

Foreign Direct Investment and the Development of the Casablanca Stock Exchange

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Abstract. This paper aims to empirically examine the impact of Foreign direct investment in developing host countries' stock markets development, in our case Morocco's Casablanca stock exchange, while investigating the effect of domestic savings and exchange rate among other variables, we utilized market capitalization as a proportion of GDP, Mad-Dollar exchange rate and Net FDI inflow as proxies for our analysis, using a multiple regression analysis (OLS) with annual time series data for the selected time period of (1993-2013). We estimated an empirical relationship between these variables and tried to depict a closer relationship between Foreign Direct Investment and Stock Market Development, we hypothesized that the increased Foreign Direct Investment in Morocco has a positive effect on its stock market development. The results show a negative impact of foreign direct investment on stock market development, along with a positive impact of the other explanatory variables on the development of the Casablanca Stock Exchange.

Key Words. Foreign direct investment, Stock market development, Exchange rate, OLS, Market capitalisation, Gross domesticsavings.

1 Introduction

To augment their share of FDI flows, developing countries smoothen constraints on foreign direct investment, as well as fortify their macroeconomic stability, escalate the privatisation of state-owned companies, commence domestic financial reforms and the liberation of capital accounts, implement enticing tax incentives and subsidies...

One of the main responsibilities of stock markets is directing funds in the direction of investment projects, thus, there is a positive relationship between FDI and financial markets; Stock markets in particular, enact structural changes in pursuance of foreign investment. Despite this, the amplitude of the FDI's impact on emerging stock market development located in developing countries has received very little attention.

Most of the studies focusing on the relationship between FDI and financial market development place economic growth at the core of this liaison; and when analyzing this association results may rely on whether the variables examined are pertinent to stock markets and banking, the ulterior can sometimes be inconclusive and vague. Similarly, a two-way relationship between stock markets development and FDI can be noticed in an emerging economy; FDI through its investment spillover effects contribute to the development of local stock markets, it raises the probability of multinational companies listing their activities in these stock markets and encourages the institution and adoption of investor friendly regulations; analogously, a well-functioning stock market attracts FDI inflow.

In this paper, we perform an empirical assessment of the association between financial market development and FDI using data from the emerging market of Morocco, the advantage of choosing an emerging market is that data is available for this particular country, and explanatory variables linking economic development and other indicators won't have a considerable impact on the results.

1.1 Institutional Background

Following political and financial changes in developing countries, foreign Direct Investment (FDI) has quickly matured, and despite the fact that consistent flow of capital have been very difficult to attract in the North African region, especially following recent political events, the Moroccan government tried its best to increase the inflow of foreign capital; to do just that, a series of facilitating reforms, macro economic policies, national privatisation programs and trade liberalisation have been encouraged.

Indeed, Morocco proposes conditions that are favorable to investors, such as the strategic position of the kingdom (Morocco's economic development plan relies a great deal on using its location as leverage, it is positioned along the Strait of Gibraltar bounded by Spain and Africa, the kingdom is trying to capitalize on its adjacency to Europe to make the country a regional manufacturing and export hub for international companies), the low salaries and a young population not to mention the accommodating legal framework and assistance; that being said, Morocco's domestic market still has its limitations, the economy still depends on agriculture and the fluctuation in the prices of hydrocarbons, further, bureaucracy has a weighing impact on decision making processes.

1.2 Casablanca stock exchange

The Casablanca Stock Exchange was established in 1929, it has also undergone since then many transformations, the most important one was in 1993 giving birth to the stock market that we see today, a private company with the status of a limited company, Bourse de Casablanca SA, the capital is equitably held by the brokerage houses; it accomplishes one of the best performances in the MENA region being Africa's largest stock market after Johannesburg Stock Exchange and the Nigerian Stock Exchange in Lagos.

2 Literature review

Evidently, a well-managed well-functioning stock market draws foreign investments to a country, most studies show a positive relationship between FDI and Stock market development; Studies like Claessens, Klingebiel, & Schmukler (2001), Adam and Tweneboah (2009), found a strong positive relationship between foreign direct investment and stock market development, Reruns (1983) observed that foreign capital inflows have an effect on stock market development and positively impacts investor participation. Nazir, Nawaz & Gilani (2010) work shows significant positive relationship between FDI and growth of economy. Torre, Gozzi & Schmukler (2006) argues that the reforms in a country via privatisation and supervisory improvements results in the development of its Stock markets. Kalim & Shahbaz (2009), Baker, Foley & Wurgler (2004), Halalmeh & Sayah (2010) also found a positive consequence of FDI on stock market development, Garcia and Liu (1999), Demirguc-Kunt and Levine (1996), Yartey and Adjasi (2007) analyzed the link between macroeconomic variables, financial reform financial market development, financial reform and other factors; Singh (1997) finds a positive relationship between economic growth and stock market development.

