STOCK MARKET AND FOREIGN DIRECT INVESTMENT IN ZIMBABWE

Kunofiwa Tsaurai*

Abstract

This study investigates the causality relationship between stock market and foreign direct investment. The subject has been contentious in recent years with three theoretical rationales emerging. The first being that FDI net inflows boost stock market by increasing the amount of funds into the host country's economy. The second suggests that FDI inflows forces the host country government to embrace market friendly policies, regulations and controls that end up boosting stock market. The third theoretical rationale mentions that well-developed and functioning stock markets attracts FDI as multinational firms perceive such a market as a friendly environment whose government is more open to the international community. Using the bi-variate causality test framework, this study discovered that there exists a long run relationship between stock market and FDI net inflows in Zimbabwe. However, the direct causality relationship from either stock market to FDI or from FDI to stock market development could not be found. This implies that stock market development and FDI net inflows in Zimbabwe are indirectly related to each other via some factors whose investigation should be a subject of another research.

Keywords: Zimbabwe, Stock Market Development, Foreign Direct Investment, Co-Integration Testing Approach

*Department of Finance, Risk Management and Banking, University of South Africa, P.O. Box 392, UNISA, 0003, Pretoria, South Africa
Email: tsaurk@unisa.ac.za, kunofiwa.tsaurai@gmail.com

1. Introduction

This research investigates the relationship between stock market development and foreign direct investment (FDI). Quite a number of researchers seem not to agree on the directional causality relationship between stock market development and FDI and these are not limited to Soumare and Tchana (2011), Desai et al (2006) and Henry (2000). Khalidy and Sohrabian (2008) and Rajan and Zingales (2003), Ncube (2007) and Claessen and Laeven (2003).

Ncube (2007) and Claessen and Laeven (2003), suggested that well-developed stock markets are better able to increase foreign capital productivity through allocating financial resources to projects with high rate of return. Furthermore, developed stock markets attract more FDI by providing better risk reduction and diversification mechanisms, argued Ncube (2007). Guiso et al (2004) weighed in by mentioning that developed stock markets enable individuals and companies easy access to external funds at a low cost apart from attracting FDI.

Bartels et al (2009) argued that stock markets avails cheaper information to potential foreign investors thereby contributing to the decline in the level of asymmetric information that normally curtail international capital mobility. According to Levine (1997a), well developed stock markets boost liquidity hence enabling faster trading of financial instruments and settlement. According to Antras et al (2007), weak stock markets forces the scaling down of foreign firms activities as they will be over depending on capital flows from the parent company. A study carried out by Korgaonkar (2012) revealed that stock market development as measured by stock market capitalization and total value traded influenced FDI. Soumare and Tchana (2011) found out that FDI initially boost stock market growth due to FDI related spillover investment opportunities and then a well-developed stock market attract more FDI inflows in return.

For a small country like Zimbabwe characterized by a weak and thin stock market, the role of stock market development in attracting FDI and vice-versa become very crucial. It is against this backdrop that the current research dwells on analyzing the causality relationship between FDI and stock market development in the context of Zimbabwe. Findings from this research will definitely assist the Zimbabwean government not only in devising stock market related strategies of attracting more FDI but also ways of harnessing FDI to
strengthen and solidify stock market development. The research will also contribute towards enrichment of the general body of knowledge in the field of FDI and stock market development.

This study used time series data ranging from 1988 to 2012 to find out the directional causality relationship between stock market development and foreign direct investment. Stationarity investigation of both stock market development and FDI data is done first in order to determine the extent of data volatility. The second procedure is to determine if long run relationship between stock market development and FDI exists. If a long run relationship exists between stock market development and FDI, then a Granger causality test is done to determine the causality direction between the two variables. The research employs FDI (% of GDP) as a measure of FDI and stock market capitalization (% of GDP) as a measure of stock market development. The rest of the study is arranged as follows. Part 2 gives an in depth overview of stock market development and FDI in Zimbabwe whilst part 3 looks at both theoretical and empirical literature review. Part 4 deals with research methodology, part 5 concludes the study whilst part 6 provides the list of references used in the study.

