

Impact of Exchange Rate Regime on International Tourists' Inflow in South Africa

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Abstract

Globally, research on exchange rate regimes have mainly centred on their influences on international trade flows, foreign direct investment, and economic growth while the empirical nexus between exchange rate regimes and international tourists' inflow has been scarcely explored in South Africa. The country has consistently witnessed an increasing inflow of tourists since the 1990s to date, hence, the importance of international tourism inflow in South Africa cannot be overemphasised as it has implications on the economy, employment generation, and as a source of revenue. Also, the nexus between the exchange rate regime and international tourism inflow in South Africa has not garnered sufficient empirical attention. Therefore, this research investigates the impact of the exchange rate regime on international tourists' inflow in South Africa over the period 1990 to 2020. Secondary data on the international tourists' receipt, GDP income per capita, inflation rate, and exchange rate were derived from the World Bank Development Indicators while the binary variable is used as a measure of the exchange rate regime. The collected data was analysed using the ordinary least squares (OLS). Findings from the study reveal that the existing floating exchange rate regime supports the international tourists' inflow, but its significant impact as a major driver of inflow is yet to be felt in South Africa. The study, however, established that per capita GDP and domestic exchange rate depreciation significantly promote international tourists' inflow in the country.

Keywords: Exchange rate regime; international tourists' inflow; OLS; South Africa

Introduction

Tourism inflow has been seen as a key facilitator of economic development among the developed and developing nations of the world (Craik, 2001; Leiper, 2008). The sector also serves as a medium for revenue generation and it is regarded as an alternative approach for sustainability and economic diversification (Ogbeba et al., 2016). The tourism sector has become one of the most viable sectors in the world's economy, mostly driven by continuous expansion, development, and diversification of the industry (Gao et al., 2018). Hence, international tourism transactions have become the largest service industry in international trade.

The international tourists' inflow has been increasing, for instance, in 2016 international tourist arrivals were 10 billion. The revenue earned from tourism globally was

over US\$5 trillion in 2016, which indicates an increase of about 3.6% more than the previous year and it is equal to 7% of the global GDP. Hence, the growth experienced in the global tourist inflow and total revenue from tourism is significantly higher than the projected GDP growth rate. International tourists' inflow has been predicted to get to 1.8 billion by 2030 (United Nations World Tourism Organisation [UNWTO], 2011). Therefore, the importance of tourism as a viable sector for the promotion of economic growth through revenue generation, job creation, and infrastructure development cannot be overemphasized (Gechore et al., 2022; Paramati et al., 2017). This has given rise to recent studies on the nexus between tourism development and macroeconomic variables (see De Vita & Kyaw, 2013; Chiu & Yeh, 2017; Falk, 2015; Tang et al., 2016a; Tang et al., 2016b; Tshidzumba & Oladunjoye, 2022).

About 29% of global services exports are driven by the tourism sector and created approximately 300 million job opportunities in 2019 (UNWTO, 2019a). Therefore, tourism is not only a vital source of income but also a source of employment for both developed and developing countries. In view of this, global reduction in tourism arrivals could have overwhelming economic effects on developing countries, like South Africa, that are heavily dependent on it. Currently, tourism in Africa is estimated to have a yearly growth rate of 5%, 8.5% GDP, direct investments into the sector are estimated at US\$29 billion, and creates jobs for 24.3 million direct employees, accounting for about 6.4% of the total working population (World Travel and Tourism Council [WTTC], 2019). Also, 78 million international tourists generated US\$45 billion in revenue in 2018 (UNWTO, 2019b).

Since 1994 when South Africa embraced the democratic system of administration, tourism has been recognized as a viable sector for the promotion of economic development and to improve the welfare of the people (Bini et al., 2022). For instance, the South African government has placed high priority on tourism as one of five economic growth sectors to drive investment and facilitate growth of the country (South African Tourism [SAT], 2010).

Before 1994, there is insufficient data regarding tourism for job creation, as a source of foreign exchange earnings, driver of economic growth, and source of development in the rural areas. But after the first democratic elections, South Africa welcomes about 3.7 million international arrivals, and since then the tourism sector in South Africa has changed fundamentally because of its enormous potential for job creation and as a viable source of foreign exchange earnings (Tourism, 2002). However, international tourist arrivals in South Africa contracted to 10.2 million in 2019, which indicates a 2% decline when compared to 2018 and earning a little over US\$5 billion as revenue. Due to the significant role of the tourism sector in the economy, the South African Tourism Board set an objective of 21 million international tourists' inflow by 2030, the target is driven by the desire to have a very sound and robust tourism industry in Africa with an ever-increasing international inflow (South African Tourism, 2020).

