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Export Diversification and Capital Flight in Cameroon

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Author's contribution

The sole author designed, analysed, interpreted and prepared the manuscript.

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ABSTRACT

The aim of this study is to show the effect of export diversification on capital flight in Cameroon over the 1984-2015 period. The Autoregressive Distributed Lags (ARDL) method is used. The results show that the export diversification promotes capital flight in Cameroon. The main recommendation is to ensure efficiency and transparency in the export diversification process in order to fight corruption, report the net worth of exported goods and fight capital flight.

Keywords: Export diversification; capital flight; ARDL; corruption; Cameroon.

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1. INTRODUCTION

There are sufficient reasons to be interested in the export diversification in developing countries. Comparing African countries to other developing regions and despite the delay in the early 1980s, a marked improvement is recorded from 1987 onwards. Merchandise exports climbed to $ 438 million in 2011 [1]. This improvement in merchandise exports is favored by the rise in commodity prices. Likewise, the amount of capital flight becomes garish and exceeds more than US $ 1400 billion between 1970-2015 [2].

The pioneering work on export diversification is that of several authors [3,4]. The latter favor free

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trade and see export diversification as a change in the composition of an economy's export structure. However, for Dennis and Shepherd [5], export diversification is a process of expanding the range of products that a country export.

Comparing the CEMAC countries, and referring to the Theil index, Cameroon remains the most diversified country in the 1984-2015 period, followed by Equatorial Guinea and the last country remains Chad. However, Cameroon's diversification efforts have known unfavorable periods (1995-2006; 2009-2014) with indices which are progressing. It went from 3.78 to 5.55 between 1995 and 2006 and from 4.03 in 2009 to 4.53 in 2015. From 1985 a trend towards diversification was observed until 1995 when Cameroon posted its best performance in terms of diversification (Theil's index is 3.78). After this date, despite a weak episode of diversification, the general trend remains concentration [1]. This situation is depicted in Fig. 1.

At the same time, the amount of capital flight according to data from the Political Economic Research Institute [6] is taking off particularly in Cameroon, the large amounts of the capital flight were recorded in 1987 (US $ 3,730.906 million in % of GDP), 1994 (US $ 3,140.608 million) and in 2008 (US $ 5,582.336 million in % of GDP). The amount for 2008 remains the highest. This situation can be explained by the financial crisis and the riots that raged in the country. Added to this, is the political risk and macroeconomic uncertainty (high inflation) that have pushed agents to keep accounts in tax havens. depicted in Fig. 2.

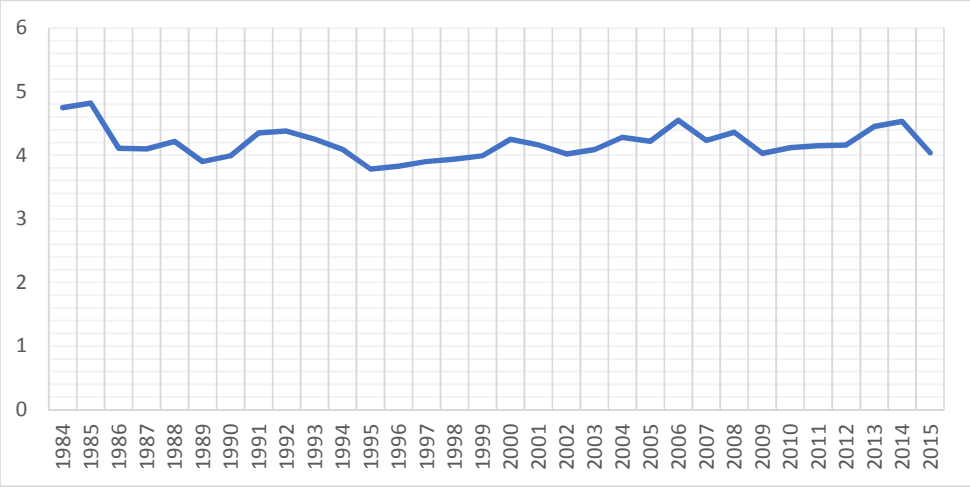

Fig. 1. Evolution of export diversification in Cameroon between 1984-2015 period
Source: Authors