2. Stock Market Development and Foreign Direct Investment in Zimbabwe

The relationship between stock market development and FDI in Zimbabwe has been characterised by ups and downs during the period 1980 to 2012 (see Figure 1).

According to the World Bank (2012), FDI net inflows (% of GDP) into Zimbabwe went up by 0.11 percentage points from -0.23% in 1988 to -0.12% in 1989, whilst stock market capitalization (% of GDP) increased from 9.90% to 12.91% during the same period (see Figure 1). The period from 1990 to 1995 saw FDI net inflows (% of GDP) surging by 1.79 percentage points, from -0.14% to 1.66%. The same period saw stock market capitalization (% of GDP) slightly going up by 1.34 percentage points from 27.32% in 1990 to 28.66% in 1995. The subsequent five-year period recorded another decline in FDI net inflows (% of GDP) in Zimbabwe from 1.66% in 1995 to 0.35% in 2000 whilst stock market capitalization (% of GDP) further increased from 28.66% to 36.36% during the same period. FDI net inflows (% of GDP) went up by 1.44 percentage points between 2000 and 2005, before experiencing another marginal increase of 0.45 percentage points, from 1.79% in 2005 to 2.23% in 2010. On the other hand, stock market capitalization (% of GDP) went up by 5.37 percentage points, from 36.36% in 2000 to 41.73% in 2005. Moreover, stock market capitalization (% of GDP) moved up from 41.73% in 2005 to 154.39% in 2010, representing a massive increase by 112.66 percentage points. The period 2010 to 2012 saw FDI net inflows (% of GDP) going up by 1.84 percentage points whilst stock market

Figure 1. Stock market development and FDI trends in Zimbabwe

capitalization (% of GDP) nosedived by a massive 33.85 percentage points. Stock market capitalization (% of GDP) went up from 2.23% in 2010 to 4.08% in 2012 whilst FDI net inflows (% of GDP) declined from 154.39% in 2010 to 120.54% in 2012.

The percentage changes of FDI net inflows (US$) and stock market capitalisation (US$) in Zimbabwe between 1988 to 2012 is characterised by many fluctuations (see Figure 2).

![Figure 2: Stock market capitalisation and FDI net inflows (% changes) in Zimbabwe -1988 to 2012.](image)

Figure 2. Stock market capitalization and FDI net inflows (% changes) in Zimbabwe (1988-2012)


According to World Bank (2012), the period from 1990 to 1995 saw FDI net inflows into Zimbabwe shrinking by 32.32%, from −US$18.03 million in 1988 to - US$12.21 million in 1990. During the same period, stock market capitalisation surged by 210%, from 774US$ million in 1988 to 2.4US$ billion in 1990. The subsequent five year period saw FDI net inflows into Zimbabwe going up by a massive 1 064%, from -US$12.21 million in 1990 to US$117.70 million in 1995. During the same period, stock market capitalisation in Zimbabwe went down by 15.08%, from US$2.4 billion in 1990 to US$2.038 billion in 1995. Stock market capitalisation experienced a rebound by 19.35% during the period 1995 to 2000 whilst FDI net inflows into Zimbabwe took a knock by 80.29% during the same period. FDI net inflows into Zimbabwe increased by a massive 343.10%, from US$23.20 million in 2000 to US$102.80 million in 2005 whilst stock market capitalisation decreased by a mere 1.26% during the same period (from US$2.432 billion in 2000 to US$2.402 billion in 2005).