Similarly, South Africa has, over the years, adopted a floating exchange rate regime which is one of the economic policies of the then apartheid period (Oseifuah & Korkpoe, 2018). The floating exchange rate regime was implemented as one of the macroeconomic policies of the South African Reserve Bank aimed at protecting the rand against the activities of currency speculators, mitigating against strike actions and unrest by the labour unions, guiding against debt crises due to increasing public sector debts, and acting as the buffer against the increasingly irregular weather patterns reducing agricultural exports which may affect the value of the rand against leading international currencies of the world (Bhundia & Ricci, 2005). Regrettably, in the past few years, the rand has witnessed swift depreciation against major currencies like the euro, dollar, and pound, hence, the call by the IMF and World Bank to devalue the rand. Therefore, the rand has constantly been experiencing fluctuations in the form of appreciation against major currencies during boom periods and depreciation during busts

when it experiences sharp contractions which is a major characteristic of a floating exchange rate regime (Oseifuah & Korkpoe, 2018).

Furthermore, the prevailing exchange rate regime choice is seen as a monetary policy implemented by the monetary authority of the country with respect to other major currencies of the world and foreign exchange markets that can affect the exchange rate which often impacts the sustainability of tourism inflow in the country. Globally, research on exchange rate regimes have mainly centred on its impact on international trade flows (see Adam & Cobham, 2007; Frankel & Rose, 2002; Rose, 2000), foreign direct investment inflows (see Abbott & De Vita, 2011; Abbott et al., 2012), economic growth (see De Vita & Kyaw, 2011; Husain et al., 2005), and economic integration (see Carmignani, 2003; Ndiaye & Korsu, 2014; Nnana, 2006; Oladunjoye et al., 2019). Nevertheless, the empirical association between exchange rate regimes and international tourist inflow has been scarcely explored except in the few studies by Bizuneh (2021), Ding and Timmer (2022), Fourie and Santana-Gallego (2011), Santana-Gallego et al. (2010), and Opstad et al. (2021), which are studies mainly focusing on developed economies and OECD member countries. The most recent study on tourism in South Africa is focused on its nexus with economic growth and urban risk (see Muzekenyi et al., 2018; Tshidzumba & Oladunjoye, 2022) but these studies failed to examine the existing floating exchange rate regime as a major determinant of tourism inflow in South Africa. Hence, the major aim of this research is to examine the impact of the exchange rate regime on international tourism inflow in South Africa.

The study consists of five sections: section two contains the literature review; section three is the methodology, while sections four and five are the analysis and conclusion with a policy recommendation.”

Literature review

The optimal exchange rate regime has remained a topical issue among developed and developing countries. This became a popular issue of concern to developing and emerging economies in the early 1990s due to the increasing call to fix the exchange rate against stronger currencies in the world (see Helble et al., 2015). Nevertheless, the Asian financial crisis of 1997 led to the problem of large capital inflow reversals and sudden stops of which revenue from tourism is a component affected by the crises. Consequently, the International Monetary Fund (IMF) recommends adoption of either fully floating or fixed exchange rate regimes (Ghosh & Ostry, 2009). Also, the intermediate rate of exchange regime such as the crawling rate of exchange or the managed floating system is recommended for countries susceptible to financial crises (Obstfeld & Rogoff, 1995). However, Ghosh et al. (2014) recommended that for developing countries who wish to exercise a high level of control over the exchange rate may adopt a managed floating exchange rate regime.

Furthermore, the United Nations (UN) selected 2017 as the “international year of sustainable tourism for development” which focuses on promoting tourism in five prominent sectors, that is “inclusive and sustainable economic growth,” “social inclusiveness, employment, and poverty reduction,” “resource efficiency, environmental protection, and climate change,” “cultural values, diversity, and heritage,” and “mutual understanding, peace, and security” (UNWTO, 2016a). This demonstrates the importance of tourism commerce in enhancing supportable economic progression.