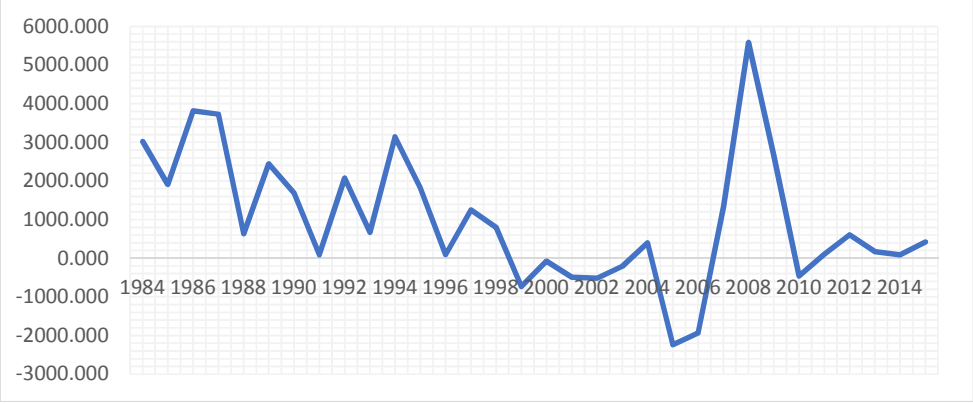

Fig. 2. Evolution of capital flight (%GDP) in Cameroon between 1984-2015 period
Source: Authors

From the aforementioned, it is also clear that a high concentration reduces capital flight and that a large diversification promotes capital flight. As for example the case of 1995 where there is a strong diversification accompanied by a large capital flight. Likewise, in 1985, it emerged that the amount of capital flight was small accompanied by high concentration.

Cameroon depends on primary products which are not numerous enough and have a low value in terms of export earnings. According to Economic Social and Finance Report [7], the main export products include cocoa (9.7%), coffee (2.6%), bananas (2.6%), cotton (3.2%), natural rubber (2.4%), crude petroleum and petroleum products (48.4%), wood and derived products (13.9%), minerals and aluminum in raw form (2.7%) and others (19.5%). However, most of these products face certain difficulties in the international market. Among the difficulties encountered are price instability, inferior products, quotas and restrictions, tariffs, tax escalation and other trade barriers. The main export remains agriculture.

According to Minader [8], the production of food crops reached respectively 15 million tons in 2010 with an export value of 128,000 dollars, then 15.6 million tons in 2011 for an amount in export value of 144,000 dollars and finally 17 million tons in 2012 followed by 301,000 dollars corresponding to exports. It should be noted that the more production increases, the monetary values in terms of exports follow the same trend. However, the Economic Social and Finance Report [7] shows that in recent years, the volume of certain products (fuels and lubricants, wood veneer sheets, aluminum, bananas, wood, crude oil) exported by Cameroon is going down. This is due to the contraction in global demand. On the other hand, other products are experiencing an increase (raw cotton, cocoa beans, coffee) in their exports.

However, the light industries and agro-industrial are the engines of the manufacturing sector. The World Bank report [9] shows that the manufacturing production index increased by 1.3% between 2009 and 2008 (15.5%). As for the tertiary sector, it represented 45.6% of GDP in 2009, it increased by 3.5% and contributed to 1.6% of growth from 2010 to 2011.

Boyce and Ndikumana [10] classify Cameroon as the 10th country in sub-Saharan Africa in terms of capital flight in 2012. Over the period 1995-2012, Cameroon recorded $ 17 billion in terms of capital flight. The amount of false invoices represents 83% of the amount of capital flight recorded in Cameroon between 1970-2010 period. This situation is only getting worse. Between 1995 and 2012, the share of false invoices in capital flight is estimated at 18.3 billion dollars, or 10 175 billion FCFA, “even surpass global leaks” with a rate of 107.5%. In the case of Cameroon, there are two aspects to this fraud. First, the under-invoicing of the value of export products, which contributes approximately 2.8 billion dollars (1540 billion FCFA) to leaks. Next comes the overbilling of imports, the impact of which amounts to US $ 4.6 billion.

Over the 1970-2010 period, the report from the Laboratory for Analysis and Research in Mathematicals Economics shows that the wood and oil production industries alone account for 90% of the income generated by the exploitation of natural resources and on average 70% of Cameroonian exports. In the 1995-2016 period, false export invoices in this sector peaked at 3,960 billion FCFA (7.2 billion dollars) while wood exporters volatilized 935 billion FCFA (1.7 billion dollar) via capital flight. The other sectors of the economy (except oil and wood) are dominated by smuggling, the incidence of which in terms of capital flight is around 1.7 billion dollars.

