more than the negative exposure sample. However, the dispersions in the data of MTBV, asset turnover and HHIare generatedfrom negative exposure sample more than the positive exposure sample.

Moreover, there is a good homogeneity in the debt ratio, asset tangibility and size, as the minimum and maximum for each variable have a good homogeneity in their value. Therefore, it makes the model more appropriate.

Figure (I) and Figure(II), in the Appendix, will prove the normality of the model.Figure (I) shows that all the points are too close to the line. In addition, Figure (II) clarifies the normality of the FXE along the companies, as it shows that the data's behavior is normal, so

the regression modelcan be used.

6.2- Regression Analysis

The **coefficient of determination**R^2 indicates the proportion of variations in the dependent variable because of the effect of the independent variables.

Model I used to estimate the FXE (γ_i)as discussed before, using FF model.

$$R_{i,t} = \alpha + \beta_1 MRP_t + \beta_2 SMB_t + \beta_3 HML_t + \gamma_i XR_{j,t} + \varepsilon_i \textbf{\textit{Model I}}$$

By using the quarterly data of FXE (γ_i) as a dependent variable in Model II, the regression coefficient of the model (clarified in Table (III)), in the Appendix,can be estimated.

γ_i =α+β1ReinR+β2Current+β3MTBV+β4Debt+β5Assetturn+β6Assettang+β7Size+β8HHI+β9ROA +β10GPM +∈***Model II***

The result in Panel B shows that the reinvestment ratio has a positive effect on the FXE by 0.038. Therefore, when the reinvestment ratio increases by one point, the FXE will increase by 0.038. As a result, companieswith high reinvestment will exhibit more risk due to the high fluctuation in prices. Therefore, they will exhibit high FXE. According to that, the study will **accept H2**.

•The result shows that the current ratio isnotsignificant to the FXE. According to that, the study will **reject H3**.

•The resultsin Panel A&B point out that the MTBV has a negative effect on the FXE by 0.014. Therefore, when the MTBV increases by one point, the FXE will decrease by 0.014. Consequently, when the company has high growth opportunities, it will have more diversifications either through product or through client. Therefore, it will exhibit low FXE. According to that, the study will **accept H4**.

•The results in Panel A&B reveal that the debt ratio has a positive effect on the FXE by 0.227. Therefore, when the debt ratio increases by one point, the FXE will increase by 0.227. The high debt ratio indicates that the firm has poor financial leverage and expected to be more subject to additional risks. According to that, the study will **accept H5**.

•The results in Panel A&B also show that the asset turnover has a positive effect on the FXE by 0.842. Therefore, when the asset turnover increases by one point, the FXE will increase by 0.842. Thus, when the company has a large amount of sales, it will exhibit high FXE due to the high change in prices and competitive environment. According to that, the study will **acceptH6**.

•The results in Panel A&B also show that the asset tangibility has a positive effect on the FXE by 0.161. Therefore, when the asset tangibility increases by one point, the FXE will increase by 0.161. As a result, when the company has high fixed asset compared to total asset, it will exhibit high FXE. The reason behind that is that the fixed asset in the positive exposure

companies may be more sensitive to the FX rate, which leads to high risk associated with this fixed asset. According to that, the study will **accept H7** in Panel A&B.

However,the result in Panel C is not compatible with this result.They can use the fixed asset toprotect themselves from the high FXE, as the lower current assets insulate them from changing input cost,which was replaced by fixed asset. Therefore, the FXE will have minimal impact on the balance sheet. Therefore, when the FX rate has a negative effect on the firm's stock return, the asset tangibility will have a negativeeffect on the FXE. According to that, the study will **reject H7** in Panel C.

•The results in Panel A & Cpoint out that the size of the company has a positive effect on the FXE by 0.151. Therefore, when the size increases by one point, the FXE will increase by 0.151.Consequently, large companies will exhibit more FXE than small companies because of their high ability to compete. According to that, the study will **accept H8**.

•The results in Panel A & Creveal that the HHI has a positive effect on the FXE by 0.829. Therefore, when the HHI increases by one point, the FXE will increase by 0.829. So,FXE is greater when companies face price competition in domestic markets and when the competitors compete using an unfair financial benefit. According to that, the study will **accept H9**.

•The result in Panel B reveals that the GPMratio has a negative effect on the FXE by 0.143. Therefore, when the profit increases by one point, the FXE will decrease by 0.143. As a result,companies with high profitmargin will have more flexibility in pricing goods and services and can absorb any shocks more easily than companies with low profitmargin. Therefore, they will exhibit low FXE.

