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Foreign Direct Investments Net Inflows into Togo: Modelling and Forecasting

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Abstract:

Modelling and forecasting over the next 13 years, the foreign direct investments net inflows into Togo, was examined in this study using Box-Jekins's methodology. The annual data on the foreign direct investment (FDI) net inflows used in this study spans from 1970 to 2020. The ADF test shows that the FDI net inflows into Togo is I (1). Based on the AIC and the Ljung-Box test, ARIMA (3,1,0) was identified to be the best, adequate and stable model for capturing the dynamism of the FDI net inflows into Togo. The results of the study show that the predicted net inflows of FDI into Togo are likely to exhibit a downward trend over the next 13 years. It also shows that throughout the next 13 years, the expected net inflows of FDI into Togo are likely to be negative and oscillating. Several recommendations have been made to help government and policy makers to act effectively to attract investors toward Togo.

Keywords: ARIMA models, Box-Jekins's methodology, forecasting, net foreign direct investments inflows, Togo.

1. Introduction

In recent years, the world economies have become more and more interconnected and interdependent relying on Foreign Direct Investment (FDI). FDI is defined as an investment that involves a long-term relationship, interest, and management influence by a resident of one country (foreign direct investor / parent enterprise) in an enterprise residing in an economy other than that of the foreign direct investor (Perera, 2015). Two types of FDI are identified; the inward FDI and the outward FDI resulting into the net FDI inflow which can be either positive or negative. Due to the interdependences between economies, every country is seeking for opportunities available in other countries. FDI is shown to be critical in the development of any economy since, within the framework of this financing process, it involves the transfer of financial resources, innovation, and new technology, contributing to the creation of more employment opportunities and in turn promote economic growth. FDI is important for economic growth as shown by (Amadou, 2011; Assiobo Komlan Mawugnon & Fang Qiang, n.d.; Choong & Lim, 2009; Eniekezimene et al., 2024; Raihan, 2024) that there is a positive link between FDI inflows and gross domestic product (GDP) growth. FDI has a powerful impact not only on the economy of the investor's country, but also on the economic and social welfare of the host country (B. Sudha, 2012). Ghebrihiwet and Motchenkova (2017) state that, due to poor standards in technological resources and a lack of financial resources, many if not all developing nations rely on FDI to be able to harvest and sell their natural resources.

Attracting foreign direct investment (FDI) is a priority for Togo. According to Unctad (2021), in 2020 FDI flows to Togo almost doubled to USD 639 million, mainly due to investment from other West African countries. Several policies have been reviewed including the creation of the High Council of Togolese Abroad (HCTE) in this regard. Current government policy is guided by the National Development Plan (PND) and an additional policy roadmap for 2020-2025 that integrates business reforms and infrastructure projects designed to attract investments. All these efforts are aimed at improving the administrative procedures for FDI inflows into Togo. However, according to Unctad (2023), FDI flows into Togo were negative by USD 227 million in 2022, marking the third year in a row with negative inflows. This decline in the FDI net inflows shows concern regarding the future of the country's economy, despite all the efforts of the state to attract investors. Togo's FDI has recently been volatile and below the expectation. Modelling and forecasting could help policy makers to

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analyse the trend and make decision accordingly. It will throw light on the trajectory of the FDI net inflows into Togo for better policy adjustments and decision making.

This study endeavours to build and forecast, over the coming 13 years, the FDI net inflows into Togo using ARIMA models. There has not been yet any study on the modelling and forecasting of FDI net inflows for the case of Togo to the best of our knowledge. So, this study aims to fill the gap.

2. Literature review

The study on the FDI has been the subject of several research, theories as well as empirical discussions. Regrading theories, only two of them are considered in this review: the Hecksher – Ohlin model and the Product Life Cycle theory.

According to Hecksher-Ohlin model, countries export commodities which require, for their production, relatively intensive use of the productive factors found locally in relative abundance. The Product Lifecycle avers that there are four (4) developmental stages through which a product passes namely; the innovative stage, The take off stage, the maturity stage, and the decline stage. In the innovative stage and take off sage, the firm will begin production for the domestic or local market. In the maturity stage, as the firm product tends to grow, the firm will then start exporting the product out of the domestic market to the international market or start exporting to other countries. In the decline stage, which is the final stage, some rival firms start producing the product and then start exporting and selling it to other countries and also to the innovative firms existing in the domestic country.

