AFRICAN GOVERNANCE AND DEVELOPMENT INSTITUTE

A G D I   Working Paper

WP/14/016

External Debt Origin, Capital Flight and Poverty Reduction in the Franc Zone: Does the Economic Consequences of Sino-African Relationship matter?

Christian-Lambert NGUENA[1]

[1]Association of African Young Economist (AAYE), Cofounder & CEO; [✆ : nguena@aaye.org].

AGDI Working Paper

External Debt Origin, Capital Flight and Poverty Reduction in the Franc Zone: Does the Economic Consequences of Sino-African Relationship matter?

Christian-Lambert NGUENA[2]

September 2014

Abstract:

Is China-Africa economic relation instrumental for capital flight and poverty reduction in FZ? Does it matter in the improvement of external debt's impact on GDP per capita and capital flight reduction in particular? This paper extends and assesses the Asongu and Aminkeng (2013) conclusions about Sino-African economic relations in the FZ context.Thus, practically, the intuition is to use a TSLS-IV econometric estimation technique on 14 African countries specific data over the period 1983-2013 to empirically assess if African external debt exclusively from China can be instrumental in the way toward capital flight and poverty reduction in FZ. The construction of a theoretical framework highlighting stylized fact and the review of a recent literature on this issue has been firstly undertaken. The main result allowed the following interpretations: (a) an important part of the traditional external debt contracted with constraint is going back out of the continent as capital flight and; (b) The capital flight contributes to improving the level of poverty in Africa. Overall, we can conclude that the contribution to economic development depends on the origin of loans received and, fostering the economic relations with China could be an excellent alternative for FZ countries. This paper is original since it has tested the Asongu and Aminkeng (2013) assumption in the continent where concerns of low economic development, higher poverty and capital flight are most acute.

Key words: Sino-African economic relation; Capital flight; External debt origin; pro poor economic growth; Poverty reduction.

JEL classification:E61; E62; H11;I32; O10; O19.

---

[2]Association of African Young Economist (AAYE), Cofounder & CEO; [✆ : nguena@aaye.org].

1.0 Introduction:

It is well known that under the pressure of Breton woods institutions and western states, the Franc Zone (FZ) countries have contracted higher levels of external debt from western countries in the name of development promise. However, more than 60 years after independence, observation of development indicators trend clearly highlight the fact that the economic development of this zone is the slowest in comparison with the rest of the world. All countries are still developing countries with a very lower industrialization and an embryonic situation in all others sectors of activity. Moreover, the problems of higher poverty and capital flight are a reality in the sub region (Demery & Squire, 1996; Hyden, 2007; Saha, 2008).

For the period 1970 to 2010, real capital flight from FZ countries is found to be positive and massive with a magnitude of roughly US$ 86.8 billion or US$ 80.1 billion, representing 122.1% or 112.6% of GDP and 5.3 times or 4.9 times domestic investment (Ndiaye, 2014). This situation could be attributed to debt management constraint like in other parts of the world (Da Costa, 1991; Boyce, 1992; Chipalkatti & Rishi, 2001; Beja, 2006). Indeed, external debt is generally presented as a factor of capital flight and thus poverty through fund transfer (Cuddington, 1986; Henry, 1996; Pastor, 1990; Boyce & Ndikumana, 2001; Ndikumana& Boyce, 2003, 2008, 2011; Collier et al., 2004; Ndiaye, 2007).

With an historical point of view, comparatively to the one contracted from China (China debt origin), the major part of debt contracted by African countries where from Occidental countries and through Bretton Woods institutions (traditional debt origin). Today, debt contracted by African countries is more mixed than before with an increasing more proactive Sino-African debt relation.Indeed, recently there have been several financial and debt contracts between China and Africa which could appear to be an excellent alternative for

African countries seeking economic development. Indeed the growing significance of China on the global scene has led to concerns in both developed and developing countries (Jenkins & Edwards, 2006; Biggeri & Sanfilippo, 2009; Fantu & Cyril, 2010; Zhu, 2010; Ji, 2010; Wang & Zheng, 2012; Renard, 2011; De Grauwe et al., 2012; Diaw & Lessoua, 2013; Asongu, 2014ab; Asongu & Ssozi, 2014).

Following this argumentation and focused literature review, we can clearly highlight some issues such as: Is external debt responsible of the problem of high capital flight and poverty in Africa? Does difference between China debt origin versus traditional debt origin matters? Which of these two types of debt origin is moreuseful in the fight against this issue?

According to Asongu and Aminkeng (2013),"*a number of positive signs suggest that China is heading toward the direction which would provide openings for a multipolar dialogue. While benefiting in the short-run, African governments have the capacity to tailor this relationship and address some socio-economic matters arising that may negatively affect the nexus in the long-term*".We can deduce that a development of Sino-African relation especially concerning the external debt origin could be useful in the fight against capital flight and poverty reduction; however, until now, there is no empirical study showing clearly conclusion. The paper usually checks the relation between external debt, capital flight and economic growth.

The present study seeks to fill this gap by providing a threefold contribution to the literature. Firstly,the focus on Africa where concerns of loweconomic and financial development, higher poverty and capital flight are most acute (Nguena&Tsafack, 2014abcd; Nguena, 2013; Asongu, 2013ab; Asongu, 2011ab; Asongu, 2012), helps elicit some glaring issues on traditional debt contractedfromoccidental countries and Bretton woods institutions, in a bid to improve economic and human development. Secondly, the use of much recent data in a large period (1983-2013) provides more updated policy implications. Thirdly, we complement existing literature by empirically debunking some myths that may loom large and

significantly influence policy decision making. Specifically, we shall attempt to empirically debunk the following myths: "*inter alia, China targets aid to African states with abundant natural resources and bad governments, Chinese do not hire Africans to work on their projects, Chinese workers and managers live in extremely simple conditions as compared to Western advisors, China outbids other companies by flouting social and environmental standards and, low linkage levels between Chinese and local businesses*" (Freschi, 2010; De Grauwe et al., 2012).

The rest of the paper is organized as follows. China's versus Western role in the global economy and the economic quality of its relations with Africa are covered in Section 2. The literature review on external debt-capital flight-poverty reduction nexus is presented in Section 3. The direct and indirect econometric analyses in section 3 and we conclude with economic policy recommendations in Section 4.

