CHINESE'S MESSIAH OR MONSTER ACTIVITIES ON ECONOMIC GROWTH IN SOUTHERN AFRICA?

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ABSTRACT

Industrialization of the Chinese economy has made China a formidable force in the global economy. Similarly, Africa has witnessed increased Chinese activity as shown by rising figures in trade with China, Chinese foreign direct investments, Chinese aid and debt to Africa. Despite the rise in Chinese activities in Africa, there is doubt about the impact of such on growth of African economies. Chinese aid and debt are observed to bear hidden costs that outweigh the benefits. Whereas Chinese trade and investments are claimed to be resource seeking and not genuine. The World Bank also observed that Chinese finance is secretive and does not comply with the best practices of good governance. In this regard, this paper aims to assess the impact of Chinese activities in Southern Africa. The paper uses an explanatory research design. On determining the effect of Chinese activities, we adapt a Solow-growth model. A panel data set is assembled using individual countries' time series data on the variables of interest. The study uses real GDP growth rate as the dependent variable. The explanatory variables in this paper are GDP per capita, trade with the rest of the world, rest of the world foreign direct investment, Chinese trade, Chinese debt, Chinese FDI, Chinese aid and population growth. Document analysis is the major data collection tool in this paper. Data on Chinese debt, investments, trade and aid is on documents of the Ministry of Commerce of China and John Hopkins University China Africa Research Initiative. Whereas, data on world trade, FDI inflows, population growth, real GDP growth and GDP per capita is on World Bank and IMF public data sets. We use Stata 15 for data analysis. The diagnostic tests showed that we have a problem of heteroscedasticity and auto-correlation. Whereas, the Hausman model choice test showed that the random effects model is the most efficient and consistent than the fixed effects model. We therefore adopt the Feasible Generalised Least Squares regression (FGLS); as this model is robust under autocorrelation and heteroscedasticity. The regression results show that GDP per capita and rest of the word FDI are the only statistically significant explanatory variables at 5% level of significance. All the other variables that is Chinese trade, Chinese debt, Chinese FDI, Chinese aid, population growth and trade with the rest of the world became statistically significant at 10% level. The study recommends that Southern African countries need to establish a thriving democracy and improve the quality of institutions as a way to attract long term investments from the rest of the world. On dealing with China, the paper observes that there is a possibility that all citizens can benefit from Chinese activities and as a region there is need to change the current systems that benefit the political elite and support corruption at the expense of sustainable and inclusive economic development.

KEY WORDS

China, economic impact, economic challenge, corruption, GDP, public activity, South Africa.

Successful industrialisation of the Chinese economy has made China a notable player in development finance and this has enhanced Beijing's global political sphere of influence (Golley & Songs, 2011). The relationship between China and Africa dates back to the late 1950s when most African countries were sending leaders into exile to seek support in the fight against colonialism (Zafar, 2007; Sanfilippo, 2010; Busse et al, 2014). Since then, there was a loose relationship between China and Africa, improved cooperation sparked at the Forum on China Africa Cooperation summit held in Beijing, China in the year 2000. Since then, China has continued to interface consistently with African leaders with the last China-Africa summit held in 2021 hosted by Senegal (Murphy, 2022; Ministry of Commerce of People's Republic of China, 2023).

China has become a key economic partner for African countries since the year 2000. Chinese imports from Africa rose from US$0.49Billion in 2002 to US$61.95Billion in 2020. On the other hand, Chinese exports to Africa shot from US$5Billion in 2002 to US$113Billion in 2020, making Africa the largest trading partner to China (UN Comtrade, 2023; UNCTAD, 2022). In terms of foreign direct investment, Chinese FDI flows to Africa improved from US$0.49Billion in 2003 to US$43.40Billion in 2020 (MOFCOM, 2020). Comparably, the United States FDI stock in Africa was 0.67Billion in 2003 and US$2.08Billion in 2020 (US Bureau of Analysis, 2022). The statistics on FDI show the deliberate initiative by Chinese public and private institutions to invest in Africa.

Additionally, Chinese aid has gained popularity in Africa and has become a major area of interaction in FOCAC meetings. In 2019, Africa received 44.65% of the total aid advanced by China, comparatively; Asian countries received 36.82% in the same year (China International Development Cooperation Agency, 2022). These statistics show the strategic intention by China to support Africa. Chinese aid often comes as debt forgiveness, aid grants, concessional loans and or zero interest loans (Sun, 2020; Jones & Hameiri, 2020; MOFCOM, 2021). In a FOCAC, coordinating meeting held in 2022, China announced the intention to forgive 23 interest free loans on 17 African countries that matured in 2019 (Foreign Affairs Ministry of China, 2023). In 2003, China spent US$0.63Billion in global aid, compared to US$2.94Billion in aid for the year 2020 (Ministry of Finance of China, 2022).