Both FDI net inflows and stock market capitalisation registered impressive growth between
2005 and 2010 with the former going up by 61.38% whilst the latter gained 377.85% during the same period. FDI net inflows actually went up from US$102.80 million in 2005 to US$165.90 million in 2010 whilst stock market capitalisation increased from US$2.402 billion in 2005 to US$11.476 billion in 2010. However, the period from 2010 to 2012 saw FDI net inflows into Zimbabwe going up by 140.81% whilst stock market capitalisation only registered a slight increase of 2.96%. Stock market capitalisation was US$165.90 million in 2010 and went up to US$399.50 million in 2012 whilst stock market capitalisation jumped from US$11.476 billion in 2010 to US$11.816 billion in 2012.

3. Review of Related Literature

There are three theoretical rationales that explain the direct causality relationship between FDI and stock market development (Soumare and Tchana, 2011). The first being that FDI net inflows boost stock market development by increasing the amount of funds in the host country’s economy.

The proponents of this category argue that there are high chances that multinational firms that bring FDI inflow end up listing their shares on the stock exchange of the host country. Studies whose views are consistent with this category include but are not limited to Desai et al (2006) and Henry (2000). The second theoretical rationale referred to as the political economy argument suggests that FDI inflows forces the host country government to embrace market-friendly policies, regulations and controls that end up boosting stock market development. Studies whose findings concur with this category were undertaken by Kholdy and Sohrabian (2008) and Rajan and Zingales (2003), among others.

The third theoretical rationale mentions that a well-developed and functioning stock markets attracts FDI as multinational firms perceive such a market as a friendly environment whose government is more open to the international community. Studies that are consistent with this view were undertaken by Desai et al (2006), among others. Due to high competition, a well-functioning and developed stock market is more liquid and reduces the cost of capital thus making the country more attractive to FDI inflows, argued Desai et al (2006). Ezeoha and Cattaneo (2011) suggested that the impact of FMD on stock market development can be divided into three views which include the allocative channel view, economic efficiency view and the liquidity easing view. Proponents of the allocative channel view who include Ncube (2007) and Claessen and Laeven (2003), among others argue that well developed stock markets are better able to increase foreign capital productivity through allocating financial resources to projects with high rate of return. Apart from this allocative efficiency argument, well developed stock markets attract more FDI by providing better risk reduction and diversification mechanisms, argued Ncube (2007) and Claessen and Laeven (2003). According to Guiso et al (2004), well-functioning stock markets are well known not only for attracting FDI but for enabling individuals and companies easy access to external funds at a low cost.

Proponents of the economic efficiency view argue that well developed stock markets have got better capacity to ease information flow and reducing transaction costs thereby easily attracting FDI inflow. Bartels et al (2009) pointed out that stock markets provide cost-cutting information for the industries to potential foreign investors thereby contributing to the decline in the level of asymmetric information that normally curtail international capital mobility. Other studies whose findings are consistent to the economic efficiency view include those undertaken by Meon and Weill (2010), Levine (1997a) King and Levine (1993) and Gordon and Bovenberg (1996), among others.

The liquidity easing view argue that well developed stock markets boost liquidity hence enabling faster trading of financial instruments and settlement (Levine (1997a). Antras et al (2007), another proponent of the liquidity easing view argued that weak stock markets forces the scaling down of foreign firms activities as they will be over depending on capital flows from the parent company.

Many empirical studies whose findings can be grouped into two views have examined the relationship between FDI and stock market development. The first view maintains that FDI promotes stock market development. Studies that support this view were undertaken by Sultana and Pardhasaradhi (2012), Zafar et al (2013), Abzari et al (2011), Omran and Bolbol (2013) and Saibu (2012) among others. The second view mentions that stock markets development promotes FDI. Studies that support this view were undertaken by Korgaonkar (2012), Hailu (2010), Anyanwu (2012), Hussain and Kimuli (2012), Nasser and Gomez (2009), Omran and Bolbol (2003) and Seghir (2009), among others.