•The result in Panel B shows that the ROA ratio has a negative effect on the FXE by 3.451. Therefore, when the ROA increases by one point, the FXE will decrease by 3.451. Thus, the companies with high profit will have a natural protection against any risk so they will exhibit low FXE. According to that, the study will **accept H10.**

However, this result is not compatible with Panel Cas their high profit leads to high FXE. The reason behind that is that their profit may be generated from high-risk operations. Therefore, when the FX rate has a negativeeffect on the firm's stock return, the ROA will have a positive effect on the FXE. According to that, the study will **reject H10** in Panel C

•The table concludes that the variables in;

➢ Panel (A) can interpret 20.6% from the change in the FXE. Moreover, the HHIand asset turnover have the most affection on the FXE.

➢ Panel (B) can interpret 40% from the change in the FXE. In addition, the asset tangibility, asset turnover and ROA have the most affection on the FXE.

➢ Panel (C) can interpret 15.7% from the change in the FXE. In addition, theHHI andROA have the most affection on the FXE.

7. Summary &Conclusion

The study estimated the model of FXE and its cross-sectional variation in the EGX30 companies'data for the period from 2000 to 2016. The results show that 70% of EGX30 companies were significant to FXE. Moreover, the FXE is positively related to competitiveness ratio, financial leverage, asset turnover, size, reinvestment ratio, but it is negatively related to growth opportunitiesand GPM; however, the liquidity ratio is not significant to the FXE.

Positive exposure companiescharacterized by achieving profit during inflation period while negative exposure companies characterized by achieving losses during the inflation period. Therefore, the positive exposure companies with high growth opportunities, profitability and low debt ratio will have low FXE. However, the negative exposure companies with high size, profitability and competitiveness will have high FXE. Therefore, the resultsof the positive exposure companiesdiffer from the results of the negative exposure companies.

Figure (III), in the Appendix, shows the effect of the FXE on the financial performance of the EGX30 companies.

Itcan be concluded that EGX30companies were affected positively from the floating of the Egyptian pound. As the stock return (financial performance) was low before 2002.

However, after the floating of the Egyptian pound at 2002-2003, the stock return increased to a high point. Then, in 2007, there was a decrease in the main index of the stock exchange market by 56.4%, which led to decrease the stock prices by more than 50% at the global financial crises. Therefore, the financial performance of EGX30companies decreased in this period by high amount.

After that, itincreaseduntil 2008 and then decreaseduntil 2011 to be negative because of the Egyptian revolution 2011. The financial performance fluctuated after that but not by the same way as before. However, after the floating of the Egyptian pound at the end of 2015, the financial performance began to increase. Therefore, the study can conclude that the floating of the Egyptian pound leads to high performance in the stock market, as the investors expect more profit on their investment.

The result disagrees with (Javed Bin Kamal, 2016, pp. 175-195)that point out that the instability dies immediately after a crisis; meanwhile, positive news generates more instability than negatives. Therefore, the financial performance of EGX30companies has a great connection with the FX rate, especially at the floating period.

According to the result, the study recommendsthe positive exposure companies to depend on the profit to mitigate the FXE, as it has a good homogeneity in its data and the empirical result shows its negative relation with the FXE. However, the negative exposure companies should hold more fixed asset compared to the total asset to mitigate the FXE, as it has a good homogeneity in its data and the empirical result shows its negative relation with the FXE.

The studyalso recommends the EGX30 companies to improve the disclosure of the foreign operation and clarifying the foreign currency for each operation in order to measure the direct

effect of the FX rate on the financial performance of the EGX30 companies.

The study limited to the indirect effect of the EGX30 companies. It also did not use the transaction, translation and economic exposure measures to measure the FXE. Further studies can measure the direct FXE and its effect on the companies' financial statement.

Appendix:

Table (I). Descriptive Statistics of Foreign Exchange Exposure

	Full sample (Panel A)			Positive exposure (Panel B)			Negative exposure (Panel C)			Significant at 0.1 Level		
	N	Mean	Standard deviation	N	Mean	Standard deviation	N	Mean	Standard deviation	Total	+/-	%
3 month	1260	-.20145317	.780599332	525	.28835810	.297082123	735	-.55131837	.829449862	878	391/487	70%

Source: Output of SPSS

Notes: Averaged estimates of foreign exchange exposure for EGX 30 used in the sample from 2000 until 2016.