Magdy Rezk and Aboul Atta Halim (n.d.) examined econometric modelling of FDI inflows into Saudi Arabia during the period 1990-2019. The forecasting hinged on the Box-Jenkins ARIMA model approach. The results of the study show that FDI net inflows into Saudi Arabia are likely to exhibit upward trend in the following 10 years. Using annual time series data on net FDI inflows for Nigeria from 1960 to 2017, Garikai et al. (2019) predicted the FDI net inflows into Nigeria. Box Jenkins ARIMA methodology was used in the study. The study found out that FDI net inflows into Nigeria are likely to deteriorate over the next decade. Yet another study in Nigeria, Idowu (2021) examined econometric modelling and forecasting FDI inflows using Box-Jenkins ARIMA model approach over the period 1970 to 2020 and found out that, in Nigeria FDI net inflows are likely to exhibit very slow upward trend between USD 2.80 billion and USD 3.26 billion over the period 2021 to 2030. Based on data regarding FDI inflows from 2001-2020, Ingale et al. (2023) constructed a customised box-Jenkins ARIMA model for forecasting and analysing the trend of FDI in India and concluded that the model showed an increasing trend. Yet another Indian study (Disha et al., n.d.) using Regression Analysis and Box-Jenkins methodology over the period 1991 to 2021, modelled, forecasted the FDI, and found out that during the next nine years (2022-2030), the total amount of FDI is expected to be USD 907,131 million. The study also found that, FDI will keep coming into India steadily during the same period.

3. Methodology

To fulfil the outlined objectives, a time series forecasting model was constructed based on the ARIMA methodology outlined by Box and Jenkins (1970). Python-3 was used for the purpose. The study utilised the dataset on the FDI net inflows into Togo from 1970 to 2022.

ARIMA modelling is a technique used in statistics and econometrics which gears the advantages of Auto Regression (AR) and Moving Average (MA) models through their Integration to structure the Integrated Auto Regression Moving Average model. It is based on the historical data or the past values of a variable that ARIMA models predict the future trend of that variable.

3.1 Auto Regressive (AR) Process

Given a time series X_t , an Autoregressive process with p order is stated as:

$$X_t = \sum_{i=1}^{p} \emptyset_i X_{t-i} + \mu_t \quad (1)$$

with the assumptions that μ_t is a white noise process, with 0 mean and constant standard deviation (σ^2), where, $X_{t-1}, X_{t-2}, \dots, X_{t-p}$ are the previous observations of X_t . (1) is known as an Autoregressive (AR) process of order p denoted as AR(p). Using the lag operator B, the aforementioned process can be re-written as:

$$X_t = \sum_{i=1}^{p} \emptyset_i B^i X_t + \mu_t \quad (2)$$

it can also be re-written as:

$$\mu_t = \left(1 - \emptyset_1 B - \emptyset_2 B^2 - \cdots - \emptyset_p B^p\right) X_t \quad (3)$$

where: $B^i X_t = X_{t-i}$ (4)

with the same assumptions for μ_t.

3.2 Moving Average (MA) Process

Considering the assumptions mentioned above regarding μ_t, the equation below;

$$X_t = \sum_{i=1}^{q} \psi_i \mu_{t-i} + \mu_t. \quad (5)$$

is known as the moving average process of order q, denoted as MA(q).

μ_t is the current disturbance while $\mu_{t-1}, \mu_{t-2}, \cdots, \mu_{t-q}$ are past disturbances. This process can also be re-written using the lag operator B as:

$$X_t = \left(\psi_1 B + \psi_2 B^2 + \cdots + \emptyset_q B^q\right)\mu_t + \mu_t \quad \text{or} \quad (6)$$

$$X_t = \sum_{i=1}^{q} \psi_i B^i \mu_t + \mu_t \quad (7)$$

For both models, it stands that the future of the series X_t, depends on the behaviour of the series (respectively errors) of the past p (respectively q) terms.

3.3 Auto Regressive Moving Average (ARMA) Process

ARMA models are obtained by combining the Autoregressive model (AR) of order p and a Moving Average (MA) of order q models. For an ARMA model, p and q are respectively the lag order of the autoregressive and the moving average components. By combining (1) and (5), an ARMA (p, q) model is specified as:

$$X_t = \sum_{i=1}^{p} \emptyset_i X_{t-i} + \mu_t - \sum_{i=1}^{q} \psi_i \mu_{t-i} \quad (8)$$

It can also be re-written by using the lag operator B as:

$$X_t = \sum_{i=1}^{p} \emptyset_i B^i X_t + \mu_t - \sum_{i=1}^{p} \psi_i B^i \mu_t \quad (9)$$

It is worth mentioning that an ARMA(p,0) process corresponds to an AR process with order p. In the same way an ARMA (0, q) process corresponds to a MA process with order q.