2.0 The global economy and the economic quality of worldwide relationship with Africa: Chineseversus Occidentalapproach.

2.1 China in the global economy and its relations with Africa.

This growing significance of China on the global scene has led to concerns in both developed and developing countries (Jenkins & Edwards, 2006; Biggeri & Sanfilippo, 2009; Fantu & Cyril, 2010; Zhu, 2010; Ji, 2010; Wang & Zheng, 2012; Renard, 2011; De Grauwe et al., 2012; Diaw & Lessoua, 2013; Wei, 2013; Drogendijk & Blomkvist, 2013; Lin & Farrell, 2013; Zhang et al., 2013; Munemo, 2013; Adekunle&Gitau, 2013).Over the last 15 years, relations between Africans and Asians in general have multiplied, beginning with booming trade and increasing investments in Africa from Asia, that have been supplemented by a broad range of recently emerging social, political and cultural interactions.

In recent years, the accelerated growth and greater openness of the Chinese economy has led

to it becoming increasingly an important player in the global economy. Today, almost one of every five people in the world live in China. Since 1990, the economy has grown almost at the rate of 10% per annum (Jenkins & Edwards, 2006). As shown by Jenkins & Edwards, between 1990 and 2002 trade as a share of GDP increased by more than two-thirds for China. Although its share of world output and trade still lag behind its share of population, it has nonetheless increased significantly. The growing significance of this developing giant on the global scene has raised concerns in both developed and developing countries. In the case of the latter, the impact of China particularly on other countries in Asia and more recently in Latin America has been the focus of attention (Lall et al., 2005; Wang & Zheng, 2010; Ortmann, 2012). African oriented studies have escaped research attention in spite of the fact that trade between China and Africa has grown significantly since the 1990s and in the last few years, China has also emerged as a significant source of FDI (Jenkins & Edwards, 2006; Fantu & Cyril, 2010; Diaw & Lessoua, 2013).

Globalization not only entails the rise of large-scale economic and political communities but also an historic increase in identities born of human travel and the concepts and ideas stemming from it. An intensification in market-orientated economic interests between Asia and Africa has simultaneously given birth to significant inter-regional migrations including African traders in Guangzhou and Yiwu in China, African students in Kuala Lumpur, Chinese investors across Africa, and Vietnamese contract workersin Angola. We can see the use of Chinese traditional medicine in African urban settings and can ask about implications of Chinese goods being traded. Relations between states are re-negotiated on all political levels and in all policy fields, accompanied and simultaneously challenged by new forms of collaboration of transnational civil society networks, including in matters such as environmental protection.

Several studies have attempted to understand China's move to Africa. Tull (2006) has stressed

that China's Africa interest is part of a recently more active international strategy based on multipolarity and non-intervention. According to the narrative, increased investment, debt cancellation and a boom in Chinese-African trade (with a strategic Chinese focus) on oil have proven naturally advantageous for China and African state elites. Biggeri & Sanfilippo (2009) examine the relationship and conclude that the Chinese move into African is driven by strategic interaction among three main channels (FDI, trade and economic cooperation) as well as by pull factors (natural resources and market potential). Fantu & Cyril (2010) have established that the relationship is mutually beneficial in the short-term and proposed criticalinterventions that African governments must undertake in order to negotiate with China for a stronger and more informed platform.

De Grauwe et al. (2012) have stressed after an empirical investigation that China is consistently willing to import more from African countries with lower governance standing. Hence, filling a gap left open by the other major world economies which might play a key role in the future development of Africa. In the same line of thought, Renard (2011) had earlier concluded that while the benefits have been mutually beneficial, the improvement of institutions is needed to reap more benefits. Kolstad &Wiig (2011) have investigated Chinese FDI[3] in Africa and found that these (FDIs) are resources-driven. They have further stressed that weak institutions appear to be the name of the investment game in Africa: that account only for 1% of global FDI flows and in dire need of foreign investment (Tuomi, 2011; Darley, 2012). However, Diaw & Lessoua (2013) have concluded that the CEMAC-China trade relations have diversified openness and mitigated the negative incidence of trade on growth in the region.

After this clarification of growing relations between China and Africa, we intend now to discuss the difference between China debt origin and occidental debt origin.

---

[3]Foreign Direct Investment.

2.2 Difference between Chinese debt origin and Western debt origin: A conceptual framework.

Practices governing Chinese aid and development finance[4]clearly diverge from OECD (traditional aid) standards and norms on mainly the following aspect: transparency and definitions, management of concessional export credits and management of sovereign debt.

In the area of environmental and social protections, corruption, and governance, there is mixed results: Chinese norms on environmental and social safeguards are evolving rapidly in comparison with traditional norms.

Regarding governance, both China and the traditional sources of development finance have rules that discourage corruption in the procurement of aid, but export credits are less well policed. However, these rules are more deepen in traditional sources than in Chinese source. Even if global aid regime is not well-institutionalised regarding democracy and human rights, the traditional source strongly apply conditionality in this area. Many bilateral donors do apply such conditions, but relatively inconsistently.

There is confusion regarding the precise definition of Chinese assistance to Africa. With the intensification of interaction between China and Africa, it becomes imperative to better characterise what can be classified as: aid in the strict sense (according to DAC[5]); economic cooperation; and simple private interests (trade or investment). These different categories are often incorrectly considered as a whole. As Qi Guoqiang (2007), we can suggest a typology for more clarification. Chinese assistance consists of grants, interest free loans and preferential rate loans:

-        Grants: Mainly used to help recipient countries to implement small social projects, such as: hospitals, schools, low cost housing, provision of clean drinking water etc.

[4]In the overall paper, we consider "aid and development finance" as financial flux received in terms of loans which is equivalent to external debt.
[5]Development Assistance Committee.

- Interest free loans: Not always reimbursed - Chinese authorities estimate that around 90% of these debts are cancelled.

- Preferential rate loans for industrial and infrastructure projects. These are implemented by the Export-Import Bank of China (*Exim Bank*), which was established in 1995. The government subsidises the difference between the preferential rate and the basic rate of the central Bank of China. Unlike other loan types, these loans do have to be paid back; bankers of Exim Bank, who are present from the initial negotiations of the loans, are particularly exacting and vigilant regarding the profitability of the projects they finance. The annual interest rate and the length of the loan vary according to the country and the project considered: on average, this is about 2% interest for loans over 10 to 15 years, without any grace period, and loans are in Chinese currency (yuan or Renminbi).

Overall the difference between Chinese aid and traditional aid is clear: the traditional one is constraint by several exogenousconditions before and within the executionwhich tend to lengthen the procedure and exposure to economic issues such as funds distractions, corruption…etc. The Chinese aid is less conditional with a very fast and focused implementation characteristic; we assume that itcan therefore been more suitable for African countries where democracy and good practises is not a reality in general.