In the literature, there is a very controversial debate between the authors several authors [11,12,13], on the one hand, authors like [11,14,12,15] show that exports encourage capital flight. In the other hand, studies by several authors [16,17,13,18] rather show that exports negatively affect capital flight. This debate does not provide complete information on the consequences of export diversification on capital flight. This is why we intend, in the context of this research, to emphasize these forgotten aspects, by highlighting the effects of export diversification on capital flight. This is one of the contributions of this study. In view of all its debates, financial and macroeconomic statistics, the question of diversification and the capital flight remains pending in Cameroon.

The main contribution of this study is to highlight the relationship between export diversification and capital flight in Cameroon. Until now, the literature on this topic remains limited. In the case of Cameroon in particular, most of the studies are not interested in this relationship to our knowledge. Previous studies have

theoretically explained the link between export diversification and growth, external debt, inflation, financial development and conflict without, however, highlighting the relationship between export diversification and the capital flight that, drives the economic performance of developing countries. Closing this gap in the theoretical and empirical literature remains our objective.

One of the additional reasons for our study is the classification of Cameroon in the Economic and Monetary Community of Central Africa (CEMAC) Zone. The figures show that this country is the most diverse in the CEMAC zone and also records huge amounts in terms of capital flight, hence the following question, what is the effect of export diversification on capital flight in Cameroon?

The main aim of this paper is therefore to highlight the effect of export diversification on capital flight in Cameroon. Sections 2 and 3 present the literature review and methodology while sections 4, 5 and 6 present the main findings, discussion and conclusion.

2. LITERATURE REVIEW

2.1 Theoretical Review

The aim of this subsection is to highlight a theory that can reconcile diversification and capital flight. The theory that seems to better explain this relationship remains that of international trade. In the event of perfect capital mobility, with exchange rates of the rest of the world low compared to the national rate, there is capital flight which occurs not by diversification but by the import of foreign products. However, export leakage, including diversification, is through transaction forgery through the process of misrepresenting the prices of exported products. This is the theory of improper invoicing or under invoicing of export products developed by Hermes et al. [11]. This theory or measure of capital flight takes into account counterfeiting activities[1]. The escape from wealth is determined by comparing trade data from both the importing and exporting countries. Two assumptions are made at this level: on the one hand, importers are assumed to be involved in capital flight when they declare higher values of imported goods compared to the declared value of the same goods by exporters; on the other hand, the exporters in turn are involved in capital flight when they declare lower values of the exported goods compared to the declared value of the same goods by the importers.

Proponents of this measure according to Hermes et al. [11], examine much more that abnormal resident capital outflows can be included in the under-invoicing of exports. The usual method of calculating counterfeiting is the comparison of partner countries. Here, the business Partner is called the world. Whether there is a country Ci with the trading partner called world, counterfeiting is calculated as follows: $Xmis = Xctry - Mworld/ax$; with Xmis : poor export invoicing;$Mmis = \frac{Mctry}{ax}$ –Xworld; with Mmis: poor import invoicing; Xctry: exports declared by country Ci; Mworld: imports from country Ci reported by the world; Mctry: imports declared by country Ci ; Xworld: exports sent to country Ci declared by the world (i.e. world imports from this country); ax is the correction factor CIF / FOB-CIF is the cost of insurance and FOB means free on board, that is to say without transaction.

The founders of international trade theory include several authors [19,20]. These theories have two things in common: an assumption of perfect competition and an explanation of international trade based on the characteristics of nations[2]. However, these theories do not explain the contemporary process of trade and capital flight very well. With the intensification of intra-industry trade and the gradual liberalization of trade, new theories of international trade have developed, it is the theory of intra-industry trade and diversification.

These new approaches to international trade are distinguished from the classical approach and are a continuation of the latter by abandoning pure and perfect competition and the immobility of the factors of production in favor of imperfect competition and mobility of factors of production. According to the intra-branch exchange theory, the works of Linder [21] formed the foundations of this theory. It is based on two fundamental elements: the flow of imports and exports of similar products between countries and the flows of imports and exports of intermediate goods in the production processes of finished products. According to the latter, the proximity of countries in terms of level of development allows a cross-

[1] *In this case, we see the overcharging of exports.*

[2] *The differences in production techniques at Ricardo, the differences in factor endowments at Heckscher Ohlin and Samuelson.*

exchange of similar products in the sense that domestic demand favors local production allowing the achievement of economies of scale and a strengthening of know-how. Achieving economies of scale prompts local producers to seek outlets in foreign markets where demand for this type of product already exists.

Thus, it is no longer the production factors that determine international trade, but the demand of product. Linder's [21] approach has been improved by Lassudrie-Duchêne [22], who states that if cross-trade between two countries involves similar products, these are not entirely identical. They can present differences by their quality or by their real characteristic. Consequently, this participation in the intra-branch exchange would allow local companies to expand their market and to be able to export their production abroad. The openness generated by this external export leads to a capital flight due to the lack of processing of local products as is the case in Cameroon. The export of products in a noise state does not generate added value and this supplement which can contribute locally is found abroad.

From the perspective of intermediate goods, Lassudrie-Duchêne [23] developed the concept of international decomposition of productive processes, which seems to make the analysis of diversification compatible with new theories of international trade. It shows that international specialization and the comparative advantages of nations must not only be observed at the level of final products but also at the level of the various production processes contributing to the production of an end product necessary to limit illicit capital outflows. The latter also shows the existence of a specific gain in international trade, observed in the various production processes. These demonstrations make it possible to advance a complete theory of the internationalization of economies and to highlight the combined role of firms and nations in the structuring of international specializations of economies. Multinational companies are therefore privileged actors in the implementation of the international decomposition of productive processes by delocalizing certain segments of the value chain which can give rise to a prior export of intermediate components re-imported in the form of final products. This reimportation increasingly causes the national capital outflow to the countries where the industries are located.

The international breakdown of productive processes therefore contributes to greater horizontal diversification and a large capital outflow. It nevertheless allows countries participating in international trade to overcome their handicaps in the production sectors for which they are less competitive, which results in a diversification of the industrial structure with the creation of a new competitive industry. This is facilitated by the fragmentation of the value chain and the industrial relocations operated by multinational firms. The balance between diversification and the international development of intra-industry trade is reflected in a greater export diversification which, in turn, in a context of corruption, of a fragile and uncertain environment causes capital flight.

2.2 Empirical Review

This empirical review focuses on export diversification and capital flight, including other variables. Having no work highlighting this relationship directly, based on the portfolio diversification theory, an open economy and economic policy, Pastor [14], find that, one of the negative consequences of capital flight is linked to the export of local products internationally. By under-invoicing exports, this leads to losses in terms of the tax base and rather benefits the person doing the manipulation; this constitutes a great capital flight at the level of the state which could exploit it within the framework of its sovereign policies. However, Ajayi [12] finds that the capital flight leads to the erosion of the tax base as well as a fall in public revenues and, by extension, a drop in public investments which will in turn reduce private investment as well as the total export diversification. This observation was approved by Ajayi [15].

In the other hand, Lensink et al. [16] found a negative effect of corporate tax payments on capital flight. This negative relationship is justified by the absolute control of the agents who collect taxes and by the concentration of companies at the national level. In addition, Ndikumana and Boyce [17] empirically show that countries with high capital flight tend to have the lowest tax revenues. If export agents do not declare the exact value of their turnover for fear of being hit by the tax, this can only lead to tax flight.

Duru and Ehidiamhen [24] examined the impact of export diversification on economic growth in Nigeria between 1980 and 2016. The results of the study show that there is a positive relationship between export diversification and economic growth. Coulibaly and Akia [13]

examined in the case of the Ivory Coast the interactions between the structure of exports and economic growth. The results of their work show that the diversification index has a negative effect on economic growth in the short and long term. Thus, showing a high level of capital flight which does not promote economic growth. Similarly, Charles et al. [18] found the same results in Nigeria. Their studies focus on the relationship between natural resource endowment and export diversification and its implications for economic growth. Granger's causality test shows that export diversification does not cause economic growth. In addition, the error correction results have shown that, export diversification has a positive impact on growth. showing that the good control of corruption and that of capital flight are favorable to diversification and economic growth.

Hodey and Senadza [25] using the generalized moments method and three different measures of diversification find that export diversification has a significant effect on growth in 42 countries in sub-Saharan Africa (SSA). Hammouda et al. [26] find that export diversification has a positive and significant impact on growth in total factor productivity and that the contribution of total factor productivity to growth was higher in African countries subject to more regimes diversified. Rath and Akram [27] confirm that export diversification positively effects total productivity growth in the South Asian region, thereby helping to reduce growth volatility.

Kumarasamy and Singh [28], find that improving access to finance and financial development allows companies that operate outside capitals or big cities to easily access export markets. This access promotes the development of industries and the introduction of new export products as well as the capital flight. Likewise, Cecchetti and Kharroubi [29] argue that, increased funding does not always produce better results, because the financial sector competes with the rest of the economy for scarce resources. They find that the size of the financial sector has an inverted U-shaped effect on productivity growth.

Osakwe et al. [30] using Theil's diversification index for a sample of 144 countries found in the specific case of sub-Saharan African countries, the economies that are more open to foreign trade have less diversified export structures. This can nevertheless reduce capital flight. Fonchamnyo and Akame [31] show that openness positively affects the export diversification while promoting capital flight. According to the OCDE [32], corruption increases transaction costs because it causes delays, capital flight and unnecessary procedures for the sole purpose of increasing the number of possibilities for corruption. Corruption therefore reduces the profitability of the investment by creating additional costs and increasing uncertainty, which is likely to affect the number of products exported. In light of this dense literature review and to our knowledge, few works have highlighted the relationship between export diversification and capital flight.

3. METHODOLOGY

3.1 Sampling, Data and Sources

This study analyzes the effect of export diversification on capital flight in Cameroon. The choice of Cameroon is justified by the availability of data over a long period, by the lack of study reconciling these two themes and, because Cameroon is the most concerned by the two phenomena compared to other countries in the sub-CEMAC region. The study period is from 1984 to 2015. Data are taken from the following sources: International Monetary Fund (IMF) [1]; Political Economic research institute (PERI) [6] and the World Bank (World Development Indicators) [33].

3.2 Econometric Model and Estimation Technique Adopted

3.2.1 Econometric model

To reach the objective, time series regression techniques are used, inspired by those used by several authors [13,34,35]. They show the effect of export diversification on growth. As part of our analysis, these models are modified, there is the introduction of the capital flight variable and the breakdown of the total diversification index. The econometric model in matrix form is as follows:

$$Y_t = \beta_0 + X_t\beta + Z_t\delta + \varepsilon_t \quad (1)$$

Where,

Y_t is the endogenous variable composed of Theil's diversification index, which is composed of the inter (extensive margin) and intra (extensive margin) index,
X_t is the variable of interest, capital flight as a percentage of GDP,

Z_t is made up of all the control variables (GDP per capita, domestic credit to the bank, external debt and government stability).
ε_t is the error term.

The econometric models developed take the following form:

$$Export\ Diversification\ Index\ (Theil)_t = \alpha_0 + Capital\ fligh_t\beta + Z_t\delta + \sum_{i=1}^{q}\alpha_{1t}\Delta Export\ Diversification\ Index(Theil)_{t-i} + \sum_{i=1}^{q}\alpha_{2t}\Delta Capital\ flight_{t-i} + \sum_{i=1}^{q}\alpha_{3t}\Delta Z_{t-i} + \gamma ECM_{t-1} + \varepsilon_t \quad (2)$$

$$Extensive\ Margin\ (Index)_t = \alpha_0 + Capital\ fligh_t\beta + Z_t\delta + \sum_{i=1}^{q}\alpha_{1t}\Delta Export\ Diversification\ Index\ (Theil)_{t-i} + \sum_{i=1}^{q}\alpha_{2t}\Delta Capital\ flight_{t-i} + \sum_{i=1}^{q}\alpha_{3t}\Delta Z_{t-i} + \gamma ECM_{t-1} + \varepsilon_t \quad (3)$$

$$Intensive\ Margin\ (Index)_t = \alpha_0 + Capital\ fligh_t\beta + Z_t\delta + \sum_{i=1}^{q}\alpha_{1t}\Delta Export\ Diversification\ Index\ (Theil)_{t-i} + \sum_{i=1}^{q}\alpha_{2t}\Delta Capital\ flight_{t-i} + \sum_{i=1}^{q}\alpha_{3t}\Delta Z_{t-i} + \gamma ECM_{t-1} + \varepsilon_t \quad (4)$$

With Z_t are the control variables incorporate Growth (GPD per capita), Domestic credit to private sector, Government stability and External debt.

3.2.2 Estimation method adopted

The equation of the effect of export diversification on capital flight above is estimated using the ARDL approach of Pesaran et al. [36]. In addition, robustness tests are carried out (preliminary tests and validation tests). Exploratory analysis of the data consisted in studying the evolution and the behavior of the variables over time. In order to analyze this effect, the autoregressive model with staggered delays (ARDL) developed by Pesaran and Shin [37] which has been extended thanks to Pesaran et al, [36] is highlighted. The use of this model is justified by the fact that it takes into account both short-run and long-run relationships of the tested variables of different levels of integration (I (1) and I (0)) or mutually In contrast to Johansen's method, this method (ARDL or ARDL Bound testing) makes it possible to introduce the dependent and independent variables that are delayed in the model, hence its name ARDL. Thus, this technique can be used even if the independent variable does not cause an instantaneous variation of the dependent variable as envisaged in the theoretical model. However, to apply the ARDL method, one must be sure that there are no I (2) variables. In addition, the ARDL offers a range of choices relating to the number of endogenous and exogenous variables and the optimal delay to be introduced into the model. In addition, this flexibility of the ARDL allows the introduction of dummy variables into the cointegration test, unlike Johansen's technique which does not allow such inclusion. For Pesaran et al. [36], this approach is better suited for small samples. However, Johansen's cointegration technique requires a large sample to obtain a valid result [38]. The ARDL Bound test allows different delays to be used for the regressors as opposed to cointegration VAR models where mixed delays for the variables are not allowed [36]. In view of the size of the sample and the results of bound testing that can be obtained, the results of estimates presenting both the long and short-run relationship are taken into account.

Concerning cointegration between variables (Bound testing approach), the [39,40] tests are the most used methods. However, these methods require that all variables be integrated of order 1 (I (1)). In addition, these methods have proven their limits when dealing with small samples [41]. The ADRL cointegration method developed by Koop et al. [42] and popularized by Pesaran et al. [36] solves these difficulties. This preference for the ADRL method in cointegration is due to the fact that it does not require that the variables be stationary in the same order. This method is also valid when the variables are integrated of order I (0) or I (1) [43]. After verifying the stationarity condition, the cointegration test of Pesaran et al. [36] called Bound testing approach is carried out. This test takes place in two stages: initially, it is a question of determining the optimal delay and in the second stage, one tests the cointegration itself. The determination of the optimal delay P* finally leads to estimating all the ARDL models (a, b, c, d, e) in which the delays of the series vary between 0 and P* and the optimal ARDL is the one which minimizes the criteria d information (AIC and SIC).

The choice of the optimal ARDL leads to testing the existence of a long-run relationship between the variables of the model. The test statistic is F-statistic or Wald statistic. Pesaran et al. [36] propose two sets of critical values to which F-statistics is compared: the first set corresponds to the case where the variables are integrated of order 0 (I (0)) and represent the lower bound and

the second, that where all the variables are integrated of order 1 (I (1)) and represent the upper bound. If the F-statistic is greater than the upper bound, then, the cointegration hypothesis is accepted and if it is less than the lower bound, then there is no cointegration relation or if it is between the lower bound and the upper bound for a low level of significance, the test is inconclusive and no conclusion can be drawn. As long as the cointegration hypothesis is validated, the next step is to estimate the long-run equation and the Error Correction Mechanism (ECRM) in order to take into account any imbalances that may exist in the short-run. The correction coefficient for the error term (ECM (-1)) must be negative and significant in order to confirm the existence of a cointegration relationship between the variables.

4. RESULTS

The results of the preliminary tests (unit root test) presented in Table 1 show that all the variables are not stationary, but all integrated of order 0 and 1 (I (0) and I (1)). In addition, Akaike info criterion (AIC), Schwarz criterion and Hannan-Quinn criterion show, in the light of the results of the graphs in the appendix that the maximum delay which makes it possible to minimize the criterion of AIC is p = 1 for all models. Likewise, the results of the cointegration test (ARDL Bound test) confirm the cointegration hypothesis for all models, since all the values of the Fisher statistic are greater than the upper bound for a significance level of 1% (see Table 2). So long-run and short-run relationships are estimated, in addition to cointegration tests in ARDL, validation tests such as residue normality tests, autocorrelation tests, heteroskedasticity tests and specification tests of the model reveal that the residues are normally distributed in all the models.

Concerning the results in Table 2, we note that the different models are globally significant at the 1% threshold and have a good level of fit. Given that all the adjusted R^2 are greater than 0.50 with the exception of that of the total diversification model which is measured by the Theil index which being located at 0.49 close to 0.5 remains at a level acceptable. Furthermore, the results show that the error correction term or cointegration coefficient (cointEquat (-1)) is negative and significant at the 1% threshold for all three models. This variable corrects the imbalance between the long-run relationship and the short-run dynamics. For comments relating to the other results, they will relate to the various indices (extensive, intensive) as well as to the total diversification index (theil index).