3.4 Auto Regressive Integrated Moving Average (ARIMA) process

ARMA models are used under the assumption of stationarity of the series. In fact, in order to leverage ARMA models to model a time series, the series should be stationary. However, most of econometric time series due to the trend, seasonal variation and the influence of the external factors are non-stationary. In a scenario where the series are not stationary, ARMA models are not appropriate. Since through the integration, the stationarity can be reached (the simplest way to get a stationary series), the ARIMA models will be much more appropriate. ARIMA models are the generalisation of the ARMA models. A process X_t has an ARIMA (p, d, q) representation if it is I(d), meaning that it has been integrated d times before reaching the stationarity, and then has an ARMA (p, q) representation. All AR, MA and ARMA models belong also to the ARIMA category. An ARMA (p, q) model for instance is an ARIMA (p, 0, q). It is worth mentioning that the choice of p, q, and d can be done based of the auto-correlation function (ACF) and partial auto-correlation function (PACF).

3.5 The Box – Jenkins Methodology:

George Box and Gwilym Jenkins developed a set of procedures to practically identify and estimate time series models satisfying the principle of parsimony without assuming any particular trend in the historical data. Time series can be modelled based on the approach of Box and Jenkins using ARMA models or ARIMA depending on the nature of the series (stationary or not). For non-stationary series, differences can be considered to reach stationarity. Box Jekins's approach is an iterative approach comprising three steps: the model identification, the parameter estimations, and the diagnostic checking. Toward the model selection, differencing the model until achieving stationarity. After achieving stationarity, to choose the right numbers for the lag order of the autoregression and the moving average, the researcher then examines the correlogram. The Akaike Information Criterion (AIC) or Bayesian Information Criterion (BIC) may be used for the purpose.

After this step, the data is used to estimate the parameters of the model. In the diagnostic checking, residuals are generated and tested to see whether they satisfy the characteristics of a white noise process. If not, the model would need to be re-specified, and the process will be repeated until satisfaction.

4. Data Sources

53 observations of annual FDI net inflows into Togo were collected from the World Bank online database which is renowned to be a reliable source of generating macroeconomic data. The data spans from 1970 to 2022 and is quantified in US dollars.

5. Results and Discussions

Table1 indicates that on average, the net inflows of FDI into Togo from 1970 to 2022 are positive. Over the study period, it was found that the minimum FDI net inflows to Togo is - USD 226,939,150.0, while the maximum FDI Net inflows is USD 7.287109e+08. The positive skewness indicates that the FDI Net inflows into Togo is positively skewed. The kurtosis is found to be greater than 3 indicating that the data are heavy tailed.

5.1 Diagnostic test and model formulation

Figure 1 shows the trend of the FDI net inflows into Togo from 1970 to 2022 measured in US dollars. To verify the stationarity of the series, firstly a visual inspection of the series was done to get some insights. However, the visual inspection of the correlogram by considering the autocorrelation and partial auto-correlation functions Figure 2, could not tell with certainty whether the series are stationary or not. To remove uncertainty, the Augmented Dickey Fuller was performed. The appropriate lag lengths were selected according to the Akaike Information criterion. The p-value are calculated using MacKinnon (1996) one-sided p-values.

Figures 1-2 and Tables 2-4 clearly indicate that the Togolese FDI net Inflows are not stationary except at levels without intercept and trend at 90% of confidence. Thus, the need to check stationarity at first difference.

Tables 5-7 indicate that the FDI net Inflows into Togo is stationary in first differences at all levels. Thus, it is integrated of the first order, so the FDI net inflows into Togo is I (1).

5.2 Model selection:

Six ARIMA models were selected for evaluation. The Table8 above shows that the model with the lowest AIC is ARIMA (3,1,0). The research considered the AIC for model selection. Therefore, ARIMA (3,1,0) was the preferred model. Even for the BIC, ARIMA (3,1,0) has a relatively small value compared to most of the rest of the models.

To check the nature of the residuals generated by the ARIMA (3,1,0) model, Augmented Dickey Fuller Test (ADF) and the Ljung-Box test were performed.