3.0 External debt-capital flight-poverty reduction nexus: A brief literature review

Thefollowing literature review suggests that coexistence between external debt, high poverty and capital flight in developing countries is effective. First, we examine the theoretical literature which mainly shows the links between high poverty, capital flight and external debt can be direct or indirectsince the causality is bidirectional. Next, the empirical literature will mainly confirm the positive effect of foreign debt on capital flight and poverty and vice versa.

✓ *The brief theoretical literature review:*

According to the theoretical literature, economic mismanagement and history debtor governments in fiscal policy may be the source of the leak of external debt-capital relationship. According to Morgan Guaranty Trust Company Bank (1986), indirect factors such as low growth rate of Gross Domestic Product (GDP), overvalued exchange rates and tax burden can not only cause the flight of capital but also generate credit demand abroad and increasing external debt.

Other researchers have argued that external borrowing can directly cause capital flight by providing the resources needed for transfers of funds (Cuddington, 1987, Henry, 1996). Lessard (1987) argues that debt disbursements generally report an increase in the probability of a fiscal crisis and thus induce capital flight. Dooley & Kretzer (1994) provide a different interpretation of the association between external debt and capital flight. These authors believe that the option of external debt may encourage domestic investors to undertakevery risky investment decisions;this results in an increase in the borrower government's contingent liabilities induced by domestic savers investments abroad and which provide a higher capital taxationin the future. This situation can also explain a large part of higher poverty.

Another perspective on the association between external debt and capital flight notes that the causality runs from the latter to external borrowing. Boyce (1992), notes that foreign creditors may be willing to fill the gap created by the flight of capital if they perceive any comparative advantage (benefit between risk and return). Lessard & Williamson (1987) supports this view by noting that, disparities in taxation and interest rate ceilings can lead to systematic differences in returns which are capital risk-adjusted by residents and non-residents. The role of policy is also emphasized in Dooley & Kletzer (1994), which suggest that international arbitration of domestic policies can induce capital flight and simultaneously attract foreign capital; However capital flight induction seems to be higher than foreign capital attraction.

Similarly, Boyce (1992) observed the correlation between external debt and capital flight, which is supposed to be a direct link between the two variables in the case of Philippines. On this basis, he found and concludes that the Philippines experience from 1962 to 1986 was one in which the external debt has encouraged capital outflows outside the country, thus generating new loans through the model of "financial revolving door".

✓ *The brief empirical literature review.*

The most recurrent finding in empirical studies of capital flight is that external debt is an important determinant of capital flight and poverty. This relationship has been established both in one country sample and in several countries samplestudies. Cuddington (1986) finds that capital flight from Mexico is highly correlated with its public debt. Hermes & Lensink (1992) indicate that the strongest predictor of capital flight is public external borrowing: 75% to 91% of public external borrowings leave developing countries in the form of capital flight.

Vos (1992), in a study applied to Philippines,found that debt stock has no statistically significant impact on capital flight; According to him, it is only debt flow that is meaningful for this country. Ajayi (1995) found a significant link between capital flight and external debt in the case of Nigeria. Ndikumana & Boyce (2003) found that external debt of 30 sub-Saharan African developing countries contribute for 80% of capital outflows from these countries. Other empirical tests show that foreign debt is positively related to capital flight; which means that more foreign debtincrease, capital flight become highest. This is also the case of Boyce (1992) which used a time series model to show that the relationship between external debt and capital flight in the Philippines is positive over the period 1962-1986. Boyce & Ndikumana (2001), using a model panel data for this performance in a sample of 25 countries in Sub-Saharan Africa during the period 1970-1996, have found the same result.

The results obtained by Chipalkattié Rishi (2001) in a study applied to the case of India and using a simultaneous equations model, validate the hypothesis of the bidirectional relationship

between current external debt and capital flight. The main result of these authors researchhas been confirmed recently by Beja (2006).

This literature review let us made the hypotheses that capital flight and external debt are positively related in one hand and poverty and capital flight are positive related in other hand.It also leave room for one main improvement: there is lack of a study that puts some dialectical structure on the existing literature on in order to assess if African external debt exclusively from China can be instrumental in the way toward capital flight and poverty reduction in FZ.

4.0 External debt origin-capital flight-poverty reduction nexus: The directly and indirectly statistic and econometric analyses:

4.1 Some stylized facts.

There is some stylized fact highlighted by the trend of our focusing variables in Africa.

Figure 1: Evolution of poverty in French Zone African countries (1990-2010).
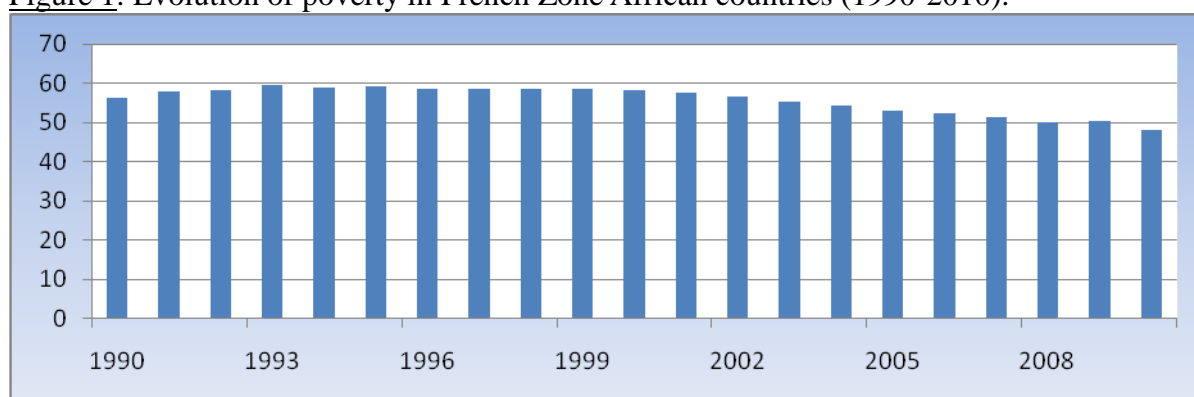
Source: Author calculation. Poverty rate (Human development capital) is from UNDP data base.

The figure 1 above show that the poverty rate trends is relatively stable at a higher level (around 55%). This is an issue since the international and national context is characterised by the adoption of MDGs[6] and development of pro-poor economic policies in Africa.

By observing the figure 2 we can see that, even with respect of all condition imposed by

---

[6] Millenium Development Goals.

occidental countries through their development assistance loans in the name of economic development, the poverty rate is high and constant over the period and since 1990.

<u>Figure 2</u>: Capital flight, FDI, and ODA in French Zone African countries (1980-2010; 10-year cumulative flows).
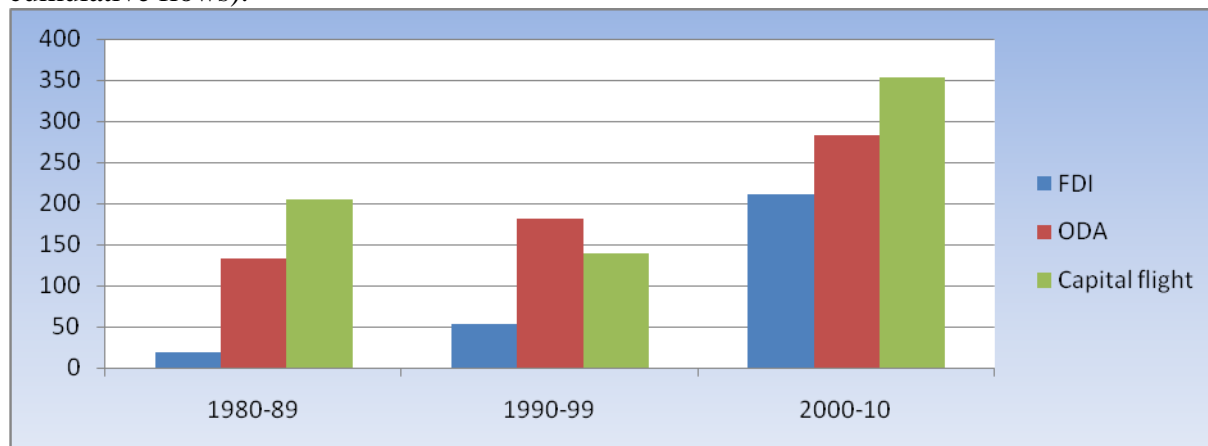
<u>Source</u>: Author calculation. Capital flight data are from Boyce and Ndikumana (2013) data base; FDI are from World Development Indicators and ODA are from OECD data base.

Additionally we can see that even if traditional development assistance to FZ countries along with FDI are increasing, however, what is also evident is that in these countries,capital flight also accelerated in this period. Indeed, capital flight outpaced ODA[7] and FDI since 2000. The problem is clear: the incapacity of traditional ODA and FDI to fight against poverty and capital flight.

After showing evidence of these stylized facts in FZ countries diagnostic, we intend now to econometrically verify this situation in order to propose correct policy recommendation to solve the problem.

4.2Methodology, data and econometric test:

4.2.1 Data and model

We examine a sample of 14 FZ countries data from Boyce & Ndikumana (2013), ICRG[8],

---

[7]Official Development Assistance.
[8]International Countries Risk Guide.

African Development Indicators of the World Bank, OECD[9]and UNDP[10] data base. Owing to constraints in data availability and in a bid to obtain more updated policy implications, the data-set spans from 1983-2013. Details of summary statistics (Appendix 1) and presentation of the selected African countries (Appendix 2) are in the appendices. In the selection of variables, while the external debt origin has been approximated by the Official Development Assistance in term of loans from OECD data base, the capital flight dimension is captured by capital flight index calculated by and extracted from Boyce & Ndikumana (2013) data base. The poverty rate is indexed by the UNDP Human Development/GDP Index.

The data can be present in detail as follow:

✓ *Endogenous variable:* The dependent variables are the poverty rate "*Human Development Index / GDP*" (HDI), an indicator from the UNDP data base used to capture the level of well-being in Africa which is consistent with the literature for poverty analyses.

✓ *Exogenous variable:* The endogenous-explaining (exogenous) variable is the index of capital flight (CAPF) previously constructed by Boyce & Ndikumana (2013) and which is consistent with the overall literature of Capital flight empirical analyses in Africa.

✓ *Instrumental variables:* According to our hypotheses, the instrumental variables in linear estimations include indicators of External debt origin (OECD traditional Official development assistance in terms of loans / GDP, ODAL) borrowed from the OECD data base. This external debt is taking into account origin from only traditional countries without China.

✓ *Control variables:*

For the first stage estimation, we have retained the following variables usually presented as a potential determinant of capital flight:

- Traditional external Debt stock (ODAL): It is the traditional official development

---

[9]Organisation for Economic Co-operation and Development.
[10]United Nations Development Program.

assistance in term of loans from the OECD data base. A positive impact is expected;

- Exchange term (TOT): It is the ratio of exportation by importation. Consistent with the literature, we anticipate that a degradation of the exchange term positively impact the capital flight;

- Inflation rate (TXINF): We expect a positive impact (Boyce & Ndikumana, 2002; Cuddington, 1986; Dooley, 1988; Ketkar & Ketkar, 1989; Onwioduokit, 2001);

- Economic growth (TXPIB): A is expected either a positive or a negative impact;

- Commercial openness (TXOUV): It is the ratio of the sum of exportation and importation by importation. More the country is open, more it is able to have devises and therefore to reimburse external debt charge; it is expected therefore to have a negative impact on capital flight;

- Financial openness (KAOPEN): it is a variable calculated to index the financial liberalization; As the commercial openness, this variable is also expected to have a negative impact on capital flight;

- Governance (CORRUP): It is indexed by the corruption level from ICRG data base. By referring to some studies like the one of Sheets (1995) or Hermes et al. (2002), we can predict a positive effect on capital flight;

- Foreign direct investment (FDI): This variable is expected to have a positive impact on capital flight.

For the second stage estimation, we have considered another control variable usually presented in the estimation of poverty equation by several authors such as:

- Density (DENS): This variable is expected to have a positive impact on poverty;

- Employment rate (TXEM): It is expected to have a negative impact;

- Human capital (CAPHUM): A negative impact is expected;

- Urbanization rate (URBAN): A negative impact is expected;

- Investment rate (TXINV): It is the logarithm of the ratio (gross fixed capital formation + changes in inventories) / GDP;A positive impact is expected.

4.2.2 Methodology

✓ *Choice of methodology justification:*

The main conclusion of the previous sections on conceptual framework and literature review allows the following assumption:

Firstly, there is a direct link between capital flight and external debt origin in one hand and between capital flight and poverty in other hand; secondly, there is an indirect link between external debt origin and poverty through capital flight channel. The situation can been illustrate as follow:

Thirdly, there are some exogenous variables explaining capital flight and not explaining directly poverty such as real exchange rate, inflation rate, financial openness…etc. Therefore if we estimate one poverty equation with capital flight and external debt origin at the same time, our result would be biased since even if there is a higher correlation between our potential instrumental variable (External debt origin) and problem variable (poverty), the error term will be uncorrelated with the problem variable.

Taking into consideration the above assumption and in line with Lalountas et al. (2011) we use Two-Stage Least Squares (TSLS) as estimation approach which more appropriate to this case. Indeed as explained above, estimation with OLS technic may have a problem of endogeneity bias because the Capital flight variable is likely to be endogenous that is it is

explained by other variables which cannot directly explain our problem variable.Even by increasing the sample size, the OLS estimator will remains inconsistent. Therefore the use of instrumental variable to estimate our equations is justified. The TSLS is a one by one estimation of simultaneous equation model. It practically consists to regress $ln(CAPF)_{i,t}$ on the first stage control variables and run the regression of our problem variable $ln(HDI)_{i,t}$, by replacing $ln(CAPF)_{i,t}$ by the estimation result of the first stage $ln(\widehat{CAPF})_{i,t}$.

We adopt the following steps in this approach. Firstly, we justify the choice of the estimation technique (TSLS over OLS) with the Hausman test for endogeneity. Secondly, we demonstrate that instrumental variable (capital flight indicator) is exogenous to the endogenous components of the poverty channel, conditional on other covariates (control variables). Lastly we investigate the validity of the capital flight instrument with the Sargan-OIR (Over Identifying Restrictions test).

✓ *Model specification:*

The TSLS-IV estimation method adopted by this study will entail the following steps.

First-stage regression:
$$ln(CAPF)_{i,t} = \alpha_0 + \alpha_1 ln(ODAL)_{i,t} + \alpha_2 ln(X)_{i,t} + \varepsilon \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots (1)$$
Second-stage regression:
$$ln(HDI)_{i,t} = \alpha_0 + \alpha_1 ln(CAPF)_{i,t} + \alpha_2 ln(X)_{i,t} + \mu \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots (2)$$
The independent control variables are represented by *X* in the two equations. In Eq. (1) and Eq. (2), ε and μ respectively denote the disturbance terms. The capital flight index (CAPF) represents the instrument. ODAL stands for external debt origin index (traditional official development assistance) while HDI entails the poverty rate.

For robustness purposes, the empirical analysis will estimates with and without HAC

(Heteroscedasticity and Autocorrelation Consistent) standard errors. However we are going to present and interpret only the result of the analyses with HAC.

5.0 Estimation result discussion:

This section addresses the level of responsibility of the exogenous components of external debt origin to account for the level of poverty; the possibility of the external debt origin instrument to explain variations in the endogenous components of capital flight and the possibility of external debt origin instrument to impact on the poverty beyond the capital flight channel. To make these assessments, we use the panel TSLS-IV estimation method with financial and trade liberalization measures as instrumental variables. The Tables below present the results of our estimation.

4.1 External debt origin and capital flight

Table 1 below assesses the validity of the external debt origin instrument in explaining cross-country differences in capital flight.

Table 1: Capital flight and external debt origin instrument

Capital flight Index (CAPF)		
	Coefficient	**P Value**
Constant	0.704	0.106
ODAL	0.209***	0.001
TOT	-1.533*	0075
TXINF	-0.118	0.245
TXPIB	0.173***	0.003
TXOUV	0.109	0.756
KAOPEN	0.512	0.423
TXCHA	0.256	0.128
CORRUP	1.065	1.023
FDI	0.556	0.819
Adjusted R²	0.346	
Fisher	6.899***	

Note: *,**,***: Significance levels of 10%, 5% and 1% respectively. Explanatory variables are: Traditional external debt stock (ODAL); Exchange term (TOT); Inflation rate (TXINF); Economic   growth   (TXPIB);   Commercial   openness   (TXOUV);   Financial   openness

(KAOPEN); Real exchange rate (TXCHA); Governance (CORRUP); Foreign direct investment (FDI).
<u>Source</u>: Author's calculation.

Based on the Fisher-test, the instruments taken together enter significantly in all regressions at the 1% significance level for the most part. It is worth noting this is the first stage of the IV estimation approach where-by traditional external debt stock instruments must be exogenous to the endogenous components of capital flight and second-stage regression control variables, conditional on other covariates (first-stage control variables). Most of the coefficients are significant with the right signs and the following could be established.

(1) Traditionalexternal debt stockhave a significant at 1% and positive impact on poverty level and are not therefore good useful in a pro poor approach. These findings are consistent with recent African literature. The positive effect of traditionalexternal debt stockon capital flight could be elucidated by the fact that this type of debt are not suitable to African countries and tends more to unleash capital flight.

(2) The exchange term has a significant and negative effect on capital flight. This is consistent with the theoretical point of view its degradation positively impact capital flight. Indeed, its degradation is going to reduce the negative impact on the exchange term.

(3) Economic growth is positively related to capital flight;

(4) The other variables do not have a significant impact on the dependent variable.

Given the validity of joint significance (Fisher test) in estimated coefficients, we proceed with the second-stage of the TSLS approach.

4.2 External debt origin, capital flight and poverty

Tables 2 bellow investigates two main issues: (1) the ability of the capital flight channel to explain changes in poverty and; (2) the possibility of the external debt origin instrumental

variables explaining changes in poverty beyond capital flight channel. Whereas we address the first issue by investigating the significance of estimated coefficients, the second is assessed by the Sargan-OIR test for instrument validity. The null hypothesis of the Sargan test is the view that the instruments account for poverty dynamics only through capital flight channel. Thus a rejection of the null hypothesis is the rejection of the view that the instruments explain poverty dynamics through no other mechanisms than capital flight channels. The Hausman-test for endogeneity precedes every TSLS-IV regression and thus justifies the choice of the estimation approach. The null hypothesis of this test is the stance that OLS estimates are consistent and efficient. Thus a rejection of the null hypothesis points to the concern of reverse causality (endogeneity) and hence lends credit to the TSLS-IV estimation approach. Else, we model by OLS[11] under strict exogeneity in the capital flight channel.

Table 2 presents second-stage results with HAC. As concerns the first issue, based on results presented below, the following could be established:

(1) Capital flight impact positively on poverty when instrumental external debt origin variables are linear.