Further, there have been a good amount of research on determinants of financial sector development recently, and a respectable number of empirical studies on the role of FDI; this research suggests that FDI in host countries is a substantial source of capital along with domestic private investment, leading to the creation of job opportunities and to the improvement of technology transfer strengthening the economic growth process, Yartey (2008) for instance argues that foreign investment is linked to regulatory reform, transparency and ethical trading practices which inspires the investor's confidence, leading to more capital inflows and investments.

Other studies have shown that financial development raises savings rates and increases economic growth (Naceur, Ghazouani, & Omran 2007), whilst Kalim & Shahbaz (2009) statistically proved a significant positive association between Stock market development and the rate of savings; therefore there's a causal relationship between FDI, economic growth and stock market development.

What is more, the macroeconomic stability of the country is a critical determinant for the development of a stock market, a stable economy attracts foreign investors; in order to measure the

macroeconomic stability of a country, we refer to a few studies that found a relationship between exchange rate and Stock market using unit root and integration tests (Tabak 2006), Dimitrova's (2005) results on the other hand, reported that depressing stock markets may emanate from depreciating currency and vice versa, however, other researchers affirmed that stock market development is only possible if the fluctuations in the exchange rate is stable (Subair & Salihu 2010), or observed a mixed relationship between exchange rate and stock prices (Parsva & Lean 2011).

This paper, hopes to fill the gap in the literature about the Moroccan stock market particularly because of the lack of empirical studies about the kingdom, and especially in the light of recent political and economical changes in light of the tensions the North African region has been subject to (notably the Arab Spring manifestations in neighbouring countries) which has significantly impacted the foreign investment inflows.

Our paper is organized as follows, just like the first section provided a brief introduction and literature review, the second one will try to outline the kingdom's foreign investment climate and strategies and a brief history of the Casablanca stock exchange, moving on to section 3 to discuss the Methodology and the model with data collection methods; the final section will expose our empirical findings along with the conclusion to our study.

3 Methodology and data collection

As the aim of this paper is to examine the impact of foreign direct investment on stock market development in Morocco using multiple regression analysis, we make use of market capitalization as a proportion of GDP, MAD-Dollar exchange rate and Net FDI inflow as the variables we have chosen to investigate this impact.

The data gathered is in the following time frame (1993-2013), the purpose of choosing the year 1993 as a starting point to our analysis is justified by the fact that the Casablanca stock exchange underwent some very important structural changes at that time, and the logic behind the inclusion of the variables and their sources is discussed below:

3.1 Stock Market Development

We shall measure stock market development using market capitalization as a proportion of GDP, which is equal to the total market value of listed shares divided by GDP, the reason for this measure is that it is not as arbitrary as other measures of stock market development (Demirguc-Kunt and Levine, 1996).

The annual data was obtained from IMF- World Bank World Economic Indicators and World Bank.

3.2 The Nominal Exchange Rate

Currency-risk is paramount to foreign investors, indeed, macroeconomic stability plays an important role in attracting FDI and in the development of the stock market, so we use MAD-USD exchange rate as a measure of macroeconomic stability. (Data was obtained from Penn World Table).

3.3 Net Foreign Direct Investment (FDI) Inflow

In this study we use the difference between outward and inward FDI in million USD, the net value represents a country's share of FDI inflow.

3.4 Domestic Savings

Gross domestic savings (current USD) is used as a proxy for Domestic Savings and we also expect a positive significant impact of Domestic Savings on Stock market development according to the literature.

4 Empirical Results and Discussion

4.1 OLS Analysis

Having established that the variables's level of integration using the ADF test, we proceed to test for Multiple regressions. Since our sample size (time series) is less than a few hundred observations, we established that some simple regression tool or just a charting of our data is

enough to make a certain point, and since the main objective of this study is to identify and analyse the role of Foreign Direct Investment in Developing Stock Markets, our Hypothesis is:

The increased Foreign Direct Investment in Morocco has a positive effect on stock market development.

