BANKING SECTOR DEVELOPMENT AND FOREIGN DIRECT INVESTMENT. A CASE OF BOTSWANA

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Abstract

The study investigates if there is a causality relationship between banking sector development and FDI inflows in Botswana. Though quite a number of authors have written on the subject, there appears to be no consensus on the directional causality between banking sector development and FDI inflows into the host country. At the moment, three dominant perspectives exist regarding the relationship between banking sector development and FDI inflows into the host country. The first perspective says that banking sector development attracts FDI inflows into the host country. The second perspective suggests that there is a positive feedback effect between banking sector development and FDI inflows whilst the third perspective maintains that there is no direct causality relationship between the two variables. The results from this study are consistent with the third perspective that says there is no direct causality relationship between banking sector development and FDI net inflows. This confirms that the long run relationship between banking sector development and FDI net inflows is an indirect one and the two set of variables affect each other indirectly through other factors in Botswana.

Keywords: Botswana, Banking Sector Development, Foreign Direct Investment, Co-Integration

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1. Introduction

This research is all about the investigation of a directional causality between banking sector development and FDI inflows using Botswana as a case study. There has been a lot of contradicting findings by quite a number of empirical theorists on the causality relationship between banking sector development and FDI inflows.

Alfaro et al (2004) found out that well developed and functioning financial markets not only do they facilitate FDI inflows into the host country but they ensure the host country economically benefits from those FDI inflows. Alfaro et al (2008) found results that agreed with Alfaro et al (2004) on this matter. According to Maduka (2014), banking sector development insignificantly attracted FDI inflow whilst financial markets in general could not register any meaningful FDI inflow into Nigeria. On the contrary, higher financial market development negatively impacted on FDI inflows while trade openness, rule of law and natural resource endowment attracted FDI inflows (Anyanwu, 2012).

However, a study by Saibu (2012) revealed that FDI had a direct significant positive impact on banking sector and financial markets development in Nigeria. Abzari et al (2011) concurred with Saibu (2012) and further revealed a direct causality relationship running from FDI to banking sector and financial market development in D-8 group of countries. On the other hand, Zakaria (2007) noted that FDI positively impacted on banking sector development in a significant way in developing nations.

In the case of Botswana which is characterized by a relatively small size of the banking sector and which heavily relies on FDI for economic prosperity, the directional causality between FDI inflows and banking sector development requires a thorough scrutiny. It is against this backdrop that the current research is attempting to find out the causality direction between banking sector development and FDI inflows into Botswana using the newly developed E-Views 8.

The findings from this study will help Botswana authorities to formulate FDI plans and strategies to ensure that the benefits cascades down to the banking sector. Moreover, the results from this study will guide the Botswana authorities as to how they should position their banking sector in order to attract FDI inflows into the country. The study will also add to the existing body of knowledge that can provide a sound platform for future research.