Stock market development as measured by stock market capitalization and total value traded and banking sector development as measured by central bank deposits and deposit money bank assets variables influenced FDI, revealed Korgaonkar (2012). Soumare and Tchana (2011) found out that FDI initially boost stock market growth due to FDI related spillover investment opportunities and then a well-developed stock market attract more FDI inflows in return.

The study by Aqeel et al (2004) revealed that stock market index played a negligible role in attracting FDI inflows into Pakistan. On the contrary, a study by Baker et al (2009) suggested the existence of a positive relationship between FDI inflows into the host country and the value of the stock market in the home country. Furthermore, Dhim and Sharma (2013) found out a positive causality relationship
running from FDI inflows to Indian stock market development. A bullish trend on the Indian stock market was also found to have been closely and directly linked to FDI inflows into the Indian economy (Dhiman and Sharma, 2013). Using both the coefficient of correlation and regression analysis, the study by Dhiman and Sharma (2013) proved beyond reasonable doubt that FDI inflows positively influenced the Indian stock market.


4. Research Methodology

a) Data
For the purposes of this study, time series data which ranges from 1988 to 2012 was used. Stock market capitalisation and FDI net inflows data variables were extracted from the World Development Indicators. Stock market capitalisation (% of GDP) was used as a proxy for stock market development whilst FDI net inflows (% of GDP) was used as a proxy for FDI. Both stock market capitalisation and FDI net inflows data were auto correlated at level. However, the auto-correlation for both data variables was dealt away with at 1° difference.

b) Unit root tests
Stock market capitalisation and FDI data sets were tested for stationarity using the Augmented Dickey Fuller (ADF), Philips-Perron (PP) tests and the Dick-Fuller GLS. Unit root tests discovered that FDI data was not stationary at level because the test statistic was found to be greater than the critical values. Stock capitalisation data was found to be stationary at level because the test statistic was lower in value as compared to the critical values at both 1% and 5% (see Table 1).

Unit root test was then done at first difference to examine the stationarity of both sets using the Augmented Dickey Fuller (ADF), Philips-Perron (PP) tests and the Dick-Fuller GLS (see Table 2).

Table 1. Stationarity Tests of Variables in Levels

<table>
<thead>
<tr>
<th>Variable</th>
<th>ADF / PP Test Statistic – Trend &amp; Intercept</th>
<th>Critical Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stock stationarity tests of variables on levels - Augmented Dickey-Fuller - Test</td>
<td></td>
<td></td>
</tr>
<tr>
<td>FDI</td>
<td>-3.363722</td>
<td>-4.394309* -3.612199**</td>
</tr>
<tr>
<td>SCAPT</td>
<td>-4.953835</td>
<td>-4.394309* -3.612199**</td>
</tr>
<tr>
<td>Stock stationarity tests of variables on levels – Phillips-Perron (PP) Test</td>
<td></td>
<td></td>
</tr>
<tr>
<td>FDI</td>
<td>-3.363722</td>
<td>-4.394309* -3.612199**</td>
</tr>
<tr>
<td>SCAPT</td>
<td>-5.690433</td>
<td>-4.394309* -3.612199**</td>
</tr>
<tr>
<td>Stock stationarity tests of variables on levels – Dickey-Fuller GLS (ERS) Test</td>
<td></td>
<td></td>
</tr>
<tr>
<td>FDI</td>
<td>-3.534825</td>
<td>-3.770000* -3.190000**</td>
</tr>
<tr>
<td>SCAPT</td>
<td>-5.174174</td>
<td>-3.770000* -3.190000**</td>
</tr>
</tbody>
</table>

Note: 1) * and ** denote 1% and 5% levels of significance, respectively. 2) * MacKinnon critical values for rejection of hypothesis of a unit root. 3) The truncation lag for the PP tests is based on Newey and West (1987) bandwidth.