5. DISCUSSION

The sign of the coefficient on the capital flight variable is negative and significant for all three short-run models. Showing thus that the concentration captured by Theil, by the intensive and extensive margin discourages capital flight in Cameroon. This result is easily explained in the short-run, because the effects of diversification on capital flight cannot be observed when a new product is introduced or when the quantity of products already increases in terms of horizontal diversification. However, the sign of the coefficient on the capital flight variable is positively correlated with the export diversification of long-run captured by the extensive margin index. This positive sign could well be justified by the fact that an export diversification through the introduction of a new export product is increasingly encouraging capital flight. By approximating it to the export variable which has been the subject of much debate in the literature, this sign confirms the

Table 1. Unit root test (Augmented Dickey-Fuller test statistic)

Variables	Unit root test at a level		Unit root test in a 1st difference		Cointegration order
	ADF test statistic	Prob	ADF test statistic	Prob	
Capital flight (% GDP)	-4.08	0.015			I (0)
Growth (GPD per capita)	-3.004	0.147	6.33	0.000	I (1)
Domestic credit to private sector	-1.15	0.9	-4.41	0.000	I (1)
Government stability	-2.46	0.33	-3.67	0.04	I (1)
External debt	-1.38	0.84	-4.41	0.007	I (1)
Export Diversification	-2.43	0.35	-6.62	0.000	I (1)
Extensive Margin (Index)	-6.97	0.000			I (0)
Intensive Margin (Index)	-2.83	0.19	-6.22	0.000	I (1)

Source: Authors

Table 2. ARDL estimation method

	Cointegrating form (Short run)		
	Dependent variables		
Independent Variables	**Export diversification index (Theil)**	**Extensive margin (Index)**	**Intensive margin (Index)**
CointEq(-1)	-0.693***	-0.564***	-0.651***
	(0.0006)	(0.0000)	(0.0007)
D(Capital flight (%GDP))	-0.009**	-0.002*	-0.009*
	(0.031)	(0.0589)	(0.0672)
D(Growth (GPD per capita))	0.013	0.004	0.008
	(0.2138)	(0.2420)	(0.4873)
D(Domestic credit to private sector)	-0.023*	-0.006***	-0.017
	(0.0816)	(0.0009)	(0.2715)
D(Government stability (-1))	0.004	0.003	0.010
	(0.8197)	(0.5711)	(0.6559)
D(External debt)	-0.002**	0.002**	-0.002*
	(0.0490)	(0.0181)	(0.0594)
	Long run coefficients (Long run)		
Capital flight (%GDP)	-0.013*	0.006**	-0.025**
	(0.0782)	(0.0192)	(0.0473)
Growth (GPD per capita)	0.019	-0.004	0.013
	(0.1659)	(0.4636)	(0.4661)
Domestic credit to private sector	0.014	-0.010***	0.024*
	(0.1288)	(0.0054)	(0.0524)
Government stability	0.006	0.005	0.016
	(0.8213)	(0.5772)	(0.6602)
External debt	-0.003**	0.0003	-0.004**
	(0.0226)	(0.4190)	(0.0241)
Constant	4.185***	0.145	3.974***
	(0.0000)	(0.1654)	(0.0000)
Observations	31	31	31
Selected Model: ARDL	(1, 0, 0, 1, 0, 0)	(1, 1, 1, 0, 0, 1)	(1, 1, 0, 1, 0, 0)
R-squared	0.615165	0.913932	0.698746
Adjusted R-squared	0.498041	0.877046	0.589199
F-statistic	5.252264	24.77707	6.378507
Prob(F-statistic)	0.001097	0.000000	0.000257
Akaike info criterion	-0.513382	-3.418663	-0.178874
Schwarz criterion	-0.143320	-2.956087	0.237445
Hannan-Quinn criter	-0.392751	-3.267875	-0.043165
Durbin-Watson stat	2.414351	2.238504	2.515337

*Notes: P-values in parentheses; *, **, *** Statistically significant at the 10%, 5% and 1% confidence level, respectively; Source: Authors*

results of the work of several authors [14,11], who justified this exit by declaring the lower values of the exported goods.

Concerning the relationship between export diversification and economic growth, it remains positive but not significant with all the index of diversification, whether short or long term. This result confirms those observed by Coulibaly and Akia [13] in the case of Ivory Coast, by Charles et al. [18] in the cases of Nigeria and by Ferreira [44] in the case of Costa Rica.