Tables 9-11 clearly show that, the errors generated by the ARIMA (3,1,0) are stationary. The results of the Ljung-Box test presented in Table 11 prove that, the residuals are independently distributed. Thus, the ARIMA (3,1,0) satisfies the characteristics of a white noise process. Therefore, the model is adequate and can be used for forecasting the future amount of FDI Net Inflows into Togo.

5.3 Stability of ARIMA (3,1,0)

For a stable model, the corresponding inverse roots of the characteristic polynomial will lie in the unit cercle. Figure 3 shows that the corresponding characteristic polynomials of the ARIMA (3,1,0) lie effectively in the unit circle, proving the stability of the model. Table 12 shows that there are no auto correlations in the errors.

5.4 Model representation:

The model is expressed by:

$$\Delta FDI_t = -0.7413\Delta FDI_{t-1} - 0.4851\Delta FDI_{t-2} - 0.5277\Delta FDI_{t-3}$$

P	**(**0.000)	(0.001)	(0.000)
Se	**(**0.130)	(0.144)	(0.123)

The coefficients of AR (1), AR (2) and AR (3) are all significant at 1% level of significance. All the three coefficients are negative. The implication is that the current FDI net inflows performance is being not only jettisoned by the previous economic activities but also the effect persists for about 3 periods (years). This tends to stabilise the FDI inflows into Togo and make it oscillate. Because, for instance, a decrease for this year may lead to an increase in the next year. Conversely, an increase in the FDI net inflows to Togo this year may lead to a

decrease in the next year. Consider the persistence of the effect. A successive increase over three years will certainly lead to a decrease in the next year and conversely for a successive decrease over three years.

5.5 Forecasting of the FDI Net Inflows into Togo

The summary of the forecasting of the future FDI Net Inflows into Togo is presented in Table 13.

Figure 4 shows the forecast of the FDI net Inflows into Togo. Forecasts lie within the 95% confidence interval. The same figure also shows the trend of the FDI net inflows into Togo over the next 13 years. It is observed that the net inflows of FDI into Togo have a decreasing trend. The FDI net inflows into Togo will decrease by oscillating around almost the negative of USD 50 Million. The most intricating of the results is that the future FDI net inflows into Togo is not expected to be positive except in 2027 where it is expected to reach almost 0. Considering the importance of FDI in Togo's economy, the economy of Togo will be likely to be set back a little unless there has been a reinforcement of investment climate and an adoption of new strategies to encourage and attract investors. It is necessary to bear in mind that ARIMA models was utilized for the purpose of modelling and forecasting for trend analysis and, therefore, may comprise errors in the predictions.

6. Conclusion and Recommendations:

In this study, yearly data from the World Indicators database/World Bank were utilised to develop an ARIMA model for forecasting FDI net inflows into Togo over the coming 13 years. This study shows that ARIMA (3,1,0) was the best, optimal and stable model for the goal of modelling and forecasting FDI net inflows into Togo. The forecasted data show that, the FDI net inflows into Togo in the forecasted period have a downward trend. It has also shown that, the forecasted values of the FDI net inflows into Togo is negative for the forecasted period, oscillating around the negative value of approximately USD 50 Million. Therefore, if nothing is done, the FDI net inflows into Togo in the future will remain negative. It becomes necessary for policy makers to review policies for attracting investors.

From this study, some recommendations are made to help policy makers. Since it has been shown from the forecasts that it is evident for the net inflows of FDI to decrease still being negative, it requires strong and investor-friendly policies to attract investors. It is necessary since between 2020 and 2022, the FDI inflows has been successively negative and on top of that, all the forecasted values are below zero, so it becomes necessary for policy makers to wake up as soon as possible. It is also recommended from the study to assure investors of the political stability to inseminate confidence in them. The stability is a key factor for attracting investors. The implementation of novel strategies of promoting investment to appeal to investors is also recommended. The scenario of FDI is followed by the transfer of technologies and resources. The technology transfer implies the electricity consumption. It has been shown by Solarin (2014) that, there is a long run positive unidirectional causality running from electricity consumption to economic growth at least for the case of Togo. Considering that also, this study recommends the policy makers to tackle the issue of power supply. No investor will take the decision to invest in a non-stable country politically or in terms of security. So, the government is recommended to also tackle these issues to assure investors. It is also important to mention that even though several recommendations have been made, the political will is crucial.