Table 2. Stationarity Tests of Variables on first Difference

<table>
<thead>
<tr>
<th>Variable</th>
<th>ADF / PP Test Statistic – Trend &amp; Intercept</th>
<th>Critical Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stock stationarity tests of variables on first Difference - Augmented Dickey-Fuller - Test</td>
<td></td>
<td></td>
</tr>
<tr>
<td>DFDI</td>
<td>-6.753217</td>
<td>-4.416345* -3.622033**</td>
</tr>
<tr>
<td>DSCAPT</td>
<td>-6.312294</td>
<td>-4.467895* -3.644963**</td>
</tr>
<tr>
<td>Stock stationarity tests of variables on first Difference – Phillips-Perron (PP) Test</td>
<td></td>
<td></td>
</tr>
<tr>
<td>DFDI</td>
<td>-8.559776</td>
<td>-4.416345* -3.622033**</td>
</tr>
<tr>
<td>DSCAPT</td>
<td>-15.67991</td>
<td>-4.416345* -3.622033**</td>
</tr>
<tr>
<td>Stock stationarity tests of variables on levels – Dickey-Fuller GLS (ERS) Test</td>
<td></td>
<td></td>
</tr>
<tr>
<td>DFDI</td>
<td>-7.070906</td>
<td>-3.770000* -3.190000**</td>
</tr>
<tr>
<td>DSCAPT</td>
<td>-6.690870</td>
<td>-3.770000* -3.190000**</td>
</tr>
</tbody>
</table>

Note: 1) * and ** denote 1% and 5% levels of significance, respectively. 2) * MacKinnon critical values for rejection of hypothesis of a unit root. 3) The truncation lag for the PP tests is based on Newey and West (1987) bandwidth.
As can be seen in Table 2, both stock market capitalisation and FDI data were found to be stationary at first difference. This was confirmed by the test statistic values that were lower than the critical values at 1% and 5% significance level.

c) Johansen Co-integration Testing Procedure

After removing the auto-correlation and ensuring stationarity in both the stock market capitalization and FDI data sets, the existence of a long run cointegration relationship between stock market and FDI variables was examined using the recently developed ARDL-bounds testing approach which is expressed as follows (see Tsaurai and Odhiambo, 2013).

\[
\Delta \text{InSCAPT}_t = a_0 + \sum_{i=1}^{n} a_i \Delta \text{InSCAPT}_{t-i} + \sum_{i=0}^{p} a_i \Delta \text{InFDI}_{t-i} + a_4 \text{InSCAPT}_{t-1} + \alpha_4 \text{InFDI}_{t-1} + \mu_t \ldots(1)
\]

\[
\Delta \text{InFDI}_t = \beta_0 + \sum_{i=1}^{n} \beta_i \Delta \text{InFDI}_{t-i} + \sum_{i=0}^{s} \beta_i \text{InSCAPT}_{t-i} + \beta_5 \text{Iny} / N_{t-1} + \beta_6 \text{InFDI}_{t-1} + \mu_t \ldots(2)
\]

Where: \(\text{InFDI} = \) FDI; \(\text{InSCAPT} = \) Stock Market Capitalisation Ratio; \(\Delta = \) first difference operator.

The optimal order of lags was found to be 2 for both stock market capitalisation and FDI net inflows first differenced variables in equations (1) and (2). The order of lags was established using the Akaike Information Criterion (AIC) and the Schwartz-Bayesian Criterion (SBC). This procedure must be performed whenever the long run relationship between variables is being investigated under the ARDL-bounds testing procedure. Table 3 shows the co-integration results between the two variables under study.

<table>
<thead>
<tr>
<th>Eigenvalue</th>
<th>Trace Statistic</th>
<th>5% Critical Value</th>
<th>Hypothesized No. of CE(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.626536</td>
<td>37.99896</td>
<td>15.49471</td>
<td>None *</td>
</tr>
<tr>
<td>0.523978</td>
<td>16.33039</td>
<td>3.841466</td>
<td>At most 1*</td>
</tr>
</tbody>
</table>

* Denotes rejection of the hypothesis at the 5% levels. Trace test indicates 2 co-integrating equation at 5% level.