Chinese debt is another attractive instrument that has attracted many governments in developing countries (Glennie, 2020; Sun, 2020). Chinese lending is based on a "non-gold standard terms". For instance, China does not interfere with the internal affairs of the borrowing government, that is there is no consideration of governance issues, corruption etc. (Yang, 2019; World Bank, 2020). The Chinese Non-Interference Policy makes China an easy source of credit compared to Western lending institutions like the IMF and the World Bank. To add on, state owned institutions dominate the Chinese banking system and this has made it easy for China to drive their foreign policy through finance. The major lenders are the Ministry of Commerce, China Development Bank, China Export and Import Bank, Industrial Bank of China, Bank of China and State Owned Enterprises that offer supplier credit facilities (World Bank, 2023; Alfaro, 2019). Loans advanced to African countries by Chinese lending institutions rose from an aggregate of US$1Biliion in 2002 to a peak of US$28Billion in 2016 (John Hopkins University, China Africa Research Initiative, 2023).

Despite the increased Chinese activities in Africa as shown by trade, foreign direct investment, official aid and debt, there seems to be doubt on the impact of such on growth of African countries. The impact of Chinese finance on growth of developing economies is ambiguous as Chinese debt and aid bear hidden costs, which are consequential for macroeconomic stability (Alfaro & Kanczuk, 2019). Similarly, Chinese investment are concentrated in the primary sector, where Chinese companies are in the process of extracting raw materials for the homeland (Carmignani & Chowdhury, 2012). The World Bank also observed that Chinese finance is secretive and does not comply with the best practices of good governance. In this regard, Chinese finance benefits those who are in power and not the general citizens (World Bank, 2020).Gu (2009), observed that China invests immensely in countries with weak institutions as long as there is a natural resource of interest. For instance, Chinese oil companies own concessions in Angola, Sudan and DRC were conflicts are rife.

The majority of African countries have accessed credit facilities from Chinese state owned enterprises and banks for infrastructural development, telecommunications, acquisition of industrial equipment and agricultural inputs etc. (Barro & Lee (2013). Lack of transparency on these facilities often makes it difficult to evaluate the magnitude of derived benefit (Busse & Grooning, 2013). The majority of borrowing countries fail to service their debt and China strategically comes through with aid packages, which in most instances are in form of debt forgiveness and or restructuring (Farooki & Kaplinsky, 2013). The Chinese communist credit system is such that it traps all resource-endowed countries in debt so that China continues to have advantaged access (Brautigam, 2011). Similarly, trade between Africa and China is such that African exports are mainly raw materials, whilst China exports labour intensive industrial goods (China Africa Business Council, 2022). Simplified trade standards have benefitted China over the years, as it is easy to sell and buy from China than when dealing with Western countries (Meir & Pinto, 2020). Additionally, Chinese FDI is mainly concentrated in the extractive sector, where there are numerous complaints of population and environmental degradation (Mckinsey & Company, 2017; Marina, 2022; UNCTAD, 2022).

With the given background, this study seeks to assess the impact of Chinese activities on growth in Southern Africa. The Chinese activities are individually identified as Chinese lending, Chinese FDI and Chinese aid. There are some studies in this area; however, lack of data has often times limited the depth of analysis. Chileshe (2010) did a study to explore the impact of Chinese activities in Zambia using both primary and secondary data. The findings revealed that China had become a major financier of projects with high social benefits. The study argued that China was playing a pivotal role in avoiding marginalisation and acute poverty in Zambia. Similarly, Guloba et al (2010) did a study to assess the impact of Chinese aid in Uganda. The research revealed that the major forms of aid received included technical assistance, debt relief and debt cancellations. Chinese aid alleviated poverty in Uganda; however, weak institutions were blamed for the economic woes the country was facing.

Contrary, Kolstad and Wiig (2011) found out that Chinese FDI and aid have no effect on growth. The study established that the Chinese finance predominantly flows to countries with vast natural resources. Similarly, Cheung et al (2012) confirmed that Chinese finance shows a resource-seeking motive. Accordingly, market potential, trade intensity and the presence of Chinese contracted projects attracts more FDI. Similarly, strategic relations in trade and FDI drive Chinese economic activities in Africa. Hence, Chinese aid and debt follow growth potential but do not cause growth (Sanfilippo (2009).

