CAPITAL FLIGHT AND EXCHANGE RATE POLICY IN COVID-19 CONTEXT: WHAT ARE THE EXPLANATORY FACTORS IN THE FRANC ZONE AND NON-FRANC ZONE COUNTRIES?

ABSTRACT

The aim of this study is to make a comparative analysis of the macroeconomic and institutional determinants of capital flight between franc zone and non-franc zone countries over the 1984-2018 period. The pooled mean groups (PMG) regression results show that the exchange rate negatively and significantly determines capital flight in the franc zone countries, while in the non-franc zone countries, the exchange rate positively but insignificantly determines capital flight. We are more interested in this subject because of the persistence of capital flight in these areas after the Covid-19 crisis. Our main recommendation is to put in place policies to control exchange rate fluctuations, especially in the non-franc zone countries. This could help limit expectations of capital flight when for cyclical reasons, exchange rates depreciate.

Keywords : Capital flight, Exchange rate, Franc Zone, Non-franc zone.

Jel Classification : F02, O24.

1. INTRODUCTION

There is sufficient evidence to believe that Africa is at a crossroads today and that it is experiencing an important period in its history, bringing unprecedented positive prospects but also major challenges. At the end of the past century, the continent went from despair to enthusiasm for a new African renaissance. In the 1980s and 1990s, the continent's poor

performance in terms of growth was topical (Elsa et al., 2003; Bates et al., 2007). Since 2000, its overall macroeconomic performance has greatly improved, as evidenced by faster GDP growth and better macroeconomic balances. Before the start of the world recession, the average GDP growth rate for the continent increased from 2.5 percent for the 1990-1999 period to 4.8 percent for the 2000-2007 period.

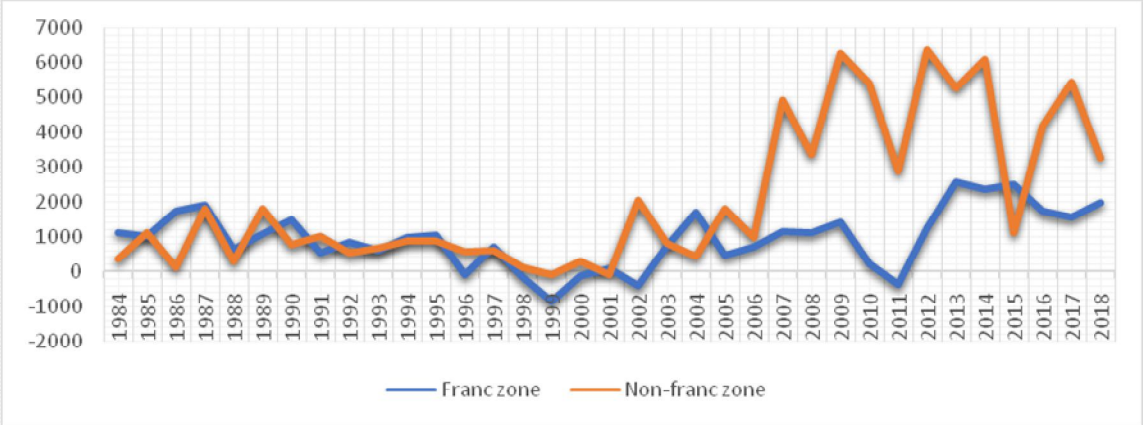
For Africa, the beginning of the twenty-first century marked a turn from a history of economic stagnation to an era of growth acceleration on the back of an unprecedented commodity boom. Until the boom was checked by the 2008 global economic crisis, Africa emerged as the world's fastest-growing region, its economies branded as "lions on the move". Following that crisis, the Sub-Saharan Africa (SSA) region rebounded and continued to grow robustly in the century's second decade at an annual rate of more than 4%. Many African countries saw substantial improvements in human development outcomes, with rising literacy and declining child mortality. Yet even as African countries witnessed these economic improvements, they continued to suffer from major outflows of resources, much of it in the form of illicit capital flight (Ndikumana and Boyce, 2022).

One of the fundamental problems facing African economies is their inability to maintain high growth rates over a sufficiently long period, enabling them to generate significant gains in poverty reduction. Consequently, the key challenges of growth consist in increasing this growth, perpetuating it and broadening its base. The low level of national investment is one of the structural barriers to growth in the majority of African nations. Although economists have primarily concentrated on private investment, African economies are more negatively impacted by the fragility and decrease of governmental investment. Lack of local financing, particularly long-run investment capital, is one factor contributing to the low level of domestic investment.

Africa's growth prospects have been severely undermined by the impact of the global economic crisis caused by the Covid-19 pandemic, which threatens to reverse some of the progress recorded since the turn of the century. The slowdowns in international trade and domestic economic activity are likely to deepen the financing gaps that constrain African governments' capacity to finance crisis mitigation and post-crisis recovery programs (Ndikumana and Boyce, 2022). Africa suffers from considerable capital flight in absolute and monetary terms, and as a proportion of GDP. Financing difficulties are exacerbated by capital flight, which ironically accelerated during the pre-crisis expansion period. Africa lost over US$ 2 trillion (in 2018 dollars) in capital flight between 1970 and 2018 (Ndikumana and Boyce, 2021).

This amount does not include all forms of illicit financial flows out of the continent. Even while the economy appears to be improving, the phenomenon of capital flight appears to be becoming worse. Specifically, the recent boom in the natural resources sector has coincided with a dramatic increase in capital flight. The rise of jurisdictions that practice bank secrecy and tax havens that make it possible to move and conceal money unlawfully favors the capital flight from African nations. These could include money obtained through the illegal exportation of natural resources, tax avoidance, corruption, use of transfer pricing, and outright capital smuggling by African nations. Secondly, capital flight leads to an uneven distribution of the fruits of growth. When capital flight is orchestrated by leaders who, because of their privileged position, accumulate embezzled funds in foreign bank accounts, the country's investment efforts in the social sectors are limited (Burns et al., 1997, and Onishi, 1999). Furthermore, Moulemvo (2016) shown through a simulation spanning the years 2000–2012 that the opportunity cost of capital flight results in significant reductions in expenditure on health and education and delays the accomplishment of MDGs 4 and 5 in sub-Saharan African nations. The situation of capital flight in the two groups of countries considered is presented in graph 1 below:

Graph 1: Evolution of the real capital flight of franc zone and non-franc zone countries



Source: authors' computations

The graph 1 shows that the average amount of capital flight between 1984 and 2018 is higher in countries outside the franc zone than in franc zone countries. During the debt crisis of the 1990s, the average amount of capital flight was $755 billion (in 2018 dollars) compared to $1504 billion (in 2018 dollars) in franc zone countries. During the 2007 crisis, countries outside the franc zone broke the record for capital flight with an average of $4,916 billion recorded, compared with $1,148 billion recorded in franc zone countries. However, it should be noted that before the health crisis (Covid-19) which became an economic crisis, countries outside the franc zone

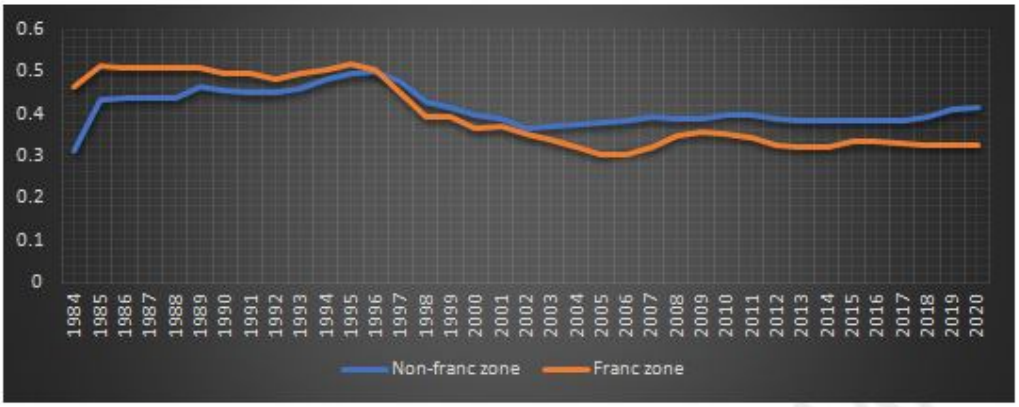
recorded huge amounts of capital flight. Thus, in 2018, despite the techniques for combating capital flight in SSA countries, the average amount of capital flight in countries outside the franc zone was 3254.32 billion dollars compared to 1980.13 billion dollars in franc zone countries. This capital flight observed in African countries in the franc zone can be linked to the exchange rate, which is generally fixed and relative to the euro. The other countries each have monetary autonomy with flexible exchange rates and this raises questions about the development of exchange rates in the two sub-areas.

Graph 2: Changes in the currency rate between nations in the franc zone and those outside of it (in % of GDP)

Source: Authors' computations

With regard to the average real exchange rate during the period 1984-2020, it should be noted that it is higher in countries outside the franc zone. After the Asian crisis of 1997, the real exchange rate of countries outside the franc zone fell to a level of 94.27% in 1999. The same rate was achieved in franc zone countries. This rate increased until 2018 before the crisis at covid-19. The real exchange rate was 249.13% in 2018 in countries outside the franc zone compared to 160.58% in franc zone countries. During the crisis at covid-19, the real exchange rates only fell in both zones. It is 227.29% in countries outside the franc zone and 170.33% in franc zone countries in 2020. Although these variations can be explained by the type of exchange rate regime of each group of countries, they can also be explained by the quality of the institutions in the two groups of countries.

Graph 3: Evolution of the index of government quality in franc zone and non-franc zone countries



Source: authors' computations

On an institutional level, the index of government quality which takes into account corruption, the quality of bureaucracy, law and order is close to standard (0.5) between 1985 and 1996 in the Franc zone. However, from 1996 to present date, this index is quite low in the Franc zone relative to the non-franc zone countries. This low index coincides with the crisis of the 1980s and 1990s when most countries were victims of capital flight.

For a number of reasons, capital flight from nations inside and outside the franc zone requires extra attention. The notion of unrestricted flow of capital within these zones is that these nations firstly benefit from little capital regulations. This idea encourages capital flight, which is on the rise. According to recent estimates, from 1970 to 2015, 5[1] out of the 14 nations in the franc zone suffered major capital flight totaling around $160 billion (Boyce and Ndikumana, 2018). 25[2] out of 39 non-Franc zone countries experienced an estimated loss of nearly $1.223 trillion over the same period. Franc Zone nations are among those in Sub-Saharan Africa where for every dollar of foreign borrowing, roughly 60% fled the country in the form of capital flight, according to studies by Ndikumana and Boyce (2007).

According to Ndiaye's (2011) research, the Franc Zone's macroeconomic performance is superior to that of the rest of Sub-Saharan Africa. In fact, from 1960 to 2004, the Franc Zone had lower inflation rates than non-Franc Zone nations (8.06 percent vs. 76.02 percent using the GDP deflator; 2.77 percent vs. 3.68 percent using the consumer price index), lower inflation variability (12.03 percent vs. 230.44 percent), a smaller budget deficit (-3.89 percent vs. -4.70 percent from 1965 to 2004), and higher economic growth (3.09 percent vs. 2.85 percent) from 1970 to 2003. This macroeconomic climate, which is more steady in the Franc Zone than it is across the rest of sub-Saharan Africa, ought to encourage local investment and reduce capital flight. But the Franc Zone is suffering tremendous capital flight, thus this is not

the case (Boyce and Ndikumana, 2018). As a result, despite the macroeconomic environment in the Franc Zone being relatively stable, it could be useful to investigate the elements that are crucial in explaining capital flight in the Franc Zone and other economies.

A broad sample of developing nations or other countries outside the Franc Zone were included in some earlier research on the factors that influence capital flight. However, a sample that solely contains Franc Zone nations is necessary to conduct a meaningful study of the factors that influence capital flight from the Franc Zone and outside the Franc Zone. By concentrating on a sample that only contains these nations. First off, this study is an expansion on Ndiaye's (2011) work, which omitted a comparison of countries in the Franc Zone and those outside of it. The contribution in the literature lies, on the one hand, in the comparison between franc zone and non-member countries. On the other hand, the currency rate, a significant factor in international trade. In the non-franc zone, the exchange rate is variable, whereas in the franc zone it is fixed. The current question is whether the variability of exchange rates favors capital flight or not. Since the literature shows that capital flight generally occurs when currency leaves one country for another.

Second, our research offers a better analytical[3] framework for determining the reasons for capital flight in nations both inside and beyond the Franc Zone. The PMG technique enables us to examine the short- and long-run explanatory elements of capital flight. To the best of our knowledge, few studies have used this method to make comparisons between groups of countries. These factors cannot be easily observed in the short run, so a long period of time is needed to justify an investment that has been diverted.

Third, this study uses a more recent database that covers capital flight over a period from 1970 to 2018 and takes into account a covid-19 pandemic. This contribution is a major strength, as it includes new methods for calculating capital flight and the inclusion of new variables. Fourthly, this study advances our knowledge of the factors that led to the occurrence of this event in these two regions. This heuristic approach helps to identify a number of economic and non-economic reasons that cause capital flight in nations both inside and outside the Franc zone. According to econometric projections, capital flight is partially financed by external debt, inflation, and natural resource income in environments with weak institutional quality and governance. The findings also show that capital flight episodes take place in less developed financial systems and macroeconomic environments that are unstable. This is one of the reasons that all of these factors are considered.

In view of all these disparities, what distinction can be made from the macroeconomic and institutional determinants of capital flight between African countries in the franc and the non-franc zones?

This study compares the macroeconomic and institutional factors that influence capital flight between nations in the franc zone and those outside of it. The literature review and methods are presented in Sections II and III, and the primary findings and conclusion are presented in Sections IV and V.

2. LITERATURE REVIEW

2.1. Critical review of theoretical literature

2.1.1. Theoretical approaches to capital flight

In the literature, several theories that explain capital flight are microeconomic (Geda and Yimer, 2016). However, the theory of the movement of static or dynamic capital pioneered by Meade (1951), Fleming (1962) and Bardhan (1967) highlights the distribution of capital between countries and generations in order to absorb yield differentials. It does not explain how capital flight and the exchange rate could be related. It is in response to this limit that Sachs (1984) and Mody and Taylor (2004) take into account market imperfections in an attempt to better explain the phenomenon of capital movements. However, they only examine the credit markets, which have an impact on interest rates, rather than the exchange rate. It is the extension of the studies of Wiliams (1938), Markowitz (1952) and Williamson (1983) in the portfolio theory approach to capital movement that trade openness play an important role by taking into account variations of exchange rates and various related risks.

Some of the factors that determine capital flight that are specifically connected to the portfolio of people are attempted to be explained by authors like Hermes et al. (2002), Ndiaye (2009), and Ndikumana and Boyce (2011). These authors propose that macroeconomic instability, as seen by rising budget and current account deficits, exchange rate overvaluation, rising inflation, and political unrest, might potentially account for the capital flight seen in the majority of African nations. As mentioned above, the popularity of the portfolio approach used in many empirical studies is explained by its consideration of the yield differential, risks and uncertainties. Since the exchange rate regime is very uncertain, even in the presence of fixed exchange rates. This uniqueness makes this strategy particularly effective at explaining capital flight from underdeveloped nations (Geda 2002).

Following the application of the portfolio choice concept as defined by Ali and Walters (2011) in the context of Sub-Saharan Africa, a relationship between capital flight and institutions is established. According to the theoretical study of the portfolio choice theory,

corruption is a major cause of capital flight. Tanzi and Davoodi (1997) believe that a poor institutional environment leads to a decline in investment, an increase in uncertainty, insecurity and, in turn, an increase in capital flight. Whatever the approach considered, Ayogu and Gbadebo-Smith (2015) consider that the combined effects of corruption, poor governance and a low exchange rate are at the root of capital flight in many developing countries. Given that the portfolio approach is microeconomic, the dynamic optimization model which has a microeconomic basis, completes it.

2.1.2. Dynamic capital flight optimization model

An unstable political and economic environment causes economic agents to engage in capital flight. For the classical economist Ramsey (1928), speaking of capital flight is tantamount to asking the question of how much a nation should save. Capital flight according to Hotelling (1931) seeks to answer the question of what is the optimal rate of resource extraction in a country. The author wants to know the amount of capital flight necessary to avoid being an obstacle to the development of a country. However, the fact remains that capital outflows do not meet any standard and each individual wants to maximize his external savings in a floating exchange rate regime with reliable interest rates.

The work that highlights the dynamic optimization model for capital flight is that of Slade (2009). The advantages of this modern formulation compared to the traditional one in modeling the determinants of capital flight are numerous. Firstly, it explicitly offers the reduced form of the microeconomic basis of the portfolio theory of the capital flight models used in the literature. Secondly, it gives a solid analytical solution which can be extended in several directions[4]. Finally, it yields a cost function and a steady-state solution analytically deduced from the first principle to be used in econometric analysis. This approach helps to frame research in a context of deeper parameters. It better explains the relationship between the exchange rate regime and capital flight.

2.2. Critical review of empirical literature

2.2.1. Macroeconomic determinants of capital flight

An environment of high domestic investment reflects the weakness of capital flight. Kalop and Ojo (2012) show that long-run capital flight is caused by the exchange rate in Nigeria unlike Lensink et al. (2000) who find no link between exchange rate uncertainty and capital flight. According to Al-Basheer et al. (2016), the foreign debt, taxes and economic openness (exchange rates) are the positive determinants of capital flight in Jordan. This result is similar

to that of Uddin et al. (2017) in the case of Bangladesh. Similar results are found by Gankou et al. (2016). Contrary to these results, Boyce and Ajayi (1997) argue that foreign debt is not a determinant of capital flight.

Owusu (2016), Adedayo and Ayodele (2016) show that capital flight positively determines economic growth. Ndiaye (2009) instead finds a negative correlation between capital flight and the deposit / GDP ratio. Ndikumana and Boyce reaffirm this adverse association (2003). According to Kwaramba et al. (2015), capital flight and natural resources have a beneficial association. These results are in line with those of Ondo and Taylor (2012). Contrary to the latter, Arezki et al. (2015) discover a link between natural resources and capital flight that is unfavorable.

To our knowledge, this literature is constrained by a dearth of empirical research on the link between the exchange rate and capital flight, a failure to include the total rent of natural resources as an explanation for capital flight, and a lack of comparisons between groups of nations.

2.2.2. Institutional determinants

The studies of Uddin et al. (2017) argue that political instability, financial crimes that generate massive illegal income and corruption in the tax administration positively affect capital flight to Bangladesh. According to Kingsley (2015) and Osei-Assibey et al. (2018), corruption is a factor that positively influences capital flight in sub-Saharan African nations. This outcome is in line with Gunter's (2017) findings for China. Political instability is a positive driver of capital flight, as demonstrated by Geda and Yimer (2016) and Alam and Quazi (2003). Ndikumana et al. (2021) demonstrate, however, that capital flight is lowest under the most well-run regimes. However, it increases with the duration of the regime. Efobi and Asongu (2016) show that terrorism in all its forms increases capital flight.

In contrast to the findings described above, Kwaramba et al. (2015) demonstrate that there is a negative association between institutions and capital flight in the instance of Zimbabwe. Capital flight is unaffected by corruption, according to Collier et al. (2004). As Nyoni (2000) points out, political risk is not a factor in determining capital flight in Tanzania, this conclusion has previously been confirmed. It is also clear that only Dooley (1987) discovers a connection between political risk and capital flight that is negative.

Concerning this literature, few studies to our knowledge take into account the quality of government index, which is a composite institutional index to explain the flight of capital in the countries of the franc zone and outside the franc zone. Similarly, the internal and external

conflict variables are neglected in the literature. By taking these variables into account, this knowledge gap can be filled.

3. STUDY METHODOLOGY

3.1. Sampling, Data, and Sources

Our sample includes both countries in the franc zone (Cameroon, Gabon, Congo, Burkina Faso, and Ivory Coast) and those outside of it (Kenya, Uganda, Botswana, Madagascar, Malawi, Mozambique, South Africa, Zimbabwe, Tanzania, Zambia, Ghana, Nigeria, Sierra Leone, Angola, and the Democratic Republic of the Congo). The information is quantitative in nature and derived from secondary sources. They are based on data from the Political Economic Research Institute (PERI, 2021), the Gothenburg database (2022), the International Country Risk Guide for Africa (2021), the Balance of Payments Statistics (2022), and the World Bank (WDI, 2021).

We use models developed by Fofack and Ndikumana (2015). This model's matrix form is as follows:

$$Capitalflight_{it} = Exchangerate_{it}\alpha + X_{it}\beta + Y_{it}\gamma + \varepsilon_{it} \quad (1)$$

Where $Capitalflight_{it}$ is the capital flight as a percentage of GDP; $Exchangerate_{it}$ exchange rate, which is an interest-related variable ; X_{it} The vector of macroeconomic control variables (growth (GDP per capita), inflation rate, external debt, and total natural resource rent) is represented by this variable ; Y_{it} Is the vector of institutional control variables (government quality index (which considers corruption, bureaucratic quality, law and order), democracy, government stability, external conflict, and internal conflict) and, ε_{it} is the error term.

The econometric model to estimate may be expressed as follows using the reduced panel model mentioned above:

$$Capitalflight = \alpha_0 + \alpha_1 Capitalflight_{it-1} + \alpha_2 Exchangerate_{it} + \alpha_3 Growth_{it} + \alpha_4 Inflation_{it} + \alpha_5 Externaldebt_{it} + \alpha_6 Totalnaturalresource + \alpha_7 GovQuality_{it} + \alpha_8 Democracy_{it} + \alpha_8 Govstab_{it} + \alpha_8 Exterconf_{it} + \alpha_3 Interconf_{it} + \varepsilon_{it} \quad (2)$$

3.2. Estimation method

The stationarity tests show that the variables are not stationary at level. They are of different order. This makes it possible to use the method of aggregated grouped averages, also called Pool Mean Group (PMG) developed by Pesaran et al. (1999). This PMG estimator applies to ARDL (Autoregressive Delayed Dataset) models, and provides good properties even when

the sample size is small compared to the temporal dimension. The general specification of a dynamic panel under ARDL has the following general form :

$$CF_{it} = \sum_{j=1}^{p} \alpha_{ij} CF_{i,t-j} + \sum_{j=0}^{q} \beta'_{ij} X_{i,t-j} + \mu_i + \varepsilon_{it} \quad (3)$$

Where number of groups i=1, 2,…, N ; number of periods t = 1,2,…, T ; X_{it} is the vector of explanatory variables consisting of the exchange rate, index of government quality, level of democracy, government stability, internal and external conflicts, GDP per capita growth rate in %, inflation, external debt, and total natural resource rent ; β'_{ij} are the vectors coefficient ; α_{ij} are the scalars ; μ_i is the group specific effect. T must be large enough that the model can be fitted separately for each group. Time trends and other fixed regressors can be included. The variables in the specification must be stationary of order I (1) and cointegrated. This allows the error term to be stationary of order I (0) for all individuals in the panel.

The main advantage of having the variables co-integrated is their ability to react to any deviation from the long-run equilibrium. This allows us to put model (2) in the form of an error correction model.

$$\Delta CF_{it} = \phi_i \left(CF_{i,t-1} - \theta'_i X_{it} \right) + \sum_{j-1}^{p-1} \alpha^*_{ij} \Delta CF_{i,t-j} + \sum_{j-0}^{q-1} \beta'^{*}_{ij} \Delta X_{i,t-j} + \mu_i + \varepsilon_{it}$$

(3)

Where $\phi_i = -(1 - \sum_{j=1}^{p} \alpha_{ij})$, $\theta'_i = \sum_{j=0}^{q} \beta'_{ij} / (1 - \sum_k CF_{ik})$, $\alpha^*_{ij} = -\sum_{m=j+1}^{p} \alpha_{im}$, j=1,2,…,p-1 and $\beta'^{*}_{ij} = -\sum_{m=j+1}^{q} \beta_{im}$, j=1,2,…,q-1.

With ϕ_i the parameter of the adjustment term. If this parameter is zero, there is no long-run relationship. It must be negative and significant to express the long-run equilibrium relationship. θ'_i is the vector of long-run coefficients and Δ denotes the variation between two given dates. In this new specification, the short-run dynamics of the variables are influenced by the deviation from the long-run equilibrium. The choice of PMGs is also justified in this study by the fact that the institutional variables take enough time to act. The literature shows that institutional conditions are structural. Therefore, results must be observed over a long period of time in order to obtain the expected returns.

4. RESULTS

The amount of integration or stationarity of the variables is examined using a stationarity test set (Im-Pesaran-Shin (IPS), Levin Lin et Chu (LLC), and Breitung test). These tests allow us to assess the evolution of its variables in order to avoid any fallacious regression. The results are presented in Table 1 below:

Table 1: Im-Pesaran-Shin (IPS), Levin Lin et Chu (LLC), and Breitung unit root test

Variables		Franc zone countries			Non-franc zone countries		
	Test	Unit root test at a level)	Unit root test in a 1st difference)	Cointegration order	Unit root test at a level)	Unit root test in a 1st difference)	Cointegration order
Capitalflight	IPS	0.0000			0.0000		
	LLC	0.0028		I(0)	0.0000		I(0)
	BREITUNG	0.0000			0.0000		
Govquality	IPS	0.8870	0.0000	I(1)	0.0232		I(0)
	LLC	0.0545		I(0)	0.0001		
	BREITUNG	0.2101	0.0145	I(1)	0.2942	0.0000	I(1)
democracy	IPS	0.5436	0.0000		0.3223	0.0000	I(1)
	LLC	0.0251		I(0)	0.0013		I(0)
	BREITUNG	0.7542	0.0000		0.9328	0.0000	I(1)
Govstability	IPS	0.5590	0.0000		0.1745	0.0000	I(1)
	LLC	0.1079	0.0029	I(1)	0.0002		
	BREITUNG	0.0208		I(0)	0.0010		I(0)
Interconflict	IPS	0.0645			0.0337		
	LLC	0.0176			0.0000		
	BREITUNG	0.0360		I(0)	0.0029		I(0)
Extercon flict	IPS	0.0586			0.2117	0.0000	I(1)
	LLC	0.0018		I(0)	0.0000		
	BREITUNG	0.0048			0.0001		I(0)
Growth	IPS	0.0000			0.0000		
	LLC	0.0048		I(0)	0.0000		I(0)
	BREITUNG	0.0002			0.0000		
Inflation	IPS	0.0000			0.0000		
	LLC	0.0000		I(0)	0.0000		I(0)
	BREITUNG	0.0000			0.0000		
Externaldebt	IPS	0.9435	0.0000		0.7562	0.0000	
	LLC	0.8723	0.0000	I(1)	0.3733	0.0000	I(1)
	BREITUNG	0.0763		I(0)	0.0001		I(0)
Totalnatu ralresour ce	IPS	0.0132			0.0019		
	LLC	0.0400		I(0)	0.0012		I(0)
	BREITUNG	0.0064			0.0000		
Exchang erate	IPS	0.0666			0.0005		
	LLC	0.0552		I(0)	0.0007		I(0)
	BREITUNG	0.0039			0.0016		

Source : Authors

The findings in table 1 demonstrate that although some variables are stationary in the first difference, others are stationary at the level. Depending on the stationarity test that was employed. The ARDL model may be used with panel data because certain variables are stationary at first difference while others are stationary at level.

Table 2: Summary of the long-run and short-run ARDL panel data results of the determinants of capital flight in franc zone and non-franc zone countries

	Long-run ARDL panel data		**Short-run ARDL panel data**
Variables	Capital flight	**Variables**	Capital flight

	Franc zone countries	Non-franc zone countries		Franc zone countries	Non-franc zone countries
			ECT (-1)	-0.923***	-0.709***
				(0.000)	(0.000)
Exchangerate	-0.062***	0.003	D(Exchangerate)	0.036**	0.005
	(0.000)	(0.702)		(0.028)	(0.771)
Growth	-0.506*	0.113	D(Growth)	0.219	0.13
	(0.090)	(0.277)		(0.541)	(0.385)
Inflation	0.07	-0.001	**D(I**nflation)	0.041	-0.14*
	(0.701)	(0.278)		(0.742)	(0.087)
Externaldebt	-0.018	-0.0018	D(Externaldebt)	0.264***	0.28*
	(0.519)	(0.886)		(0.002)	(0.053)
Totalrentresource	1.468***	-0.17**	D(Totalrentresource)	-0.761***	0.36
	(0.000)	(0.012)		(0.005)	(0.313)
Govquality	34.127***	3.03	D(Govquality)	-49.947***	-30.04
	(0.006)	(0.373)		(0.003)	(0.269)
Democracy	0.764	0.63**	**D(D**emocracy)	0.407	0.53
	(0.348)	(0.014)		(0.758)	(0.772)
Govstability	-0.182	-0.16	**D(G**ovstability)	-0.936	-0.62
	(0.734)	(0.408)		(0.125)	(0.454)
Interconflict	1.168**	0.38	D(Interconflict)	1.876	-0.43
	(0.020)	(0.138)		(0.346)	(0.756)
Exterconflict	-0.401	-0.666**	D(Exterconflict)	-1.033***	0.25
	(0.637)	(0.026)		(0.000)	(0.795)
			Cons	-28.25	3.14
				(0.000)	(0.004)
Observations	155	465		155	465
Group	5	15		5	15

Notes: Parentheses around P-values; *, **, *** Statistics that are significant at the 10%, 5%, and 1% confidence levels, respectively

Source: Authors

In the light of the results presented in the table 2 above, several comments can be made:

4.1. Institutionnal indicators

Concerning the long-run relationship, it appears from the table 2 above that the Index of the quality of government (Govquality) has a positive and significant effect on capital flight in the Franc zone, whereas it is not significant in Non-franc zone countries. This result is contrary to the theoretical literature and to the studies of Ndikumana et al. (2015). As for the variables Democracy and External conflict, they respectively have a significant positive and negative effect on capital flight in the Non-franc zone countries and not significant in the franc zone countries, thus invalidating our expectations and the theory. The variable Internal conflict has a positive and significant effect on the capital flight from the franc zone, unlike in Non-franc zone countries where the effect is not significant. For this reason, when a country is dominated by internal conflicts, this strongly favors capital flight to countries whose

environment is more stable. Finally, the variable Stability of government has no effect on capital flight whether in the franc zone or Non-franc zone. Andriana and Zajaczkowska (2017) and Geda and Yimer (2016) find opposite results.

Concerning the short-run relationship, the results show that the Index of the quality of government has a negative and significant effect on capital flight in the franc zone, unlike the non-franc zone. This result is in line with those obtained by Lensink et al. (2000) as well as those of Hermes and Lensink (2001) who show that the quality of government is a major determinant of capital flight. The variables such as Democracy, Stability of government and Internal conflict have no significant effect on capital flight in the two areas. As for the variable External conflict, it negatively and significantly impacts capital flight in the franc zone and not significantly in the non-franc zone. External conflicts push the leaders of countries in the absence of conflict to keep capital in their country. This result is in line with those of Alam and Quazi (2003), Ndikumana et al. (2015). Finally, the variable ECT (-1) (cointegration) has a negative and significant coefficient showing that there is an adjustment mechanism between the long-run and short-run disequilibrium.

4.2. Macroeconomic indicators

The results of the long-term relationship show that Growth and the Exchange rate have a negative and significant effect on capital flight in the franc zone, unlike the non-franc zone where these variables are not significant. This result is similar to that of Ajayi (1997). A 1% increase in the growth rate translates into a 0.5% drop in capital flight in the long-run. In the short-run, the result is not significant. As for the exchange rate, an increase of 1% translates into a decrease in capital flight of 0.062%. Although this percentage is quite low, this result can be justified by the fact that in the franc zone, the exchange rate is fixed and varies very little according to the evolution of the exchange market unlike countries outside the franc zone. This result confirms our expectations and joins those obtained by Kalop and Ojo (2012). Furthermore, the total rent of natural resources positively and significantly affects capital flight in the franc zone. A 1% increase in total rent would translate into a 1.47% increase in capital flight. However, the direction of the relationship is reversed in the non-franc zone countries where a 1% increase in the total rent of natural resources generates a decrease in capital flight by 0.17%. This result could be justified by the fact that the management of natural resources is done with more opacity in the franc zone countries compared to those outside the franc zone. The inflation rate has no effect on capital flight in the two groups of countries. This result is contrary to that obtained by Lensink et al. (2000).

In the short-term, the Growth rate has no effect on capital flight whether in the franc zone or in the non-franc zone. This result is quite surprising given the growth rate of the countries of the two zones in recent years. This result is contrary to that of Lan (2009) and Usman and Arene (2014), Owusu (2016), Adedayo and Ayodele (2016) and Adaramola and Obalade (2013). Likewise, inflation does not impact capital flight in the franc zone while it negatively and significantly influences capital flight in the non-franc zone. The foreign debt is an accelerating factor for capital flight in the franc zone and the non-franc zone. This result confirms those of Al-Basheer et al. (2016), Gankou et al. (2016), Azziz et al. (2014) and Ali and Walters (2011) but contradicts those obtained by Liew et al. (2016). The exchange rate favors capital flight in the franc zone, unlike the non-franc zone. This result is surprising in that a relatively fixed exchange rate should allow managers to better consolidate their investments because the flexible exchange rate system makes investments unprofitable. Kalop and Ojo (2012) find opposite results. In the short-run, the total rent of natural resources significantly reduces capital flight to the franc zone, unlike in countries outside the franc zone. Ayamena et al. (2016) who find contrasting results in the Franc zone justify it by erroneous invoicing in transactions on raw materials.

5. CONCLUSION AND RECOMMENDATIONS

This study compares the macroeconomic and institutional factors that influence capital flight between nations in the franc zone and those outside of it. The results show that the determinants of capital flight vary according to the area. However, short-run and long-run results remain ambiguous because some factors favor long-run capital flight and others reduce it. Capital flight has several causes depending on the region. Given everything mentioned above, the following suggestions are offered: Create guidelines to regulate exchange rate volatility, especially in nations outside the franc zone. It is a question of limiting the anticipations of capital flight when for cyclical reasons the exchange rates will depreciate; Improve the quality of government by putting in place processes to allow control and the fight against corruption and the misappropriation of public funds, especially in the Franc zone countries; and increase transparency in the management of the natural resources in the countries of the Franc zone.

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