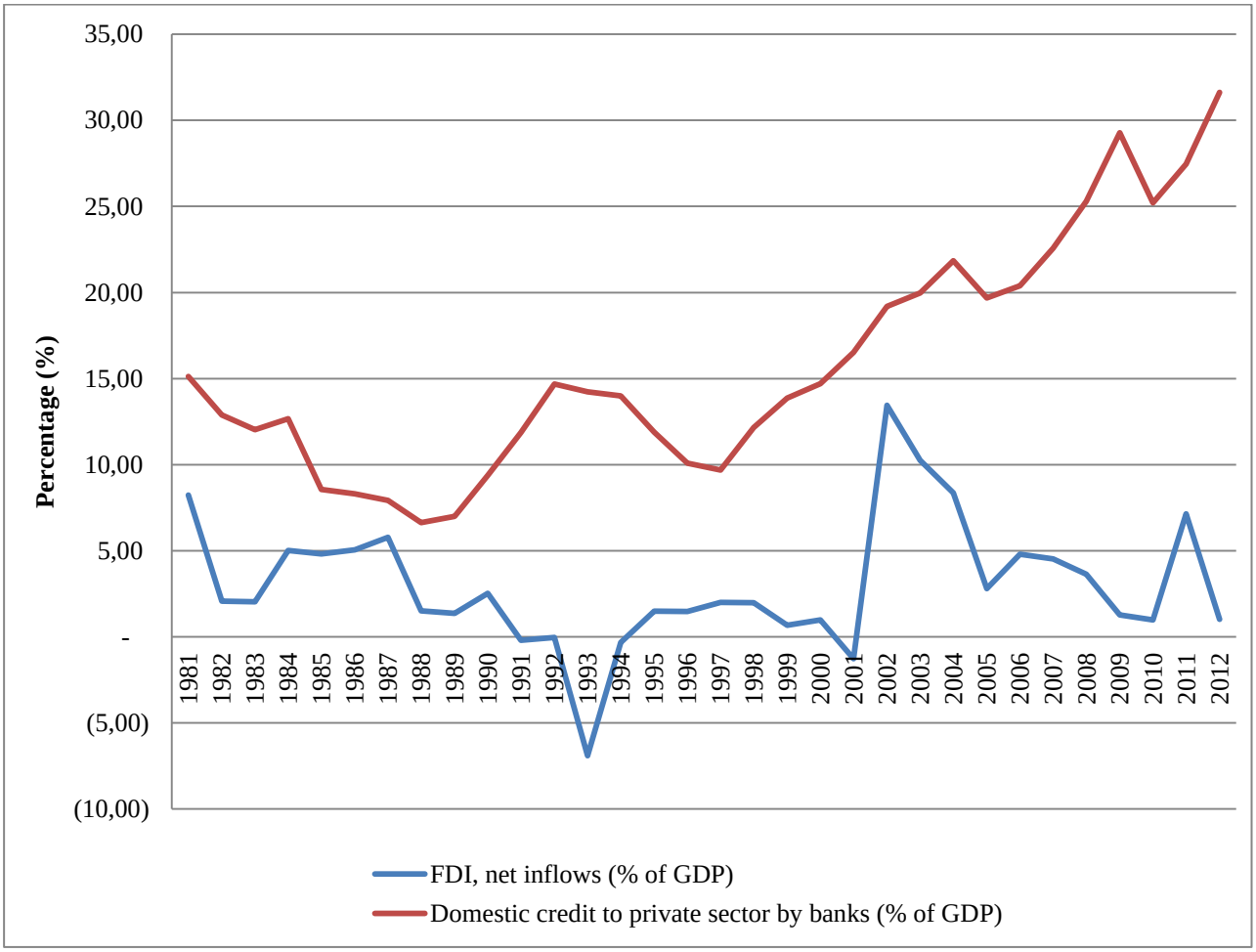
This study employs time series data that spans from 1980 to 2012 in the investigation of the directional causality between banking sector development and FDI inflows in Botswana. We first examine the statistical properties of the data, such as stationarity and then employ the co-integration test to determine the existence of a long-run relationship between banking sector development and FDI inflows in Botswana. Finally, a Granger causality test is

performed to find out the direction of causality between banking sector development and FDI inflows. FDI net inflows (% of GDP) is used as a proxy for FDI inflows and domestic credit to private sector by banks (% of GDP) is used as a proxy for banking sector development in this study. Part 2 describe the trends between banking sector development and FDI inflows in Botswana. Part 3 looks at an overview of the related literature on the subject matter. Part 4 deals with the research methodology. Part 5 concludes the study whilst part 6 summarises all the references used in the study.

2. Banking sector development and FDI inflow trends in Botswana

Figure 1 and 2 shows banking sector development and FDI inflow trends in Botswana. Domestic credit to private sector by banks (% of GDP) is the proxy for banking sector development whilst FDI net inflows (% of GDP) stand in for a FDI inflows measure.