<table>
<thead>
<tr>
<th>Eigenvalue</th>
<th>Max-Eigen Statistic</th>
<th>5% Critical Value</th>
<th>Hypothesized No. of CE(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.626536</td>
<td>21.66857</td>
<td>14.26460</td>
<td>None *</td>
</tr>
<tr>
<td>0.523978</td>
<td>16.33039</td>
<td>3.841466</td>
<td>At most 1*</td>
</tr>
</tbody>
</table>

* Denotes rejection of the hypothesis at the 5% levels. Max-eigenvalue test indicates 2 co-integrating equation at 5% level.

We reject the null hypothesis that there is no significant long run relationship between stock market and FDI net inflows since Eigen value is lower than the critical values. The results show that there is a significant long run relationship between the two variables.

d) Granger causality tests

The next procedure after establishing the existence of a long run relationship between stock market and FDI net inflows would be to determine the directional causality between the two variables. This was done by performing Granger causality tests (see Table 5).

<table>
<thead>
<tr>
<th>Null Hypothesis</th>
<th>Obs</th>
<th>F-Statistic</th>
<th>Probability</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stock market capitalisation does not Granger cause FDI net inflows</td>
<td>23</td>
<td>0.00134</td>
<td>0.9712</td>
</tr>
<tr>
<td>FDI net inflows does not Granger cause stock market capitalisation</td>
<td></td>
<td>0.53559</td>
<td>0.4728</td>
</tr>
</tbody>
</table>

According to the results in Table 5, the author cannot reject the null hypothesis which says that stock market development does not Granger cause FDI and FDI does not Granger cause stock market development. This is confirmed by the probability values that are greater than 0.05 and the F-statistic.
that is less than 4. The study therefore reveals that whilst there is a long run relationship between stock market development and FDI, there is no direct causality from stock market development to FDI net inflows and vice versa in Zimbabwe. This confirms that the long run relationship between stock market development and FDI in Zimbabwe is via a set of indirect group of factors.

5. Conclusion

This study investigated the causality link between FDI and stock market development in Zimbabwe using data spanning from 1988 to 2012. Three theoretical rationales and three views of the relationship between these two variables were extensively discussed. The first theoretical rationale suggested that FDI net inflows boost stock market development through increasing the amount of funds in the host country’s economy. The second theoretical rationale known as the political economy argument suggests that FDI inflows forces the host country government to embrace market friendly policies, regulations and controls that end up boosting stock market development. The third theoretical rationale mentions that a well-developed stock markets attract FDI as multinational firms perceive such a market as a friendly environment whose government is more open to the international community.

Three views of the relationship between stock market development and foreign direct investment encompass the allocative channel view, economic efficiency view and the liquidity easing view (Ezeoha and Cattaneo, 2011). Proponents of the allocative channel view argue that well developed stock markets are better able to increase foreign capital productivity through allocating financial resources to projects with high rate of return. Proponents of the economic efficiency view argue that well developed stock markets have got better capacity to ease information flow and reducing transaction costs thereby easily attracting FDI inflow. The liquidity easing view theorists argue that well developed stock markets boost liquidity hence enabling faster trading of financial instruments and settlement. The investigation used the Phillips-Perron, ADF and the Dickey-Fuller GLS unit-root tests to examine the order of integration.

Using the bi-variate causality test framework, this study discovered that there exists a long run relationship between stock market development and FDI net inflows in Zimbabwe. However, the direct causality relationship from either stock market development to FDI or from FDI to stock market development could not be found. This implies that stock market development and FDI net inflows in Zimbabwe are related via some factors whose investigation should be a subject of another research. The study therefore urges Zimbabwe to concentrate on addressing factors that can help FDI net inflows to boost stock market development or to implement policies that can help stock market of Zimbabwe to attract more FDI net inflows into the country.

References:


