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Fragility of State in Central African Republic: An Econometric Approach to Efficiency Understanding

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Abstract

A fragile state contributes to the underdevelopment of the nation and its consequences can be very devastating on the state's cohesion. Characterized by high level of corruption which lead the country to an incessant political instability and continuous presence of foreign troops¹. This paper used the vector autoregressive model (VAR) covering the period of 2005-2015 to examine the impact of control of corruption on fragility of state in Central African Republic (CAR). The results show that control of corruption is significant and has negative impact on fragility of state in the short run. The impulse response shows a negative impact of control of corruption in short-run but positive in long-run on fragility of state. The policies implications of this fragility are that the CAR must pursue better governance as well as in the investment choices. Unless CAR leaders and citizens recognize their own fragility, things can only get worse.

JEL Classification: A12; B22; C50; I 28; O55; P37

Keywords: state's fragility, control of corruption, VAR, policies, Central African Republic

I. Introduction

The idea of state fragility which was formerly initiated by political scientists has recently been debated only on economic development. This thought has been related to several combinations of the dysfunctions. The notion of a fragile state emerged in the early 90's. It designates a state's inability to ensure its core objective of development, security guaranteeing and peacekeeping within its borders. Such

¹Since independence in 1960, CAR has a series of political and military disturbances that have regularly thrown it into chaos. In total the country faced 5 coups made by Jean- Bedel Bokassa in 1966, David Dacko in 1979, and André Kolingba in 1981, François Bozizé.

fragility has become a new international concern as its aggravating factors can likely affect international security. A fragile government can be overthrown by power hungry politicians whose motivations are to seize power thus establishing a totalitarian or autocratic regime which seeks to isolate the country from the international community.

The fragility is not limited to the situations of conflict but the consequences after the conflicts. Based on a report made by the Organization for Economic Co-operation and Development (OECD) in 2014, 51 fragile states were recognized with a population of nearly 1.4 billion. Many of them are extremely fragile; their governments cannot fully assume their tasks and have lost their legitimacy. The loss of their legitimacy brings forth a lot of adverse impacts such as: outbreaks of violence, lower treaties and guarantees, slow growth, low gross domestic product, political instability, low yield in agriculture hence resulting into hunger, undernourishment and malnutrition, high illiteracy rate, inability to provide basic services and meet vital needs, unstable and weak governance, a persistent condition of extreme poverty, lack of territorial control, and high propensity to conflict and civil war. That reflects how far CAR is underdeveloped.

The new OECD report (2015) takes this direction to formulate a general understanding of fragility that goes beyond fragile and conflict-affected states with the sixteen sustainable development Goals (SDG) precisely aiming to lessen violence of all forms. All countries, not only those usually considered fragile will be anticipated to meet targets for this goal. The report grants a new, multidimensional observing framework which uses five magnitudes of fragility based on a post-2015 framework: violence, justice, institutions, economic foundations and resilience. A definition is quite different from Canada's Country Indicators for Foreign Policy project (CIFP) which stands that: "fragile states ranges beyond service entitlements to include the states that lack the functional authority to deliver basic security inside their borders, the institutional capacity to offer basic social needs for their populations, and/or the political legitimacy to effectively signify their citizens at home or abroad (CIFP 2006).

As a landlocked country, CAR is covering an area of 623,000 square kilometers with a population of 4.5 million. Bordered in the South by the Republic of Congo and Democratic Republic of Congo, to the west by Cameroon, to the east by Sudan, and finally to the north by Chad, the country is in the middle of Africa. CAR is known for being conspicuous by the fragility of the state. This country is ranked as the third most fragile state in the world, after Sudan and Somalia (FFP)². CAR is very fragile due to decades of corruption resulting in poor governance. Seemingly endless series of coups d'états and civils wars have negatively affected the economic development of African countries in terms of social and economic growth perspective.

²The Fund for Peace (FFP) is an independent, nonpartisan, non-profit research and educational organization which analyzed 12 indicators related to a state's social, economic and political climate in determining fragility, in addition to 100 sub-indicators.

Generally, the most failure of state is due to armed violence which makes the government susceptible of being overthrown. After CAR gained independence in 1960, it became a theater of changing powers, thus breeds political instability. Corrupt governors and the repression of the Central African people have resulted in the nation's decreasing patriotism. Except the democratic election between Kolingba and Ange-Félix Patassé, in 1993-1994 and the election of Faustin Archange Touadéra in 2016³, coups and mutinies have undermined political life and compromised economic development of the country.

This paper investigates the main cause of CAR being a fragile state and shows which policies can be integrated in the government to fight against the fragility, as well as poverty and underdevelopment. Fragility CAR not only reinforces the negative development but also the demise of the rule of law. Identified as a main cause of the state fragility, corruption will be an object of our investigation by using control of corruption as policy to fight against state fragility covering the period of 2005-2015.

This article is organized as follows: the introduction in section I, review of the relevant literatures on the determinant of fragility of states in the section II, Objectives of the study in section III, rationale behind of the study in section IV. Causes and effects of state fragility in CAR are discussed in section V. Section VI takes an econometric approach of fragility of state in CAR. Methodology, data source and sample frame are contained in section VII. Empirical model occupies the section VIII, results and discussions are in section IX and conclusion in section X. Section XI contains managerial implications, while section XII provides the limitations of the study.

II. Review of literature on the determinants of state fragility

Nabamita and Sanjukta (2016) examined the relationship between state and transparency by employing a relatively new database of transparency to show that transparency acts as an important determinant of state fragility using a system of generalized method of moments (GMM) estimators found that a higher level of transparency reduces state fragility. Moreover, free flow of information assists to restore trust in government, decrease state fragility and increase citizen's participation in the political arena. Posso and Regan-Beasley (2015) in their examination of drivers of state fragility; conduct an analysis on both binary measures of fragility and the actual Country Policy and Institutional assessment (CPIA) scores. They employed an array of estimation techniques. Their study found that democracy,

³ André Kolingba was the fourth president of CAR (1981-1993). He took the power from President David Dacko by military coup in 1981 and lost power to Ange-Félix Patassé in democratic election in 1993. Ange-Félix Patassé was president of CAR from 1993-2003. During his reign, three mutinies were against his government (1996-1997). He was overthrown by François Bozizé in 2003. Archange Touadéra was elected president of CAR in 2016 following the national election. He got victory during the second round, with 62% of the votes against 37.7% of his opponent Anicet-Georges Dologuélé.

income levels, economic growth, education level, natural resource rent and the size of the country are important determinants of state fragility. Shields and Paulson (2015) used cross-national data to do a longitudinal analysis of armed conflict, fragility and school enrolment in primary and secondary schooling employed multilevel modeling techniques. Their study found that growth in enrolment is significant lower in conflict affected countries but, the effect depends on the countries overall enrollment level.

Gisselquist (2015) explored varieties of fragility and implications for aid. They found that varieties of fragility are identified in dimensions; degree and duration. Grävingholt et al (2015) made the case for a multidimensional empire typology of state fragility in their methodological article. Unlike existing indices of state fragility, it suggests a route towards operationalization. The main contribution is an emphasis on preserving conceptual multi dimensionality in the operationalization of the concepts hence increased content validity.

Carment et al (2015) studied the theory of fragile state transition in Yemen, Bangladesh and Laos. They used Country Indicators for Foreign Policy (CIFP) to evaluate fragile states transitions. Their findings identify three categories of countries; those in a fragility trap, those which exist in fragility and countries fluctuating between fragility and stability. Randel et.al (2015) found that improving state citizen relations is one of the path ways out of fragility for the case of Guinea. They explore a donor funded project that combined with improvements in service delivery. Their findings show that transparency and accountability lead to better services, increased trust and a change of attitudes. Siambabala & Stuart (2015) examined states structure which is “often seen as willing to sacrifice the well-being of the many for the benefit of a few”. They concluded that a sustainable solution lies in addressing the root causes of unemployment, inequality and poverty, “Bridging the concepts of resilience, fragility and stabilization”, disaster prevention and management. Their finding shows that the state fragility results from the collapse of the social contract between the state and its citizens. Moreover, they argue that stabilization and resilience are anticipated constructs in decreasing fragility, resulted to lead social transformative ability where agency is implanted for societies to exercise some sort of power to raise transformation.

Argitis and Nikolaide (2014) examined the financial fragility and the crisis of the Greek government sector. They argue that, implementation of the fiscal and wage austerity in an economy that lacks structure competitiveness produce recession and unemployment which has adverse effects on financial fragility. Tonwe and Eke (2013) based their research in Nigeria as the study state fragility and violent uprisings. They make their case from the emergence of the Islamic sect, Boko Haram and its transformation into a terrorist organization. They use historicism to demonstrate that for the case of Nigeria the responsibility for the deepening insecurity resides in the states structure which is often seen as willing to sacrifice the well-being of the many for the benefit of a few”. State fragility renders incapacity

of effective service delivery resulting into massive unemployment and extreme poverty. They conclude that a sustainable solution lies in addressing the root causes of unemployment, inequality and poverty.

Zürcher (2012) examined conflict, state fragility and aid effectiveness in Afghanistan. He finds that, firstly, in fragile states the interest of donor-peace-builders and recipient governments are rarely aligned. Secondly, lack of basic security is another impediment. He also finds that aid is more likely to do harm in fragile states than in countries with stable government. Aid also often fuels patronage and corruption.