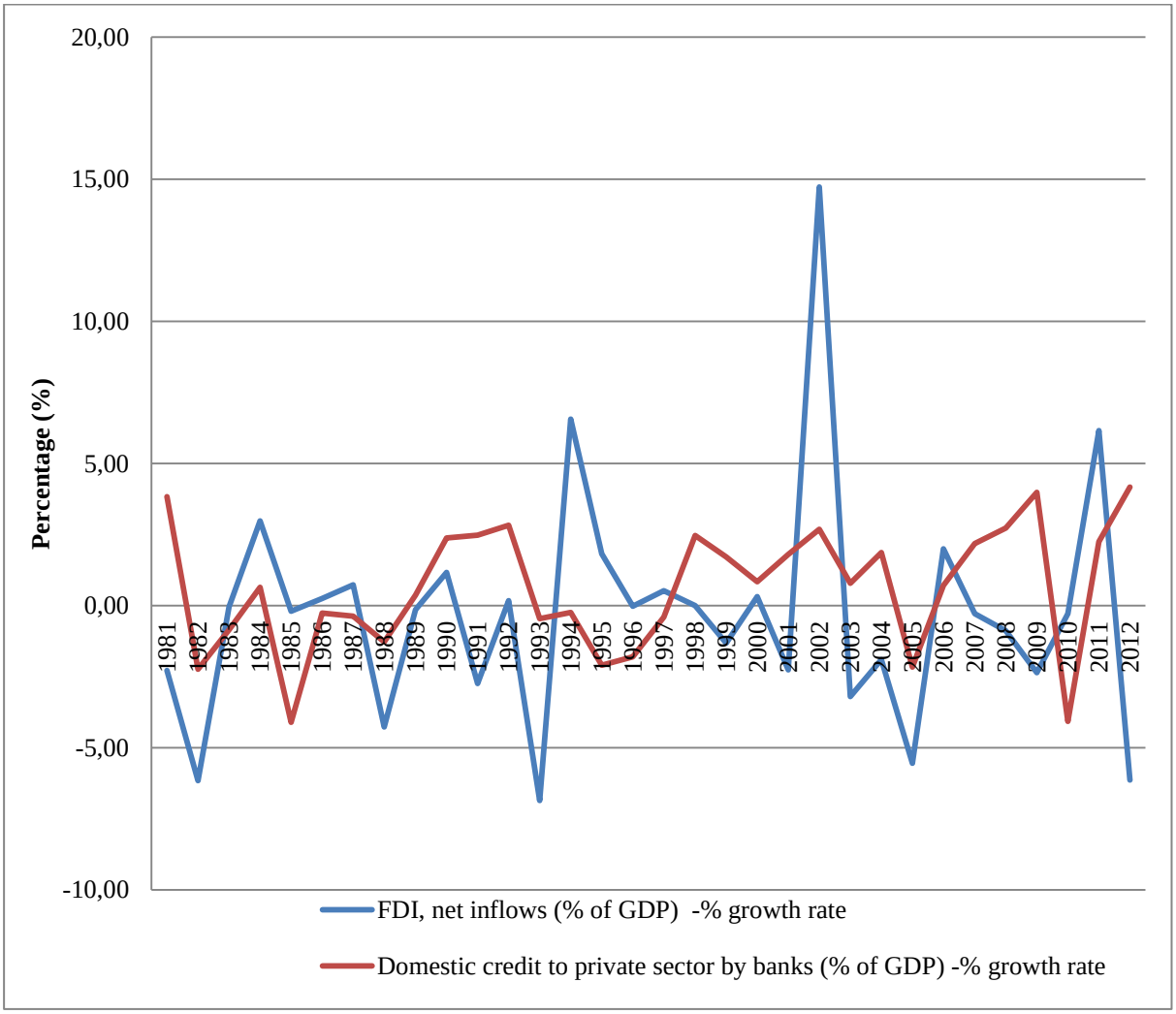
Figure 1. Banking sector development and FDI trends for Botswana (1981-2012)



Source: World Bank (2013)

According to the World Bank (2013), FDI net inflows (% of GDP) declined by 5.71 percentage points from 10.51% in 1980 to 4.81% in 1985, whilst domestic credit to private sector by banks (% of GDP) also decreased from 11.29% to 8.56% during the same period (see Figure 1). The period from 1985 to 1990 saw domestic credit to private sector by banks (% of GDP) surging by 0.83 percentage points, from 8.56% to 9.38%. The same period saw FDI net inflows (% of GDP) slightly declining from 4.81% in 1985 to 2.53% in 1990. The subsequent five-year period recorded another decline in FDI net inflows (% of GDP) in Botswana from 2.53% in 1990 to 1.49% in 1995; whilst domestic credit to private sector by banks (% of GDP) went up from 9.38% to 11.89% during the same period.