We use the following model in the form of an equation to investigate the impact of Foreign Direct investment on Stock Market Development along with the exchange rate:

$$\text{Eq. 1 } \ln MC = \beta_0 + \beta_1 \ln FDIN + \beta_2 \ln ER + \beta_3 \ln GDS + U \quad (1)$$

Where: MC= Market capitalisation, proxy for Stock Market Development

FDIN= Foreign Direct Investment, net inflows

ER= Exchange Rate

GDS= Gross domestic savings, current USD

(In the above equation, natural log values of the variables are used to transform it into a linear equation and to facilitate the use of ordinary least square method).

4.2 Results

An ordinary least square (OLS) regression method was applied to determine the impact of Foreign Direct Investment on Stock Market Development in Morocco. The regression results for the model are reported in the following table.

Fig.1 Multiple regression equation output (Source: computed by author using the views software)

Variable	Coefficient	Std. Error	t-Statistic	Prob
C	-2,047438	1,994147	-1,026724	0,3208
LNGDS	1,712397	0,204392	8,378020	0,0000
LNER	0,544863	0,793103	0,687002	0,5026
LNFDIN	-0,115137	0,056789	-2,027444	0,0608
R-squared	0,883831	Mean independent var		3,541999
Adjusted R-squared	0,860478	S.D. Dependent var		0,715128
	0,267119	Akaike info criterion		0,382422
S.E. of regression	1,070292	Schwarz criterion		0,581252
Sum squared residue	0,366988	Hannan-Quinn Criter.		0,416072
Log likelihood	38,00385	Durbin-Watson stat		0,930626
F-statistic	0,000000			
Prob(F-statistic)				

The results above indicate that GDS statistically significant at 5%, where FDIN is significant at 10% and ER shows insignificant results.

The adjusted R-squared value is 0.860478, implying that 86% of the variation in the stock market development (proxied here by market capitalisation) is explained by the independent variables, Foreign direct investment, gross domestic savings and exchange rate, which is an indication of a very good fit.

The Durbin-Watson statistic is 0,930626 which is not very close to 2 but somehow still suggests that there is no major autocorrelation problem which implies that the regression has economic meaning. The overall equation is statistically significant as shown by the probability value of the F-statistic (0.000000).

4.3 Diagnostic tests

In order to examine the robustness of the model used diagnostic tests were also conducted; the results are as follows:

-Breach-Godfrey Serial Correlation LM Test: Null hypothesis: No serially correlated errors, the results are F-statistic= 1,61/ Prob. Chi-Square= 0,15, we then fail to reject H0.

-*Normality Test*: Null hypothesis errors are normally distributed, the results are Jarque-Bera=2,23/ Probability= 0,32, we then fail to reject H₀.

-*Heteroskedasticity Test (Breusch-Pagan-Godfrey)*: Null hypothesis homoscedasticity, the results are F-Statistic=1,30/ Prob. Chi-Square=0,41 so we can't reject H₀.

The diagnostic test suggests a good fit of the model. The model does not suffer from the problems of non-normality of the errors, serially correlated errors and heteroskedasticity which can be seen from all the probability values which are greater than 5%.

5 Conclusions

The analysis in this paper aims to investigate which macroeconomic variables, granted with a special interest in FDI, affect stock market development of Morocco specifically. Twenty years of data was collected (1993-2013), and the multiple Regression analysis conducted gave us the following result, the model explains 86 percent of the variation in the dependent variable and the co-efficient sign for the direct foreign investment (FDI) is negative, rejecting our expected hypothesis; which implies that an increase in FDI will result in a decrease of 0,11 in Stock market Development and that the Foreign direct investment has a negative impact over Stock Market Development, contradicting the literature along with previous empirical studies conducted in other countries, which can either be explained by an insufficiency in the data observed or by a collinearity between some variables.

Domestic Savings (GDS) on the other hand has a positive effect on our dependent variable, indeed an increase in Domestic savings causes the Stock Market Development to increase by 1.71, this result is in accordance to previous theories.

The Exchange rate result shows that an increase in the exchange rate means there will be a positive impact over the stock market by 0,54, which is also contrary to the literature as Dimitrova (2005) found that, the depreciation in currency of a country will result in depressing the Stock Market of that country.

The purpose of this study is to analyze the role of FDI along with other important variables in the stock market development of a developing country like Morocco since every country has its own local dynamics. The result of this study and its implication must be further explored and explained by the author and future researchers.

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