As stated by the WTTC, tourism commerce accounts for 10.2% of global GDP in 2016 and account for 6.6% of global exports and generate millions of jobs (see UNWTO, 2016b). Intercontinental tourist arrivals are on the increase by 3.9% globally, leading to more than 1.2 million international influxes (UNWTO, 2016b). Hence, due to the high likelihood expansion in the tourism sector, the World Tourism Organization (2011) in the 2030 vision projected that

international tourists' arrivals would grow at the rate of 3.3% per annum from 2010 to 2030 thereby reaching 1.8 billion tourist influxes by 2030. To actualize the noble vision, several new tourist attraction destinations are being established to have a viable and competitive tourism sector.

One of the earliest studies investigating the prevailing exchange rate regime in South Africa is the study by Van der Merwe (2003) which identified the four diverse stages of the development of exchange rate regime (policies) in South Africa. The study highlights that “direct monetary policy controls and the need to have a stable exchange rate influenced the kind of exchange rate system adopted in the 1970s” while in the 1980s the “transition to a more market-oriented system and money supply target influenced the choice of the exchange rate system adopted”. However, in the “1990s and 2000s the informal inflation targeting as well as a managed floating coupled with formal inflation targeting and a free-floating exchange rate regime were vigorously pursued in South Africa”.

Several scholastic studies have investigated the nexus between exchange rate policies and international tourism inflows in both advanced and emerging countries alike. The findings of these studies yielded conflicting and interesting outcomes. For instance, Santana-Gallego et al. (2010) examines the impact of exchange rate administration on tourism using the panel gravity model. The study reveals that a fixed exchange rate administration promotes tourism inflow. Also, Fourie and Santana-Gallego (2011) investigates the factors that influence the African tourism industry using a panel gravity model approach. The outcome of the study reveals that income, distance, and land area are the major elements of tourism in Africa.

Similarly, Saayman and Saayman (2013) examine the association between exchange rate fluctuations and worldwide tourism in South Africa using the GARCH and ARDL model. The study finds that the spending behaviour of intercontinental tourists is greatly influenced by the shocks in exchange rate of South Africa. However, the study by De Vita (2014) investigates the lasting effect of exchange rate administrations on worldwide tourism flows among 27 OECD/non-OECD member nations using a panel system GMM (generalized method of moments). The findings from the literature reveal that multiple exchange rate administrations have an additive effect which helps to have a somewhat steady exchange rate that facilitates the attraction of international tourists.

The study by Agiomirgianakis et al. (2014) examine the nexus amongst exchange rate fluctuations and tourist drifts into Turkey using the ARDL technique of analysis. It observes that exchange rate instability has an adverse bearing on tourist inflows in Turkey. While Mwanza (2016) considers the influence of the foreign exchange management practices on tourism and hospitality industry in Zimbabwe using a qualitative method. The study reveals that the major way of reducing foreign exchange exposure in Zimbabwe is through the use of the same international currency for the importation of commodities from the country of origin of tourists.

Furthermore, Ogbeba et al. (2016) investigate the nexus between exchange rate instability and tourism sector output in Nigeria using the VECM, that is, vector error correction model, Granger causality, and cointegration approach. The study reveals that exchange rate instability has a negative and significant effect on the tourism sector's productivity in Nigeria. Also, the study finds unidirectional causation and a long-run relationship running from the tourism subdivision to GDP, real effective exchange rate, employment, and the global number of tourist arrivals in Nigeria.

Similarly, Ergen and Yavus (2017) examine the association between tourist currents and exchange rate instability in Turkey using the ARDL approach. The study reveals that there is a long-run connection between tourist flows and exchange rate instability and establishes the return to the lasting path after initial short-run disturbances. But the study by Gao et al. (2018)

which investigates whether the exchange rate will always greatly influence the number of international tourists' arrivals in China using the rolling window estimation. Findings from the study establish that there is no causality among the exchange rate and China's international tourist arrivals.

Rathnayake (2018) investigates the influence of exchange rate instability in Sri Lanka's inward bound tourist flow using an EGARCH, that is, exponential generalized autoregressive conditional heteroscedasticity and error correction model. The study reveals that exchange rate volatility negatively and significantly affects tourist flows in Sri Lanka and the domestic inflation rate also affects tourist flow negatively in the short phase, while in the long phase the study observes relative price stability. In the same vein, Letsie and Setshegetso (2018) examine the association between exchange rate and tourism in Botswana using ordinary least squares (OLS) regression. The study discovers that the rate of exchange has both adverse and insignificant effects on tourism in Botswana, but the real GDP positively promotes tourism in Botswana.