The relationship between export diversification and domestic credit by banks to the private sector is negative in the short-run. Indices with significant results remain that of total diversification and extensive margin. Contrary to what is observed in the short-run, in the long-run, the indices of extensive and intensive margins have opposing signs. The negative sign of the extensive margin confirms that observed by Udoh and Ogbuagu [45] in the case of Nigeria, in contrast to the positive relationship that exists between the intensive margin and the domestic credit by banks to private sector. This result was

observed by Svaleryd and Vlachos [46]. For the latter, economic diversification stimulates the development of the financial sector, which, in turn, will push the economy towards greater diversification.

The relationship between diversification indices and government stability, whether short or long-run, remains positive but not significant. Boix [47] suggests that economic growth in countries with historically favorable legal and economic institutions triggers key social transformations such as the reduction of inequality, an educated workforce and more diversified economies. So, the stability of the government can, to a certain extent, favor the diversification of exports to Cameroon, whether by the introduction of new products or by the extension of already existing products.

Regarding the relationship between export diversification and external debt, Theil's total index and that of the intensive margin have negative and significant effects on external debt both in the short and long term. Contrary to these results, the extensive margin index has a positive and significant effect on short-term external debt but not significant in the long term. This result confirms that of the Africa's Pulse [48]. This result could be explained by the fact that external debt favors the creation of new export products.

6. CONCLUSION

The aim of this study is to highlight the effect of export diversification on capital flight in Cameroon. The estimation method is that of Autoregressive distributed lags (ARDL). The results show that over the 1984-2015 period, the export diversification, whether in the short or long-run, generally favors the capital flight. In view of these results and the institutional situation in Cameroon, we recommend that the State ensure better transparency in the management of export products, to set up a better diversification process in order to restrict corruption and facilitate administrative procedures which are cumbersome for investors. this would allow us to benefit from the fruits of the diversification necessary to boost our economy and fight against capital flight.

COMPETING INTERESTS

Author has declared that no competing interests exist.

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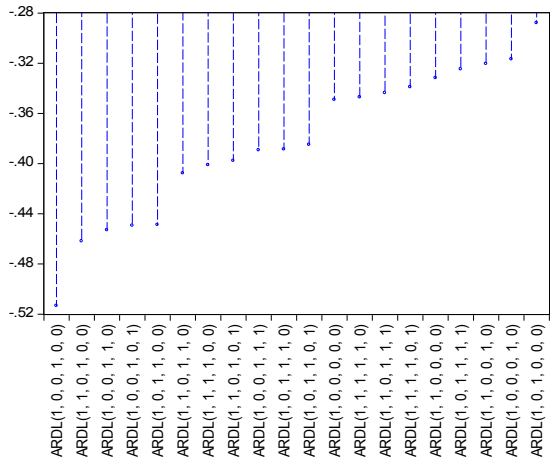
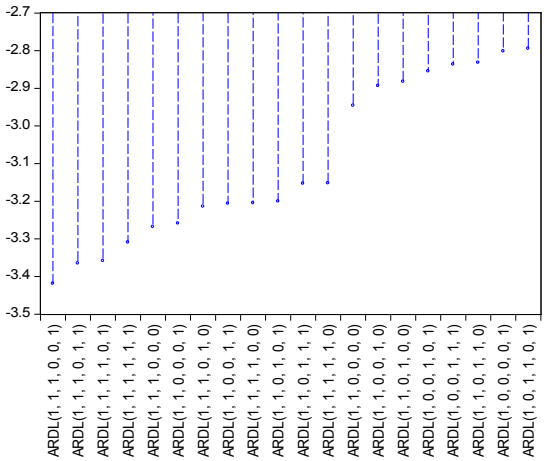
APPENDIX

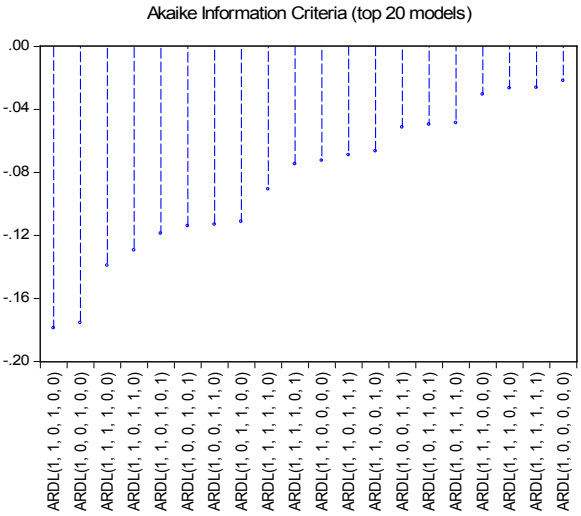
Export diversification index (Theil)



Extensive margin index



Intensive margin index



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