Figure 2. FDI and banking sector development (% growth rates) trend for Botswana



Source: World Bank (2013)

FDI net inflows (% of GDP) slightly declined by 0.50 percentage points between 1995 and 2000, before experiencing a positive growth of 1.82 percentage points, from 0.99% in 2000 to 2.81% in 2005. However, domestic credit to private sector by banks (% of GDP) continued on a positive trend, recording a 2.82 percentage points growth during the period 1995 to 2000. During the subsequent five year period, domestic credit to private sector by banks (% of GDP) further grew by a significant 4.96 percentage points, from 14.71% in 2000 to 19.68% in 2005. FDI net inflows (% of GDP) took a knock by 1.82 percentage points, from 2.81% in 2005 to 0.99% in 2010 – before it positively regained by a marginal 0.02 percentage points during the period 2010 to 2012. On the other hand, domestic credit to private sector by banks (% of GDP) continued on a significant positive trend by recording an increase of 5.53 percentage points during the period 2005 to 2010. During this period, domestic credit to private sector by banks (% of GDP) went up from 19.68% in 2005 to 25.21% in 2010. Domestic credit to private sector by banks (% of GDP) further went up from 25.21% in 2010 to 31.62% in 2012, representing an increase by 6.41 percentage points.

3. Review of Related Literature

According to Korgaonkar (2012), countries whose banking system is functional are the ones which can attract FDI inflows. In Pakistan, banking sector as measured by the size of credit to the private sector was found to have a significant impact on FDI inflows (Aqeel et al, 2004). On the contrary, banking sector development was found to be not important when it comes to FDI inflows attraction, argued Zakaria (2007). The same study by Zakaria (2007) however placed so much importance on stock market development as an engine for FDI inflows attraction into the host country.

Banking sector reform and size, foreign exchange, trade liberalisation and legal reforms were discovered to be vital in attracting FDI inflows into host nations, revealed Bevan et al (2004). According

to Bevan et al (2004), one of the major considerations by foreign investors when it comes to the investment destination is an efficient and effective banking sector whose payment system is sound.

A study by Al Nasser and Soydemir (2010) revealed the existence of a feedback relationship between banking sector development and FDI inflows in Latin American countries. However, Adam and Tweneboah (2009) found the existence of a long run relationship between FDI inflows and banking sector size in Ghana. The same study by Adam and Tweneboah (2009) did not go further to investigate the directional causality between FDI and banking sector development.

According to Girma et al (2008), Chinese companies which had access to domestic bank loans and foreign capital inflows were not only innovative but recorded greater success in general. FDI inflows positively impacted innovation among Chinese firms which had access to domestic finance, revealed Girma et al (2008). The same study also discovered a uni-directional causality relationship from FDI inflows to domestic credit finance provided by banks among those companies controlled by the Chinese government.

FDI inflows into China played a very influential role in assisting Chinese companies avoid some credit constraints and other financial huddles, revealed Hericourt and Poncet (2009). FDI inflow made sure that Chinese companies encountered less difficulties and hurdles in accessing credit and financial assistance from the financial institutions. On the other hand, Havrylchyk and Poncet (2007) found out that banking sector development was the prime architect behind different quantities of FDI inflow distribution across Chinese provinces.

Easy credit finance access in the United States (US) attracted plenty of FDI projects into the US from Japanese firms (Klein et al, 2000). The same study by Klein et al (2000) noted that the number of FDI projects undertaken by Japanese firms in the US economy positively correlated with the financial health status of United States (US) banks in general. On the contrary, a study by Bevan et al (2004) revealed that non-bank financial sector development played no role or a very insignificant impact in determining FDI inflows into transitional economies because foreign investors relied more on their own financial resources and made little or no use of local capital market institutions.