Table (II). Descriptive Statistics for the Variablesusing Quarterly Data

Panel A	Mean	Std. Deviation	Coefficient of variation	Minimum	Maximum
Reinvestment Ratio	-.0153652	.83747795	-54.5047	-26.86900	.75800
Current Ratio	1.454087	1.6347978	1.124278	.0000	38.0300
MTBV	2.315508	4.7803949	2.064512	-71.3778	32.1200
Debt Ratio	.639788	.2565643	0.401014	.0373	2.0425
Asset Turnover	.115791	.1212990	1.047567	-.0531	1.1536
Asset Tangibility	.437312	.2316803	0.529782	.0073	1.2994
Size	3.694940	.5608549	0.15179	1.7880	5.8885
HHI	.0577970	.11754244	2.033712	-.12490	.99940
ROA	.011470	.0441006	3.844981	-.9210	.2858
GPM	.732407	9.7864579	13.36205	-8.0000	319.5000
Panel B	Mean	Std. Deviation	Coefficient of variation	Minimum	Maximum
Reinvestment Ratio	-.0470190	1.40303847	-29.83981943	-26.86900	.63600
Current Ratio	1.275652	2.0903574	1.638658035	.0000	38.0300
MTBV	2.033663	2.0076264	0.98719719	-3.1300	14.5000
Debt Ratio	.665330	.2207549	0.331797604	.0863	2.0425
Asset Turnover	.152065	.1009714	0.664001578	-.0531	.4783
Asset Tangibility	.487540	.1908851	0.391527054	.0376	1.2994
Size	3.811222	.4724413	0.123960583	2.1048	4.9996
HHI	.1006526	.12676381	1.259419131	-.12490	.79367
ROA	.017427	.0357539	2.051638262	-.3618	.2115
GPM	.342631	.2580007	0.752998707	-.5131	2.3532
Panel C	Mean	Std. Deviation	Coefficient of variation	Minimum	Maximum
Reinvestment Ratio	.0346710	.08094544	2.334672781	-.31600	.75400
Current Ratio	1.566888	1.4393577	0.918609179	.0000	8.5000
MTBV	3.506688	4.0387975	1.15174133	.0000	27.2900
Debt Ratio	.653100	.2049482	0.313808299	.0972	1.4986
Asset Turnover	.093004	.1149759	1.236246828	-.0067	.6245
Asset Tangibility	.341376	.2490487	0.72954367	.0073	.9569
Size	3.571371	.4883675	0.136745104	1.7880	4.9488
HHI	.0465667	.13783767	2.960005111	-.00211	.99940
ROA	.016303	.0237937	1.459467583	-.0695	.2209
GPM	1.367501	15.6464519	11.44163836	-8.0000	319.5000

Source: Output of SPSS

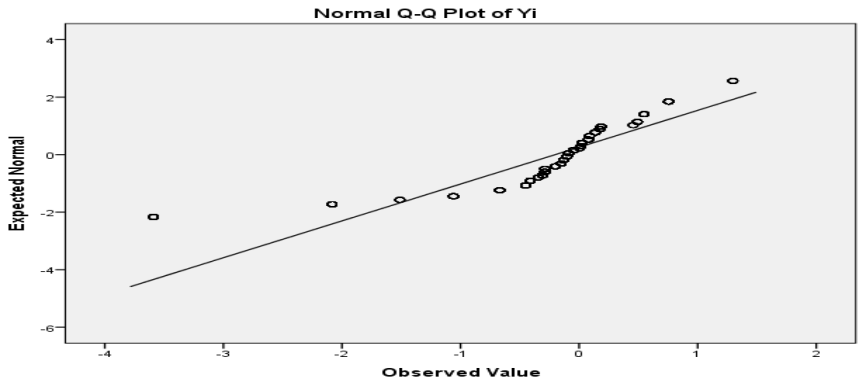
Notes: The sample is the period 2000 until December 2016 (64 quarterly) for EGX30 companies. Panel A is the full sample, Panel B is the positive exposure sample and Panel C is the negative exposure sample.