Davies (2011) in his article on learning for state building capacity development, education and fragility examine capacity development in fragile contexts. They identified that capacity development in education can be achieved if the state takes this focus on analysis of state fragility, coherent, survival intention power in terms of those who have themselves both the capacity and will to affect change and indicators for success government. Baranyi and Salahub (2011) investigated on police reform and democratic development in lower profile states. They find that prospects for SSR and peace building are much better in low profile societies that are in margin of war on terror compound to societies which are at the center of the conflict. Kedir (2011) examined on the paper titled “Donor coordination in a fragile state of Africa: capacity building for peace and poverty reduction. He argues that donors should match their respective African policies reports and give significance to infrastructure instead of concentrating entirely on social agenda. Moreover, donors should not provide diversified signal to recipients and need to be elastic in their operational techniques as well as to help fragile state to avoid inflation and curb fungible, focus on re-integration and discourage ex-combatants.

Kirk (2007) in his study entitled “Education and Fragile States” argues that education should be in the center of fragile state discussion. He that gender equality and state fragility are inherently connected. Minimum standards for education in emergencies; chronic crisis and early reconstructions are important factors in enhancing quantity and quality of education. Ikpe (2007) reviewed the discourse on state fragility and examines the basis for definition. He used a model which considers both middle income and low-income countries. He finds that the nature and extent of state fragility is a function of relationship between state capacity and resilience. Osaghae (2007) examined competing analyses on post-colonial African states and finds that the popular characteristics of weak institutions, poverty, social inequalities, civil strife, corruption, armed conflicts and civil wars have historical background and are not original conditions. They argued that it is not the responsibility of benevolent donors or the international community to determine when the state has no longer to be fragile, rather than concerned citizens of the country.

III. Objectives of the study

This paper empirically examines the impact of control of corruption on fragility of state and shows which policies can be integrated in the government to fight against the fragility in CAR.

IV. Rationale of study

This paper is first in kind which try to examine empirically the impact of control of corruption on state fragility in CAR. This paper is very important for policies-makers in Central African Republic as well the rest of African fragile states which are struggle for economic development.

V. Establishing causes and effects of state fragility in CAR

CAR fragility of state comes from high level of corruption resulting in political instability which can be identified as the main causes of state fragility in the country. Its consequences are very dramatic for economic and human development. On the one hand, the lack of effective government control and the inability to exercise basic state functions provide a fertile ground for disorder, crime and ultimately armed conflict to be increased. On the other hand, internal violence and armed conflict are causes of instability and potential spurs of state failure. Once this downward spiral is set in motion, the likelihood of a protracted crisis has increased immensely. Besides the high level of corruption, there is a poor governance which has been caused was by an incessant political instability triggered by coups and dictatorships. Poor governance and predation have ruined the economy and impoverished the country. Referring to the Global security website (2015), Governance in CAR was tremendously weak due to several political disorders dating back to the 1980s till now due to the corruption, poor financial management, which make CAR extremely underfunded and depend heavily on donor support.

After the attainment of independence in August 13, 1960, David Dacko was elected the president of the Republic. Because of a coup which occurred on the night of December 31, 1965, he was expelled by Lieutenant Colonel Jean Bédél Bokassa⁴. After the constitution was amended, the country becomes an empire. Protected by French parachutists; David Dacko overthrew the Imperial regime and announced the return of the Republic. The collapse of Bokassa's dictatorship and the election in March 15, 1981, brought David Dacko back into power⁵. Coups d'état are permanent, and France also bears its share of responsibility. This electoral process generated a political crisis and resulted in a bloodbath (Voyemakoa,

⁴On December 31, 1965, Jean-Bédél Bokassa used his position as supreme military to overthrow Dacko; he declared himself president of CAR on January.1, 1966. He was president of the CAR (1966-1976) and self-styled emperor of Central African Empire (1976-1979). Jean Bédél Bokassa died November 3, 1996.

⁵Le David Dacko was elected in the first round with 50.23% ahead Ange Félix Patassé (38.11%) and Henri Maidou (3.23%); see Gaudusson of Jean Du Bois, Conac Gerard and Christine Desouches, pp.183.

1983). General André Kolingba, chief of the army, conducted another coup on September 1, 1981. August 22, 1993 the country saw Ange Félix Patasse come into power. His former Chief of Staff, General François Bozizé overthrew him in March 15, 2003 through a rebellion. With the repeal of the defense treaties 1960 France could not intervene militarily to save its regime⁶. These numerous successful and unsuccessful attempts to overthrow the government have crippled the nation.