(2) Control variables are not all significant. However we can notice the negative impact of investment rate and employment rateon one hand and positive impact of human capitaland densityon poverty rate. The negative impact of human capital could be understood by the fact that graduated student are usually not finding employment. Only investment rate do not have the expected sign regarding theoretical prediction and based on our previous literature review. This could be explained by the fact that generally external debt is used to investment without local content; therefore the household are not benefiting from it and sometime are suffering about it since there is generally some global macroeconomic adjustment following the

---

[11]Ordinary Least Square.

increase of revenue such as inflation which they have to face.

Table 2: IV regressions with HAC: Poverty and capital flight with external debt origin instrument.

	Poverty rate (HDI)	
	Coefficient	P Value
Constant	0.024	1.056
CAPF	0.106***	0.000
DENS	1.471*	0.070
TXEM	-0.186**	0.034
CAPHUM	0.005*	0.062
URBAN	-1.025	1.078
TXINV	-0.848**	0.040

Hausman	8.550**	
	(0.013)	
Sargan-OIR	2.297	
	(0.513)	
Adjusted R²	0.127	
Fisher	5.447***	
Instruments	1st Set	

1st Set of Instruments	Constant, DENS, TXEM, CORRUP, TXINV, URBAN, d_DENS, d_TXEM, d_CORRUP, d_TXINV, d_URBAN, d_ODAL
2nd Set of Instruments	Constant, DENS, TXEM, CORRUP, TXINV, URBAN, d_DENS, d_TXEM, d_CORRUP, d_TXINV, d_URBAN

*,**,***: significance levels of 10%, 5% and 1% respectively. HAC: Heteroscedasticity and Autocorrelation Consistent. Explanatory variables are: Capital flight (CAPF); Density (DENS); Employment rate (TXEMP); Human capital (CAPHUM); Urbanization rate (URBAN); Investment rate (TXINV); first difference (d_); Traditional external debt stock (ODAL).
Source: Author calculation.

5.0   Result discussion and policy implication

We have tested the assumption of Asongu & Aminkeng (2013) in Africa (specifically In FZ African countries) from different methodological and contextual standpoints. In the analysis, the economic and social dimensions of Sino-African relationship have been reflected in capital flight. For clarity in elucidations, we shall present the following hypotheses: Chinese external debt is a powerful tool for poverty reduction in Africa.

Our analysis demonstrates that traditional external debt instrumented on capital flightimpact

positively on poverty in Africa. In plainer terms, traditional external debtcannot be used as an instrumental tool for the poverty reduction through fighting capital flight. As a policy implication, there is need of reorientation through alternative debt source to go hand in glove before such an achievement could be discounted. Therefore this finding broadly confirms the theoretical underpinning from Asongu & Aminkeng (2013). African countries are recommended to alternate their debt source and not to concentrate only on traditional debt origin; as we have found in our empirical investigation, the traditional debt origin is not good for the economic well-being.

6.0 Conclusion:

A number of stylized facts observed worldwide suggest that Chinese external debt is on the right track to foster inclusive and pro poor economic development through fighting capital flight system impact on poverty reduction. They also outperformed traditional external debt origin, including during periods of financial turmoil. As widely argued by scholars and practitioners, the Chinese external debt industry is more powerful in capital flight reduction than traditional external debt, positioning itself as a potential instrument for poverty reduction.

Over the past decades in Africa, the issue and search for strategies of poverty reduction through fighting capital flight based on a sustainable and non-binding external debt contract have grown in importance as a topic of public debate and a major criterion by which the civil society evaluates public authorities. This increased attention is motivated by the realization among international development experts that development requires above all good and new practices. As we have argued at the beginning of this work, in the African continent we can notice a concentration of debt contracting originate from Western economies exclusively as general characteristics along with generally bad performance in terms of poverty reduction and wealth creation and distribution. Considering the specificity of Chinese external debt

characteristics and its potential relative success in solving or contribute to reduce the previous problem in the area it is implemented, African countries could find a way to undertake this specific external debt origin as an instrument to reduce the level of capital flight and therefore of poverty (poverty reduction through alternative debt source). This alternative debt source is more suitable with African behaviors and has had success until now; so we can extend the level of confidence.

As a conclusion and based on our empirical research results, we can therefore argue that the development of Chinese external debt origin as an alternative can be used as a good instrument for the fight against capital flight and then poverty reduction. Chinese aid is generally given through projects or as cash for direct budget support. It also generally takes into account, humanitarian aspects with some programs for training, scholarships, debt relief and a new volunteer program; this is the main differences with the traditional one which is not more open and therefore able to stimulate capital flight.

Based to the above conclusion and our previous result interpretation, we can recommend to African states irrespective of religion, to permit and/or develop Sino-African relationships in their countries; the government can for example implement a proactive external debt contract policy as an alternative in order to encourage the development of this specific initiative. For African states without any initiative of contracting external debt from China until now, we recommend their governments to concretely contract external debt from China to encourage the private sector to follow them; for the others we recommend to the government to encourage, regulate and formalize this type of initiative.

Appendices

Appendix 1: Summary Statistics

	Variables	Observation
Dependent Variables	Poverty rate (HDI)	420
Independent/dependent Variables	Capital flight (CAPF)	420
First-Stage Control Variables	Traditional external Debtstock (ODAL)	395
	Exchange term (TOT)	420
	Inflation rate (TXINF)	420
	Economic growth (TXPIB)	420
	Commercial openness (OUV)	420
	Financial openness (KAOPEN)	420
	Real exchange rate (TXCHA)	420
	Governance (CORRUP)	290
	Foreign direct investment (FDI)	420
Second-Stage Control Variables	Density (DENS)	405
	Employment rate (TXEM)	386
	Human capital (CAPHUM)	290
	Investment rate (TXINV)	420
	Urbanization rate (URBAN)	205

Source: Observation of data bases by the author.

Appendix 2: List of the FZ Countries(by sub-regions).

Sub-region	Country name	Num.
CEMAC (Central African Economic and Monetary Community)	Cameroon; Chad; Gabon; Equatorial Guinea; Congo; Central African Republic.	06
WAEMU (West African Economic and Monetary Union)	Togo; Burkina Faso; Senegal; Ivory Coast; Guinea Bissau; Mali; Benin; Niger	08

Num.= Number of countries.
Source: Observation of data bases by the author.

Bibliography:

- **Adekunle, B., &Gitau, C. M. W., (2013).** *"Illusion or Reality: Understanding the Flow Between China and Sub-Saharan Africa",* Journal of African Business, 14(2), pp. 117-126.

- **Ajayi, S. I. (1995)** *"Capital flight and external debt in Nigeria"*, Research Paper 35, African Economic Research Consortium (AERC), Nairobi, Kenya.

- **Asongu, A. S. &Aminkeng, A. A., (2013a),** *"The Economic Consequences of China-Africa Relations: Debunking Myths in the Debate"*, Journal of Chinese economic and business studies. Abingdon : Routledge, Vol. 11.2013, 4, p. 261-277;

- **Asongu, S., (2013b).** "*The Knowledge Economy-finance nexus: how do IPRs matter in SSA and MENA countries*?," African Governance and Development Institute Working Paper No. 13/023,

- **Asongu, S., (2012).** "*Financial development dynamic thresholds of financial globalization: evidence from Africa,*" African Governance and Development Institute Working Papers No. 12/020.

- **Asongu, S., (2011a).** "*Investment and Inequality in Africa: which financial channels are good for the poor?,*" African Governance and Development Institute Working Paper No.11/015.

- **Asongu, S., (2011b).** "*New financial development indicators: with a critical contribution to inequality empirics*". African Governance and Development Institute Working Paper No. 13/036.

- **Asongu, S. A, (2013c).** "*Fighting African Capital Flight: Empirics on Benchmarking Policy Harmonization,*". African Governance and Development Institute Working Paper No. 13/006.

- **Asongu, S. A, (2013d).** "*Fighting African capital flight: timelines for the adoption of common policies,*" African Governance and Development Institute Working Paper No. 13/008.

- **Asongu, S. A., (2014a).** "Sino-African relations: a review and reconciliation of dominant schools of thought", *African Governance and Development Institute Working Paper*.

- **Asongu, S. A., (2014b).** "A Development Consensus reconciling the Beijing Model and the Washington Consensus: Views and Agenda", *African Governance and Development Institute Working Paper* No. 14/013.

- **Asongu, S. A., & Ssozi, J., (2014).** "Sino-African relations: some strategies and solutions to the policy syndromes", *African Governance and Development Institute Working Paper*.

- **Beja, Jr. L. E. (2006)** "*Revisiting the Revolving Door: Capital Flight from Southeast Asia*", DESA Working Paper N°16, ST/ESA/2006/DWP/16.

- **Biggeri, M., & Sanfilippo, M., (2009).** "*Understanding China's move into Africa: an empirical analysis*", Journal of Chinese Economic and Business Studies,7(1), pp. 31-54.

- **Boyce, J. K. (1992)** "*The revolving door? External debt and capital flight: Philippine case study*", World Development, 20 (3): 335-349.

- **Boyce, J. K. and Ndikumana, L. (2001)** "*Is Africa a Net Creditor? New Estimates of Capital Flight from Severely Indebted Sub-Saharan African Countries, 1970-1996*", Journal of Development Studies, 38 (2), 27-56.

- **Boyce, J.K., Ndikumana, L. (2002)** "*Public Debts and Private Assets: Explaining Capital Flight from Sub-Saharan African Countries*", World Development.

- **Boyce, J.K. and L. Ndikumana,(2012)**, "Capital Flight from Sub-Saharan African Countries: Updated Estimates, 1970 – 2010". PERI Research Report.

- **Chipalkatti, N., Rishi M. (2001)** "*External Debt and Capital Flight in the Indian Economy*", Oxford Development Studies, 29 (1).

- **Collier, P. A. Hoehhler& C. Pattillo (2004),** "*Aid and Capital Flight*". Oxford University: Centre for the Study of African Economies, Oxford.

- **Cuddington, J. T. (1986)** "*Flight Capital, Issues and Explanations*", Princeton Studies in International Finance, 58. Princeton, NJ: Princeton University.

- **Cuddington, J. T. (1987)** "*Macroeconomic Determinants of Capital flight: An Econometric Investigation*", in Lessard, D. R. and Williamson, J. (Eds), Capital Flight and Third World Debt. Washington DC: Institute for International Economics, pp. 85-96.

- **Da Costa, G. C., (1991),** "*External Debt of Developing Countries: Crisis of Growth*", Economic and Political Weekly, Vol. 26, No. 8 (Feb. 23, 1991), pp. 433-438

- **De Grauwe, P., Houssa&Picillo, G., (2012).**"*African trade dynamics: is China a different trading partner?* ", Journal of Chinese Economic and Business Studies, 10(1), pp. 15-45.

- **Demery, L. and Squire, L. (1996),** "*Macroeconomic adjustment and poverty in Africa: an emerging picture*", The World Bank Research Observer 11(1) (February).

- **Diaw, D., &Lessoua, A., (2013).** "*Natural Resources Exports, Diversification and Economic Growth of CEMAC countries: On the Impact of Trade with China*", African Development Review, 25(2), pp. 189-202.

- **Dooley, M. P. (1986)** "*Country – Specific Risk Premiums, Capital flight and Net Investment Income Payments in Selected Developing Countries*", Washington DC: IMF, Unpublished Manuscript.

- **Dooley, M. P. (1988)** "*Capital Flight: A Response to Differences in Financial Risks*", IMF Staff Paper 35, pp. 422-436.

- **Dooley, M. P., Kletzer, K. M. (1994)** "*Capital flight, external debt, and domestic policies*",FRBSF Economic Review, pp. 29-37.

- **Drogendijk, R., &Blomkvist, K., (2013).** "*Drivers and Motives for Chinese Outward Foreign Direct Investment in Africa*", Journal of African Business, 14(2), pp. 75-84.

- **Fantu, C., & Cyril, O., (2010).** "*The Rise of China and India in Africa: Challenges, Opportunities and Critical Interventions*", The Nordic Africa Institute.

- **Freschi, L., (2010).** "Chinain Africa myths and realities", AIDWATCH (accessed on:11/07/2014). http://aidwatchers.com/2010/02/china-in-africa-myths-and-realities/

- **Henry, L. (1996)** "*Capital Flight from beautiful places: The case of three Caribbean countries*", International Review of Applied Economics, 10, pp. 263-272.

- **Hermes, N., Lensink, R. (1992)** "*The Magnitude and Determinants of Capital Flight: The Case for six Saharan African Countries*", De Economist, ABI/INFORM Global.

- **Hermes, N. R., Lensink, R., Murinde, V. (2002b)** "*Capital Flight, Policy Uncertainty, and the Instability of the International Financial System*" in A. Mullineuxet V. Murinde (Eds), Handbook of International Banking. Cheltenham: Edward EIger.

- **Hyden, Goran, (2007),** "*Governance and Poverty Reduction in Africa*", Proceedings of the National Academy of Sciences of the United States of America, Vol. 104, No. 43, pp. 16751-16756.

- **Jenkins, R., & Edwards, C., (2006).** "*The economic impacts of China and India on sub-Saharan Africa*", Journal of Asian Economics, 17, pp. 207-225.

- **Ji, B., (2010).** "*China's economic recovery and the China model*", Journal of Chinese Economic and Business Studies,8(3), pp. 215-226.

- **Ketkar, S. L., Ketkar, K. W. (1989)** "*Determinants of Capital Flight from Argentina, Brazil and Mexico*", Contemporary Policy Issues, 7 (3):11-27.

- **Kolstad, I., &Wiig, A., (2011).** "*Better the Devil You Know? Chinese Foreign Direct*

Investment in Africa", Journal of African Business, 12(2), 31-50.

- **Lall, S., Weiss, J., & Oikawa, H., (2005).** *"China's Competitive Threat to Latin America: An Analysis for 1990-2002",* Oxford Development Studies, 33(2), pp. 163-194.

- **Lalountas, D.A., Manolas, G.A., &Vavouras, I.S., (2011**), *"Corruption, globalization and development: How are these three phenomena related?"*, Journal of Policy Modeling, 33, pp.636-648.

- **Lessard, D. R. (1987)** Comment, in: D.R. Lessard& J. Williamson (Eds) *"Capital Flight and Third World Debt"* (Washington, DC, Institute for International Economics), pp. 97-100.

- **Lin, X., & Farrell, C., (2013).** *"The Internationalization Strategies of Chinese State and Private State Enterprises in Africa"*, Journal of African Business, 14(2), pp. 85-95.

- **Munemo, J., (2013).** *"Examining Imports of Capital Goods From China as a Channel for Technology Transfer and Growth in Sub-Saharan Africa"*, Journal of African Business, 14(2), pp. 106-116.

- **Ndiaye, A. S. (2007)** *"Fuite des capitaux, épargne et investissement en Zone Franc Africaine : une approche économétrique par les données de panel"*, Conférence Economique Africaine organisée par la Banque Africaine de Développement et la Commission Economique pour l'Afrique, "Opportunités et enjeux du développement de l'Afrique dans l'arène mondiale", Centre de Conférence des Nations Unies, Addis-Abeba, Ethiopie, Du 15 au 19 Novembre.

- **Ndikumana L. & JK Boyce (2003),***"Public debts and private assets: explaining capital flight from Sub-Saharan African countries"*, World Development, 31 (1): 107-30.

- **Ndikumana L. & JK Boyce (2008),***"New estimates of Capital flight from Sub-Saharan African countries: Linkages with external borrowing and policy options"*. International Review of Applied Economics, 25 (2); 149-70.

- **Ndikumana L. & JK Boyce (2011),** *"Africa's Odious Debt: How Foreign Loans and Capital Flight Bled a Continent"*, London & New York: Zed Books.

- **Nguena, C. L. (2013),** "Rethinking Pro-Growth Monetary Policy in Africa: Monetarist versus Keynesian Approach"; *Africa Economic Brief (AEB),* 4.

- **Nguena, C. L. and TsafackNanfosso, R. (2014a),***"Banking Activity Sensitivity to Macroeconomic Shocks and Financial Policies Implications: The case of CEMAC Sub-region"*, African Development Review, Vol. 26, No. 1, 2014, 102–117.

- **Nguena, C. L. and TsafackNanfosso, R. (2014b),** *"Déterminants Microéconomiques du Déficit de Financement des PME au Cameroun"*, AfricanDevelopmentReview : Forthcoming.

- **Onwioduokit, E. A. (2001)** *"Capital Flight from Nigeria: An Empirical Re-examination"*, West African Monetary Institute, Accra, Ghana.

- **Ortmann, S., (2012).** *"The 'Beijing consensus' and the 'Singapore model': unmasking the myth of an alternative authoritarian state-capitalist model"*, Journal of Chinese Economic and Business Studies, 10(4), pp. 337-359.

- **Pastor, M. (1990)** *"Capital flight from Latin America"*, World Development, 18 (1): 1-18.

- **Qi Guoqiang, (2007),** *"China's Foreign Aid: Policies, Structure, Practice and Trend,"* paper delivered to Conference on New Directions in Foreign Aid, Center for Global Governance, Oxford University, June 2007.

- **Renard, M. F., (2011, May)**, "*China's trade and FDI in Africa*", African Development Bank Working Paper No. 126.

- **Saha, Jean Claude, (2008),** "*Reducing Poverty in Sub-Saharan Africa: The Need for Participatory Governance*", Development in Practice, Vol. 18, No. 2 (Apr.,), pp. 267-272;

- **Sheets, N. (1995)** "*Capital Flight from the Countries in Transition: Some Theory and Empirical Evidence*", International Finance Discussion Papers 514, Washington, DC: Board of Governors of the Federal Reserve System.

- **TsafackNanfosso, R. and Nguena, C. L. (2014c),** "*On the Sensitivity of Banking Activity Shocks: Evidence from the CEMAC Sub-region*", Economics Bulletin, Vol. 34 N°=1, pp. 354-372.

- **TsafackNanfosso, R. and Nguena, C. L. (2014d),** « *Importance des Politiques Financières dans la Croissance Economique en zone CEMAC: Approche en Données de Panel* », AfricanDevelopmentReview: Forthcoming.

- **Tull, M. D. (2006).** "*China's engagement in Africa: Scope, significance and consequences*". Journal of Modern African Studies, 44(3), 459-479.

- **Tuomi, K., (2011).** "*The Role of the Investment Climate and Tax Incentives in the Foreign DirectInvestment Decision: Evidence from South Africa*", Journal of African Business, 12(1),pp.133-147.

- **Vos, R. (1992)** "*Private Foreign Asset Accumulation, Not Just Capital Flight: Evidence from the Philippines*", Journal of Development Studies, 28 (3): 500-537.

- **Wang, L., &Zheng, J., (2012).** "*China's rise as a new paradigm in the world economy: preliminaries*", Journal of Chinese Economic and Business Studies, 10(4), pp. 301-312.

- **Wei, W. X., (2013).** "*Special Issue: Chinese Trade and Investment in Africa*", Journal of African Business, 14(2), pp. 72-74.

- **Zhang J., Wei, W. X., & Liu, Z., (2013),** "*Strategic Entry and Determinants of Chinese Private Sector Enterprises in Africa*", Journal of African Business, 14(2), pp. 96-105.

- **Zhu, Y., (2010).** "*Trade, capital flows and external balance: is China unique in two hundred years of globalization?*", Journal of Chinese Economic and Business Studies,8(1).