Furthermore, Muzekenyi et al. (2018) investigate the power of global tourism receipts on economic progress in South Africa using VECM. The study finds that tourism promotes South African economic growth. While the literature by Adeola and Evans (2020) examines the dynamic association among infrastructure, ICT, and tourism in Africa between 1996 to 2016 using the dynamic panel gravity model. The study finds that both ICT and infrastructure positively and robustly impact on tourism inflow in Africa.

Nguyen and Valadkhani (2020) scrutinize the dynamic responses of tourists' arrivals in Australia to currency fluctuations using the mixed data sampling (MIDAS) approach covering 1998 to 2018. The study finds that most tourists always show concern about fluctuations in the exchange rate within 15 to 20 days before their travel. This implies that travellers were only responsive to the rate of exchange movement in the short-run period of three weeks.

Raheem and Ajide (2021) investigate the nexus between dollarization and tourism in selected countries of Africa using Tobit regression. The study finds that tourism promotes the adoption of dollarization in sub-Saharan Africa (SSA). While the study by Manyara and Naliaka (2021) which examines the association among African tourism and trade using the gravity equation approach establishes that a 10% raise in tourism within Africa will boost the volume of export on the African continent by 1.4% and 3.2%, respectively. The study thus established that tourism can be used as a catalyst for the promotion of tourism trade within Africa in the framework of AfCFTA, that is, African Continental Free Trade Area.

Similarly, Opstad et al. (2021) investigates the impact of revenue and currency variations on tourist influx to campsites in Norway by German and Swedish guests using a logarithmic regression model. The study finds that revenue and the rate of exchange movement slightly promote the influx of sudden Swedish and German visitors in Norway. The study further reveals that appreciation of the euro currency is responsible for more visitors from Germany leading to a stronger Swedish exchange rate with respect to the euro which consequently promotes the number of Swedish visitors to Norway.

Bizuneh (2021) investigates the duration of a fixed exchange rate administration to determine the factors which determine the probability of an exit from a peg rate of exchange regime. The study finds that GDP growth rate and trade openness drop the certainty of an exit from a pegged exchange rate administration instead leading to raising unemployment and claims on government which results in the certainty of abandoning a pegged rate of exchange. Similarly, Ding and Timmer (2022) study the power of exchange rate elasticities on universal tourism and dominant currency pricing using the panel fixed effect model and OLS for country-specific estimates. The research finds that the bilateral rate of exchange promotes the tourist-

inflow from the country of origin to their destination. Also, the rate of exchange between the domestic rate of exchange and the US dollar influences tourism flows and pricing.

Also, the impact of the 2019 pandemic (coronavirus) had an adverse effect on the intercontinental tourism industry. For instance, the UN Conference on Trade and Development (2020) studied the effects of the pandemic on the tourism sector in the world by employing a quantifiable GTAP, that is, general equilibrium model. The study observes that the pandemic prompted substantial disturbances in the global economic realm. Specifically, after the first quarter of 2020, the pandemic had led to a total shut down of international travels which significantly affects the tourism industry thereby upsetting projected revenue and foreign exchange earnings. Consequently, international tourism was suspended which shows that tourism is a critical sector of the international economy.

Research methods

This study is premised on the tourism demand model developed by Ding and Timmer (2022), Fourie and Santana-Gallego (2011), Kim and Lee (2017), Muchapondwa and Pimhidzai (2008), and Nguyen and Valadkhani (2020) as well as on the exchange rate regimes choice model developed by Aliyev (2014), Feridun (2005), Leon and Oliva (1999), and Markiewicz (2006) where multinomial equations were specified to define the choice of a particular exchange rate administration (regime).

The study adapts the probit model by Papaioannou (2003) which specified the factors that influence the rationale behind the choice of fixed or floating exchange rate regime:

$$ERR = j \begin{cases} 1 = \text{Fixed Exchange Rate Regime} \\ 0 = \text{Flexible Exchange Rate Regime} \end{cases} \quad (1)$$

According to Ding and Timmer (2022); Fourie and Santana-Gallego (2011); Kim and Lee (2017); and Muchapondwa and Pimhidzai (2008) exchange rate regime choice is a discrete form where international tourism (arrival/receipts) is a function of classical demand theory in which demand is determined by the price of a product and income. Therefore, the two major economic variables that determine demand for international tourism inflow were included, that is, per capita income and tourism price. Thus, per capita income measures the individual spending power and is regarded as a significant determining factor of international tourism inflow.