Asiedu (2002) discovered that higher rate of return on an investment, stable and efficient banking system and good infrastructure attracted FDI inflows into non-SSA countries whilst having an insignificant influence on FDI flows to SSA countries. The same study further revealed that banking sector development and financial markets development in general including good infrastructure attracted FDI inflow towards non-resource endowed countries as compared to resource endowed countries.

4. Research methodology

FDI net inflows (% of GDP) and domestic credit to private sector by banks (% of GDP) time series data which spans from 1980 to 2012 was used for the purposes of this study. The time series data for both FDI net inflows (% of GDP) and domestic credit to private sector by banks (% of GDP) were extracted from the World Development Indicators. Domestic credit to private sector by banks (% of GDP) was used as a proxy for banking sector development whilst FDI used FDI net inflows (% of GDP) as its proxy.

Domestic credit to private sector by banks (% of GDP) and FDI net inflows (% of GDP) data sets were volatile or auto correlated at level. The volatility or auto-correlation in both data sets was removed at 1st difference. After auto-correlation checks, both data set variables were then tested for stationarity using the Augmented Dickey Fuller (ADF), Philips-Perron (PP) tests and the Dick-Fuller GLS.

Both domestic credit to private sector by banks (% of GDP) and FDI net inflows (% of GDP) data sets were found not to be stationary at level. This is because the test statistic for Augmented Dickey Fuller (ADF), Philips-Perron (PP) tests and the Dick-Fuller GLS was greater than the critical values at 1% level of significance (see Table 1).

Table 1. Stationarity Tests of Variables in Levels

Variable	ADF /PP/GLS Test Statistic – Trend & Intercept	Critical Values
Stationarity Tests of Variables on levels - Augmented Dickey-Fuller - Test		
FDI	-3.710707	-4.273277*
DC	-1.345625	-4.273277*
Stationarity Tests of Variables on levels – Phillips-Perron (PP) Test		
FDI	-3.689774	-4.273277*
DC	-1.296549	-4.394309*
Stationarity Tests of Variables on levels – Dickey-Fuller GLS (ERS) Test		
FDI	-3.365479	-3.770000
DC	-1.424581	-3.770000*

Note:

1) * denote 1% level of significance.
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.
4) Critical values for Dickey-Fuller GLS test are based on Elliot-Rothenberg-Stock (1996, Table 1).

However, both data sets were found to be stationary at first difference under Augmented Dickey Fuller (ADF), Philips-Perron (PP) tests and the Dick-Fuller GLS. This is because the test statistics were lower that the critical values at 1% significance level (refer to Table 2) for results.

Table 2. ***Stationarity Tests of Variables on first Difference***

Variable	ADF /PP/GLS Test Statistic – Trend & Intercept	Critical Values
Stationarity Tests of Variables on first Difference - Augmented Dickey-Fuller - Test		
DFDI	-6.898982	-4.284580*
DDC	-5.649436	-4.284580*
Stationarity Tests of Variables on first Difference – Phillips-Perron (PP) Test		
DFDI	-13.55092	-4.284580*
DDC	-5.884445	-4.284580*
Stationarity Tests of Variables on levels – Dickey-Fuller GLS (ERS) Test		
DFDI	-7.009460	-3.770000*
DDC	-5.091924	-3.770000*

Note:

1) * denote 1% level of significance.
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.
4) Critical values for Dickey-Fuller GLS test are based on Elliot-Rothenberg-Stock (1996, Table 1).

Table 2 stationarity results shows that both FDI and domestic credit to the private sector data variables are integrated of order 1.