The fragility of the state at that time led to the establishment of a cartel of rebel movements in the north which led to the creation of Union of Democratic Forces for Unity (UFDR)⁷, catalyst in the formation of this alliance called Seleka⁸ in the national language (Sango). The exactions of the former members of Seleka generated into a dramatic inter-confessional confrontation in Bangui and in the west. Instability endures because of the presence of multiple insurgent groups, bands of highway robbers throughout the north, a deeply weak and frequently ineffective military, and restricted state presence outside of Bangui. The atrocities of Seleka led to the creation of Anti-Balaka⁹. The assimilation of Anti-Balaka to the Christian militia was grossly murderous and strongly contributed to interreligious clashes that developed rapidly after the beginning of the operation of Sangaris (name given to a military operation of French army in CAR from 5 December 2013).

Rebel groups were simply one indication of the illness of high level of corruption - not the root cause of uncertainty. The international community and the government of the CAR had involved much importance to Disarmament, Demobilization, and Reintegration (DDR) as the solution to the CAR long consecutively conflict. This process, encouraged by the United Nations (UN) was affected by problems such as the slow roll out of the program, mishandling of funds by the government and difficulty raising funds from the international community. Despite an agreement being reached in April 2009 that produced a list of rebels to be disarmed and the acceptance by the CARG to use money approved by the Economic Community of Central African States for DDR for its expressed determination, observers placed too much confidence in the process as a resolution to the CAR's ills. Until the CAR Government had the means, and more significantly, the will, to fill the vacuum left behind by disarmed groups, both on a security and

⁶The new partnership agreement signed in 2010 with France no longer provides military intervention to rescue a regime.

⁷Union of Democratic forces for Unity (UFDR) in French Union des Forces Démocratiques pour le Rassemblement, is a rebel group which fought against the government in CAR civil war. The UFDR was the result of the merger in September 2006 of three rebels' movements such as: Central African Democratic Front in French Front démocratique Centrafricain (FDC), Movement of Central African Liberators for Justice (MLCJ), Patriotic Action Group for the Liberation of Central Africa (GAPLC)

⁸Seleka (Meaning Union in CAR national language) is rebel coalition originated in an agreement signed between factions of the Convention of Patriots for Justice and Peace (CPJP) and the Patriotic Convention for Saving the Country (CPSK).

⁹The term Anti-Balaka is often translated as anti-machetes and equated with "a Christian militia." In reality the term comes from the national language of the country. The Anti-Balaka has charms carriers which are believed to have the ability to stop bullets of guns.

economic front, the determination was unlikely to achieve its goals. Beyond that was the predominant problem that the CAR was a failed state - there was simply no economy into which former combatants can be reintegrated.

CAR is one of the poorest countries in the world, it is ranked 180 out of nearly 190 countries by UNDP's Human Development Index. Its incessant political instability has a tremendous impact on already weak economy and low human development index. The country continues to experience conflicts and underdevelopment which lead citizens to live hand to mouth. Political instability has limited the country attractiveness resulting to poor business climate, lack of infrastructure, high mortality rate, high unemployment, violations of human right, shortage of skilled labor force as well as brain drain. Violence against women, torture of civilians, and other human rights violations continues. Exiled people cannot defend themselves from harm, their health is in misery, they have no water, food, or shelter their daily reality is in danger and hardship. Health rate of CAR citizens is currently among the lowest in the sub-Saharan region and the state investment in these sectors is very limited. Because of the political instability, large portion of population have problems accessing healthcare infrastructures. The political instability in CAR also has resulted in violence and abuses of innocent people, as well as massive displacement. Due the conflict between Seleka and Balaka half of the country's population needs an assistance; among them 554,800 internally displaced people (Internal Displacement Monitoring Centre Report, 2014). Moreover, tens of thousands of people, mostly Muslims have absconded in fear for their lives to neighboring countries due to the conflict between Seleka and Balaka.

Economic growth declines due to the political instability prevailing in the country and lack of economic activities. According to African Economic Outlook (2015) the real GDP rate was gradually improved in 2014 at 1% compared from the targeted initial rate at 1.5%. However, the CAR is still facing some hardships in the economy due to fall in public sector activities at 8.5%, this is seeming to be lower than the case in 2013, where it was recorded at -46.5%. Over the period of 2004-2010, real per capita GDP growth averaged just 0.3 percent annually, considerably lower than in other fragile countries in Sub-Saharan Africa. From 2009 to 2010, the exports in goods increased from 120 to 210 million USD against 28 to 30 in the exportation of services (World Trade Organization report, 2010).

Corruption resulting to the lack of enough military funds, has been an obstacle to the effective border controls which make the country victim of internal insecurity, political instability and illegal immigration into the CAR by Chadians and Sudanese. The high prevalence of sexually transmitted diseases and especially the spread of AIDS is also a major challenge. In fact, the HIV prevalence rate is estimated at 13.8% among people aged fourteen to forty-four years living in Bangui, 8% in other cities, and 4% in rural areas (United Nations Children's Emergency Fund, 2012).