Table (III). Regression Analysis using Quarterly Data

Dependent variable	Independent variables	β	T		F		R^2	R	Collinearity Statistics	
			value	Sig.	value	Sig.			Tolerance	VIF
Panel A										
Foreign Exchange Exposure	MTBV	-.014	-3.244	.001	34.181	0.000	.206	.461	.955	1.047
	Debt Ratio	.227	-3.140	.002					.852	1.174
	Asset turnover	.842	6.288	.000					.901	1.110
	Asset tangibility	.161	2.448	.015					.807	1.239
	Size	.151	4.380	.000					.894	1.118
	HHI	.829	5.435	.000					.726	1.376
Panel B										
Foreign Exchange Exposure	Reinvestment Ratio	.038	3.393	.001	33.669	0.000	0.4	.642	.560	1.787
	MTBV	-.015	-2.141	.033					.725	1.380
	Debt Ratio	.212	-2.748	.006					.495	2.022
	Asset turnover	.983	6.846	.000					.697	1.435
	Asset tangibility	.744	10.107	.000					.741	1.350
	ROA	-3.451	-6.073	.000					.341	2.931
	GPM	-.143	-2.442	.015					.611	1.638
Panel C										
Foreign exchange exposure	Asset tangibility	-.373	-7.645	.000	20.780	0.000	.157	.406	.977	1.024
	Size	.061	2.213	.027					.984	1.017
	HHI	.583	4.549	.000					.971	1.030
	ROA	1.514	2.626	.009					.985	1.015

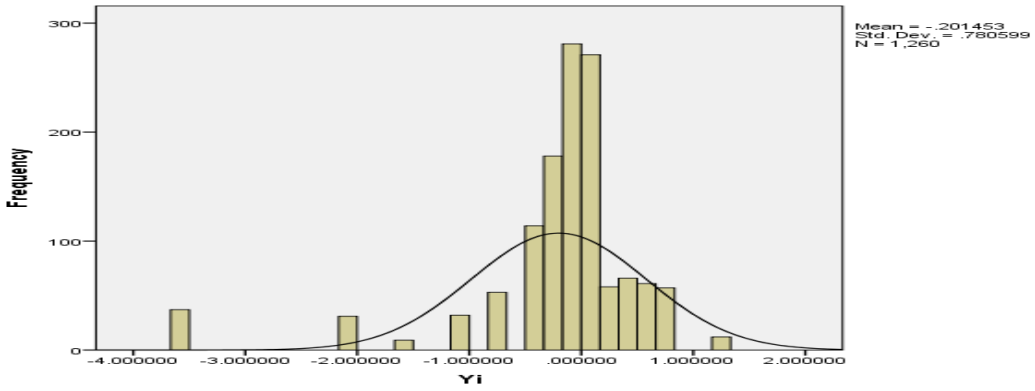
Source: Output of SPSS

Notes: The sample is the period 2000 until December 2016 (64 quarterly) for EGX30 companies. Panel A is the full sample, Panel B is the positive exposure sample and Panel C is the negative exposure sample.



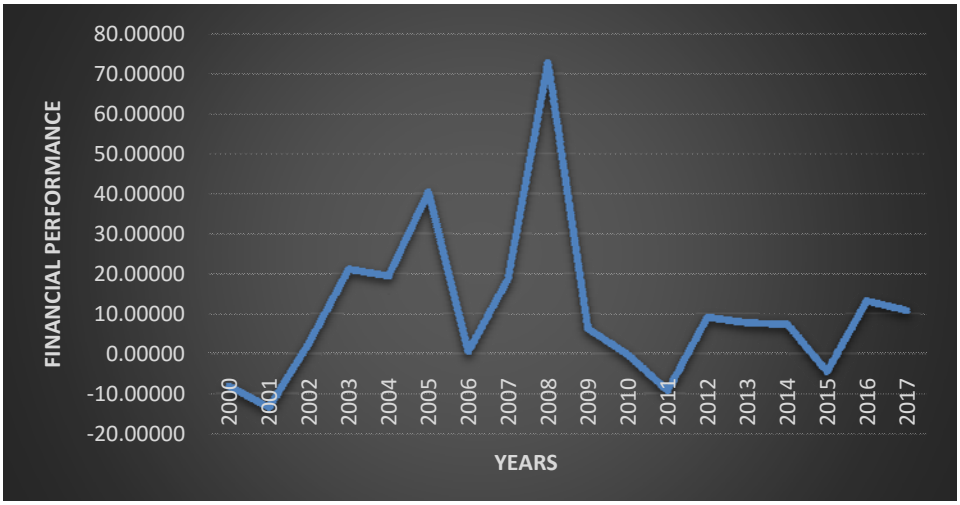
Source: Output of SPSS

Figure (I). Normal Q-Q Plot of the Foreign Exchange Exposure using Quarterly Data



Source: Output of SPSS

Figure (II). Horizontal for Linear Distribution using Quarterly Data



Source: Output of SPSS

Figure (III). The Financial Performance of EGX 30 Companies

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Abbreviations

1- GPM: Gross Profit Margin
2- FF: Fama-French
3- HHI: Average industry Herfindahl index
4- FXE: Foreign Exchange Exposure
5- FX: Foreign Exchange
6- MTBK: Market to Book value
7- ROA: Return on Asset