Johansen Co-integration Testing Procedure

After stationarity tests on both data sets, the next stage is to determine the existence of a long run co-integrating relationship between the two data variables using an Auto Regressive Distributive Lag (ARDL)-bounds testing approach which is expressed in equation format as follows.

$$\Delta InDC_t = a_0 + \sum_{i=1}^{n} a_{1i}\Delta InDC_{t-i} + \sum_{i=0}^{n} a_{2i}\Delta InFDI_{t-i} + a_3 InDC_{t-1} + a_4 InFDI_{t-1} + \mu_t \text{.....(1)}$$

$$\Delta InFDI_t = \beta_0 + \sum_{i=1}^{n} \beta_{1i}\Delta InFDI_{t-i} + \sum_{i=0}^{n} \beta_{2i} InDC_{t-i} + \beta_3 InDC_{t-1} + \beta_{4I} InFDI_{t-1} + \mu_t \text{.....(2)}$$

Where: InFDI = FDI; InDC = Domestic credit to private sector by banks; Δ = first difference operator.

For both FDI net inflows and domestic credit to the private sector by banks, the optimal order of lags was discovered to be 2. The optimum order of lags was established using the Akaike Information Criterion (AIC) and the Schwartz-Bayesian Criterion (SBC). Table 3 and 4 the results of a long run co-integration results between FDI net inflows and domestic credit to the private sector by banks.

Table 3. Unrestricted Cointegration Rank Test (Trace)

Eigenvalue	Trace Statistic	5% Critical Value	Hypothesized No. of CE(s)
0.474733	30.30207	15.49471	None *
0.306650	10.98659	3.841466	At most 1*

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

Table 4. Unrestricted Cointegration Rank Test (Maximum Eigenvalue)

Eigenvalue	Max-Eigen Statistic	5% Critical Value	Hypothesized No. of CE(s)
0.474733	19.31547	14.26460	None *
0.306650	10.98659	3.841466	At most 1*

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

The null hypothesis that there is no significant long run relationship between domestic credit to the private sector by banks and FDI net inflows is rejected. In other words, the results prove that there is a co-integrating long run relationship between FDI net inflows and domestic credit to the private sector by banks. This is because the Eigen value is lower than the trace statistic, max-eigen statistic and critical values (see Table 3 & 4).

Granger causality tests

Granger causality test was then performed to determine the directional causality between FDI net inflows and domestic credit to the private sector by banks (see Table 5) for results.

Table 5. Granger Causality Tests

Null Hypothesis:	Observations	F-Statistic	Probability
FDI net inflows does not Granger cause domestic credit to private sector by banks	30	0.14109	0.8691
Domestic credit to private sector by banks does not Granger cause FDI net inflows		1.12357	0.3410

Table 5 shows neither FDI net inflows Granger causes domestic credit to the private sector by banks nor domestic credit to the private sector by banks Granger causes FDI net inflows. The author according to results in Table 5 is compelled to accept the null hypothesis that says that domestic credit to the private sector by banks does not Granger cause FDI net inflows and FDI net inflows does not Granger cause domestic credit to the private sector by banks. This is confirmed by the F-statistic that is less than 4 and probability values that are greater than 0.05 (see Table 5).

5. Conclusion

The research investigated the directional causality between banking sector development and FDI inflows in Botswana. The time series data that was used ranged from 1980 to 2012. This data was obtained from World Bank Development Indicators database. Judging from the literature review on the subject, it appears the debate on the directional causality between banking sector development and FDI inflows is actually very far from over. Three dominant perspectives currently exist regarding the relationship between banking sector development and FDI inflows into the host country. The first perspective says that banking sector development attracts FDI inflows into the host country. The second perspective suggests that there is a positive feedback effect between banking sector development and FDI inflows whilst the third perspective maintains that there is no direct causality relationship between banking sector development and FDI net inflows. The results from this study are consistent with the third perspective that says there is no direct causality relationship between banking sector development and FDI net inflows. This confirms that the long run relationship between banking sector development and FDI net inflows is an indirect one and the two set of variables affect each other indirectly through other factors in Botswana. The study urges Botswana authorities to concentrate on addressing variables that can assist FDI net inflows to boost banking sector development or rather to design and implement policies that can help Botswana banking sector to attract more FDI net inflows.

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