References

Amadou, A. (2011). The Effect of Foreign Capital on Domestic Investment in Togo. International Journal of Economics and Finance, 3(5). https://doi.org/10.5539/ijef.v3n5p223

Assiobo Komlan Mawugnon, & Fang Qiang. (n.d.). The Relationship Between Foreign Direct Investment and Economic Growth in Togo [1991-2009]. Retrieved 22 August 2024, from http://www4.pucsp.br/icim/ingles/downloads/papers_2011/part_7/part_7_proc_43.pdf

B. Sudha, B. S. (2012). Foreign Direct Investment. International Journal of Scientific Research, 2(4), 175–177. https://doi.org/10.15373/22778179/APR2013/61

Choong, C.-K., & Lim, K.-P. (2009). Foreign direct investment, financial development, and economic growth: the case of Malaysia. Macroeconomics and Finance in Emerging Market Economies, 2(1), 13–30. https://doi.org/10.1080/17520840902726227

Disha, M., Patel, N., & Patel, R. P. (n.d.). GAP iNTERDISCIPLINARITIES A Global Journal of Interdisciplinary Studies DETERMINING FDI INFLOWS IN INDIA: USING BOX-JENKINS ARIMA APPROACH. https://www.gapinterdisciplinarities.org/

Eniekezimene, A. F., Wodu, E., & Anda-Owei, J. P. (2024). Foreign Direct Investment and Economic Growth in Nigeria: A Revisit. Asian Journal of Probability and Statistics, 26(2), 37–48. https://doi.org/10.9734/ajpas/2024/v26i2590

Garikai, B. W., Nyoni, T., & Bonga, W. G. (2019). Predicting Net Foreign Direct Investment in Nigeria using Box-Jenkins ARIMA Approach. www.dynamicresearchjournals.org

Ghebrihiwet, N., & Motchenkova, E. (2017). Relationship between FDI, foreign ownership restrictions, and technology transfer in the resources sector: A derivation approach. Resources Policy, 52, 320–326. https://doi.org/10.1016/j.resourpol.2017.03.011

Idowu, A. (2021). Econometric Modelling and Forecasting Foreign Direct Investment Inflows in Nigeria: ARIMA Model Approach. https://mpra.ub.uni-muenchen.de/107466/

Ingale, K. Y., Bharati, S. V, & Karale, P. V. (2023). Time series ARIMA forecasting of FDI inflow in India. ~ 2454 ~ The Pharma Innovation Journal, 12(1), 2454–2456. www.thepharmajournal.com

Magdy Rezk, W., & Aboul Atta Halim, M. (n.d.). Modeling and Estimating the size of Foreign Direct Investment in Saudi Arabia ARIMA Model Approach.

Perera, P. (2015). Modeling and Forecasting Foreign Direct Investment (FDI) into SAARC for the Period of 2013-2037 with ARIMA. International Journal of Business and Social Science, 6(2). www.ijbssnet.com

Raihan, A. (2024). Influences of foreign direct investment and carbon emission on economic growth in Vietnam. Journal of Environmental Science and Economics, 3(1), 1–17. https://doi.org/10.56556/jescae.v3i1.670

Solarin, S. A. (2014). Multivariate causality test of electricity consumption, capital formation, export, urbanisation and economic growth for Togo. Energy Studies Review, 21(1), 109–132. https://doi.org/10.15173/esr.v21i1.2531

Unctad. (2021). World investment report 2021. United Nations.

Unctad. (2023). World Investment Report 2023: Investment and sustainable energy.

Appendices

Figure 1: Trend of the Foreign Direct Investment net inflows into Togo from 1970 to 2022