Under the influence of unemployment of up to 60% of the active population, significant proportion sees integrating by force in an informal economy of exchanges and commissions. Bringing up a family in these conditions is an arduous task, requiring priority access to food and potable water. Fragile infrastructure and support to production, strongly limits yields much lower than those neighboring countries: 3 tons / ha for cassava against 14 tons / ha in Cameroon, more than 30% of Central African households could not adequately cover their food needs (FAOSTAT, 2008).

In terms of resource, the mining sector accounted for a total of 7% of GDP in 2007 (United States Agency for International Development, 2010), and industry tax revenues were 9% and 11% of total tax revenues of the state in 2009 and 2010, respectively (Extractive Industries Transparency Initiative, 2012).

This decline is the result of insecurity and its implications for the financing of the sector; the interference of the authorities in the production and marketing of diamonds; and massive fraud (facilitated by the difficulty of controlling country borders). Diamonds, are the main product of government revenue (whose production is almost entirely interrupted in 2013) because of an embargo related to Kimberley Process Certification Scheme (KPCS) established in 2013, to prevent conflict diamonds from entering the mainstream rough diamond market. Between 2005 and 2011, exports of the country decreased slightly, to stand at 103.9 million US dollars. The trade balance was in deficit totalizing an amount of 110.8 million US dollars (annex 4: République Centrafricaine).

The country's transportation system is very limited, both domestically and internationally. The country has only one international airport, located in Bangui, the Capital city, which is in poor condition. CAR has no railway infrastructure despite being a landlocked country. In the south west regions, most of the roads are deteriorated. Regarding the south East and North regions, the quality is either fair or poor. Generally, the road network in the country is quite bad, excluding the strategic conditions roads. Additionally, only 2% of the unpaved network is either in good or fair condition. The country depends completely on regional roads such as, Douala-Bangui and Pointe Noire-Brazzaville-Bangui to assume the conveyance of goods as well as public transportation. Paved roads are below the level observed in others fragile states (Dominguez and Foster, 2011).

Electricity production is a largely used hydropower source. Thermal generators are seldom used because of high cost of fuel, as well as the fragile performance of the principal energy company of the CAR (ENERCA) which is in charge¹⁰. Telecommunications infrastructure is inefficient to ensure the coverage of the country. To summarize the causes of CAR state fragility is corruption which has great influence on political, economic and social stability of the country. Most of the governments was

¹⁰ENERCA in French (Energie Centrafricaine) is the principal energy company of CAR. It was founded in 1963 and is located in the capital city Bangui.

characterized by corruption, selfishness dictatorship, arbitrariness, violations of human right, as well as the lack of clear political vision and will.

Table I. Trend between CAR fragile state index and the countries identified with very high alert

Fragile States		Index	Total	DP	REF	HF	GG	UED	ECO	SL	PS	HR	SEC	FE	EXT
2016															
1	Somalia		114.0	9.7	9.7	9.4	9.5	9.3	9.0	9.5	9.0	9.7	9.7	10.0	9.5
2	South Sudan		113.8	9.9	10.0	9.9	6.6	9.0	9.3	9.7	10.0	9.7	10.0	9.7	10.0
3	CAR		112.1	8.7	10.0	9.3	7.2	9.9	8.6	9.8	10.0	9.9	9.2	10.0	9.5
4	Sudan		111.5	9.0	10.0	9.8	9.1	7.6	8.7	9.8	9.1	9.3	9.2	10.0	9.9
5	Yemen		111.5	9.5	9.6	9.5	7.5	8.4	9.4	9.4	9.3	9.4	10.0	9.5	10.0
6	Syria		110.8	8.4	10.0	10.0	8.6	7.4	7.8	10.0	8.9	9.8	10.0	9.9	10.0
7	Chad		110.1	9.9	9.8	8.5	8.9	9.3	8.0	9.2	9.8	9.3	9.1	9.8	8.5
8	Congo (D.R)		110.0	9.1	9.7	9.7	6.8	8.9	8.1	9.3	9.7	10.0	9.2	9.8	9.7

Source: Author's construction based on Fund for Peace (FPP), available at: <http://fsi.fundforpeace.org/>

DP = demographic pressure; REF = refugees and IDPs; HF = human right; GG = Group grievance; UED = uneven development; ECO = poverty and economic decline; SL =legitimacy of state; PS = public services; HR =human flight; SEC = security apparatus; FE = fractionalized elites; EXT = external interventions. The Fragile States Index, developed by The Fund for Peace, is a critical tool in highlighting not only the normal pressures that all states experience, but also in identifying when those pressures are pushing a state towards the brink of failure. As we saw in the Table I, CAR is ranked third out 8 countries with very high alert in the world preceded by Somalia and South Sudan. This statistic showed how serious the fragility is in the country.

Figure I. Evolution of fragility of state index in CAR from 2005-2015

Source: Author's construction from Microsoft excel based of World Bank and fragility of state index data

The figure I show the evolution of state index in CAR. We can remark that the index of fragility of state in country increase gradually each year. The highest value can be observed in 2015 (111.9) and the lowest value in 2005 (93.7)

Figure II. Trend between the fragility of state index and control of corruption in CAR

Source: Author's construction from Microsoft excel based of World Bank and fragility of state index data

The figure II shows the trend between the evolution of fragility of state index and the control of corruption in CAR. It can be observed that the control of corruption is almost near zero and the fragility of state evolved over time.

VI. Methodology

This paper uses secondary time series data covering the period of 2005 to 2015. Control of corruption data is collected from worldwide governance indicators available at: www.govindicators.org.

The index of fragility of state is collected from Fund for Peace website available at: <http://global.fundforpeace.org>.

To examine the impact of control of corruption in CAR on fragility, we run the preliminary times series unit root test by using the Augmented Dickey–Fuller (ADF) of Dickey and Fuller (1981) as well PP of Phillips and Perron (1988) to test if our variables are stationary or not. We also employed Johansen co-integration technique to examine whether the variables in our model have long run relationship or not based on unrestricted VAR model following with selection of lag length of the VAR. The results of both trace and Maximum -Eigen value of Johansen cointegration is presented. Our analysis used VAR. In addition to that, the stability through cumulative sum (CUSUM) diagnostic test is conducted to evaluate our model.

VII. Empirical model

Referring to the history of CAR and possible causes highlighted of state fragility in section V. We can notice that there is an existence of many factors such as: poor governance, political instability, external interference, macro-economic instability, natural resources mismanagement, weak infrastructure, human rights abuses, refugee's pressures affect the state fragility of the country.

For the case of our analysis accent has been put on corruption due to due to inadequacy of required data. The study was limited to those variable and factors for which adequate data could be sought. We are not going to take it into account the political instability in our model because we assumed that political instability is the result of poor governance due to the corruption because some Sub-Saharan Africa countries are politically more stable, but still fragile (Dumitru and Hayat, 2015) and also conflicts persisted in the country due to mismanagement of funds allocated and deflections of funds allocated to the demobilization of armed troops in CAR.

Even if some previous studies focused on political instability as main root of fragility of state as (Robin Geib ,2009) by investigating on: Armed violence in fragile states: Low-intensity conflicts, spillover conflicts, and sporadic law enforcement operations by third parties found that: The gradual process of the state's failure is mostly accompanied by armed violence. Apart from occasional outbreaks, armed force violence in fragile states tends to smolder with relatively low intensity often over an extended period. We hypothesize that the probability of fragility of state decreases with high level of control of corruption in CAR. Control of corruption is integrated in our model to see how it affects the fragility of state. In addition to that, the intention of this paper is to investigate if the variable included in our model can impact positively the fragility of the state. Based on above statement, we hypothesize the following mathematical specification of the model where ε_t represented variables outside the model.

$$FRAG_t = f(CC_t)\varepsilon_t \dots\dots\dots (1)$$

The following model is employed for better understanding of the impact of control of corruption on State fragility

$$. FRAG_t = \alpha_0 + \alpha_1 CC_t + \varepsilon_t \dots\dots\dots (2)$$

Where:

FRAG= Fragility of state, total of: DP+ REF +HF +GG+ UED +ECO+ SL +PS +HR +SEC +FE+ EXT

CC= Control of corruption is measured by the index of corruption estimate rating from -2.5 to 2.5

α =Error term

α = coefficient

According to (Rothstein, 2007), corruption is a phenomenon of crucial importance that can be compared to an epidemic because it is spreading rapidly in the country's political-economic system. Corruption has become a major global critical issue that affect most of the countries in the executing their economic development. This in turn affects the economic growth of the international community at large. Where corruption exists, society can be affected at large in such a way that it is difficult to curb it. It incapacitates the legal and political systems that should be employed for the community good by weakening the rule of law and quieting the voice of the persons. African countries have long been perceived to be very most corrupt, but also politically unstable. In the regards to this problem, many African countries have made control of corruption one of their priority.

Control of corruption captures perceptions of the extent to which public power is exercised for private gain, including both petty and grand forms of corruption, as well as "capture" of the state by elites and private interests (World Bank website, 2016) Fight against corruption, it is very important to take some strong measures in forms of reforms for sustainable development. Kodila-Tedika and Simplicé Asongo (2013) empirically confirmed that corruption has a major role in this descent into problems. It is a vicious circle: the more corruption weakens African states, once weak, corruption grows more. It is very important for Central African to fight against corruption otherwise the fragility of state which has already negatively affected the country, will shoot down the country. Generally, control of corruption is perceived to have a positive effect. The objective of this model is to check if CAR government decides to use make control of corruption as priority in their plan, can it impact positively and significantly the fragility of state. As we know the control of corruption leads to the better management of public budget with results such as: good services to the population, reduction of inequalities, encouragement of investors and developing partners, the reach Disarmament, Demobilization, and Reintegration goals very crucial for sustainable economic growth.

Analysis

The table II and III show the results of ADF and PP unit root test. All our variables become stationary at either 1% or 5% significance level at the first difference and we reject the null-hypothesis of the existence of unit root test. For the case of Augmented Dickey- Fuller test, the index of fragility become stationary at the second difference. However, control of corruption estimate, and fragility of state become stationary both at the second difference.

Table II: Unit root test by Augmented Dickey- Fuller (ADF)

	At level		First difference		Included
Variables	t. stat	Prob	t. stat	Prob.*	
FRAG [2]	-1.594481	0.4490	-3.444248	0.0476**	Trend and Intercept
CC	-1.005243	0.7009	-2.805000	0.0953*	Trend and intercept

***, **, * indicates rejection of the null hypothesis of Unit Root Test at 1%, 5% and 10% levels of significance

Source: Prepared by the author, based on Eview 8

Table III: Unit Root Test by Phillips Perron (PP)

	At level		First difference		Included
Variables	t. stat	Prob	t. stat	Prob.*	
FRAG [2]	2.606036	0.9932	-1.797485	0.0708*	At none
CC [2]	-1.826474	0.3486	-2.823424	0.0112**	At none

***, **, * indicates rejection of the null hypothesis of Unit Root Test at 1%, 5% and 10% levels of significance.

Source: Prepared by the author, based on Eview 8

After the unit-root test, the next step is to check the existence of long-run relationship between the fragility state index and the control of corruption the table IV shows the result of co-integration test, estimated Eigen value, trace statistics, the critical value and the probability. The trace statistics indicate an inexistence of cointegration among our variables which imply that our variables are not co integrated or not moving together. The table V shows the results for unrestricted Cointegration Rank Test (Maximum Eigenvalue) with zero cointegration. Both tests, Trace statistic and Max-Eigen statistics, do not confirm an existence of long-run relationship between our variables.

Table IV: Johansen Test for unrestricted Cointegration Rank Test (Trace)

No. of CE(s)	Eigenvalues	Trace	0.05	Prob. **
		Statistics	Critical Value	
None	0.786720	14.36443	15.49471	0.0735*
At most 1	0.049625	0.458087	3.841466	0.4985

Trace test indicates no cointegration) at the 0.05 level and * denotes rejection of the hypothesis at the 0.05 level.

Source: Prepared by the authors, based on Eview 8

Table V: Johansen Maximum Eigen values for Co-integration

No. of CE(s)	Eigenvalue	Trace Statistic	0.05	
			Critical Value	Prob**
None *				
	0.786720	13.90634	14.26460	0.0569**
At most 1 *				
	0.049625	0.458087	3.841466	0.4985

Maximum Eigen-Value test indicates no Co integrating Equation(s) at the 0.05 level

Source: Prepared by the author, based on Eview 8

Before running the vector auto regression, it is crucial to conduct the granger causality test statistics to check the direction of causality between dependent variable and independent variables in our model by knowing that if the P-value <5%, we can reject the null hypothesis.

Table VI: Granger causality

	F-Statistics	P-value.
CC does not Granger Cause FRAG	4.16395	0.0806*
FRAG does not Granger Cause CC	2.00821	0.1994

, * denote rejection of the hypothesis at the 0.05 and 0.10 levels

Source: Prepared by the author, based on Eview 8

According to the statistics contained in the table VI, there is a unidirectional causality running from control of corruption to fragility of the state. In another term, the control of corruption granger causes the fragility of the state at level of 10 %. This means that there is an existence from short-run causality running from control of corruption to fragility of state in CAR However, fragility of state does not granger control of corruption. To strength the direction of relation between these variables in the

model, the impulse response test is performed. In addition to that, short-run estimated the relationship between our variables and FRAG by using OLS method.

Table VII: Estimated results for short run

Variable	Coefficient	Std. Error	t-Statistic	Prob.
CC	-102.6409	4.351034	-23.59001	0.0000***

, * denote rejection of the hypothesis at the 0.05 and 0.10 levels

Source: Prepared by the author, based on Eview 8

The table VII showed that control of corruption is statistically significant at level of 1% and have negative relationship with fragility of state and means that a lot the control of corruption is still not effective to impact positively the fragility of the state in CAR. The figure III presents the results obtained from impulse responses from control of corruption to fragility of state as well from fragility of state to control of corruption. In our analysis [0-10] is considered as a short –run period and [10-20] as a long-run period. For the impulse response of control of corruption to fragility state, the figure 3 shows that in the short-run the impulse response is constantly negative before starting improving positively at the fourteenth year. The fragility of state impulse is constantly positive in the short-run before it started to decrease slowly in the long run. To compare it to granger causality test statistics, the result is very consistent which stressing that control of corruption has a positive impact on fragility of state.