Reinsen (2011) did a study using data from the Ministry of Commerce of China, to ascertain the effect of Chinese debt on Africa's debt sustainability. The results showed that Chinese debt increased export capability. The researcher further revealed that the rise in exports increased government income without improving the living standards of the public. Secretive terms of trade helped the political elite to accumulate more wealth. Lastly, the author argued that long-term loans exposed borrowing countries to liquidity risk due to the continued appreciation of the Chinese Renminbi. As such, those who access long-term loans often fail to repay them and are subject to Chinese restructuring terms.

Meyers and Gallagher (2020) used panel data to ascertain the effect of Chinese debt in Latin America. The study observed that China has become the largest lender in the region. Furthermore, the results showed that Chinese finance has failed to support sustainable growth and this was attributable to the fact that Chinese loans do not come with technical assistance. Similarly, Reinhart and Rogoff (2010) applied panel regression analysis on 20 developing countries with the aim to ascertain the relationship between debt and growth. Their results showed that for GDP to debt ratio under 90 percent, debt had no effect on growth. However, for thresholds above 90 percent and reduced the average growth rate by 5 percent. This finding is in conformity with that of Kumar and Woo (2010), who found out that debt, had a negative effect on economic growth of developing countries.

On trade, Renard (2011) did a study to assess the impact of Chinese trade and foreign investments in Africa. The results of the study showed that trade and FDI in the natural resources sector are causing environmental degradation and have clearly failed to improve

community livelihoods .Similarly, Ajakaiye et al (2009) revealed that trade with China has perpetuated weak governance and sustained undemocratic governments in Africa. The study argues that Chinese finance has failed to support sustainable development in Africa.

Although China's engagement in Africa has received attention from a policy perspective, a few studies have fully applied econometric analysis on the subject (World Bank, 2022; Morrissey & Zgovu, 2011; Marius, 2022; McKane, 2021). The majority of studies used both primary data and secondary data in a complementary manner in order to achieve completeness. This study aims to fill the gap by applying econometric analysis on panel data for Southern Africa.

This paper uses an explanatory research design. This research design seeks to establish causal relationship between the dependant variable and the explanatory variables (Panke, 2018). Further, an explanatory research design helps to determine how and why a particular phenomenon is occurring and the results of the variable interaction process provide a model for predicting the future (Matanda, 2022). Similarly, an explanatory research helps to establish the "cause and effect"; this facilitates investigating trends in historical data and model building for future predictions (Njoku, 2019). In this regard, the author uses this method to investigate the effect of Chinese activities on economic growth in Southern Africa.

To determine the effect of Chinese activities in Southern Africa, we use a Solow-growth model. A panel data set is assembled using individual countries' time series data on the variables of interest. The study uses real GDP growth rates as the dependent variable, in line with past literature (Busse et al, 2014; Biggeri & Sanfilippo, 2009; Krugman, 1998; Sachs; 1989; Ndulu & O'Connell). The key variables of the Solow growth model are income per capita, population growth, capital depreciation and the savings rate (Muller et al, 2020; Quah, 1993). The model of the study is as shown:

$$\ln y_{it} = \alpha + \beta \ln y_{it-1} + \Upsilon \ln S_{it} + \theta \ln(n_{it} + g + \textit{б}) + \theta \ln X_{it} + \mu_i + \epsilon_{it}$$

Where: y is the real GDP growth rate, y_{it-1} is GDP per capita, S_{it} is the savings rate, n_{it} is the population growth rate and $(g; \textit{б})$ are changes in technology and the rate of capital stock depreciation respectively.

This paper assumes a constant value for changes in depreciation and technology (Mankiw et al, 1992; Busse et al; 2014). As such, a constant change of 0.05 for depreciation and technological evolution is used.

To test for the effects of Chinese activities in Southern Africa, the paper collects data on Chinese debt, Chinese FDI, Chinese trade and Chinese aid. The model also includes control variables for the rest of the world, which are trade with the rest of the world and annual FDI net inflows as a percentage of GDP. Document analysis is the major data collection tool in this paper. Data on Chinese debt, investments, trade and aid is on documents of the Ministry of Commerce of China and John Hopkins University China Africa Research Initiative. Whereas, data on World trade, net FDI inflows, population growth, real GDP growth and GDP per capita is on World Bank and IMF public data sets.