Consequently, an increase in per capita income is expected to have a direct impact on the individual spending power, thereby creating tourism demand.

The international tourism demand equation is given as:

$$ITI_t = f(ERR_t, PCI_t, INF_t, EXR_t) \quad (2)$$

Where ITI is the international tourists' inflow, ERR is the exchange rate regimes, PCI is the per capita GDP, INF is the inflation rate, and EXR is the exchange rate.

The linear probit form of equation (2) is presented in equation (3) as:

$$\ln ITI_t = \beta_0 + \beta_1 ERR_t + \beta_2 \ln PCI_t + \beta_3 \ln INF_t + \beta_4 \ln EXR_t + \mathcal{E}_t \quad (3)$$

Where: β_0 represents the intercept while $\beta_1 \dots \beta_4$ represents the estimates of the explanatory variables and the a priori expectation of the model is given as $\beta_1 > 0, \beta_2 > 0, \beta_3 > 0, \beta_4 > 0$

This indicates that the connection of the exchange rate regime, per capita income, inflation, and exchange rate are expected to have a direct impact on international tourists' inflow in South Africa.

This study further subjects the macro-economic variables used in the study to some preliminary tests such as the Augmented Dickey-Fuller (ADF), Phillips-Perron (PP) tests, as well as the Johansen cointegration test to determine the unit root properties data and to investigate whether long-run associations are present amongst the variables. The rationale for these tests is premised on the assumption that the tests control for higher-order autocorrelation (Harris & Sollis, 2003).

Findings and discussion of results

The unit root features of the macro-economic variables are examined using the “Augmented Dickey-Fuller (ADF) and Phillips-Perron (PP) tests as shown in Table 1.

Table 1: Unit root test

Variables	Augmented Dickey-Fuller Test			Phillips-Perron Test		
	Level	1 st Difference	Status	Level	1 st Difference	Status
ln(INTA)	0.43	-8.56*	I(1)	0.43	-8.56*	I(1)
ln(INTR)	-0.44	-2.90*	I(1)	-0.44	-2.90*	I(1)
ERR	-	-	-	-	-	-
ln(PCI)	0.11	-1.70***	I(1)	0.58	-1.76***	I(1)
INF	-1.91***	-4.80*	I(0)	-2.11**	-5.11*	I(1)
ln(EXR)	-2.38**	-3.29*	I(0)	2.10	-3.21*	I(1)
Critical Valued	Level	1 st Difference		Level	1 st Difference	
1%	-2.64	-2.64		-2.64	-2.64	
5%	-1.95	-1.95		-1.95	-1.95	
10%	-1.61	-1.61		-1.61	-1.61	

Source: Authors

Level of significance: * = 1%, ** = 5% and *** = 10%

Table 1 shows that the variables in this study are a combination of $I(0)$ plus $I(1)$ series, such that, the variables that are both integrated of order zero and order one. Specifically, international tourism receipt ($lnINTR$), and GDP per capita ($lnPCI$) are integrated of order one $I(1)$ while the rates of inflation (INF) and exchange ($lnEXR$) stood as integrated of order zero $I(0)$ under ADF but integrated of order one $I(1)$ under PP test.

Also, this study considered two international tourist inflow measures; these measures include international tourists’ arrival ($lnINTA$) and international tourists’ receipt ($lnINTR$). However, to obtain a more robust and reliable estimate, the international tourists’ receipt ($lnINTR$) is adopted as a more reliable measure for international tourists’ inflow (INI).

Additionally, the cointegration Johansen test shows that there is association amongst the variables, hence, leading to the rejection of the null hypothesis of no cointegration amongst the variables” ($lnINTR$, ERR , $lnPCI$, INF & $lnEXR$). Table 2 indicates that there is at least one cointegrating equation amongst the variables thereby establishing the presence of a long-run association among the variables in the study.