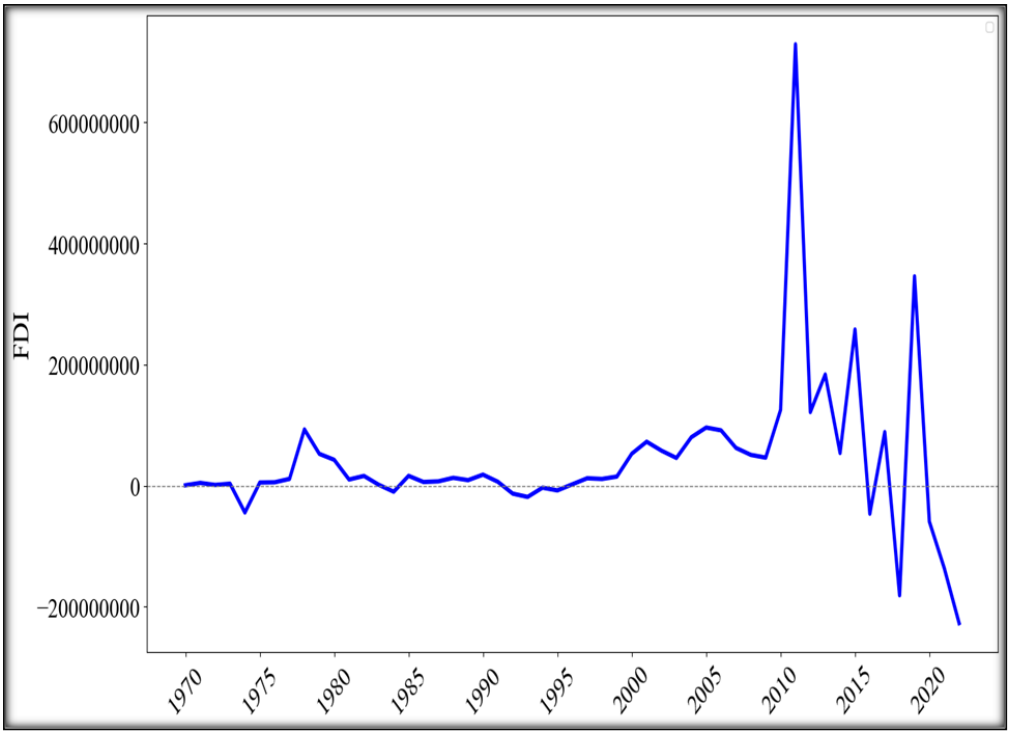

Figure 2: Correlogram analysis

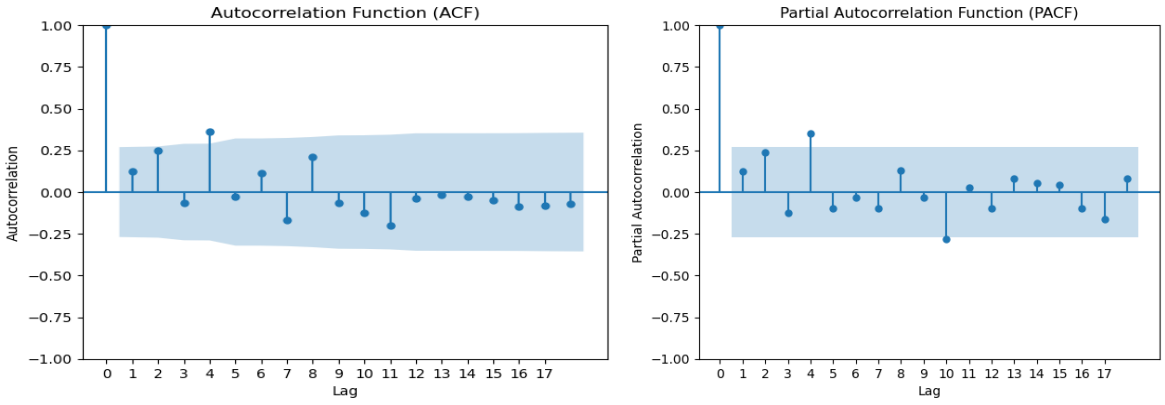

Figure 3: Inverse roots of the AR/MA polynomials

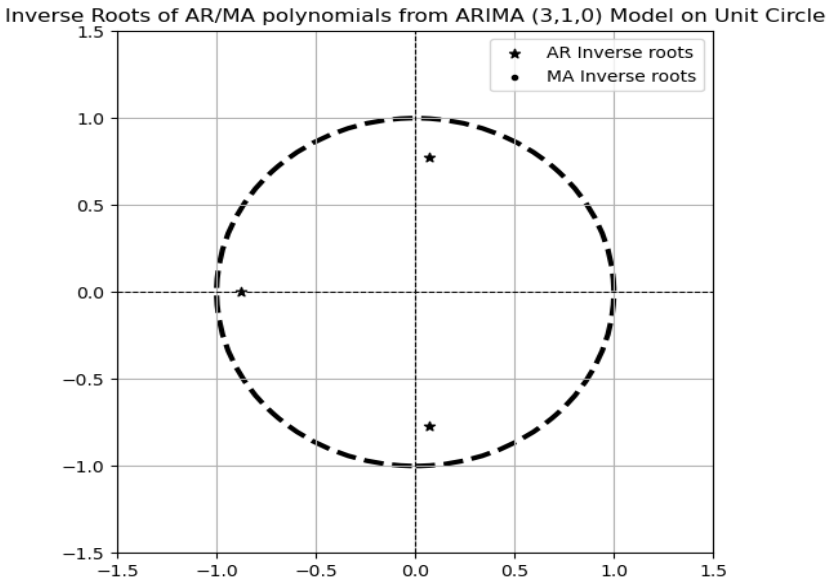

Figure 4: Predicted net inflows of FDI over the next 13 years

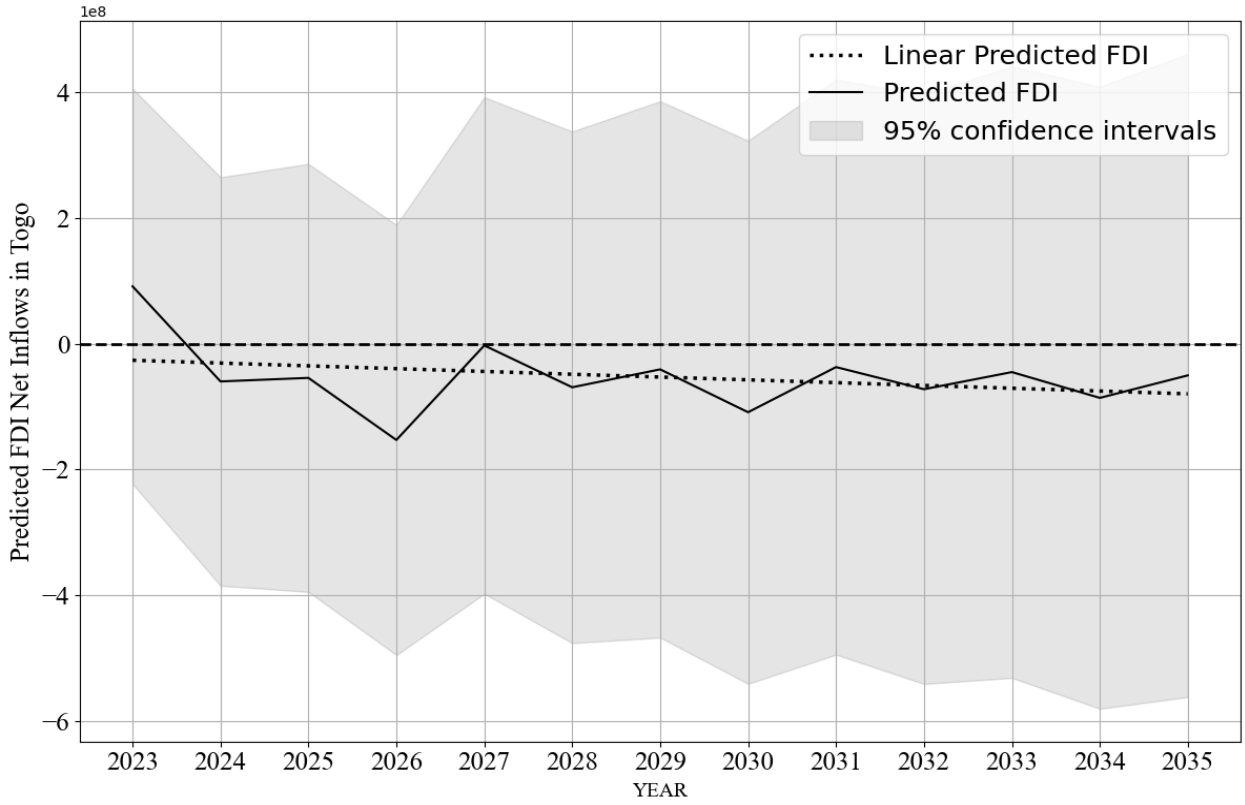

Table 1: Descriptive statistics

Description	statistic
Minimum	-226939150.0
Mean	41119312.946132064
Median	12260365.78
Standard deviation	1.297023e+08,
Skewness	3.009486
Kurtosis	15,40766
Maximum	7.287109e+08

Table 2: Levels: intercept

Variable	ADF Statistic	Probability	Critical values		Decision
FDI Net Inflows	-1.833131	0.364142	-3.571471	@1%	Not stationary
			-2.922629	@5%	Not stationary
			-2.599335	@10%	Not stationary