All the data in this paper is collectable in its annualised form. We use STATA 15 software to perform diagnostic tests on the data and to perform the panel data regression. As data diagnostics, we carry out the Breusch-Pagan Test. The Breusch-Pagan Test tests for heteroscedasticity. One of the major assumptions of the OLS regression is homoscedasticity as this ensures that the results are not spurious (Gujarati, 2004). The null hypothesis of the Breusch-Pagan Test is that homoscedasticity exists and the alternate hypothesis is that heteroscedasticity exists. The decision rule of this test is that if the probability value is less than 0.05, we conclude that heteroscedasticity exists (Maddala, 2009).

The Wu-Hausman Test guides the choice of the model between the fixed effects and the random effects models (Baltagi, 2008). The null hypothesis of the Hausman Test implies that the coefficients of both the fixed effects and the random effects models are consistent but only the coefficients of the random effects model are both consistent and efficient. As such, under the null hypothesis the random effects model is the best choice of the two. On the other hand, the alternate hypothesis spells that only the coefficients of the fixed effects

model are consistent and the random effects model in not consistent. In this regard, if we do not accept the null hypothesis, then the fixed effects model is the superior choice (Brooks, 2008; Davidson et al, 2004). On regression analysis, this paper uses the Feasible Generalised Least Squares (FGLS) method, which is compatible with the random effects model and provides robust results in the presence of heteroscedasticity and autocorrelation.

Data diagnosis started with testing for heteroscedasticity in the residuals. Shown below are the Breusch-Pagan heteroscedasticity test results:

Table 1 – Breusch-Pagan Heteroscedasticity Test

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Breusch-Pagan / Cook-Weisberg test for heteroskedasticity
        Ho: Constant variance
        Variables: fitted values of rgdp


        chi2(1)      =     97.53
        Prob > chi2  =   0.0000
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Source: STATA Results Output.

The Breusch-Pagan heteroscedasticity test showed a p-value of 0.000, which is less than 0.05. Guided by the thumb rule; we reject the null hypothesis of constant variance and conclude that we have heteroscedasticity. Accordingly, the presence of heteroscedasticity also hints the presence of auto-correlation in our model.

Hausman Model Choice Test computed in order to choose the best estimation criteria between the random effects and the fixed effects models. Shown below are the results:

Table 2 – Hausman Model Choice Test

| | —— Coefficients —— | | | |
| | (b) | (B) | (b-B) | sqrt(diag(V_b-V_B)) |
	fe	re	Difference	S.E.
gdp_capita	.200775	.0583194	.1424556	.0483333
china_trade	-.0565446	-.0053602	-.0511844	.0200761
china_debt	-.0172298	-.0158704	-.0013594	.0038001
china_fdi	.0569052	.05583	.0010752	.0115802
china_aid	.0326455	.019395	.0132505	.0071452
pop_growth	.0323668	.0367027	-.0043359	.0210028
trade	.0950276	-.0271443	.1221719	.0808676
fdi	.1003291	.1039466	-.0036175	.0210271

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                          b = consistent under Ho and Ha; obtained from xtreg
           B = inconsistent under Ha, efficient under Ho; obtained from xtreg


      Test:  Ho:  difference in coefficients not systematic


            chi2(8) = (b-B)'[(V_b-V_B)^(-1)](b-B)
                  =         12.78
         Prob>chi2 =       0.1197
         (V_b-V_B is not positive definite)
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Source: STATA Results Output.

The Hausman Test results showed a p-value of 0.1197 which is above 0.05. In this regard, we accept the null hypothesis that the random effects model is appropriate.

The diagnostic tests showed that we have a problem of heteroscedasticity and auto-correlation. Whereas, the Hausman model choice test showed that the random effects model

is the most efficient and consistent than the fixed effects model. We therefore adopt the Feasible Generalised Least Squares regression (FGLS); this type of model is robust under autocorrelation and heteroscedasticity.