Table VIII: Diagnostic test

Diagnostic	Statistic	Conclusion
Heteroskedasticity Test: Breusch-Pagan-Godfrey	F-statistic = 0.228 P-value = 0.644	There is no heteroscedasticity
Breusch-Godfrey Correlation LM Test	Serial F-statistic = 3.335383 P-value = 0.1011	No serial correlation
Normality Test	Jarque-Bera Test = 0.888 P-value = 0.641	Residual are normally distributed

Source: Prepared by the author, based on Eview 8

To ascertain the goodness of the model, the diagnostic test and stability test were conducted. Diagnostic test (VIII) shows that our model has passed all three test such as: serial correlation, heteroscedasticity associated with the model, and normality of errors (figure IV). For the stability test,

Cumulative sum (CUSUM) is presented in figure V. The results of the stability test show that our model is stable since no root lie outside the range of the conditions. The recursive residual test satisfies the stability test at 5% significance level.

Figure III: Impulses responses

Figure IV: Normality Test.

Figure V: Stability Test of Residuals

Conclusion

The VAR is employed to examine the relationship between fragility of state index and the control of corruption covering the period of 2005-2015. The results show that the control of corruption is significant at 1% and has negative relationship with fragility index in the short-run. The impulse response of control of corruption to fragility state shows that in the short-run the impulse response is constantly negative before to start improving positively at the fourteenth year. The fragility of state impulse is constantly positive in the short-run before it starts to decrease slowly in the long run.

Many efforts should be done to fight against corruption to impact positively the fragility of the state. If corruption is not controlled, greater will be its impact on political instability. The control of corruption will affect the management of public administration as the government budget. It will help the country to reduce its excessive dependence on International Monetary Fund (IMF). Borrowing from IMF and other financial international organizations will be effective because it will be directed to real economic sectors and sufficient to ensure the security and stability of financial market. Overall, the study finds that the control of corruption has a significant impact on fragility of state. Moreover, the emphasizing of understanding of fragile of state is a hopeful sign. After all, before CAR become more and more fragile. Something should be done to avoid the worst situation in upcoming years.

Managerial Implications

Any country, region, or social organization cannot develop if it is badly managed and has an unsafe business climate. It is crucial for the country to fight against corruption for sustainable development of human capital as well the economic development.

The fragility of state in the CAR is becoming worse. It is important for the country to implement new policies to fight against corruption because it is this threat that apparently has led to the fragility of

the state. To fight against fragility through control corruption will lead the CAR to have stable political environment which will improve the national security of the citizens and CAR will also be able to provide auspicious conditions both internal and external to secure thus to protect the true national interests. By fighting against the corruption, the country will be fighting main cause of fragility of state and military troubles which cannot lead the country to sustainable development. The control of corruption will help the CAR to create more infrastructures, improve business climate as well increase the attractiveness of the country. The creation of schools will affect the thinking way of the population and permit to educate, sensitize the young generation on the importance of the preservation of national identity to avoid inter-confessional and civil wars in another political instability.

The CAR witnessed a big jump back. Ranked 184 out of 187 in terms of human development index, and large size of population lives below the poverty line. The control of corruption will permit to have enough funds to implement policies which will lead the CAR to sustainable development as well the economic security. A country with good and strong economy leads sovereignty as well the human security and peaceful living and able to ensure the basic need of citizens, sustainable and efficient economy with a sufficient source of government revenue. The new insight on the causes of fragility of state is based on institutional quality (Bertocchi and Guerzoni 2010b), but if CAR do not have enough funds to invest in institutions, it will be difficult to run out of the fragility.

The control of corruption will permit the improvement of the quality of institutions in CAR because the government exists only through its administration and institutions. Although this is not the case of CAR where institutions and administration are virtual. The fight against corruption will help the CAR to fight against fragility of state which make CAR to be politically stable. A strengthen of the government anti-corruption agency will impact the political environment, the quality of institutions, and guarantees a sustainable national sovereignty, and peace keeping. If CAR continues to face the fragility of state in the coming years, the country might turn to a terrorist's base, drug trafficking, human trafficking as well threat for most neighboring countries with substantial increase of refugees.

This country can avoid this turning point, only when, CAR political leaders and the population are aware of the fragility of the state, the real danger that may result in long-run and try to resolve their differences to live in peace as to maintain a solidarity which can lead the country to sustainable development.

Limitations of the study

Besides the model which tries to identify control of corruption as possible solution to state fragility there are a lot of variables out of our control especially the colonial history. We recommend further studies to be

done to explore the impact of French colonial history on CAR state fragility as well as the relationship between control of corruption and political instability in CAR.

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