Table 3: Levels: trend & intercept

Variable	ADF Statistic	Probability	Critical values		Decision
FDI Net Inflows	-2.378588	0.391062	-4.186369	@1%	Not stationary
			-3.518049	@5%	Not stationary
			-3.189584	@10%	Not stationary

Table 4: Levels: without intercept and trend

Variable	ADF Statistic	Probability	Critical values		Decision
FDI Net Inflows	-1.631173	0.097108	-2.612879	@1%	Not stationary
			-1.947617	@5%	Not stationary
			-1.612314	@10%	stationary

Table 5: Levels-intercept after the first difference

Variable	ADF Statistic	Probability	Critical values		Decision
FDI Net Inflows	-7.607221	2.305123e-11	-3.571471	@1%	Stationary
			-2.922629	@5%	Stationary
			-2.599335	@10%	Stationary

Table 6: Levels-intercept after the first difference

Variable	ADF Statistic	Probability	Critical values		Decision
FDI Net Inflows	-7.609319	5.707798e-10	-4.156507	@1%	stationary
			-3.504239	@5%	stationary
			-3.181642	@10%	stationary

Table 7: Levels-intercept after the first difference

Variable	ADF Statistic	Probability	Critical values		Decision
FDI Net Inflows	-8.860662	1.641235e-12	-2.612879	@1%	stationary
			-1.947617	@5%	stationary
			-1.612314	@10%	stationary

Table 8: Evaluation of ARIMA models

Model	AIC	BIC
ARIMA (1,1,1)	2096.893	2096.893
ARIMA (2,1,1)	2096.527	2104.332
ARIMA (2,1,3)	2094.755	2106.462
ARIMA (3,1,1)	2094.095	2103.852
ARIMA (3,1,1)	2091.636	2101.392
ARIMA (3,1,0)	**2089.792**	**2097.597**

Table 9: Levels: intercept

Variable	ADF Statistic	Probability	Critical values		Decision
residuals (μ_t)	-6.859396	1.617016e-09	-3.565624	@1%	stationary
			-2.920142	@5%	stationary
			-2.598014	@10%	stationary

Table 10: Levels: trend & intercept

Variable	ADF Statistic	Probability	Critical values		Decision
residuals (μ_t)	-6.887962	2.529008e-08	-4.148222	@1%	stationary
			-3.500392	@5%	stationary
			-3.179425	@10%	stationary

Table 11: Levels: without intercept and trend

Variable	ADF Statistic	Probability	Critical values		Decision
residuals (μ_t)	-6.896912	1.029680e-10	-2.610973	@1%	stationary
			-1.947325	@5%	stationary
			-1.612464	@10%	stationary

Table 12: Results of Ljung-Box test

	Statistic Value	Pvalue
1	0.016513	0.897752
2	0.149601	0.927928
3	0.192903	0.978727
4	0.997803	0.910129
5	1.227830	0.942180
6	1.478614	0.960902
7	2.972762	0.887510
8	6.669887	0.572631
9	6.724561	0.665772
10	9.219190	0.511436

Table 13: Forecasting of FDI for Togo for the Period of 20123-2035

YEAR	Predicted FDI	standard error	95% confidence interval	
			Lower Limit	Upper Limit
2023	9.133359e+07	1.220874e+08	-1.479534e+08	3.306206e+08
2024	-5.995636e+07	1.261067e+08	-3.071210e+08	1.872083e+08
2025	-5.431993e+07	1.321341e+08	-3.132980e+08	2.046582e+08
2026	-1.530624e+08	1.327815e+08	-4.133093e+08	1.071845e+08
2027	-2.763895e+06	1.532798e+08	-3.031868e+08	2.976591e+08
2028	-6.925682e+07	1.579563e+08	-3.788455e+08	2.403319e+08
2029	-4.076569e+07	1.656061e+08	-3.653476e+08	2.838162e+08
2030	-1.089439e+08	1.676802e+08	-4.375912e+08	2.197033e+08
2031	-3.713583e+07	1.775367e+08	-3.851013e+08	3.108296e+08
2032	-7.233019e+07	1.819517e+08	-4.289489e+08	2.842885e+08
2033	-4.509558e+07	1.887990e+08	-4.151349e+08	3.249437e+08
2034	-8.610547e+07	1.919489e+08	-4.623183e+08	2.901074e+08
2035	-5.034382e+07	1.985963e+08	-4.395855e+08	3.388978e+08