Table 3 – Feasible Generalised Least Squares Regression Results

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Cross-sectional time-series FGLS regression

Coefficients:  generalized least squares
Panels:        homoskedastic
Correlation:   no autocorrelation

Estimated covariances     =        1        Number of obs      =       320
Estimated autocorrelations =        0        Number of groups   =        16
Estimated coefficients    =        9        Time periods       =        20
                                            Wald chi2(8)       =     14.17
Log likelihood            = -38.81075       Prob > chi2        =    0.0774
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rgdp	Coef.	Std. Err.	z	P>|z|	[95% Conf. Interval]	
gdp_capita	.0330211	.01558	2.12	0.034	.0024849	.0635574
china_trade	.0009021	.0140456	0.06	0.949	-.0266268	.028431
china_debt	-.014277	.0127481	-1.12	0.263	-.0392628	.0107088
china_fdi	.0322467	.0441183	0.73	0.465	-.0542235	.118717
china_aid	-.0032379	.0505192	-0.06	0.949	-.1022536	.0957779
pop_growth	.0195802	.0244738	0.80	0.424	-.0283876	.0675479
trade	-.0161209	.042851	-0.38	0.707	-.1001073	.0678655
fdi	.1053381	.0461804	2.28	0.023	.0148261	.1958501
_cons	2.591491	.1914327	13.54	0.000	2.21629	2.966692

Source: STATA Results Output.

The regression results show that GDP per capita and rest of the word FDI are the only statistically significant explanatory variables at 5% level of significance. All the other variables that is Chinese trade, Chinese debt, Chinese FDI, Chinese aid, population growth and trade with the rest of the world became statistically significant at 10% level.

The results show that GDP per capita has a positive effect on real GDP growth, where a percentage increase in GDP per capita translates to 3.3% growth rate in real GDP. Similarly, the results show a positive relationship between rest of the world FDI and growth, where a percentage increase in rest of the world FDI causes real GDP to change by 10.53%.

The rest of the variables failed to be statistically significant at the acceptable 5% level of significance. However, worth to note is that Chinese debt, Chinese aid and trade with the rest of the world had a negative effect on real GDP growth. Interestingly also, Chinese trade, Chinese FDI and population growth had a positive effect on real GDP growth.

The positive relationship found between GDP per capita and real GDP growth is consistent with literature, which suggests that an increase in household income will lead to increased consumption and the spill over effects will ultimately trigger firms to increase productivity hence economic growth (Muller et al, 2020).

Interestingly, the rest of the world FDI has a positive effect on growth, whilst Chinese FDI is not statistically significant. These results show that Chinese FDI is exploitative, concentrated and resource seeking that is why it fails to support growth. Our results on FDI are similar to the findings of Kolstad and Wiig (2011), whose results showed that Chinese FDI has no effect on growth and they argued that this is because Chinese capital has a resource-seeking motive.

Chinese debt and aid have no effect on growth. These results resonate with the findings of Sanfilippo (2009), who found out that Chinese aid and debt do not cause growth. In Southern Africa, Chinese aid and debt are associated with secretive-clauses, which promote poor governance and attach natural resources of a country in return for aid and or debt cancellations. Similarly, Marina (2022) argued that most of Chinese loans come with steep repayment terms and often times governments fail to meet their obligations when due. This situation puts the borrowing country in a liquidity trap and this retraces the benefits of Chinese finance.

Trade with China has a positive but insignificant effect on growth. The results on Chinese trade conflict with the findings of Busse et al (2014), who found out that countries trading with China benefit from increased demand for raw materials as this means more revenue inflows. Contrary, Carmignani and Chowdhury (2012) argued that despite increased demand for raw materials in China, most developing countries would fail to reap the benefits due to weak institutions and externalisation of foreign earnings by the political elite. On the other hand, trade with the rest of the world had a negative but statistical insignificant effect on growth. This result confirms that, on trade the problem is not China but it is within Southern Africa.

Lastly, population growth showed a positive but statistically insignificant effect on growth. This result is similar to that of Busse et al (2014), who argued that the lack of significance is likely attributable to high rates of migration of skilled labour and low levels of technological innovations. Clearly, the level of industrialisation and beneficiation is very low in Southern Africa as characterised by vast exports of raw materials.

CONCLUSION

The results of the study have shown that FDI from the rest of the world has the highest impact on growth. In this regard, instead of being carried away by the Look East Policy, authorities must be aware that there are still good investments coming from the rest of the world. On another note, there is need to holistically improve our governance institutions in order to have negotiating power and curb cases of corruption that are counter progressive to development and growth. The results have shown that Southern Africa has a potential to benefit from Chinese trade and Chinese FDI as shown by the positive coefficients. The SADC region needs strong institutions that will ensure that terms of trade are fair, investments are sustainable and that there are no revenue leakages through corruption and hidden secretive clauses in agreements with China. Despite the negative impact of Chinese debt and Chinese aid, there is also potential for bargaining for fair terms as we scout for development finance. On trade in general, the whole region needs to focus on export diversification, value addition and import substitution in order to benefit on trade arrangements with China and the rest of the world.

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