Table 2: Johansen cointegration test

Series: LOG(INTR) ERR LOG(PCI) INF LOG(EXR)				
Hypothesized No. of CE(s)	Engen-Value	Trace Statistic	0.05 Critical Value	Probability
None	0.67	69.60	60.06	0.00
At most 1	0.51	37.48	40.17	0.09
At most 2	0.37	16.47	24.27	0.34
At most 3	0.10	3.22	12.32	0.81
At most 4	0.00	0.01	4.12	0.93

Trace test indicates at least 1 cointegrating equation at the 0.05 level

Source: Authors

Similarly, the Akaike Information Criterion (AIC), Schwartz Information Criterion (SIC), and Hannan-Quinn Information Criterion (HQC) were used to estimate the maximum numbers of lags used for the study. The Akaike Information Criterion (AIC) recommended an optimum lag length of 4 while the Schwartz Information Criterion (SC) and Hannan-Quinn Information Criterion (HQC) proposed an appropriate lag length of 1 lag. Therefore, the long-regression estimation of the impact of exchange rate regime on international tourists' inflow in South Africa" is established on an optimum lag of one.

Table 3: Lag length selection criteria

Endogenous variables: LOG(INTR) ERR LOG(PCI) INF LOG(EXR)						
Sample: 1990 2020						
Lag	LogL	LR	FPE	AIC	SC	HQ
0	-33.42	NA	1.19	2.84	3.08	2.91
1	67.47	156.96*	4.45*	-2.77	-1.33*	-2.34*
2	92.98	30.23	5.30	-2.81	-0.17	-2.02
3	120.77	22.63	8.18	-3.02	0.81	-1.87
4	152.62	14.15	2.77	-3.52*	1.51	-2.02

* Indicates lag order selected by the criterion

Source: Authors

Having observed the Johansen cointegrating connection between the variables, the study goes on to run regression amongst the variables using the OLS technique. The coefficient of the estimate as shown on Table 4 indicates that the exchange rate regime (ERR) has a direct but insignificant impact on international tourists' inflow in South Africa ($t = 0.06$; $p > 0.05$). This implies that even though the existing floating exchange rate regime supports the international tourists' inflow, its significant impact as a major driver of inflow is yet to be felt in South Africa. This finding is in support of De Vita (2014); Nguyen and Valadkhani (2020), and Opstad et al. (2021) who argue that a flexible exchange rate regime positively promotes international tourists' inflow. The deduction arrived at from this observation is contrary to studies such as those by Gao et al. (2018); Ledesma-Rodriguez and Perez-Rodriguez (2007), Letsie and Setshegetso (2018); and Ogbeba et al., (2016) who all argued that floating exchange rate regime negatively affects international tourists' inflow in an economy.

However, findings from this study reveal that GDP per capita income (lnPCI) has a direct and statistically significant influence on international tourists' inflow in South Africa ($t = 10.16$; $p < 0.05$). This proposes that a unit growth in the GDP per capita income will lead to about a 5.21% increase in international tourists' inflow. This implies that the per capita income in South Africa is the major determinant of international tourists' inflow which encourages the inflow of international visitors. This observed outcome supports earlier studies including Manyara & Naliaka (2021), Muzekenyi et al. (2018), and Ogbeba et al. (2016), that have established a direct correlation between international tourists' inflow and economic progress in emerging countries of Africa and South Africa inclusive.

The study further discovers that the inflation rate (INF) has an adverse but inconsequential impact on international tourists' inflow in South Africa ($t = -0.89$; $p > 0.05$). The negative relationship goes a long way to affect the domestic price stability which significantly influences the confidence of international tourists in making South Africa their potential tourism destination. This supports the finding of a previous study conducted on Sri Lanka, a huge tourism-dependent country like South Africa has established that domestic inflation rate harms international tourists' inflow negatively in both the short and long run (see Rathnayake, 2018).

Lastly, this study also reveals that the rate of exchange (lnEXR) has a negative and statistically substantial impact on international tourists' inflow in South Africa ($t = -4.60$; $p <$

0.05) which indicates that a unit decrease in the rate of exchange will lead to approximately 0.61% rise in international tourists' inflow in South Africa. This implies the presence of an inverse association between the South African exchange rate and the international tourists, that is, as the South African domestic exchange rate depreciates, it yields a positive response on tourism demand which leads to a rise in the number of international tourists' inflow to South Africa. Although, this observed outcome is contrary to previous studies in developed and the OECD countries which established a direct influence of exchange rate fluctuation on international tourism (see Ding & Timmer, 2022; Opstad et al., 2021). Findings from these studies are not farfetched due to the existing bilateral exchange rate arrangements among the developed countries due to the overriding effects of the US dollar as well as the euro most especially among the OECD member countries.

The R-squared coefficient of the OLS estimation yields nearly 83% between international tourists' inflow, exchange rate regime, and other relevant explanatory variables used in this study which indicates that more than 83% of the total variation in international tourists' inflow in South Africa is explained by changes in the explanatory variables in the model. While the adjusted R-squared which quantifies the fitness of a model also indicates that more than 80% of the total variation in international tourists' inflow in South Africa is described by variables contained in the model. Therefore, the results signify that the estimated regression is reliable for making an appropriate judgement in relation to the influence of the exchange rate administration on intercontinental tourists' influx in South Africa. The F-statistic showed a relatively high F-value of (32.29627; $p < 0.05$) which measure of the overall importance of the model.

Table 4: OLS long-run estimates

Dependent Variable: ln(INTR)	Coefficients	Standard Error	t - Statistic	Probability
C	-25.27	4.66	-5.41	0.00
ERR	0.06	0.22	0.26	0.79
ln(PCI)	5.21	0.51	10.16	0.00
INF	-0.01	0.01	-0.89	0.37
ln(EXR)	-0.61	0.13	-4.60	0.00
R-Squared	0.83			
Adjusted R ²	0.80			
F-Statistic	32.29; probability (0.00)			

Source: Authors

The robustness of the OLS model is evaluated by conducting a serial correlation test as well as the stability tests on the macro-economic variables using the plot of the cumulative sum (CUSUM) and cumulative sum of squares (CUSUMsq) of the residuals based on the Schwarz Bayesian Criterion. The serial autocorrelation test established the non-existence of serial autocorrelation in the residual of the long-run regression estimate of the variables. Since the F-statistic of the Breuch-Godfrey serial correlation test is not significant, then, this recommends that there are no lagged forecast variances in the conditional variance equation of the model (see Nwachukwu & Egwaikhide, 2007; Oladunjoye & Akinbobola, 2018).

Table 5: Breuch-Godfrey serial correlation test

F-statistic = 2.65	Probability F(2, 25) = 0.09
Lagrange Multiplier = 5.42	Probability Chi-squared (2) = 0.06

Source: Authors

Figures 1 and 2 are the stability tests obtained from the CUSUM and the CUSUMsq plots. The CUSUM and CUSUMsq plots are seen to be steady and within the boundary of the 5% significance level during the time frame. In view of this, variables in this study are assumed to

be very steady as shown in the CUSUM and CUSUMsq diagrams. Thus, the study accepts the null proposition that all estimates of the error term are steady.

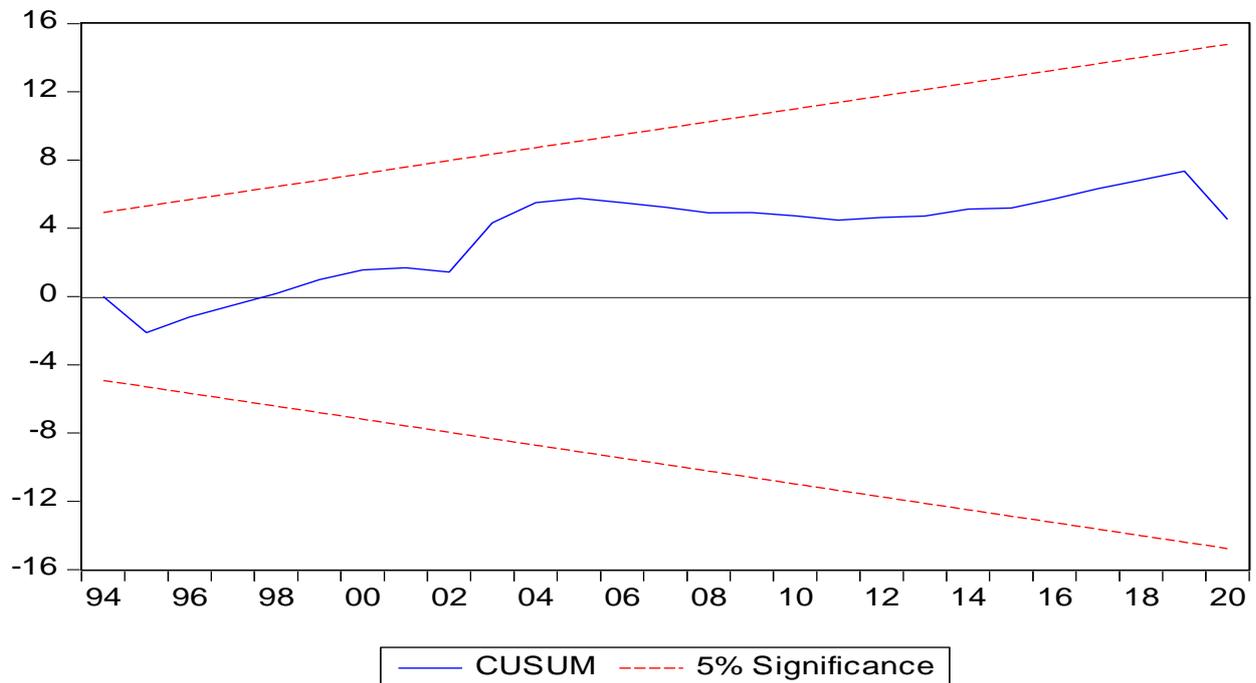


Figure 1 CUSUM at 5% Significance Level

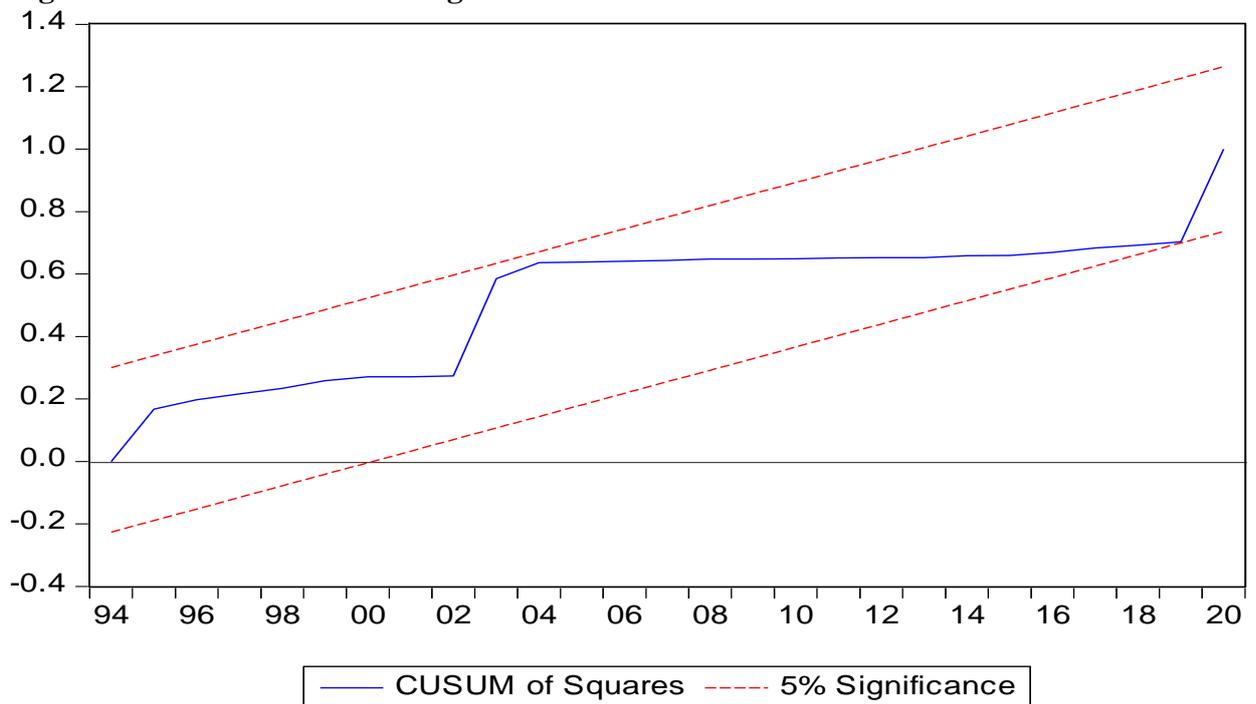


Figure 2 CUSUMsq at 5% Significance Level

Conclusion

The study concludes that the floating exchange regime adopted by the South African monetary authority merely establish a positive influence but has an inconsequential relationship with international tourists’ inflow into the country. Rather, the per capita GDP and domestic

exchange rate depreciation serve as the catalyst which significantly promote international tourists' inflow into the country over the study period. Therefore, efforts by the South African Reserve Bank should be directed at promoting a more viable tourism-dependent South African economy through the implementation of a well-managed-floating exchange rate regime that will enhance the actualisation of sustainable economic growth and stable exchange rate in South Africa which will help to boost the influx of intercontinental tourists in South Africa.

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